APPENDIX Q

Social Impact Assessment

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

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

INLAND RAIL GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

APPENDIX Q - SOCIAL IMPACT ASSESSMENT

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Abbreviations

ABS	Australian Bureau of Statistics
ACH Act	Aboriginal Cultural Heritage Act 2003
AEP	Australian Exceedance Probability
AL Act	*Acquisition of Land Act 1967* (Qld)
ARTC	Australian Rail Track Corporation
AMP	Accommodation Management Plan
AEDC	Australian Early Development Census
AL Act	Acquisition of Land Act 1967 (Queensland)
CEMP	Construction Environmental Management Plan
C&K	Creche and Kindergarten
CHMP	Cultural Heritage Management Plans
CNVMP	Construction Noise and Vibration Environmental Management Plan
CCC	Community Consultative Committee
COAG	Council of Australian Governments
CRG	Community reference group
CYMHS	Child and Youth Mental Health Service
C2K	Inland Rail Calvert to Kagaru
Db(A)	Decibel levels weighted to approximate the way the human ear hears
DCDSS	Department of Communities, Disability Services and Seniors
DESBT	Department of Employment, Small Business and Training
DESSFB	Department of Employment, Skills, Small and Family Business
DRDMW	Department of Regional Development, Manufacturing and Water
DITRDC	Department of Infrastructure Transport Regional Development and Communications
DFW	Domestic and family violence
DCHDE	Department of Communities, Housing and Digital Economy
Draft Outline EMP	draft Outline Environmental Management Plan
DITRDC	Department of Infrastructure, Transport, Regional Development and Communications
DSD	Department of State Development
DSDSATSIP	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships
DSDMIP	Department of State Development Manufacturing Infrastructure and Planning
DSDTI	Department of State Development, Tourism and Innovation
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning
DTMR	Department of Transport and Main Roads
DVO	Domestic violence order
EIS	Environmental Impact Statement
EP Act	Environmental Protection Act 1994 (Queensland)
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)
ERP	Estimated resident population

FTE	Full time equivalent
GP	General practitioner
G2H	Inland Rail Gowrie to Helidon (the Project)
G2K	Inland Rail Gowrie to Helidon, Helidon to Calvert and Calvert to Kagaru projects
GWIZ	Gatton West Industrial Zone
Ha	Hectare
HACC	Home and Community Care
H2C	Inland Rail Helidon to Calvert
IFC	International Finance Corporation
IFS	Intermodal Freight Terminal
IS	Infrastructure Sustainability
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
IEO	Index of Education and Occupation
LGA	Local Government Area
LIPP	Local Industry Participation Plan
LVRC	Lockyer Valley Regional Council
NIEIR	National Institute Economic and Industry Research
NT	Native Title
NNTT	National Native Title Tribunal
P&C	Parents and Citizens Association
PDA	Priority Development Area
PHA	Population Health Areas
PHN	Primary Health Network
PHIDU	Population Health Information Data Unit
PM	Particulate Matter
PPL2	Roma Brisbane Gas Pipeline (PPL2)
QAS	Queensland Ambulance Service
QFES	Queensland Fire and Emergency Service
QGSO	Queensland Government Statistician's Office
QPS	Queensland Police Service
QUT	Queensland University of Technology
RDA	Regional Development Australia
RD Plan	Regional Development Plan
TMP	Traffic Management Plan
TRC	Toowoomba Regional Council
RSIS	Regional Skills Investment Scheme
USQ	University of Southern Queensland
UQ	University of Queensland
WHO	World Health Organization

SUMMARY

The Gowrie to Helidon (G2H) Project (the Project) consists of a new 28 kilometre (km) single-track dual-gauge freight railway, including a 6.24 km tunnel through the Toowoomba Range. The Project is proposed by Australian Rail Track Corporation (ARTC) as one of 13 projects which comprise the Inland Rail Program. The Project will be constructed between Gowrie Junction, in the Toowoomba Local Government Area (Toowoomba LGA) and Helidon, in the Lockyer Valley Local Government Area (Lockyer Valley LGA).

This Social Impact Assessment (SIA) has been prepared as part of the Project's Environmental Impact Statement (EIS). The purpose of the SIA is to identify how the Project may affect local and regional communities, and how the Project will work with stakeholders to ensure that negative social impacts are mitigated, and Project benefits are enhanced.

Project construction is expected to start in 2022 and be completed in 2027. The Project's construction workforce is expected to peak at approximately 596 personnel in Year 2. Over the full construction period an average of 264 personnel is required. Once operational, a workforce of approximately 15 to 20 personnel is expected.

Social impacts and benefits have been assessed with respect to:

- Landowners and residents in the EIS investigation corridor (generally within 1 km of the Project's disturbance footprint)
- Potentially impacted communities in and near the EIS investigation corridor including Kingsthorpe, Charlton, Gowrie Junction, Cranley, Cotswold Hills, Wilsonton Heights, Rockville, Harlaxton, Mount Kynoch, Mount Lofty, Ballard, Blue Mountain Heights, Lockyer, Withcott, Postmans Ridge, Helidon Spa, and Helidon
- The Project region, which refers to the Toowoomba and Lockyer Valley LGAs.

The Project is located within Country to which the Western Wakka Wakka People and Yuggera Ugarapul People are connected.

SOCIAL BASELINE

Engagement undertaken for the SIA indicates that community members enjoy the following attributes which contribute to their quality of life:

- A rural or semi-rural lifestyle, with access to services in Toowoomba
- Agriculture as a cornerstone of local communities, with tourism based in natural and rural community settings also important
- Relationships to land and the natural elements of place, including flora and fauna
- The rural landscape, characterised by agricultural character and the topography of mountains and valleys
- Close-knit communities, with strong social networks and mutual reliance between neighbours.

Land uses in and around the potentially impacted communities include residential, rural residential, community infrastructure, cropping, irrigated cropping, grazing, and industrial, logistics and manufacturing uses.

Key features of the social baseline which are relevant to social impacts include:

- The potentially impacted communities included rural residential and urban populations based in Toowoomba, rural communities in the Lockyer Valley, and small and dispersed populations in rural localities such as Lockyer (95 people), Charlton (120 people) and Ballard (151 people). In 2016 the most populous communities were the urban areas of Mount Lofty (3,770 people), Rockville (3,238 people), Harlaxton (2.548 people) and Wilsonton Heights (2,668 people). In the rural areas, Gowrie Junction had the largest population at 2,120 people, followed by Kingsthorpe (1,867 people) and Withcott (1,842 people) in 2016.
- Population growth of 5.9 per cent is expected in the Toowoomba LGA between 2021 and 2026, whilst growth in the Lockyer Valley LGA is expected to be approximately 10.0 per cent
- The Lockyer Valley and Toowoomba LGAs had slightly older communities than Queensland (39 years and 38 years, compared with 37 years). Cranley had the highest median ages at 48 years, reflecting the presence of a seniors' community there. Blue Mountain Heights, Cotswold Hills, Mount Lofty and Postmans Ridge had the next highest median ages (with median ages of 47, 45, 43 and 43 years respectively), while Harlaxton and Wilsonton Heights (30 and 31 years) had the youngest median age.
- Children under 16 years old were most highly represented in Mount Kynoch (25.6 per cent) and Gowrie Junction (25.3 per cent)
- Median household incomes were lower in both Lockyer Valley and Toowoomba LGAs than Queensland, and were lowest in Harlaxton, Wilsonton Heights, Rockville, Cranley and Helidon (ranging from $925 per week to $1,097). Incomes were highest in Blue Mountains Heights, Cotswold, Gowrie Junction, Mount Kynoch and Withcott (ranging from $2,237 per week to $1,776).
- Rental vacancy rates reflect tight market conditions with vacancy rates below 1.0 per cent in postcodes which include potentially impacted communities
- There are few short-term accommodation establishments in the potentially impacted communities, but a total of 36 tourism establishments with at least 15 rooms were identified in the Project region. There is likely to be some availability of short term accommodation particularly in Toowoomba, but local accommodation establishments experience seasonal and event-related demands which will need to be considered
- There is a dominance of detached housing in the Project region with limited housing diversity. Toowoomba and Lockyer Valley LGAs have a low supply of social housing (2.6 per cent and 1.2 per cent of housing stock) compared with Queensland (3.7 per cent). Social housing is concentrated in Wilsonton Heights (96 dwellings), Rockville (74 dwellings) and Harlaxton (69 dwellings), and comprises 15.7 per cent of Toowoomba LGAs social housing supply
- In combination Harlaxton, Rockville, Wilsonton Heights, Helidon and Cranley each present as vulnerable communities drawing on a number of socio-economic indicators (income level, age, household type and tenure, Indigenous status, unemployment, access to the internet and disability). Rockville and Wilsonton Heights also had the largest numbers of people with need for assistance with a disability (at 287 and 211 people respectively)
- Lockyer Valley had a higher percentage of dwellings without home access to the internet (17.5 per cent) than the Toowoomba LGA (16.1 per cent) and Queensland (13.6 per cent)
- The Project region had fewer people who had completed Years 11 or 12 at school, a lower level of tertiary qualifications and a slightly higher level of certificate qualifications than is typical for Queensland
- Toowoomba residents have access to twice weekly passenger rail service between Brisbane and Charleville, stopping at Helidon, and Toowoomba, as well as local bus services. Lockyer Valley residents have access to South-east Queensland (SEQ) passenger rail network services via Helidon including a rail-bus replacement service but are heavily reliant on private transport.

- The largest industry of employment by number of workers in the Locker Valley LGA was agriculture, forestry and fishing (2,177 people) followed by health care and social assistance (1,542 people), education and training (1.441 people), retail trade (1,428 people) and construction (1,307 people)
- In the Toowoomba LGA, the five largest industries by number of workers were health care and social assistance (10,501 people), education and training (7,806 people), retail trade (6,756 people), construction (6,056 people) and manufacturing (4,840 people).

COMMUNITY AND STAKEHOLDER ENGAGEMENT

Project stakeholders include:

- Landowners in the EIS investigation corridor
- Members of potentially impacted communities
- Lockyer Valley Regional Council (LVRC)
- Toowoomba Regional Council (TRC)
- Western Wakka Wakka People
- Yuggera Ugarapul People
- Businesses and business organisations
- Community and government agencies.

The SIA drew on the results of ARTC's stakeholder engagement processes. Additional SIA-specific engagement included:

- A community survey involving residents in the Toowoomba, Lockyer Valley, Ipswich and Scenic Rim LGAs
- Meetings with LVRC and TRC officers to discuss community concerns, potential social impacts and benefits, and mitigation and management measures
- Involvement in community information sessions and Community Consultative Committee meetings
- Workshops with community and Government agencies to discuss social infrastructure access, potential social impacts and mitigation strategies
- Meetings with business groups
- Consultation with the Office of Coordinator-General (OCG).

CONSTRUCTION IMPACTS AND OPPORTUNITIES

The SIA has identified the following social impacts and opportunities during the construction phase.

Some landowners and residents have endured an extended period of uncertainty about potential Project impacts including acquisition and impacts on amenity, so stress and anxiety are already being experienced by some people in potentially impacted communities.

Land acquisition impacts

The impacts of land acquisition include the need for between two and an estimated 20 households to relocate, disruption to lifestyles whilst changes to land ownership and use are being accommodated, sterilisation of small areas of good quality agricultural land, and disruptions to grazing and cropping operations.

Amenity

Impacts on rural and residential amenity, if not effectively mitigated, may include:

- Construction noise exceedances which would be intrusive on the amenity of homes and outdoor spaces, and construction traffic noise which is predicted to exceed acceptable criteria for 10 road sections
- Construction noise exceedances at the Gowrie State School, the Ballie Henderson Hospital and the Postmans Ridge Pioneer Memorial Hall
- Dust which may cause a nuisance to homes, business and facilities
- The potential for laydown areas and bridge construction sites to affect the amenity of nearby dwellings through a combination of noise, dust, temporary effects on rural character and/or increased traffic
- Ground-borne noise due to tunnel construction may exceed noise criteria, affecting residential amenity and potentially resulting in sleep disturbance while the tunnel boring machine is within approximately 390 m of homes.

Local character and identity

- The Project will add to the severance effects that major infrastructure projects (road networks, pipelines and rail) have had on the Indigenous cultural landscape in the Project region, commencing during construction and continuing during operations
- Clearing of vegetation, activities at laydown areas and increased traffic and noise may collectively impact on local character for residents within the EIS investigation corridor
- During operations, the Project's embankments, bridges and viaducts are likely to change views and vistas, which may lead to distress about the change to its scenic character and may alter community members' feelings of connection to place.

Disadvantage

- There is potential for construction noise to affect the amenity of properties in areas where residents have low levels of social resources to help them cope with change e.g. Lockyer, Helidon, Murphys Creek and Toowoomba's northern suburbs
- Residents who have been affected by drought and/or floods, or by the impact of construction works for the Toowoomba Bypass may feel particularly vulnerable to impacts such as noise and traffic disruption
- At the broader level, a positive impact would result with construction employment sustaining the income of personnel and their families.

Community cohesion and connectivity

- The relocation of up to an estimated 20 households may affect the cohesion of rural neighbourhoods but would not be significant at the regional level
- Temporary disruptions to road travel will occur during construction due to roadworks
- Pedestrian and cyclist access between Gowrie and Gowrie Junction may be impeded during construction of the Gowrie Junction Road bridge
- The closure of roads on private properties may affect connectivity within properties, but access to the road network would be maintained for all affected properties.

Employment

There is a significant existing pool of skilled workers within the Project region who are equipped for major project construction and/or can be trained for construction work on the Project (approximately 7,363 people in August 2016), along with an unemployed workforce which numbered approximately 5.201 people in June 2019. The Project will also have access to construction personnel living in communities in adjacent LGAs that are within a daily driving distance. On this basis, difficulties accessing adequate labour are not expected, but there is potential for cumulative impacts on labour availability if multiple major projects are constructed during the same period. Impacts and benefits include:

- As the construction workforce is expected to be drawn primarily from communities within the Project region and nearby LGAs, employment benefits would extend to construction industry workers and labourers across the broader region
- The Project's construction phase represents an important source of potential training and career pathway development for young people in the Project region
- There may be shortages in specific trades (such as specialist welders) which could be exacerbated by Project construction or cumulative demands for construction labour.

Housing

- The Project may change the future settlement pattern in the areas designated for rural living at Helidon Spa and Postmans Ridge Road where land is within 250 m of the alignment
- Impacts on housing affordability as the result of workforce demands or housing scarcities are not expected, but cumulative impacts on housing availability are possible
- The number of personnel requiring short-term accommodation is expected to be small, e.g. specialist crews doing short-term construction works. This would be experienced as a welcome increase in trade for accommodation providers, however the Project will be required to plan and monitor its use of short-term accommodation to avoid displacing tourists from accommodation
- The likelihood and quantum of the Project's impacts on property values cannot be conclusively assessed, however stress and anxiety about the potential for negative impacts on property values will result for some residents in the EIS investigation corridor.

Health and wellbeing

- Without effective mitigation, the Project’s construction may result in noise levels which could affect the amenity and lifestyle (e.g. outdoor activities) of residents
- The results of air quality risk assessment for the Project indicate that the unmitigated air emissions from the construction phase of the Project pose a low risk of human health impacts, however, community concerns about air quality changes may persist regardless of the EIS findings
- The construction workforce may generate a small increase in demand for hospital and health services.

Community, health and recreational facilities

- Community members and school bus operators may experience delays or detours on school bus routes or road access to schools and other facilities
- Without effective mitigation, there is potential for construction noise exceedances at the Gowrie State School, Postmans Ridge Pioneers Memorial Hall and the Baillie Henderson Hospital
- Construction noise may be audible at other community facilities including the Gowrie Junction Community Hall

- The Project may intersect the Bicentennial National Heritage Trail on Gittins Road north of Withcott and the Helidon Ravensbourne trail west of Helidon, requiring consideration of the trails' connectivity during the detailed design process
- Volumetric acquisition of a small part of properties hosting the Toowoomba Horse Riding for The Disabled Association facility and Teen Challenge facility is required, and there is potential for these facilities to be affected by ground-borne noise for a short period during tunnel construction
- The Project's construction would require a combination of temporary and permanent use of land within the Toowoomba and Lockyer Valley Kart Club at Helidon Spa, and there is potential for construction noise to affect the amenity of the facility during construction.

Mental health

- Some residents in the EIS investigation corridor are experiencing stress and anxiety about property resumptions, and in relation to concerns about Project impacts on their amenity or quality of life
- Stress related to the Project' s land acquisitions, noise or dust, concerns about property values and fears about other Project impacts may exacerbate community stress levels resulting from floods, drought and the construction of the Toowoomba Bypass, and may affect mental health.

Police and emergency services

- The Project is likely to increase demands on police and emergency service providers through workplace or traffic accidents, increased demand for traffic policing and potentially responses to traffic or workplace accidents, general policing, wide load escorts, and potentially theft from construction sites and Project-related disputes.

Safety

- The location of work sites near homes may engender anxiety about perceived personal safety for some residents
- Large and over-size vehicles, laydown and bridge construction sites, delays at road/rail interfaces during construction and increased traffic may increase the risk of road accidents
- Construction traffic and increased traffic movements generated by personnel may contribute to deterioration of road surfaces, dust and safety issues associated with fatigued or inattentive commuters.

Business and industry

- There would be a range of impacts on farms and grazing properties including land acquisition which may affect property operations, disruption to property accesses and farm infrastructure and potential for delays to product movements where routes to markets are affected by traffic or roadworks
- Land acquisition requirements are not expected to lead to significant impacts on the Project region's agricultural productivity
- Private road closures and construction of crossings of private roads may result in disruption of the movement of stock, equipment and vehicles across the corridor
- Groundwater bores within the EIS investigation corridor may be destroyed or made inaccessible, with potential also for groundwater drawdown to affect water access, requiring 'make good' arrangements with affected landowners
- Water for construction purposes will be sourced from bulk water supplies and/or via arrangements with water licence holders, with impacts on other water users not expected
- The Project's alignment within Withcott Seedlings may result in disruptions to its business activities during construction of that part of the Project

- There is potential for road works, bridge construction and the visual impact of laydown areas during construction to affect tourists' general experience of the area, and to affect travel times
- Project supply opportunities during the construction phase represent a substantial source of trade and an opportunity for local business growth, with local businesses offering an extensive skills base for construction
- Businesses located in Toowoomba or near the Highway at Helidon or Withcott are likely to benefit from construction personnel's expenditure as they pass through the Project region.

Cumulative social impacts

Cumulative social impacts may occur where the effects of the Project combine with those of other major projects to affect:

- Access to skilled labour
- Character and amenity in the Gowrie Junction, Helidon, Lockyer and Helidon Spa areas
- Potential for the coincidence of major road works to affect travel times and cause driver frustration
- The availability of housing or short-term accommodation.

The cumulative benefits of multiple projects' construction may include a significant increase in employment opportunities, increased trade for businesses and opportunities for business development.

OPERATION IMPACTS AND OPPORTUNITIES

The Project is expected to operate for at least 100 years. Potential impacts during operation are summarised below.

Amenity

- Without mitigation, operational rail noise could result in exceedance of noise assessment criteria at 31 sensitive receptors (assumed to be dwellings) at Project opening (2027)
- Noise from the Project's operation may be experienced by nearby residents as intrusive and stressful, with potential to affect quality of life
- The results of air quality risk assessment for the Project indicate that compliance with air quality goals has been predicted for all pollutants of concern during Project operations, however community concerns regarding the effects of emissions on health may persist.

Local character and identity

- Residents with visibility to the western tunnel portal (particularly from Gowrie Junction) may experience the portal as a detraction to the scenic character of this area
- Residents and/or hospital patients and staff with a view to the intermediate ventilation shaft building will experience a small change to the semi-industrial visual character of this site, and may also be concerned about air quality
- Residents with views to the eastern tunnel portal (principally from Blue Mountain Heights) may experience a change to the visual amenity of the natural landscape in this area
- In areas where elevated structures or embankments are required, the Project would impact on the character of natural, rural and rural residential areas, which is likely to lead to distress about impacts on the existing scenic amenity

Connectivity

- The provision of grade-separated crossings for rail interfaces with public roads would support the connectivity and safety of the local road network
- The closure of roads on private properties may affect connectivity within properties, but access to the road network would be maintained for all affected properties.

Employment

- Once operational, a workforce of approximately 15 to 20 personnel is expected for the Project's operation. A portion of the operational workforce is expected to be drawn from the Project region and nearby LGAs.

Health and wellbeing

- There were up to 32 residential receptors along the Project alignment where the predicted railway noise levels were above the maximum night-time trigger levels with the potential to cause sleep disturbance impacts, triggering investigation of mitigation for these properties
- Operational noise exceedances could be experienced at Gowrie State School if effective mitigation measures were not in place
- Air quality assessment indicates that tunnel venting would not worsen air quality for the nearest residents with the exception of one dwelling in the EIS investigation corridor which would be acquired
- Emissions vented from the tunnel may be visible to residents and be a source of anxiety
- Hydrological assessment predicted that the Project would result in minimal increases in flooding levels, however anxiety about the Project's potential impacts on flood patterns may affect feelings of security
- The Project would increase the opportunity for rail-based suicide attempts by providing access to a lethal means.

At the national level, the Inland Rail Business Case anticipates that the Inland Rail Program as a whole will remove 200,000 truck movements from roads each year, resulting in improved road safety, a reduction in serious accidents, reduced truck volumes in regional towns, and a reduction in carbon emissions.

Mental health

- Along with noise exposure, other factors which could contribute to stress and/or anxiety include disruptions of movements across the rail corridor within agricultural properties, and concerns about property values or flooding risks. In combination, these stressors have the potential to affect the mental health of community members
- The Project is expected to lead to the establishment of new and/or expanded businesses and industries, increasing employment opportunities for people in the region, which may have positive mental health benefits for the individuals employed.

Police and emergency services

- During operations, any road/rail accidents associated with derailments, in-tunnel incidents such as fire, rail load loss, hazardous goods spills or other major incident would place significant demands on health and emergency services resources for immediate response.

Safety

- Safety risks associated with Project operation include derailments and railway-based suicide
- Road/rail safety issues are not anticipated during operation as there will be no level crossings along the alignment

- Trains currently using the Western Rail system may use Inland Rail, which may reduce traffic delays and safety issues at level crossings in Toowoomba.

Business and industry

- Crossings roads on private properties may result in delays and the need to manage safety risks when moving stock, large equipment and vehicles across the corridor
- The Project corridor including elevated structures would change scenic amenity due to the Project's location within the natural landscape, with concerns this will damage the Lockyer Valley's brand as scenic and green, and detract from the amenity of businesses with a view to elevated structures and embankments
- Inland Rail will better connect the Darling Downs and South East Queensland regions, as well as connecting to domestic and international markets, improving accessibility to markets for businesses in the region
- The Project is expected to facilitate the growth of industries associated with logistics and freight terminal hubs. This will support business growth, providing long-term employment for Project region residents.

SOCIAL IMPACT MANAGEMENT

In developing and implementing management measures which will reduce the significance of social impacts to local communities, ARTC will focus on the following key risks:

- Disruption of family lifestyles and farming practices due to land acquisition, to be addressed through compensation for land acquisition, close engagement with affected property owners and facilitation of access to support services
- Impacts on the amenity of residents and community facilities due to construction noise, dust or increased traffic, to be addressed through noise and dust mitigation measures, a Traffic Management Plan and engagement with affected residents to enable adaptive management of impacts
- Impacts on farm connectivity and property operations to be addressed through consultation with landowners to maintain an appropriate level of access for landowners
- Stress and anxiety affecting community members due to concerns about property acquisition or other Project impacts, addressed through mental health partnerships, support for community-managed services, and engagement with landowners that may experience impacts on amenity, to ensure mitigation is effective
- Impacts on the amenity of dwellings due to rail noise during operations, to be addressed where triggered through mitigation including investigation of architectural treatments, and enhancements to existing boundary fences
- Impacts on scenic amenity as the result of changes to local character or changes to views and vistas, to be addressed through detailed measures outlined in the Project's draft Outline Environmental Management Plan (draft Outline EMP) (EIS Chapter 23: Draft Outline Environmental Management Plan) and support for local tourism marketing.

The SIA includes a Social Impact Management Plan (SIMP) which outlines the objectives, outcomes and actions for mitigation of social impacts. Measures intended to enhance Project benefits and opportunities are also provided. Action plans are provided for:

- Community and Stakeholder Engagement
- Workforce Management
- Housing and Accommodation

- Health and Community Wellbeing
- Local Business and Industry Content.

Community and Stakeholder Engagement Plan

The Community and Stakeholder Engagement Plan describes how the Project will communicate and engage with community members and other stakeholders throughout the pre-approval, detailed design, pre-construction and construction phases of the Project. The objectives of the Community and Stakeholder Engagement Plan are:

- Establish and maintain engagement mechanisms which build relationships between ARTC and its stakeholders
- Work with stakeholders to minimise impacts on community values including cultural landscapes, local character and connectivity.
- Enable adaptive management of impacts on amenity, connectivity and community values during construction.

The Community and Stakeholder Engagement Plan describes the communication tools, engagement measures (such as regular liaison with landholders, Community Reference Group/s [CRG/s] and stakeholder meetings), specific engagement actions to be implemented in each Project stage, and the responsibilities for community and stakeholder engagement. A summary of the status of ARTC's partnerships and agreements with stakeholders is also provided.

The engagement plan includes a monitoring and reporting framework for community and stakeholder engagement and describes how stakeholder inputs will be incorporated in ongoing development and implementation of SIMP measures.

Upon the completion of the construction phase, the Project will be commissioned as part of the Inland Rail network. Before the completion of the construction phase, ARTC and/or its contractor will develop community and stakeholder engagement strategies for the commissioning phase and the first three years of operations, in accordance with ARTC's established practices.

Workforce Management

ARTC aims to maximise employment opportunities for residents within the SIA impact assessment area by:

- Facilitating skills development opportunities to build regional capacity in construction and rail operation
- Building partnerships with training providers to strengthen workforce skills in the SIA impact assessment area, and reduce the potential for cumulative impacts to draw labour and skills from other businesses
- Requiring the Principal Contractor to employ locally, and to implement workforce training and diversity strategies.

The workforce management sub-plan describes how ARTC will maximise training and employment opportunities for residents in the Toowoomba and Lockyer Valley LGAs and manage the potential for impacts on other industries.

ARTC has established the Inland Rail Skills Academy which is a collection of projects and partnerships with the aim to:

- Facilitate training to increase the number of skilled local people eligible for employment on Inland Rail and associated regional industries Increase school student awareness and capability in Science, Technology, Engineering and Maths (STEM) and rail careers by connecting them with industry best practice
- Facilitate opportunities for local businesses to participate in new supply chains
- Equip Inland Rail employees with world-class skills.

Inland Rail Skills Academy initiatives includes targeted local training and business capacity building programs which are being developed in cooperation with community, Council and Government stakeholders.

Housing and Accommodation

The Housing and Accommodation sub-plan describes the measures that ARTC will undertake to mitigate potential impacts on housing and accommodation access in the SIA study area.

ARTC will require its Contractor to provide an Accommodation Management Plan (AMP) for ARTC's approval to support three desired outcomes:

- Accommodation solutions minimise negative social and economic impacts to potentially impacted communities
- Potentially impacted communities are consulted on accommodation solutions prior to them being decided
- Accommodation solutions contribute social and economic value to potentially impacted communities.

This action plan includes provisions for monitoring any impacts on housing or accommodation and modifying accommodation management strategies if the potential for negative impacts is identified.

Health and Community Wellbeing

The Health and Community Wellbeing sub-plan addresses the potential for impacts on community facilities and services, community safety and mental health, and community wellbeing due to changes to local amenity, community cohesion or local character, or changes to water access or environmental qualities.

This plan includes measures for cooperation with community and government organisations to maintain the amenity of community facilities and local access to services, including emergency services and mental health services. A more detailed Community Wellbeing Plan will be developed in cooperation with key stakeholders during the detailed design phase and will include:

- Initiatives to upgrade community facilities
- Placemaking initiatives to offset impacts on local character, and/or support recreation or tourism initiatives
- Projects to support community cohesion and resilience
- Cooperation with police and emergency services.

Local Business and Industry Participation

The Local Business and Industry Participation sub-plan addresses the potential for Project impacts on businesses including farms, agribusinesses and tourism-related businesses, and describes ARTC's commitments to ensuring that local and regional businesses benefit from the Project.

ARTC is working with directly affected landowners to develop and implement property-specific measures to mitigate impacts on agricultural land and business uses and is committed to ongoing cooperation with all directly affected landowners and those adjacent to the Project footprint to minimise Project impacts.

ARTC will consult with tourism-related businesses in potentially impacted communities when the Project's detailed design is confirmed regarding potential impacts on tourism businesses related to e.g. the road network or local character, and work with tourism stakeholders to minimise or offset impacts on tourism businesses.

ARTC is committed to providing full, fair and reasonable opportunities for capable local businesses (within the Toowoomba and Lockyer Valley LGAs and nearby LGAs) and Indigenous businesses to compete and participate in the Project's supply chain. An Australian Industry Participation Plan (AIP Plan) will be prepared to support opportunities for businesses to supply the Project. This will include capacity building programs for local and Indigenous businesses to be delivered as part of the AIP Plan and within the Inland Rail Skills Academy.

Monitoring and reporting

The SIMP includes a monitoring and reporting framework to:

- Track and enable reporting on delivery of measures which mitigate social impacts or increase community benefits
- Collect data on the effectiveness of mitigation and benefit enhancement measures
- Support identification of corrective actions to improve the effectiveness of management measures.

Proposed roles for Councils and the Project's CRG/s in SIMP implementation and monitoring are included.

ARTC will track SIMP implementation and review performance measures quarterly (where information is available), to facilitate continual improvement of strategies and practices.

ARTC will review the SIMP annually during the construction phase, and where necessary update it based on monitoring results, including stakeholder feedback.

1 Introduction

1.1 Purpose of the SIA

Australian Rail Track Corporation (ARTC) is seeking approval to construct and operate the Gowrie to Helidon (G2H) Project (the Project), which will involve a new 28 kilometre (km) single-track dual-gauge freight railway, including a 6.24 km undrained tunnel through the Toowoomba Range. The Project which generally follows the Gowrie to Grandchester future State transport corridor will accommodate double-stacked freight trains of up to 1,800 metres (m), with a future possible requirement to accommodate trains of up to 3,600 m. The Project is one of 13 Inland Rail projects proposed by ARTC to establish a freight rail line between Melbourne and Brisbane.

On 16 March 2017, the Project was declared a 'coordinated project for which an EIS is required' under Section 26(1)(a) of the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act). On 17 March 2017, the Project was also deemed to be a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), with the Project to be assessed under a bilateral agreement between the Queensland and Commonwealth governments.

The final Terms of Reference (ToR) were issued for the Project on 9 August 2017 and include the requirement for Social Impact Assessment (SIA).

This SIA has been prepared as part of the Project's EIS. The purpose of the SIA is to identify how the Project may affect local and regional communities, and how ARTC will work with stakeholders to ensure that negative social impacts are mitigated, and Project benefits are enhanced.

The objectives of the SIA are to:

- Identify potentially impacted communities, having regard to all potential social impacts throughout the Project's life (construction and operation)
- Enable potentially impacted stakeholders and communities to provide inputs to the SIA
- Develop a comprehensive baseline of social characteristics against which potential Project-related changes can be assessed
- Provide a detailed assessment of likely social impacts and benefits, including their significance to stakeholders and communities during each stage of the Project
- Provide a Social Impact Management Plan (SIMP) and monitoring strategy to support adaptive management of social impacts and opportunities for the Project to benefit local communities.

The Project has a design life of 100 years and decommissioning of the Project cannot be foreseen at this point in time, so the social impacts of decommissioning have not been considered.

1.2 Project location

The Project will join to the New South Wales/Queensland Border to Gowrie (B2G) project in the west, and the Helidon to Calvert (H2C) project in the east. It will extend from Gowrie Junction within the Toowoomba Regional Council (TRC) Local Government Area (Toowoomba LGA) to Helidon within the Lockyer Valley Regional Council (LVRC) Local Government Area (Locker Valley LGA).

The preferred Project alignment is generally consistent with that of the western portion of the Gowrie to Grandchester future State transport corridor under the Public Passenger Transport Guideline (No. 1) 2019 made under the *Transport Planning and Coordination Act 1994* (Qld) in 2005.

The Project begins in the rural locality of Charlton and follows the existing QR West Moreton System rail corridor, to the south, for approximately 6.8 km through Gowrie Junction, south of the main urban settlement. The Project runs parallel to Gowrie Creek for approximately 5 km, traversing rural land, before passing into a proposed western tunnel portal within the vicinity of Boundary Street and the Toowoomba Bypass interchange at Gowrie Junction. It then continues for approximately 6.24 km in tunnel through the Toowoomba Range, passing under the localities of Cranley, Mount Kynoch and Ballard, and 1-2 km to the north of Toowoomba suburbs including Cotswold Hills, Rockville, Harlaxton and Wilsonton Heights, emerging on the eastern side of the Great Dividing Range within the vicinity of Mt Kynoch and crossing through the northern edge of an area of Commonwealth land at Mount Lofty previously utilised by the Department of Defence. The eastern tunnel portal is in a rural area predominantly consisting of undisturbed natural vegetation.

Continuing east, the alignment passes on the northern side of Withcott, and traverses areas of native vegetation and grazing properties, with proposed crossings over the valleys of Rocky Creek, Six Mile Creek and the Toowoomba Bypass. It then continues from Postmans Ridge to Helidon, crossing Lockyer Creek before tying into the existing rail corridor north-west of Helidon.

2 Legislation, guidelines and plans

The Coordinator-General has declared the Project to be a 'coordinated project for which an EIS is required' under Section 26(1)(a) of the SDPWO Act.

The Project was also referred to the Commonwealth Government under the EPBC Act and was determined to be 'a controlled action' requiring an EIS. The EIS prepared for the Project will address the requirements of the SDPWO Act and the EPBC Act under the Bilateral Agreement between the Australian and Queensland governments.

The SIA seeks to address the ToR and the Coordinator-General's Social Impact Assessment Guideline (SIA Guideline) as outlined below. The SIA also considers local and regional planning objectives as addressed in Section 2.4.

2.1 State Development and Public Works Organisation Act 1971

The SDPWO Act aims to facilitate *'timely, coordinated and environmentally responsible infrastructure planning and development to support Queensland's economic and social progress'* (Queensland Government, 2019d). The Act provides for the appointment of a Coordinator-General, as a corporation sole, to represent the Crown, and gives the Coordinator-General powers to (among other things) declare a project to be a 'coordinated project' and coordinate a whole-of-government environmental impact assessment process for the project, evaluate an environmental impact statement for a coordinated project, and evaluate proposed changes to coordinated projects.

As the Project was declared a 'coordinated project for which an environmental impact statement is required', ARTC must prepare an EIS which addresses the ToR to the satisfaction of the Coordinator-General (refer EIS Chapter 3: Project approvals for further details).

2.2 Terms of Reference

The ToR details the matters which must be addressed in the EIS. The objectives, information requirements and key matters to be considered in the SIA are shown in Table 2.1, cross-referenced to the SIA sections where they are addressed.

Table 2.1 Social impact assessment information requirements

ToR Section	ToR No.	Terms of Reference	SIA Section
Social - Information requirements	11.136	Conduct a Social Impact Assessment (SIA) in accordance with the Coordinator-General's Social Impact Assessment guideline (July 2013) and the Coordinator-General's Social impact assessment guideline (draft) (October 2016) or the guideline in place at the time of delivery of the SIA.	2.3
	11.137	The SIA should be developed in consultation with the Coordinated Project Delivery Division in the Office of the Coordinator-General, Department of State Development, and describe the potential social impacts (positive and negative) on affected communities. The proposed mitigation measures are to be discussed.	6.2
	11.138	The SIA is to include:	
		(a) a profile of key stakeholders	4.3.1
		(b) a social baseline study of potentially impacted communities within the SIA study area	5.1 – 5.7
		(c) an overview of state government legislation and policies and priorities which complement the mitigation measures for the Project's Social Impact Assessment	2.4

ToR Section	ToR No.	Terms of Reference	SIA Section
		(d) an explanation of sources used to gather information and analysis methods used. Discuss rationale for both primary and secondary data	3.4
		(e) a description of how the potentially impacted communities and affected stakeholders were engaged and consulted with during the development of the SIA	6.1 and 6.2
		(f) identification of potential social impacts and their likely significance, including duration	7.1.- 7.7, 9
		(g) the proponent's proposed enhancement and mitigation/management measures in relation to project impacts	8.1 – 8.6
		(h) details of the proponent's proposed monitoring and reporting framework	8.7
Social - Existing environment (SIA study area)	11.139	Define the Project's SIA study area (including the local, district, regional and state level as relevant), taking into account the:	4.2
		(a) potential for social impacts to occur	4.4
		(b) location of other relevant projects (existing major projects and/or developments and those which are progressing through planning and approval processes and public information is available)	4.2.7
		(c) location and types of physical and social infrastructure, settlements and land use patterns	5.1, 5.6
		(d) social values that might be affected by the Project including integrity of social conditions, liveability, social harmony and wellbeing and sense of community	5.3
		(e) indigenous social and cultural characteristics, such as native title rights and interests, and cultural heritage	5.1.1, 5.3.1
Social - Existing environment (social baseline study)	11.140	Undertake a targeted baseline study of the people residing within the Project's SIA study area. This will provide a benchmark against which to identify the Project's social issues, potential negative and positive social impacts, and the mitigation measures and management plans to address these impacts	5.1 – 5.7
	11.141	The social baseline study should be based on qualitative, quantitative and participatory methods. It should be supplemented by community engagement processes and primary data collection, and should reference relevant data contained in local and state government publications, reports, plans, guidelines and documentation, including regional and community plans	5.1 – 5.7
Social - Existing environment (community engagement)	11.142	A consultative and inclusive community and stakeholder engagement process should inform the baseline study, assessment of potential social Impacts and development of appropriate mitigation measures and management plans. The engagement should commence at an early stage of the EIS process. It should include consultation with a broad range of stakeholder groups including affected landholders, local residents, community groups, traditional owners, state and local government agencies, and non-government organisations, local businesses and traditionally-underrepresented stakeholders (for example vulnerable groups, women, people with a disability, Indigenous people and persons from diverse ethnic or linguistic backgrounds)	6.1 – 6.3
	11.143	The community and stakeholder engagement process should be adequately described and documented in the EIS. This should include details such as stakeholders consulted and how and when they were consulted, principles and processes adopted, overview of the consultation program and key events, stakeholder feedback and issues raised (including the means by which these have been or will be addressed), and a statement of agreement/s reached, or to be negotiated, for impact mitigation and management	6.2, 6.3, 8.1.4

ToR Section	ToR No.	Terms of Reference	SIA Section
Social - Potential impacts and mitigation (impact assessment)	11.144	Assess and describe the type, level and significance of the Project's social Impacts (both negative and positive), based on the outcomes of the community engagement, social baseline study and impact analysis processes. This should include sufficient data to enable affected local and state authorities to make informed decisions about the Project's effects. The potential social impacts will be identified by considering the potential changes to key aspects included in the social baseline study as a result of the Project	7.1 – 7.6, 9
	11.145	Impact assessment should include an assessment of the potential scope and significance of impacts at the local and regional level, considering factors such as:	
		(a) population and demographic changes	7.1.10
		(b) workforce	7.2
		(c) lifestyles and amenity	7.1.3, 7.1.4
		(d) community values	7.1.3 - 7.1.8
		(e) housing	7.3
		(f) local and regional planning outcomes	2.4.9
		(g) social infrastructure	7.4.1
		(h) the health and social/cultural wellbeing of families and communities	7.4.1-7.4.11
	11.146	The impact assessment should 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)	7.6
	11.147	The impact assessment should include:	
		(a) the impacts identified by the SIA process	7.1-7.6, 9
		(b) impacted stakeholders	4.4.1, 6.2, 9
		(c) the timing or timeframes of impacts and the mitigation and management measures	8.1-8.6
		(d) description of the mitigation and management measures	8.1- 8.6
		(e) defined outcomes, and the performance indicators and targets to achieve the outcomes	8.1- 8.6
		(f) monitoring and reporting framework	8.7
		(g) residual impacts (after mitigation and management measures) and how these will be addressed	9, 10

ToR Section	ToR No.	Terms of Reference	SIA Section
Social - Potential impacts and mitigation (management plans)	11.148	Management plans for the following are to be provided as part of the SIA:	
		(a) community and stakeholder engagement	8.2
		(b) workforce management	8.3
		(c) housing and accommodation	8.4
		(d) local business and industry content	8.6
		(e) health and community wellbeing	8.5

2.3 SIA Guideline

The Coordinator-General published the SIA Guideline in March 2018 (Queensland Government, 2018c) pursuant to the *Strong and Sustainable Resources Communities Act 2017* (Qld) (SSRC Act). The SIA Guideline is a non-statutory guideline for non-resource projects subject to an EIS under either the SDPWO Act or the *Environmental Protection Act 1994* (Qld) (EP Act).

The SIA Guideline requires that the type, level and significance of the Project's social impacts (both negative and positive) must be analysed and described, based on the outcomes of the community engagement, social baseline study and impact analysis processes, and considering the potential changes to key aspects included in the social baseline study as a result of the Project. This should include assessment of the potential scope and significance of impacts at the local and regional level including cumulative impacts. Key factors for consideration include:

- Population and demographic changes
- Workforce
- Lifestyles and amenity
- Community values
- Housing
- Local and regional planning outcomes
- Social infrastructure
- The health and wellbeing of families and communities.

Community and stakeholder engagement requirements include commencement of engagement at an early stage of the EIS process and the involvement of stakeholders including affected landowners, local residents, community groups, traditional owners, State and local government agencies, and non-government organisations, local businesses and traditionally-underrepresented stakeholders including Indigenous people and young people. This is discussed in Section 6.

The SIA responds to the SIA Guideline and includes:

- Consideration of the Guideline's key matters, for the full life cycle of the Project
- A description of how the potentially impacted communities and stakeholders were consulted during the development of the SIA as part of a meaningful, inclusive and transparent engagement process
- Analysis of the nature and scale of the Project, potentially impacted communities and the sensitivity of the social environment
- Development of a social baseline that includes demographic indicators, community values and history, community health and well-being, key industries, the local and regional workforce, access to social facilities and services, and housing and accommodation

- Consideration of factors which determine the likely scope and significance of the Project's social impacts
- Assessment of social impacts and opportunities across all relevant issue categories, for each stage of the Project lifecycle, including cumulative impacts
- Integration with the EIS process, including consideration of the social consequences of technical matters assessed in other parts of the EIS
- Provision of a SIMP which documents the management measures that address potential negative impacts and capitalise on positive opportunities and includes a monitoring and reporting framework.

2.4 Local and regional plans and policies

The objectives of the State Planning Policy (SPP) and community and regional plans relevant to potentially impacted communities are outlined below.

2.4.1 State Planning Policy

The State Planning Policy (SPP) is a key component of the Queensland land use planning system which expresses the State's interests (as defined under the *Planning Act 2016* (Qld)) in land use planning and development. The SPP identifies 17 State interests relating to land development with five key themes:

- Liveable communities and housing
- Economic growth
- Environment and heritage
- Safety and resilience to hazards
- Infrastructure.

State interests for liveable communities that must be integrated into local government planning through local government planning schemes and the designating of land for community infrastructure include (in summary):

- Providing for quality urban design that reflects and enhances local character and community identity
- Providing attractive and accessible natural environments and public open spaces that are functional, accessible and connected
- Facilitating vibrant places and spaces, diverse communities, and good neighbourhood planning and centres design
- Facilitating the provision of pedestrian, cycling and public transport infrastructure and connectivity within and between these networks
- Planning for cost-effective, well-located and efficient use of community facilities and utilities.

2.4.2 South East Queensland Regional Plan 2017 (ShapingSEQ)

The South East Queensland (SEQ) Regional Plan (ShapingSEQ) sets out five goals for the Region's development: Goal 1: Grow, Goal 2: Prosper, Goal 3: Connect, Goal 4: Sustain and Goal 5: Live. Outcomes for the Western sub-region within which the Project would be located include a dispersed network of urban and rural centres, significant expansion areas, Regional Economic Clusters (RECs) and infrastructure connections of national significance. Key actions include:

- **Grow**: focusing density in and around appropriate locations along urban corridors, and in areas with superior access to public transport, employment and services

- **Prosper**: Identifying, protecting and growing economic opportunities and synergies within and between RECs which includes the Western Gateway (the intersection of three national highways), the Toowoomba Wellcamp Airport, the Charlton Wellcamp Enterprise Area, Toowoomba Bypass, and Inland Rail
- **Connect:** The intent to be a region of interconnected communities that moves people and freight efficiently to maximise community and economic benefits with key improvements to the integrated regional transport system, including supporting delivery of the Inland Rail
- **Sustain:** Protect and nurture the regional biodiversity network and manage regional landscapes, including recognition of Traditional Owners' cultural knowledge and connection to land and sea in planning
- **Live:** Developing and promoting great places will support the sub-region's liveability, prosperity, sense of identity and community, including Toowoomba city centre.

2.4.3 Darling Downs Regional Plan

The Darling Downs Regional Plan (Department of State Development, Infrastructure and Planning, 2013) aims to achieve specific regionally-focused outcomes and resolve competing State interests on a regional scale.

Of relevance to the Project region, the eastern area of the Darling Downs contains the region's largest population centre, Toowoomba, and serves as 'the gateway' to the region. The eastern Darling Downs is at the junction of several strategic highways and railway lines and is the major transport and service hub of the region. It anticipates accelerated development of the Wellcamp industrial node with enhancements to the transport network including the Toowoomba Second Range Crossing (TSRC), now known as the Toowoomba Bypass, increased rail capacity and the Toowoomba Wellcamp Airport. Its economy is largely driven by the agricultural sector, in addition to emerging resources industries, food processing industries and government administrative services.

Toowoomba facilitates the movement of goods and resources between Queensland's southeast and west, enabling access to domestic and international markets through the strategic port facilities along the east coast. The broader region also has major transport linkages to southern markets.

2.4.4 Regional Development Australia Darling Downs South West Roadmap

The Australian Government established Regional Development Australia (RDA) to help set up committees that seek to strengthen economic development in regional areas of Australia. The RDA Darling Downs South West Regional Roadmap (Regional Development Australia, 2012) notes that Darling Downs and South West (DDSW) region is one of the most dynamic and diverse growth areas in Australia and is a major contributor to the Queensland economy, with key issues for the region being connectivity and infrastructure investment. To achieve the vision for the region, the RDA DDSW Roadmap has identified the following regional priorities:

- Social infrastructure including health facilities and community and cultural centres
- Local government planning reforms and certainty of funding
- Connectivity
- Diversifying local economies
- Infrastructure supporting connectivity, community vitality and regional economic development.

2.4.5 Regional Development Australia Ipswich and West Moreton Regional Development Plan

The RDA Ipswich and West Moreton Regional Development Plan (RD Plan) notes the Lockyer Valley region as predominantly rural land used for farming and agriculture, particularly vegetable and grain growing and sheep and cattle grazing. Key regional priorities within the RD Plan lie within the food and agriculture, infrastructure and tourism sectors.

The RD Plan focuses on five key economic development areas:

- Food and agriculture
- Infrastructure
- Growth sectors
- Intelligent region
- Tourism.

The 2018 Project Status Report for RDA Ipswich and West Moreton (Regional Development Australia, 2018) identifies a number of recent investment projects in the Lockyer Valley region including the Helidon Travel Centre (Warrego Highway), Grantham Agricultural Industry Food Processing Plant, Lockyer District State High School, Gatton Landfill, and the Lockyer Valley Cultural Centre.

2.4.6 Toowoomba Regional Community Plan

The Toowoomba Regional Community Plan (TRC, 2014b) articulates the long-term vision, goals and priorities to strengthen the assets of the Toowoomba Region and serves as the key driver for the TRC's Corporate Plan, Toowoomba Regional Planning Scheme and other planning projects within the LGA.

Transport and mobility is identified as one of the key themes of the Toowoomba Regional Community Plan, and enhanced freight transport is identified as a key priority. It is recognised that an efficient freight transport system enhances the region's position as a major freight distribution centre, while minimising the associated impacts of freight movement on the community and its environment. The Plan's key priorities include:

- A compact urban form and a network of rural towns, with Toowoomba as the principal regional activity centre
- Diverse rural communities with a strong sense of place linked to local heritage, character and identity
- Equitable access to affordable, suitable and good quality housing
- An integrated passenger transport system, an efficient and integrated freight transport system, and access to active transport
- Protecting primary production and areas of environmental significance
- Coordinated infrastructure planning and delivery, integrated water management, improved waste management and up to date information and communications technology
- Protection of ecosystems and biodiversity networks
- Well managed scenic landscapes and regional greenspaces.

2.4.7 Lockyer – Our Valley Our Vision

'Lockyer – Our Valley, Our Vision' Community Plan 2017-2027 (LVRC, 2017a) sets out the ten-year vision for the region based on strategic objectives which address the key focus areas of:

- Community, including access to social infrastructure and events that bring people together
- Leadership, including sustainable, connected organisations which are supported by Council

- Farming, including appropriate management of farming land, innovation and research
- Business, including sustainable economic development and infrastructure to support growth
- Livelihood, including opportunities for lifelong learning, access to specialised training organisations and agriculture as a career path
- Nature, including protection and showcasing of natural assets, and harmony between conservation and farming
- Planned, including access to affordable housing, good urban design and reliable broadband and mobile networks.

The Plan continues to position the Lockyer Valley as a leading agricultural production zone in Australia. Gatton is identified as the region's principal rural activity centre supporting future growth of the business, retail and commercial, government and health sectors. Laidley and Plainlands are also identified as growth areas for local service provision, to supplement the role of Gatton. The Plan identifies that effective management of the region's projected population growth to 2031 is one of its greatest future challenges.

2.4.8 Gowrie to Grandchester Corridor Study

The Gowrie to Grandchester rail corridor was declared a 'Future State Transport Corridor' in 2005 (now referred to as a future State transport corridor) in the *Public Passenger Transport Guideline* pursuant to section 8E of the *Transport Planning and Coordination Act 1994* (Qld) (TPC Act). This declaration followed the Gowrie to Grandchester Corridor Study prepared by a joint venture between the Department of Transport and Main Roads (DTMR), (formerly Queensland Transport) and Queensland Rail (QR). The purpose of the study was to investigate a rail corridor that would help mitigate constraints on rail operations caused by the Toowoomba and Little Liverpool Range crossings. Technical, environmental and cultural heritage studies were undertaken as part of the project, along with community consultation.

The corridor provides for a high level of rail service to connect the south west of the State to Brisbane and was designed to accommodate design speeds up to 200 kilometres per hour (km/h), possible future double stacked container freight trains and a potential link to any 'future private sector proposal for the Melbourne-Darwin inland rail concept'.

Given the Project alignment predominantly follows the QR West Moreton System rail corridor and the Gowrie to Grandchester future State transport corridor, the Project is generally consistent and compatible with the intent of State and regional land use and infrastructure planning in the area. This includes the State Planning Policy and ShapingSEQ, which identifies the Inland Rail Program as key region-shaping infrastructure that supports the vision for SEQ.

Although the Project does not propose railway stations or passenger services, it has been aligned with the Gowrie to Grandchester future State transport corridor to co-locate the future transport corridors where possible whilst also allowing potential for the corridor to be utilised by QR for future electrified passenger rail service.

The Project also has potential to catalyse development and growth of nearby regional intermodal hubs associated with InterLinkSQ and Charlton-Wellcamp Enterprise Area.

2.4.9 Alignment with planning priorities

The Project will support the following local and regional planning outcomes as outlined in Table 2.2. Potential impacts on planning outcomes such as impacts on scenic landscapes, agricultural land and connectivity are discussed in the SIA.

Table 2.2 Project alignment with planning priorities

Document	Alignment with planning priorities
State Planning Policy Themes	▪ Project co-location with the existing QR West Moreton System (i.e. brownfield), the tunnel and the future State transport corridor minimise impacts on the liveability of local communities ▪ Provision of freight rail infrastructure which will support regional economic growth, for the long-term.
South East Queensland Regional Plan	▪ Support for economic opportunities and synergies within and between RECs ▪ Support for the development of interconnected communities that move freight efficiently ▪ Recognition of the regional biodiversity network in the EIS (refer e.g. Appendix I: Terrestrial and aquatic ecology technical report).
Darling Downs Regional Plan	▪ Strengthening inter-regional linkages to facilitate the movement of commodities ▪ Development of opportunities for employment and infrastructure ▪ Provision of rail infrastructure to leverage economic development.
RDA Darling Downs South West Roadmap	▪ Provision of freight rail infrastructure will support economic development and address key issues for the region being connectivity and infrastructure investment.
RDA Ipswich and West Moreton Regional Development Plan	▪ Addresses a key regional priority for infrastructure development ▪ Project alignment aims to minimise impacts on the agricultural land and businesses. Project impacts on agricultural land are discussed in the SIA at Section 7.5.1 ▪ The Project does not require level crossings which would impact on the connectivity of the road network. The potential for other impacts on connectivity is assessed in the SIA (refer Section 7.1.8.).
Toowoomba Regional Community Plan	▪ Support for an enhanced freight transport system ▪ Enhancement of the region's position as a major freight distribution centre ▪ Design minimises impacts on natural economic resources such as productive rural land and forestry ▪ Support for opportunities for economic diversification ▪ Project avoids towns with the exception of the urban area to the south of Gowrie Junction ▪ While the Project traverses under Mount Kynoch and key infrastructure (e.g. Toowoomba Waste Management Centre) impacts on the functions of existing infrastructure would be avoided ▪ Project use of brownfield section, the tunnel and the Project alignment will minimise impacts on primary production ▪ The potential for impacts on scenic landscapes has been considered in the EIS (Chapter 10: Landscape and visual amenity) ▪ The potential for impacts on sense of place linked to local character is discussed in the SIA at Section 7.1.5.
Lockyer – Our Valley Our Vision	▪ The Project's alignment avoids town centres in the Lockyer Valley LGA ▪ Where possible the Project alignment has been placed on the border of properties and structures have been designed to minimise impacts on agriculture ▪ Provision of training, development and employment opportunities for the LGA's residents ▪ The potential for impacts on agricultural land are considered in the EIS (refer Chapter 8: Land use and tenure) ▪ The potential for impacts on sense of place linked to local character is discussed in the SIA at Section 7.1.5.
Gowrie to Grandchester Corridor Study	▪ Project does not propose railway stations or passenger services but has been aligned with the Gowrie to Grandchester future State transport corridor to co-locate the future transport corridors where possible whilst also allowing the corridor to be utilised by QR for future electrified passenger rail service ▪ Avoids direct impacts on existing railway stations.

3 Methodology

This section describes how the SIA was conducted, including:

- Engagement with stakeholders and communities to identify the scope of potential social impacts and benefits, and ensure community views and knowledge are considered in the SIA
- Defining the study area and the scope of assessment
- Developing a social baseline which combines quantitative and qualitative data, to provide a detailed picture of existing conditions in local and regional communities
- Assessing the likelihood, nature and distribution and potential social impacts and benefits, and evaluation of their significance for social conditions and stakeholders
- Considering the results of EIS technical studies with a bearing on social impacts and benefits
- Assessing the potential for cumulative social impacts of multiple projects
- Developing management measures which avoid, reduce or offset social impacts, and maximise Project benefits
- Evaluating the significance of social impacts and benefits.

The provision of a transparent and rigorous SIA assists to develop a project's 'social licence to operate' which refers to the level of acceptance or approval of the Project by its stakeholders, especially local impacted communities (Vanclay et al., 2015).

3.1 Stakeholder engagement

ARTC has undertaken a comprehensive community and stakeholder engagement process to ensure that community members in the Project region were aware of the Project design and potential impacts and were provided with updates as the Project design and EIS, along with other relevant ancillary works progressed. This has ensured that residents are informed about Project elements and potential impacts and benefits, as the basis of their participation in the EIS process.

SIA engagement was integrated with ARTC engagement processes for the Project (refer Section 6.2).

SIA-specific engagement was also undertaken to ensure that directly affected stakeholders and other community members had the opportunity to provide informed input to the social baseline, impact assessment and mitigation. SIA engagement principles are shown in Table 3.1.

Table 3.1 SIA engagement principles

Principles	How achieved
SIA is informed by consultation with directly affected stakeholders	▪ The views of community members who may be affected by the Project's impacts, or benefit from Project opportunities, are represented in the SIA
SIA engagement is inclusive of all interested stakeholders	▪ SIA engagement was conducted through the SIA community survey, community information sessions, Community Consultative Committee (CCC) meetings, and workshops
Stakeholders are able to provide informed inputs to the SIA	▪ Stakeholders have access to information about the Project and its impacts, and opportunities to provide input to the assessment, through face to face and online options

SIA-specific engagement is detailed in Section 6.2 and included:

- A community survey involving more than 400 residents in the Toowoomba, Lockyer Valley, Ipswich and Scenic Rim LGAs (capturing input across the Project and the neighbouring H2C and Calvert to Kagaru (C2K) Inland Rail projects which overlap these LGAs)

- SIA team attendance at the Project's community information sessions
- Meetings with TRC and LVRC managers to discuss community concerns, potential social impacts and benefits, and potential mitigation measures
- Workshops with community organisations and government agencies in Toowoomba and Gatton to discuss social infrastructure access and community concerns about the Project.

A profile of SIA stakeholders and their key issues is provided in Section 4.3 The results of stakeholder engagement are provided in Section 6 and have been incorporated throughout the assessment.

3.2 Scoping

The purpose of the SIA scoping process is to identify potentially impacted communities and define the focus for assessment. The scoping process identified potentially impacted communities and matters to be assessed by considering:

- Statutory requirements for the SIA and ARTC's SIA Procedure
- The stakeholder profile and stakeholder inputs of relevance to the SIA
- The nature and scale of the Project, including associated infrastructure, and its interactions with stakeholders and communities as identified by:
  - Consultation with landowners and other residents living near the Project
  - Native Title rights and other interests held by Indigenous people
  - The Project's interactions with the settlement pattern, including urban and rural centres, land uses and infrastructure
- The nature and scale of potential social impacts and benefits throughout the Project lifecycle, based on experience with linear infrastructure projects
- The location of other projects in the region which may contribute to cumulative social impacts over time.

Following consideration of these factors, the SIA study area was defined (refer Section 4.2) and potential impacts and benefits to be assessed were identified. The outcomes of the scoping process are reported in Section 4.

3.3 Social baseline

Investigations undertaken to develop the social baseline included research and analysis of:

- Potentially affected communities' history, land use and settlement pattern
- Population size, composition and growth
- Housing and accommodation availability and affordability
- Community values
- Community health and safety
- Employment, labour force and skills
- Business and industry
- Infrastructure provision including physical infrastructure and social infrastructure (community facilities, services and networks).

Stakeholder engagement outcomes assisted to define community values and validate research findings.

3.4 Impact assessment

Impacts were assessed for the construction and operational phases of the Project. The SIA includes assessment of potential cumulative impacts in relation to the adjoining Inland Rail sections and other major projects in the Lockyer Valley and Toowoomba LGAs. A summary of the assessment methods and data sources is provided in Table 3.2.

Table 3.2 SIA Assessment Methods

Social domains	Assessment method	Data sources	Rationale
Community and stakeholder engagement	▪ Stakeholder analysis as part of SIA scoping ▪ Analysis of stakeholder engagement inputs ▪ Analysis of planning context ▪ Analysis of community values	▪ Primary: collected through stakeholder engagement outcomes (community survey, community information sessions, meetings and interviews) ▪ Secondary: regional and community plans	▪ Stakeholder inputs are central to SIA ▪ Regional and community plans provide an overview of community values, informed by extensive stakeholder engagement
Settlement pattern	▪ Identify the distribution and key indicators of the population in the SIA study area ▪ Describe potentially impacted communities and land uses ▪ Compare Project elements to the baseline to identify potential changes to social values ▪ Identify potential negative impacts on the use and amenity of properties and communities	▪ Primary: corridor scan (physical and via aerial maps) ▪ Secondary data: planning schemes, regional plans	▪ Scanning the corridor enables identification of communities, localities and features which may be impacted ▪ Planning schemes and regional plans identify the current and likely future of land uses
Population, housing, employment and skills	▪ Demographic analysis and research ▪ Identify potential impacts on population, housing and labour demand based on population projections, labour force profile and Project workforce estimates	▪ Primary: Project workforce estimates ▪ Secondary: Australian Bureau of Statistics (ABS) Census of 2016, Queensland Government Statistician's Office (QGSO) Profiles and Projections, and other sources as referenced	▪ The Project's estimates of workforce numbers are key inputs to the assessment ▪ The ABS Census provides the most consistent and reliable demographic data available for a large number of indicators
Social infrastructure	▪ Profile the provision of social infrastructure servicing local and regional communities ▪ Consult social infrastructure providers to identify local vulnerabilities, potential impacts on social infrastructure, community capacity to address social impacts, and strategies to reduce impacts and enhance Project benefits	▪ Primary: stakeholder engagement outcomes, social environmental scan outcomes and population modelling ▪ Secondary: desktop research of various websites and databases as referenced	▪ A combination of sources is required to identify the distribution and where known, capacity of social infrastructure

Social domains	Assessment method	Data sources	Rationale
	▪ Identify potential impacts on social infrastructure, and describe the potential for the Project to affect social infrastructure functions, either directly or indirectly		
Community values (e.g. amenity, cohesion, community identity, rural values)	▪ Community survey to identify community values ▪ Analysis of values identified in community and regional plans and reports ▪ Identify Project design and management measures relevant to community values ▪ Describe the potential for Project impacts to affect community values	▪ Primary: stakeholder engagement outcomes, Project design and management measures ▪ Secondary: community and regional plans	▪ Stakeholder inputs are a key source for identification of community values ▪ Regional and community plans provide an overview of community values,
Health and wellbeing	▪ Consultation and research to identify community health and safety status ▪ Consultation with service providers to identify any changes to facilities' access or amenity ▪ Consideration of changes to social conditions and the physical environment which may affect human health, community wellbeing or community safety	▪ Primary: Stakeholder engagement outcomes ▪ Secondary: ABS Census of Population and Housing 2016, Population Health Information Data Unit (PHIDU) data, EIS technical assessments (refer Section 3.5)	▪ Stakeholder inputs are a key source for identification of community health determinants and potential impacts on social infrastructure ▪ ABS Census provides consistent data on socio-economic health determinants ▪ PHIDU provides specialised datasets relating to health status
Business and Industry	▪ Analysis of the distribution, type and size of business in local communities, and profiling of regional businesses with relevant capabilities ▪ Engagement with businesses to identify opportunities for participation in the Project	▪ Primary: Stakeholder engagement outcomes ▪ Secondary: ABS data and other sources as referenced	▪ Stakeholder inputs are a key source for identification of potential impacts on businesses ▪ ABS data and other data as referenced provide insights into the distribution of businesses

Table 3.3 provides information on the reliability of data used in the SIA.

Table 3.3 Data quality summary

Data type/set	Source	Currency	Reliability
Demographic data	ABS Census of Population and Housing	2016	Minor variances in totals due to ABS rounding procedures Indigenous people traditionally under-represented in Census (~10 per cent) Uncertainties regarding potential changes since 2016
Population and housing projections	Queensland Government Statistician's Office	2017	Uncertainties regarding effect of newly proposed projects and economic trends on projections

Data type/set	Source	Currency	Reliability
Housing data	ABS Census of Population and Housing SQM Research	2016, 2019	Uncertainties regarding effect of cumulative impacts and economic trends on housing markets
Public Health Information Development Unit (PHIDU)	ABS Census of Population and Housing and other sources as referenced	Variable, as referenced	Local relevance of modelled estimates is uncertain
Social infrastructure provision	Stakeholder feedback and various research sources	2018	No recent consistent data available on the capacity of local services
Labour force	Department of Jobs and Small Business Labour Market Portal	2018	Subject to seasonal fluctuations and under-representation of rural unemployment
Research references	As referenced	Various	Lack of certainty about the relevance of international references to the Project region

3.5 Integration with EIS findings

Changes to the biophysical environment, infrastructure or land use may result in social impacts including impacts on amenity, health, safety or sense of place. The SIA integrates the relevant findings of the EIS technical studies as shown in Table 3.4.

Table 3.4 Links to EIS Findings

Topic	Key issues	EIS Section	SIA Section
Project description	▪ Project elements potentially affecting the social environment	Chapter 6: Project description	4.1
Stakeholder engagement	▪ Outcomes of ARTC engagement for the EIS	Chapter 5: Stakeholder engagement and Appendix D: Community Consultation	6.1, 8.2
Flora and fauna	▪ Existing biodiversity values	Chapter 11: Flora and fauna Appendix I: Terrestrial and aquatic ecology technical report Appendix J: Matters of national environmental significance report	7.4.6
Cultural heritage	▪ Impacts on Indigenous values ▪ Impacts on historic cultural heritage	Chapter 18: Cultural heritage and Appendix S: Cultural heritage survey report	7.1.5
Landscape and visual Amenity	▪ Impacts on visual amenity	Appendix H: Landscape and visual impact assessment technical report	7.1.5
Land use and tenure	▪ Existing and proposed land use	Chapter 8: Land use and tenure	7.1.1, 7.1.2, 7.5.1
Traffic, transport and access	▪ Changes to traffic network and travel times	Appendix U: Traffic impact assessment	7.1.8
Economics	▪ Employment benefits and impacts	Appendix R: Economic impact assessment	7.2.2
Land resources	▪ Potential for land contamination to affect health	Chapter 9: Land resources	7.5.1

Topic	Key issues	EIS Section	SIA Section
Air quality	▪ Assessment findings in relation to health	Appendix K: Air quality technical report and Chapter 12	7.4.7
Noise and vibration	▪ Assessment findings in relation to amenity and health	Appendix O: Construction noise and vibration and Appendix P: Operational railway noise and vibration	7.1.3, 7.4.7
Hydrology and flooding	▪ Changes to flooding patterns affecting houses and farms	Appendix M: Hydrology and flooding technical report	7.1.9
Surface water	▪ Surface water quality potentially affecting health	Appendix L: Surface water	7.4.6
Groundwater	▪ Impacts on water bores or groundwater levels	Appendix N: Groundwater technical report and Chapter 14	7.4.6
Spoil management	▪ Transport of spoil using road network	Appendix T: Spoil management strategy	7.1.3, 7.6.2
Land acquisition	▪ Impacts relating to land acquisition	Appendix V: Impacted properties Chapter 8 – Land Use and Tenure	7.1.2, 7.5.1
Waste	▪ Implications of waste management	Chapter 21: Waste and resource management	7.4.7
Community safety	▪ Potential hazards and risks	Chapter 20: Hazard and risk management	7.4.10
Cumulative impacts	▪ Combined impacts of major projects	Chapter 22: Cumulative impacts	7.6
Environmental management	▪ Management of environmental impacts	Chapter 23: Draft Outline Environmental Management Plan	7.1.3, 8.1, 8.2

3.6 Cumulative impact assessment

Cumulative SIA considers the potential for the combined impacts of a set of projects to affect a social environment over time. The SIA considers the potential impacts of Inland Rail's adjacent B2G and H2C projects and other proposed major projects in the Project region whose construction may coincide with that of the Project, as well as the potential for cumulative social impacts relating to the construction of major rail projects in SEQ.

The potential area of influence was identified with respect to potential spatial impacts at the local level and social change processes at the local and regional levels. The assessment included:

- Development of a list of applicable projects and operations for consideration in the Cumulative Impact Assessment
- Consideration of the Project's areas of spatial and social influence, and its overlap with applicable projects or operations
- Development of a timeline (construction and operation) to show the temporal relationship between the Project and other projects and operations
- Consideration of social values (e.g. populations, housing demands, labour and skill demands and community values) and the projects which may affect them
- Consideration of community fatigue associate with other major projects.

Key issues addressed as part of the cumulative SIA include population, workforce, workforce accommodation, local and regional housing markets, connectivity, amenity and use of and access to community infrastructure.

Review of other projects' EISs and associated literature, consideration of cumulative workforce numbers and qualitative analysis identified the potential for cumulative impacts at local and regional levels. Cumulative impacts were considered in evaluating the significance of social impacts and benefits.

3.7 Significance assessment

At the conclusion of the impact assessment stage, a two-stage significance assessment was undertaken. This considered:

- Stakeholder inputs on how the Project would affect their communities or households
- The likelihood and consequence of potential social impacts and benefits
- ARTC's standard mitigation measures and commitments, and mitigation and enhancement strategies identified as part of the assessment process
- Identification of the residual significance of impacts and benefits, with the implementation of mitigation and enhancement measures.

3.8 SIMP

The Social Impact Management Plan provides mitigation strategies and management measures for social impacts and strategies designed to enhance Project benefits. The SIMP includes five sub-plans addressing community and stakeholder engagement, workforce management, housing and accommodation, local business and industry content, and health and community wellbeing. The process for SIMP development included:

- Stakeholder engagement to identify stakeholders' suggestions about mitigation
- Incorporation of ARTC's mitigation and enhancement commitments
- Identifying additional mitigation, management and enhancement measures
- Developing performance measures and a monitoring and reporting framework to support adaptive management of social impacts.

3.9 Limitations

The findings of this report are based on the information available to date regarding the Project and existing social conditions.

If approved, the Project will undergo a detailed design phase during which the design and/or construction methodologies may be refined. Should the final design or construction methodology differ from the currently available information, social impacts may also vary. For example, this assessment includes assumptions about the number of land acquisitions required based on the number of properties directly affected and ARTC's consultation with landowners to date (refer Section 7.1.2). The number of acquisitions may change as the result of design changes or discussions between the Constructing Authority and landowners during the detailed design phase. ARTC will conduct a review of any material changes to social impacts as a result of Project changes, as outlined in Section 8.1.1.

As the construction and operation of new freight rail lines in similar rural and semi-rural settings is relatively uncommon, there is no evidence on which to draw regarding social impacts such as changes to property values and the extent to which changes to road networks may affect tourism or other businesses. Such uncertainties are reflected in relevant sections of this report.

At the time that the SIA was being completed, uncertainties were emerging regarding changes to social and economic conditions as the result of the COVID-19 pandemic. Potential changes to social baseline conditions in the SIA study area as the result of COVID-19 include:

- Increased unemployment, resulting in increased availability of labour to the Project and other projects considered as part of the cumulative social impact assessment
- Changes to labour mobility, which in the short-term may be constrained, and in the longer term may increase as specific industries and regions recover from changes to economic conditions
- Loss of the viability of small businesses, with the retail, accommodation and tourism sectors among those likely to be affected
- Potential to decrease household incomes, savings or asset value, leading to the potential for increased disadvantage
- Changes to the capacity of health, police and ambulance services due to the need for services to respond to the pandemic
- Increased anxiety levels and changes to mental health, with an increased need for mental health services
- Increased service capacity as the result of government and community responses to the pandemic, e.g. investment in training or mental health services, which may or may not be of adequate capacity to respond to social and economic changes
- Changes to community resilience, cohesion and/or liveability due to physical distancing measures and/or other unknown changes to social dynamics.

Such changes to the social baseline could change the way that communities experience the social impacts and benefits of major projects, e.g.:

- The availability of employment and business opportunities will become critical to community and economic recovery
- Increased labour availability within the SIA study area would reduce the potential for cumulative impacts on housing and accommodation
- Changes to community resilience (either positive or negative) or mental health may affect the way people experience Project impacts
- People may be more tolerant of temporary impacts such as the effects of construction work on amenity in recognition of broader community benefits such as employment and business opportunities.

Some data on indicators such as unemployment and labour force availability will become available during 2021, whilst data on indicators such as income levels, housing tenure, the relative economic strength of industry sectors and indicators of community cohesion may only be available after the ABS Census of Population and Housing 2021 (with this data expected to be available from 2022-2023).

Assuming the Project is approved and progresses to detailed design, ARTC will review the available data on key indicators such as labour and housing availability and engage with LVRC and TRC to discuss changes to social conditions in the SIA study area. Any need for a review of the significance of social impacts and benefits in light of social and economic changes resulting from the COVID-19 pandemic will be agreed with the OCG at that time.

4 Project description and SIA scope

This section describes the Project as relevant to social impacts and benefits, and the scope of the SIA.

4.1 Project description

The Gowrie to Helidon Project is proposed as an approximately 28 km long single track dual gauge railway with crossing loops to accommodate double stacked freight trains of up to 1,800 metres (m). The Project would involve the construction of an approximately 6.24 km long tunnel through the Toowoomba Range to facilitate the required gradient across the undulating topography.

The objectives of the Project are to:

- Deliver infrastructure that meets the Inland Rail specifications, to enable trains using the Inland Rail corridor to travel between Gowrie and Helidon, connecting with other sections of Inland Rail (B2G and H2C) to the east and west
- Co-located with the existing QR West Moreton System rail corridor where possible, with tie-ins to the existing West Moreton System rail corridor at Gowrie (into the Western Line) and to the north-west of Helidon (into the Main Line)
- Minimise the potential for adverse environmental and community impacts.

The Project has been intentionally aligned to utilise the existing QR West Moreton System rail corridor, existing road corridor and the Gowrie to Grandchester future State transport corridor under the Public Passenger Transport Guideline (No. 1) 2019 made under the TPC Act. The Project corridor has been identified to relieve constraints on existing rail operations caused by the Toowoomba crossing. The infrastructure requirements for the possible future passenger transport service are excluded from this Project and would be progressed by DTMR.

The Project corridor will have a minimum width of 62.5 m through greenfield sections of the alignment, widened to accommodate earthworks, drainage structures, rail infrastructure, access tracks and fencing requirements. The Toowoomba Range tunnel corridor includes the tunnel (a diameter of approximately 13 m) plus a provisional area (total width of 50 m) to protect the tunnel from future development. Within sections of brownfield development, reasonable endeavours will be made to remain within the existing rail corridor, widening the corridor only where required to accommodate infrastructure. This will be confirmed during the detailed design phase of the Project.

The corridor will be of sufficient width to accommodate the infrastructure currently proposed for safe construction, as well as, at a point in time defined by demand, additional infrastructure, including the extension of crossing loops to accommodate 3,600 m trains. Apart from the additional space provided to accommodate longer trains, future works and operations do not form part of this analysis and would be subject to a separate assessment and approval process.

At the request of the DTMR, the Project is being developed to take into account measures to not exclude the potential for future rail transport infrastructure for passenger services to be delivered by DTMR.

Key components of the Project include:

- 28 km of single track dual gauge rail line with three crossing loops to ultimately accommodate trains up 3,600 m long based on business needs, but initially constructed for 1,800 m long train sets
- The 6.24 km Toowoomba Range tunnel, through the Toowoomba Range. The tunnel passes under the localities of Cranley, Mount Kynoch and Ballard, with tunnel portals at Gowrie Junction and Ballard, and an intermediate ventilation shaft at Cranley
- Viaducts and bridges, cuttings and embankments to accommodate topography east of Toowoomba, maintaining operational grades

- Connections to the existing QR West Moreton System rail corridor at the Project boundaries and other potential intermediate locations to be confirmed by operational modelling
- The construction of associated rail infrastructure including maintenance sidings and signalling infrastructure to support the train control system
- Rail crossings including grade separations/road overbridges/road underbridges (no level crossings are proposed), private crossings, fauna crossing and drainage structures
- Changes to the local road network, including road closure of roads and road realignments to facilitate the rail alignment, along with the use of the road network for access to and along the rail corridor during construction and operations (refer Section 7.1.8)
- Ancillary works including road and public utility crossings, realignments, signalling and communications, signage and fencing, and services and utilities
- Construction workspace including laydowns, storage, tunnel portal construction areas including a tunnel boring machine (TBM) launching area and access roads
- Operation of the rail corridor and tunnel (i.e. the corridor will be declared 'railway land' under the *Transport Infrastructure Act 1994* (Qld) (TI Act)).

During the operational phase, tunnel operations may require power and water supplies for ventilation, fire and life safety. Electricity supply will also be needed for points and other infrastructure. It is anticipated that the supply of these services will be delivered by relevant providers under the terms of their respective approvals and/or assessment exemptions.

The Project will be delivered through a delivery method to be confirmed during future project stages. A construction contractor (the Contractor) employed under the selected delivery method will be responsible for implementation of mitigation measures including the Construction Environmental Management Plan (CEMP) and SIMP.

The Project's indicative timeframe is:

- 2017 - 2021: design, planning and EIS
- 2021-2022: detailed design, approvals, pre-construction and land acquisition
- 2022 - 2027: construction and commissioning
- 2027: proposed Project opening.

Key elements not included as part of the Project include the following:

- Complementary infrastructure, such as metropolitan and regional freight terminals
- Upgraded fleet/rolling stock
- Complementary land use and freight precinct developments.

The Project will form part of the rail network managed and maintained by ARTC and operational life of 100 years. If the Project, or elements of it, were to be decommissioned, works would be undertaken in accordance with a decommissioning plan, which would be developed in consultation with relevant stakeholders and regulatory authorities. Decommissioning would involve removal and recycling of the track and infrastructure which is not required for other future purposes. The number of personnel required for decommissioning works is unknown. As such, Project decommissioning has not been considered in the SIA.

The following subsections describe the nature and scale of the Project as relevant to stakeholders and the social environment.

4.1.1 Construction

Project construction is planned to start in 2022 and is expected to be completed in 2027. The construction program includes the following stages and activities:

- Pre-construction activities and early works, including detailed design, land acquisition, obtaining environmental planning approvals, surveys and geotechnical investigations, establishment of access tracks, and utility and service relocations
- Site preparation including site clearance and vegetation clearing, establishment of laydown areas and associated construction sites, and stockpiling of turf and topsoil where possible
- Establishment of site compounds and facilities, installation of temporary and permanent fencing, installation of drainage and water management controls and construction of site access including temporary haul roads
- Relocation of impacted utilities and roads
- Establishment of hardstand areas for laydown, storage, material distribution, flashbutt welding and administration facilities
- Civil works, including bulk earthworks, construction of cuts and embankments, installation of permanent drainage controls, bridge and watercourse crossing construction, and environmental management measures (e.g. fauna crossings)
- Construction of the tunnel
- Track works including the installation of ballast, sleepers and rails
- Installation of rail systems infrastructure and wayside equipment including signals, turnouts and asset monitoring infrastructure.

4.1.2 Tunnel construction and operations

The Project proposes a tunnel approximately 6.24 km long through the Toowoomba Range, which at its maximum depth (under the New England Highway) is approximately 220 m below surface level. Construction will involve roadheaders to excavate tunnel portals (openings at each end) and a TBM which will operate from west to east. Excavation via drilling and blasting methods may also be required.

The tunnel construction timeline of approximately 4 years includes the procurement and set up of the TBM (a period of approximately 12 months), the cut and cover and mined tunnel works at the eastern tunnel portal, and tunnel construction using the TBM (a period of approximately 18 months) plus decommissioning of the TBM and fit out of the tunnel and associated buildings. As tunnel excavation is completed, a tunnel lining will be installed as the TBM passes through. The intermediate ventilation shaft, approximately 100 m deep, at Cranley will be excavated prior to the tunnel construction though that area.

Tunnel spoil (excavated material), including from the intermediate ventilation shaft will be stockpiled at the western tunnel portal. Excess material (not used by the Project or other users as fill) resulting from excavation will be formed into permanent spoil mounds, which will be contoured and stabilised/vegetated to manage erosion and sediment impacts within the rail corridor.

The tunnel services facilities would primarily be located at the western tunnel portal and include the Tunnel Control Centre (TCC), intake substation, fire water tanks, fire pumps and emergency services staging area. At the eastern tunnel portal facilities would include a ventilation building and a water treatment plant. The tunnel portal areas will require a substation building for power supply and distribution to electrical equipment. Two in-tunnel substations may also be required to supply lighting, power and communications equipment in the tunnel.

The tunnel ventilation system would require an intermediate ventilation shaft and building (located at approximately Ch 6.8 km) where air would be drawn into the tunnel to facilitate cooling of locomotive engines and purging of smoke in emergency situations. The ventilation system would provide bi-directional smoke control in the event of a train fire in the tunnel. Doors would be located at both ends of the tunnel and at the intermediate ventilation shaft location. This allows one door to be closed during train movement to maintain airflow and allow cooling of the locomotives.

4.1.3 Rail operations

Following construction, testing and commissioning (checking) of the rail line and communication and signalling systems will be undertaken. Construction sites, compounds and access routes would be returned the same or better condition than prior to construction commencing, unless agreed otherwise with the relevant landowners.

Inland Rail as a whole will be operational once all 13 sections are complete. The Project will form part of the rail network managed and maintained by ARTC.

The Project provides for an efficient and modern network which was the original intent of the Gowrie to Grandchester future State transport corridor. Train services will be provided by a variety of operators, with it assumed that existing rail traffic will utilise the Project to access coal mines in the Clarence Basin, areas west of Toowoomba or Toowoomba in preference to the existing rail network, reducing rail traffic in Toowoomba city and through Murphys Creek.

Trains will be a mix of grain, coal, bulk freight and other general transport trains, though the design will also accommodate the existing passenger service (i.e. Westlander). The Project does not preclude the use of the corridor for a passenger service, to be developed by DTMR at a future date.

It is estimated that the Project's operation will involve an annual average of about 33 train services per day in 2027. This is likely to increase to approximately 47 train services per day in 2040. The Project design is for train speeds ranging from 80 to 115 km/h, however the current gradient will limit operational speeds.

Operational processes will include:

- The use of the railway for freight purposes
- Standard ARTC maintenance activities including:
- Minor maintenance works, such as bridge and culvert inspections sleeper replacement, rail welding rail grinding, ballast profile management and track tamping
- Major periodic maintenance, such as ballast cleaning, reconditioning of track, and adjustment and correction of track level and line
- Operation and maintenance of tunnel ventilation, safety systems and signalling infrastructure.

Fencing will be provided for the extent of the Project alignment (except where noted otherwise) and its primary purpose is to limit access to the railway for unauthorised people, stock and wildlife. Fencing is to extend between the corridor and privately owned land adjoining the railway, with any specific requirements to be designed in consultation with the adjoining landowner.

As the Project comprises greenfield works in rural areas east of the Toowoomba Range tunnel and semi-rural areas west of the Toowoomba tunnel, standard rural fencing will typically be provided according to ARTC fencing procedure, Boundary Fencing ETM-17-02. Fencing will act to protect adjoining lands from trespass and to prevent stock on such adjoining land from gaining access to the railway corridor. Tunnel operations will require power and water supplies for ventilation and fire safety. Electricity supply will also be needed for points, signalling and other infrastructure. It is anticipated that the supply of these services will be delivered by relevant providers under the terms of their respective approvals and/or assessment exemptions.

4.1.4 Workforce

Pre-construction activities are anticipated to require a small number of personnel (approximately 20 – 50 people) over a 6 to 12-month period.

For the construction period, the size and composition of the workforce will vary depending on the construction activities being undertaken and the staging strategy adopted. The core construction workforce will consist of professional staff, supervisors, trades workers and plant operators, with earthworks crews, bridge structure teams, capping and track-works crews working at different periods though the construction phase.

The construction workforce will peak in year 2 at 596 personnel. Over the full construction period (approximately 4.6 years) an average of 264 personnel is required.

The construction workforce is expected to be drawn from communities within the Lockyer Valley and Toowoomba LGAs, and surrounding LGAs such as Ipswich, Brisbane, and Logan. It is likely that the majority of the construction workforce will be sourced from communities within a safe daily driving distance (to be defined by the Contractor in accordance with their fatigue management principles). On this basis a workforce accommodation facility is not proposed and little potential change to population or housing conditions is anticipated. The potential for workforce accommodation demands to be experienced in local communities is discussed in Section 7.3.

Once operational, a workforce of approximately 15 to 20 personnel is expected, to undertake monitoring and maintenance of the track and infrastructure, signalling, environmental monitoring and management of land and infrastructure in the railway corridor.

The majority of the operational workforce is expected to be drawn from communities within a safe daily driving distance with little potential for change to population or housing conditions.

4.1.5 Hours of work

The construction program will be based on the following worksite hours (unless approved otherwise):

- General construction activities:
  - Monday to Friday – 6.30 am to 6.00 pm
  - Saturday – 6.30 am to 1.00 pm
  - No work planned on Sundays or public holiday
- Underground tunnel construction activities, including the laydown area at the western tunnel portal - 24 hours a day, 7 days a week
- Track possessions on a 7-day/24-hour calendar basis.

QR and ARTC track possessions will generally be allocated over weekend periods, with extended track possessions occurring over holiday or non-seasonal periods (i.e. outside of grain movement periods). Works outside of standard construction hours will occur throughout the duration of the construction program and will involve:

- Track works including tamping, ballast profiling, earthworks and formation works
- Delivery of concrete, steel, and other construction materials delivered to site by heavy vehicles
- Movements of heavy plant and materials
- Arrival and departure of construction staff during shift change-overs.
- Roadworks to arterial roads
- Traffic control crews, including large truck mounted crash attenuator vehicles, medium rigid vehicles, and lighting towers

- Incident response including tow-trucks for light, medium, and heavy vehicles
- Alternative construction rosters to suit delivery and industrial relations issues may be investigated by the Contractor
- Various low intensity activities.

Train operations are anticipated to be 24 hours a day, 7 days a week on a variable schedule. While maintenance activities will generally occur at times similar to general construction activities, track possessions will be on 7-day/24-hour calendar basis.

4.2 SIA study area

The SIA study area was identified by considering:

- The Project's location and activities in relation to population centres, rural localities and physical and social infrastructure
- Social values that might be affected by the Project
- The potential for and likely distribution of potential social impacts and benefits at local and regional levels
- Indigenous social and cultural characteristics such as native title rights and interests, and cultural heritage
- The results of ARTC consultation prior to commencement of the EIS
- The location of other relevant projects which may contribute to cumulative social impacts.

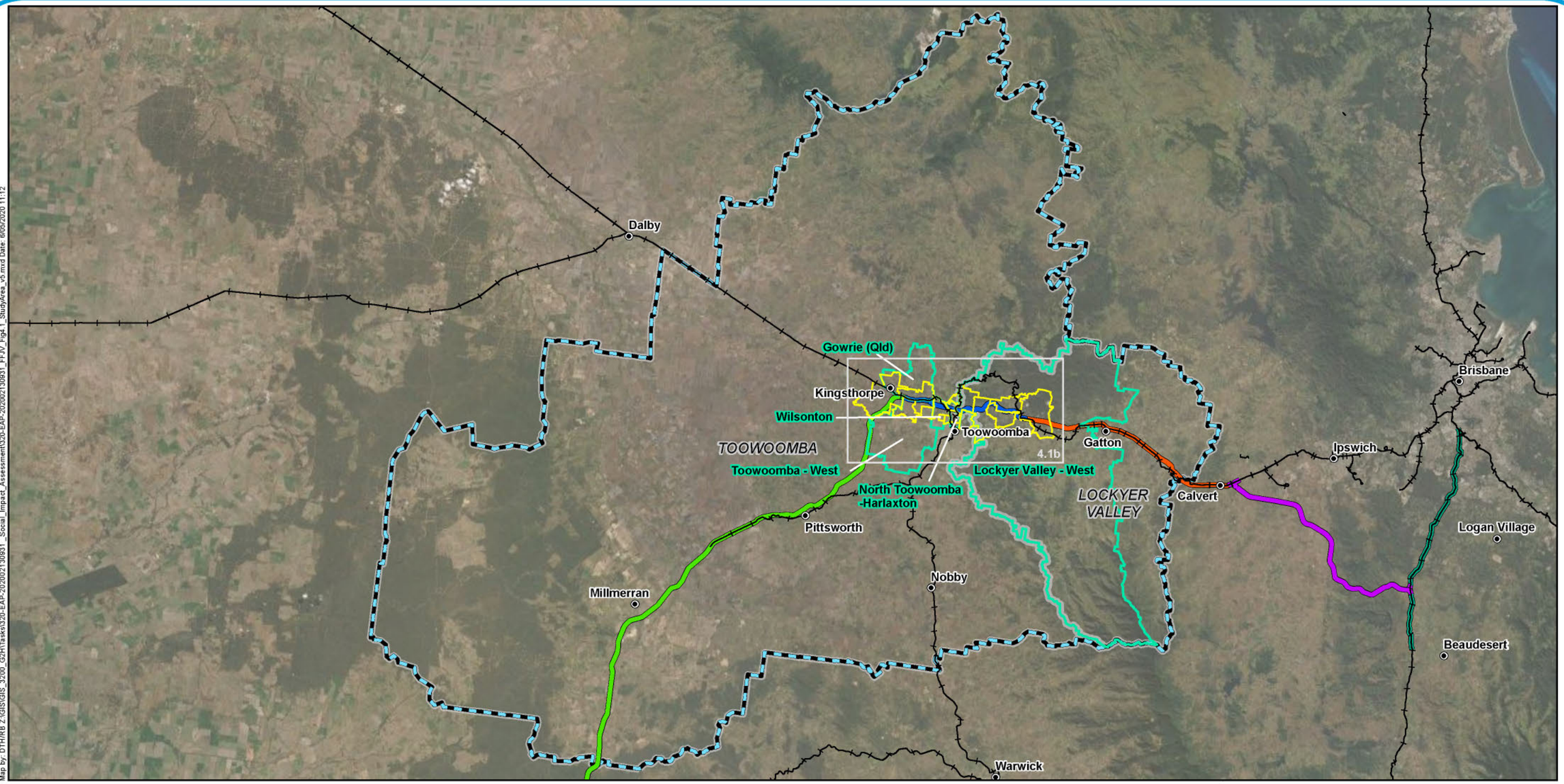
The geographic reach of impacts can vary depending on the impact being assessed. For example, residents who live close to the Project could experience impacts related to land acquisition, land severance or noise, whilst those who live in nearby communities could experience different impacts e.g. traffic disruptions or changes to service access. Impacts such as demand for accommodation and benefits related to employment may be experienced across a region.

The SIA study area comprises:

- The EIS investigation corridor which incorporates the Project disturbance footprint and a buffer of approximately 1 km, as described in Section 4.2.1
- Potentially impacted communities as described in Section 4.2.2
- The Project region which refers to the Toowoomba and Lockyer Valley LGAs, as described in Section 4.2.3.

The SIA study area is shown in Figure 4.1a and Figure 4.1b.

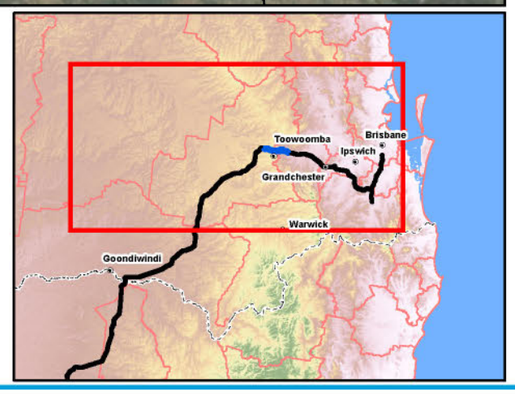
Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Map by: DTH/RB Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20200213093 1_Social_Impact_Assessment\320-EAP-20200213093 1_FFJV_Fig4.1_StudyArea_v5.mxd Date: 6/05/2020 11:12

Legend

- Localities
- Existing rail
- B2G project alignment
- G2H project alignment
- H2C project alignment
- C2K project alignment
- K2ARB project alignment
- SIA Study Area
- Local Government Areas
- State Suburb (SSC) boundary
- SA2 boundary



A3 scale: 1:880,000

0 6.5 13 19.5 26 32.5km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 06/05/2020 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

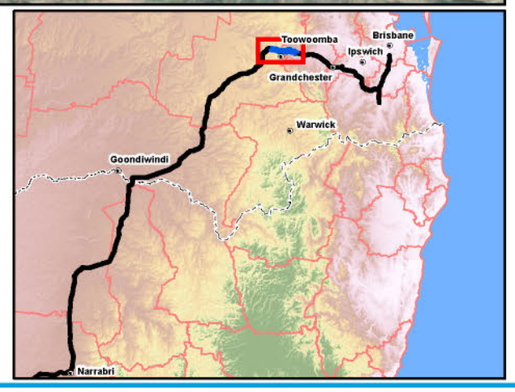
Gowrie to Helidon
Figure 4.1a: SIA study area

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Kingsthorpe
Gowrie (Qld)
Gowrie Junction
Kingsthorpe
Charlton
Charlton (Qld)
Cotswold Hills
Toowoomba - West
TOOWOOMBA
Ballard
Blue Mountain Heights
Mount Kynoch
Cranley
Wilsonton
Wilsonton Heights
Harlaxton
Rockville
North Toowoomba - Harlaxton
Mount Lofty
Withcott
Postmans Ridge
Lockyer
Lockyer (Qld)
Helidon
Helidon Spa
Lockyer Valley - West
LOCKYER VALLEY
0
5
10
15
20
25

Legend

- 5 Chainage (km)
- Localities
- Existing rail
- B2G project alignment
- G2H project alignment
- H2C project alignment
- State Suburb (SSC) boundary
- SA2 boundary
- Local Government Areas



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Gowrie to Helidon
Figure 4.1b: SIA study area

4.2.1 EIS investigation corridor and Project disturbance footprint

The EIS investigation corridor includes the Project disturbance footprint and a zone of approximately 1 km either side of the disturbance footprint. Investigations for the purposes of the Project's EIS and design were generally undertaken within the EIS investigation corridor, or as required by the individual technical assessments.

The 'Project disturbance footprint' includes:

- The permanent disturbance footprint, which refers to the rail corridor and associated crossing loops, maintenance sidings, road network changes, viaducts and bridges, culverts and infrastructure
- The temporary construction disturbance footprint, which refers to land required temporarily for construction, including for laydown areas, access tracks and work areas.

The SIA includes a focus on residents, landowners and businesses within the Project disturbance footprint (those whose land would be partially or wholly acquired or used during construction) and those near the Project disturbance footprint, generally within 1 km, but as relevant to the social and environmental qualities being considered.

Key characteristics of Statistical Area 1 (SA1) areas within approximately 1 km of the Project were identified in order to understand population distribution and potential community vulnerabilities within the EIS investigation corridor (refer Section 5.2.1, with Figure 5.1 showing the location of the Project in relation to SA1s).

4.2.2 Potentially impacted communities

The SIA includes a focus on potentially impacted communities, being the towns and rural localities in the Toowoomba and Lockyer Valley LGAs that may experience Project impacts such as impacts on residential amenity, the road network, farms and other businesses, community facilities, or community values. Potentially impacted communities include:

- Towns and rural localities (defined by ABS SSCs) through which the Project would pass:
  - Charlton (where the Project commences)
  - Gowrie Junction (including the location of the eastern tunnel portal)
  - Cranley (in tunnel and the location of the intermediate ventilation shaft)
  - Mount Kynoch (in tunnel)
  - Ballard (in tunnel and location of the eastern tunnel portal)
  - Mount Lofty
  - Withcott
  - Lockyer
  - Postmans Ridge
  - Helidon Spa
  - Helidon
- Toowoomba suburbs to the south of the Project:
  - Cotswold Hills, with the western tunnel portal located approximately 1.0 km north of the nearest homes
  - Rockville, with the Project located in tunnel approximately 1.5 km north of the nearest homes

  - Wilsonton Heights, with the Project located in tunnel approximately 1.6 km to north of the nearest homes
  - Harlaxton, with the Project located in tunnel 500 m north of the nearest homes
- The suburb of Kingsthorpe (approximately 2.5 km west of the Project) due to the potential for cumulative impacts associated with the B2G project
- The suburb of Blue Mountain Heights (approximately 1 km north of the Project), where there is potential for visual impacts as the result of views to the eastern tunnel portal.

Section 4.2.4 provides the statistical geography for potentially impacted communities .

Murphys Creek within the Locker Valley LGA is not traversed by the EIS investigation corridor and the town centre is some 4-5 km from the Project, but has been included in discussion of its settlement pattern and changes to the road network.

4.2.3 Project region

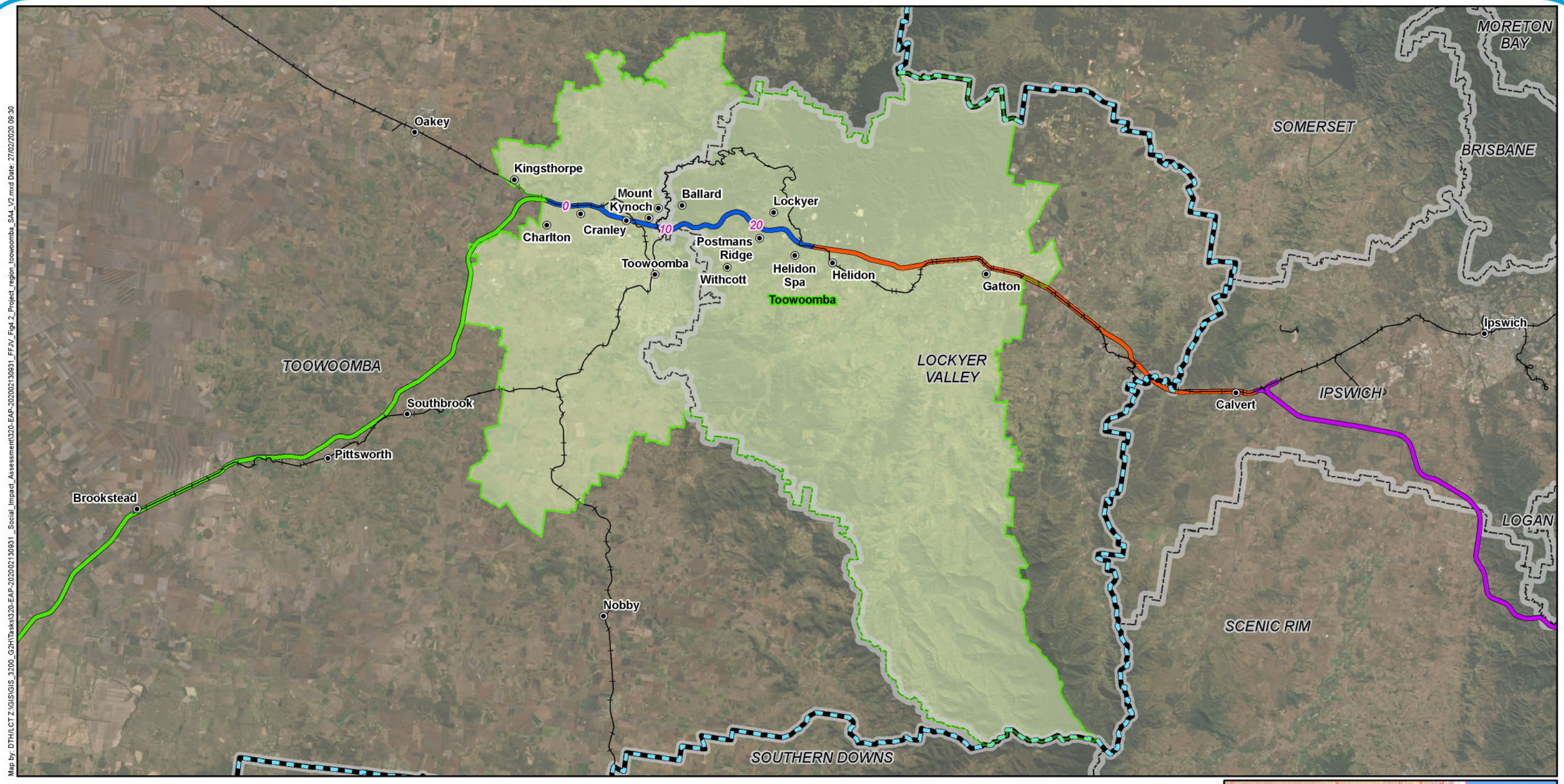
From the start of the Project in Charlton, 3.7 km west of Gowrie, to Mount Kynoch and north of Harlaxton, the Project is within the Toowoomba LGA, and from Ballard east, the Project is within the Lockyer Valley LGA. The former Mount Lofty Rifle Range which the Project traverses east of the Toowoomba Range is also located within the Toowoomba LGA.

These LGAs form the Project region, within which impacts and benefits such as changes to the labour market, the road network, business supply opportunities, housing access and social infrastructure impacts may be experienced.

Labour force data have also been provided for the Toowoomba Statistical area 4 (SA4) to support analysis of broader labour force availability.

Potential impacts and benefits for other regional communities and/or the State of Queensland relate primarily to the Project's potential to catalyse regional development and economic benefits. EIS Appendix R: Economic impact assessment has defined the Toowoomba and Lockyer Valley LGAs as the 'local study area' for assessment of employment and other economic benefits. Appendix R: Economic impact assessment has also provided data and analysis for the Toowoomba SA4 as the 'regional economic catchment area', recognising that economic benefits would extend beyond the economic impact assessment local study area. The Project region and Toowoomba SA4 are shown in Figure 4.2.

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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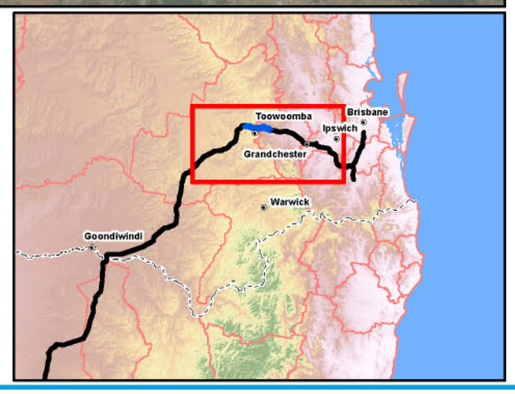
Legend

- Localities
- Localities
- 5 Chainage (km)
- Existing rail
- B2G project alignment
- G2H project alignment
- H2C project alignment
- C2K project alignment
- SA4 boundary
- Local Government Areas
- SIA Study Area



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Gowrie to Helidon

Figure 4.2: Project region and Toowoomba SA4

4.2.4 Statistical Geography

The statistical geography used in the SIA is based on the Australian Statistical Geography Standard (ASGS) as defined by the ABS. State Suburb Codes (SSCs) as defined by the ABS have been used to delineate potentially impacted communities (towns and localities) within the SIA study area.

The potential for social impacts and benefits has been considered for areas and communities identified in Table 4.1. Detailed demographic data are provided in Section 5 for SSCs with a resident population of more than 200 people. Where specific data are not available for SSCs they have been provided for the relevant Statistical Area 2 (SA2s) which represent collections of suburbs. Detailed demographic data are not provided for rural localities with less than 200 people (Ballard, Lockyer and Charlton), as the consistency of data and its availability are constrained by their small populations and ABS confidentiality protocols, however their demographic characteristics are reflected by the SA1 level data provided in Section 5.2.1 and by the community profiles included in Section 5.1.3.

Detailed data are also provided for the Toowoomba and Lockyer Valley LGAs which represent the Project region, and labour force data have also been provided for the Toowoomba SA4.

Table 4.1 Statistical geography

Area	Study Area	Name (LGA)	Land area (km^2)	Population (2016)
Statistical Area 1 (SA1)	EIS investigation corridor	SA1s within approximately 1 km of the Project disturbance footprint (refer Section 5.2)		
State Suburbs (SSC)	Potentially impacted communities	Ballard (Lockyer Valley LGA)	16.8	151
		Blue Mountain Heights (Toowoomba LGA)	3.8	925
		Charlton (Toowoomba LGA)	14.1	120
		Cotswold Hills (Toowoomba LGA)	6.6	1,282
		Cranley (Toowoomba LGA)	10.4	1,452
		Gowrie Junction (Toowoomba LGA)	25.6	2,120
		Harlaxton (Toowoomba LGA)	5.0	2,548
		Helidon (Lockyer Valley LGA)	48.8	1,061
		Helidon Spa (Lockyer Valley LGA)	137	541
		Kingsthorpe (Toowoomba LGA)	53.7	1,872
		Lockyer (Lockyer Valley LGA)	17.9	95
		Mount Kynoch (Toowoomba LGA)	3.4	242
		Mount Lofty (Toowoomba LGA)	9.8	3,770
		Postmans Ridge (Lockyer Valley LGA)	16.8	392
		Rockville (Toowoomba LGA)	1.9	3,238
		Wilsonton Heights (Toowoomba LGA)	1.4	2,668
		Withcott (Toowoomba LGA)	30.8	1,842
Statistical Area 2 (SA2)	Project region	Gowrie	81.0	6,411
		Highfields	149.3	13,180
		Wilsonton	18.9	13,180
		North Toowoomba – Harlaxton	10.3	5,734

Area	Study Area	Name (LGA)	Land area (km^2)	Population (2016)
		Toowoomba West	161.3	13,005
		Lockyer Valley – West	1,480.2	11,362
LGA	Project region	Toowoomba	12,957.2	160,779
		Lockyer Valley	2,269	38,609
Statistical Area 4 (SA4)	Broader labour force region	Toowoomba SA4	2,258.8	149,512
Queensland (State)	Comparator for SIA study area	Queensland	1,730,172.1	4,702,193

Source: ABS 2016b

SIA scoping considerations

This section details the scope of the SIA, which was defined by considering:

- Statutory requirements for SIA
- The Project's key elements and operational processes which may impact on social values
- The nature of local communities (refer Section 5.1.3)
- Stakeholder inputs on potential impacts and benefits
- Workforce estimates and the likely origin of personnel.

4.2.5 Statutory requirements

The SIA seeks to address the Coordinator-General's statutory requirements as provided by the ToR and the SIA Guideline (discussed in Sections 2.2 and 2.3).

The SIA Guideline provides detailed assessment requirements, which have been addressed throughout the SIA, and in the development of the SIMP (refer Section 8). The SIA Guideline's central requirement for the SIA is to assess the type, level and significance of the Project's social impacts (both negative and positive) throughout the Project lifecycle, based on the outcomes of stakeholder engagement, social baseline study and impact analysis processes. The SIA is also required to integrate the relevant results of other EIS chapters as relevant to social values (refer Section 3.5).

4.2.6 Project elements and operations

Project elements with potential for social impacts and benefits are summarised in Table 4.2.

Table 4.2 Project elements of relevance to the social environment

Key elements	Detail	Potential impact areas
Construction		
Corridor and associated works	▪ Construction of a 28 km dual gauge rail line, including a tunnel through the Toowoomba Range (refer below) ▪ Construction of rail infrastructure, culverts, bridges and viaducts, crossing loops, sidings and signalling infrastructure ▪ Connections to the existing QR West Moreton System (western and eastern extent, along	▪ Residential amenity ▪ Connectivity ▪ Community cohesion ▪ Agricultural operations ▪ Sense of place ▪ Health ▪ Concerns about security and privacy

Key elements	Detail	Potential impact areas
	with a spur line allowing access to and from Toowoomba) ▪ Ancillary works including road and public utility crossings and realignments.	▪ Potential to impact on access to water
Tunnel construction	▪ Construction of an approximately 6.2 km tunnel through the Toowoomba Range ▪ Construction of tunnel portals near Ch 4.0 km (western tunnel portal) and Ch 10.0 km (eastern tunnel portal) ▪ Construction of an intermediate ventilation shaft and associated infrastructure at Cranley(Ch 6.8 km).	▪ Residential amenity (noise and vibration) ▪ Concern about air quality ▪ Scenic amenity (portals and intermediate ventilation shaft building)
Bridge and viaduct construction	The Project includes 13 viaducts and bridges totalling approximately 6.7 km in length, including: ▪ Gowrie Junction Road Bridge ▪ Gowrie Creek Rail Bridge ▪ Oaky Creek Viaduct ▪ Withcott Viaduct 1 ▪ Withcott Viaduct 2 ▪ Withcott Viaduct 3 ▪ McNamaras Road Bridge ▪ Withcott Viaduct 4 ▪ TSRC and Six Mile Creek Viaduct ▪ Postmans Ridge Viaduct ▪ Murphys Creek Road Viaduct ▪ Withcott Seedlings Viaduct ▪ Lockyer Creek Viaduct Thirteen cuts with an approximate total length of 6.65 km length and a maximum cut depth of 45.7 m are required along the Project disturbance footprint to maintain the required elevation for the proposed rail line. The total length of embankments required for the Project will be approximately 15.4 km with a maximum embankment height of 33.3 m. Further details on the location of bridges and viaducts is provided in EIS Chapter 6: Project description.	▪ Road network access ▪ Connectivity ▪ Rural character and visual amenity ▪ Amenity
Construction employment	Pre-construction works would require a workforce of up to an estimated 50 personnel. The construction phase would require a peak of 596 personnel (in Year 2) and an average of approximately 264 personnel over the full construction period (refer Section 4.1.4 for more detail).	▪ Employment and training opportunities ▪ Accommodation ▪ Other industries or communities' access to skilled labour
Road interfaces	The Project would interface with public roads including: ▪ Toowoomba Bypass ▪ Murphys Creek Road ▪ Draper Road ▪ Gowrie Junction Road ▪ Morris Road ▪ Paulsens Road	▪ Road network access ▪ Property access ▪ Connectivity ▪ Traffic safety

Key elements	Detail	Potential impact areas
	▪ Ganzer Road ▪ Wallens Road ▪ Jones Road ▪ McNamaras Road ▪ Gittins Road ▪ Howmans Road ▪ Cattos Road ▪ An unnamed road in the Lockyer Valley LGA There are no level crossings proposed in the Project, while the Project is proposing to eliminate an existing level crossing (Gowrie Junction Road) on the QR West Moreton System. There are also 36 private crossings interfaces, with the majority grade separated and no new occupational crossings proposed.	
Road works	Road works, including some road realignments and consolidations are required where the Project disturbance footprint interfaces with public roads. The majority of the road network changes are to occur within existing road reserves, however some works will extend onto private lands.	▪ Road network access ▪ Property access ▪ Connectivity ▪ Traffic safety
Tunnel spoil transport	Excess spoil from the construction of the tunnel and intermediate ventilation shaft will be stockpiled at the western tunnel portal. Excess spoil from the eastern tunnel portal will reused in the corridor or disposed of in accordance with the spoil management strategy (refer EIS Appendix T). The desired outcome will be to truck directly from the tunnel to adjacent embankment areas via the corridor in line with tunnel construction (i.e. seven days/week). Spoil from cuts will generally be used as part of filling e.g. in the construction of embankments.	▪ Road safety ▪ Visual amenity
Laydown areas	A total of 24 laydown areas are required to act as centralised points for all material storage. Some laydown areas will also contain fuel storage areas and site offices.	▪ Amenity ▪ Increased traffic ▪ Privacy ▪ Change in local community character
Quarries	Ballast material will be sourced from local quarries. Seven operational quarries have been identified by ARTC as potentially suitable for use as material source locations during construction. The viability and feasibility of accessing material from these locations will be confirmed during the detailed design phase of the Project (post-EIS). There are no borrow pits proposed.	▪ Traffic safety ▪ Amenity of neighbouring properties
Construction supplies	The Project will require construction supplies, including borrow material, ballast material, water, pre-cast concrete, concrete sleepers and turnout panels, steel, fencing, electrical components, fuel and consumables. A range of services will also be required during construction and operations, many of which may be sourced locally (refer Section 7.5.4).	▪ Local and regional supply opportunities ▪ Road network ▪ Potential to impact on access to water

Key elements	Detail	Potential impact areas
Operations		
Rail operation	Operation of the rail line, to accommodate double-stacked container freight trains of up to 1,800 m, with potential for future accommodation of freight trains of 3,600 m. The rail line will also be used by trains transporting grain, coal, bulk freight and other general transport and by the existing passenger service (Westlander). The hours of operation are anticipated to be 24 hours a day, 7 days a week on a variable schedule.	▪ Residential amenity - noise, air quality and visual ▪ Rural character ▪ Tourism values ▪ Community safety ▪ Regional development ▪ Health (stress and enjoyment of home)
Tunnel operation	Trains would enter the eastern or western tunnel portal and travel through the tunnel for approximately 6.2 km. Tunnel control centres would be required at each portal. An intermediate ventilation shaft located approximately halfway between the western and eastern tunnel portals at Cranley (Ch 6.8 km) would allow draw down of air to help cool the locomotives while in tunnel. Locomotive emissions would be vented from each portal.	▪ Concern about air quality ▪ Scenic amenity (portals and intermediate ventilation shaft) ▪ Noise at portals
Operational employment	Up to 15 to 20 personnel are expected to be employed in Project operations.	▪ Employment and training opportunities
Corridor security	Standard rural fencing (post and wire) to the extent of the rail corridor. as described in Section 4.1.3.	▪ Connectivity ▪ Stock and agricultural equipment movements ▪ Pedestrian and cycle movements
Bridge operation	Rail over road, road over rail and rail over waterway bridges	▪ Residential amenity - noise characteristics, visual amenity and air quality
Crossing loops	The Project would include three crossing loops with a minimum length of 2.2 km, at: ▪ Western tunnel portal (Gowrie Junction) ▪ Eastern tunnel portal (Ballard) ▪ Postmans Ridge, in the vicinity of Murphys Creek Road, east of the eastern tunnel portal	▪ Residential amenity - noise characteristics and air quality ▪ Connectivity
Track maintenance	Regular track maintenance would be performed	▪ Noise ▪ Employment
Decommissioning		
Removal and rehabilitation	Track and infrastructure removal and corridor rehabilitation	▪ Employment and training opportunities ▪ Future use opportunities

4.2.7 Potential for cumulative impacts

The Project is likely to be constructed during the same period as other major projects in the Lockyer Valley and Toowoomba LGAs, so cumulative social impacts are possible.

The Project adjoins the B2G project in the west and the H2C project in the east. Localised cumulative impacts on connectivity or amenity are possible if the Project is constructed at the same time as the B2G and/or H2C projects.

Cumulative impacts such as impacts on housing access or increased traffic on local and State roads, and benefits such as increased employment levels, may also occur for communities in the Toowoomba and Lockyer Valley LGAs as a result of other major projects' construction phases coinciding with Inland Rail project construction, whilst growth in long-term employment options may occur as the result of major projects' operation, including the operation of Inland Rail projects. There is also potential for cumulative impacts with respect to rail construction projects in SEQ on labour force availability. Potential cumulative social impacts are discussed in Section 7.6.

4.3 Stakeholders

SIA stakeholder engagement commenced with identification of stakeholders and their interests, which included:

- Reviewing the outcomes of ARTC's stakeholder engagement to date
- Participation in community information sessions to identify community concerns
- Desktop analysis of social infrastructure provision and management in the area of social influence
- Identification of Council departments and Government agencies with an interest in the SIA study area.

This section provides a profile of SIA stakeholders and the key issues they identified.

4.3.1 Stakeholder profile

Stakeholder inputs to the scope of assessment were obtained through:

- Discussions with community members in community information sessions
- SIA community survey (refer Section 4.3.2)
- Participation in Lockyer Valley CCC and Inner Darling Downs CCC meetings
- Consultation with Lockyer Valley and Toowoomba Councils
- A community meeting organised by the Lockyer Valley Tourism Association.

Table 4.3 provides a stakeholder profile including stakeholder groups, their locations, and key issues identified as part of consultation in the scoping stage. Further information about the stakeholder engagement program and outcomes is provided in Section 6.

Table 4.3 Stakeholder Profile

Stakeholder Groups	Locations	Key Issues for investigation
Landowners within Project disturbance footprint including landowners near the Toowoomba Range tunnel	▪ Charlton ▪ Gowrie Junction ▪ Cranley ▪ Mount Kynoch ▪ Ballard ▪ Withcott ▪ Lockyer ▪ Postmans Ridge ▪ Helidon Spa ▪ Helidon ▪ Mount Lofty	▪ Acquisition of properties resulting in displacement of households and impacts of property severance on property use and access ▪ Volumetric resumption of land above the tunnel ▪ Potential for homes near the Project disturbance footprint to be affected by noise, vibration or dust during construction or operation ▪ Effects of tunnelling under properties or homes including potential for tunnel construction to result in noise or vibrations, and concerns about subsidence affecting properties ▪ Impacts on water access ▪ Stress, anxiety and uncertainty ▪ Potential for decrease in land values ▪ Potential for diversion of water flows to affect flooding patterns

Stakeholder Groups	Locations	Key Issues for investigation
		▪ Potential for dams or bores to be disturbed ▪ Potential for visual impacts at tunnel portals and central ventilation building
Community members near the Project	▪ Charlton ▪ Gowrie Junction ▪ Cranley ▪ Mount Kynoch ▪ Ballard ▪ Withcott ▪ Lockyer ▪ Postmans Ridge ▪ Murphys Creek ▪ Helidon Spa ▪ Helidon ▪ Cotswold Hills ▪ Harlaxton ▪ Mount Lofty ▪ Rockville ▪ Wilsonton Heights	▪ Potential for visual amenity to be adversely impacted by bridges or tunnel portals ▪ Potential for homes to be affected by rail noise, vibration or dust during construction or operation, and the potential to make houses uninhabitable ▪ Potential for changes to flooding patterns to affect farms, homes or environmental values ▪ Traffic network connectivity ▪ Anxiety caused by Project planning ▪ Impact to quality of life due to noise and lack of enjoyment of property ▪ Concerns regarding market value of homes near rail line
Toowoomba City Council	▪ Charlton ▪ Gowrie Junction ▪ Cranley ▪ Mount Kynoch ▪ Blue Mountain Heights ▪ Kingsthorpe ▪ Cotswold Hills ▪ Harlaxton ▪ Mount Lofty ▪ Rockville ▪ Wilsonton Heights ▪ Toowoomba LGA	▪ Impacts of property severance on farms and landowners ▪ Potential for impacts on the amenity of residential and rural residential areas ▪ Potential for noise from crossing loops to affect nearby residents ▪ Effects of disruption to local roads and services on motorists and businesses ▪ Concern that, as for the Toowoomba Bypass, the Project may affect visual amenity ▪ Community fatigue following Toowoomba Bypass construction ▪ Potential severance impacts on stormwater drainage and overland flow ▪ Potential for a short-term increase in economic activity during construction ▪ Support for the development of Toowoomba as a freight and logistics hub ▪ Potential to impact on housing availability ▪ Ensuring local communities benefit through employment and supply opportunities, and through legacy values
Lockyer Valley Regional Council	▪ Ballard ▪ Withcott ▪ Postmans Ridge ▪ Murphys Creek ▪ Helidon Spa ▪ Helidon ▪ Lockyer ▪ Lockyer Valley LGA	▪ Impacts on vehicular connections which are important for local access to services, and to tourism assets ▪ Biosecurity concerns through the accidental transfer of pests such as fire ants and diseases affecting crops ▪ Potential for build-up of debris against rail line during and after flooding events, with potential to increase flooding impacts ▪ Need for local employment opportunities and on-the-job training ▪ Potential impacts on tourism values through effects on visual amenity or connectivity ▪ Maintaining social amenity i.e. community members' enjoyment of rural and rural residential areas and towns ▪ Community concern regarding effects on property values

Stakeholder Groups	Locations	Key Issues for investigation
		▪ Contribution to community facilities to improve the impacted towns
Traditional owners – Western Wakka Wakka People, Yuggera Ugarapul People	▪ Project region	▪ Impact on Native Title interests ▪ Opportunity to provide employment and training opportunities for Indigenous people ▪ Impacts on cultural heritage
Businesses	▪ Project region	▪ Construction impacts causing traffic delays and impacts on visual amenity of Lockyer Valley ▪ Visual amenity impacts of rail line on scenic amenity and therefore tourism assets and experiences ▪ Concern that rail noise will affect the amenity of tourism properties ▪ Potential to support regional economic development through freight facilities and logistics hub development ▪ Potential for local businesses to supply the Project, using capacity and capacity built on recent projects such as Toowoomba Bypass (i.e. Toowoomba Second Range Crossing) ▪ Interest in accessing information about the Project's timing and construction staging, and labour and material requirements
Community and Government organisations – education, community support, health	▪ Project region	▪ Project-related stress, anxiety and disruption for mental health ▪ Existing mental health issues following the impacts of the past floods ▪ Potential for impacts on land values due to Project is causing anxiety ▪ Uncertainty about local employment opportunities ▪ Project represents opportunity for employment and community development initiatives ▪ Older people and asthmatics may be vulnerable to dust during the Project's construction phase
Police and emergency services	▪ Project region	▪ Benefits for businesses with potential to engage with the Project ▪ Need to maintain access for Queensland Fire and Emergency Service (QFES) near the Project and to nearby communities which include areas on hills, ridges and plains ▪ Need for close cooperation with QFES and Queensland Police Service (QPS) prior to construction to mitigate impacts on community safety and demands for service ▪ Community anger and anxiety about land acquisition ▪ Potential for protest activity which will be a police resourcing issue ▪ Potential for small increases in traffic to increase fatigue related incidents/animal strike ▪ Potential for increased calls for service and resources required for wide load escort

4.3.2 Community survey inputs

The Project, along with the H2C and C2K projects were the focus of a SIA community survey undertaken between 31 May and 31 July 2018. The survey was hosted online using the Survey Monkey platform, supported by hardcopy survey administration at community information sessions during June 2018, with a total of 403 responses received. The four LGAs (Toowoomba, Lockyer Valley, Ipswich and Scenic Rim) affected by the three projects have a combined population of approximately 411,000 people. Accordingly,

the SIA survey results have limited statistical validity when broken down by LGA, but provide good insights to community values and views about potential Project impacts.

Of the 315 survey respondents who identified their residential location, 102 respondents were from the Project region, including 29 residents in the Toowoomba LGA and 73 residents in the Lockyer Valley LGA. Whilst this is not a large sample and does not provide statistically valid results, the survey results provide an indication of the types of concerns held by residents about Project impacts.

A total of 59 respondents from the Lockyer Valley LGA and 20 respondents from the Toowoomba LGA provided inputs about how they expected the Inland Rail projects would affect local people, businesses and communities by rating their response to a series of statements regarding likely positive or negative effects on social values. Average responses are summarised in Figure 4.3, where a rating of 1 represents the most negative response, and 5 the most positive response, that is, low scores indicate respondents' expectations that the Project would have an adverse effect on social values, whilst high scores indicate the expectation that the Project would have a positive effect.

Respondents from the Lockyer Valley LGA generally expected negative effects on social values (with most scores averaging below 2 out of 5), particularly for housing and property use (rated 1.5 out of 5), amenity of towns or farms (rated 1.6 out of 5) and community wellbeing (rated 1.6 out of 5). Responses were less negative towards employment and training options (rated 2.2 out of 5) and industry and economic development (rated 2 out of 5), but still ranking at the 'negative' end of the spectrum.

Respondents from the Toowoomba LGA generally expected negative effects on social values from the Project, particularly in relation to community wellbeing (receiving an average rating of 1.9 out of 5) and the Project's effects on access around their district (rated 2 out of 5). On average Toowoomba respondents had less negative expectations about the Project's impacts on local business, employment and training, and industry and economic development, however the rating of each element at 3.1 out of 5 indicates mixed views, with a small majority seeing potential for positive effects, achieving a slightly more than neutral average score.

Positive views included the advantages that faster access to markets would have for the agricultural industry and facilitating business development and jobs growth. Others saw the potential for the Project to facilitate passenger rail services to the region.

Comments in support of the Project included:

- "Better and faster access for agriculture and industry both import and export"
- "A connection to Inland Rail will allow the region to house businesses such as food processing, manufacturing, transport, freight forwarders which will stimulate jobs and economic development"
- "Work opportunities"
- "Depends on passenger rail … passenger service will enable residents to access long distant entertainment and airports"
- "The Inland Rail project will greatly benefit our region should an Inland Port (such as InterLinkSQ) exist in Toowoomba to allow freight to be transferred to rail."

Respondents' concerns included the impact of the Project on farming properties and agricultural productivity, damage to the region's scenic amenity and related tourism industry, the effects of noise and vibration on the quiet lifestyle, impacts on wildlife, air quality concerns (particularly relating to coal dust), and the potential for a divisive effect in the community between those who are directly impacted and those who are not. There was also a sentiment amongst mainly the Lockyer Valley respondents that while there were national benefits, there was no benefit for local communities. Some survey respondents noted that more information about the Project (e.g. alignment, structure, commercial use arrangements, employment and supply arrangements) was needed for them to determine the social impacts and benefits for their community.

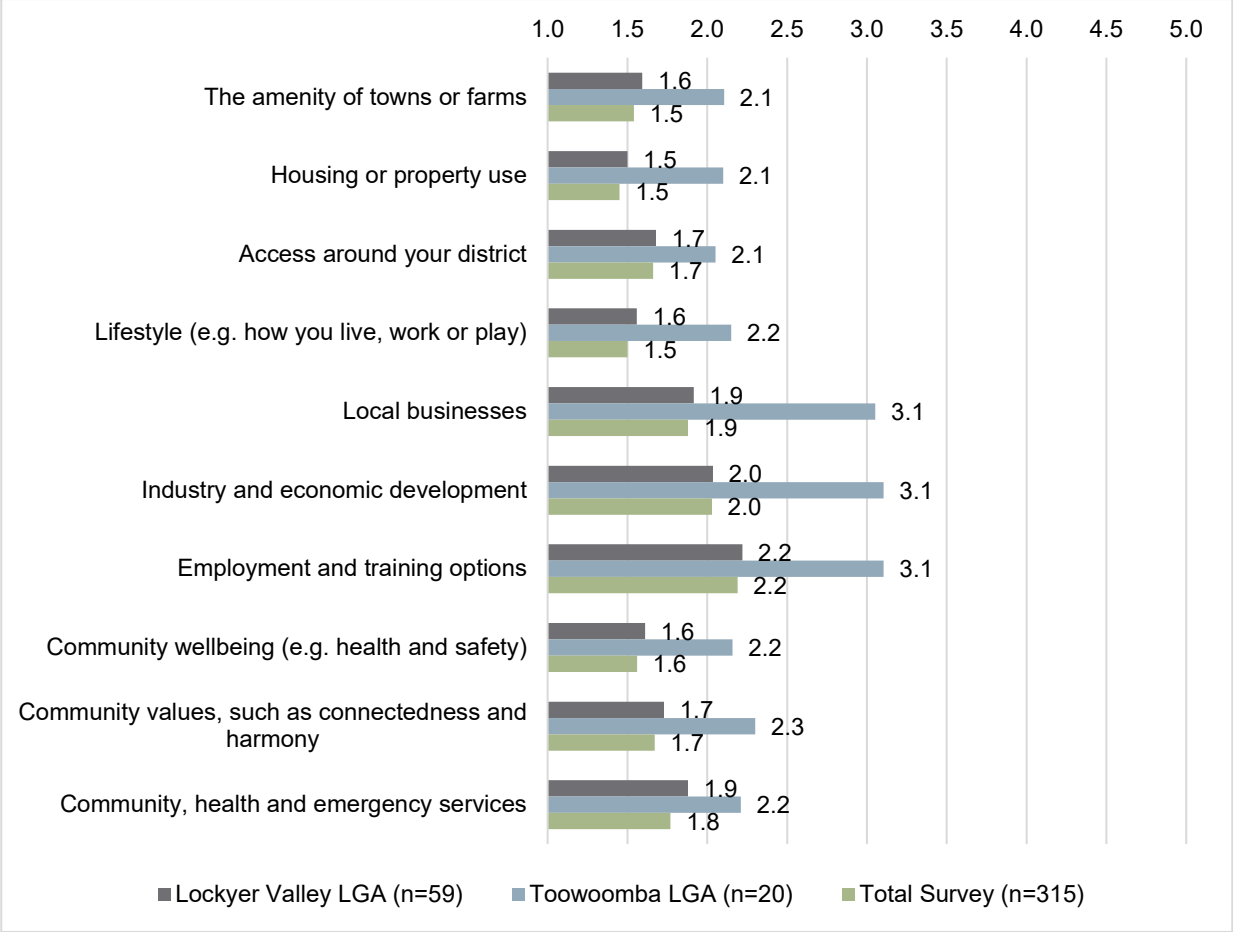


Figure 4.3 Survey respondents' views on social impacts and benefits

Comments expressing concern about Project impacts included:

- "Splitting up and resuming land from farmers can only be disruptive and detrimental on many levels"
- "Agricultural land should be off limits"
- "Obviously it will vary from town to town, but any high embankments or pylons will likely be considered negative for the scenic amenity"
- "I feel it takes away from the lifestyle out here. It is such a beautiful peaceful place and this could really affect the way our area is viewed. Which in turn could affect tourism, housing prices, desire for people to make the move out here"
- ""I think it may scare off a lot of wildlife that currently comes through our community"
- "There is no benefit to the community. No jobs. Doesn't assist local businesses or farmers. Will increase the flood risk. Will disadvantage property owners along the Investigation Corridor. Devalues properties"
- "Dividing the community between those who are directly impacted and those who are adjacent. In proposing or making changes to location/ design may minimise impacts on an individual/ group of residents but upset others"
- "Whilst the intent is for direct rail access for freight cargo/manufacturing products, there is a risk that it will be used for coal trains and adversely impact on the adjacent properties and farmland "
- "If the Inland Rail goes ahead through towns that completely destroys the chance of passenger rail in the future which is what the corridor was originally set aside for."

4.4 Scope of impacts and benefits considered

Table 4.4 summarises the scope of potential impacts and benefits to be assessed in the SIA in accordance with the ToR and SIA Guideline requirements outlined in Section 2, and considering:

- Stakeholder inputs on potential impacts and benefits
- The characteristics and values of potentially impacted communities
- Key elements and operational processes which may impact on social values
- Workforce estimates and the likely origin of personnel.

Table 4.4 Potential social impacts and benefits

Potential impacts/benefits	Social Impact Assessment Section
Community values	
Impacts on Indigenous values or native title	7.1.1
Effects of land acquisition on landowners, farms, and communities	7.1.2, 7.1.6, 7.5.1
Effects of construction noise and/or dust on amenity and community health	7.1.37.4.7
Effects on rail operational noise on amenity or health	7.1.4, 7.4.7
Effects on the character of local towns and rural residential areas	7.1.5
Loss of community cohesion	7.1.6
Potential to exacerbate social disadvantage	7.1.7
Impacts on connectivity near the Project and within local communities	7.1.8
Potential to increase flooding risk	7.1.9
Changes to population size or characteristics	7.1.10
Employment	
Potential for employment during Project construction	7.2.1
Availability of skills and labour for construction and operation	7.2.2
Benefits of Project training and development	7.2.3
Impacts on employment in other industries	7.2.4
Potential for workforce behaviour to impact on community values	7.2.5
Housing and accommodation	
Potential to change the settlement pattern of communities or the Project region	7.3.1
Potential for impacts on housing access or costs	7.3.2
Potential for decrease in property values	7.3.3
Potential demands for short-term accommodation	7.3.4
Community health and wellbeing	
Impacts on schools, community, and recreational facilities	7.4.1, 7.4.2, 7.4.5
Impacts on health facilities or services	7.4.3
Increased demands for police and emergency services	7.4.4
Impacts on access to natural resources	7.4.6
Changes to environmental conditions such as air quality which could affect human health	7.4.7

Potential impacts/benefits	Social Impact Assessment Section
Stress and anxiety related to the Project, and impacts on mental health	7.1.2, 7.4.8
The risk of suicide	7.4.9
Community safety, including traffic safety	7.4.10
Business and industry	
Impacts on farms and agribusinesses	7.5.1
Impacts on other local businesses	7.5.2
Impacts on tourism, including effects on scenic amenity and local character	7.5.3
Potential for local and regional business to benefit from supply opportunities	7.5.4
Facilitation of regional economic development	7.5.5

5 Social Environment

This section describes the social environment in the SIA study area, including local and regional communities, community values, demographic characteristic, housing, social infrastructure, employment and businesses.

The key sources drawn upon include:

- National Native Title Tribunal (NNTT) National Native Title Register
- Community and regional plans which apply to the Project region
- Primary data collected through stakeholder engagement including the SIA community survey results, engagement with Councils, and meetings and workshops with stakeholders
- LVRC and TRC reports, webpages and plans
- ABS Census of Population and Housing (2016) data on population size, characteristics and distribution, housing, workforce characteristics, building approvals and tourist accommodation, using Community Profiles, TableBuilder and various occasional ABS datasets
- Queensland Government Statistician's Office's population projections and regional profiles
- Commonwealth Department of Education, Skills and Employment Small Area Labour Market data on unemployment
- Department of Education data on childcare and education provision
- Queensland Health information on health and hospital service provisions and aged care
- My Community Directory (a web-based directory providing information on community services and facilities)
- Mental Health Council Australia sources on mental health
- The Australian Medical Association (AMA) Report Card on Indigenous health
- Population Health Information Forecasting Unit data on community health
- Queensland Police Service data on offences
- DTMR crash data as presented in EIS Appendix U: Traffic impact assessment and Australian Transport Safety Bureau
- data on skills shortages from the then named Department of Employment Skills Small Family Business (DESSFB) (now part of the Department of Education, Skills and Employment)
- AIGroup's 2018 Workforce Development Needs Survey data on recruitment difficulties
- SQM Research and Real Estate Institute of Queensland data on housing prices, rental costs and rental vacancies
- Various research sources as referenced.

5.1 Settlement pattern

5.1.1 Indigenous connections

The Yuggera Ugarapul People and the Western Wakka Wakka People are connected to land on which the Project would be constructed and operated.

The Yuggera Ugarapul People have a registered native title claim (NNTT file number QC2017/005) over the eastern part of the EIS investigation corridor, from approximately Ch 17.0 km to Ch 26.0 km, which includes the localities of Lockyer, Postmans Ridge, Withcott, Helidon and Helidon Spa. The Yuggera Ugarapul People have an active native title claim QC2017/005 which has been accepted for registration but as of January 2021, the claim has not yet been determined by the courts.

The Western Wakka Wakka People have previously had a native title claim over areas in the western part of the EIS investigation corridor, however this claim is no longer registered.

5.1.2 Regional communities

5.1.2.1 Toowoomba LGA

Toowoomba LGA is the gateway to the productive Darling Downs region. Located on the Great Dividing Range, it is surrounded by Lockyer Valley and Somerset LGAs to the east, Southern Downs (south), and South Burnett LGAs to the north, Western Downs LGA to the north and west, and Goondiwindi LGA to the south. As the main administrative and regional centre for the northern and eastern Darling Downs, Toowoomba is an emerging logistics hub and inland port.

Toowoomba LGA is located at the westernmost extent of the ShapingSEQ planning area, with a mixture of urban, semi-urban and rural land uses. Toowoomba city is identified in the ShapingSEQ as 'urban footprint' (Queensland Government, 2018d). All large towns near Toowoomba are identified as Priority Living Areas and the surrounds as Regional Landscape and Rural Production Areas under the *Regional Planning Interests Act 2014*.

Toowoomba LGA is also within the Darling Downs Regional Plan area. The Darling Downs Regional Plan is discussed in Section 2.4.3.

Toowoomba was founded in the mid-19th century and was named in 1860. The region grew quickly with the establishment of new farm holdings at Drayton and the establishment of a range crossing. The rail connection to Ipswich was completed in 1867 and other connections to the outlying townships followed, including a branch line to Millmerran in 1885. The Warrego Highway creates a range crossing that links Brisbane to the inland regional centre of Charleville. The Toowoomba Bypass has been completed, alleviating congestion caused by freight haulage by road through the city centre.

The Toowoomba LGA is extensive at approximately 12,957 square kilometres (km^2). Toowoomba city is the regional commercial centre, which together with the larger towns such as Oakey, Pittsworth, Yarraman Highfields, Crows Nest, Clifton, Greenmount and Millmerran, support the needs of the region's population of over 160,000 people (Toowoomba Regional Council, 2014a). The region's temperate climate and rich soils have supported an agriculturally based economy that has enabled Toowoomba to become the second largest inland city in Australia. The education and training industry has shown strong growth for the region in the last decade, particularly focussed on international students and research in the region's growth industries of fibres, energy, construction and agriculture (Queensland Government, 2017a).

After the destruction caused by the 2010/11 floods, the region is focussed on building resilient infrastructure to preserve life in the community (Queensland Government, 2017a).

5.1.2.2 Lockyer Valley LGA

The Lockyer Valley LGA covers an area of approximately 2,200 km^2 and was formed through the amalgamation of the Gatton and Laidley LGAs in 2008. The LGA is located around the Warrego Highway, one hour west of Brisbane and 20 minutes east of Toowoomba. The Lockyer Valley LGA is surrounded by Southern Downs to the south, Somerset to the north, Toowoomba to the west and Ipswich and Scenic Rim to the east.

Pastoralists settled the area in the 1820s and in the 1870s, German and Prussian settlers arrived and brought their farming skills to the region. In 1866 the rail line from Ipswich (enroute to Toowoomba) reached

Gatton. The region's agricultural college has been open since 1897 (Centre for the Government of Queensland, 2018). Irrigation enterprises flourished in the 1930s with the introduction of reticulated electricity. Agriculture, forestry, farming, transport and small business are still the main industries of employment. Regional farm work attracts backpacker, refugee and migrant labourers, giving the region a fluctuating cultural profile.

Gatton is the commercial centre of the region, with larger towns such as Laidley, Grantham and Helidon with smaller villages of Withcott, Murphys Creek, Plainland and Forest Hill. The region's deep alluvial soil, climate and good quality water has earned the nickname "Australia's salad bowl" that represents 12-14 per cent of Queensland's agricultural economy (Lockyer Valley Growers, 2018).

The crops grown in the region include carrots, potatoes, cabbage, broccoli, cauliflower, pumpkins, corns and beans as well as some exotic vegetables. The region's population is predicted to grow at 3 per cent and the regional council recognises the challenge of supporting this growth and residential pressure (LVRC, 2017b). The valley is dissected by creeks that enter the Brisbane River near the village of Lowood.

The 2011 flood affected the region deeply with the loss of life, homes and businesses throughout the valley and the LVRC and local communities have had a clear focus on building resilience to flooding.

5.1.3 Potentially impacted communities

The Project avoids urban centres, with the exception of Gowrie Junction, however it passes through several rural localities and close by urban settlements, as described below.

5.1.3.1 Kingsthorpe

Kingsthorpe is located approximately 2.5 km north-east of the connection between B2G and the Project and is approximately 16 km northwest of Toowoomba. Kingsthorpe was initially settled as the Gowrie pastoral run, with township settlement following the extension of the western railway from the 1870s (Centre for the Government of Queensland, 2018). The township and surrounds are bounded by Dry Creek to the south and Westbrook Creek to the south-west, and the Western Line to the south and are dissected by the Warrego Highway and Gowrie Creek.

The Toowoomba Regional Planning Scheme classifies the locality into Township, Rural Residential, Community and Sports and Recreational zones with the surrounding area zoned Rural, with some limited Community Facilities (Toowoomba Regional Council, 2018).

Land use within Kingsthorpe township is primarily residential and rural residential, offering village and rural living, with easy access to the Warrego Highway. Two wineries and a number of scenic outlook sites are located around Kingsthorpe. Extensive cropping areas are also located around Kingsthorpe, including the Leslie Research Facility Kingsthorpe Field Station.

Features near the Project include:

- Mt Kingsthorpe Walk and Mount Kingsthorpe Bushland Park, Emmanulla Drive approximately 1.5 km north of Ch 2.0 km
- Access corridor for the Wetalla water pipeline from Toowoomba to New Acland Mine.

5.1.3.2 Charlton

The Project commences in the rural locality of Charlton which is located 13 km west of the Toowoomba city centre and is bounded by Dry Creek to the south, the QR West Moreton System (Western Line) to the north. Charlton is dissected by the Warrego Highway and the Toowoomba Bypass. The land uses include cropping, irrigated cropping, grazing native vegetation, rural residential, industrial and services.

Charlton includes both Urban Footprint (either side of Omara Road) and Regional Landscape and Rural Production areas under the ShapingSEQ (Queensland Government, 2017b). The Project traverses the Eastern Darling Downs Important Agricultural Area (IAA) which supports some of Queensland's best

cropping lands (refer EIS Chapter 8: Land use and tenure). ShapingSEQ classifies the area east of Gowrie Mountain as a Priority Agricultural Area, while the plains to the west of Omara Road (south of the Warrego Highway) and the east of the Toowoomba Bypass are noted as Strategic Cropping Land under the *Regional Planning Interests Act 2014* (RPI Act). The eastern side of Gowrie Mountain is considered to have regional biodiversity value as have some parcels adjacent to Krienkes Road.

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

Features within 1 to 2 km of the Project alignment include a heavy haulage company and horticulture businesses on Leesons Road around Ch 1.5 km.

5.1.3.3 Gowrie Junction

The Project traverses Gowrie Junction (incorporating Gowrie), south of the main urban area. Gowrie Junction is located approximately 2.5 km north of Toowoomba's urban fringe, separated from the urban area by Gowrie Creek and the Western Line, and is approximately 6 km from the city centre. A branch railway line (the Western Line) running west from Toowoomba to the southern Downs opened in 1869, leading to the development of the township. A State primary school was established in 1878 and by the early 1900s the town included a post office, a stone-crushing plant, a store and a hotel (Centre for the Government of Queensland, 2018).

Land use in this area are largely low density residential, in a semirural setting of dryland production and native vegetation grazing. The southern portion of the locality is described as Regional Landscape and Rural Production in the South East Queensland Regional Plan 2017 (Queensland Government, 2018d). The areas adjacent to Gowrie Creek and its tributaries are designated Strategic Cropping Land under the RPI Act.

Under the Toowoomba Regional Planning Scheme, the Gowrie area includes Residential, Rural and Community Facilities zones. Areas to the north of Gowrie Birnam Road are zoned Township and earmarked for future urban residential land supply in the next 10+ years.

Features near the Project include:

- The Gowrie Junction urban area approximately 400 m north of the Project between Ch 0.0 km and Ch 3.0 km, and including the Gowrie State School, Gowrie Junction Progress Hall and Gowrie One Stop Convenience Centre (retail, takeaway food and fuel sales)
- Gowrie Landscaping Supplies, approximately 200 m south near Ch 2.0 km
- Boundary Street intersection with the Toowoomba Bypass near Ch 4.0 km and where the eastern tunnel portal is located.

5.1.3.4 Cranley

The Project would be in tunnel through the rural locality of Cranley, with the intermediate ventilation shaft located approximately 1 km to the north of the nearest homes. Cranley is located 6 km northwest of the Toowoomba town centre and is bounded by Gowrie Creek to the north, Ganzer Road to the south and Boundary Street to the west, and dissected by the QR West Moreton System (Western Line) rail corridor and the Toowoomba Bypass. European settlement increased in the Cranley area following the establishment of a railway station on the rail line from Toowoomba to Warwick in the 1870s and was largely based on farming.

The suburb of Cranley now accommodates a diverse range of land uses, including very low-density rural residential, small farms, grazing and waste treatment and disposal and conservation zones. The Toowoomba Regional Planning Scheme identifies these areas as Rural and Community Facilities zones with limited Rural Residential and High Impact Industry zones. Areas to the south of Hermitage Road are zoned

Township, and earmarked for urban residential land supply in 5 -10+ years, with an area near Sanctuary Drive in 1-2 years.

Features near the Project include:

- Baillie Henderson Hospital, a heritage listed psychiatric hospital constructed during the late 1880s on a 133 hectare site (Queensland Government, 2018a) approximately 1 km south of the Project near the intermediate ventilation shaft and building near Ch 6.8 km. Queensland Health is planning to redevelop the site as the new Toowoomba Hospital.
- Toowoomba Horse Riding for the Disabled Association Inc. based on a reserve adjacent to the tunnel near Ch 7.5 km on Goombungee Road, Cranley
- Cranley Escarpment, a remnant bushland reserve with hiking trails approximately 1.2 km southwest near Ch 5.0 km
- Darling Downs Field Archers Inc (recreational facility) at Willems Road, Cranley approximately 1 km north of Ch 6.0 km
- Toowoomba Waste Management Centre (landfill for commercial customers only) approximately 300 m south of Ch 6.0 km
- Teen Challenge Care Queensland (a not for profit addiction treatment service) on Bedford Road, Cranley within the EIS Investigation Corridor near Ch. 5.5 km
- Palm Lake Resort Toowoomba and the proposed Pinnacle Country Club retirement living (which would add 322 new homes to the current 221 homes) approximately 1 km south of Ch 6.0 km
- Wetalla Water Reclamation (Sewage Treatment Plant) Facility approximately 650 m north of Ch 6.5 km
- Birdsong Market Garden (organic farm) on Boundary Street farm gate sales approximately 500 m south of Ch 4.5 km
- Our Bird Pty Ltd feed manufacturer on Hermitage Road approximately 460 m south of Ch 7.0 km
- CJ Nutricon Manufacturer of beef and beef bone stock is approximately 400 m south of Ch 7.0 km
- The Roma Brisbane Gas Pipeline (Petroleum pipeline licence 2 (PPL2) lies within the corridor of Ganzer and Hermitage Roads.

5.1.3.5 Cotswold Hills

The Project would enter the Toowoomba Range tunnel at approximately 1 km north of the locality of Cotswold Hills at Ch 4.1 km and would continue in tunnel in an easterly direction from there. Cotswold Hills is a rural residential community located on the urban fringe of Toowoomba City, approximately 6.6 km northwest of the Toowoomba town centre. It is bounded by Gowrie Junction Road to the west, Hermitage Road to the north, Boundary Street to the east and the Warrego Highway to the south. Cotswold Hills joins Wilsonton to the east and Cranley to the west. Cotswold Hills was settled by Europeans for pastoral purposes, and over time developed as a rural residential area with homes on large lots. The suburb was in the former Jondaryan Shire, but has been part of Toowoomba Regional Council since 2008. Cotswold Hills is largely residential and forms part of the Toowoomba metropolitan area, Cotswold Hills is designated as a Rural Residential zone in the Toowoomba Regional Planning Scheme.

Features near the Project include:

- John Trousdell Memorial Park approximately 1.7 km south at approximately Ch 2.4 km
- Kooringa Valley Park approximately 1.2 km south at approximately Ch 4.0 km.

5.1.3.6 Wilsonton Heights

The Project passes in tunnel north of Wilsonton Heights, with the intermediate ventilation shaft located approximately 1.7 km north of the suburb at Ch 6.6 km. Wilsonton Heights is situated about 3.8 km north west of the Toowoomba town centre and is an urban suburb within Toowoomba City, bounded by Greenwattle Street to the west, Hogg Street to the north, Tor Street to the east and North Street to the south. The Wilsonton area developed as a farming area during the late 1890s and has subsequently subdivided following World War II (Centre for Queensland Government 2018). Under the Toowoomba Regional Planning Scheme Wilsonton Heights' main zoning designation is Low Density Residential zone, however it also includes Community Facility and Specialised Centre (Government Research Facility) zones.

Features near the Project include:

- CSIRO research facility and Queensland State Government precinct approximately 2.5 km south of the intermediate ventilation shaft at Ch 6.6 km
- Wilsonton State High School approximately 2.6 km south near Ch 6.0 km
- Heights Community Centre approximately 2 km south near Ch 7.0 km
- Toowoomba Australian Football Club at Tor Street, approximately 2.7 km south near Ch 7.0 km
- The Wilsonton shopping, services and commercial centre approximately 3.4 km south near Ch 6.5 km
- A range of parks and reserves located within 2-3 km south between Ch 6.0 and Ch 7.0 km.

5.1.3.7 Rockville

The Project passes in tunnel approximately 1.5 km north of the urban suburb of Rockville. Rockville lies to the east of Wilsonton Heights and is located approximately 2.7 km north west of the Toowoomba town centre. Rockville was developed as a farming area in the late 1800s with the township developing in the early part of the century and the Rockville primary school opening in 1922. Rockville developed over time to become an inner western suburb of Toowoomba, and is bounded by Tor Street to the west, Hogg Street to the north, Mort Street to the east and Oakleigh Street to the south. Under the Toowoomba Regional Planning Scheme Rockville is primarily designated as a Low-Medium Density Residential zone.

Features near the Project (where it is in tunnel) include:

- Department of Agriculture and Fisheries, Leslie Research Centre at Holberton Street approximately 2.5 km south at Ch 7.4 km
- St. Andrews Hospital, approximately 3 km south near Ch 7.0 km
- Rockville State School, approximately 1.7 km south near Ch 7.5 km
- The Northridge Haven and Northridge Salem Aged Care on Holberton St, Rockville at approximately 2.5 km south near Ch 7.5 km.

5.1.3.8 Harlaxton

The Project passes in tunnel through the eastern slopes of the Great Dividing Range approximately 600 m north of the nearest homes in Harlaxton. Harlaxton is an urban suburb located 3 km north of the Toowoomba town centre and is bounded by Mort Street, Gowrie Creek and the Willowburn Rail Yard to the west, the Toowoomba Bypass to the north, Stuart Street to the east and North Street to the south. It is dissected by the Western Line and Main Line corridors and the New England Highway, a major north-south highway connecting NSW and Central Queensland. Harlaxton was the site of the summer residence of the Queensland Governor, Harlaxton House, which was constructed around 1870. The Harlaxton primary school was constructed in 1901 (Centre for Queensland Government, 2018). Under the Toowoomba Regional Planning Scheme Harlaxton is primarily designated as a Low-Medium Density Residential zone. Predominant land uses include residential areas, grazing land and conservation and natural environments.

Features near the Project (where it is in tunnel) include:

- Willowburn Rail Yard on the West Moreton System, approximately 2.2 km south near Ch 8.5 km
- Harlaxton Quarry, approximately 1 km south near Ch 10.0 km
- Harlaxton Community Hall and Harlaxton Neighbourhood Centre approximately 700 - 900 m south near Ch 9.5 km
- Harlaxton Bocks Park approximately 600 m south near Ch 9.0 km and Harlaxton Park approximately 800 m south near Ch. 9.5 km
- Harlaxton State School, approximately 2.3 km south near Ch 9.5 km
- Downlands College at Kate Street, approximately 1.6 km south near Ch 10.0 km.

5.1.3.9 Mount Kynoch

The Project would be in tunnel through the rural locality of Mount Kynoch, which is located approximately 10 km north of the Toowoomba city centre, to the north of the suburb of Harlaxton, and east of Goombungee Road. Mount Kynoch is dissected by the New England Highway and bounded to the south by the Toowoomba Bypass. Mount Kynoch lies east of the boundary between Toowoomba and Lockyer Valley LGAs.

Under the Toowoomba Regional Planning Scheme, Mount Kynoch includes Rural Residential, Rural (Grazing) and Emerging Community Areas, Community Facilities and Limited Development zones (constrained land). Areas to the west of the New England Highway are earmarked for urban residential land supply in 0-10 years, including an area nominated for 1-2 years north of Ch 8.0 km.

Features near the Project (where it is in tunnel) include:

- A residential neighbourhood bounded by Westview Drive and the New England Highway located adjacent to the alignment near Ch 9.0 km
- The Mount Kynoch Water Treatment Plant (Shuttlewood Court) located 750 m north of Ch 9.0 km
- The PPL2 crossing near Ch 8.0 km
- Mount Kynoch Park, 650 m north at Ch 9.0 km
- Toowoomba Bypass and New England Highway near Ch 9.0 km.

5.1.3.10 Ballard

The Project is within tunnel through the locality of Ballard.. Ballard is a rural locality with no population centre and lies west of the boundary between the Toowoomba LGA and Lockyer Valley LGA, 11 km east of the Toowoomba city centre. The locality is named for Robert Ballard, a railway engineer who oversaw the construction of part of the Ipswich–Toowoomba railway (Centre for the Government of Queensland, 2018). Ballard is dissected by Oaky and Rocky Creeks and the Toowoomba Bypass.

Predominant land uses include grazing and natural environments with limited quarry, cropping and residential areas (Queensland Government, 2018d). The Gatton Shire Planning Scheme designates the area as Rural Uplands with some land adjoining Rocky Creek and Oaky Creek zoned Rural Agricultural (Lockyer Valley Regional Council, 2007).

Features near the Project include:

- The heritage listed Main Line and Swansons Rail Bridge, approximately 1 km north of Ch 10.0 km
- An agricultural/transport enterprise approximately 580 m north of Ch 11.0 km.

5.1.3.11 Blue Mountain Heights

Blue Mountain Heights is a suburb established during the mid-1970s and named after a hotel in the area known as Blue Mountains Estate (Centre for the Government of Queensland, 2018). Blue Mountain Heights is located on the eastern boundary of the Toowoomba LGA, on the New England Highway approximately 7 km north of the city centre and is approximately 1 km northeast of the Project.

Land use in Blue Mountain Heights is predominantly low density residential and community purposes, with grazing areas surrounding the urban area. The Toowoomba Regional Planning Scheme (Toowoomba Regional Council, 2018) designates the locality as Rural Residential, Rural and Low Density Residential Zones, with some Community Facilities. With the exception of local parks and businesses within the residential area, there are no features of particular note.

5.1.3.12 Mount Lofty

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

Features near the Project include:

- Mount Lofty Heights Nursing Home and Infinite Aged Care approximately 2.4 km south of the Project disturbance footprint near Ch 10.5 km
- Toowoomba State High School at approximately 2.7 km south of the Project disturbance footprint near Ch 10.5 km
- Mount Lofty Lookout and Boyce Gardens approximately 2.6 km south of the alignment at Ch 10.7 km
- Jubilee Park approximately 2 km south between Ch 10.8 km and Ch 13.0 km.

5.1.3.13 Withcott

The Project traverses Withcott, approximately 3 km north of the rural residential area, with the township approximately 2 km south of the Project (near Ch 15.0 km). Withcott township is located on the Warrego Highway, 10 km east of Toowoomba at the bottom of the Toowoomba Range. The surrounding area is dissected by Six Mile Creek and Rocky Creek tributaries of Lockyer Creek. Pastoral settlement occurred from the late 1870s, including dairying and mixed farming, followed by the Withcott Post Office around 1905, and a primary school in 1912. Rural depopulation from the decline of dairying led to closure of the school in 1976, but due to community advocacy, a new school opened in 1984.

Predominant land uses include rural residential, community purposes and recreation, cropping, grazing and natural environments, with limited quarry and industrial areas. Land within this locality, designated under the Gatton Shire Planning Scheme (2007), includes Urban and Rural Residential, a Rural Agricultural Zone adjoining Rocky Creek, Emerging Communities, Industrial Uses, Open Space and Recreation zones (Gatton Shire Council, 2007).

Areas to the north of the Warrego Highway are earmarked for Rural Residential land supply in 5-10 years.

Features near the Project include:

- The Toowoomba Bypass traverses the northern section of the locality in an east west direction
- The National Heritage Bicentennial Trail, associated with Gittins Road, intersects the Project in a predominantly north south direction
- Withcott Aquatic Centre approximately 1.2 km south of Ch 21.0 km.

5.1.3.14 Lockyer

The Project traverses rural and rural residential land in Lockyer, which is approximately 10 km east of the Toowoomba city centre and is bounded by Lockyer Creek to its west. The Toowoomba Bypass intersects the south east corner of the locality, with the Project paralleling the Toowoomba Bypass (to the north) at this location. Land use in Lockyer is predominantly grazing and natural areas, with isolated rural residential settlement. The Gatton Shire Planning Scheme (2007) designates the area as Rural Uplands, Rural Agricultural, Rural General, and Rural Residential (Gatton Shire Council, 2007). Murphys Creek Road which is the main access point to Murphys Creek passes through this locality.

A small residential neighbourhood (Rossiters Road/Squires Road) is located approximately 250 m north of the proposed rail alignment near Ch 22.0 km. Lockyer Creek and QR West Moreton System rail corridor intersect this locality in a north south direction.

Postmans Ridge

Postmans Ridge is a locality in the Lockyer Valley LGA, approximately 12 km east of the Toowoomba city centre, and is generally bounded by Six Mile Creek and Toowoomba Bypass to the north and the Warrego Highway to the south. The predominant land uses include rural residential, grazing and natural environments with small areas of irrigated and dryland cropping and limited industrial areas. The Gatton Shire Planning Scheme (2007) designates the area as Rural Uplands, Rural Agricultural zone adjoining Rocky Creek and Six Mile Creek, Rural General, Rural Residential, and Emerging Communities zones (Gatton Shire Council, 2007).

Features near the Project include:

- Toowoomba Bypass which traverses this locality in an east west direction
- The National Heritage Bicentennial Trail, associated with Gittins Road, runs along the boundary of this locality in a predominantly north south direction
- Withcott Seedlings on Postmans Ridge Road, a major supplier of vegetable seedlings to the east coast of Australia established in 1983 (The Land, 2018) through which the Project passes between Ch 23.0 km and Ch 24.0 km
- Postmans Ridge Pioneer Memorial Hall approximately 1.3 km south near Ch 21.0 km.

5.1.3.15 Murphys Creek

Murphys Creek is a locality in the Lockyer Valley LGA approximately 18 kms east of Toowoomba. Murphys Creek runs through the suburb which is bounded by Ballard and Highfields to the west, and by several sparsely populated rural localities to the north and east. The predominant land uses include rural residential, grazing and natural environments with small areas of cropping. The Gatton Shire Planning Scheme (2007) designates Rural Agricultural, Village and Open Space and Recreation zones within Murphys Creek (Gatton Shire Council, 2007).

Features in Murphys Creek include:

- Murphy's Creek Escape, a camping ground
- Murphys Creek Railway Complex
- Murphys Creek Town Centre.

5.1.3.16 Helidon Spa

The Project traverses rural land in Helidon Spa, within 100 m of homes to the south. Helidon Spa is a locality adjacent to the township of Helidon bounded by Lockyer Creek and Monkey Water Holes Creek and dissected by the Warrego Highway. Toowoomba Bypass also commences in this locality. Predominant land uses include residential and natural environments, grazing, and limited irrigated cropping and land in transition and limited industrial areas. The Gatton Shire Planning Scheme designates the area within and

surrounding the Project as Rural Agricultural (adjoining creek lines), Rural General and Rural Residential zones (Gatton Shire Council, 2007).

Features near the Project include:

- Intersection with the Roma Brisbane Gas Pipeline (PPL2) at Ch 24.5 km
- Toowoomba and Lockyer Valley Kart Club with the Project traversing the north east corner of the property, a membership-based go-kart racing club
- Helidon Natural Springs Spa Resort/Caravan Park, providing affordable accommodation, and located approximately 1.5 km south of Ch 25.0 km.
- Lockyer Motel and Golf Course approximately 1.5 km south of Ch 26.0 km
- The Project traverses Lockyer Creek at this location.

5.1.3.17 Helidon

Helidon township is located 18 km east of Toowoomba and is bounded by Lockyer Creek to the south and west and Lockyer National Park and State Forest to the north. The locality is dissected by the Warrego Highway. Helidon has an artesian water spa and is known for export quality sandstone used in Queensland's historic buildings and cemetery monuments (Lockyer Valley Regional Council, 2017b). The Project end point is approximately 2.4 km to the north west of Helidon.

Predominant land uses include residential, grazing and natural environments with limited industrial areas, including transport businesses. The Gatton Shire Planning Scheme (Gatton Shire Council, 2007) designates the area within and surrounding the Project as Rural Agricultural (adjoining creek lines) Rural General, Industrial and Community Facilities, Rural and Urban Residential zones, with a defined Commercial zone. Areas to the south of the Project (in Helidon Spa south of Lockyer Creek) are earmarked for urban residential land supply in 2-10 years.

Features near the Project include:

- QR West Moreton System (Main Line) – the Project is co-located (to the north) with the Main Line for approximately 800 m east of Lockyer Creek
- Helidon magazine reserve (a Queensland government explosives reserve) which is a centralised, secure storage depot for explosives) at Air Force Road, approximately 1.4 km north of Ch 25.0 km
- Helidon Cricket Club and Tennis Club at Progress Park at approximately 230 m south east from Ch 26.2 km
- Roma Brisbane Gas Pipeline (PPL2)
- The Project traverses Lockyer Creek at this location.

The Helidon and District Community Hall is located within Helidon approximately 1.2 km south of the H2C project.

5.2 Community profile

This section describes the key demographic features of the ASGS Statistical Area 1 (SA1s) that interface with the EIS investigation corridor, potentially impacted communities and the Project region.

5.2.1 EIS investigation corridor

Figure 5.1 shows the ASGS Statistical Area 1 (SA1s) that interface with the Project disturbance footprint or are within approximately 1 km of the Project (i.e. generally within the EIS investigation corridor).

The SA1s represented cover a total area of 216.75 km^2, with most located within the Toowoomba LGA and the balance in the Lockyer Valley LGA.

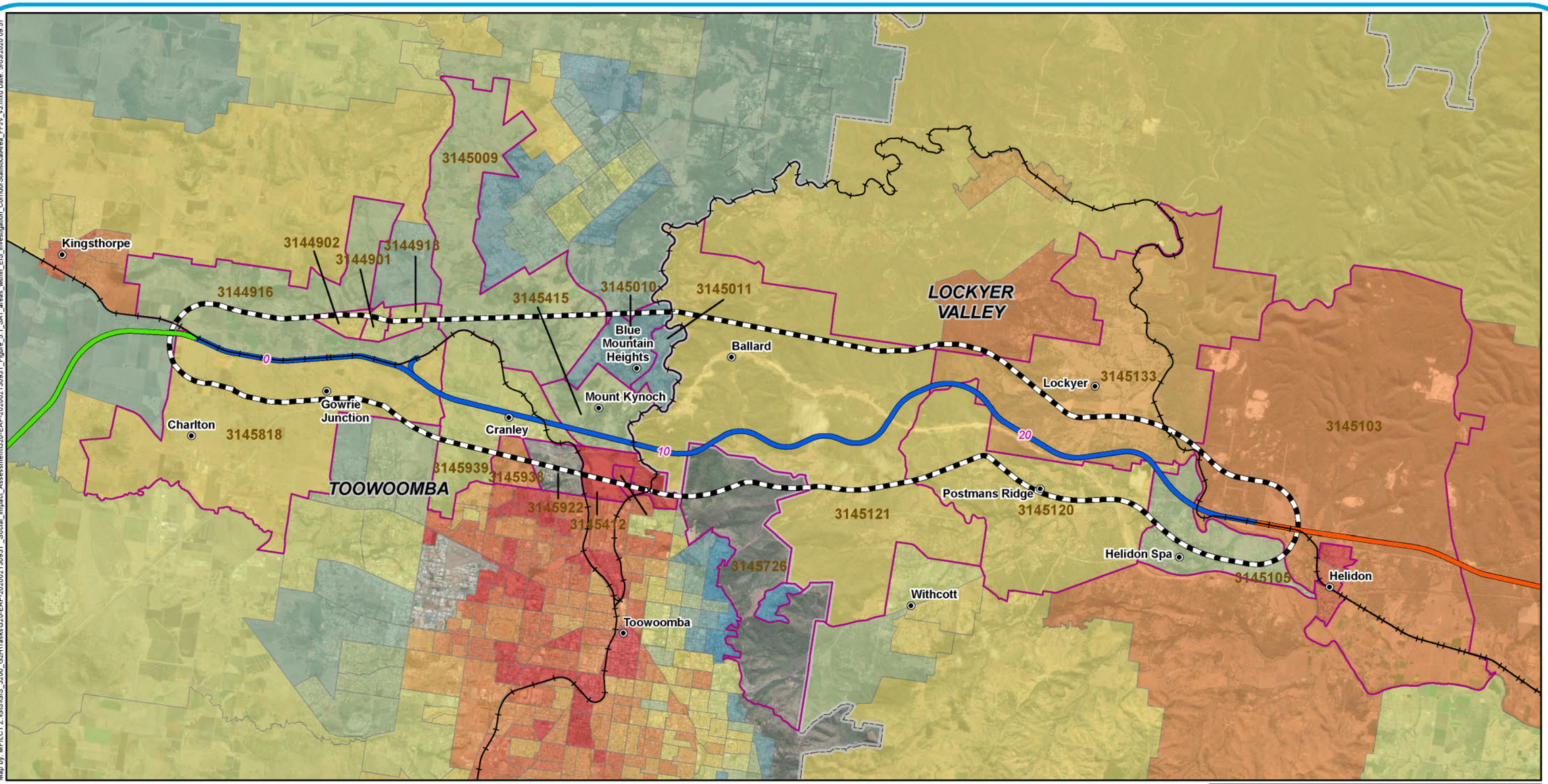
Key characteristics of the SA1s are shown in Table 5.1. At the 2016 Census (ABS 2016b), there were approximately 2,605 dwellings and 6,701 people within the SA1s. Since Census 2011, the combined population of the SA1s had increased by 1,612 people (approximately 23 per cent), with most growth occurring in the Toowoomba LGA, principally in the regional centre of Toowoomba.

Six of the SA1s had a population density less than 20 people per km^2, including three with a density less than ten people per km^2. In the balance of the SA1s, while the population size varies, densities were more typically that of urban areas.

The Socio-Economic Index for Areas (SEIFA) is an area-based index that gauges relative advantage and disadvantage between communities using data generated by the ABS Census of Population and Housing. The SIA has referred to two of the SEIFA indices: The Index for Relative Socio-economic Advantage and Disadvantage (IRSAD) and the Index of Education and Occupation (IEO).

Analysis of IRSAD scores for the 20 SA1s indicates that five SA1s fall within the 40 per cent most disadvantaged SA1s in Queensland (scoring in the bottom 4 deciles). These SA2s correspond to areas within the northern suburbs of Toowoomba, Lockyer, Helidon and Helidon Spa. Seven communities are neither particularly advantaged nor disadvantaged (scoring in the middle deciles 5 and 6), while six communities enjoy relative advantage, falling within the 40 per cent most advantaged communities (scoring in deciles 7 to 10). Two deciles have no score.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



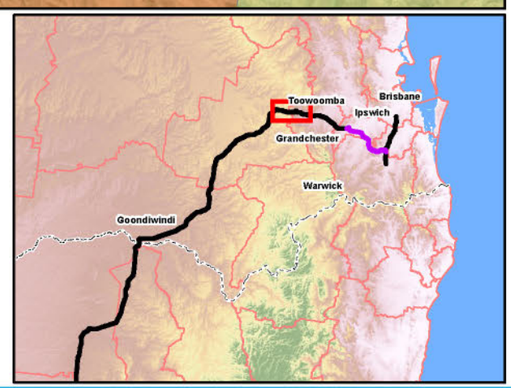
Legend

- 5 Chainage (km)
- Localities
- Existing rail
- B2G project alignment
- G2H project alignment
- H2C project alignment

SEIFA IRSAD Score

- Decile 1 (most disadvantaged)
- Decile 2
- Decile 3
- Decile 4
- Decile 5
- Decile 6
- Decile 7
- Decile 8
- Decile 9
- Decile 10 (most advantaged)

- Local Government Areas
- SA1 boundary
- EIS investigation corridor



A3 scale: 1:100,000

0 0.75 1.5 2.25 3 3.75km

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Gowrie to Helidon
Figure 5.1: SA1 areas within the EIS investigation corridor

Considering the IEO, only three SA1s are constrained in terms of educational attainment or ability to access skilled work, falling within the 40 per cent most disadvantaged SA1s in Queensland (scoring in deciles 1 to 4). Two are neither particularly advantaged nor disadvantaged (scoring in the middle deciles 5 and 6), and thirteen enjoy relative advantage in the IEO, falling in the 40 per cent most advantaged communities (scoring in 7 to 10). Two deciles have no score.

Table 5.1 SA1 Characteristics in the EIS investigation corridor

SA1	Area (km)	Population (2011)	Population (2016)	Population density (persons/km^2)	No. dwellings	SEIFA IRSAD		Index of Education and Occupation (IEO)	
						Score	Decile	Score	Decile
3144916	13.19	ND	636	48.21	226	1,041	7	1,107	9
3145818	22.23	320	240	10.80	95	994	5	1,054	7
3144902	0.61	275	256	417.62	89	991	5	1,083	8
3144901	0.44	275	295	673.98	99	1,009	6	1,074	8
3144913	0.57	240	240	417.83	79	1,012	6	1,066	8
3145939	7.61	ND	285	37.44	94	1,019	6	1,114	9
3145009	14.25	259	262	18.39	96	1,044	7	1,082	8
3145938	1.05	ND	511	486.20	295	928	3	946	3
3145922	1.40	174	91	65.13	ND	ND	ND	ND	ND
3145412	2.01	383	361	179.83	168	868	1	871	1
3145415	3.35	161	237	70.66	84	1,037	7	1,030	6
3145010	2.64	353	394	149.04	146	1,121	9	1,141	10
3145011	1.20	465	535	444.80	201	1,120	9	1,113	9
3145121	38.09	341	380	9.98	144	989	5	1,057	8
3145408	0.27	567	579	2,123.21	291	810	1	816	1
3145726	11.75	17	27	2.30	7	ND	ND	ND	ND
3145133	26.18	299	337	12.87	117	977	4	1,053	7
3145120	16.81	387	398	23.67	149	986	5	1,062	8
3145105	5.52	240	327	59.20	96	1,036	7	1,105	9
3145103	47.56	333	310	6.52	129	928	3	1,014	6

Source: Population Health Information Development Unit (PHIDU, 2017), based on ABS Census of Population and Housing 2016. Note: ND refers to 'No Data' (to protect privacy the ABS does not report data for smaller populations).

5.2.2 Local and regional populations

In 2016, Toowoomba LGA had a population of 160,779 people, representing an increase of 9,590 people or 6.3 per cent since 2011. Comparatively, the Lockyer Valley LGA's population (at 38,609 people) had notably higher growth, increasing by 3,647 people or 10.4 per cent over the five years to 2016 (refer Table 5.2).

The potentially impacted communities had a total population of 23,953 people in 2016. The most populous suburbs were Mount Lofty (3,770 people), Rockville (3,238 people), Harlaxton (2,548 people) and Wilsonton Heights (2,668 people).

The strongest population growth from 2011 to 2016 was experienced in Cranley with an additional 600 people (up by 70.0 per cent although on a small base), which is likely to be due to the Palm Lake Resort Retirement Park, established after the 2011 Census (Toowoomba Regional Council, 2019a). Mount Kynoch grew by 82 people, (up 51.3 per cent).

The most notable population decline since 2011 was in Helidon Spa (with a decrease of 82 people or 13.2 per cent of the population), with small declines also seen in Wilsonton Heights and Harlaxton (falls of 5.4 per cent and 5.2 per cent respectively) and to a lesser extent in Mount Lofty and Rockville (falls of 2.0 per cent and 0.8 per cent respectively).

As noted in Section 4.2.4, detailed demographic data are not provided for Ballard, Lockyer and Charlton, as the consistency of data and its availability are constrained by their small populations and ABS confidentiality protocols, however their demographic characteristics are reflected by the SA1 level data provided in Section 5.2.1 and by the community profiles included in Section 5.1.3.

Table 5.2 Population 2011 - 2016 (number and percentage change)

Statistical Area	Population (number of persons)		Change	
	2011	2016	Number of persons	% of Total Population
State Suburb				
Blue Mountain Heights	820	925	105	*12.8*
Cotswold Hills	1,213	1,282	69	5.7
Cranley	852	1,452	600	*70.4*
Gowrie Junction	1,939	2,120	181	*9.3*
Harlaxton	2,689	2,548	-141	-5.2
Helidon	1,054	1,061	7	*0.7*
Helidon Spa	623	541	-82	*-13.2*
Kingsthorpe	1,821	1,872	51	*2.8*
Mount Kynoch	160	242	82	*51.3*
Mount Lofty	3,847	3,770	-77	-2.0
Postmans Ridge	-	392	-	-
Rockville	3,264	3,238	-26	-0.8
Wilsonton Heights	2,821	2,668	-153	-5.4
Withcott	1,710	1,842	132	*7.7*
Total	*22,813*	*23,953*	*1,140*	*5.0*
LGA				
Lockyer Valley	34,956	38,603	3,647	10.4
Toowoomba	151,189	160,779	9,590	6.3
Total	*186,145*	*199,382*	*13,237*	*7.1*
Queensland	4,332,739	4,703,193	370,454	8.6

Source: (ABS, 2016 Tablebuilder) Note: no data for Postmans Ridge in Census 2011 due to boundary changes

5.2.3 Indigenous population

Table 5.3 shows that in 2016, the Toowoomba LGA had an Indigenous population consistent with Queensland (4.0 per cent), with a similar proportion in the Lockyer Valley LGA (3.9 per cent).

In 2016 Aboriginal and Torres Strait Islander people were most highly represented in the suburbs of Wilsonton Heights (9.0 per cent of the population), Rockville (8.0 per cent) and Harlaxton (7.1 per cent), with relatively high representation also evident in Helidon (5.9 per cent) and Kingsthorpe (5.8 per cent). This compares with the much lower overall representation in other potentially impacted communities and Queensland (at 4.9 per cent and 4.0 per cent respectively). Rockville recorded the highest number of Indigenous people (259 people) followed by Wilsonton Heights (240 people).

Table 5.3 Indigenous People, 2016 (number and per cent)

Statistical Area	Indigenous people	
	Number of persons	% of Total Population
State Suburb		
Blue Mountain Heights	8	0.9
Cotswold Hills	9	0.7
Cranley	41	2.8
Gowrie Junction	85	4.0
Harlaxton	182	7.1
Helidon	63	5.9
Helidon Spa	16	3.0
Kingsthorpe	108	5.8
Mount Kynoch	4	1.7
Mount Lofty	94	2.5
Postmans Ridge	7	1.8
Rockville	259	8.0
Wilsonton Heights	240	9.0
Withcott	46	2.5
Total	*1,162*	*4.9*
LGA		
Lockyer Valley	1,503	3.9
Toowoomba	6,435	4.0
Total	*7,938*	*4.0*
Queensland	186,482	4.0

Source: (ABS, 2016b Tablebuilder)
Note: Some medians unavailable due to small population count

5.2.4 Population forecasts

As can be seen in Table 5.4 and Table 5.5, population growth in the Lockyer Valley LGA has consistently exceeded growth rates for Toowoomba LGA from 2011 to 2017, with an annual growth rate of between 1.8 per cent and 3.1 per cent per annum, compared with between 0.8 and 4.5 per cent per year in Toowoomba LGA. Notwithstanding, Toowoomba LGA had a greater increase in numbers over this period, growing by 10,936 people (reaching 166,409 people by 2017), compared to an increase of 4,309 people in the Lockyer Valley LGA (reaching 40,189 people by 2017).

In the four years from 2017-2021 the Lockyer Valley LGA's population is forecast to grow by 9.1 per cent with a further 10.0 per cent increase forecast between 2021 and 2026 (increasing by 8,029 people to reach

48,218 people). Toowoomba LGA's population is forecast to grow by 4.5 per cent from 2017 to 2021, with a further increase of 5.9 per cent from 2021 to 2026 (increasing by 17,902 people to 184,311 people by 2026).

Population forecast data are available at SA2 level but not at State Suburb level. At the SA2 level, the greatest rate of population growth for the 2021 – 2026 period is forecast to occur in the Toowoomba-West SA2 (increasing by 18.9 per cent to 18,183 people) and Highfields (increasing by 14.2 per cent to 16,290 people), Lockyer Valley – West (8.5 per cent to 13,392 people) and North Toowoomba-Harlaxton (8.1 per cent to 7,336 people). Wilsonton is the only SA2 where no growth is expected during this period.

Table 5.4 Population growth, 2011-12 to 2026 – SA2 and LGA (percentage change)

Statistical Area	2011-12 %	2012-13 %	2013-14 %	2104-15 %	2015-16 %	2016-17 %	2017-21 %^	2021-26 %
SA2								
Gowrie	2.5	3.2	2.5	1.6	1.2	5.6	3.6	5.5
Highfields	2.4	2.6	1.5	2.0	2.5	8.1	2.9	14.2
Lockyer Valley - West	1.4	1.9	2.1	1.4	1.6	3.0	5.4	8.5
North Toowoomba - Harlaxton	0.4	1.6	0.7	0.9	0.8	-7.0	15.2	8.1
Toowoomba - West	2.6	1.0	2.7	2.9	1.8	5.0	11.2	18.9
Wilsonton	1.9	0.8	0.8	1.0	0.3	-1.7	2.5	0.0
LGA								
Lockyer Valley	1.9	3.1	1.9	1.3	1.6	1.8	9.1	10.0
Toowoomba	1.6	1.3	1.1	0.9	0.8	1.1	4.5	5.9
Total	*1.7*	*1.7*	*1.2*	*0.9*	*1.0*	*1.2*	*5.4*	*6.8*

Source: (ABS, 2017a) Note: ^(Queensland Government Statistician's Office, 2018).

Table 5.5 Population growth, 2011-2026 – SA2, LGA and Queensland (number)

Location	2011	2012	2013	2014	2015	2016	2017	2021^	2026^
SA2									
Gowrie	5,687	5,828	6,017	6,168	6,267	6,343	6,696	6,939	7,321
Highfields	11,495	11,773	12,079	12,258	12,504	12,817	13,859	14,262	16,290
Lockyer Valley - West	10,458	10,607	10,804	11,035	11,195	11,372	11,709	12,347	13,392
North Toowoomba - Harlaxton	6,063	6,089	6,185	6,226	6,285	6,336	5,895	6,789	7,336
Toowoomba - West	11,737	12,039	12,163	12,495	12,859	13,093	13,752	15,297	18,183
Wilsonton	13,280	13,535	13,641	13,747	13,881	13,928	13,686	14,022	14,022
Total	*58,720*	*59,871*	*60,889*	*61,929*	*62,991*	*63,889*	*65,597*	*69,656*	*76,544*
LGA									
Lockyer Valley	35,880	36,548	37,678	38,377	38,881	39,486	40,189	43,835	48,218
Toowoomba	155,473	157,986	160,096	161,865	163,243	164,595	166,409	173,969	184,311
Total	*191,353*	*194,534*	*197,774*	*200,242*	*202,124*	*204,081*	*206,598*	*217,805*	*232,529*

Source: (ABS, 2017a) Note: ^(Queensland Government Statistician's Office, 2018)

5.2.5 Families and households

Family types in the Project region in 2016 are shown in Table 5.6. Both the Lockyer Valley and Toowoomba LGAs have a higher representation of families identified as couple only (42.6 per cent and 42.0 per cent respectively) than for Queensland (39.4 per cent). Consequently, both LGAs had a lower representation of couple with children households (39.8 per cent and 40.8 per cent respectively) when compared with Queensland (42.5 per cent). Compared with the Queensland average of 16.5 per cent, sole parent families represented slightly smaller percentages in the Lockyer Valley LGA (16.1 per cent) and Toowoomba LGA (15.6 per cent).

Amongst the SSCs, potentially impacted communities, Cranley and Blue Mountain Heights had the highest percentages of couple only families (58.9 per cent and 50.7 per cent respectively), consistent with their older median ages (refer Table 5.8). In contrast, in Mount Kynoch and Gowrie Junction there were higher percentages of couple with children families (55.8 per cent and 54.6 per cent respectively). The representation of sole parent families was notably higher in Wilsonton Heights, Harlaxton and Rockville (28.0, 26.4 and 24.4 per cent respectively), but also high in Mount Kynoch and Helidon (21.2 per cent and 21.0 per cent respectively). This was higher than either of the LGA's percentages (16.1 per cent in Lockyer Valley LGA and 15.8 per cent in Toowoomba LGA) and Queensland (16.5 per cent). The higher concentration of sole parent households indicates the potential for an increased need for support to address associated risks of disadvantage (ABS, 2007).

Table 5.6 Family types, 2016 – SSC, LGA and Queensland (percentage)

Statistical Area	Couple Only (% of total)	Couple with Children (% of total)	Sole Parent Family (% of total)	Other Family (% of total)	Total %
State Suburb					
Blue Mountain Heights	50.7	39.3	8.6	1.4	*100*
Cotswold Hills	50.3	42.5	7.5	0.0	*100*
Cranley	58.9	26.7	13.6	0.8	*100*
Gowrie Junction	37.8	54.6	7.1	0.5	*100*
Harlaxton	37.7	32.1	26.4	3.5	*100*
Helidon	40.9	35.6	21.0	2.5	*100*
Helidon Spa	35.5	48.6	15.9	0.0	*100*
Kingsthorpe	43.7	43.5	12.1	0.6	*100*
Mount Kynoch	23.1	55.8	21.2	0.0	*100*
Mount Lofty	41.5	42.9	13.9	1.6	*100*
Postmans Ridge	41.0	40.2	16.2	2.6	*100*
Rockville	41.2	32.1	24.4	2.4	*100*
Wilsonton Heights	38.4	30.9	28.0	2.8	*100*
Withcott	38.9	47.9	12.0	1.1	*100*
LGA					
Lockyer Valley	42.6	39.8	16.1	1.4	*100*
Toowoomba	42.0	40.8	15.8	1.4	*100*
Queensland	39.4	42.5	16.5	1.6	*100*

Source: (ABS, 2016b Tablebuilder)

Table 5.7 identifies the household types in the Project region at the 2016 Census. The Lockyer Valley LGA had a higher percentage of family households (68.6 per cent) than Toowoomba LGA and Queensland (at 66.1 per cent and 66.4 per cent respectively). The Toowoomba LGA (24.7 per cent) had a notably higher representation of lone person households than both Lockyer Valley LGA (19.2 per cent) and Queensland (21.7 per cent).

At the State Suburb level, the highest representation of family households was in Blue Mountains Heights, (85.5 per cent of households), Cotswold Hills and Gowrie Junction (both with 84.4 per cent) and Withcott (82.5 per cent). These SSCs had a much higher representation of family households than either of the LGAs or Queensland.

Lone person households were most highly represented in Harlaxton (30.9 per cent), Rockville (27.6 per cent), Cranley (27.5 per cent), Wilsonton Heights (26.5 per cent) and Mount Lofty (25.3 per cent)

Representation of other family households was high in Helidon Spa (13.3 per cent) and Mount Kynoch (12.7 per cent).

Table 5.7 Household types, 2016 – SSC, LGA and Queensland (percentage)

Statistical Area	Family Household (% of total)	Lone Person Household (% of total)	Group Household (% of total)	Other (% of total)	Total %
State Suburb					
Blue Mountain Heights	85.5	9.2	1.5	3.7	*100*
Cotswold Hills	84.4	9.3	2.3	3.2	*100*
Cranley	61.4	27.5	3.4	7.6	*100*
Gowrie Junction	84.4	10.9	1.7	2.9	*100*
Harlaxton	57.4	30.9	4.7	7.2	*100*
Helidon	66.1	22.0	2.8	9.0	*100*
Helidon Spa	65.6	19.4	1.6	13.4	*100*
Kingsthorpe	75.1	18.0	3.0	3.9	*100*
Mount Kynoch	67.1	13.9	6.3	12.7	*100*
Mount Lofty	68.6	25.3	2.6	4.1	*100*
Postmans Ridge	78.9	15.8	5.3	0.0	*100*
Rockville	61.7	27.6	3.3	7.0	*100*
Wilsonton Heights	65.5	26.5	2.3	5.6	*100*
Withcott	82.5	12.7	2.0	2.8	*100*
LGA					
Lockyer Valley	68.6	19.2	4.4	7.8	*100*
Toowoomba	66.1	24.7	3.2	6.1	*100*
Queensland	66.4	21.7	4.3	7.5	*100*

Source: (ABS, 2016b, Tablebuilder)

5.2.6 Demographic characteristics

5.2.6.1 Age and gender

The Lockyer Valley and Toowoomba LGAs have a slightly older community than Queensland (39 years and 38 years compared with 37 years) (refer Table 5.8).

Between 2011 and 2016, the median age of residents of the Lockyer Valley LGA increased by two years (37 to 39 years) compared to Queensland's median age change of 36 years to 37 years. Toowoomba LGA also experienced an increase in median age by 1 year (37 years to 38 years).

The Lockyer Valley LGA population had an even balance of males and females (50.0 per cent each), while Toowoomba LGA had a higher percentage of females (51.4 per cent females and 48.6 per cent males). Both LGAs were similar to Queensland (49.4 per cent males and 50.6 per cent females).

In 2016 amongst the SSCs, the highest median age was in Cranley (48 years) followed by Blue Mountain Heights (47 years). Cotswold Hills, Mount Lofty and Postmans Ridge also had higher median ages (45, 43 and 43 years respectively). Mount Kynoch had the lowest median age at 27 years, whilst Harlaxton had the next lowest median age at 34 years.

Changes in median ages between the 2011 and 2016 were observed to increase most notably in the suburbs of Wilsonton Heights (increasing by 5 to 36 years) and Harlaxton (increasing by 4 to 34 years). The median age decreased in Mount Kynoch over this same period (reducing by 5 years to 27), most likely due to the 51.3 per cent population growth that occurred between 2011 and 2016 (refer Table 5.2) and to the high percentage of couple with children families (refer Table 5.7).

The gender balance within the SSCs was similar to those recorded for each of the LGAs, with a slightly higher representation of males in Helidon Spa and Postmans Ridge (both at 51.5 per cent of the population), while females were more highly represented in Mount Kynoch (54.6 per cent), Cranley (53.0 per cent), Wilsonton Heights (52.6 per cent) and Mount Lofty (52.4 per cent).

Table 5.8 Change in median age 2011 – 2016 (years) and gender balance (percentage)

Statistical Area	Median Age (years) 2011	Median Age (years) 2016	Change 2011-2016	Male (% of total population)	Female (% of total) population)
State Suburb					
Blue Mountain Heights	48	47	-1	*50.0*	*50.0*
Cotswold Hills	42	45	3	*49.1*	*50.9*
Cranley	48	48	0	*47.0*	*53.0*
Gowrie Junction	35	36	1	*50.1*	*49.9*
Harlaxton	30	34	4	*48.6*	*51.4*
Helidon	39	38	-1	*49.4*	*50.6*
Helidon Spa	38	39	1	*51.5*	*48.5*
Kingsthorpe	37	37	0	*49.1*	*50.9*
Mount Kynoch	32	27	-5	*45.4*	*54.6*
Mount Lofty	41	43	2	*47.6*	*52.4*
Postmans Ridge	40	43	3	*51.5*	*48.5*
Rockville	36	38	2	*49.1*	*50.9*
Wilsonton Heights	31	36	5	*47.4*	*52.6*
Withcott	40	37	-3	*50.1*	*49.9*

Statistical Area	Median Age (years) 2011	Median Age (years) 2016	Change 2011-2016	Male (% of total population)	Female (% of total) population)
LGA					
Lockyer Valley	37	39	2	50	50
Toowoomba	37	38	1	49	51
Queensland	36	37	1	49	51

Source: (ABS, 2016b)

Note: data adjustments to protect confidentiality in small cells (e.g. Postmans Ridge) may cause some totals to not align.

Table 5.9 shows the representation of age groups that are potentially vulnerable to changing social conditions, primarily children, young people and seniors (people aged over 65 years).

Both the Toowoomba and Lockyer Valley LGAs recorded a slightly higher percentage of seniors than Queensland (17.8 per cent and 16.2 per cent of people aged over 65 years compared with 15.3 per cent). The proportion of children less than 16 years old in both LGAs was similar to levels in Queensland (19.5 per cent in the Lockyer Valley and 20.3 per cent in Toowoomba compared with 19.4 per cent in Queensland).

Amongst the SSCs, Cranley had a considerably higher representation of seniors (32.2 per cent) than in either of the LGAs or Queensland, possibly due to the retirement facility located in this suburb. Seniors were also more highly represented in Mount Lofty (19.6 per cent) and Rockville (18.3 per cent). By contrast, Mount Kynoch had a very low representation of seniors (3.3 per cent).

Children under 15 years old were most highly represented in Mount Kynoch and Gowrie Junction (25.6 per cent and 25.3 per cent respectively), which, together with the reducing median age and population growth noted above, suggests these suburbs are growth areas for young families.

Table 5.9 Selected Age Groups, 2016 – SSC, LGA and Queensland (number and percentage)

Statistical Area	<15 yrs No.	15-24 yrs No.	>65 yrs No.	<15 yrs % of Total	15-24 yrs % of Total	>65 yrs % of Total
Blue Mountain Heights	179	99	154	*19.4*	10.7	16.6
Cotswold Hills	237	177	207	*18.5*	*13.8*	*16.1*
Cranley	174	214	467	*12.0*	14.7	32.2
Gowrie Junction	537	247	186	*25.3*	11.7	8.8
Harlaxton	455	524	398	*17.9*	*20.6*	*15.6*
Helidon	249	129	172	*23.5*	12.2	16.2
Helidon Spa	111	75	49	*20.5*	13.9	9.1
Kingsthorpe	413	230	256	*22.1*	12.3	13.7
Mount Kynoch	62	50	8	*25.6*	20.7	3.3
Mount Lofty	696	464	739	*18.5*	*12.3*	*19.6*
Postmans Ridge	72	32	46	*18.4*	8.2	11.7
Rockville	608	439	592	*18.8*	*13.6*	*18.3*
Wilsonton Heights	579	372	375	*21.7*	*13.9*	*14.1*
Withcott	394	244	218	*21.4*	13.2	11.8

Statistical Area	<15 yrs No.	15-24 yrs No.	>65 yrs No.	<15 yrs % of Total	15-24 yrs % of Total	>65 yrs % of Total
LGA						
Lockyer Valley	7,547	5,320	6,246	19.5	13.8	16.2
Toowoomba	32,594	20,841	28,552	20.3	13.0	17.8
Total	40,141	26,161	34,798	20.1	13.1	17.5
Queensland	912,697	613,144	717,951	19.4	13.0	15.3

Source: (ABS, 2016b, Tablebuilder)

5.2.6.2 Disability

The Core Activity Need for Assistance variable has been developed by the ABS to measure the number of people with a profound or severe disability. Table 5.10 indicates that both the Toowoomba LGA (at 5.9 per cent of the total population) and the Lockyer Valley LGA (at 6.4 per cent) had a somewhat higher percentage of residents requiring assistance with core activities compared with Queensland (at 5.2 per cent).

The highest representation of disability among the SSCs was in Cranley at 9.6 per cent, potentially due to the presence of the Palm Lakes Resort, followed by Rockville with 8.9 per cent.

The largest numbers of people with a disability were in Rockville (287 people), Wilsonton Heights (211 people) and Mount Lofty (199 people), potentially relating to the presence of aged care homes in these suburbs (refer Section 5.6.5). Disability was least prevalent in Mount Kynoch (10 people).

Table 5.10 Core disability (need for assistance), 2016 (number and percentage)

Statistical Area	Persons with Need for Assistance	
	Number of persons	% of Total population
State Suburb		
Blue Mountain Heights	23	2.5
Cotswold Hills	46	*3.6*
Cranley	140	9.6
Gowrie Junction	72	3.4
Harlaxton	139	*5.5*
Helidon	57	5.4
Helidon Spa	21	3.9
Kingsthorpe	107	5.7
Mount Kynoch	10	4.1
Mount Lofty	199	*5.3*
Postmans Ridge	23	5.9
Rockville	287	*8.9*
Wilsonton Heights	211	*7.9*
Withcott	71	3.9
Total	*525*	*5.0*

Statistical Area	Persons with Need for Assistance	
	Number of persons	% of Total population
LGA		
Lockyer Valley	2,468	6.4
Toowoomba	9,426	5.9
Total	11,894	6.0
Queensland	243,267	5.2

Source: (ABS, 2016b)

5.2.6.3 Level of education completed

Table 5.11 shows school completions at 2016 (Year 11 or 12 equivalent) were lower in both LGAs than is typical for Queensland with only 44.4 per cent of school leavers completing Years 11 or 12 in Lockyer Valley LGA, and 52.4 per cent in Toowoomba LGA, compared with 58.9 per cent in Queensland.

Both the Lockyer Valley and Toowoomba LGAs recorded notably higher percentages of people who did not go to school or attended to Year 8 or below (9.2 per cent and 7.4 per cent respectively), compared to Queensland (5.4 per cent). A lower proportion of educational attainment within the Lockyer Valley LGA may be attributed to the higher proportion of employment in agriculture and trades (refer Section 5.4.1).

Table 5.11 Highest level of schooling completed, 2016 - LGAs and Queensland (number and percentage)

Statistical Area	Did not go to school Year 8 or equivalent below		Year 9 or 10 or equivalent		Year 11 or 12 or equivalent		
	Number	% of Total	Number	% of Total	Number	% of Total	Total
Lockyer Valley (LGA)	2,749	9.2	10,293	34.5	13,226	44.4	29,816
Toowoomba (LGA)	9,092	7.4	37,645	30.7	64,264	52.4	122,598
Queensland	196,488	5.4	964,903	26.5	2,146,809	58.9	3,643,834

Source: (ABS, 2016b). Note: Total includes highest level of schooling not stated

Table 5.12 shows that a relatively low proportion of the population in the Lockyer Valley LGA obtained a bachelor's degree or higher qualification (9.5 per cent) when compared to Toowoomba LGA (16.1 per cent) and Queensland (18.3 per cent), again reflecting agriculture as a key employer. The populations of both LGAs had slightly higher percentages of certificate qualification (21.8 per cent for Lockyer Valley LGA and 22.0 per cent for Toowoomba LGA) when compared to Queensland (21.3 per cent), likely reflecting slighter higher percentages of technicians and trades workers compared to Queensland.

Table 5.12 Non-school qualifications by level of education, 2016 - LGAs and Queensland (number and percentage)

Statistical Area	Level of education [a]					
	Bachelor's degree or higher (b)		Advanced diploma or diploma		Certificate (c)	
	No.	%	No.	%	No.	%
Lockyer Valley LGA	2,946	9.5	2,141	6.9	6,779	21.8
Toowoomba LGA	20,633	16.1	10,221	8.0	28,224	22.0
Queensland	693,410	18.3	330,619	8.7	807,105	21.3

Source: (ABS, 2016b)

Notes:

(a) Includes persons aged 15 years and over with a qualification within the scope of the Australian Standard Classification of Education.

(b) Includes bachelor degree, graduate diploma, graduate certificate and postgraduate degree.

(c) Includes Certificate, I, II, III and IV and Certificates not further defined responses.

5.2.7 Income and disadvantage

5.2.7.1 Income

As shown in Table 5.13, median household income in the Lockyer Valley LGA ($1,198 per week) was approximately $70 less than Toowoomba LGA ($1,269 per week), while both LGAs recorded median weekly household incomes much lower than Queensland ($1,402 per week).

SSCs with notably higher median weekly household incomes than Queensland (at $1,402 per week) were Blue Mountains Heights ($2,237 per week), Cotswold Hills ($1,938 per week), Gowrie Junction ($1,879), Mount Kynoch ($1,854) and Withcott ($1,776). Five suburbs had median incomes that were well below the Queensland median, including Harlaxton (at $925 per week), Wilsonton Heights ($1,021), Rockville ($1,047), and Cranley and Helidon (both $1,097).

The average household size in both the Lockyer Valley and Toowoomba LGAs is similar to that for Queensland (at 2.7 and 2.5 people per households respectively compared with 2.6 people in Queensland) (refer Table 5.13). At the suburb level, Mount Kynoch (3.2 people) and Gowrie Junction (3.1 people) recorded the highest median household sizes, consistent with the higher representation of couple with children families in these suburbs noted previously. Cranley had both the smallest household size and one of the lowest median household incomes, possibly reflecting the presence of retirement accommodation there.

Table 5.13 Median household Income and household size, 2016 – SSC and LGA

Location	Median Weekly Household Income ($)	Number of People per Household
State Suburb		
Blue Mountain Heights	2,237	2.7
Cotswold Hills	1,938	2.8
Cranley	1,097	2.2
Gowrie Junction	1,879	3.1
Harlaxton	925	2.3
Helidon	1,097	2.5
Helidon Spa	1,420	2.8
Kingsthorpe	1,335	2.8

Location	Median Weekly Household Income ($)	Number of People per Household
Mount Kynoch	1,854	3.2
Mount Lofty	1,685	2.5
Postmans Ridge	1,464	2.6
Rockville	1,047	2.4
Wilsonton Heights	1,021	2.4
Withcott	1,776	2.9
LGA		
Lockyer Valley	1,198	2.7
Toowoomba	1,269	2.5
Queensland	1,402	2.6

Source: (ABS, 2016b)

5.2.7.2 Socio-economic advantage and disadvantage

Research into the social determinants of health consistently establishes that the most disadvantaged people carry the greatest burden of poor health. The IRSAD is an area-based index that measures both socio-economic advantage and disadvantage in terms of peoples' access to material and social resources, and their ability to participate in society. The IEO is an area-based index that measures and ranks relative advantage or disadvantage for educational attainment or accessing skilled work.

Table 5.14 reports the IRSAD and IEO results at the SA2 and LGA level providing a score, a decile and a ranking. Each area is given a score based on weighted characteristics for that area. The scores are then standardised and distributed as deciles (as scores cannot be individually compared) and ranked in order to show relativity to other equivalent geographies (e.g. SA2 or LGA). Areas in the middle deciles are not particularly advantaged or disadvantaged (decile 5 and 6), while those in low deciles are the most disadvantaged (deciles 1 to 4) and those in high deciles are the most advantaged (deciles 7 to 10). A low value ranking (such as position 1) indicates communities with the highest disadvantage, whereas a high value ranking (such as position 526) indicates communities with the least disadvantage.

In Table 5.14 the Indices for IRSAD indicate that the Lockyer Valley LGA is neither advantaged or disadvantaged compared to other LGAs in Queensland ranking in the middle (position 36 of 80 LGAs and with a decile of 5), while the Toowoomba LGA is relatively advantaged, ranking amongst the most advantaged LGAs in Queensland (at position 63 and with a decile of 8).

However, patterns of disadvantage are evident at the more detailed SA2 and SA1 levels (refer Table 5.14):

- IRSAD scores for SA2s varied, with the North Toowoomba-Harlaxton and Wilsonton SA2s within the 20 per cent most disadvantaged in the State (both scored at decile 2, and ranked within in the top 101 most disadvantaged SA2s). The Gowrie and Lockyer Valley West and Toowoomba-West SA2s were neither especially advantaged or disadvantaged, both scoring in the mid-range (at deciles 6 and 5 respectively). By contrast, the Highfields SA2 had a strong relative advantage, scoring among the 20 per cent most advantaged SA2s in the State (at decile 9).
- Pockets of disadvantage were evident in SA1 3145408 in Harlaxton and SA1 3145412 in North Toowoomba – Harlaxton, both of which were amongst the 10 per cent most disadvantaged SA1s in Queensland (sharing a decile of 1), while SA1 3145938 in Cranley was among the 30 per cent most disadvantaged SA1s in Queensland with a decile of 3 (refer Table 5-1).

Elsewhere the SA1s were amongst the most advantaged (such as Blue Mountain Heights and Withcott) or neither particularly advantaged nor disadvantaged (such as Gowrie Junction and Postmans Ridge).

Similar to the IRSAD indices, the IEO (Table 5.14) shows that:

- At the LGA level, Toowoomba LGA had a notable advantage in terms of education and skilled employment. However, the Lockyer Valley LGA was among the 40 per cent most disadvantaged LGAs in Queensland (decile of 4) and ranking 26th among 80 LGAs
- Wilsonton SA2 has the greatest potential for disadvantage, being among the 10 per cent most disadvantaged SA2s (with a decile of 1) and ranking 39th among 526 SA2s. Highfields was the only SA2 with notable advantage, being amongst the top 20 per cent of the most advantaged SA2s in Queensland (decile of 8).

Results at the SA1 level reflect those of the IRSAD, with SA1 3145408 in Harlaxton and SA1 3145412 in North Toowoomba – Harlaxton amongst the 10 per cent most disadvantaged SA1s in the State (sharing a decile of 1), and SA1 3145938 in Cranley amongst the 30 per cent most disadvantaged (with a decile of 3) (Table 5.15).

Table 5.14 Relative socio-economic advantage and disadvantage, 2016 – SA2 and LGA

Location	LGA	Relative Socio-economic Advantage and Disadvantage (IRSAD)			Index of Education and Occupation (IEO)		
		Score	Decile	Rank	Score	Decile	Rank
SA2				**Position in 526 SA2s**			**Position in 526 SA2s**
Gowrie	Toowoomba	1002	6	283	945	4	194
Highfields	Toowoomba	1067	9	432	1,044	8	388
Lockyer Valley - West	Lockyer Valley	979	5	232	956	5	221
North Toowoomba - Harlaxton	Toowoomba	919	2	101	942	4	186
Toowoomba-West	Toowoomba	1010	6	298	963	5	234
Wilsonton	Lockyer Valley	891	2	54	882	1	39
LGA				**Position in 80 LGAs**			**Position in 80 LGAs**
Lockyer Valley		932	5	36	913	4	26
Toowoomba		974	8	63	969	9	65

Source: (ABS, 2016b)

5.2.7.3 Internet access

Inability to access the internet is an indicator of disadvantage as information and services which support wellbeing are increasingly designed to be accessed online. Lower levels of internet access are evident in the Project region than is typical for Queensland (refer Table 5.15). In 2016, 17.5 per cent of residents in the Lockyer Valley LGA and 16.1 per cent residents in the Toowoomba LGA did not access the internet from their dwelling. Both percentages were notably higher than Queensland's 13.0 per cent, reflecting generally poorer access to internet services in rural locations.

However, access to the internet from dwellings varied greatly at the suburb level, with some suburbs having higher levels of access than that typical for Queensland (at 83.7 per cent) e.g. Blue Mountain Heights (95,9 per cent) and Mount Kynoch (90.2 per cent)but lower than average access in socio-economically disadvantaged suburbs e.g. Rockville (69.3 per cent), Helidon (73.0 per cent), Wilsonton Heights (72.9 per cent) and Harlaxton (70.8 per cent).

Table 5.15 Dwelling internet connection, 2016 – SSC and LGA

Statistical Area	Internet accessed from dwelling (% of total)	Internet not accessed from dwelling (% of total)	Not Stated (% of total)
State Suburb			
Blue Mountain Heights	95.9	3.2	1.0
Cotswold Hills	89.0	7.3	3.9
Cranley	75.9	14.9	9.3
Gowrie Junction	87.1	7.8	4.8
Harlaxton	70.8	19.2	10.1
Helidon	73.0	23.3	3.7
Helidon Spa	78.9	18.7	2.4
Kingsthorpe	83.5	11.9	4.3
Mount Kynoch	90.2	9.8	0.0
Mount Lofty	84.8	9.7	5.3
Postmans Ridge	88.4	11.6	0.0
Rockville	69.3	22.1	8.4
Wilsonton Heights	72.9	19.6	7.8
Withcott	86.0	9.2	4.7
LGA			
Lockyer Valley	77.4	18.8	3.8
Toowoomba	80.5	16.9	2.6
Queensland	83.7	13.6	2.7

Source: (ABS, 2016b Tablebuilder)

5.2.8 Travel behaviour

5.2.8.1 Transport networks

The Warrego Highway is a vital east-west freight artery, transporting people and freight from Toowoomba to Brisbane and southern Queensland.

The Warrego Highway (incorporating the Toowoomba Bypass) is the main arterial road through the Lockyer Valley and Toowoomba LGAs, connecting with Ipswich and Brisbane to the east (via the Ipswich and Centenary Motorways) and with Toowoomba, Dalby, Chinchilla, Miles, Roma and Charleville to the west.

The Lockyer Valley LGA's main road network also includes Rosewood-Laidley Road, Gatton-Laidley Road and Gatton-Helidon Road which provides an alternative network south of the Warrego Highway connecting Rosewood to Helidon (Lockyer Valley Regional Council, 2007).

The Toowoomba LGA's road network includes the Warrego Highway, New England Highway and Gore Highway (the latter ends east of Toowoomba and does not interface with the Project). The Warrego Highway links Toowoomba LGA east-west, connecting Brisbane in the east to Dalby, Miles and Roma in the west. The New England Highway passes through Toowoomba, providing access to Yarraman in the north and many major inland regional centres to the south through to central New South Wales.

There are two airports that service the Toowoomba and Lockyer Valley LGAs. The Brisbane West (Wellcamp) Airport near Toowoomba (approximately 20 kms west of the Toowoomba CBD) provides passenger services and also operates as an international cargo hub for primary producers. The Brisbane

Domestic and International Airport is approximately 140 km to the east and provides domestic and international passenger travel for Project region residents.

The Toowoomba aerodrome located approximately 2.5 km south of the Project, in Wilsonton, supports a number of business operators including flying schools, charter operators and maintenance providers, as well as being home to one of the finest collection of warbirds in Australia (TRC, 2018b,).

5.2.8.2 Vehicle ownership

In 2016, the Lockyer Valley LGA had a higher average number of motor vehicles per dwelling than the Toowoomba LGA and Queensland (2.2 compared to 1.9 and 1.8 respectively) (refer Table 5.16). This higher rate of ownership reflects the rural nature of the two LGAs, offering limited access to a public transport network, with a greater reliance by residents living in more isolated communities on private transport.

At the State Suburb level vehicle ownership was highest in Cotswold Hills and Withcott (with 2.7 vehicles and 2.5 vehicles per dwelling respectively), followed by Blue Mountain Heights, Gowrie Junction, Helidon Spa and Postmans Ridge (each with 2.3 vehicles per dwelling). Wilsonton Heights, Rockville and Cranley recorded the lowest level of car ownership (at 1.6, 1.7 and 1.7 vehicles per household respectively) reflecting both age factors (in the case of Cranley) and low income status (in the case of Wilsonton Heights and Rockville).

Table 5.16 Motor vehicle ownership (average number per household)

Location	Number of Motor Vehicles per dwelling
State Suburb	
Blue Mountain Heights	2.3
Cotswold Hills	2.7
Cranley	1.7
Gowrie Junction	2.3
Harlaxton	1.6
Helidon	1.9
Helidon Spa	2.3
Kingsthorpe	2.2
Mount Kynoch	2.0
Mount Lofty	1.8
Postmans Ridge	2.3
Rockville	1.7
Wilsonton Heights	1.6
Withcott	2.5
LGA	
Lockyer Valley	2.2
Toowoomba	1.9
Queensland	1.8

Source: (ABS, 2016b)

5.2.8.3 Public transport

Greyhound Australia provides a daily bus service between Brisbane and Toowoomba, stopping at Withcott, Helidon and Helidon Spa on request (Lockyer Valley Information Centre, 2019).

QR operates the Westlander train service, providing a twice weekly passenger rail service between Brisbane and Charleville, stopping at Helidon and Toowoomba. Lockyer Valley residents have access to SEQ passenger rail network services via Helidon including a rail-bus replacement service.

Translink operates bus services in Toowoomba servicing the central business district (CBD) and outer suburbs. School bus services are also provided. The main bus hub is in Neil Street in the CBD. The Traffic Impact Assessment identified approximately 35 public transport routes that share routes with potential construction traffic and/or proposed and existing road rail interface locations may be impacted by the Project (EIS Appendix U: Traffic impact assessment, Section 2.2.3).

The Project's disturbance footprint would interface with the Gowrie State School – Toowoomba school bus route which includes Gowrie Junction Road, Morris Road (which is proposed to be closed as part of the Project as described in Section 7.1.8), Paulsens Road and Old Homebush Road. This is further discussed in Section 7.4.1. The Traffic Impact Assessment also identified 21 routes that may share routes with potential construction traffic (EIS Appendix U: Traffic impact assessment, Section 2.2.3).

5.2.8.4 Journey to work

In 2016, a notably high percentage of employed people within potentially impacted communities travelled to work via car as a driver (73.6 per cent) when compared with Queensland (64.6 per cent), reflecting the limited public transport available (refer Table 5.17).

All suburbs had higher levels of journey to work by car as driver than the LGA averages, with this travel mode particularly high in Mount Kynoch (80.5 per cent). This suburb also recorded the highest rate of travel by car as passenger (11.5 per cent). There were higher representations of people working from home in Postmans Ridge (9.6 per cent), Blue Mountain Heights (7.5 per cent) and Cotswold Hills (6.3 per cent), with low levels in Wilsonton Heights and Rockville (1.3 per cent and 2.5 per cent). Elsewhere levels of working from home were similar to or somewhat lower than the LGAs and Queensland (1.3 per cent in the Lockyer Valley LGA and 0.9 per cent in Toowoomba LGA and Queensland).

Walking to work as a mode of transportation was lower in the Lockyer Valley LGA (2.5 per cent) compared with Toowoomba LGA and Queensland (3.4 per cent and 3.3 per cent respectively), and generally lower in most suburbs. The exceptions to this were Rockville and Harlaxton (3.4 per cent and 3.0 per cent respectively).

The Toowoomba Sustainable Transport Strategy (2014c) aims to increase the use of active transport (walking and cycling) to improve the health and wellbeing of its residents, with the likely effect of changing travel behaviours in the region over time. The Project interfaces with the Principal Cycle Network at Gowrie Junction (e.g. Gowrie Junction Road); while the proposed construction traffic routes also coincide with the Principal Cycle Network.

Table 5.17 Methods of travel to work for employed persons, 2016 – State Suburb and LGA (percentage)

Area	^Public Transport	Car, as driver	Car, as passenger	Truck	Motor-bike/ scooter	Bicycle	Walked only	Other Mode	Worked at home	Did not go to work	Not stated	Total
	(% of total)											
State Suburbs												
Blue Mountain Heights	0.0	71.4	6.4	1.7	0.0	0.8	0.0	0.0	7.5	11.2	0.6	100.0
Cotswold Hills	0.6	77.4	4.9	1.2	0.6	0.0	1.6	0.6	6.3	6.1	0.0	100.0
Cranley	0.0	69.7	9.0	1.9	1.9	0.6	0.6	0.0	4.6	10.7	1.0	100.0
Gowrie Junction	0.7	75.9	4.3	1.2	0.5	0.3	0.7	0.7	3.4	11.4	0.9	100.0
Harlaxton	0.7	72.3	6.3	0.6	1.0	0.5	3.0	0.0	3.7	10.2	0.6	100.0
Helidon	0.0	71.9	5.6	4.1	0.7	0.0	2.2	0.0	5.1	8.0	0.7	100.0
Helidon Spa	0.0	74.4	6.4	2.1	0.0	0.0	2.6	1.7	5.1	9.4	3.8	100.0
Kingsthorpe	0.5	74.2	3.7	2.8	0.7	0.0	0.8	1.3	3.4	12.3	0.6	100.0
Mount Kynoch	0.0	80.5	11.5	0.0	2.7	0.0	0.0	0.0	4.4	3.5	0.0	100.0
Mount Lofty	0.8	73.6	6.5	0.5	0.9	0.4	2.4	0.9	5.6	8.0	0.4	100.0
Postmans Ridge	0.0	71.6	3.0	0.0	0.0	0.0	2.5	0.0	9.6	10.7	3.6	100.0
Rockville	0.6	71.0	8.0	1.3	0.8	0.5	3.4	0.6	2.5	10.1	1.0	100.0
Wilsonton Heights	1.5	73.6	6.4	1.2	0.8	0.5	1.0	0.7	1.3	11.5	1.0	100.0
Withcott	0.6	76.5	4.8	1.9	0.8	0.0	1.5	0.6	3.4	9.6	1.2	100.0
Total	0.8	73.6	6.0	1.3	0.8	0.3	1.9	0.6	4.1	9.8	0.8	100.0
LGA												
Lockyer Valley	1.2	67.8	7.0	2.0	0.8	0.1	2.5	0.6	5.8	11.0	1.3	100.0
Toowoomba	1.0	70.1	6.0	1.1	0.8	0.7	3.4	0.6	5.7	9.7	0.9	100.0
Queensland	7.3	64.6	5.3	0.9	0.9	1.0	3.3	0.7	5.3	9.7	0.9	100.0

Source: (ABS, 2016b Tablebuilder. Adjusted for small area randomised data) Note: ^Includes train, bus, ferry, tram and taxi

5.2.9 Summary of demographic features

Key features of the social baseline most relevant to informing the assessment of social impacts include:

- The SA1s within 1 km of the Project represented an area of 216.75 km^2 with approximately 2,605 dwellings and 6,701 people, with the main growth being in SA1s within the Toowoomba LGA
- SEIFA IRSAD scores indicate that the North Toowoomba – Harlaxton and Wilsonton SA2s were among the 20 per cent of Queensland SA2s most likely to experience disadvantage and the most likely to have less opportunity in terms of education and skilled employment
- The potentially impacted communities included rural residential communities in the Toowoomba and Lockyer Valley LGAs, urban populations based in Toowoomba suburbs, and small dispersed populations in rural localities
- At the suburb level, the most populous areas were Mount Lofty (3,770 people), Rockville (3,238 people), Harlaxton (2.548 people) and Wilsonton Heights (2,668 people)
- The largest population growth in potentially impacted communities during 2011-2016 was experienced in Cranley (70.4 per cent or 600 people) partially due to the development of a seniors' residential estate
- Population growth of 5.9 per cent is expected in the Toowoomba LGA between 2021 and 2026, whilst growth in the Lockyer Valley LGA during the same period is expected to be approximately 10.0 per cent
- Percentages of Indigenous people were higher than the State average (4.0 per cent) in Wilsonton Heights (9.0 per cent of the population), Rockville (8.0 per cent), Harlaxton (7.1 per cent), Helidon (5.9 per cent) and Kingsthorpe (5.8 per cent)
- The Lockyer Valley and Toowoomba LGAs have slightly older communities than Queensland (39 years and 38 years compared with 37 years). In 2016 amongst the SSCs, the highest median age was in Cranley (48 years) followed by Blue Mountain Heights (47 years). Cotswold Hills, Mount Lofty and Postmans Ridge also had higher median ages of 45, 43 and 43 years respectively, while Harlaxton and Wilsonton Heights (30 and 31 years) had low median ages, and Mount Kynoch had the lowest median age at 27 years
- The highest representation of disability among the SSCs was in Cranley at 9.6 per cent, potentially due to the presence of the Palm Lakes Resort, followed by Rockville with 8.9 per cent
- Children under 16 years old were most highly represented in Mount Kynoch (25.9 per cent) and Gowrie Junction (25.5 per cent), both growth areas for young families
- Fewer people had completed Years 11 or 12 in the Project region than is typical for Queensland, with only 44.4 per cent in Lockyer Valley LGA, and 52.4 per cent in Toowoomba LGA, compared with 58.9 per cent in Queensland
- The Project region had a lower level of tertiary qualifications than average, but slightly higher level of certificate qualifications
- Both LGAs recorded median weekly household incomes lower than the Queensland median ($1,198 per week in Lockyer Valley LGA and $1,269 per week Toowoomba LGA compared with $1,402 per week).
- Five suburbs comfortably exceeded the Queensland median weekly household income (Blue Mountains Heights, Cotswold, Gowrie Junction, Mount Kynoch and Withcott), while a further five were well below (Harlaxton, Wilsonton Heights, Rockville, Cranley and Helidon)
- Lockyer Valley had a higher percentage of dwellings without access to the internet (18.8 per cent) than the Toowoomba LGA (16.9 per cent) and Queensland (13.6 per cent). Rates of access varied at the suburb level.

- The higher rate of car ownership in the Lockyer Valley LGA reflects its largely rural nature (2.2 cars per dwelling compared with 1.9 in Toowoomba LGA)
- Car ownership levels were highest in Cotswold Hills (2.7 vehicles per dwelling) and Withcott (2.5), and lowest in Wilsonton Heights (1.6), Rockville (1.7) and Cranley (1.7)
- Toowoomba residents have access to twice weekly passenger rail service between Brisbane and Charleville, stopping at Helidon, and Toowoomba, as well as local bus services. Lockyer Valley residents have access to SEQ passenger rail network services via Helidon including a rail-bus replacement service but are heavily reliant on private transport, with limited access to public transport.
- A high percentage of employed people within the Project region travelled to work via car as a driver, with this mode of travel particularly high in Mount Kynoch (80.5 per cent). There was a higher representation of people working from home in Postmans Ridge (9.6 per cent), Blue Mountain Heights (7.5 per cent) and Cotswold Hills (6.3 per cent). Walking to work as a mode of transport was generally lower in most suburbs than Queensland levels (3.3 per cent of journeys to work) except in Rockville (3.4 per cent).
- Considering a combination of socio-economic indicators (income level, age, household type and tenure, Indigenous status, unemployment, access to the internet and disability), Harlaxton, Rockville, Wilsonton Heights, Helidon and Cranley each present as vulnerable communities.

5.3 Community values

This section describes community values, including reference to cultural heritage, local qualities supporting amenity and quality of life, community identity, sense of place, and cultural diversity.

5.3.1 Cultural heritage

5.3.1.1 Indigenous cultural heritage

The Project is located within country to which the Western Wakka Wakka People and Yuggera Ugarapul People are connected.

Aboriginal cultural heritage studies and surveys were undertaken in corollary with the EIS process, as the basis for development of Cultural Heritage Management Plans (CHMP) with the Western Wakka Wakka People and Yuggera Ugarapul People.

ARTC have held preliminary consultations with the statutory Aboriginal parties with an interest in the Project region to provide an overview of the Project and discuss cultural heritage sensitivities and processes.

SIA consultation has also been held with Indigenous representatives. Discussions with the Western Wakka Wakka People identified that:

- Gowrie Creek and Gowrie Mountain are culturally important areas for Western Wakka Wakka People
- The Project intersects Gowrie Creek (i.e. realigned Gowrie Junction Road)
- There is concern about the ongoing disruptive effect that infrastructure projects, including the Warrego Highway, Toowoomba Bypass and the Project, may have on the integrity of the cultural landscape
- There may be potential for the Project to affect massacre sites which have specific importance (this was not identified as part of the cultural heritage assessment undertaken for the Project).

In SIA consultation, Yuggera Ugarapul Elders emphasised the importance of the cultural landscape and how strongly their sense of community is connected to natural elements of place, with potential for the Project to affect their emotional attachments to Country.

Aboriginal cultural heritage will be managed under the approved CHMPs as outlined in Section 7.1.1.

5.3.1.2 Non-Indigenous cultural heritage

Assessment of non-Indigenous cultural heritage (in EIS Appendix S: Cultural heritage survey report) identified places in the Register of the National Estate, the State Heritage Register, the Toowoomba Regional Planning Scheme and the Gatton Shire Planning Scheme relevant to the Project.

The Project traverses under the QR Main Range Railway (i.e. West Moreton System) at Ballard, which is of State significance, but a depth of 175 m with no potential for impacts. The Project traverses over the Bicentennial National Trail (i.e. Gittins Road at Withcott) and the Mount Lofty Rifle Range which are places of local heritage significance. In addition, the cultural heritage assessment identified a number of areas of interest relevant to the Project, including the structures and buildings associated with the current and former railway at Gowrie, along with homesteads and dairies within the EIS investigation corridor.

The potential for impacts on cultural heritage places is discussed in detail in EIS Appendix S: Cultural heritage survey report and summarised in this report at Section 7.1.5.

5.3.2 Amenity and quality of life

Amenity refers to the use and enjoyment of private and public properties and contributes strongly to quality of life. Assessment of amenity in potentially impacted communities draws on findings from community engagement (refer Section 6.3.1) as well as field observation, which indicate that key factors contributing to local amenity include:

- A semi-rural lifestyle, in a clean and serene environment
- Appreciation of flora and fauna, and particularly wildlife
- The scenic value of rural-residential and semi-rural land uses, including small farms, grazing and cropping areas and views across the landscape
- The character and ‘small town’ amenity of Gowrie Junction, Withcott and Helidon
- The landscape as characterised by the Toowoomba Range, heavily vegetated ridges and escarpments and the Lockyer Valley
- Access to business service hubs
- Access to local services and events
- The culturally diverse, yet close-knit community, with strong social networks and mutual reliance between neighbours.

Many landowners in and near the EIS investigation corridor enjoy a semi-rural lifestyle. Aspects which support local quality of life include a clean and healthy environment, affordable housing, community connections, access to local services and community events, and strong community networks. Local residents emphasised that the Project region’s rural environment in close proximity to service centres (Toowoomba, Gatton and Ipswich) plays a strong part in the amenity, lifestyle and quality of life of its residents.

Residents within and near the EIS investigation corridor have access to semi-rural and scenic views primarily made up of rural and rural-residential settlement, vegetated watercourses, croplands and pastures, and forested areas uplands. Residents of Toowoomba on the eastern edge of the Great Dividing Range, enjoy views across forested uplands across the plains to the east.

Toowoomba's emerging role as a major regional logistics hub and its position on major transport routes, means that the landscape is also characterised by major highways (the Warrego Highway and Toowoomba Bypass) and the QR West Moreton System (used primarily for coal haulage). A number of communities in the Toowoomba and Lockyer Valley LGAs have links with historic and current rail operations forming part of the local landscape.

A baseline assessment of the Inland Rail Program's Queensland corridor (University of Melbourne, Melbourne School of Government, 2017), affirmed by community engagement for this study, revealed the cumulative impacts on many of the communities along the proposed alignment due to the delivery of other major infrastructure or mining and extractive projects (including the Toowoomba Bypass and the Roma Brisbane gas pipeline). Consultation indicates that severe construction fatigue is evident, particularly in the communities of Gowrie Junction/Gowrie/Kingsthorpe and in the Postmans Ridge/Murphys Creek community, which is also still coping with legacy issues associated with the 2011 flood. Some residents are reported to be selling up and leaving the area as they don't feel able to cope with the construction impacts of another major project.

5.3.3 Community identity

Community identity is derived from elements including community history, land uses, special features and community characteristics, and varies between and within the Toowoomba and Lockyer Valley LGAs.

The Toowoomba LGA is home to metropolitan, semi-rural and rural communities, and occupies a large region west of the Toowoomba Range. Toowoomba city is the main regional centre for the northern and western Darling Downs. The LGA's communities have a strong sense of place, based in their individual heritage and landscape, with the rural qualities of the townships, semi-rural and rural landscapes forming an intrinsic part of this area's character. Representative comments from Toowoomba residents who participated in the SIA community survey (refer Section 4.3.2) include:

- "A clean unpolluted environment, fresh air and the unique qualities of rural living"
- "We experience the attributes of nature as well as having a wonderful community support network, close proximity to health, education, transport and job opportunities."

Communities identify with the region's rural qualities, its relaxed country lifestyle, and the safe and family-friendly environment (Toowoomba Regional Council, 2014a, Toowoomba Regional Council, 2018). Natural assets such as parks, rural spaces and bushland are a valued feature of the Project region.

The Lockyer Valley LGA's identity has been forged on its rich farmland, with enduring industry strengths in horticulture and agriculture, while historically its small population settlements were aided by the development of the railway (1860s) from Ipswich to Toowoomba. Lockyer Valley is home to rural, low density community settlements, with an attractive country lifestyle supported by the regional centre in Gatton, residential growth in Plainland and the future development of a service centre in Laidley.

The SIA community survey (refer Section 4.3.2) invited feedback from respondents about what they valued about their community. Figure 5.2 presents the weighted average of community responses from the Toowoomba and Lockyer Valley LGAs to a series of value statements regarding their community's identity, core values and resilience (based on a scale of 1 = strongly disagree; 2 = disagree; 3 = neutral; 4 = agree; and 5 = strongly agree). There was a total of 102 responses for this question including 29 from residents in the Toowoomba LGA and 73 from the Lockyer Valley LGA. The weighted average of total survey responses for this question for the Project along with H2C and C2K projects (n=342) are provided for comparison.

Common to both LGAs was how respondents value their communities as family-oriented and safe (4.4 and 4.3 out of 5 for Toowoomba and Lockyer Valley LGAs respectively), and generally with a strong sense of identity (4.1 out of 5 for each LGA), the strength of their communities and 'sticking together' in difficult times (4.2 and 4.3 out of 5 respectively). Survey respondents were less confident that their communities had the ability to adapt to change (2.8 and 2.9 out of 5 respectively).

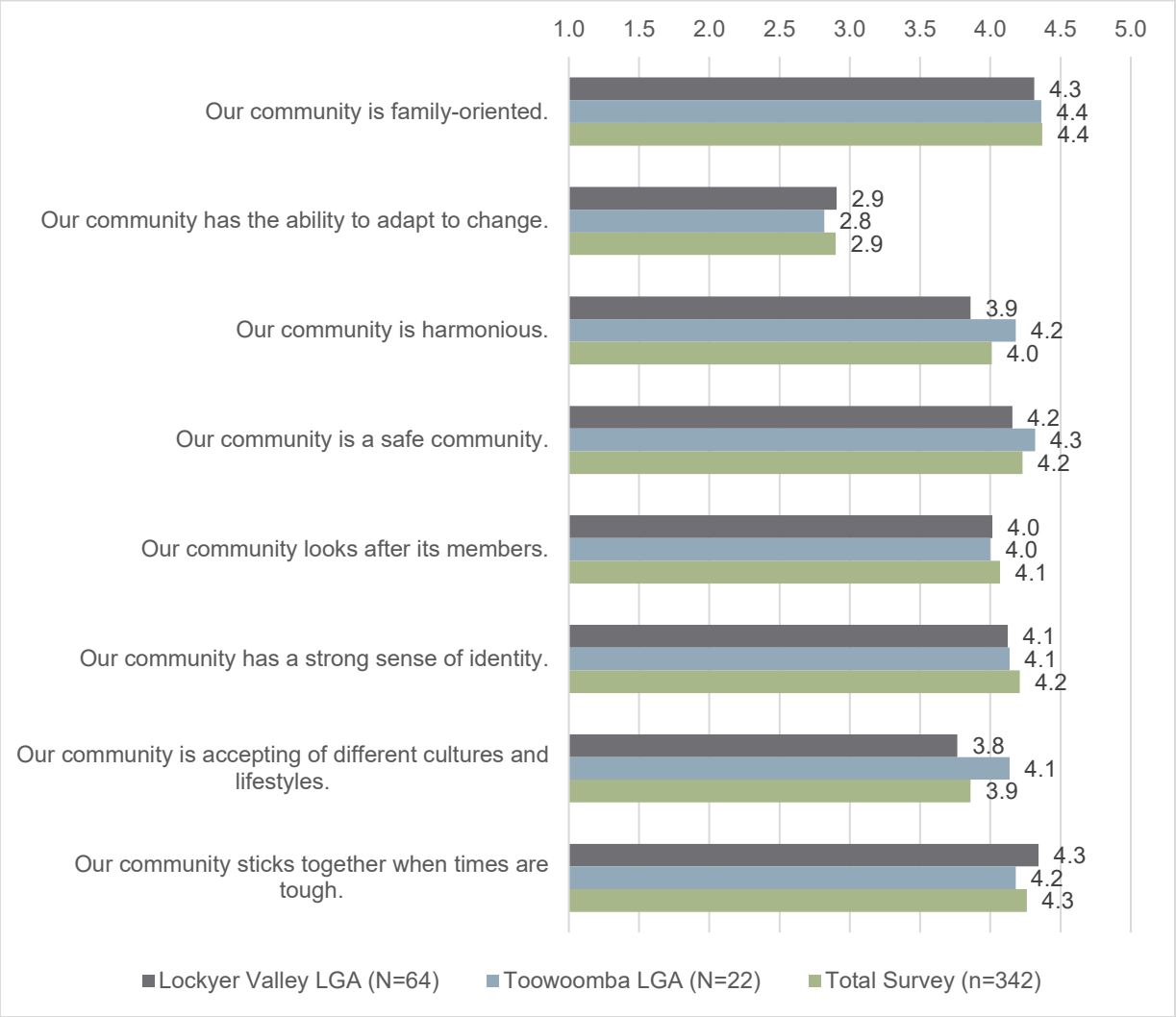


Figure 5.2 Community values in the SIA study area

Many of the rural communities and townships in the Project region enjoy strong community connections and cohesion.

Representative comments from the SIA community survey respondents included:

- "Although the Lockyer Valley has grown and diversified in business and in people, we all still have small town/rural values where we all help each other in times of need … it is a safe environment to raise a family. We would not want our towns threatened by major changes to our environment and landscapes."
- "It is a tight knit community that helps each other. Especially in times of duress like the floods in 2011 and 2013.… It is a nice place to live. Not too far to major centres (Ipswich and Toowoomba) if you need more entertainment and services."

5.3.4 Sense of place

Sense of place refers to an appreciation of, and attachment to aspects of a place and its identity, and describes 'the human experience of place …the beliefs, perceptions, and attitudes held toward a place… conscious and unconscious attachments to place [which] can also be a strong component of personal, as well as group or community identity" (De Wit, 2012).

Aboriginal people have a particular relationship to land and their sense of community is strongly connected to natural elements of place. As noted in Section 5.3.1, Aboriginal people are strongly attached to the Project region's cultural landscapes.

Sense of place in the potentially impacted communities has a strong relationship to the land (through farming and attachment to the landscape), environmental values and the pattern of rural localities and villages, as well as social elements such as relationships between community members and places. Comments from Toowoomba survey respondents about what makes their community a special place to live describe a rural way of life, picturesque landscapes and appreciation of local wildlife, away from the pressure of towns but within close proximity of Toowoomba city. Comments included:

- "Nature at my door, parrots, kangaroos, koalas etc. … photography of beautiful sunsets and mornings … walking exercise morning and night … supermarkets and associated infrastructure"
- "Strong agricultural industries which support the economic [life] of this community. We do not want anything which will impact on these industries, or the people dependant on them (which are the majority of the residents of the Lockyer Valley)".

Comments from the Lockyer Valley LGA sample described specific places and emphasised the value of unique town characters, the natural environment and strong community identities, as reflected in the following sample of comments:

- "In the Helidon Hills section of the Lockyer Valley, the serenity of the natural environment is extremely important … our community includes likeminded people who take great steps to preserve, regenerate and enhance it … to better support its unique flora and fauna. "
- "Lockyer Valley has two rated Tidy Towns - Helidon and Forest Hill …this is not just for rubbish, it is about a community - how it involves itself with others and the history. We have a beautiful rural lifestyle with community infrastructure locally."

5.3.5 Cultural diversity

Cultural diversity in the Project region is represented at a broad level by the percentages of people born in Australia, percentages of people who were not proficient in the English language, and the most common other languages spoken.

As shown in Table 5.18, in 2016 both the Toowoomba and Lockyer Valley LGAs had a higher percentage of people born in Australia than the State average (81.0 per cent and 78.2 per cent respectively, compared with Queensland at 71.1 per cent). However, the Lockyer Valley LGA had a higher representation of people not proficient in the English language (10.9 per cent) than either Toowoomba LGA (7.3 per cent) or Queensland (9.5 per cent). This is likely to be a reflection of the international student and backpacking farm worker populations there.

Most of the SSCs had an even stronger representation of Australian-born residents (more than 84 per cent of the population) which was highest in Cotswold Hills (91.1 per cent of the population) and Gowrie Junction (90.3 per cent). In the smaller communities of Mount Kynoch and Helidon, the representation of Australian-born residents was lower than in other local communities (at 73.4 per cent and 78.9 per cent respectively).

The larger proportions of residents born overseas were from North America (Mount Kynoch at 6.0 per cent of a total of 237 people) or from New Zealand or England (in Helidon at 1.7 per cent and 1.2 per cent respectively from a total of 884 people) (ABS Quickstats 2016).

Table 5.18 Cultural Diversity Indicators, 2016

Location	Born in Australia (% of total)	Not Proficient in English Language (% of total)
State Suburb		
Blue Mountain Heights	85.2	0.0
Cotswold Hills	91.1	0.0
Cranley	81.4	2.8
Gowrie Junction	90.3	6.4
Harlaxton	81.1	2.3
Helidon	84.3	0.0
Helidon Spa	78.9	0.0
Kingsthorpe	88.1	2.7
Mount Kynoch	73.4	0.0
Mount Lofty	83.4	4.9
Postmans Ridge	84.1	0.0
Rockville	84.2	5.2
Wilsonton Heights	84.9	4.2
Withcott	85.9	3.2
LGA		
Lockyer Valley	78.2	10.9
Toowoomba	81.0	7.3
Queensland	71.1	1.8

Source: (ABS, 2016b)

5.4 Employment, business and industry

This section provides an overview of labour force characteristics, tourism in the Project region, business capacity to supply the Project, and existing skills shortages.

5.4.1 Employment and labour

5.4.1.1 Labour force

Labour force data are provided at State Suburb, LGA and SA4 level. SA4 areas are specifically designed to capture labour force survey data and consider a larger geographic footprint.

Table 5.19 shows that in 2016 the Project region had a total workforce of 86,950 people, of whom 15,762 people (18.1 per cent) lived in the Lockyer Valley LGA and 71,188 people (81.9 per cent) lived in the Toowoomba LGA.

In the Lockyer Valley LGA in 2016, the labour force participation rate was 71.6 per cent for non-Indigenous people and was 49.5 per cent for Indigenous people. In the Toowoomba LGA, the labour force participation rate was 78.0 per cent for non-Indigenous people and was 61.1 per cent for Indigenous people (Department of Seniors, Disability Services and Torres Strait Islander Partnerships (DSDSATSIP) formerly Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP), 2020).

The largest industry of employment by number of workers in the Locker Valley LGA was agriculture, forestry and fishing (2,177 people) followed by health care and social assistance (1,542 people), education and training (1,441 people), retail trade (1,428 people) and construction (1,307 people).

In the Toowoomba LGA, the largest industries by number of workers were health care and social assistance (10,501 people), education and training (7,806 people), retail trade (6,756 people), construction (6,056 people) and manufacturing (4,840 people).

On a percentage basis, the key industries of employment in 2016 in the Lockyer Valley LGA were agriculture, forestry and fishing (13.8 per cent of the employed labour force), health care and social assistance (9.8 per cent), education and training (9.1 per cent), retail trade (9.1 per cent), and construction (8.3 per cent).

Key industries in Toowoomba LGA included health care and social assistance (14.8 per cent of the employed labour force), education and training (11.0 per cent), retail trade (9.5 per cent) construction (8.5 per cent) and manufacturing (6.8 per cent).

Table 5.19 Industry of employment, number by industry, 2016 – LGA and SA4 (number of people and per cent)

Industry of employment	Number				Per cent			
	Toowoomba LGA	Lockyer Valley LGA	Total	Toowoomba SA4	Toowoomba LGA	Lockyer Valley LGA	Total	Toowoomba SA4
Agriculture, Forestry and Fishing	4,533	2,177	6,710	2,965	6.4%	13.8%	7.7%	4.5%
Mining	1,285	211	1,496	1,065	1.8%	1.3%	1.7%	1.6%
Manufacturing	4,840	1,114	5,954	4,313	6.8%	7.1%	6.8%	6.5%
Electricity, Gas, Water and Waste Services	835	218	1,053	741	1.2%	1.4%	1.2%	1.1%
Construction	6,056	1,307	7,363	5,735	8.5%	8.3%	8.5%	8.6%
Wholesale Trade	2,137	455	2,592	1,979	3.0%	2.9%	3.0%	3.0%
Retail Trade	6,756	1,428	8,184	6,531	9.5%	9.1%	9.4%	9.8%
Accommodation and Food Services	4,226	879	5,105	4,206	5.9%	5.6%	5.9%	6.3%
Transport, Postal and Warehousing	3,002	1,098	4,100	2,803	4.2%	7.0%	4.7%	4.2%
Information Media and Telecommunications	494	96	590	516	0.7%	0.6%	0.7%	0.8%
Financial and Insurance Services	1,876	205	2,081	1,836	2.6%	1.3%	2.4%	2.8%

Industry of employment	Number				Per cent			
	Toowoomba LGA	Lockyer Valley LGA	Total	Toowoomba SA4	Toowoomba LGA	Lockyer Valley LGA	Total	Toowoomba SA4
Rental, Hiring and Real Estate Services	1,033	199	1,232	1,022	1.5%	1.3%	1.4%	1.5%
Professional, Scientific and Technical Services	3,165	592	3,757	3,101	4.4%	3.8%	4.3%	4.7%
Administrative and Support Services	1,734	465	2,199	1,736	2.4%	3.0%	2.5%	2.6%
Public Administration and Safety	4,734	891	5,625	4,432	6.6%	5.7%	6.5%	6.7%
Education and Training	7,806	1,441	9,247	7,615	11.0%	9.1%	10.6%	11.5%
Health Care and Social Assistance	10,501	1,542	12,043	10,028	14.8%	9.8%	13.9%	15.1%
Arts and Recreation Services	667	142	809	651	0.9%	0.9%	0.9%	1.0%
Other Services	2,911	586	3,497	2,807	4.1%	3.7%	4.0%	4.2%
Inadequately described/Not stated	2,593	719	3,312	2,310	3.6%	4.6%	3.8%	3.5%
Total	71,188	15,762	86,949	66,386	100%	100%	100%	100%

Source: (ABS, 2016b)

5.4.1.2 Occupation

The occupation profile of the Toowoomba LGA is largely comparable to that for Queensland (refer Table 5.20), with greater divergence in the Lockyer Valley LGA.

Labourers were the mostly highly represented group in the Lockyer Valley LGA (18.1 per cent), compared with Toowoomba LGA (12.2 per cent) and Queensland (10.5 per cent), consistent with its agricultural industry profile and lower level of educational attainment (i.e. certificate not degree) noted previously. Toowoomba also have a higher representation of labourers than Queensland (12.2 per cent). Machinery operators and drivers were also more highly represented in the Lockyer Valley LGA (10.2 per cent of the workforce) compared to the Toowoomba LGA and Queensland (both at 6.9 per cent). Percentages of technical and trade workers were also slightly higher in the Toowoomba LGA (15.1 per cent) and in Lockyer Valley LGA (15.0 per cent), when compared with Queensland (14.3 per cent).

There was a notably lower percentage of people employed as professionals in the Lockyer Valley LGA (11.8 per cent) compared with both Toowoomba LGA (18.6 per cent) and Queensland (19.8 per cent).

Table 5.20 Occupational groups, 2016 – LGA (percentage)

Occupation	LGA		QLD
	Lockyer Valley % of total	Toowoomba % of total	% of total
Managers	12.7	12.4	12.1
Professionals	11.8	18.6	19.8
Technicians and trades workers	15.0	15.1	14.3

Occupation	LGA		QLD
	Lockyer Valley % of total	Toowoomba % of total	% of total
Community and personal service workers	10.6	11.1	11.3
Clerical and administrative workers	11.5	13.3	13.6
Sales workers	8.5	9.0	9.7
Machinery operators and drivers	10.2	6.9	6.9
Labourers	18.1	12.2	10.5

Source: (ABS, 2016b)

5.4.1.3 Unemployment

Table 5.21 provides data on the labour force, number of people who were unemployed and the unemployment rate in potentially impacted communities in 2011 and 2016.

At the LGA level, Lockyer Valley LGA's unemployment rate increased from 6.5 per cent in 2011 to 8.1 per cent in 2016, an increase of 1.6 per cent. In the Toowoomba LGA, the unemployment rate increased by 2.0 per cent from 4.7 per cent in 2011 to 6.7 per cent in 2016.

Unemployment rates in 2016 were highest in Mount Kynoch (12.2 per cent), Harlaxton (11.8 per cent), Wilsonton Heights (11.5 per cent), Helidon (10.3 per cent) and Rockville (10.1 per cent), and at much higher levels than that in the LGAs. The largest concentrations of unemployed people were in Mount Lofty (1,840 people), Rockville (1,251 people) and Gowrie Junction (1,074 people), reflecting their larger populations.

Mt Kynoch and Postmans Ridge saw large increases in unemployment between 2011 and 2016 (8.5 percentage points and 5.3 percentage points respectively), however these data are based on very small workforce numbers and may not be significant. With 411 people employed in 2016, Helidon had the largest increase in unemployment of the other suburbs between the Census periods, rising by 4.9 per cent from 5.4 per cent in 2011 to 10.3 per cent in 2016. In combination with other socio-economic indicators (e.g. SEIFA scores, median incomes and household types) this this data reflects earlier analysis of Harlaxton, Rockville, Wilsonton Heights and Helidon as being disadvantaged communities.

Table 5.21 Employed and unemployed workers and unemployment rate, 2011-2016

Location	2011			2016			
	Employed workers (No)	Unemployed workers (No)	Unemployment Rate (%)	Employed workers (No)	Unemployed workers (No)	Unemployment Rate (%)	Change in rate 2011-2016 (percent-age points)
State Suburb							
Blue Mountain Heights	449	6	*1.3*	476	14	*2.9*	1.5
Cotswold Hills	645	7	*1.1*	666	26	*3.8*	2.7
Cranley	321	11	*3.3*	527	31	*5.6*	2.2
Gowrie Junction	1,004	39	*3.7*	1,074	58	*5.1*	1.4

Location	2011			2016			
	Employed workers (No)	Unemployed workers (No)	Unemployment Rate (%)	Employed workers (No)	Unemployed workers (No)	Unemployment Rate (%)	Change in rate 2011-2016 (percent-age points)
Harlaxton	1,029	87	*7.8*	983	132	*11.8*	4.0
Helidon	424	24	*5.4*	411	47	*10.3*	4.9
Helidon Spa	268	19	*6.6*	241	19	*7.3*	0.7
Kingsthorpe	872	40	*4.4*	863	54	*5.9*	1.5
Mount Kynoch	77	3	*3.8*	115	16	*12.2*	8.5
Mount Lofty	1,812	70	*3.7*	1,840	91	*4.7*	1.0
Postmans Ridge	230	4	*1.7*	198	15	*7.0*	5.3
Rockville	1,336	98	*6.8*	1,251	141	*10.1*	3.3
Wilsonton Heights	1,157	83	*6.7*	990	129	*11.5*	4.8
Withcott	844	31	*3.5*	952	35	*3.5*	0.0
Total	*10,468*	*522*	*4.7*	*10,587*	*808*	*7.1*	*2.3*
LGA							
Lockyer Valley	14,658	1,014	*6.5*	15,762	1,393	8.1	1.6
Toowoomba	68,825	3,427	*4.7*	71,188	5,149	6.7	2
Statistical Area 4							
Toowoomba	64,142	3,353	5	*66,386*	5,028	7	2

Source: (ABS 2011, ABS 2016b Community Profiles and Tablebuilder)

Figure 5.3 presents the unemployment rate trend for the Lockyer Valley and Toowoomba LGAs between March 2016 and March 2020 (the period for which the latest unemployment data was available at the time of writing). The unemployment rate in the Lockyer Valley LGA increased during 2016 and decreased during 2018, followed by a small increase in unemployment during 2019, to reach a rate of 6.4 percent in March 2020. This was a decrease of 0.5 percentage points since March 2016.

In the Toowoomba LGA, unemployment rates trended upwards during 2016 - 2018, but declined during 2019 to reach 4.6 per cent in March 2020, which was an increase of 0.2 percentage points since March 2016. For the March quarter 2020, the unemployment rate in Queensland was 5.6 per cent, which was 0.8 percentage points lower than in Lockyer Valley LGA but 1.0 percentage point higher than in the Toowoomba LGA.

At March 2020, there were 3,393 unemployed people in the Toowoomba LGA and 1,178 unemployed people in the Lockyer Valley LGA, for a collective unemployed workforce of 4,571 people (Department of Education, Skills and Employment (ESE), 2020).

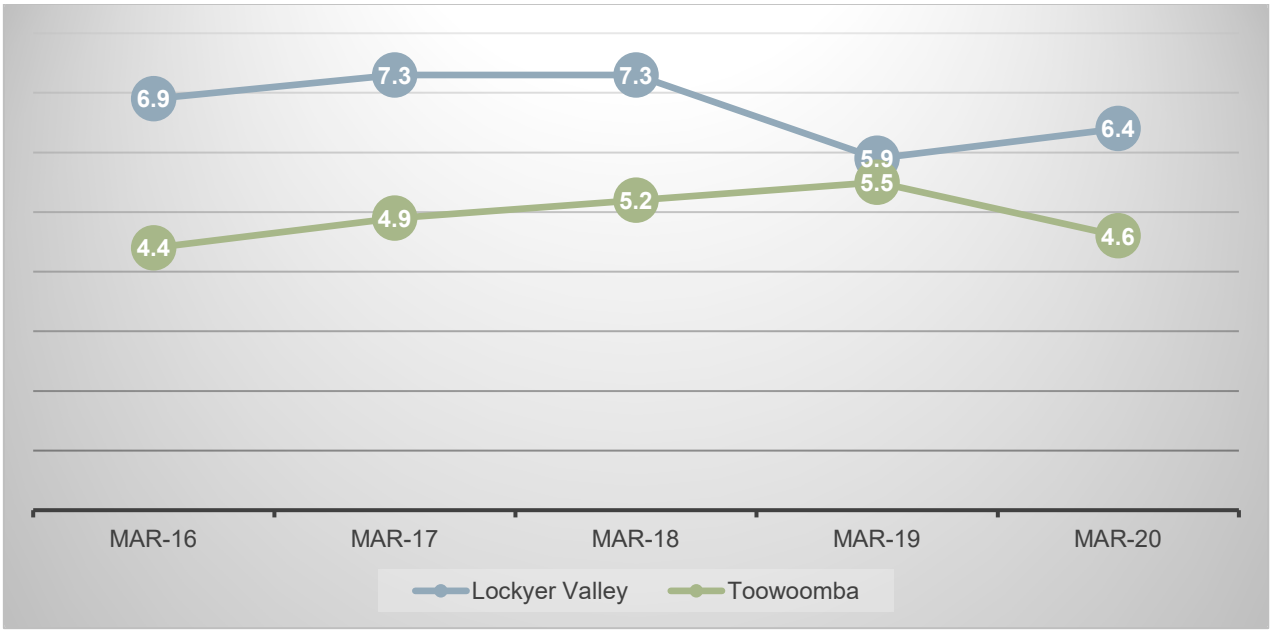


Figure 5.3 Unemployment rate Toowoomba and Lockyer Valley LGAs June 2016 – June 2019

Source: DESE Small Area Labour Market – Lockyer and Toowoomba LGAs (2020)

The COVID-19 pandemic resulted in job losses across Australia from March 2020. The number of Toowoomba LGA residents receiving Jobseeker or Youth Allowance benefits (a proxy indicator for unemployment numbers, noting that not all Youth Allowance recipients are available for work) increased from 7,175 people to 10,995 people between March 2020 and July 2020 (an increase of 53.2 per cent) (Id.Profile, 2020).

The number of Lockyer Valley residents receiving these benefits increased from 1,903 in March 2020 to 2,955 people in July 2020 (an increase of 55.2 per cent) (Ibid.). Increases in the number of Jobseeker and Youth Allowance recipients was largely due to decreased economic activity resulting from COVID-19 and indicates that unemployment is likely to have risen since March 2020. The effect of COVID-19 on labour availability is yet to be established. Increased unemployment and business closures may result in increased availability of labour and skills to the Project, but labour mobility may be constrained whilst travel restrictions are in place, with mobility potentially increasing as specific industries and regions recover from changes to economic conditions. Overall, a decrease in the labour and skills available within the Project region is not anticipated.

5.4.2 Tourism

Tourism in the Toowoomba and Lockyer Valley LGAs is largely generated by the scenic amenity, environmental values and rural character of the region. Self-drive tours are popular throughout the LGAs and walking tracks, flora and fauna, extensive wooded and mountainous vistas attract day-trippers and overnight stayers, with a diverse range of accommodation, bed and breakfast and farm stays.

The Landscape and Visual Impact Assessment (LVIA) (EIS Appendix H: Landscape and visual impact assessment technical report) identified a number of recognised self-guided tourist drives in the region, including:

- The 'Warrego Way', 'Adventure Way' and 'Australia's Country Way', each nationally marketed as 'Great Queensland Drives' (Outback Queensland Tourist)
- The 'Cobb and Co Tourist Drive'
- The 'Open Plains Country Drive'
- The 'Spring Bluff Tourist Drive'.

Referred to fondly as the 'salad bowl', the Lockyer Valley is known for its production of high-quality produce and stock as well as scenic landscapes (Lockyer Valley Visitor Information Centre, 2019, My Community Directory, 2019).

The LVIA identified a number of national parks and nature refuge areas with scenic amenity and tourist appeal, including:

- Lockyer National Park (including Alice Creek Nature Reserve)
- Picnic Point Parklands, one of Toowoomba's top tourist destinations
- The Bicentennial National Trail network, a multi-use trail
- Mount Tabletop Bushland Reserve
- A number of parks along the escarpment, including Redwood Park and Jubilee Park.

The Murphys Creek Fossil Downs Bush Rodeo is a popular event in the Lockyer Valley Region along with several festive events such as the Christmas in the Country Art and Craft Show and the Laidley Spring Festival. The Lockyer Valley Visitor Information Centre (Lockyer Valley Visitor Information Centre, 2019) advertises food trails in the area, and promotes local hospitality businesses and food producers to visitors. Another key attraction is the Helidon Natural Springs in Helidon, also offering visitor accommodation at the Helidon Natural Springs Spa Resort.

Toowoomba has a number of events, including the well-known Carnival of Flowers which is held annually and attracts thousands of visitors to the region (Toowoomba Regional Council, 2019b). Parks are also significant generators of day trip tourism. There are several attractions in the region including Highfields Falls, Mount Lofty Lookout and the Heritage Centre in Toowoomba. Cranley Escarpment is a bushland reserve that is used for bushwalking and general recreational purposes.

Toowoomba is also a popular cycling destination offering mountain bike trails and network of roads. (Toowoomba Regional Council, 2019a). A master plan has been developed by TRC, LVRC and the Queensland Government to guide the future of mountain biking along the Toowoomba Range escarpment. Farm stays are also popular amongst visitors.

Each of the small townships have their own unique landscape and architecture that entices tourists. Several other attractions in the area include the Cobb and Co Museum and the Jondaryan Woolshed. There are several historical walks in the Toowoomba Region which highlight the rich farming and Indigenous culture in the area. The Toowoomba Region has many food and beverage options for tourists visiting the area. The SEQ website (South East Queensland Food Trails, 2019) provides information on local businesses in the area to visit, from wineries to restaurants and cafes.

5.4.3 Businesses capacity to supply Project

Table 5.22 shows the number of registered businesses by industry in the Toowoomba and Lockyer Valley LGAs in 2017, with agriculture and construction the predominant industries in both. The Toowoomba LGA recorded significantly more businesses (15,619 businesses) compared to the Lockyer Valley LGA at 3,053 respectively reflecting its larger population and its role as a regional centre.

The Toowoomba LGA's largest industry by number of businesses in 2017 was agriculture, forestry and fishing (3,330 businesses) followed by construction (2,539 businesses) and rental, hiring and real estate services (1,592 businesses). In 2016-2017 the total output value of agriculture in the Toowoomba LGA was $1,785 million (M) (Id Community, 2019).

The largest industry within the Lockyer Valley LGA (as indicated by number of businesses) was agriculture, forestry and fishing (847 businesses) followed by construction (538 businesses) and transport, postal and warehousing (276 businesses).

The construction industry is the second largest industry in both LGAs, indicating capacity in this industry as a potential labour pool during the Project's construction phase. Recent major projects, including the construction of the Toowoomba Bypass, and urban growth are likely to have contributed to the strength of the construction industry in both the Toowoomba and Lockyer Valley LGAs.

Table 5.22 Business count by industry, 2015 and 2017 – LGAs (number of businesses)

Type of Industry	Toowoomba LGA		Lockyer Valley LGA	
	2015	2017	2015	2017
Agriculture, Forestry and Fishing	3,292	3,330	862	847
Mining	53	51	14	14
Manufacturing	594	592	129	124
Electricity, Gas, Water and Waste Services	36	33	4	7
Construction	2,444	2,539	487	538
Wholesale Trade	370	390	84	88
Retail Trade	863	847	159	163
Accommodation and Food Services	462	482	73	70
Transport, Postal and Warehousing	901	936	275	276
Information Media and Telecommunications	65	65	3	4
Financial and Insurance Services	1,019	1,120	119	130
Rental, Hiring and Real Estate Services	1,594	1,592	210	234
Professional, Scientific and Technical Services	1,074	1,088	184	189
Administrative and Support Services	457	454	83	97
Public Administration and Safety	29	32	6	5
Education and Training	145	154	19	19
Health Care and Social Assistance	774	851	60	66
Arts and Recreation Services	160	172	25	31
Other Services	717	748	137	141
Currently Unknown	138	142	20	22
Total Businesses	*15,200*	*15,619*	*2,952*	*3,053*

Source: (ABS, 2017b)

Table 5.23 shows the employment size of registered businesses within the Toowoomba LGA and Lockyer Valley LGA in 2016-2017.

The majority of businesses in both LGAs were either non-employing or were small businesses with less than 20 employees. In the Toowoomba LGA, 63.9 per cent of businesses were non-employing (sole operators, including farmers) and 33.8 per cent employed 1 to 19 employees. In the Lockyer Valley LGA the percentage of non-employing businesses was slightly higher at 65.2 per cent (reflecting the agricultural industry commonly operated as family businesses), whilst 32.6 per cent of businesses employed 1-19 employees. While this is similar to the Queensland business profile, it is likely that many businesses will need capacity building in order to participate in supply to the Project.

Table 5.23 Business Count by Number of Employees (LGA), 2017

LGA	Non-employing	1-19 Employees	20-199 Employees	200+ Employees	Total
Number					
Lockyer Valley	1,990	996	65	3	3,054
Toowoomba	9,981	5,281	348	10	15,620
Total	*11,971*	*6,277*	*413*	*13*	*18,674*
Percentage					
Lockyer Valley	65.2	32.6	2.1	0.1	*100*
Toowoomba	63.9	33.8	2.2	0.1	*100*
Total	*64.1*	*33.6*	*2.2*	*0.1*	*100*

Source: (ABS, 2017b)

5.4.4 Skills shortages

The AIGroup Construction Outlook November 2018 Survey (2018a) found that the construction industry was experiencing widespread and increasing difficulties in sourcing skilled labour and materials. A total of 69.2 per cent of respondents reported either ‘major’ or ‘moderate’ difficulty in recruiting skilled labour in the six months to March 2018, up from 66.7 per cent in the previous six months. ‘Major’ or ‘moderate’ difficulties sourcing sub-contractors was reported by 57.8 per cent of respondents, down from 66.7 per cent in the previous six months. More than two thirds (69.2 per cent) of respondents expected ‘very busy’ or ‘busy’ levels of activity to June 2019. Respondents to AIGroup’s 2018 Workforce Development Needs Survey listed construction trades workers, electricians and mechatronics/automation trades workers as the top three job roles experiencing skill shortages (Australian Industry Group, 2018b). Respondents were not expecting this situation to ease, with continued growth in the construction sector forecast into 2019/20, based on a range of large-scale projects, and strong growth prospects in transport infrastructure and civil works projects, which were expected to continue to draw heavily on labour and materials.

The 2018 National Skills Needs List (showing shortages in trade workers) indicates that a very wide range of trades were experiencing skills shortages at the national level. Those of potential interest to the Project which are experiencing shortages include electrical equipment trades workers, metal fabricators and pressure welders (Australian Apprenticeships, 2019).

The Australian Government Department of Jobs and Small Business produced data on selected occupations for which shortages or some recruitment difficulty was evident in 2016-17. Occupational reports for skill categories relevant to the construction sectors are shown in Table 5.24, and indicate that companies and projects were expecting some difficulties in recruitment in plumbing and gas fitting trades. A ‘shortage’ is defined when employees are unable to fill or have considerable filling vacancies (DESSFB, 2019).

Table 5.24 Skill shortages, Queensland, 2018

Occupational group	Labour market rating
Structural Steel and Welding trades workers	No shortage
Sheet metal trades Workers	No shortage
Painting trade workers	No shortage
Plumbing and gas fitting trades	Regional shortage

Source: (Department of Jobs and Small Business, 2018)

At the national level, the most recently available data for specific occupations are for 2019 and indicate that the labour market for engineering professionals had tightened since 2018, a shortage of civil engineering professionals remained in Queensland, and a national shortage of electrical engineers had emerged, whilst engineering trades such as fitters, metal machinists and sheet metal trades also had shortages at the national level (with no Queensland-specific data provided) (Department of Jobs and Small Business, 2019).

Queensland labour market research conducted in 2017 (Department of Jobs and Small Business, 2018) also identified shortages for occupations within the construction cluster (with the exception of carpenters, joiners and fibrous plasters), but noted that regional employers had more success filling vacancies than metropolitan based employers. In contrast to national findings, it found no shortages for structural steel and welding trades (Department of Jobs and Small Business, 2018).

Within the Project region in 2017, there were approximately 2,539 construction industry businesses in the Toowoomba LGA (up from 2,444 businesses in 2015) and 538 construction industry businesses in the Lockyer Valley LGA (up from 487 businesses in 2015), for a total of 3,077 businesses (refer Table 5.22).

Locally, consultation participants noted that the number and capacity of construction and manufacturing industry businesses had increased as the result of major project construction including the Toowoomba Wellcamp Airport and the Toowoomba Bypass. This indicates the likely availability of construction workers from within the Project region for the Project's construction.

5.4.5 Training and Employment Policies

Government strategies and programs are summarised below. A number of the training programs offered as part of these programs are market driven, with needs identified and addressed as they emerge. ARTC will consult with the Queensland Department of Employment, Small Business and Training (DESBT) to identify opportunities to align Inland Rail's workforce training and development initiatives with the Queensland Government's jobs, skills and workforce diversity programs.

5.4.5.1 Regional Skills Investment Strategy

The Regional Skills Investment Strategy (RSIS) is a DESBT initiative funded over four years. RSIS will support regional communities to identify current and emerging jobs in key industries, and ensure local people are supported to develop the skills to meet this demand (Queensland Government. 2019a).

Both TRC and LVRC are participating in the RSIS. In the Toowoomba LGA, the identified priorities for skills development have been identified in advanced manufacturing, health care and social assistance, and transport and logistics. In the Lockyer Valley LGA, the identified priorities are the agriculture, construction and hospitality industries.

ARTC has commenced consultation with the RSIS coordinators in each Council, towards alignment of Inland Rail training initiatives with RSIS strategies.

5.4.5.2 Jobs Queensland

Jobs Queensland is an independent statutory entity established by the Queensland Government to provide strategic advice to the Government on future skills requirements, workforce planning and development issues and the apprenticeship and traineeship system.

Jobs Queensland's 'Positive Futures: Apprenticeships and Traineeships in Queensland' Discussion Paper notes that after trending upwards for over a decade during the mining boom, apprenticeship commencements in Queensland began to fall in 2007, but were recovering by 2016 (Jobs Queensland, 2019). Queensland Government programs that support apprentices and trainees include:

- Registered Trades Skill Pathway and Trade Skills Assessment and Gap Training which help existing workers to gain trade qualifications
- User Choice which funds the training of eligible apprentices and trainees
- Industry Pre-Apprenticeship Programs which work in partnership with industry to develop tradespeople in priority trade occupations
- Work Start, which provides a one-off payment of $10,000 to private sector employers who employ a recent participant of particular Skilling Queenslanders for Work programs into a traineeship or apprenticeship.

The Project's Contractor will determine the applicability and utilisation of Jobs Queensland programs as part of its workforce development and training plans.

5.4.5.3 Skilling Queenslanders for Work

Skilling Queenslanders for Work (SQW) (2016b) is an initiative providing training to people who are under-utilised or under-employed in the labour market, and building the skills of young people, Aboriginal and Torres Strait Islander people, people with a disability, mature-age job seekers and people from culturally and linguistically diverse backgrounds. Local community ownership of projects is a cornerstone of the initiative.

ARTC has engaged with TRC and LVRC regarding the potential for joint applications for SQW projects.

5.4.5.4 Back to Work Regional Employment Package

The Back to Work package is aimed at increasing business confidence and employment prospects for regional jobseekers (Queensland Government, 2016a). Employers, jobseekers, and the Back to Work Teams will work together to build regional networks, build regional capacity, and create local opportunities. This initiative includes:

- Support payments of $10,000-$20,000 for employers to take on jobseekers in regional Queensland
- Training for eligible jobseekers to gain the skills including Certificate 3 qualifications
- Back to Work Teams working with local employers and jobseekers.

The Project's Contractor will determine the applicability and utilisation of Back to Work package programs as part of its workforce development and training plans.

5.4.5.5 Workforce diversity

The Queensland Women's Strategy 2016-21 (Department of Communities, Child Safety and Disability Services. 2016) provides a framework for government, the private sector and the wider Queensland community to take significant action to achieve gender equality in Queensland. The Strategy's four priority areas include participation and leadership; economic security; safety; and health and wellbeing. The Strategy also provides a list of initiatives that government, business and the community have committed to delivering, working together to achieve gender equality in Queensland.

ARTC will require its Contractor to set goals for female employment and report on progress towards those goals (refer Section 8.3.2).

5.4.5.6 Advancing Aboriginal and Torres Strait Islander education

The Department of Education has released an action plan for Advancing Aboriginal and Torres Strait Islander education aimed at driving higher expectations and achieving better outcomes for Queensland's Aboriginal and Torres Strait Islander communities across early childhood education, school education, vocational education and training, and higher education (Queensland Department of Education, 2019).

Highlights from the action plan with relevance to the SIA include:

- Ensuring Aboriginal and Torres Strait Islander students are engaged, achieving at school and transitioning into further education, training or work
- Building workforce and system capability, and partnering with key stakeholders to deliver responsive services for Aboriginal and Torres Strait Islander children, students, their families and communities.

ARTC has a commitment to ensuring Indigenous people are able to access Project-related training, employment (refer Section 8.3.3) and will require its Contractor to set goals for Indigenous participation in employment and report on progress towards those goals (refer Section 8.3.2).

5.5 Housing and accommodation

5.5.1 Housing access

5.5.1.1 Occupied and unoccupied dwellings

At Census 2016, there was a total of 83,217 private dwellings in the Project region (refer Table 5.25). With most of these dwellings being occupied (91.2 per cent of all private dwellings), there is little surplus housing supply available in the region. The greatest supply of private dwellings was in the urban suburbs of Mount Lofty (1,607 dwellings), Rockville (1,393 dwellings), Wilsonton Heights (1,184) and Harlaxton (1,161 dwellings). The largest number of dwellings in the rural suburbs were in Kingsthorpe (730 dwellings), Gowrie Junction (714 dwellings), Cranley (681 dwellings) and Withcott (651 dwellings), whilst Mount Kynoch and Postmans Ridge had the smallest number of dwellings (87 and 145 dwellings respectively).

Occupancy levels were highest in the Lockyer Valley LGA (93.6 per cent), followed by Toowoomba LGA (90.7 per cent), with both higher than the Queensland average (89.4 per cent).

There were 806 unoccupied dwellings in the potentially impacted communities, with the greatest number located in Mount Lofty (157 dwellings), Harlaxton (119 dwellings) and Rockville (101 dwellings) reflecting their larger supplies of housing. Cranley had the highest rate of unoccupied dwellings at 13.5 per cent, followed by Mount Kynoch at 11.5 per cent, potentially reflecting a lag in housing demand for newly built dwellings or the existence of vacant homes on larger rural properties.

Table 5.25 Private dwelling occupancy, 2016 – LGA and State Suburb (number and per cent)

Statistical Area	Occupied dwellings		Unoccupied dwellings		Total dwellings
	(number)	(% total)	(number)	(% total)	(number)
State Suburb					
Blue Mountain Heights	325	*95.9*	14	*4.1*	339
Cotswold Hills	437	*91.6*	40	*8.4*	477
Cranley	589	*86.5*	92	*13.5*	681

Statistical Area	Occupied dwellings		Unoccupied dwellings		Total dwellings
	(number)	(% total)	(number)	(% total)	(number)
Gowrie Junction	690	*96.6*	24	*3.4*	714
Harlaxton	1,042	*89.8*	119	*10.2*	1,161
Helidon	414	*92.8*	32	*7.2*	446
Helidon Spa	188	*93.5*	13	*6.5*	201
Kingsthorpe	673	*92.2*	57	*7.8*	730
Mount Kynoch	77	*88.5*	10	*11.5*	87
Mount Lofty	1,450	*90.2*	157	*9.8*	1,607
Postmans Ridge	141	*97.2*	4	*2.8*	145
Rockville	1,292	*92.7*	101	*7.3*	1,393
Wilsonton Heights	1,071	*90.5*	113	*9.5*	1,184
Withcott	621	*95.4*	30	*4.6*	651
Total	9,010	*91.8*	806	*8.2*	*9,816*
LGA					
Lockyer Valley	13,961	*93.6*	951	*6.4*	14,912
Toowoomba	61,954	*90.7*	6,351	*9.3*	68,305
Total	75,915	*91.2*	7,302	*8.8*	83,217
Queensland	n/a	*89.4*	n/a	*10.6*	n/a

Source: (ABS, 2016b)

5.5.1.2 Housing type

In 2016 the Project region had a higher proportion of dwellings as separate houses when compared to Queensland. Table 5.26 shows that in 2016 most dwellings in the Lockyer Valley LGA were separate houses (91.4 per cent), more so than in Toowoomba LGA (81.4 per cent), while both LGAs had a higher representation than Queensland (76.6 per cent).

The Toowoomba LGA offers greater housing choice than elsewhere in the Project region, with a higher percentage of medium density housing, consisting of semi-detached, row or terrace housing (11.9 per cent of dwellings) and flat or apartments (5.1 per cent of dwellings). This compares with the Lockyer Valley LGA's lower representation of semi-detached housing (2.6 per cent) and flats/apartments (1.8 per cent). While Toowoomba LGA has a similar level of semi-detached, row or terrace housing as Queensland (11.9 per cent compared with 10.6 per cent) it has a much lower representation of flats or apartments (at 5.1 per cent compared with 11.3 per cent).

The housing profile indicates a generally low density of housing with limited diversity in supply. In the suburbs of Cotswold Hills, Gowrie Junction, Kingsthorpe and Postmans Ridge all housing stock was separate housing in 2016. The most significant representation of semi-detached housing was in Cranley (47.1 per cent of stock and reflecting the location of the Palm Lakes Resort), Harlaxton (15.9 per cent semi-detached and 5.4 per cent flat or apartment), and Mount Kynoch (15.0 per cent as semi-detached).

Table 5.26 Dwelling Structure (Private Dwellings), 2016 – Per cent

Statistical Area	Separate House % of total	Semi-detached, row or terrace house, townhouse % of total	Flat or Apartment % of total	Other Dwelling^ % of total	Not Stated % of total	Total %
State Suburb						
Blue Mountain Heights	99.1	0.0	0.0	0.0	0.9	*100*
Cotswold Hills	100.0	0.0	0.0	0.0	0.0	100.0
Cranley	52.3	47.1	0.0	0.0	0.6	*100*
Gowrie Junction	100.0	0.0	0.0	0.0	0.0	*100*
Harlaxton	78.0	15.9	4.5	0.7	1.0	100.0
Helidon	92.3	2.9	3.8	0.0	0.9	*100*
Helidon Spa	67.8	0.0	0.0	32.2	0.0	*100*
Kingsthorpe	100.0	0.0	0.0	0.0	0.0	*100*
Mount Kynoch	85.0	15.0	0.0	0.0	0.0	*100*
Mount Lofty	88.7	8.7	2.2	0.2	0.2	100.0
Postmans Ridge	100.0	0.0	0.0	0.0	0.0	*100*
Rockville	82.6	3.8	13.3	0.3	0.0	100.0
Wilsonton Heights	87.2	5.6	7.2	0.0	0.0	100.0
Withcott	98.1	0.8	0.5	0.6	0.0	*100*
Total	86.9	8.1	3.9	0.8	0.3	100.0
LGA						
Lockyer Valley	91.4	2.6	1.8	3.4	0.8	*100*
Toowoomba	81.4	11.9	5.1	0.9	0.7	*100*
Total	*83.2*	*10.3*	*4.5*	*1.4*	*0.7*	*100*
Queensland	76.6	10.6	11.3	1.0	0.5	100.0

Source: (ABS, 2016b)

5.5.1.3 Housing tenure

Households in rental dwellings can be more vulnerable to rental price changes, particularly if on low incomes, and may have difficulties accessing the home purchase market. In 2016, as shown in Table 5.27 the Toowoomba LGA recorded a higher percentage of dwellings that were rented (30.0 per cent) compared to the Lockyer Valley LGA (23.1 per cent) but lower than the Queensland average (34.2 per cent). However, the higher proportion of rental households in Toowoomba does not appear to reflect a more transient population, with both LGAs recording similar percentages of people living at the same address one year ago (70 per cent of households each) and five years ago (51 per cent of households in Toowoomba LGA and 49 per cent in Lockyer LGA).

The Lockyer Valley LGA recorded a higher percentage of dwellings owned with a mortgage (35.5 per cent) compared to the Toowoomba LGA (30.6 per cent) and Queensland (33.7 per cent).

Home ownership with dwellings owned outright was highest in the suburbs of Blue Mountain Heights (49.1 per cent), Cotswold Hills (46.9 per cent) and Cranley (46.4 per cent). Outright home ownership levels were the lowest in Helidon Spa (14.8 per cent) and Mount Kynoch (18.2 per cent). Rental tenure was highly represented in the suburbs of Wilsonton Heights (45.7 per cent), Harlaxton (42.1 per cent) and Rockville (35.4 per cent), identified earlier as being disadvantaged (refer Section 5.2.7), as well as in Mount Kynoch (40.3 per cent). Home purchasing is most highly represented in Gowrie Junction (60.2 per cent of dwellings owned with a mortgage), Withcott (51.0 per cent) and Kingsthorpe (50.8 per cent).

Table 5.27 Tenure 2016 (dwellings) LGA and SSC (per cent)

Statistical Area	Owned Outright % of total	Owned with a Mortgage % of total	Rented % of total	Other/Not Stated % of total	Total %
State Suburbs					
Blue Mountain Heights	49.1	39.6	7.3	4.0	*100*
Cotswold Hills	46.9	40.6	8.3	4.2	100.0
Cranley	46.4	15.5	27.9	10.2	*100*
Gowrie Junction	25.9	60.2	8.6	5.3	*100*
Harlaxton	24.2	24.1	42.1	9.6	100.0
Helidon	28.0	28.2	30.1	13.7	*100*
Helidon Spa	14.8	43.9	27.0	14.3	*100*
Kingsthorpe	29.6	50.8	15.5	4.2	*100*
Mount Kynoch	18.2	24.7	40.3	16.9	*100*
Mount Lofty	36.5	34.0	24.4	5.2	100.0
Postmans Ridge	36.1	43.8	17.4	2.8	*100*
Rockville	26.3	28.1	35.4	10.2	100.0
Wilsonton Heights	22.4	23.5	45.7	8.3	100.0
Withcott	29.2	51.0	14.4	5.4	*100*
Total	*30.7*	*34.5*	*27.2*	*7.6*	*100.0*
LGA					
Lockyer Valley	29.9	35.5	23.1	11.5	*100*
Toowoomba	30.7	30.6	30.0	8.7	*100*
Queensland	28.5	33.7	34.2	3.6	*100.0*

Source: (ABS, 2016b)

5.5.1.4 Social housing and homelessness

Housing stress is said to occur when low income households (those in the bottom 40 per cent of income distribution) pay more than 30 per cent of their gross household income on housing costs such as mortgage or rent (Torrens University (PHIDU), 2018).

Housing stress and homelessness increase the risk of poor health outcomes and reduces psychological wellbeing. The prevalence of severe and persistent mental illness amongst people experiencing homelessness, and people whose housing tenure is marginal, is significantly higher than in the general population (Mental Health Council Australia, 2014). Housing stress, housing insecurity and homelessness can be significant barriers for residents accessing education, employment and health services.

The Rental Affordability Index is a marker for housing stress, where a score of 100 or less indicates households in housing stress (i.e. where households pay more than 30 per cent of gross household weekly income on rent) (SGS Economics and Planning, 2019). Scores are only available for Postcode 4350 and Postcode 4352 due to data availability and are reported in Table 5.28. The scores for Postcodes 4350 and 4352 indicate that rental housing is affordable for a couple on an average income of $75,000; however, they also show that affordability has been declining in both postcode areas since 2011 (falling from 154 to 129 in Postcode 4350, and from 140 to 134 in Postcode 4352).

Table 5.28 Rental Housing Stress, 2011-18 (Rental Affordability Index)

Postcode	State Suburb	LGA	Rental Affordability Index Score (Quarter 4)							
			2011	2012	2013	2014	2015	2016	2017	2018^
4344	Helidon Helidon Spa	Lockyer Valley^	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4350	Toowoomba suburbs	Toowoomba	154	149	142	136	143	144	142	139
4352	Gowrie Junction Postmans Ridge Withcott	Toowoomba / Lockyer Valley	140	144	131	130	117	138	127	134
4400	Kingsthorpe	Toowoomba^	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes: ^ insufficient new rental bonds to determine rental affordability in some locations; 2018 data reported for Quarter 2 ~ Postcode 4350 represents Toowoomba suburbs and includes Cotswold Hills, Wilsonton Heights, Rockville, Harlaxton, Mount Lofty, Blue Mountain Heights, Cranley and Mount Kynoch

Source: (SGS Economics and Planning, 2019) Parameters: minimum wage couple income $75,000; 3 bedroom dwelling

As shown in Table 5.29, there is a low level of supply of social housing in the Project region when compared with Queensland. In the Toowoomba LGA in 2016, 2.6 per cent of housing (or 1,591 dwellings) was social housing, while in the Lockyer Valley LGA 1.2 per cent of housing (or 174 dwellings) was social housing compared with 3.7 per cent in Queensland.

Of Toowoomba's social housing stock, 250 dwellings (15.7 per cent) is located in the potentially affected communities, predominantly in Wilsonton Heights (96 dwellings), Rockville (74 dwellings) and Harlaxton (69 dwellings), these being some of the most disadvantaged suburbs in the Project region.

Table 5.29 Social Housing, 2016 – LGA and State Suburb (number and per cent)

Statistical Area	Total Dwellings	Social Housing^	
	No	No	% Total dwellings
State Suburb			
Blue Mountain Heights	328	0	0.0
Cotswold Hills	433	0	0.0
Cranley	588	0	0.0
Gowrie Junction	683	0	0.0
Harlaxton	1032	69	6.7
Helidon	415	0	0.0
Helidon Spa	196	0	0.0
Kingsthorpe	666	8	1.2
Mount Kynoch	77	0	0.0

Statistical Area	Total Dwellings	Social Housing^	
	No	No	% Total dwellings
Mount Lofty	1440	3	0.2
Postmans Ridge	144	0	0.0
Rockville	1285	74	5.8
Wilsonton Heights	1067	96	9.0
Withcott	624	0	0.0
Total	*8978*	*250*	*2.8*
LGA			
Lockyer Valley	13,956	174	1.2
Toowoomba	61,949	1,591	2.6
Queensland	1,656,831	61,533	3.7

Notes: ^ Defined as rented from State or territory housing authority, housing co-operative, community or church group

Source: ABS, 2016b Tablebuilder and Table G33 Qld STE

Due to the nature of homelessness, the number of homeless people is hard to estimate accurately. Data on homelessness are presented at the SA2 and LGA level in Table 5.30. There was an estimated 660 people experiencing homelessness in the Project region at the 2016 Census. Most were identified in the Toowoomba LGA (493 people, an increase of four people from 2011 to 2016), consistent with the larger population and greater availability of service level here. An estimated 167 people in the Lockyer Valley LGA were homeless in 2016, an increase of 37 people since 2011.

At the SA2 level the number of people who were recorded as being homeless was highest in the Wilsonton SA2 (46 people) and Toowoomba-West SA2 (40 people), followed by North Toowoomba-Harlaxton SA2 (32 people) and Lockyer Valley-West SA2 (31 people). The greatest change was seen in Wilsonton SA2, increasing by approximately 27 homeless persons between 2011 and 2016 (an approximate 140 per cent increase), while numbers generally reduced elsewhere. This may indicate the transient nature of homelessness and/or the difficulties of accurately reporting homelessness.

Table 5.30 Homeless Persons, 2011 and 2016 – LGA and SA2 (number)

Statistical Area	LGA	Homeless Persons (Estimate)^		Change
		2011	2016	
SA2				
Gowrie	Toowoomba	11	7	-4
Highfields	Toowoomba	20	7	-13
Lockyer Valley - West	Lockyer Valley	29	31	2
North Toowoomba - Harlaxton	Toowoomba	37	32	-5
Toowoomba - West	Toowoomba	50	40	-10
Wilsonton	Lockyer Valley	19	46	27
Total		*166*	*163*	*-3*

Statistical Area	LGA	Homeless Persons (Estimate)^		Change
		2011	2016	
LGA				
Lockyer Valley		130	167	37
Toowoomba		489	493	4
Total		*619*	*660*	*41*

Notes: ^Homelessness estimates are derived from Census data collected on Census night and may not be a true representation of actual homelessness.

Source: (ABS, 2016c)

5.5.2 Housing trends

5.5.2.1 Purchase availability and prices

As shown in Table 5.31, REIQ data reported on median sale prices indicates that the Toowoomba LGA housing market has been steady in recent years with a small reduction in median house prices of 1.0 percentage points over the year to March 2020. Five year purchase price trend data to March 2019 showed modest growth of 12.2 per cent in the Toowoomba LGA (REIQ, 2019). The unit sales market saw an average decrease of 8.2 per cent in the year to March 2020 compared to the previous year.

There was no change to the median value of housing asking prices in the Lockyer Valley LGA in the year to March 2020. Five year trend data to March 2019 indicated that housing asking prices had remained steady with growth of 1.9 per cent (an annualised growth of 0.38 per cent) (*Ibid*.).

At the end of March 2020, the median asking price for all houses in Postcode 4352 (Gowrie Junction, Postmans Ridge and Withcott) was $489,900 which was the highest median cost among the four postcodes, and had decreased by 1.5 per cent compared with the previous year and by 1.3 per cent over the previous three years (SQM Research, 2020).

The other postcodes had median prices ranging from $374,200 in Postcode 4344 (Helidon and Helidon Spa) to $377,500 in Postcode 4350 (Toowoomba suburbs) to $377,800 in Postcode 4400 (Kingsthorpe). Postcode 4350 saw a one year increase of 1.9 per cent in median asking price for all houses, and a small decrease (1.5 per cent) over the preceding three years. In Postcode 4344 (Helidon and Helidon Spa), there was a one year decrease of 5.6 per cent and a three year decrease of 2.4 per cent, whilst in Postcode 4400 (Kingsthorpe) there were also small decreases at 1.0 per cent over the one year period and 0.2 per cent over the three year period. Overall, this indicates a stable market with no remarkable surges in demand or changes in housing cost.

Volatile house prices in Postcode areas 4344 and 4400 reflect small housing markets (611 and 666 dwellings respectively in 2016) and are not reliable market indicators. Unit prices also tended to show greater volatility, likely due to the small market size, and should be treated with caution.

Table 5.31 Median Dwelling Price (House and Units), March 2020

Statistical Area	State Suburb	Median house price ($)	1 Year Change %	3 year change %	Median unit price ($)	1 Year Change %	3 year change %
Postcode^							
4400#	Kingsthorpe	377,800	-1.0	-0.2	-	-	-
4350	Toowoomba suburbs	377,500	1.9	-1.5	275,700	2.4	-1.1
4352	Gowrie Junction Postmans Ridge Withcott	489,900	-1.5	-1.3	364,500	9.4	22.1
4344#	Helidon Helidon Spa	374,200	-5.6	-2.4	374,000	-10.5	133.4
LGA*							
Lockyer Valley		250,000	0.0		n/a	n/a	n/a
Toowoomba		349,000	-1.0	12.2	280,000	-8.2	n/a

Notes:
~ Postcode 4350 represents Toowoomba suburbs and includes Cotswold Hills, Wilsonton Heights, Rockville, Harlaxton, Mount Lofty, Blue Mountain Heights, Cranley and Mount Kynoch
#High volatility in this area is likely due to price differentials in a small housing market

^Source: (SQM Research, 2019) March 2020 data, reporting median asking price.
*REIQ Queensland Marketing Monitor, Issue 44, March 2020, reporting median sales price for the March Quarter.

5.5.2.2 Rental cost

Table 5.32 presents the median weekly asking rents for the key postcode areas at the end of March 2020. The highest median asking rent for houses was in Postcode 4352 (Gowrie Junction, Postmans Ridge and Withcott) at $415/week with rents in all other postcodes ranging from $332 to $344 per week.

Postcode 4350 (Toowoomba suburbs including Blue Mountain Heights, Cranley and Mount Kynoch) had the next highest rent at $344/week, which had decreased by 2.1 per cent over the preceding 12 months but increased by 7.1 per cent over the preceding three years. In Postcode 4344 (Helidon and Helidon Spa) the median weekly asking rent was $332/week which was similar to Postcode 4400 (Kingsthorpe) at $333/week. Rents had decreased by 3.6 per cent in Postcode 4344 and by 15.9 per cent in Postcode 4400 over the preceding 12 months, but had increased (by 10.4 per cent and 3.4 per cent respectively) over the preceding three years.

Modest increases to rental asking price for units are evident over the three year period to March 2020, with median asking rents rising by 8.6 per cent in Postcode 4350 (annualised at approximately 2.9 per cent per year) and by 7.2 per cent in Postcode 4352 (annualised at approximately 1.4 per cent per year).

Table 5.32 Median Weekly Rent, March 2020 – Post Code (price and percentage change)

	State Suburb	House Median Rent ($/week)	1 Year Change (% of total)	3 Year Change (% of total)	Unit Median Rent ($/week)	1 Year Change (% of Total)	3 Year Change (% of total)
4400^	Kingsthorpe	333	-15.9	3.4	-	-	-
4350	Toowoomba suburbs ~	344	-2.1	7.1	289	4.3	8.6
4352	Gowrie Junction Postmans Ridge Withcott	415	-1.4	1.0	300	3.1	7.2
4344^	Helidon Helidon Spa	332	-3.6	10.4	-	-	-

Notes:
Postcode 4350 represents Toowoomba suburbs and includes Cotswold Hills, Wilsonton Heights, Rockville, Harlaxton, Mount Lofty, Blue Mountain Heights, Cranley and Mount Kynoch
Asking price has been used rather than the bond lodgement data as reported by the REIQ as the data is not consistently available for all the required postcode areas. The data reported for asking rents offers a medium level of confidence.
^ High volatility in this area is likely due to price differentials in a small housing market

Source: (SQM Research, 2020)

During 2020, the average weekly rent for houses in Toowoomba suburbs saw a modest rise of 4.0 per cent over the 12 months to December (SQMResearch, 2021), whilst average weekly rents for houses rose by 11.0 per cent in the Gowrie Junction/Postmans Ridge/Withcott postcode and by 10.5 per cent in the Kingsthorpe postcode (SQMResearch, 2020). This is consistent with increased demand for rental housing in these communities (refer Table 5-33). Helidon saw a decrease of 17.7 per cent in average weekly rental costs over the 12 months, but from a low rate of turnover in this small rental market.

5.5.2.3 Rental housing availability

The REIQ considers that a healthy rental market exists when rental vacancy rates are between 2.5 per cent and 3.5 per cent of rental stock, with the housing market considered weak when rates are at or above 3.6 per cent, and tight when vacancy rates are less than 2.5 per cent (REIQ, 2019:2). According to the REIQ, vacancy rates in Toowoomba LGA have remained consistently low in recent years, with substantial rental demand due to the large number of students attending the University of Southern Queensland in Toowoomba.

Table 5.33 presents recent data on rental housing vacancy rates. Data for June are used in the following analysis as June provides a more reliable benchmark month than December when vacancy rates increase due to the end of year turnover in Toowoomba-based students.

In Toowoomba suburbs, where most of the local rental stock is located, the already low rental vacancy rate more than halved from 1.7 per cent in June 2019 to 0.7 per cent in June 2020, and remained very low at 0.9 per cent in December 2020. Rental vacancy rates were also very low in other local communities during 2020, at 0.0 – 1.6 per cent in Kingsthorpe, 0.3 - 0.7 per cent in the Gowrie Junction/Postmans Ridge/Withcott postcode and 0.6 -1.0 per cent in Helidon and Helidon Spa. Low rental vacancy rates were being experienced across Queensland regions during the second half of 2020, e.g. rates of 1.5 per cent in the nearby regional centres of Goondiwindi, 0.5 per cent in Dalby, and 0.9 per cent in central Ipswich.

At June 2020, a total of 135 rental dwellings were advertised as vacant in the four postcode areas of interest, which was a decrease of 173 dwellings or more than 56 per cent since June 2019.

Table 5.33 Rental Vacancies (Post Code), June and December 2019

Postcode	Potentially impacted communities	June 2019		December 2019		June 2020		December 2020	
		Vacant Dwellings No.	Vacancy Rate^ %	Vacant Dwellings No.	Vacancy Rate^ %	Vacant Dwellings No.	Vacancy Rate^ %	Vacant Dwellings No.	Vacancy Rate^ %
4400	Kingsthorpe	1	0.8	2	1.6	0.0	0.0	2	1.6
4350	Toowoomba suburbs~	266	1.7	339	1.8	127	0.7	176	0.9
4352	Gowrie Junction Postmans Ridge Withcott	29	1.6	41	2.3	5	0.3	13	0.7
4344	Helidon Helidon Spa	12	4.0	5	1.6	3	1.0	2	0.6
Total		308	N/A	387	N/A	135	N/A	180	N/A

Source: (SQM Research, 2019)

Postcode 4350 represents Toowoomba suburbs and includes Cotswold Hills, Wilsonton Heights, Rockville, Harlaxton, Mount Lofty, Blue Mountain Heights, Cranley and Mount Kynoch

^ Market status: tight <2.5 per cent, healthy 2.5-3.5 per cent, weak >3.5 per cent (REIQ 2019)

5.5.2.4 Building approvals

In the year to January 2021, there were 732 building approvals for new houses in Toowoomba LGA, and 230 building approvals in the Lockyer Valley LGA (refer Table 5.34). This indicates an increasing supply of housing during 2020-21, however the effects of the COVID-19 pandemic on rates of building (in the context of constraints on businesses and employment) are as yet unknown.

Table 5.34 Dwelling Approvals, 2017-2018

LGA	Total New Dwelling Approvals
Lockyer Valley	230
Toowoomba	732
Total	*962*

Source ABS (2019). 8731.0 - Building Approvals, Australia, Jun 2019.

5.5.3 Short-term accommodation

Communities within the Project region have access to a range of short-term accommodation options, predominantly in the urban centre of Toowoomba which offers a range of hotel, motel and serviced apartment visitor accommodation options.

There are few short-term accommodation establishments in the potentially impacted communities within the Lockyer Valley LGA. Helidon hosts the Lockyer Motel (15 rooms) and Helidon Spa hosts the Helidon Natural Springs Spa Resort Motel/Caravan Park which has a total of 80 cabins and provides affordable accommodation for low income households. Accommodation is not available in Ballard, Lockyer, Postmans Ridge or Withcott.

Catering to a mix of visitors, students, tourists and seasonal workers, nearby Gatton has three hotel/motel options (Gatton Motel, Royal Hotel Gatton and Room Motels Gatton), and a caravan park (understood to be continually occupied by seasonal workers). There are seasonal demands on low cost accommodation in relation to fruit picking and crop harvesting, with the Lockyer Valley generally requiring pickers in most months with the general exception of June and July.

Within potentially affected communities in the Toowoomba LGA, accommodation establishments include:

- Gowrie Motor Inn at Kingsthorpe, which has nine rooms
- Cotswold Motor Inn in Cotswold Hills, which has 21 rooms
- Northpoint Motel in Harlaxton, which has 24 rooms.

The latest data on provision and availability of tourism accommodation provided by the ABS were produced for 2015-2016 (ABS, 2016c) for tourism establishments with at least 15 rooms. A supplementary scan of accommodation available locally has also been undertaken.

A total of 36 tourism establishments with at least 15 rooms were identified in the Project region and within a half hour drive of the Project, including:

- In the Lockyer Valley LGA, the Lockyer Motel in Helidon and the Gatton Motel in Gatton within the Lockyer Valley West SA2, with none recorded in Lockyer Valley East. An additional two motels have opened in the Lockyer Valley LGA since 2016, including the Rooms Motel in Gatton offering 39 rooms, and the Porters Plainland Hotel offering 26 rooms. Accommodation is also provided in Gatton at the Royal Hotel (approximately 20 rooms) and the Commercial Hotel with approximately 10 rooms.
- In the Toowoomba LGA, 36 hotels, motels and serviced apartments, including one each in the Toowoomba East, Wilsonton, and Highfields SA2s, two each in in the Newton and North Toowoomba-

Harlaxton SA2s, three in the Drayton/Harristown SA2, eight in the Toowoomba East SA2 and 16 establishments in Toowoomba-Central SA2 A new 55 room hotel opened in Toowoomba Central in 2017, and an additional establishment with 102 suites is planned to open in Toowoomba Central in 2020 (HTL Property, 2019).

Limited data is available on room numbers and vacancy rates in the Toowoomba LGA. The 16 establishments in Toowoomba-Central SA2 offered a total of 588 rooms, whilst Toowoomba East SA2's eight establishments had 245 rooms and Drayton-Harristown SA2's thee establishments offered a total of 97 rooms. As each of the other establishments had at least 15 rooms each, a minimum total of 1,065 rooms were offered by establishments within a half hour's drive of the Project. With the 55 room hotel opening in Toowoomba Central in 2017, and an additional establishment with 102 suites planned for construction in Toowoomba Central in 2020, the total number of rooms offered would be at least 1,192 rooms by 2021.

The occupancy rate for Toowoomba-Central SA2 establishments was 58.4 per cent in the June 2016 quarter, and applying this rate to the total number of rooms identified above, approximately 495 vacant rooms may be available on average in the Toowoomba LGA during 2021.

No occupancy data were available for the Lockyer Valley LGA, however a scan of accommodation availability in the Lockyer Valley on 3 March 2020 (during the Lockyer Valley Country Music Festival which is a major tourist drawcard) found that of the five hotels and motels for which information was available:

- Rooms Motel in Gatton had ten rooms available (of 39 rooms)
- Royal Hotel in Gatton had nine rooms available (of approximately 20 rooms)
- Gatton Motel had eight rooms available (of approximately 20 rooms)
- Locker Motel in Helidon had seven rooms available (of approximately 15 rooms)
- Porters Plainland Hotel had fourteen rooms were available (of 26 rooms).

This availability totalled 48 vacant rooms (from 120 rooms) which equated to an average occupancy rate for the five establishments of 60.0 per cent, and indicates that the local short-term accommodation market would generally have capacity to service additional demand.

Accommodation demand fluctuates, with tourism accommodation demands increasing around major events such as Toowoomba's Carnival of Flowers (held in September), Lockyer Valley's Country Music Week (March), CTM FarmFest (June, in Kingsthorpe) and Queensland-wide events held occasionally in the region (e.g. Queensland PGA Championship which was held in in Toowoomba in February 2020).

5.6 Social infrastructure

This section describes social infrastructure including childcare, educational facilities, aged care services, health facilities, emergency services, cultural services and recreational facilities located within the potentially impacted communities.

Local communities are also serviced by the Toowoomba urban centre, from which regional services (such as major hospitals and tertiary education) are delivered throughout the region, with district-level services (such as family support and high schools) also delivered from Gatton, and local level services (such as childcare and primary schools) available in most communities.

5.6.1 Childcare

The nearest childcare centres to the Project are:

- Kate's Place Early Education Centre at Wilsonton Heights (located approximately 1.7 km south of the Project footprint where the Project is in tunnel)

- Funberry Kids Childcare in Harlaxton (located approximately 2.0 km south where the Project is in tunnel)
- Creche and Kindergarten (C&K) Fairview Heights Community Kindergarten (located approximately 3.0 km south where the Project is also in tunnel).

The next nearest childcare centres are approximately 4.2 km to the south of the Project in various inner and northern Toowoomba suburbs, and approximately 4.1 km to the south in Withcott.

Table 5.35, Toowoomba LGA had approximately 112 childcare services, with 52 of those being long day care services. The Lockyer Valley LGA had 22 childcare services, including 14 long day care services (Queensland Government, 2019b).

The larger number of early childhood services within the Toowoomba LGA is due to the larger population and higher proportions of young persons and families, when compared to the Lockyer Valley LGA.

Table 5.35 Childhood education and care services, 2018

LGA	Family day care	Kindergartens	Long day care	School aged care	Limited house care	Total
	Number					
Lockyer Valley	0	4	14	4	0	22
Toowoomba	1	20	52	35	2	112

Notes: (a) Total includes Other service types (for example Child and Family Support Hubs and Community Services).

Source: Office for Early Childhood Education and Care, Department of Education, 2018

5.6.2 Primary and secondary education

Primary and secondary education facilities located within approximately 4 km of the Project are shown in Table 5.36. This wider area has been used in recognition that school students in potentially impacted communities may travel to other nearby schools.

The nearest schools to the Project are:

- Gowrie State School (with the existing Western Line approximately 700 m to the south) Downlands College and Good Samaritan College (Youth and Community Learning Centre) in Harlaxton, approximately 1.6 km to the south of the project where the Project in tunnel
- Rockville State School in Rockville, approximately 1.9 km to the south of the Project where the Project in tunnel
- Helidon State School, approximately 1.7 km to the south east of the eastern extent of the Project.

There are no secondary schools within 4 km of the Project in the Lockyer Valley LGA, with two state secondary schools and several private schools located within 4 km in Toowoomba. In 2018, Toowoomba State High School had the largest student enrolment at 832 students followed by the Toowoomba Christian College (717 students) and Wilsonton State High School with 702 students. Fairview Heights State School was the largest state primary school at 567 students.

Table 5.36 Primary and secondary education facilities, 2018

School	Total Enrolment 2018	LGA	Proximity to the Project
Kingsthorpe State School (Prep to Year 6)	208	Toowoomba	The Project is 3.9 km to the south east
Gowrie State School (Prep to Year 6)	185	Toowoomba	The Project is 700 m to the south

School	Total Enrolment 2018	LGA	Proximity to the Project
Fairview Heights State School (Prep to Year 6)	565	Toowoomba	The Project is 2.5 km to the south
Fairview Heights State School Special Education Program (Prep to Year 6)	Unavailable	Toowoomba	The Project is 2.5 km to the south
Rockville State School (Prep to Year 6)	217	Toowoomba	The Project is 1.9 km to the north
Harlaxton State School (Prep to Year 6)	152	Toowoomba	The Project is 2.3 km to the north
Good Samaritan College (Tailored vocational education and support)	Unavailable	Toowoomba	The Project is 1.6 km to the north
Sacred Heart Primary School (Wilsonton)	221	Toowoomba	The Project is 3.0 km to the north
Wilsonton State School	517	Toowoomba	The Project is 3.2 km to the north
Wilsonton Agricultural Environmental Education Centre	N/A – casual attendance	Toowoomba	The Project is 2.7 km to the north
Wilsonton State School Special Education Program	Unavailable	Toowoomba	The Project is 3.2 km to the north
Downlands College (Harlaxton) (Years 4 – 12)	803	Toowoomba	The Project is 1.8 km to the north
Youth and Community Learning Centre	Unavailable	Toowoomba	The Project is 1.6 km to the north
Toowoomba West Special School	Unavailable	Toowoomba	The Project is 3.5 km to the north
Withcott State School (Prep to Year 6)	219	Lockyer Valley	The Project is 4.2 km to the north
Toowoomba Christian College (Highfields) (Prep to year 12)	717	Toowoomba	The Project is 3.0 km to the south
Helidon State School (Prep to Year 6)	128	Lockyer Valley	The Project is 1.7 km to the northwest
Wilsonton State High School (Year 7- 12)	702	Toowoomba	The Project is 2.7 km to the north
Toowoomba State High School (Mount Lofty) (Year 7- 12)	832	Toowoomba	The Project is 2.6 km to the north

Source: (Queensland Government, 2018b) Source: (Queensland Government, 2018b), Downlands College, 2019, Sacred Heart Primary School (2019), Toowoomba Christian College, 2019.

5.6.3 Further education and training

Technical and Further Education (TAFE) Queensland has a campus located in Toowoomba, located approximately 3.5 km to the south of the Project. The campus offers courses in hospitality, business, early education, horticulture and beauty (Tafe Queensland, 2018).

University of Southern Queensland's (USQ) main campus is in Toowoomba, approximately 4.5 km to the south of Toowoomba's city centre. There are on-site residential colleges, a range of student and staff support services and a wide range of facilities and recreational areas (University of Southern Queensland, 2019).

TAFE Queensland services are also delivered in Gatton, based at the Lockyer Valley Conference and Function Centre. Courses delivered include certificates in rural operations, agricultural skills (e.g. chemical application), fatigue management, off farm employment, and life skills such as first aid (Tafe Queensland, 2018).

University of Queensland (UQ) operates a large campus in Gatton, within the Lockyer Valley LGA. There is onsite accommodation, a bioscience research precinct, sporting facilities, veterinary services, farms and various food services. In 2020 there were 1,799 enrolled students. The Warrego Highway provides an important link for the Gatton campus, from Toowoomba to the west and Brisbane/Ipswich to the east. The UQ campus includes several different on-campus housing options for both students and staff.

A wider range of community based and commercial training organisations are also available in the Project region, with capacity to offer readiness for work programs, trades training, and skills in areas including business management, rural management and technologies, hospitality management, building and construction, traffic management and safety and first aid.

5.6.4 Hospital and health services

The Project falls across two Queensland Health and Hospital Service (HHS) Districts:

- The Darling Downs HHS (DDHHS) is the major provider of public hospital and healthcare services in the Toowoomba LGA, including the Toowoomba Hospital which is a major regional hospital providing a full range of medical services including acute, specialist and palliative care. Toowoomba also hosts two private hospitals and a range of primary and allied health services.
- The West Moreton HHS provides services to the potentially impacted communities in the Helidon area, including a rural public hospital and a range of allied health and community health services in Gatton, and with access to major hospitals In Toowoomba and major hospital in Ipswich providing a full range of medical services including acute, specialist and palliative care.

The majority of the potentially impacted communities are within the Darling Downs HHS, while the Helidon area is within the West Moreton HHS. Table 5.37 shows the hospitals and their associated services located in the Project region.

Ballie Henderson Hospital (a public hospital) is located approximately 1 km south of the Project. Baillie Henderson Hospital specialises in psychiatric care, community mental health services and a range of community health services and residential aged care facilities. In September 2018, the Queensland Government announced that the Bailie Henderson Hospital campus (a site of 75 ha) was the preferred location for a new Toowoomba Hospital, and a detailed Business Case is currently being undertaken to develop a master plan for the whole Baillie Henderson Hospital campus (Queensland Government, 2019).

All other hospital and health services are located more than 2 km from the Project disturbance footprint, with St. Andrews Hospital the closest at approximately 2.5 km to the south near Ch 7.0 km where the Project is in tunnel.

Public mental health services are provided in the Project region by the Darling Downs HHS, delivering specialised assessment, clinical treatment and rehabilitation services. They focus on people with the most severe forms of mental illness and behavioural disturbances. Child and Youth Mental Health Service (CYMHS) are also located in Toowoomba, supporting children and young people aged 0 to 17 years who have or are at risk of developing severe and complex mental health issues.

Services work in collaboration with primary health professionals (including general practitioners, community health workers, nurses, allied health professionals, school health nurses, counsellors and community support groups). Consultation with Queensland Health indicated that as any Project personnel requiring treatment for injuries or sudden illness would be transported to the nearest major hospital (Toowoomba) the level of demand generated by the Project would be within the hospital services' capacity.

Table 5.37 Hospital and health services in the Project region

Services	Gatton Hospital	St Andrew's Toowoomba Hospital	Baillie Henderson Hospital	St Vincent's Hospital	Toowoomba Hospital
Address	William St, Gatton	North Street, Toowoomba	Hogg Street and Tor Street Cranley	Scott Street Toowoomba	154 West Street Toowoomba
Hospital services	22 beds Public Hospital - post-operative care, outpatients, accident and emergency, post-natal care, Respite; rehabilitation services, palliative care	137 beds Private hospital - cancer care centre, cardiac, diabetes, head and neck clinic, Intensive care unit (ICU), medical ward, operating theatre, palliative care, renal dialysis unit, sleep studies, surgical ward, mental health unit	Bed number unknown Psychiatric Hospital – providing short and long-term mental health services	191 beds Private Hospital – cancer services, oncology Unit, palliative care, obstetrics and gynaecology, children's ward, emergency centre, ICU and radiology.	384 beds Public Hospital – full range of hospital services including medical, surgical, orthopaedic, obstetrics and gynaecology, paediatrics, specialist care and palliative care
Allied health	Physiotherapy, rural mental health service, social worker services, oral health, occupational therapy	N/A	Mental health support services	N/A	Full range of allied health services
Community health	Child health, oral health, community mental health services, diabetes consultant, Well Women's Clinic	N/A	N/A	N/A	Full range of community health services

Source: (Queensland Health, 2019)

General Practitioner (GP) clinics in potentially impacted communities are presented in Table 5.38. These communities are serviced predominately by smaller GP clinics (Department of Health, 2018). There are no general practitioner clinics within approximately 2 km of the Project disturbance footprint.

Table 5.38 Primary health services

Facility/Service	Location	Number Practitioners *
Downs Rural Medical Centre	North Street, Kingsthorpe	2
Kingsthorpe Medical	Gowrie Street, Kingsthorpe	4
St Andrew's Toowoomba Medical Centre	North Street, Toowoomba	9
Wilsonton Medical Centre	Hooper Street, Wilsonton	6
Northpoint Medical Centre	Ruthven Street, Harlaxton	4
The Doctors on Erin Street	Erin Street, Wilsonton	9
Toowoomba Pain Physicians	Pioneer Street, Rockville	2
Withcott Medical Centre	Jones Road, Withcott	4
Warrego Medical Centre	Warrego Highway, Withcott	1

*Note: Approximate
Source: (Queensland Health, 2019)

5.6.5 Aged care services

There are several aged care services in the Toowoomba and Lockyer Valley LGAs in 2020, as noted in Table 5.39. The Toowoomba LGA had a total of 47 aged care services including 1,922 residential and restorative care beds. The Lockyer Valley LGA had six aged care services within the LGA including 229 beds residential and restorative care beds (Department of Health, 2020).

Palm Lake Retirement Resort is an over 50s retirement community that has a recreational centre and upon completion, will include approximately 543 detached dwellings. The resort is located on Hogg Street in Cranley and is approximately 1 km to the south of the Project near Ch 6.5 km (i.e. near the intermediate ventilation shaft and associated infrastructure).

The next nearest centres for seniors are:

- Northridge Haven and Northridge Salem Aged Care on Holberton St, Rockville at approximately 2.5 km south of the Project disturbance footprint near Ch 7.5 where the Project is in tunnel
- Infinite Aged Care at 69 Stuart Street, Mount Lofty at approximately 2.4 km south of the Project disturbance footprint near Ch 10.5 km
- Mount Lofty Heights Nursing Home at 66 Stuart Street, Mount Lofty at approximately 2.4 km south of the Project disturbance footprint near Ch 10.5 km.

Table 5.39 Aged care services, Toowoomba and Lockyer Valley LGA, 30 June 2020

LGA	Aged care services Number	Number of operational places by care type		
	Aged care services	Residential aged care beds	Restorative care beds	Total Beds
Lockyer Valley	6	229 beds	0	229
Toowoomba	47	1,588 beds	52 beds	1,922

Source; Australian Government Department of Health, 2020, described in QGSO Regional Profile, 2020

Notes: (a) Australian government recurrent funding for the aged-care services in the 12 months ending 30 June. Please note the value of Australian Government funding has been suppressed for a small number of services and not included in Australian funding totals. Users should be aware of this limitation when using these data.

Source: (Queensland Health, 2019)

5.6.6 Police, Emergency Services and Justice

Table 5.40 profiles Queensland Police, Ambulance and Fire stations located in the Toowoomba and Lockyer Valley LGAs (Queensland Government, 2019a) which service the potentially impacted communities.

Table 5.40 Emergency services, June 2018

LGA	Police stations	Ambulance stations	Fire stations
Lockyer Valley	3	2	4
Toowoomba	14	11	11

Source: Queensland Government, 2019a

The nearest police stations to the Project include:

- Toowoomba Police Station – Hume Street, Toowoomba
- Highfields Neighbourhood Police Beat – Meritt Street, Highfields
- Helidon Police Station – Turner Street, Helidon
- Gatton Police Station, William St, Gatton.

The nearest fire stations to the Project include:

- QFES, South Western Region Headquarters – Warrego Highway, Charlton
- Gowrie Little Plain Fire Brigade - Yalangur Lilyvale Road, Gowrie Junction
- Toowoomba Fire Station – Kitchener Street, East Toowoomba
- Helidon Fire Station – Railway Street, Helidon
- Gatton Fire Station, North Street.

Rural fire brigades are located at Gowrie Little Plains, Withcott and Murphys Creek.

Ambulance stations in proximity to the Project include:

- Fairview Ambulance Station - Bridge Street, Torrington
- Highfields Ambulance Service – Kratzke Road, Highfields
- Toowoomba Ambulance Station – Herries Street, Toowoomba
- Gatton Ambulance Station, Spencer St, Gatton.

There are also two courthouses located at Gatton (Gatton Courthouse) and Toowoomba (Toowoomba Courthouse).

5.6.7 Community facilities and services

Table 5.41 provides an overview of key community facilities and support services in the Project's potentially impacted communities. Community halls and centres host a wide range of family support, child and family health, cultural and recreational services.

Facilities which are closest to the Project include:

- Gowrie Junction Community Hall on Old Homebush Road which is approximately 500 m north of the Project alignment and within approximately 250 m of works to Old Homebush Road near Ch. 2.0 km
- Teen Challenge Care Queensland (a not for profit addiction treatment service) on Bedford Road, Cranley near Ch. 5.5 km where volumetric tenure of the property's northern border would be required for construction of the Toowoomba Range tunnel
- Heights Community Centre on Wine Street Wilsonton, which is approximately 2 km south of the Project disturbance footprint where it is in tunnel at approximately Ch 7.0 km
- Harlaxton Community Hall on Gleeson Crescent Harlaxton, which is approximately 700 m south of the Project where it is in tunnel at approximately Ch 9.5 km
- Harlaxton Neighbourhood Centre on Coonan Street Harlaxton, which is approximately 900 m south of the Project where it is in tunnel at approximately Ch 9.0 km
- Gateway Church Toowoomba on Gleeson Crescent in Harlaxton approximately 800 m south of the Project near Ch 8.5 km where the Project is in tunnel
- Wilsonton Congregation of Jehovah's Witnesses on Hogg Street in Wilsonton approximately 1.7 km south near Ch 6.0 km
- Toowoomba Christian Fellowship on Goombungee Road in Birnam approximately 1.5 km north near Ch 6.6 km
- Toowoomba North Church of Christ in Progress Court in Harlaxton, which is located approximately 1.7 km south of the Project near Ch. 9.0 km where the Project is in tunnel
- Postmans Ridge Pioneer Memorial Hall on Murphys Creek Road which is approximately 1.3 km south of the Project at Ch 20.0 km
- Helidon and District Community Centre which is approximately 1.2 km south of the Project near Ch. 28 km
- Saint Joseph's Church on Gunn St in Helidon approximately 1.8 km southeast of the Project.

The location of nearby community facilities is shown in Figure 7-1.

Table 5.41 Community and civic facilities and support services

Location	Community and Civic Facilities and Services	Community Organisations
Kingsthorpe	Kingsthorpe War Memorial Hall Committee Inc	Queensland Country Woman's Association Kingsthorpe Progress Association Glencoe Medieval Re-enactment Group
Gowrie Junction	Gowrie Junction Community Hall	Gowrie Junction Progress Association Junction Joeys Playgroup
Cotswold Hills	None identified	None identified
Birnam (west of Blue Mountain Heights)	Toowoomba Christian Fellowship	
Wilsonton	Heights Community Centre Wilsonton Congregation of Jehovah's Witnesses	Richmond Fellowship Queensland
Rockville	Northside Baptist Church	Rockville State School Playgroup National Seniors Australia – Toowoomba Branch

Location	Community and Civic Facilities and Services	Community Organisations
Harlaxton	Harlaxton Community Hall Harlaxton Neighbourhood Centre Gateway Church Toowoomba New Hope Church Toowoomba Toowoomba North Church of Christ	None identified
Mount Lofty	None identified	None identified
Ballard	None identified	Teen Challenge Care Queensland
Withcott	Withcott Church of Christ	Lockyer Valley Landcare Inc - Withcott
Postmans Ridge	Postmans Ridge Pioneer Memorial Hall	
Helidon	Helidon and District Community Centre Saint Joseph's Church	T.R.U.S.T Support and Understanding for Today's Truckies Inc Helidon and District Progress Association Helidon Hills Smokespotters

Source: (Lockyer Valley Regional Council, 2017c, My Community Directory, 2019)

A wide range of community, church, and government agencies provide services throughout the SIA study area. Key community service providers in the Lockyer Valley LGA include:

- Laidley Crisis Care and Accommodation, providing emergency housing support and services to people who are homeless
- ALARA Queensland Limited – Laidley which provides support and Respite Service for people with disabilities in the Lockyer and surrounding areas
- Anuha, which provides supported accommodation and community access services for people with disability
- Blue Care Lockyer which provides care for seniors and people with disability assistance, transport, and Community Aged Care Packaged Care
- Gatton and Laidley Meals on Wheels Inc, delivering meals to those in need
- Kambu Aboriginal and Torres Strait Islander Corporation, which promotes Indigenous community wellbeing
- Laidley Community Centre which provides a wide range of services including information, referral and support activities and events
- Uniting Care Employment Service
- Lockyer Valley Community Disability Association Inc, a support and referral service
- Lives Lived Well New Access Program, which provides easily accessible, free services for people experiencing depression and/or anxiety
- Rural Financial Counselling Service Southern Queensland, which provides free and confidential financial assessments for rural small business.

Toowoomba's key service providers (which also extend outreach services to surrounding communities) include:

- Lives Lived Well, which offers a range of community and residential programs and services including drug and alcohol support services and rehabilitation, counselling youth and family support

- Relationships Australia, which is a community based organisation offering individual, couple and family relationship counselling and education, and family support
- Lifeline Darling Downs, which provides counselling, family and community support, and services for people with disability
- Uniting Care, which provides services including child protection, supported accommodation, intervention services domestic violence programs, disability services, services for children and young people and emergency support
- Mercy Family Services, which offers support services for vulnerable and disadvantaged children, young people and their families including foster care, counselling, family intervention, and supported independent living and a Multi-cultural Worker Program
- CatholicCare, which provides counselling, family dispute resolution and mediation, support and participation services for Aboriginal young people, refuges and migrant support, and child protections services
- Richmond Fellowship of Queensland, which provides mental health support, suicide prevention and recovery support services for people with insecure housing
- Creating Options Program, which offers alcohol and other drug support including counselling and care coordination
- A range of National Disability Insurance Scheme service providers and aged care providers.

There is no published information regarding the current adequacy of various service types to meet community needs, current and future, in the SIA study area. The adequacy of community services to community needs differs across service types, and community needs change over time in line with demographic characteristics (e.g. unemployment levels and increasing percentages of seniors), emerging community needs (e.g. support needs related to drought conditions and the COVID-19 pandemic response) and Commonwealth and State government funding decisions.

Consultation participants identified increasing demand on mental health and financial support services as the result of flooding events and drought, which is likely to be exacerbated by the COVID-19 pandemic. Consultation with the Darling Downs and West Moreton Primary Health Network (PHN) and the Brisbane South PHN indicated that local support services have capacity to assist local residents experiencing stress or mental health issues. ARTC's approach to supporting residents who are vulnerable to mental health issues is therefore based on providing financial support for the supplementation of local services and ongoing engagement with key stakeholders to monitor any changes to service capacity related to the Project (refer Section 8.2.6).

5.6.8 Recreation and cultural facilities

Most of the major recreational and cultural facilities that service the Project region are located in Toowoomba or the Lockyer Valley LGA centres of Gatton and Laidley, however, smaller recreational and cultural facilities are located within most of the potentially impacted communities. Table 5.42 details sport and recreation facilities and arts, culture and amenity facilities within potentially impacted communities.

The alignment intersects with two trails in the Withcott/Helidon area:

- The Bicentennial National Trail is a multi-use recreational trekking route used for horse riding, cycling and walking, stretching from Cooktown in Queensland to Healesville in Victoria. It is one of the longest trails in the world at 5,330 km (Bicentennial National Trail, 2019). Within the EIS investigation corridor it follows Gittins Road and interfaces with the Project alignment near Withcott at Ch 16.6 km (refer Section 7.4.5) where the Project is elevated on viaduct.

- The Helidon to Ravensbourne trail is a popular 50 km mountain bike trail that follows a mixture of roads and off-road tracks. The route interfaces with the alignment along Airforce Road at Ch 25.4 km and follows Airforce Road eastwards to end of the alignment at 27.0 km.

TRC and LVRC have developed the Toowoomba and Lockyer Valley Escarpment Mountain Bike Master Plan 2019-26 which aims to add an additional 68.4 kms of mountain bike trails (24 new trails), however there would be no interface between the Project and this trail system.

The other recreational and cultural facilities that are nearest to the Project include:

- McMahon Park in Gowrie Junction approximately 400 north near of the existing rail line near Ch 2.0 km
- Gowrie Junction Community Hall at approximately 500 m from the Project alignment as described in Section 5.6.7
- Toowoomba Horse Riding for the Disabled Association Inc at Cranley near Ch. 7.5 km where acquisition of volumetric tenure (underground land) of State Land would be required
- Kooringa Valley Park which is approximately 1.2 km south of the Project near Ch 4.0 km
- Greenwattle Street Park which is approximately 1.5 km south of the Project near Ch 5.5 km where the Project is in tunnel
- Darling Downs Field Archers approximately 1 km north near Ch 6.0 km where the Project is in tunnel
- Harlaxton Blocks Park, approximately 600 m south of the Project near Ch 9.0 km where the Project is in tunnel
- Withcott Aquatic Centre which is approximately 1.2 km south of Ch 21.0 km
- Jubilee Park, approximately 1.5 km south of the Project near Ch 12.6 km
- Mount Lofty Lookout and Boyce Gardens approximately 2.7 km south of the alignment at Ch 10.7 km
- Jubilee Park approximately 2 km south between Ch 10.8 km and Ch 13.0 km Toowoomba and Lockyer Valley Kart Club where the Project would acquire the north-west corner of the property near Ch 24.0.

Table 5.42 Recreation and cultural facilities

Location	Sport and Recreation	Arts, Culture, Amenity
Kingsthorpe	None identified	None identified
Charlton	Toowoomba Clay Target Club	None identified
Gowrie Junction	McMahon Park Glen Gowrie Environmental Park	Gowrie Junction Community Hall
Cotswold Hills	Kooringa Valley Park John Trousdell Memorial Park Lennie Cooper Park	None identified
Wilsonton	Boundary Road Quarry Park Catalina Drive Park Barlow Street Park Armstrong Street Park Miranda Drive Park Greenwattle Street Park Captain Cook Park	Garden City Country Music Association Transport & Main Roads Heritage Centre
Rockville	Rockville Park Toowoomba Australia Football Club Fair Street Park	None identified

Location	Sport and Recreation	Arts, Culture, Amenity
	Esmond Street Park Vanity Street Park Doherty Street Park Jaycee Park Bushnell Court Park Ford Street Park Black Gully Reserve	
Harlaxton	Willowburn Football Club Toowoomba Rangers Baseball Club Toowoomba Bears Rugby Club North Toowoomba Bowls Club Horn Park Southern cross Reserve Reg Veacock Park Harlaxton Blocks park Kate Street Park	Toowoomba Bridge Club Toowoomba Jazz Club
Mount Kynoch	Lions Scenic Rest Area	None identified
Cranley	Toowoomba Horse Riding for the Disabled Association Inc – Cranley Cranley Escarpment Darling Downs Field Archers	
Mount Kynoch	Lions Scenic Rest Area	None identified
Mount Lofty	Toowoomba Downhill Mountain Bike Track Jubilee Park Boyce Gardens Girl Guide Hut Bunya Park Scout Group	Australian Decorative and Fine Arts Society Toowoomba Incorporated
Blue Mountain Heights	Range Rovers Orienteering Club	None identified
Withcott	Withcott Sports Centre Withcott Aquatic Centre Withcott Basketball Club Withcott Football Club Bicentennial National Trail Withcott Sporting Grounds	Maryfields Environmental Education Centre
Helidon Spa	Toowoomba and Lockyer Valley Kart Club Emu Gully Adventure Education Group	
Helidon	Bicentennial National Trail Withcott Pony Club Toowoomba Pistol Club Helidon to Ravensbourne mountain bike trail	

Source: (Lockyer Valley Regional Council, 2017c, My Community Directory, 2019)

5.7 Health and wellbeing

5.7.1.1 Data quality

Social Health Australia (Torrens University (PHIDU), 2018) is a key source of data for profiling the population health and wellbeing in the Project region. The data is reported by Population Health Area (PHA), which comprise a collection of SA2s. The PHAs and the SA2s within the Project region (in bold type) are shown in Table 5.43. The confidence level in the data reported varies, according to the extent of representation of potentially impacted communities in the PHA, as shown in Table 5.43 which indicates a low level of confidence in data reported for Gowrie SA2, so selective use has been made of this data.

The other primary data source for profiling community health and wellbeing in this section is the ABS Census 2016 data which carries a high level of confidence.

Table 5.43 Confidence level in Public Health Area data based on data geography

PHA Code	SA2	Percentage of population in Project region	Confidence level
30205	Cambooya-Wyreena, Gowrie, Toowoomba-West	24%	Low
30211	Newton, North Toowoomba – Harlaxton, Wilsonton	61%	Medium
30209	Highfields	100%	High
30208	Gatton, Lockyer-Valley West	61%	Medium

Source: Torrens University (PHIDU). 2018.

5.7.2 Socio-economic factors

A complex interaction of social, economic, environmental, behavioural and genetic factors helps to shape a population's health and wellbeing, with social and economic conditions amongst the most important. A safe environment, adequate income, meaningful social roles, secure housing, higher levels of education and social support are all associated with better health (McKiernan et al., 2005).

5.7.2.1 Advantage and disadvantage

Research into the social determinants of health consistently establishes that the most disadvantaged people carry the greatest burden of poor health. The IRSAD is an area based index that measures both socio-economic advantage and disadvantage in terms of peoples' access to material and social resources, and their ability to participate in society. The indices are ranked so that relativity with other areas can be understood. Section 5.2.7 noted that the Toowoomba LGA is ranked as Queensland's 63rd least disadvantaged LGA, while the Lockyer Valley LGA ranked in the middle position of the State's LGAs, being neither relatively advantaged nor disadvantaged. However, this masks pockets of disadvantage present within the SSCs of Lockyer and Helidon, with SA1s associated with these suburbs being among the 40 per cent most disadvantaged in Queensland. Pockets of disadvantage were also noted within the Toowoomba LGA, most notably in Cranley (among the 30 per cent most disadvantaged) and Harlaxton (among the 10 per cent most disadvantaged).

5.7.2.2 Ageing

Ageing is key determinant of health as the risk of poor health and disability increases with age. The region has an ageing population with a higher proportion of people aged over 65 years than is typical for Queensland (16.2 per cent in Lockyer Valley LGA and 17.8 per cent in Toowoomba LGA compared with

Queensland's 15.3 per cent). As the regional centre for a large rural hinterland, and with a number of aged care accommodation facilities also located there, Toowoomba LGA's percentage of seniors is high.

The suburb of Cranley has a high representation of people aged over 65 years (32.3 per cent), possibly due to the retirement facility located in this suburb, while this age group was also more highly represented in Mount Lofty (19.6 per cent) and Rockville (18.3 per cent), Blue Mountain Heights (16.6 per cent), and Helidon (16.3 per cent). Elsewhere in the Project region the proportion of people in this older age group is lower than for Queensland.

5.7.2.3 Economic status

There is a strong association between economic status and health, with economic status being a function of access to work, education, housing and income. Specific population groups affected commonly include Indigenous people, young people, seniors, migrants and refugees, people with disabilities and homeless people (McKiernan et al., 2005).

Both LGAs recorded median weekly household incomes lower than the Queensland median ($1,198 per week in Lockyer Valley LGA and $1,269 per week Toowoomba LGA compared with $1,402 per week). Five suburbs comfortably exceeded the Queensland median weekly household income (Blue Mountains Heights, Cotswold, Gowrie Junction, Mount Kynoch and Withcott) while a further five were well below the Queensland median weekly household income (Harlaxton, Wilsonton Heights, Rockville, Cranley and Helidon).

Entitlement to a Pensioner Concession Card is a proxy for low socio-economic status, and includes aged pensioners, people with disabilities, carers and sole parents who are in receipt of a pension or benefit. The Lockyer Valley-West, North Toowoomba-Harlaxton/Wilsonton PHAs each have a higher proportion of residents holding Pensioner Concession Cards than is typical for Queensland (24.7 per cent and 31.7 per cent of the population respectively over 15 years of age, compared with 21.7 per cent). All areas have similar numbers of Seniors Health Card holders, while only Highfields SA2 exceeds the rate for Queensland (11.0 per cent compared to 7.6 per cent for Queensland), suggesting a concentration of lower income older residents in this area (Torrens University (PHIDU), 2018).

The SEIFA Index of Education and Opportunity (IEO) is an area-based index that measures and ranks relative advantage or disadvantage for educational attainment or accessing skilled work. As described in Section 5.2.7, the Project region includes a mix of advantaged and disadvantaged communities. Wilsonton SA2 is among the 10 per cent most disadvantaged SA2s in Queensland, while North Toowoomba-Harlaxton and Gowrie SA2s are among the 40 per cent most disadvantaged. Highfields is in the 20 per cent most advantaged SA2 communities in Queensland.

Unemployment is generally associated with lower income, reduced life opportunities and poorer health and wellbeing. Long-term unemployment and intermittent unemployment can have negative effects on health and wellbeing, especially on the emotional and mental health of unemployed people and their families (Torrens University (PHIDU), 2018). In 2016 unemployment was most concentrated in the suburbs of Mount Kynoch (12.2 per cent), Harlaxton (11.8 per cent), Wilsonton Heights (11.5 per cent), Helidon (10.3 per cent) and Rockville (10.1 per cent), and at much higher levels than that in the LGAs. The presence of vulnerable groups is an indicator of the level of social disadvantage experienced in the community. The percentage of jobless families with children in the Locker Valley-West, North Toowoomba-Harlaxton/Wilsonton PHAs is high at 14.2 per cent and 21.6 per cent respectively, compared with 12.8 per cent for Queensland. The proportion of jobless families in the balance of the Project region is significantly lower compared with the Project region and Queensland (Torrens University (PHIDU), 2018).

Housing stress and homelessness increase the risk of poor health outcomes and reduce psychological wellbeing. The prevalence of severe and persistent mental illness amongst people experiencing homelessness, and people whose housing tenure is marginal, is significantly higher than in the general population (Mental Health Council Australia, 2014). Housing stress, housing insecurity and homelessness

can be significant barriers to accessing education, employment and health services. The Rental Affordability Index is a useful proxy for housing affordability (SGS EP, 2018). The Index shows that rental housing is affordable to minimum waged households, based on a gross minimum wage income of $75,000 per year, in the potentially impacted communities (noting that data is not reported for Kingsthorpe SSC), with these households paying less than 30 per cent of their gross household income on rent. However, housing stress is present. Census 2016 data showed higher than typical rates of rental stress amongst low income earners (households in the bottom 40 per cent of income distribution) in Gatton/Lockyer Valley – West and Newtown/ North Toowoomba-Harlaxton PHAs at 33.3 per cent and 32.5 per cent, when compared with 28.0 per cent for Queensland
(Torrens University (PHIDU), 2018). Elsewhere in the Cambooya-Wyreema/Gowrie/Toowoomba-West and Highfields PHAs, rental stress was lower, at 23.0 and 20.0 per cent of rental households.

Due to the nature of homelessness, the number of people experiencing homelessness is hard to estimate accurately. Based on the 2016 Census estimates of homelessness, 116 people were homeless across the Project region's five SA2s, and concentrated mainly in Lockyer Valley-West, North Toowoomba-Harlaxton and Wilsonton SA2s (ABS, 2016c).

5.7.2.4 Disability

People with disabilities face greater challenges across most of the social determinants of health, including finding work, participating in community activities, accessing housing, health and support services, and reliance on a low income. For the ABS Census, Disability is defined as people needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication, because of a long-term health condition (lasting six months or more), a disability (lasting six months or more), or old age.

At the 2016 Census, 1,409 people in the Project region had a core disability and were in need of assistance. This represents 4.8 per cent of the Project region's population, and is a little less than Queensland's rate of 5.2 per cent. The highest concentrations of people requiring assistance were in Withcott (21.6 per cent) followed by Cranley (14.5 per cent), Helidon (12.8 per cent) and Kingsthorpe (10.1 per cent). Rockville, Wilsonton Heights and Mount Lofty had the largest numbers of people with need for assistance (at 287, 211 and 199 people respectively).

5.7.3 Population health and wellbeing

The following subsections provide an overview of the health and wellbeing of the Project region's population.

5.7.3.1 Physical activity

The Darling Downs HHS has one of Australia's highest rates of physical inactivity, a key risk factor for disease or poor health condition and premature mortality (Commonwealth of Australia, 2018).

5.7.3.2 Self-assessed health

Self-assessed health status provides a proxy measure of health status and relates to how strongly respondents experience illness and disability. The rate of people who assessed their health as being fair or poor in North Toowoomba - Harlaxton/Wilsonton PHA was significantly higher than that for Queensland (21 people/100 compared with 15.5 people/100). All other areas showed better self-assessed health than typical for Queensland (Torrens University (PHIDU), 2018).

5.7.3.3 Community strength

Strong communities exhibit resilience and have well-developed social connections and supports, contributing to community health and wellbeing. The level of volunteering by residents is a measure of community strength. The level of volunteering in the Project region is high with 21.2 per cent of the population volunteering, compared with 18.8 per cent in Queensland (ABS, 2016e). However, community strength as indicated by volunteering is not evenly spread, with low levels of volunteering in Rockville (14.3 per cent) and

Kingsthorpe (15.6 per cent), contrasting with the much higher levels in Blue Mountain Heights (33.9 per cent), Mount Lofty (26.1 per cent) and Withcott (24.6 per cent).

The ability to access support in times of crisis is a further indicator of the strength of social connections in a community. The estimated levels of people who are able to access support when needed across the suburbs in the Project region's PHAs is similar to levels typical in Queensland (ranging from 92.3 people/100 in North Toowoomba-Harlaxton/Wilsonton to 93.3 people/100 in Gowrie/Toowoomba-West, compared with 93.0 people/100 in Queensland). The data indicates that residents in most suburbs in the Project region's PHAs are able to raise financial help at short notice ($2,000 within a week) at or above levels typical for Queensland, as follows: 89.9 people/100 in the Highfields, 86.2 people/100 in Gowrie/Toowoomba-West and 81.0 people/100 in the Lockyer Valley – West, compared with 81.9 people/100 in Queensland. The rate is much lower at 72.6 people/100 in North Toowoomba – Harlaxton/Wilsonton (Torrens University (PHIDU), 2018).

5.7.3.4 Developmental vulnerabilities

Developmental vulnerabilities in childhood provide a useful indicator of potential long-term effects on a child's later health, wellbeing and academic success. Lockyer Valley - West and North Toowoomba – Harlaxton/Wilsonton PHAs have slightly higher proportions of school age children who are developmentally delayed than is typical for Queensland (28.6 per cent and 30.0 per cent compared with 26.1 per cent). For other SA2s in the Project region the proportion of school age children who are developmentally delayed is lower Torrens University (PHIDU), 2018).

5.7.3.5 Self-harm and suicide

Death from suicide and self-inflicted injury is an indicator of mental wellbeing, particularly among people between 15 and 24 years of age, and 25 and 34 years of age, for whom suicide is a major cause of death. The rate of suicide in North Toowoomba – Harlaxton/Wilsonton PHA is the highest in the Project region at 15.0 people/100,000 and also high compared to Queensland's rate of 14.1 people/100,000 (Torrens University (PHIDU), 2018). The rate is lower at 13.1 people/100,000 in the Lockyer Valley – West PHA (data is not reported for Highfields PHA).

5.7.3.6 Circulatory and respiratory diseases

Community members have raised concerns about the potential for polluting emissions from the rail operation, including coal dust, to affect their health.

Diesel emissions contain concentrations of particulate matter, generally measured and reported as $PM_{2.5}$ and PM_{10}. $PM_{2.5}$ are fine particles and are associated with harmful health effects including cardiopulmonary and respiratory disease, and some substances found as $PM_{2.5}$ have been declared carcinogens by the World Health Organisation (New South Wales EPA, 2019).

Health indicators relevant to the population at risk of air pollution include:

- The level of current respiratory system disease (asthma, chronic obstructive pulmonary disease, bronchitis and other conditions) as an indicator of the population potentially at risk of air pollution from PM_{10}; and
- Coronary heart disease as an indicator of the potential impact of $PM_{2.5}$ (noting however that data is currently only reported for all circulatory diseases).

Available information shows that the North Toowoomba-Harlaxton/Wilsonton PHA has a predisposition to a number of these illnesses, with higher rates of hospital admissions for circulatory and respiratory system diseases than the Queensland rate (refer Table 5.44, referencing 2014-15 data).

Table 5.44 Hospital Admissions by Type

Population Health Area	Population Health Area Code	Circulatory System Diseases	Respiratory System Diseases
		Rate per 100,000 persons	Rate per 100,000 persons
Lockyer Valley - West	30208	2,490.9	1,913.3
Highfields	30209	1,675.5	1,718.9
North Toowoomba - Harlaxton/ Wilsonton	30211	3,156.7	3,130.3
Gowrie/Toowoomba-West	30205	2,050.8	1,976.7
Queensland		2,476.9	2,227.5

Source: Torrens University (PHIDU). 2018. Referencing 2014-15 data. Rates are age standardised. All Hospitals.

At present, modelled estimates for asthma are only available based on 2012 data. As such they can only be considered a crude indication of the population likely to be sensitive to air pollution. Estimated rates of asthma were higher in the Lockyer Valley – West, Highfields and North Toowoomba – Harlaxton/Wilsonton PHAs than the rate for Queensland (at 10.7, 12.3 and 13.3 people/100,000 respectively, compared with Queensland's 10.2).

The incidence of lung cancer was the same in the Lockyer Valley – West PHA as that for Queensland (at 54.1 people 100,000 compared with 51.4 for Queensland), and significantly lower elsewhere in the Project region (Torrens University (PHIDU), 2018).

Hospital admissions for diseases of the circulatory and respiratory systems occurred at a much higher rate in North Toowoomba - Harlaxton Wilsonton PHA than elsewhere in the Project region, and when compared with Queensland (Table 5.44).

Inhaling black carbon, present in diesel emissions, can cause damage to lung cells potentially leading to cancer (Rail Safety and Standards Board, 2016). Diesel emissions are considered in EIS Appendix K: Air quality technical report (Section 2.4).

5.7.4 Access to health services

Barriers to accessing services and facilities due to a lack of transport, limited financial resources, lack of service capacity or feeling unsafe can prevent or delay people accessing health care, affecting their health and wellbeing.

The Darling Downs and West Moreton Public Health Network report that there is a substantial workload for health professionals across the region and difficulty in recruiting and retaining the health workforce, particularly in rural areas and West Moreton (Commonwealth of Australia, 2018).

The health services available to the potentially impacted communities are described in Section 5.6.4 and include general practitioners in Toowoomba, Wilsonton, Highfields, Withcott and Gatton, and allied health, hospital and community health services in Toowoomba, Oakey and Gatton. Tertiary hospitals offering specialist care are available in Toowoomba and Ipswich.

Residents in Toowoomba have the option of public transport services to access health services, with residents elsewhere being reliant on private transport. This is consistent with the Accessibility/Remoteness Index of Australia's classification of the area as Inner Regional, characterised as having some restricted access to some goods, services and opportunities for social interaction (ABS, 2016a). The communities where lack of transport is most likely to be a barrier to accessing health care services are in the North Toowoomba – Harlaxton/Wilsonton and Lockyer-Valley West SA2s (at 3.9 people per 100 people and 3.7 people per 100 respectively), but at similar levels to that for Queensland (3.9 people per 100) (Torrens

University (PHIDU), 2018). The cost of health care appears to be a greater barrier to accessing health for residents in North Toowoomba – Harlaxton/Wilsonton SA2s, where it is estimated to affect 5.4 people per 100, compared with from 1.1 to 2.2 people per 100 in the remaining communities, and 2.7 people per 100 in Queensland.

The Home and Community Care (HACC) Program provides services to assist frail older people and younger people with disabilities to continue living in their home and in their communities. HACC services are provided in the home or in the local community, community health centre or local council facility. State-wide data indicates that nearly 75 per cent of HACC clients are older than 65 years of age and around 74 per cent live in their own home (Department of Social Services, 2014). Rates of home and community care assistance in the North Toowoomba – Harlaxton/Wilsonton PHA were slightly higher than typical for Queensland, with 108.1 instances/1,000 people compared with 106.3 instances (Torrens University (PHIDU), 2018). There is likely to be a high concentration of HACC clients in the suburbs of Cranley (in Wilsonton SA2) and Helidon (Lockyer Valley - West SA2), both of which have a concentration of older people.

5.7.5 Indigenous health

Indigenous status is an important indicator of health status as Aboriginal and Torres Strait Islander people experience a greater burden of disease and injury than non-Indigenous Queenslanders (Queensland Health. 2017). The Australian Medical Association Report Card on Indigenous Health reported a widening gap between Indigenous and non-Indigenous health in the past 10 years, with chronic diseases being the biggest health challenge, while suicide and mental health gaps have also widened (AMA, 2018). Injury, including suicide, is the second leading cause of death amongst males and has increased by 21 per cent since 2011 (AMA, 2018).

At the 2016 Census, 1,166 people identified as Indigenous in the Project region's affected suburbs. The largest Indigenous populations were in Wilsonton Heights (254 people) and Rockville (252 people), followed by Harlaxton (182 people) and Kingsthorpe (108 people), with smaller populations in the remainder of affected suburbs (refer Section 5.2.2, Table 5.2).

Unemployment is associated with poor health and wellbeing. Like many areas in Queensland, unemployment in the Project region amongst Indigenous residents is high at 18.9 per cent, but lower than the State-wide unemployment rate of 20.1 per cent for Indigenous people. This compares with the general unemployment rate of 7.6 per cent in Queensland.

Aboriginal and Torres Strait Islander residents in the Darling Downs Hospital and Health Service Region experienced 2.1 times the expected burden of disease and injury than that of the State's non-Indigenous population, and have an 11.8 years shorter average life expectancy. Cardiovascular disease, mental disorders and diabetes were the largest contributors to the gap in disease and injury burden between Indigenous and non-Indigenous residents (Queensland Health, 2017).

5.7.6 Mental health

Mental health is a pervasive challenge, with one in five Australians experiencing a mental health issue in any one year, and almost one in two people experiencing a mental health issue in their lifetime (Mental Health Australia and KMPG, 2018). The most common mental illnesses are depressive, anxiety and substance use disorders, often occurring in combination. Environmental factors can increase the risk of mental illness, including trauma and stress (Healthdirect Australia, 2019).

Estimates for mental and behavioural problems in the Project region show that residents in North Toowoomba-Harlaxton/Wilsonton and Lockyer Valley West PHAs are likely to have a higher rate of issues than Queensland residents (16.9 and 15.1 people/100 respectively, compared with 14.4/100 people). These areas coincide with the areas that are relatively disadvantaged socio-economically.

The rate of hospital admissions for mental health related conditions shows that admissions are much higher in North Toowoomba-Harlaxton/Wilsonton PHA at 3,616.7 people per 100,000 compared with the rate of 2,162.0 people per 100,000 for Queensland. The rate elsewhere in the Project region is significantly lower at 1,376.7 people per 100,000 in Lockyer Valley West PHA and 1,466.5 people per 100,000 in Highfields PHA.

ARTC consultation has identified that residents in potentially impacted communities include ex-service personnel and people who experienced severe flooding events who have Post-Traumatic Distress Disorder, and are among residents who experience challenges with mental health.

5.7.7 Community safety

Feeling unsafe can influence levels of anxiety and can be a barrier to community participation and accessing services. The Highfields PHA perceive their personal safety to be high, with 69.4 people per 100 feeling safe to walk alone after dark in the local area, well above Queensland's rate of 50.9 people per 100. In contrast, residents in North Toowoomba-Harlaxton/Wilsonton PHA have lower levels of perceived personal safety at 37.1 people per 100 Torrens University (PHIDU), 2018).

Crime rates are significantly higher than that typical for Queensland in the more disadvantaged areas in North Toowoomba – Harlaxton, and Wilsonton SA2s, and somewhat high in Lockyer Valley – West SA2 (refer Table 5.45). Both Gowrie and Highfields report rates of crime well below that typical for Queensland.

Table 5.45 Reported offences (total reported offences), 2017

Statistical Area 2 (SA2)	LGA	Rate per 100,000
Gowrie	Toowoomba	3,445.8
Highfields	Toowoomba	2,289.2
Lockyer Valley – West	Lockyer Valley	7,536.0
North Toowoomba – Harlaxton	Toowoomba	22,802.9
Toowoomba - West	Toowoomba	6,392.5
Wilsonton	Toowoomba	11,956.7
Queensland		6,622

Source: Queensland Police, Queensland Regional Database, Queensland Government Statistician's Office

5.7.8 Domestic and family violence

Domestic and family violence refers to physical, sexual, economic, psychological, verbal or emotional abuse. It has a significant immediate and longer term impacts on the health and well-being of victims, with exposure leading to poorer physical health overall, and an increased risk of health problems (World Health Organisation, 2013).The reasons for domestic violence are complex. However, contributing factors include drug and alcohol abuse, irregular or intermittent work, mental health issues (including anxiety), stress and historical trauma (such as racial discrimination and disadvantage).

Queensland Magistrates Courts data reports on applications for Domestic Violence Orders (DVO). The two courts servicing the Project region are in Toowoomba and Gatton. Court statistics show that in 2018-19, 773 DVO applications were lodged in the Toowoomba Magistrates Court, equivalent to a rate of 480.8 DVOs per 100,000 people, almost half the rate of Ipswich at 864.1 DVOs per 100,000 people (Queensland Courts, 2019 and ABS 2016f, Quickstats). Notwithstanding this data, the true scale of the family and domestic violence is likely much greater in both LGAs as only a small proportion of victims ever reports violence (COAG, 2019). Data are not reported for Gatton Magistrates Court.

5.7.9 Road safety

DTMR crash data for the period between 2012 and 2017 are provided in detail in EIS Appendix U: Traffic impact assessment and indicate that the following crashes occurred at proposed road/rail interface locations:

- Paulsens Road (referenced as Gowrie Junction Road by QR)
- Morris Road.

The data indicated that the following crashes occurred along Project construction traffic routes:

- 88 crashes on local government roads operated by TRC
- 11 crashes on local government roads operated by LVRC
- 711 crashes on State controlled roads.[1]

More localised road safety data shows that the Project region had a high number of deaths from road traffic injuries compared to Queensland's rate of 5.4 people per 100,000 in 2015. In the Lockyer Valley – West PHA 9.3 people per 100,000 died from road traffic injuries, and in North Toowoomba – Harlaxton/Wilsonton PHA an even higher 10.8 people per 100,000 died from this cause (Torrens University (PHIDU), 2018).

5.7.9.1 Rail safety

The main traffic safety risks associated with rail transport include derailments, level crossing accidents with road based vehicles, accidents associated with passenger/pedestrian slips and falls, and railway suicide and assaults.

In the decade from 2001 to 2012 Queensland had the second highest rate of serious rail injuries in Australia, averaging 17.1 injuries a year (after Victoria at 58.5 and followed by West Australia at 5.1, with no data reported for NSW). There were 145 road vehicle collisions at level crossings in Queensland in the decade to June 2012. This equates to a normalised rate of 0.4 collisions per million train kilometres travelled per year, and was the fourth highest rate in Australia, following Tasmania at 3.77, Northern Territory at 0.61 and Victoria at 0.53. NSW's rate was significantly lower at 0.16 (Australian Transport Safety Bureau, 2013).

In the five years to 2013 in Queensland there were six serious injuries and eight fatalities from running line and level crossing collisions with people, and 67 serious injuries and eight fatalities from people slipping, tripping or falling (no data is reported for suicide). Most incidents occurred within the greater Brisbane network, with none recorded in the Project region (Queensland Government Data, 2013).

In 2019/2020, Queensland Rail recorded 211 reported near misses at level crossings and seven collision, including 33 the near misses which occurred on the West Moreton System between Rosewood and Quilpie.

There is over 7,000 km of freight and passenger rail track throughout Queensland (Queensland GovernmentData, 2013). The Project would add a further 28 km single track dual gauge railway track to Queensland's rail system. However, no new level crossings are proposed with all road rail interfaces grade

[1] Includes the Warrego Highway, Toowoomba Bypass, Gatton Helidon Road, Murphys Creek Road, New England Highway and Toowoomba Cecil Plains Road.

separated, and the Project also proposing to eliminate an existing level crossing on the QR West Moreton System.

The Project will also accommodate existing rail traffic on the QR West Moreton System, effectively reducing the rail traffic through Murphys Creek and Toowoomba and further reducing the risk of road rail incidents.

6 SIA Stakeholder Engagement

This section outlines the stakeholder engagement undertaken by ARTC and the SIA team, the results of engagement, and where stakeholder issues are addressed in the SIA. EIS Appendix D: Community Consultation provides a detailed record of ARTC's engagement processes and outcomes.

6.1 EIS engagement

ARTC values active engagement with stakeholders and communities, and has undertaken a wide range of consultation activities during the EIS process.

6.1.1 Key stakeholders

ARTC's consultation process is detailed in EIS Appendix D: Community Consultation, and has included engagement with:

- Directly affected and adjacent landowners through a range of individual meetings and community engagement options, including face to face meetings to inform landholders about potential impacts or changes to conditions on their property as a result of the Project, discuss landholders' concerns and provide information that is specifically based on their questions or concerns
- Community members, through community information sessions, the Inner Darling Downs CCC, the Lockyer Valley CCC and other forums
- Councils, through a series of meetings with LVRC and TRC
- Business and community organisations, through representative organisations, supplier forums and individual meetings
- Indigenous parties, as part of the cultural heritage and native title assessment processes, and as part of ARTC's Indigenous Participation Adviser's consultation on employment and cultural awareness
- Community, business, cultural and environmental groups, through a range of consultation mechanisms including community information sessions, CCC meetings, online options, and meetings with Chambers of Commerce, Southern Queensland Country Tourism and Queensland Rural Fire Services
- Existing infrastructure asset owners and operators in the Project area to inform Project design as documented in EIS Chapter 6: Project Description
- Spoil and waste management providers (e.g. TRC's Toowoomba Waste Management Centre)
- Local schools and the University of Southern Queensland
- Elected representatives of the Australian and Queensland Governments
- A wide range of Government agencies, including a specific focus on the Project design, interfaces with Government assets, groundwater modelling, surface water and flooding, traffic and transport planning, and alignment on training programs.

With the completion of community workshops as part of the EIS assessment phase in 2021, stakeholder engagement during 2021 has included:

- provision of a letter to all directly impacted landholders to update them on the status of the Project and the draft EIS, and provide an invitation for them to contact the stakeholder engagement team if they would like further information or consultation
- phone calls, emails, and a letterbox drop providing project updates to all registered stakeholders and community members who may be affected by noise and vibration related to the Project

- meetings as requested by stakeholders to discuss property impacts and/or noise and vibration impacts.

6.1.2 Accessibility

The EIS consultation process was made broadly accessible to community members through:

- Provision of Inland Rail offices in Toowoomba and Gatton so that all community members could access face to face contact with Project team members
- Extensive advertising and promotional campaigns to support awareness of the Project and consultation options
- Invitations to a diverse range of community, economic and environmental groups to participate in consultation (refer EIS Appendix D: Community Consultation)
- Regular community information sessions, at different times of the day and week, in a range of locations, to enable community members, groups and organisations to access Project information and provide their feedback
- CCC meetings (held in various locations), with members having demonstrated knowledge of the area, membership of community groups and organisations, and the ability to bring representative views to the work of the CCC
- Inviting community members to observe CCC meetings to hear Project updates, information about design and EIS technical studies and community views first-hand
- Communication channels including fact sheets, newsletters, an EIS free call number, email and postal address
- Use of social media including Facebook, YouTube, Instagram and LinkedIn, and provision of a fly-through video demonstrating the Project's interaction with landholdings and communities, available online
- Provision of an online, interactive Project map enabling people to obtain detailed information about the Project, ask questions, provide comments and receive feedback.

6.1.3 Consultation with community groups

ARTC has involved a wide range of community groups in Project consultation through various means, e.g. letters providing information about the Project, the EIS process and engagement opportunities, and inviting contact with the Project team, discussions at community information sessions and CCC meetings, and one to one and group meetings, as detailed in EIS Appendix D: Community Consultation. Given the close-knit nature of local communities, many community members who participated in community information sessions and the CCC are members of multiple local groups. Community, environmental and business groups who were engaged included:

- Gowrie Junction Progress Association, Murphy's Creek Progress Association and the Helidon and District Progress Association
- Toowoomba and Lockyer Valley Go Kart Association
- Teen Care Challenge Queensland Inc.
- Toowoomba Community Housing Service
- Lockyer Community Centre
- Lockyer Valley Community Activities Shed

- Condamine Alliance
- Southern Queensland Country Tourism
- Toowoomba Chamber of Commerce
- Lockyer Valley Chamber of Commerce and Industry
- Highfields and District Business Connection Incorporated
- Drayton & Toowoomba Agricultural & Horticultural Society, QLD
- Royal Agricultural Society of Queensland
- SQ Landscapes
- Friends of the Escarpment Parks Toowoomba Inc.
- Macintyre Valley Cotton Growers Association Inc.
- Heritage groups including Transport Main Roads Heritage Centre, Cobb+Co Museum, Toowoomba Historical Society, and the Toowoomba & Darling Downs Family History Society
- A wide range conservation, Landcare, wildlife protection and catchment authorities
- Universities, TAFEs, Schools (primary and secondary, public and private) throughout the Project region.

Key issues raised by members of community groups (refer EIS Appendix D: Community Consultation for further information) included:

- Health issues, including the potential for dust generated by construction works, the potential for coal dust to affect air quality during operation, and the effects of stress and anxiety on mental health
- The potential for noise or vibration during construction and/or operation to reduce the amenity of local towns and community facilities
- Environmental management issues including the potential to mobilise contaminated material, weed and pest control, protection of endangered flora and fauna, management of sediment and erosion, biodiversity offsets, waste management and land rehabilitation after construction
- Issues associated with water use and quality, including the potential to affect groundwater access for other use, the potential for the Project to compete with other water users for allocations, and potential for ground disturbance and water discharge to affect the quality of local creeks
- How excess spoil will be managed, including spoil haulage on local roads
- The potential to increase the risk of flooding impacts with risks to community safety
- Impact on the amenity of and access to local businesses
- Changes to visual amenity during the Project's operation, including the effects of structures (bridges and viaducts) and Project lighting
- Impacts to agricultural activities, including land acquisition and severance of agricultural properties
- Concerns about disruption to traffic and increased traffic volumes
- The need for clarity on Project timeframes, the timing of specific construction activities and the approval process, including opportunities for community members and groups to make submissions on the EIS
- The need to ensure local people benefit from Project employment and supply opportunities
- Project justification, route selection, alignment and design issues

- The need for respectful and honest engagement as the Project progresses.

6.1.4 Key issues

A summary of key issues raised in ARTC consultation and ARTC responses to key issues is provided in Table 6.1. EIS Appendix D: Community Consultation (Section 6) includes detailed information about issues raised and ARTC responses.

Table 6.1 ARTC Engagement – Key Issues and responses

Key issue	ARTC response
Land use and tenure	Consultation with directly affected landowners was undertaken to identify their specific issues and concerns. ARTC Inland Rail sought to minimise impacts by aligning the rail corridor with existing infrastructure and property boundaries, where possible. Inland Rail actively sought feedback about individual requirements in relation to irrigation, water licences, livestock movements, local road usage, private crossing requirements, hydrology, existing infrastructure and land use. This feedback was considered in the design process where possible to minimise impacts, e.g.: ■ Gowrie Junction landholders provided information and photos for Gowrie Creek and existing QR line to assist in design to mitigate drainage, flooding and afflux impacts ■ Gowrie Junction, Withcott and Lockyer Valley landholders and stakeholders provided information on experience with the Toowoomba Bypass construction and potential impacts relating to geotechnical issues, groundwater bores and water access, resulting in option reviews and alignment adjustments ■ Airforce Rd businesses provided input into road use requirements (e.g. movement of hazardous goods) which was taken on-board and acknowledged in the decision making process for that section ■ Gowrie Junction Progress Association provided valuable information regarding the western portal area location which resulted in a change to the location of the portal. The disturbance footprint will be further refined during detailed design to a size that is required to safely construct, operate and maintain the Project, while minimising land acquisition, severance and disruption to land use, tenure and transport networks.
Agribusiness impacts	Where loss of agricultural land was unable to be avoided, the horizontal alignment considered placement of the rail corridor so that it traverses around or as close as possible to property boundaries to reduce potential fragmentation and sterilisation of land. Intensive livestock operations, including feedlots and poultry farms, have also been avoided where possible. Where the permanent operational 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, and consultation with individual landowners will determine if the agricultural enterprise can remain viable. ARTC will continue to work with directly affected landholders to develop and implement property-specific measures to mitigate impacts on properties that could affect agricultural enterprises. This will inform development of the detailed design and CEMP.
Property values	Landholders' concerns about the Project's potential to change property values are acknowledged, however, assessment of the likelihood and magnitude of change is not possible given the individual circumstances of properties, other market drivers, the variability of Project impacts, and payment of compensation where there is a land requirement for the project. As such, the likelihood and quantum of the Project's impacts on property values cannot be conclusively assessed
Flooding and Hydrology	Flooding is a major concern in the area given the 2011 and 2013 flood events which impacted the Gowrie Creek and Lockyer Creek catchments). Landowner consultation was undertaken to obtain specific photographic records and anecdotal evidence of existing flooding impacts and extents through a series of workshops and landowner meetings. Based on primary feedback, this information was validated and shared again with landowners to verify the modelling outcomes and findings of the Project's hydrology and flooding assessment.

Key issue	ARTC response
Water	Water users are concerned about the potential for the Project to affect groundwater levels or surface water flows, or to acquire rights to water for construction purposes which could limit use by other water users. The Project design has been undertaken with the aim of meeting specific design criteria as per Chapter 13 Surface water and hydrology. The Project traverses' floodplains and major watercourses of Lockyer Creek catchment on structure avoiding changes to channel flows and minimising changes to floodplain conditions for all flood events. EIS Appendix N: Groundwater technical report provides detailed proposed mitigation measures for the potential impacts on groundwater resources. Identification of construction water sources will utilise a hierarchical approach to confirming the suitability of water sources. EIS Appendix L notes that the hierarchy of preference for accessing construction water.
Traffic and Transport	Consultation is ongoing with local councils, DTMR and QR about the road and rail networks interfaces and connections, construction traffic management and expectations with regards to temporary and permanent road network changes. Concerns regarding road changes due to the proposed Gowrie Junction Road bridge at Gowrie Junction, where the road will cross over the proposed and existing rail lines, Morris Road and Gowrie Creek, have been raised by landowners and TRC. The Project has undertaken additional works to explore these road rail interfaces and road network changes and will continue consultation with the public and relevant stakeholders through the next phase of the Project. The use of a tunnel and viaducts will also facilitate the ability to travel across the rail corridor.
Land use and tenure	Where possible the Project was co-located with the existing QR West Moreton System rail corridor and existing road reserves. The Project is also generally located within the Gowrie to Grandchester future State transport corridor (a protected corridor dedicated for future railway under the TPC Act) within which some of the properties have already been acquired by DTMR.
Indigenous connections to land and heritage	As part of the development of CHMPs, ARTC engaged with the Aboriginal representative groups Western Wakka Wakka and Yuggera Ugarapul. Native Title rights and interests for existing State land (i.e. reserves and waterways) will not be impacted by the Project as the relevant areas are subject to volumetric acquisition. A cultural heritage assessment, including consultation with local landholders and other stakeholders, was also undertaken to describe the non-indigenous values of the Project footprint and surrounds.
Landscape and Visual amenity	Community information sessions were held with stakeholders, including directly and indirectly affected residents, to understand their landscape and visual amenity concerns. In addition, access to 'before and after' landscape illustrations of the proposed Project area were made available on the Project website page. Concerns about the visual amenity have been captured and addressed via the online interactive map, community consultation sessions and CCC meetings. Through this consultation, specific visual amenity concerns have been identified within the Gowrie Junction and Lockyer Valley areas due to the proposed infrastructure.
Waste and Spoil management	Consultation with TRC and LVRC was undertaken to ascertain current and forecast landfill capacities and waste transport service providers and appreciate operational capacities and industry processes.
Flora and fauna	Consultation was undertaken with individuals and groups to present Project findings, understand key concerns, provide face to face access to EIS technical specialists and provide an opportunity for stakeholder input into mitigation and design. A number of design measures have been incorporated into the Project to minimise potential impacts, for example opportunities to locate fauna crossings to maintain habitat connectivity, avoiding locating and/or minimising Project works within nationally and regionally protected areas, and several mitigation measures for Koalas and their habitats proposed for implementation in future phases of the Project.
Amenity – air quality and noise	Landowners shared concerns about the potential for air quality and noise impacts near the western tunnel portal in Gowrie Junction, the eastern tunnel portal at Ballard and in Helidon Spa. Operational noise for landowners and businesses is another significant concern along the Project alignment. During October 2019 and November 2019, the Project team held four community information sessions and consulted with the community about the air quality and noise assessments (including findings and impacts). In February 2020, the Project team also held workshops with impacted landowners where modelling predicted property noise exceedances. Specific noise management and mitigation measures will be detailed in the Construction Noise and Vibration Sub-Plan. ARTC will engage with people whose properties may experience noise impacts,

Key issue	ARTC response
	to ensure the potential impact on amenity is clearly explained, and where relevant, to obtain residents' inputs to the development of property-specific mitigation strategies. With regard to air quality, quantitative dispersion modelling assessment was undertaken of operational emissions associated with freight rail movements and from the tunnel portals. The assessment concluded that the highest predicted pollutant concentrations were below adopted air quality goals (with veneering applied to coal trains, consistent with current practices along the QR West Morton System rail corridor).
Interest in passenger rail in addition to freight	While the Project is specifically designed for freight trains, it does not preclude the use of the track at a future date by a passenger service. The current design accommodates the existing QR narrow-gauge rail line, which runs passenger trains including the Westlander on the QR West Moreton System. The Project design does not consider the construction of a high speed dedicated passenger rail line, which was the original intent of the Gowrie to Grandchester future public passenger transport corridor, to be delivered by the DTMR. Given that the Project accommodates single dual gauge track and includes significant infrastructure such as the 6.24 km tunnel and large viaducts, the provision of passenger tracks being co-located along the entire Project length at a future date is unlikely. EIS Chapter 6: Project Description provides further information.
Social and economic benefits	Stakeholders in the project region would like to see economic opportunities and benefits beyond construction of the project. Chapter 2: Project Rationale presents a wide range of economic opportunities and benefits that are likely to eventuate with the delivery of Inland Rail. A Workforce Management Action Plan is provided as part of the SIMP. The objective of this action plan is to enable residents to access training and employment opportunities created by the Project, equipping the local workforce for employment on Inland Rail and future projects.
Access to Toowoomba Range Tunnel in the case of emergency	The railway tunnel in the Toowoomba Range has been designed considering risk associated with emergency situations/incidents. The design incorporates fire and life-safety mitigation measures, and ensures emergency access is managed through a Project Access Strategy. Access for emergency vehicles during construction will be discussed with services providers in developing the strategy. Multiple access points into and out of the rail corridor will be provided.

6.2 SIA Engagement

The purpose of SIA engagement was to ensure that directly affected stakeholders and other community members had the opportunity to provide informed input to the SIA.

SIA engagement was integrated with ARTC's engagement for the Project through SIA team participation in community information sessions and attendance at Inner Darling Downs CCC and Lockyer Valley CCC meetings, with Project representatives also participating in SIA-specific consultation. The SIA has considered the results of ARTC's consultation with landowners, businesses, community groups, environmental groups, Councils and Government agencies, including the results of consultation on other Inland Rail projects and particularly on the adjacent B2G and H2C projects.

SIA-specific engagement regarding the Project included:

- A community survey of residents (refer Section 4.3.2)
- SIA team participation in Community Information Sessions in May, July and August 2018 and October 2019 to outline the SIA scope and process, and speak with community members about potential social impacts
- Participation of SIA team members in Lockyer Valley and Inner Downs CCC meetings to discuss the SIA process and scope, and hear members' concerns regarding potential impacts and the need to maximise benefits resulting from Inland Rail projects for local people
- Meetings with LVRC and TRC officers to discuss community concerns, potential social impacts and benefits, and potential mitigation measures

- Workshops with social infrastructure providers in Toowoomba, Gatton and Helidon to discuss social infrastructure access, community concerns, potential impacts and benefits, and mitigation measures
- A meeting with Yuggera Ugarapul People and an interview with a Western Wakka Wakka leader to discuss the Project, the potential for impacts on Indigenous values and involvement of Indigenous people in Project employment
- Participation in a meeting with the Lockyer Valley Tourism Association to discuss their concerns about Inland Rail's impacts on local businesses and scenic amenity
- A meeting with the Toowoomba Chamber of Commerce to discuss businesses views and opportunities
- A meeting with Gowrie Junction Progress Association representatives to discuss potential impacts in the Gowrie Junction area.

ARTC's social performance team also attended Lockyer Valley CCC meetings (where the Project is a key focus along with the H2C project) in March 2019, August 2019 and October 2019 to provide a briefing on the SIA progress and key focus areas for the social performance program and seek feedback.

Additional meetings with the Lockyer Valley and Inner Downs CCCs were planned for 2020 to discuss the draft SIA findings, however this has not been possible to date due to COVID-19 restrictions.

Table 6.2 details the objectives, mechanisms and timing for SIA stakeholder engagement.

Table 6.2 SIA Engagement

Stakeholder Groups	Objective	Mechanism	Timing
Office of Coordinator-General	Discuss the proposed SIA scope and assessment requirements for Inland Rail projects	Meeting with representatives of the Office of the Coordinator-General officers	June 2018
	Discuss the draft SIA	Meeting with representatives of the Office of the Coordinator-General	June 2020
Landowners and community members	Provide information about the Project alignment and EIS study process Enable community members to contribute their views on the scope of potential social impacts and benefits	Participation in ARTC information sessions (refer EIS Appendix D: Community Consultation for detailed information)	May 2018
	Collect information on social baseline values	Community survey Meeting with Lockyer Valley Tourism Association Briefings to and discussions with Lockyer Valley CCC	June-July 2018 May 2018 October 2018

Stakeholder Groups	Objective	Mechanism	Timing
	Obtain community inputs on potential impacts, benefits and mitigation	Participation in ARTC community information sessions to undertake discussions with landholders and community members	June-July 2018
		Briefings to and discussion with Lockyer Valley CCC	September 2018
		Briefings to and discussion with Inner Downs CCC (focussed on B2G project)	February 2019
		ARTC briefing on SIA to Lockyer Valley CCC and requests for feedback	March 2019, August 2019, October 2019
		ARTC SIA and social performance update to Inner Downs CCC	June 2019
		Community information session in Gowrie Junction	October 2019
Traditional Owners	Identify Indigenous community values to be considered in the SIA Seek inputs on opportunities for Indigenous economic and community development	Interview with Yuggera Ugarapul elders	August 2018
		Interview with Western Wakka Wakka representative	November 2018
		Meeting with Yuggera Ugarapul People	November 2019
Local Governments – Toowoomba and Lockyer Valley LGAs	Brief Council and managers on the draft SIA scope and seek their inputs on local issues and the focus of assessment	Meetings with planning and community development officers	October – November 2018
	Discuss the results of stakeholder engagement and preliminary assessment findings, and seek input on draft mitigation measures	Meetings with planning, community development and economic development officers	November 2019
Community and government organisations (refer Section 6.3.6)	Identify social infrastructure capacity and gaps Seek input on social impacts and opportunities for social infrastructure providers and vulnerable groups, and potential mitigation measures	Workshops in Toowoomba and Gatton with social infrastructure providers (H2C, G2H and B2G focus)	November 2018
		Workshop in Helidon (focus on G2H)	November 2019
		Meeting with Gowrie Junction Progress Association representatives	October 2019
Businesses and business organisations	Identify businesses' views on potential impacts and opportunities, and identify strategies to support local suppliers to participate	ARTC Meeting with Lockyer Valley Chamber of Business and Industry	June 2019
		Meeting with Toowoomba and Surat Basin Enterprise	May 2019
		Meeting with Toowoomba Chamber of Commerce	November 2019

6.3 Engagement Outcomes

This section describes the outcome of stakeholder engagement undertaken as part of the SIA, including a summary of issues raised in CCC meetings and community information sessions.

6.3.1 Community survey

As described in Section 4.3.2, of the 315 SIA survey respondents who identified their residential location, 102 respondents were from the Project region, including 29 residents in the Toowoomba LGA and 73 residents in the Lockyer Valley LGA.

The survey respondents' views on what they valued about their community are detailed in Sections 5.3.3 and 5.3.4. Common to both LGAs is how respondents value their communities as family-oriented and safe, the strong sense of identity, the strength of their community ties and how they help each other out in difficult times. Respondents were less confident as to whether they felt their community had the ability to adapt to change. Respondents from the Lockyer Valley LGA described strong values attached to the unique character of local towns and community identities, and to local environmental qualities. Similarly, respondents from the Toowoomba LGA were attached to local environmental qualities, including landscapes and biodiversity, and a strong appreciation of their quiet, rural way of life.

Respondents were asked to comment on how they expected the Project would affect local people, businesses and communities (discussed in detail in Section 4.3.2). A range of positive and negative views were expressed.

Potential impacts identified by community members included:

- Impacts on local property values
- Severance of farming land and impacts to agricultural productivity and local business operations
- Damage to the scenic amenity and character, also impacting visitor appeal
- Disturbance to wildlife
- Disruption of residents' quiet way of life and enjoyment of public spaces and townships.

Impacts on community wellbeing, including:

- Fear of community fragmentation, harming cohesion
- Potential for increased stress, anxiety and depression among affected property owners and nearby residents who fear or oppose the Project
- Noise and vibration impacts causing nuisance, affecting sleep and general health and wellbeing
- Concerns about air quality, including from the potential transportation of coal
- The perception that while there were national benefits, the Project offered no benefits for local communities.

Positive benefits identified included:

- Advantages of faster access to markets for the agricultural industry
- Facilitating business development and jobs growth
- The potential for the Project to facilitate passenger rail services to the region.

While a general theme from respondents was opposition to the Project's impacts, many suggested actions that could be considered to mitigate adverse impacts and maximise benefits. These are addressed in Section 8.1.4.

6.3.2 Community Consultative Committees

ARTC established the Lockyer Valley CCC in December 2017, with the G2H and H2C projects as the focus for consultation. The Inner Darling Downs CCC is primarily focussed on the B2G project but has also been provided with opportunities to discuss the G2H project. The two CCCs have met quarterly since December 2017.

Members of the CCC were appointed following a publicly advertised nomination period and independent assessment of nominees, with members representing either individual or group interests, and are chaired independently. The role of the CCC is to act as a conduit between the community and ARTC, to provide input and feedback on community issues and concerns about the Project.

Lockyer Valley CCC members have raised the following issues of relevance to social impacts:

- Opposition to the Project's interaction with farming land and the scenic beauty of the Lockyer Valley
- Frustration with the process for determining the Project's alignment, and opposition to the Project's alignment
- Concerns about the location of crossing loops, regarding potential for noise impacts
- Impacts of property acquisition (stress and disruption) and the methodology for compensation for land acquisitions
- Stress and distress in the community regarding potential or perceived impacts
- Impacts on property values
- Potential for traffic congestion and traffic safety impacts at level crossings
- Impacts of land severance, displacement and reduced amenity for people whose land would be acquired for the Project or who would be living near the rail corridor
- The potential for a freight rail corridor, including viaducts and raised structures through Lockyer Valley's areas of natural beauty to affect visual amenity and deter tourists from the region's growing tourism and event offerings
- Noise and vibration impacts on residents, business and properties near the rail line, affecting their amenity or property values
- Potential for the rail line (embankments, structures and culverts) to change flooding patterns and/or exacerbate flooding
- How the agistment of livestock and impacts on property management will be addressed
- Project links to the InterLinkSQ facility at Gowrie Junction
- Impacts of Project construction and rail infrastructure on tourism and visual amenity
- Impacts on Native Title interests or cultural heritage
- Potential for passenger rail inclusion as part of Project planning.

The Inner Darling Downs CCC members raised the following concerns about social impacts in relation to Inland Rail as a whole:

- Opposition to the Project's location
- Impacts of property acquisition (stress and disruption of families) including uncertainty about the effects of the Project alignment on individual properties, and the methodology for compensation for land acquisitions
- Impacts on property values

- Potential to exacerbate flooding and affect homes, farms, roads or infrastructure
- Noise impacts from construction or operation
- The potential for blasting/vibrations during construction to damage on properties
- Impacts on farming properties, including livestock management during construction and impediments to crossings between properties, and effects on water bores
- Biosecurity/weed management concerns
- Lack of perceived local benefit
- Frustration about community access to Project design and information about impacts
- Concerns about the transport of coal with potential for coal dust to affect people, houses or tank water
- Stress and distress in the community regarding potential or perceived impacts
- Interest in the Project's procurement model and how it will engage local businesses
- Difficulties faced by small businesses in accessing major Project opportunities
- The need for consideration of the Project's impact upon small businesses
- Concerns over tunnel ventilation, speeds of locomotives, tunnel capacity for dangerous goods and coal dust
- The potential for increased noise as a result of increased train traffic and the air quality impacts related to the location of tunnel portals
- The potential for noise and amenity impacts for neighbours to Project works for the grade separation of Gowrie Junction Road
- Effects on the connectivity of Morris Road
- Use of a TBM 24/7 which could create noise and dust.

6.3.3 Community information sessions

ARTC has held four rounds of community information sessions to provide landowners, community members businesses and community organisations with an opportunity to learn about the Inland Rail projects in their area and provide their feedback on project design, impacts and benefits.

During May-June 2017, ARTC held twelve community information sessions (one in Ipswich, two in Toowoomba, seven in Gatton and two in Laidley) to provide information about the Project and the EIS process. A second round of community information sessions was held in May 2018 (in Gowrie Junction, Withcott, Helidon and Toowoomba) to gather community input and local insights to inform technical studies including the SIA.

A third round of 10 community information sessions was held in April-May 2019 in Gatton (seven sessions), Helidon (three sessions), and focused on the proposed engineering design, the tunnel, property impacts, road access and haulage route, and noise and vibration. Discussion on these issues continued with a further six community information sessions held during July-August 2019 (two in Helidon, one on Gatton, one in Gowrie Junction, one in Withcott and one in Toowoomba).

During October – November 2019, a fourth round of four community information session was held in Gowrie Junction, Withcott, Helidon and Toowoomba, to present to the community the progress made in environmental studies (e.g. noise, flooding, traffic, visual amenity, social impacts and air quality). Key issues of discussion included operational noise and vibration, air quality, geotechnical investigations, and land acquisition.

Additional issue-specific information meetings and workshops were also held to discuss hydrology and flooding (seven sessions between December 2018 and February 2020), flora and fauna (two sessions in February 2019 and two sessions in June 2019), noise and vibration (two sessions in February 2020).

Issues of relevance to social impacts and benefits identified by participants in community information sessions during 2018-2019 included:

- The potential to increase the level and frequency of rail noise in Gowrie Junction
- Noise, vibration, visual amenity and connectivity impacts on residential amenity, rural character and outdoor living
- The potential for the tunnel portals to affect air quality
- The potential for vibration from the tunnel for housing above
- Impacts on road connectivity as the result of road realignments, or level crossings
- Severance of agricultural uses and farms and potential for impacts on stock movements
- Disruption of access to properties
- Potential for rail-related dust (including coal dust if coal is hauled) on residential amenity
- Impacts on the amenity and trading levels of businesses
- Potential to exacerbate flooding risks
- Potential benefit to the community if the Project facilitates the provision of a passenger train service to Brisbane (dual gauge rather than single gauge rail suggested)
- Potential benefit if coal trains are diverted to the tunnel instead of passing through Toowoomba
- Concern about impacts on property values
- Where water would be sourced for construction purposes and any impact on other water users' access.

6.3.4 Local government engagement

6.3.4.1 Toowoomba Regional Council

The SIA team met with TRC officers in March 2019 and May 2019. The primary focus of these meetings was the B2G project, however a number of the issues raised also apply to the Project, including:

- The question of whether buffers would be required between the rail line and residential development to protect amenity with respect to noise, noting there are no buffers around existing rail lines
- The potential for noise from crossing loops to affect nearby residents
- Concerns about road closures during construction in the event of a flood event, leading to isolation of some communities
- Concern that, as for the Toowoomba Bypass, additional lighting may affect visual amenity
- Potential severance by alignment of stormwater drainage and overland flow
- Potential for visual impact, e.g. during construction due to laydown areas and during operation due to bridge structures, with concern regarding the rehabilitation of laydown areas to reduce visual amenity impacts
- Community opposition to the Project alignment could constrain business participation

- Potential for investment in community facilities in local towns to address existing issues and/or Project impacts on community cohesion
- The need for ongoing consultation with TRC regarding infrastructure investments, place making outcomes, community facility investments and driving economic development.

Potential opportunities were also identified, and included:

- School based opportunities for students
- Potential for a short-term increase in economic activity during construction
- Support for the development of Toowoomba as a freight and logistics hub
- Legacy benefits in the form of community facilities.

Council officers noted that TRC has a Regional Skills Investment Strategy project funded by the Queensland Government to engage with industry to identify vocational training requirements, with freight and logistics a current focus.

The SIA team met with senior TRC officers in November 2019 to discuss the Project's social impacts and opportunities. Council feedback included:

- TRC has concerns about the current alignment which is being discussed though technical working group meetings with ARTC, with the connectivity of Morris Road a key issue
- The potential for noise, lighting and dust impacts to affect residential amenity is a key point of interest for Council
- Potential for noise or other impacts on the Palm Lakes Resort will be a concern for residents there
- The potential for any noise or vibration impacts on Baillie Henderson Hospital needs to be assessed
- The likelihood of community concern regarding changes to air quality as the result of venting of emissions from the tunnel
- Effects on aquifers which could affect landowners' access to water are of concern to Council and landowners
- Residents have consultation/project fatigue following the Toowoomba Bypass construction
- The potential for significant changes to the Project's design is possible, as occurred for the Toowoomba Bypass.

Inland Rail's EIS team engaged with TRC throughout the EIS assessment phase, including:

- Reporting progress to Council officers and elected representatives on the design and EIS process
- Facilitating the Council's input into the design development
- Gaining an understanding of the environmental, planning and engineering constraints and opportunities relevant to the Project
- Discussion of key issue including impacts to the existing road networks, lessons learnt from the Toowoomba Second Range Crossing Project, water resources and socio-economic impacts and benefits such as local jobs
- Developing a working relationship with Council officers to identify engineering, planning and environmental impacts, benefits and mitigation strategies during EIS development for implementation during construction and operational phases of the Project.

Inland Rail's Social Performance and Engagement teams met with TRC regional development and engagement representatives in Toowoomba in October 2020, with outcomes as follows:

- Inland Rail provided an update regarding the current status of the projects and shared an update regarding the program's social performance and stakeholder engagement activities
- TRC provided information regarding various community and social performance focus areas and ways Inland Rail can potentially engage with the local community. They also provided information regarding the council's capacity building and workforce training projects
- No formal agreements or design changes arose from this discussion, however one suggestion was passed on to Project team for consideration in detail design.

Inland Rail's Social Performance team met with TRC representatives again in February 2021 to discuss the following with respect to the B2G project, which are also relevant to this Project:

- The scope of the Accommodation Management Plan (AMP) (as outlined in Section 8.4), with TRC noting that COVID-19 incentives such as HomeBuilder and Toowoomba's attraction for people moving from New South Wales and Victoria had seen reduced housing availability during 2020, and the need to manage any Project impacts on housing
- Workforce management including an update on Councils' priorities as part of RSIS, SQW, and economic development/recovery initiatives, and to confirm Council's interest in joint initiatives
- Social issues and community needs in light of COVID-19-related impacts, which was that the region has not been generally adversely impacted by COVID-19, however, high levels of unemployment remain a concern for young people, refugees and migrants

Council and community initiatives which could be considered as part of the Community Wellbeing Plan (see Section 8.5.4) e.g. placemaking, community facility upgrades and/or community events to strengthen local amenity, character and cohesion. Local initiatives identified by TRC included their proposed skills hub, community interest in developing running tracks beside the train line, support for social enterprises, and support for tourism plans (e.g. in Millmerran and Pittsworth). Another meeting was held with TRC in May 2021 to encourage Council feedback on community development and amenity improvement initiatives, with a further meeting on potential initiatives and the scope of the Community Wellbeing Plan planned for August 2021.

Gowrie community members have identified the opportunity for ARTC to provide support for a newly established Gowrie Junction Multi-Purpose Community Facility. This opportunity is being considered by the Project team along with the B2G project team and will be the subject of further consultation during the post-approval stage.

These initiatives and other emerging ideas will be further discussed with Council and other stakeholders as part of developing the Project's Community Wellbeing Plan during the detailed design phase.

6.3.4.2 Lockyer Valley Regional Council

The SIA team met with LVRC officers in October 2018 and as part of a July 2019 workshop. Although the primary focus was on the Helidon to Calvert section of the Inland Rail Program, a number of the issues raised also apply to the Project, including:

- Impacts to the Lockyer Valley's visual amenity, and the lifestyle values and tourism values attaching the landscape and heritage of local towns
- The centrality of Lockyer Valley farms to the Lockyer Valley LGA's communities and economy, and to food production from the region
- Potential for properties close to the Project to lose value, with existing uncertainty around property values and banks' risk assessments already an issue in the area following flooding

- Concerns regarding the potential for property severance and reduced connectivity affect the productivity of farms and their contributions to the region's farming sector
- The likelihood that increased noise from the freight rail line would affect residents' amenity
- Existing community anxiety about flooding which is exacerbated by fears that the Project will change flooding patterns or that debris caught against rail lines will result in local flooding increases
- Concern regarding the potential for construction vehicles and activities to exacerbate the current fire ant problem in the Lockyer Valley, with consequent impacts on use of public areas such as parks
- Decreased property values with potential to affect financial security
- Need for ongoing engagement with Council.

LVRC officers also participated in a technical workshop for Councils and Government agencies which reviewed the draft findings of the H2C and C2K draft SIAs. Key issues raised which are relevant to the Project included:

- The need to consider the effects of roadworks, construction noise and other impacts on the amenity of tourism facilities
- Concern regarding the potential impacts of road works on tourists' experience of the Lockyer Valley as a scenic and natural place to visit, and the potential to deter daytrip tourists
- Impacts of severance on agricultural lots, and the potential to affect their viability
- The potential for increased housing demands from major project workforces which could displace low income households
- Perceptions of a decrease in property values near the Project's proposed alignment
- Observations of significant stress being caused by uncertainty and fears about Project impacts
- The need for awareness of existing challenges to mental health, including the effects of drought on farmers and business owners
- Concerns regarding the Project's use of water, particularly in drought, which could affect farms and other businesses' access to water.

The SIA team presented a summary of draft SIA findings and proposed mitigation measures to senior Council officers in October 2019. Council feedback included:

- Viaducts would make a substantial change to the Locker Valley's visual character
- The visual impacts of cuts need to be reduced
- Areas north of Withcott are designated as urban footprint and could be affected
- Need for further engagement with Council during detailed design regarding mitigation of impacts on local character and liveability
- Local businesses benefitted from workforce expenditure during Toowoomba Bypass, but have experienced a drop in trade since it was completed
- Local businesses require certainty regarding Project timing before capacity building will commence
- Community concern regarding noise, particularly as rail noise from viaducts will carry a long way and be audible even where exceedances of criteria are not modelled
- Potential to provide training for community members in recognising and responding to mental health issues e.g. through men's sheds and community support groups

- Community cohesion could be supported by supporting existing community events which bring people together
- Community character and identity could be strengthened by supporting hamlets and towns to upgrade their entrance statements
- Spoil haulage routes are a concern with respect to traffic safety and road conditions
- Assurance regarding maintenance of property accesses
- Potential for need for consideration of use of land not needed after construction (i.e. within temporary footprint) with potential to connect these parcels to existing trails and public spaces or fire access trails (for consideration by the Constructing Authority)
- Potential to offer training which is also relevant to the agricultural industry
- Need for Inland Rail Skills Academy to include all local high schools.

LVRC is also interested in the potential for a rail maintenance hub to be located in the Lockyer Valley. Decisions regarding the location of maintenance hubs would be made as part of the detailed design phase.

Similarly to engagement with TRC, Inland Rai's EIS team engaged with LVRC throughout the EIS assessment phase, including reporting progress to Council officers and elected representatives on the design and EIS process, facilitating the Council's input into the design development, and gaining an understanding of the environmental, planning and engineering constraints and opportunities relevant to the Project. This included development of working relationships with Council officers to identify engineering, planning and environmental impacts, benefits and mitigation strategies for implementation during construction and operational phases of the Project.

ARTC's Social Performance team met with LVRC representatives in November 2020 to provide an update on SIMP measures and ARTC's social performance progress. ARTC has sought further engagement with LVRC, who have agreed to participate in an SIA briefing, and will be consulted regarding feedback on community development and amenity improvement initiatives, and the scope of the Project's Community Wellbeing Plan, commencing in June 2021.

6.3.5 Traditional owner engagement

ARTC has actively engaged with Traditional owners through the Cultural Heritage process (refer EIS Appendix S: Cultural heritage technical report) and with respect to Indigenous employment and training opportunities.

An interview with a Western Wakka Wakka community leader identified the following issues of relevance:

- Concern about the cumulative impact of infrastructure projects on cultural landscapes and the stories bound to them
- Concern that local jobs should mean local, and include employment targets for local Indigenous people
- The risk of the Project reducing housing availability and affordability, with the likelihood that Indigenous people would be particularly vulnerable to housing shortages
- The need for early engagement with the Indigenous community regarding job and supply opportunities so they have time to build capacity.

Potential opportunities identified included:

- Indigenous people are ready to seize opportunities, but need timely engagement to be able to participate effectively
- Engagement with Indigenous businesses with existing capacity, formed through joint ventures

- Adopting the historical precedent for naming rail sidings after Indigenous people.
- Creating a legacy by addressing the need for an effective Indigenous keeping place for history, art and culture.

A meeting with the Yuggera Ugarapul People was held in November 2019. Key issues raised included:

- Effects of Project construction on wildlife corridors
- The need for ongoing consultation as the detailed design progresses
- Changes to the landscape and environmental impacts cause distress to Aboriginal people
- The need for cultural awareness training for contractors
- Need for cultural heritage assessment of the locations of any new quarries
- Interest in an opportunity to talk with Indigenous agencies that will be involved in Inland Rail projects
- Keen interest in employment and training opportunities which could include early training, skills and work readiness programs and
- Employment and business opportunities
- Desire for Indigenous business participation in the Project and the need for advice to Yuggera Ugarapul People regarding business opportunities and skills that construction contractors require.

6.3.6 Government and community organisations

A series of social impact workshops was held with government and non-government agencies to discuss the potential social impacts and benefits of the Inland Rail projects, with a focus on social infrastructure, community safety and the well-being of local residents. As three Inland Rail projects overlap the Project region, issues raised in regard to each project are generally relevant to the others, with the exception that:

- The Project does not propose level crossings which are a key concern for community and government organisations with respect to the safety of young people, people with disability and seniors in particular
- The Project involves the Toowoomba Range tunnel.

The following workshops were held:

- November 2018 at Gatton and Toowoomba, with a focus on the Project, H2C and C2K
- February 2019 at Toowoomba, with a primary focus on B2G but including a focus on Gowrie and issues in the Toowoomba LGA
- Helidon in November 2019, with a focus on the Project.

A wide range of organisations including community housing services, community services, community centres childcare providers, service groups, schools and training and employment agencies were invited to participate. The organisations that participated in the Gatton and Toowoomba workshops included:

- Queensland Ambulance Service (QAS), QFES, QPS and State Emergency Service (SES)
- LVRC and TRC
- DTMR
- Queensland Health
- Department of Education
- Department of Infrastructure Transport Regional Development and Communications (DITRDC)

- Department of State Development Manufacturing Infrastructure and Planning (DSDMIP), now known as Department of State Development Infrastructure Local Government and Planning (DSDILGP)
- DESBT
- TAFE Queensland
- Gowrie Junction Progress Association
- Kingsthorpe and District Progress Association
- Lions Club of Gatton
- SW Training
- Best Employment
- NEATO Employment
- Lockyer Valley Ministers Association
- Darling Downs and West Moreton Primary Health Network (DDWM PHN).

The majority of organisations who participated in these workshops service the Toowoomba and Lockyer Valley LGAs, so issues discussed were largely applicable to the Project and have been considered where relevant.

A workshop was held in Helidon in November 2019 to discuss the Project in more detail. Participants in this workshop included DESBT, TRC, LVRC, Department of Education, Construction Skills Queensland (CSQ), DITRDC, TAFE Queensland, and DDWM PHN.

Key themes which are relevant to all Inland Rail projects that were identified in the October 2018 – February 2019 workshops included:

- Stress is evident in local communities reflecting fear and anxiety about the impacts of Inland Rail
- Importance of maintaining honest communication and responsiveness to community concerns
- Concern that the Project would not benefit local towns and businesses and a need for legacy benefits for local communities
- Anecdotal feedback that land values are dropping
- Region is seeing increased trends in drug addiction, increased mental health presentations and increased rate of suicide as a result of the drought
- There is a good mature skills base locally within businesses, strengthened by the Toowoomba Bypass and gasfields developments
- CSQ, local high schools and Toowoomba TAFE have capacity to work with ARTC to provide skills training and qualifications
- Need for definition of local employment and targets to ensure that contractors employ people who live locally
- Hope for improvement in local unemployment rate
- Darling Downs HHS advised that there is sufficient service capacity at the Toowoomba Hospital to meet increased demand
- Region has developed sound disaster management response capability post the 2011 flood
- Road closures can alter response times, but most issues can be overcome with alternative routes

- Ensure connectivity is maintained by providing alternative road routes during construction and clear communication with residents (for QAS, response times are critical)
- Decrease in road trauma due to decreased trucks on roads perceived as an important benefit.

Issues identified in the workshop held in Helidon in November 2019 included:

- Potential for amenity impacts in relation to construction noise and laydown areas
- Location of crossing loops in relation to potential noise impacts
- Spoil management with respect to haulage routes and potential cumulative impacts
- Need for information about dangerous good transport (e.g. in the rail tunnel)
- Increase in large vehicle haulage and potential for damage to local roads
- Potential for public transport/passenger line
- Effects of noise from rail operation on residential amenity
- Potential for workforce accommodation to be required if workers are drawn from outside a daily driving distance
- Definition of 'local' for employment and business involvement
- Community scepticism about the availability of local jobs
- Uptake of training opportunities in the Project region is likely to be low until there is certainty about the project's construction timeframe and construction contractors' needs
- TAFE is working with LVRC with respect to training needs and initiatives
- Potential for businesses to benefit from development of freight terminals
- Businesses are unlikely to invest in training until a likely tangible benefit is identified, noting that for many businesses, skills training is on the job and not through institutions
- Tier 1 companies have commenced preparation for Inland Rail projects but smaller businesses will not invest in preparation until there is certainty about project timing and supply chain requirements
- Likely benefits for local business from workers' passing trade
- Need to ensure that qualifications offered as part of training initiatives are recognised by local employers.

DSDILGP and DESBT

During July 2020, ARTC met twice with DSDILGP (then known as DSDTI) regarding their existing programs focused on working with major projects, and opportunities for the Department and Inland Rail to collaborate on elements of business capability development. DSDILGP provides online business capability training programs which Inland Rail will promote to businesses interested in supplying the Project. The potential for a joint forum with other major projects in the Project region to provide information about a range of projects and their supply requirements was also identified.

Further engagement with DSDILGP between November 2020 and May 2021 has included:

- DSDILGP representatives attended ARTC business capability workshops and provided information to support local and Indigenous businesses (November-December 2020)
- ARTC has met with DSDILGP twice regarding supplier engagement and business capability collaboration opportunities and supply chain mapping (March and May 2021)

- DSDILGP partnered with ARTC by exhibiting at and providing support to local and indigenous businesses at ARTC 'Meet the Proponents' Supply Chain event (March 2021)
- ARTC partnered with DSDILGP by providing speaker at a series of the Department's business capability workshops (April 2021).

A meeting with Brisbane DESBT staff in October 2019 to discuss Inland Rail and existing DESBT programs which may support skills and business development identified the RSIS program as a key opportunity for alignment with local priorities. DESBT advised ARTC that all funding and cooperative activities to deliver training initiatives must be via existing programs through a formal application process.

Throughout 2020, ARTC made submissions and/or provided support for six SQW applications over two rounds. In February 2021 DESBT indicated that none of the SQW applications in progress were successful, with budget constraints a contributing factor to this decision.

ARTC and DESBT also met in November 2020 regarding alignment of workforce training initiatives to government programs and supply chain development opportunities, and in March 2021, a DESBT representative attended and participated in ARTC 'Meet the Proponents' Supply Chain event.

DITRDC

DITRDC participated in the Project's consultation process during 2018-2020 via attendance at CCC meetings and participation in SIA workshops. In March and November 2021, ARTC met with DITRDC representatives to discuss and provide updates on ARTC's Social Performance program. An invitation for DITRDC to participate in ARTC's business capability workshops was extended but representatives were unavailable. Department representatives attended and participated in ARTC's 'Meet the Proponents' Supply Chain event in March 2021, and were also invited to participate in ARTC STEM program event.

6.3.7 Businesses

ARTC has undertaken consultation with businesses who are directly impacted by, adjacent to or near the Project and may experience impacts as a result. Key issues identified by these businesses included:

- The need for the width of Airforce Road to be maintained to allow access for transport businesses which include explosives transport and need a larger turning cycle to enter the driveways and properties along Airforce Road
- Access arrangements for the Gowrie One Stop Convenience Centre, and Gowrie Landscaping Supplies will need to be maintained during construction of the Gowrie Junction Road bridge
- Property access to horticultural, transport and grazing businesses will need to be maintained throughout construction
- Business owners need ongoing access to information about the Project and its impacts.

The SIA team held meetings with Toowoomba Surat Basin enterprise (TSBE) and Toowoomba Chamber of Commerce in November 2019, which identified the following issues:

- Chamber of Commerce members have not raised the potential for negative impacts as the result of the Project or other Inland Rail projects
- Toowoomba businesses are very interested and well equipped for major projects and are looking for the next 'big thing' after the completion of the Toowoomba Bypass construction
- Businesses are very interested in potential long-term opportunities for better freight transport that would result from Inland Rail
- Local businesses would prefer that that Inland Rail terminates in Toowoomba to maximise local benefits

- There is uncertainty about whether/when the Project will proceed, so businesses are reluctant to invest in capacity building until they understand the time frame
- Businesses are considering capacity building for involvement in Inland Rail, but smaller construction businesses will need help to understand where they fit in the supply chain
- Chamber's stakeholder register can be used to promote opportunities
- Workshop on developing capacity statements could be offered in cooperation between ARTC and the Chamber
- Food and fencing businesses may benefit
- Project likely to provide access to development of skills which will be transferrable to other projects
- Tourism industry growth is a key focus for local businesses.

The Inland Rail Stakeholder Engagement and/or Project team attended all of the Toowoomba Chamber of Commerce's official meetings throughout 2020, at which they provided formal and informal G2H project updates and had discussions with the Chamber about Project impacts and opportunities for Chamber members to participate in the Project's supply chain.

6.3.7.1 Gowrie Junction Progress Association

ARTC has met with the Gowrie Junction Progress Association regularly during the EIS process, and the SIA team met with the Progress Association in November 2019. Issues identified by the Progress Association included:

- Preference for the proposed alignment over the alignment presented in 2014
- Concern that the proposed alignment would require acquisition of private properties
- The effects of the road over rail bridge on the scenic amenity of Gowrie Junction
- Potential for impacts on access to businesses near the bridge construction site
- Concern about noise impacts on dwellings, businesses and facilities as the result of more frequent and longer trains
- Maintenance of connectivity for pedestrians and cyclists.

6.3.8 Summary of stakeholder inputs

Table 6.3 summarises key themes and issues raised by stakeholders, and where they are addressed in the SIA. Issues which are not addressed in the SIA include:

- Specific recommendations regarding air quality management (addressed in EIS Appendix K: Air quality technical report
- Potential for passenger rail inclusion as part of the Project (not part of the Project scope).

Table 6.3 Issues raised by stakeholders addressed in SIA

Impact area	Key Issues for investigation	SIA Section
Indigenous community interests	▪ Impacts on native title interests or cultural landscapes	7.1.1
	▪ The potential for increased housing demands from major project workforces to displace low income households	7.3.2

Impact area	Key Issues for investigation	SIA Section
Residential and rural amenity	▪ Potential for visual amenity to be adversely impacted by bridges or tunnel portals	7.1.5
	▪ Potential for homes to be affected by rail noise, vibration, lighting or dust during construction or operation	7.1.3, 7.1.4
	▪ Potential for noise from crossing loop near Gowrie Junction to affect amenity	7.1.4
	▪ Potential for tunnel construction to result in noise or vibration for housing above or near the tunnel	7.1.3
	▪ Concerns about subsidence above tunnel affecting properties	7.1.3
	▪ Concerns about the potential for the western tunnel portal to increase noise or affect air quality	7.1.4, 7.4.7
	▪ Potential for noise impacts on the Palm Lakes Resort at Cranley	7.1.3
Land acquisition	▪ Impacts of land acquisition such as stress, uncertainty about the effects of the Project on individual properties, and compensation methodology	7.1.2
	▪ Impacts of property severance on farms and landowners	7.5.1
Housing and accommodation	▪ Potential for workforce use of rental housing or short-term accommodation	7.3.2, 7.3.4
	▪ Potential for cumulative impacts on housing access	7.6.1
	▪ Impacts on property values	7.3.3
Community values – cohesion, character, connectivity	▪ Acquisition of properties resulting in displacement of households	7.1.2
	▪ Impacts of Project and particularly structures on local character and identity	7.1.5
	▪ Impacts on local access to the traffic network	7.1.8, 7.5.1, 7.5.3
	▪ Project interface with Morris Road	7.1.8
	▪ Impacts on vehicular connections which are important for local access to services, and to tourism assets	7.1.8, 7.5.1 and 7.5.3
Farms and agriculture	▪ Impacts of land acquisition on property use and access	7.5.1
	▪ Biosecurity concerns through the accidental transfer of pests and disease	7.5.1
	▪ Potential for diversion of water flows to affect flooding patterns	7.1.9
	▪ Potential for dams or bores to be disturbed	7.5.1
	▪ Impacts on access to the road network and travel delays	7.5.1
Community health and safety	▪ Potential for exacerbation of flooding to affect community safety	7.1.9
	▪ Project-related stress and anxiety	7.1.2, 7.4.7
	▪ Impact on quality of life due to noise	7.1.3, 7.1.4, 7.4.6
	▪ Effects of changes to noise or air quality on health	7.1.3, 7.4.7
	▪ Concerns about the transport of coal with potential for coal dust to affect people, houses or tank water	7.1.4, 7.4.7
	▪ Impacts of tunnel operation including air quality	7.1.4, 7.4.7
	▪ Project should leave legacy benefits for local communities	7.2.4, 7.5.5
	▪ Potential for spoil transport to affect local roads' service levels	7.4.10

Impact area	Key Issues for investigation	SIA Section
Employment and training	▪ Ensuring local communities benefit through employment and supply opportunities	7.2.1, 7.2.3
	▪ Partnerships to provide skills training and qualifications	7.2.3
	▪ Need for definition of local employment and targets	8.3
	▪ Manage business expectations and support effective preparation by communicating clearly about Project elements, time frames and contracting requirements	7.5.4
	▪ The need for collaboration with Traditional Owners to ensure their community members benefit from employment and training opportunities	7.2.3
Business benefits and impacts	▪ Construction impacts on tourism due to traffic delays and impacts on visual amenity	7.5.3
	▪ Need for the width of Airforce Road to be maintained to allow access for transport businesses	7.5.2
	▪ Visual amenity impacts of rail line on scenic amenity and therefore tourism assets and experiences	7.1.5, 7.5.3
	▪ Interest in the Project's procurement model and how it will engage local businesses	7.5.4
	▪ Potential impacts on tourism values through effects on visual amenity or connectivity	7.5.3
	▪ Potential for a short-term increase in economic activity during construction	7.2.1, 7.5.4
	▪ Impacts on businesses	7.5.1, 7.5.2, 7.5.3
	▪ Potential to support regional economic development through facilities freight and logistics hub development	7.5.5
	▪ Potential local businesses to supply the Project, using capacity and capacity built on recent projects such as the Toowoomba Bypass	7.5.4
Impacts on local and regional services	▪ Delays to emergency service access	7.4.4
	▪ Increased demands on local health and emergency services	7.4.3, 7.4.4
	▪ Potential to increase demands for mental health services	7.4.8
	▪ Cooperation with the emergency services providers including disaster management coordinators	7.4.4

7 Potential impacts

This section describes the potential for social impacts and benefits to occur as a result of the Project's construction and operation, including the potential for cumulative impacts. Section 9 provides an evaluation of the risk of Project impacts to social values.

7.1 Communities

The Project will have impacts for directly affected landowners (i.e. those whose land would be acquired for the Project), neighbouring landowners, local communities, Councils, Traditional Owners, businesses and Government agencies.

Whilst all social impacts and benefits affect community members, this subsection focusses on the impacts of Project construction and/or operation which may affect residential amenity, vulnerable community members, community values, flooding risk or the Project region's population.

7.1.1 Indigenous People's interests

The Project is located within Country to which the Western Wakka Wakka People and Yuggera Ugarapul People are connected (refer Section 5.1.1). Assessment of land use and tenure undertaken for the Project identified no native title determinations over the EIS investigation corridor. There is one yet to be determined native title claim for the Yuggera Ugarapul People over the eastern part of the EIS investigation corridor (from approximate chainage Ch 17.0 km to Ch 26.0 km).

Land traversed by the Project is predominately freehold, where native title rights have been extinguished. However, the Project also traverses State Lands including water and reserve tenure. Native title is unlikely to have been extinguished or suppressed on these parcels, including Lockyer Creek which is located within the Yuggera Ugarapul People native title claim area.

Where it is determined that native title has not been extinguished within the Project disturbance footprint, ARTC will, in order to allow the Project to proceed, ultimately be seeking the extinguishment of native title rights and interests in question prior to construction. This may involve either the voluntary surrender of native title by the appropriate native title parties under a registered Indigenous land use agreement (ILUA) (which will be valid under Section 24EB of the NT Act) or the compulsory acquisition of native title under a relevant State law (which will be valid under Section 24MD of the NT Act), to enable the grant of the necessary interests in Crown lands required to construct the Project.

This may not be the case for the two reserves above the tunnel where native title may continue to exist. This will be confirmed as part of the Native Title assessment under the NT Act in consultation with the construction authority and the Department Resources.

Yuggera Ugarapul People consulted as part of the SIA noted that that the Lockyer Valley and other landforms which contribute to the Project region's landscape are important to cultural heritage and Aboriginal connections to Country.

Consultation with Western Wakka Wakka People identified culturally important landscape features and sites around Gowrie Creek and Gowrie Mountain, and the potential to compound the current effects of infrastructure such as the Warrego Highway on the cultural landscape.

ARTC has undertaken consultation and negotiation with the relevant Aboriginal parties for the Project in accordance with Part 7 of the *Aboriginal Cultural Heritage Act 2003* (ACH Act). In accordance with the ToR and the ACH Act, Indigenous cultural heritage values and Project impacts to these values will be managed under approved CHMPs (CLH017009) that have been developed with the relevant Aboriginal Parties for the

Project. The relevant parties are the Western Wakka Wakka People and the registered native title claimant for the Yuggera Ugarapul People claim.

In recognition of the potential for feelings of connections to country to be affected, the Project will:

- Continue to exchange information about the Project and cultural values with Traditional Owners
- Plan with Traditional Owners for the delivery of cultural awareness training for Project personnel, including respect for cultural landscape features and cultural heritage sites
- Continue engagement with Traditional Owners to enable opportunities to provide input regarding cultural values
- Implement a 'vehicle wrap' program which will commission local Indigenous artists to provide designs for Project vehicles.

ARTC will also commission local Aboriginal artists to produce art works for ARTC offices in the Project region to raise community awareness of traditional owners' cultural values.

Employment opportunities and participation in the business economy are central interests for Indigenous community members. The Project will implement Indigenous training partnerships, facilitate employment pathways and work with Indigenous businesses to strengthen their capacity and opportunities for involvement in the Project's supply chain (refer Sections 7.2 and 7.5).

7.1.2 Land acquisition impacts

Between Gowrie and Helidon and excluding untenured land (such as waterways and road reserves) the Project traverses 151 land parcels, including 94 within the Toowoomba Regional Council local government area (LGA) and 57 within Lockyer Valley Regional Council LGA.

The Project alignment follows the existing QR West Moreton System rail corridor for part of its length, minimising the need to acquire additional land. Where located outside of the existing rail corridor, the Project predominately follows the Gowrie to Grandchester future State transport corridor. As such the Project traverses a number of properties held in ownership by QR (26 properties, with 20 properties associated with the West Moreton System), DTMR (35 properties, mainly associated with the Toowoomba Bypass) or TRC (three properties) and where possible, reduces potential impacts on property access, services or land use. The Project's interfaces with land owned by government agencies and TRC is further discussed in EIS Chapter 8: Land use and tenure.

In addition to the lots held by QR, DTMR or TRC, partial and full acquisition of freehold lots will be required. The land resumption process will only commence once the Project is approved and all or part of a property is identified as directly affected by the Project works.

Surface land acquisition would affect approximately 85 freehold lots including 45 freehold lots within the Gowrie to Grandchester future State transport corridor and 40 freehold lots outside the Gowrie to Grandchester future transport corridor. Acquisition would involve lots in the following locations:

- Charlton, which are 'fenceline' acquisitions of cropping and grazing properties required to facilitate the widening of the existing rail corridor
- Gowrie Junction, the majority of which are 'fenceline' acquisitions required to facilitate the construction of the Gowrie Junction/Old Homebush Road rail bridge and widening of the existing rail corridor, but also including partial acquisition of cropping, grazing and rural residential lots
- Cranley, with partial acquisition within lots used for light industrial/buffer purposes for construction of the intermediate ventilation shaft and building
- Ballard, with partial acquisition of grazing lots required for the construction of the greenfield rail corridor

- Lockyer, which are partial acquisitions required to facilitate the construction of the corridor and Murphys Creek Road rail bridge
- Withcott and Postmans Ridge, which are partial acquisitions of grazing lots and lots within Withcott Seedlings required for the construction of the greenfield rail corridor
- Helidon and Helidon Spa, which are partial 'fenceline' acquisitions of lots used for grazing and cropping to facilitate the construction of the greenfield corridor, the rail bridge over Cattos Road and the tie-in to the Inland Rail H2C project.

A further 12 freehold properties are only required for construction (i.e. only located in the Projects' temporary disturbance footprint), with two of the land parcels are owned by DTMR. Commercial arrangements with landowners for the use of these properties will result in a financial benefit to landowners during the period of use for construction purposes.

Further information about land acquisition affecting agricultural properties is provided in Section 7.5.1.

Based on the Project's design, the Project would also require acquisition of volumetric tenure (underground land) of approximately 26 freehold lots, two lands lease lots and two Reserve lots, excluding six properties where surface land acquisition will also occur. Locations where volumetric tenure is required include Gowrie Junction, Cranley, Mount Kynoch and Ballard, including residential properties, grazing properties, land owned by TRC and DTMR, land owned by businesses and development companies, a property owned by Teen Care Challenge Queensland Inc. and a reserve currently used by the Toowoomba Horse Riding for the Disabled Association, with TRC as the Trustee. This includes residential properties which are subject to volumetric acquisition as a result of the provisional area around the tunnel (i.e. the tunnel is not directly below these properties). There are no houses located above the tunnel.

Of the properties affected by volumetric tenure, 28 land parcels have also previously been identified as potentially impacted properties through the Gowrie to Grandchester rail corridor study (DTMR 2003). Twelve of these have been acquired including the location of the Project's western tunnel portal, land parcels associated with the Toowoomba Bypass and land parcels where the Project's intermediate ventilation shaft would be located.

Land required for the Project will be acquired either through negotiation with the landowner or through a compulsory land acquisition process, also known as land resumption. Land resumption processes in Queensland are undertaken by the relevant acquiring government agencies (described here as the Constructing Authority) in accordance with the *Acquisition of Land Act 1967* (Qld) (AL Act), which sets out the process for acquisition and the assessment of compensation. ARTC may also acquire land by negotiation in some cases and this may occur ahead of or in parallel with the compulsory acquisition process. For State Land (including Lands Lease), 'acquisition' will occur under *the Land Act 1994* (Qld) (Land Act).

Land acquired for the Project will be designated as "railway land" under the TI Act or for the purposes of a road under the Land Act. Excess land acquired for the purposes of the Project may be returned to the landholder at market value. Land may also be acquired for the purposes of construction, including under the TPC Act though the preference will be for a commercial arrangement with the relevant landowner.

Based on ARTC's consultation with landowners to date, two landowners would request full acquisition, resulting in the need for these households to relocate. With access to further information during the EIS display or land acquisition processes, or changes to their circumstances, other landowners may choose to seek full acquisition. There is also potential for a small number of acquisitions to be required to mitigate unacceptable noise impacts or accommodate changes to the Project's design. For the purpose of estimating impacts on housing, community cohesion or population size, the SIA has assumed that up to approximately 20 households may relocate as the result of land acquisition for the Project.

Any existing water authorisations associated with the land to be acquired (including six groundwater licences and two surface water licences) will become null avoid, and the landholder will have to source new approvals. ARTC will provide compensation for direct impacts on groundwater bores which will be disturbed by construction activities or require relocation due to the land acquisition process.

7.1.2.1 Compensation for land acquisition

Landowners will be entitled to claim compensation for the acquisition of land or an interest in land, in accordance with the AL Act. Compensation is assessed on an individual basis, based on the highest and best use market value of the land that is acquired at the date of resumption. Compensation for disturbance caused by the resumption may also apply, and may include:

- Reasonable legal costs, valuation or other professional fees, and stamp duty
- Costs related to purchase of replacement comparable land
- Costs associated with removal and relocation of assets and infrastructure
- Other reasonable financial costs incurred that are a direct consequence of the resumption of the land.

Where only part of a land parcel is acquired, compensation for the severance of the resumed land and the impact upon the remaining land may also apply.

The land use and tenure assessment identified 21 freehold land parcels to be temporarily used for laydown areas including one flashbutt welding site during the construction phase (EIS Chapter 8: Land use and tenure, Table 8.20). Where land is required only for the construction phase, land may be occupied temporarily in accordance with the AL Act or may be leased or licenced from landholders.

The assessment of compensation is undertaken by a registered property valuer appointed by the Constructing Authority. Landowners may seek their own valuation advice and the reasonable costs incurred in obtaining valuation advice are able to be reimbursed as part of the compensation claim.

Landowners are entitled to obtain their own professional and independent advice in support of their claim for compensation. If there is a disagreement about the compensation, this can be resolved through negotiation with Constructing Authority via a mediation process, or if necessary, by a court judgement.

Landowners can also apply for an advance payment of compensation which does not affect final settlement of compensation at a later date, or to have the matter heard by the Land Court in order to reach a settlement.

7.1.2.2 Impacts on landowners

Consultation with affected landholders and communities has been central to understanding individual properties' operational arrangements and the potential for Project impacts.

Engagement with landowners in and near the EIS investigation corridor has been undertaken during EIS preparation to hear and address their concerns, and to understand the proposed impact of the alignment on their properties. Many landowners were concerned and anxious about the process of land acquisition, the nature of potential impacts on their amenity, the impact of property severance on grazing or farming operations, and the potential for effects on property values. Impacts identified by landowners included:

- Distress about the loss of fenceline areas or severance of lots, and potential to affect the use of agricultural properties (further discussed in Section 7.5.1)
- Potential impacts on the mental health of residents as the result of stress or anxiety (refer Section 7.4.8)
- Impacts on properties' amenity during Project construction or operation as the result of noise, dust, vibrations or changes to views (discussed in Sections 7.1.3 and 7.1.4)

- Potential to exacerbate existing hardship resulting from floods, drought or socio-economic circumstances (discussed in Section 7.1.7).

Landowners in and near the EIS investigation corridor have endured an extended period of uncertainty about whether the Project will proceed, and whether their properties will be affected. This has been stressful for landowners and has impacted their ability to plan for and improve their properties.

The majority of the affected private landowners within the Gowrie to Grandchester future State transport corridor were aware that their properties were within the corridor, however a small number of landowners were unaware and were distressed by the news. Landowners within the Gowrie to Grandchester future State transport corridor are entitled to seek early acquisition. Some of the landowners of the 55 properties outside the Gowrie to Grandchester future State transport corridor are also experiencing stress and anxiety about potential impacts on their use of the land and/or the potential for impacts on the amenity or value of their properties. ARTC is developing property-specific management measures in consultation with landowners for the management of property severance, including any required adjustments to access, impacts on farm infrastructure and restoration of access to water where impacted. The Project's preference is for land to be acquired through negotiations with the landowners, however compulsory acquisition would be required where agreement on land acquisition cannot be reached.

Residents whose properties would be subject to volumetric tenure have concerns regarding the potential for impacts on their amenity (discussed in Sections 7.1.3 and 7.1.4) or on their property's value. The impact of volumetric title on property value would differ for each property depending on its location, quality and use of the property and other specific factors directly attributable to the property. Acquisition of volumetric title under the AL Act entitles the affected landowner to compensation based on valuation of the land in accordance with the legislation.

Concerns about impacts on property values are further discussed in Section 7.3.3.

Project strategies to reduce the impacts of land acquisition on landowners, tenants and their families include:

- Meeting with all directly affected landowners, to identify their specific needs and concerns, provide access to updates on the Project's approval process and timeframe, and provide information about support services if required
- Providing multiple communication channels for landowners in and near the Project disturbance footprint to learn more about the Project and its potential impacts and benefits, and provide their feedback
- Establishment of a partnership with the Darling Downs and West Moreton PHN and the Brisbane South PHN to support mental health services in the Project region and address additional demand resulting from Inland Rail.

Prior to the commencement of land acquisitions, the Project team will work with the appointed Constructing Authority to ensure that landowners receive appropriate information about the nature, timing and process of land acquisitions.

Consultation with directly impacted landowners will continue during the detailed design phase to ensure the impacts of land acquisition are minimised where possible, and that the needs and views of affected landowners are considered in the CEMP.

7.1.3 Amenity during construction

Residents and landowners living within and near the Project disturbance footprint are concerned about the potential for the Project's construction to result in noise, vibration, dust, lighting and/or visual impacts which could affect the amenity of homes, businesses and properties.

Consultation with community members (particularly during community information sessions) indicated that the construction of the Toowoomba Bypass impacted on the amenity of residents closest to the Bypass

construction sites through noise and dust impacts, and caused disruptions to travel and traffic delays. Residents whose amenity and travel times were affected by the Toowoomba Bypass construction are fatigued by these impacts and concerned that the Project will result in a further extended period of impacts on amenity. Consultation with government agencies and Councils also indicated that there is also a degree of 'consultation fatigue', with residents tired of participating in major projects' engagement processes.

The following subsections include the results of EIS technical reports as they pertain to amenity.

7.1.3.1 Amenity impacts associated with tunnel construction

Tunnelling creates vibration which may disturb human comfort or cause ground-borne noise. Residents in the area of the Toowoomba Range tunnel alignment have expressed concern that construction may result in noise and vibration impacts, and cause dust or traffic interruptions as spoil is hauled from tunnel portals.

EIS Appendix O: Construction noise and vibration technical report provides an assessment of vibration levels which are predicted to result from tunnel construction which would be predominantly via TBM in an easterly direction. There are no homes above the tunnel, but homes are located above the protective zone (50 m) around the tunnel. Vibration levels from tunnel construction are predicted to comply with the criteria utilised to protect human comfort and avoid damage to buildings, including heritage and sensitive buildings, so the risk of vibration affecting human comfort or causing damage to buildings was assessed as low.

Vibration from tunnel construction (i.e. the operation of the TBM) would result in ground-borne noise for residents near the tunnel whilst the TBM is operating near them. Assuming worst-case vibration propagation, the assessment documented in EIS Appendix O predicted exceedances of the most stringent night-time criterion (35 dB(A) LAS_{Max}) at up to 72 residential receptors which are located within 390 m of the tunnel (using the diagonal distance from the tunnel to receptors).

Exceedances of the 35 dB(A) criterion are predicted for isolated homes in the areas of Morris Road in Gowrie Junction, Hermitage Road in Cranley, and Goombungee Road and for all the homes in the Mount Kynoch estate accessed via Weale Street. Dwellings in the proposed Habitat residential estate to be located between Goombungee Road and the New England Highway in Mount Kynoch could also be affected if this development is approved by TRC and the homes are constructed before the Project commences construction.

Construction of the tunnel may result in ground-borne noise within the Baillie Henderson Hospital campus, Toowoomba Horse Riding for the Disabled Association's facility and/or Teen Care Challenge facility in Cranley, as further discussed in Section 7.4.5.

ARTC met landholders near the proposed tunnel section alignment in early November 2020 to discuss the potential for ground-borne noise or vibration to affect their properties. This identified the need for provision of further information in the EIS to enable stakeholders to understand noise and vibration levels and inform their involvement in future engagement with the Project. EIS Appendix O: Construction noise and vibration technical report and EIS Chapter 23: Outline EMP contains this information. The Project team will contact landowners who may be affected by ground-borne noise when the draft EIS is placed on public display, to ensure they are aware of how and where to access the information about their properties. Landholders were also interested in whether the tunnel could result in groundwater drawdown, as discussed in Section 7.4.6.

The duration of ground-borne noise impacts resulting from tunnel construction is not known at this stage of the Project and will be dependent on the type of TBM procured for the Project. Most people would tolerate short-term noise exceedances but exceedances which extend over days may affect residents' sleep or stress levels.

Mitigation measures to reduce ground-borne noise impacts are outlined in EIS Chapter 15: Noise and vibration. During the detailed design phase (and when the type of TBM is known), the Project will consult with residents near and above the Toowoomba Range tunnel (within 400 m) who may experience ground-borne noise exceedances, to explain likely noise levels and mitigation options. Mitigation measures would be

selected in consultation with affected residents and confirmed during the pre-construction phase, and may, as one of the measures, include temporary relocation of residents. Residents may choose to stay with friends or relatives or could be compensated for the cost of short-term accommodation. This is likely to result in inconvenience and a temporary disruption to the affected households' lifestyles. The potential demand for short-term accommodation is discussed in Section 7.3.4 and has assumed that relocation periods of up to a month could be required.

The construction of the tunnel is not expected to result in subsidence of surface land with the exception of some minor subsidence associated with the construction of the tunnel portals. The location and degree of subsidence associated with the tunnel construction and infrastructure is unlikely to affect the use of surface land.

The construction of the tunnel also requires a significant area for the set-up of the TBM and supporting equipment. As the tunnel is being constructed in an easterly direction, the laydown area at western tunnel portal has been sized to accommodate the TBM and will be a major site for storage and construction, including a concrete batching plant, segment manufacturing plant and storage yard, assembly and launch site for the TBM, water treatment plant, a spoil stockpile and spoil loading facility, offices, workshops, stores and amenities and general laydown facilities. Spoil from the Toowoomba Range tunnel will also be stockpiled at the western tunnel portal laydown area. Laydown areas are discussed in detail in a subsequent sub-section.

The western tunnel portal has been located to minimise disturbance to surrounding residential areas. However, an estimated 10 dwellings are within 500 m of the portal and may hear construction noise which disturbs their amenity during the portal's construction, which will involve roadheaders and potentially blasting. An additional two dwellings on Morris Road are located across from the laydown area and may experience noise as the result of the use of plant and equipment or traffic accessing the laydown area.

The intermediate tunnel ventilation shaft in Cranley (at Ch 6.8 km) is located adjacent to light industrial uses (including a water treatment plant) and construction works are not expected to affect their amenity. The ventilation shaft and associated building would be constructed approximately 1 km from the Ballie Henderson Hospital and residential areas in Cranley, including the Palm Lake Resort (approximately 1 km to the south). If unmitigated, noise resulting from the construction of the tunnel's surface infrastructure (tunnel portals, the intermediate ventilation shaft and associated facilities) has potential to affect the amenity of residents in several communities, as further discussed below.

The eastern tunnel portal is in a vegetated location near Mt Kynoch, within Ballard with no nearby residents and one industrial use nearby. Disturbances to amenity in this area are not anticipated.

7.1.3.2 Transportation routes for construction materials and spoil

As outlined in EIS Appendix U: Traffic impact assessment technical report, precast material and in-situ concrete for tunnel construction are assumed to be supplied from the proposed concrete batch plant at the western tunnel portal. All pre-cast elements for tunnel portal, bridge and viaduct construction are assumed to be supplied from Brisbane by road. Inland Rail is currently undertaking a procurement process for the manufacture and supply of sleepers for the Inland Rail Program which will determine the location of the sleepers' suppliers and the routes to be used. The remaining in-situ concrete required along the alignment will be sourced from existing concrete suppliers within supply distance to the Project.

Quarry materials for ballast and capping are assumed to be transported by road from existing quarries. Water, plant, tools and other materials are also assumed to be delivered by road. Several access tracks would need to be developed to facilitate access to the laydown and construction sites located along the Project corridor (detailed in EIS Appendix U: Traffic impact assessment). It is anticipated that rail lengths will be delivered by rail from the flashbutt welding facilities within the Project disturbance footprint via the QR network and will then be transported down the rail corridor using rail roller and/or via truck.

Impacts on amenity (such as increased traffic volumes, access restrictions and/or traffic noise) associated with construction-related traffic may be experienced by residents along various routes, including Gittins Road and Murphys Creek Road, both identified as a haulage route for mass haul materials from earthworks. The assessment provided in Appendix U: Traffic impact assessment found that traffic volumes during construction would increase by more than 10 per cent along certain sections affecting 36 roads. The impacts are expected to be short-term and only for the duration of the specific activities, and able to be mitigated through adequate traffic management measures.

The Project's construction will produce spoil material from cuts and the construction of the tunnel. As part of the Project's detailed design and construction phases, there will be opportunities to optimise the use and placement of spoil material between adjacent Inland Rail projects, however excess spoil which can't be re-used in this Project or adjoining projects will be stockpiled at the western tunnel portal, and/or transported offsite in accordance with the spoil management strategy (EIS Appendix T). The transport of spoil may increase traffic volumes on key routes with potential to affect Levels of Service or traffic safety. At this stage it is not possible for an accurate assessment of traffic and transport impacts as the result of spoil transport. This would be undertaken during the detailed design phase, and will consider the potential for impacts on other road users. Further discussion of spoil management is provided in EIS Appendix T: Spoil management strategy and EIS Appendix U: Traffic impact assessment.

7.1.3.3 Noise

The potential for noise impacts on homes and businesses as the result of Project construction was a key concern for community members living near the Project disturbance footprint.

Noise sources during construction will include the operation of earthmoving machinery, piling equipment, cranes, trucks, the use of sundry plant and equipment, placement of ballast and tracks, laydown areas, the construction of structures such as bridges and embankments, tunnelling, earth and drainage works, and road and rail civil works (for further details refer EIS Appendix O: Construction noise and vibration technical report). While most construction will occur during standard construction hours (Monday to Friday – 6.30 am to 6.00 pm and Saturday – 6.30 am to 1.00 pm) some works will take place outside of these hours including tunnel construction, deliveries to construction site, and arrival and departure of construction staff during shift change-overs. Works during non-standard hours (at night, or Saturday afternoon or on Sundays) are held to lower noise limits.

Substantial works will be required for construction of a new road-over-rail bridge linking Gowrie Junction Road to Old Homebush Road in Gowrie Junction. The works will involve road works, bridge construction and laydown areas. The potential for noise impacts on homes and businesses as the result of Project construction was a key concern for Gowrie Junction community members, particularly as it would affect the amenity of nearby homes and businesses for a significant period. This is an area with a high concentration of family households whose amenity could be affected.

Residents of the Squires Road area in Lockyer and Ashlands Drive area in Postmans Ridge were also particularly concerned about the potential for construction noise given their proximity to the Project. In the Jones Road area in Withcott, residents have endured significant construction works along with noise and traffic disruption impacts from the construction of the Toowoomba Bypass, and are concerned about the Project's potential to result in noise and construction which could affect their amenity, and also the potential for operational railway noise.

Assessment of the Project's construction noise and vibration impacts (EIS Appendix O: Construction noise and vibration technical report) considered the potential for noise impacts during daytime, evening and night time hours. Earthworks and rail civil works are predicted to have the greatest impact, however, EIS Appendix O: Construction noise and vibration technical report notes that other construction stages may have a greater overall impact depending on the timing and duration of each construction stage. Further details are provided in EIS Appendix O: Construction noise and vibration technical report at Section 5.4.

The assessment presented in EIS Appendix O: Construction noise and vibration technical report identified large numbers of sensitive receptors (dwellings, businesses and facilities) which could experience construction noise exceedances. For example, the assessment predicted that noise from earthworks – if unmitigated - would exceed the upper noise limit of 65 dB(A) during standard construction hours for 192 receptors along the alignment including dwellings and community facilities (the Postmans Ridge Pioneer Community Hall, Gowrie State School and Baillie Henderson Hospital) as further discussed in Section 7.4. Noise may affect the amenity of residents in areas nearest the Project including:

- Gowrie Junction, where homes and businesses are located near the Project, including near laydown areas and bridge construction sites
- Airforce Road, Helidon, where homes are within approximately 300 m of the Project
- Murphys Creek Road, Squires Road, Howmans Road and Rossiter Road in Lockyer/Postmans Ridge
- Jones Road, Bells Road and Gittins Road in Withcott
- Cattos Road in Helidon
- Ashlands Drive and Snelling Road in Helidon Spa
- Homes within approximately 390 m of the tunnel construction (as discussed above).

Noise exceedances during construction were not predicted for the Palm Lakes Resort.

Noise from a variety of construction activities may also impact on homes which are further from the Project disturbance footprint, as is discussed in detail in EIS Appendix O:Construction noise and vibration technical report.

There is potential for works during non-standard hours to cause noise which would disturb sleep, which is further discussed in Section 7.4.7. Noise disturbance to daytime sleepers such as shift workers is also possible during standard hours.

Should earthworks occur at night (which is not currently planned) and if construction noise was unmitigated, exceedances of the night time limit of 45 dB(a) could occur at an estimated 2,131 sensitive receptors along the Project corridor. This assessment is representative of the worst case 15 minute period of construction activity, while the construction equipment is at the nearest location to each sensitive receptor within the Project disturbance footprint, and does not represent the ongoing day to day noise impact for an extended period. Particularly noisy activities, such as piling, are likely to persist for only a short duration.

Whilst the Project is in tunnel through Cranley and is located in tunnel between 500 m and 1.5 km north of Toowoomba's northern suburbs of Cotswold Hills, Wilsonton Heights, Rockville, Harlaxton and Mount Lofty, there is potential for noise exceedances from construction of the tunnel portals and intermediate ventilation shaft to result for these communities. As noted in Section 5.2.9, social indicators identify the potential for disadvantage in Cranley and the northern Toowoomba suburbs, which could be exacerbated if their amenity were affected and particularly if sleep disturbance resulted from construction noise.

Works which will create vibration (e.g. piling and vibratory rolling) will also be undertaken as part of construction. An assessment of the potential for vibration which may affect human comfort or damage buildings is provided in EIS Appendix O: Construction noise and vibration technical report. The assessment predicted that the lower night time vibration limit for human comfort could be exceeded at 175 receptors adjacent to the Project, However, it is expected that vibration intensive equipment will only rarely be operated during the night period defined by the CoP Vol 2. Works which would cause vibration exceeding human comfort criteria would require prior advice to residents. EIS Appendix O: Construction noise and vibration technical report also includes recommended setback distances and maximum permissible charge weights to avoid structural damage to buildings.

Blasting may be required to facilitate the construction of tunnel portals or in other locations which are yet to be confirmed. EIS Appendix O: Construction noise and vibration technical report provides maximum permissible charge weights for blasting to meet the sensitive structure criteria outlined in the assessment. Blasting activities will be confined to Monday – Friday 9.00 am – 5.00 pm and Saturday 9.00 am – 1.00 pm, with no blasting on Sundays or public holidays.

Blasting may result in noise, dust or perceptible vibrations which frighten people or briefly disturb their activities or cause concern, particularly if they are not aware of the source of the noise or vibration. Once the location of blasting is known, a detailed blasting assessment will be undertaken, including development of mitigation measures to minimise vibration and noise impacts from blasting. As described in EIS Chapter 23: Draft Outline Environmental Management Plan, mitigation measures to reduce the likelihood that blasting would frighten people would include:

- Establishing a blasting timetable through community consultation for example, blasts times negotiated with surrounding sensitive receptors
- Establishing and communicating the protocol for notifying relevant stakeholders when activities such as blasting are planned to be carried out, with contact details for queries or complaints
- Avoiding blasting during wind conditions which are likely to transport dust emissions toward sensitive receptors within 500 m of the blasting location.

Construction traffic noise is predicted to exceed acceptable criteria for 10 road sections within the noise and vibration study area (refer EIS Appendix P: Operational railway noise and vibration). These roads are primarily in rural locations where existing road traffic noise levels are low before the addition of construction traffic. Mitigation measures to reduce the impacts of construction vehicle noise on these roads are outlined in EIS Chapter 15: Noise and vibration.

As detailed in EIS Chapter 23: Outline EMP, a Noise and Vibration Sub-plan to the CEMP will be prepared during the detailed design phase. The Sub-plan will include:

- The location of sensitive receptors in proximity to the Project
- Requirements for pre-construction dilapidation surveys and/or vibration monitoring at vibration sensitive receptors during construction
- Specific management measures for activities that could exceed the construction noise and vibration criteria at a sensitive receptor
- Notification process within the community engagement plan (including who to contact in the event of a complaint) to advise of significant works with potential for noise nuisance or vibration at sensitive receptors
- Noise management measures including controlling noise and vibration at the source, controlling noise and vibration on the source to receptor transmission path and controlling noise and vibration at the sensitive receptor
- Practicable and reasonable measures to minimise the noise and vibration impacts of construction activities on sensitive receptors
- Management of complaints about dust and emissions in accordance with the Complaint Management
- Handling Procedure
- Any other measures necessary to comply with conditions of approval or regulatory requirements.

Where it is found that existing mitigation measures are not sufficient to reduce noise and vibration impacts to acceptable levels, additional mitigation measures will be investigated and implemented.

Prior to construction works which may result in noise impacts, sensitive receptors identified in the Noise and Vibration Sub-plan, as well as residents within at least 2 km of the Project disturbance footprint and other relevant stakeholders, will be provided with sufficient information to enable them to understand the likely nature, extent and duration of noise and vibration impacts during construction.

Construction progress and upcoming activities will be regularly communicated to local residents/stakeholders, particularly when noisy or vibration generating activities are planned, such as vibratory compaction, piling and blasting.

7.1.3.4 Air quality

Residents living near the Project are concerned that earthworks, track construction, construction traffic or activities at laydown areas will result in dust affecting air quality or settling on outdoor areas, roofs, and in water tanks.

Dust sources during construction will be variable, and impacts will differ according to the proximity of construction activities to homes, businesses and facilities. The results of air quality impact assessment for the Project (EIS Appendix K: Air quality technical report) indicate that the most sensitive areas to construction dust impacts will be residential areas in the localities located near the alignment, including Helidon Spa, Postmans Ridge, Lockyer, Blue Mountain Heights, Mount Kynoch, Cranley, and Gowrie Junction. The assessment concluded that with effective mitigation of construction dust sources the residual impact on both dust deposition and human health will not be significant, with the exception of one sensitive receptor (which is within the Project disturbance footprint and would be acquired). Blasting was not identified in the air quality assessment (EIS Appendix K) as a potential source of dust.

Management measures to reduce the potential for dust and to respond to any dust issues affecting residents or businesses include:

- Disturbed areas will be rehabilitated and stabilise as soon as practical upon completion of works.
- Limiting clearing to that required to safely construct and operate the Project
- Implementing water sprays to reduce dust emissions
- Implementing mitigation methods to reduce wind erosion from stockpiles
- Establishing and communicating the protocol for notifying relevant stakeholders when potentially dust generating activities are planned to be carried out, with contact details for queries or complaints
- Monitoring air quality during construction of the Project
- Management of complaints about dust and emissions in accordance with the Complaint Management Handling Procedure.

As noted in EIS Appendix K: Air quality technical report, potential sources of odour during construction include fuel tanks (due to the emission of volatile organic compounds) and sewage management. Fuel tank storage locations are proposed at five locations along the alignment during the construction of the Project. As also noted in EIS Appendix K: Air quality technical report, all fuel tank storage locations have a separation distance from the closest receptors of greater than 50 m (with most located more than 250 m away) and therefore an acceptable separation distance can be achieved for fuel storage at each laydown area. Further information is provided in EIS Appendix K: Air quality technical report (Section 6). Portable toilet facilities will be located along the alignment during construction for workers and a suitably qualified contractor will be engaged for the removal and transport of the sewage to an approved off-site treatment facility. EIS Appendix K: Air quality technical report notes that portable toilet facilities are not considered significant odour sources for the purpose of this EIS and were therefore not assessed.

7.1.3.5 Laydown areas, viaduct and bridge construction

The Project requires construction of 13 bridges and viaducts (refer Table 7.1), involving establishment of laydown areas, earthworks, piling, delivery of construction supplies, construction of foundations and the bridge deck, and roadworks to connect bridges to the road network. This is likely to cause noise and traffic disruptions in areas near bridge construction sites. Vibratory rollers and plant such as piling rigs and hydraulic hammers for bridge construction may also result in perceptible vibration impacts.

Table 7.1 Proposed bridges and viaducts

Approximate Chainage	Bridge name	Crossing type	Length (metres)
Ch 1.9 km	Gowrie Junction Road Bridge	Road bridge over rail and waterway	311 m
Ch 3.4 km	Gowrie Creek Rail Bridge	Rail bridge over waterway	56 m
Ch 11.3 km	Oaky Creek Viaduct	Rail viaduct over terrain, road and waterway	736 m
Ch 12.8 km	Withcott Viaduct 1	Rail viaduct over waterway	261 m
Ch 13.6 km	Withcott Viaduct 2	Rail viaduct over terrain and waterway	322 m
Ch 14.1 km	Withcott Viaduct 3	Rail viaduct over terrain and waterway	174 m
Ch 15.5 km	McNamaras Road Bridge	Road bridge over rail	74 m
Ch 15.1 km	Withcott Viaduct 4	Rail viaduct over waterway	145 m
Ch 15.9 km	TSRC and Six Mile Creek Viaduct	Rail viaduct over terrain, road and waterway	966 m
Ch 18.4 km	Postmans Ridge Viaduct	Rail viaduct over terrain, road and waterway	644 m
Ch 21.0 km	Murphys Creek Road Viaduct	Rail viaduct over terrain, road and waterway	690 m
Ch 21.8 km	Withcott Seedlings Viaduct	Rail viaduct over terrain and waterway	1,794 m
Ch 24.4 km	Lockyer Creek Viaduct	Rail viaduct over road, rail and waterway	506 m

The Project's construction will require a total of 26 laydown areas, used for storage, management and distribution of materials, with some laydown areas also including fuel storage and site office compounds, and a temporary flashbutt welding facility to be established in the Project disturbance footprint. Flashbutt welding facilities comprise a large shed housing machinery to weld track sections together and heavy vehicles to place track section, facilitating transport of welded sections within the rail corridor, minimising haulage on public roads wherever possible. A large laydown area would be established at the western tunnel portal and will also be used for construction site offices, stockpiling spoil, concrete batching, fuel storage and tunnel bore machine construction and operation.

Laydown areas may cause noise, lighting or dust impacts, as well as temporary effects of increased traffic on the rural character of the roads on which they are located. Laydown areas where dwellings, businesses, and other land uses are located within approximately 200 m include:

- Krienkes Road, with dwellings and farming businesses to the north, east and south
- Old Homebush Road, with dwellings to the south
- Morris Road, with dwellings to the north and south
- The intermediate tunnel ventilation shaft laydown area, with light industry premises, a landfill facility and the Wetalla wastewater treatment facility nearby
- The eastern tunnel portal with a light industrial premises and the Roma to Brisbane Gas Pipeline nearby
- Jones Road, with dwellings to the north and south
- Gittins Road with dwellings to the north and south

- Near Murphys Creek Road, with dwellings to the north and south as well as the Withcott Seedlings Farm
- Cattos Road, with dwellings, light industry business and the Toowoomba Kart Club to the south.

The CEMP will include measures developed in consultation with affected stakeholders to address potential noise, dust, traffic and visual impacts as the result of laydown areas. A TMP will be prepared and ongoing consultation undertaken with relevant local government councils, state authorities, police, emergency services and affected property owners/occupiers. The Project's TMP will include strategies to ensure that Project-related traffic increases during construction are managed to ensure the safety of motorists using all roads used by the Project.

Laydown areas will be progressively decommissioned and the area rehabilitated as their use is completed. Some office facilities may be left within the railway corridor for the commissioning phase. There is also potential for some laydown areas to be left in place for their legacy value to landowners or businesses. This will be determined as part of ongoing engagement with local stakeholders.

7.1.3.6 Lighting

The landscape visual impact assessment (refer EIS Appendix H: Landscape and visual impact assessment technical report) includes a qualitative desktop assessment of the potential for lighting during construction or operation to affect the external environment. The assessment concludes that the proposed alignment and associated infrastructure are unlikely to create any significant obtrusive lighting into the external environment as a result of the likely construction activities or permanent Project lighting.

7.1.3.7 Summary

It is likely that the amenity of homes, rural properties and community facilities will be affected by noise whilst construction activities are nearby, with the impacts of laydown areas and bridge sites lasting longer than those for works (such as rail civil works and roadworks) which would be more transient. This includes the potential for ground-borne noise from construction of the Toowoomba Range Tunnel.

Construction noise may discourage people from participating in outdoor activities (such as barbecues or sports) whilst areas are affected by noise, and there is potential for construction noise, if unmitigated, to affect residents, including in communities which experience disadvantage.

Dust may also cause a nuisance for homes, but with effective mitigation of construction dust sources the residual impact on both dust deposition and human health were assessed as not significant.

Measures for the management and mitigation of noise, vibration, dust and traffic impacts are included in EIS Chapter 23: Draft Outline Environmental Management Plan and will be included in the CEMP. In addition to these measures, which include standard community notifications about construction works, sensitive receptors identified in the Noise and Vibration Sub-plan, residents within 2 km of the Project disturbance footprint and other relevant stakeholders will be provided with sufficient information to enable them to understand the likely nature, extent and duration of noise and vibration impacts during construction. Construction progress and upcoming activities will be regularly communicated to local residents and stakeholders, particularly when noisy or vibration generating activities are planned, such as vibratory compaction, piling and blasting.

During the detailed design phase (and when the type of TBM is known), the Project will consult with residents near and above the Toowoomba Range tunnel (within 400 m) who may experience ground-borne noise exceedances, to explain likely noise levels and discuss mitigation options e.g., temporary relocation of residents, respite periods as acoustic treatments are not an effective mitigation for ground-borne noise and Project compensation of the costs of alternative accommodation. This will be determined on a case by case basis, including preferred milestones for updates as the construction period for the tunnel is about 24 months (e.g. reaffirm mitigation measures at designed timeframes (e.g. 300 days, 100 days, 30 days and 10 days or at specific distances).

During the pre-construction phase, the Project will:

- Continue consultation with residents near and above the Toowoomba Range tunnel (within 400 m) who may experience ground-borne noise exceedances, to provide updates on the Project including any changes to the noise modeling, confirm mitigation measures and timing of the work and notification periods (days or distance)
- Communicate with all residents adjacent to and within 1,000 m of Project works for laydown areas, bridge construction and roadworks sites to:
  - Identify any specific household concerns (e.g. the presence of children or seniors)
  - Provide advance warning of the construction schedule and sequence e.g. how long specific activities will take, the nature and causes of noise and vibration, how long impacts from construction work are likely to be felt and any disruptions to access or services
  - Provide 24-hour contact details for construction managers.

Notwithstanding implementation of management and mitigation measures, some residents will experience construction noise as intrusive on the amenity of their homes, outdoor spaces, and community facilities, with the potential for effects on lifestyle as a result, including decreased enjoyment of outdoor activities, or the need to keep windows shut to minimise noise.

7.1.4 Amenity during operation

Many landowners living near the Project are concerned about the potential for its operation to affect the amenity of their properties as a result of environmental changes which may include, as relevant to each property and community:

- Locomotive and track noise which may intrude on residential amenity or outdoor activities
- Dust which may settle on nearby dwellings, water tanks or solar panels
- Potential for diesel emissions, particularly near crossing loops
- Tunnel operations, including lighting
- The introduction of a freight rail line affecting rural views (discussed in Section 7.1.5).

Noise was the most frequently cited concern by stakeholders, however the potential for the operation of the rail tunnel to affect amenity was also of concern.

The following subsections summarise the results of relevant EIS chapters as they relate to amenity during the Project's operation.

7.1.4.1 Tunnel operation

Tunnel operation is described Section 4.1.2.

Buildings would be required at each tunnel portal to accommodate operational infrastructure (e.g. an electricity substation, tunnel drainage management infrastructure, ventilation building and tunnel control/emergency response activities). A substantial area will also be required at the western tunnel portal to accommodate the main tunnel services facilities, including the Tunnel Control Centre and water tanks as part of the fire safety systems. The majority of the western tunnel portal will be located in cut approximately 20 m deep.

The western tunnel portal area will also be used to permanently stockpile unutilised spoil from tunnel excavation (within a flat-topped mound approximately 10 m high).

EIS Appendix H: Landscape and visual impact assessment technical report provides an assessment of potential visual impacts as the result of tunnel infrastructure. Residents (particularly in Gowrie Junction) with visibility to the western tunnel portal will experience changed visual amenity to the semi-rural character of

this area. Residents with views to the eastern tunnel portal (from Blue Mountain Heights) may also experience a change to the visual amenity of the natural landscape in this area.

Staff and patients at the Ballie Henderson Hospital would have views towards the intermediate shaft building, residents at the Palm Lakes Resort in Cranley may also have views to this area. The adjacent land uses within the vicinity of the intermediate ventilation shaft include a landfill and industrial buildings, and with a distance of approximately 1 km from proposed infrastructure, the LVIA (refer EIS Appendix H: Landscape and visual impact assessment technical report) concluded that the impact of the intermediate shaft and associated infrastructure on the Baillie Henderson Hospital viewpoint represented a low magnitude of change. With a similar distance (approximately 1 km) to the Palm Lakes Resort, it might be assumed that a low magnitude of change might also be experienced at the Palm Lakes Resort.

The operation of the tunnel through the Toowoomba Range will require venting of heat, air and emissions from the tunnel, which will require the operation of three ventilation buildings, including one at each portal for the release of emissions (subject to the direction of the train moving) and a third at the intermediate ventilation shaft for the drawn down of air into the tunnel. Future stages of Project design may find that the intermediate ventilation shaft is not needed (refer EIS Chapter 6: Project description).

As discussed below, air quality assessment (EIS Appendix K: Air quality technical report) indicates that compliance is predicted for all pollutants for all scenarios for peak operations. Emissions vented from the tunnel may be visible and of concern to residents and motorists, if they fear the emissions will affect their health. ARTC will communicate with residents in this area to ensure they are aware of the air quality impact assessment findings, and to address any concerns they have regarding health risks.

7.1.4.2 Air quality

Nearby residents are concerned that dust (including coal dust) or diesel emissions from the Project's operation may affect their amenity or health during operations. The results of air quality risk assessment (EIS Appendix K: Air quality technical report) for the Project indicate that compliance is predicted for all pollutants for all scenarios for peak operations (refer EIS Appendix K: Air quality technical report Section 7.1.2). This residence is within the Project disturbance footprint and will be acquired in accordance with the land acquisition process.

EIS Appendix K: Air quality technical report includes assessment of the potential for volatile organic compounds (toluene and xylenes) to result in the potential for odour impacts. The assessment indicates that the Project's operation would result in contributions of less than 0.1 per cent of the relevant objectives for toluene, and less than 0.2 per cent of the relevant objectives for xylenes, concluding that an impact on amenity would not occur in relation to odour from locomotives.

Odour emissions from moving agriculture freight trains were considered unlikely to cause significant impact or exceedance of the odour criterion. Odour produced from trains stopped at crossing loops could be of high intensity and offensiveness, with the main area of concern the western tunnel portal crossing loop due to its location near sensitive receptors, however, impacts are expected to be infrequent and of a short duration, and the Project is located in a predominantly rural area where odour from agricultural uses is likely to be common to the existing airshed. Based on this reasoning, odour emissions from agriculture freight were considered unlikely to result in significant impact to neighbouring sensitive receptors (refer EIS Appendix K: Air quality technical report for more detail).

Predicted impacts of dust deposition during operation on agricultural uses are not anticipated to be significant (EIS Appendix K: Air quality technical report, Section 7.3).

Management measures in relation to air quality as detailed in EIS Chapter 23: Draft Outline EMP include:

- Prior to commencement of operational activities, engagement will be undertaken with existing stakeholders and members of the South West Supply Chain (including QR and Department of Environment and Science (DES)) with regards to coal dust management and monitoring requirements

necessary to maintain the integrity of the existing South West Supply Chain Coal Dust Management Plan

- Monitoring of air quality during operation of the Project and reporting monitoring results
- Monitoring and recording complaints about dust and emissions in accordance with the Complaint Management Handling Procedure
- Educating train operators on the potential impact of idling locomotives on air quality and encouragement to reduce idling when possible.

Community concerns regarding the effects of emissions on health are discussed in Section 7.4.7.

7.1.4.3 Noise and vibration

Stakeholders in affected communities were concerned that rail noise or vibration could affect their quality of life or cause sleep disturbance. Those living near the proposed crossing loop locations were also concerned that the operation of crossing loops would result in noise impacts as trains idle. The Project incorporates three crossing loops which allow trains on the single line to pass, and are designed to accommodate an 1,800 m long train, with consideration of future provision for a 3,600 m train. Proposed locations for the crossing loops are:

- The western end of the Toowoomba Range tunnel (adjacent an existing crossing loop)
- The eastern end of the Toowoomba Range tunnel
- Postmans Ridge – located approximately 9.4 km east of the eastern tunnel portal.

A noise and vibration assessment has been undertaken for the operation of the rail corridor (refer EIS Appendix P: Operational railway noise and vibration), along with the changes to the road networks and the operation of the tunnel (refer EIS Appendix O: Construction noise and vibration technical report). The assessment of air-borne noise was based on a detailed noise prediction models and considered the main line tracks, crossing loops and the Toowoomba Range tunnel, including an area covering 2 km either side of the alignment. The assessment predicted that noise levels for the proposed daytime and night-time railway operations at Project opening (2027) and the design year (2040) were predicted to achieve the airborne noise assessment criteria at the majority of the sensitive receptors.

The predicted noise levels were above the noise assessment criteria (night time) at 31 sensitive receptors (assumed to be dwellings) for railway operations at Project opening (2027) including at:

- Paulsens Road, Gowrie Junction (13 receptors)
- Krienke Road, Junction Street (three receptors) and Morris Road, Gowrie Junction (five receptors in total). An additional receptor on Daniel Street is affected at the design year 2040
- Jones Road, Ballard (two receptors)
- Gittins Road, Withcott (two receptors)
- Howmans Road, Withcott (one receptor)
- Squires Road, Lockyer (four receptors)
- Ashlands Drive, Helidon Spa (four receptors)

Noise exceedances were also predicted at Gowrie State School at Project opening.

Predicted noise levels exceeded the criteria by less than 5 dB(A) at the majority of these sensitive receptors. The highest forecast result was 11 dB(A) above the relevant assessment criteria. The operation of the tunnel portals, tunnel, intermediate ventilation shaft and crossing loops were not predicted to result in noise exceedances.

Consideration has been given to feasible and reasonable noise mitigation options for noise-affected receptors. As the majority are isolated houses (not in urban areas), noise walls are not considered feasible, and architectural acoustic treatment of the properties will be required to manage noise impacts within habitable rooms. The decisions to implement architectural acoustic treatments will be based on measured rolling stock noise levels and a survey of the property. Architectural acoustic treatments can reduce potential noise impacts within buildings, however EIS Appendix P: Operational railway noise and vibration indicates that rail noise has the potential to be clearly audible above the ambient noise environment within the initial 300 m from the rail corridor.

The assessment predicted an exceedance of noise criteria at some buildings within the Gowrie State School, with estimated internal $L_{Aeq(1hour)}$ noise levels of up to 44 dB(A) (or 4 dB(A) above the daytime $L_{Aeq(1hour)}$ 40 dB(A) internal noise criterion). If the windows to these buildings were closed, the internal noise criterion would be achieved at Gowrie State School. This is further discussed in Section 7.4.1. There were no noise exceedances forecast at any other community facilities, including health facilities, the Baillie Henderson Hospital, halls or childcare centres.

Noise from fixed infrastructure associated with the tunnel (such as tunnel ventilation fans, pumps and pump stations, transformers, substations and generators) is not expected to exceed noise criteria (for further details refer Appendix O: Construction noise and vibration technical report).

With respect to ground vibration levels from rail freight movements, the noise and vibration assessment (refer EIS Appendix P: Operational railway noise and vibration) confirmed that the Project's operation is not expected to exceed the vibration criteria for human comfort impacts at any of the sensitive receptors. In addition, the vibration levels are well below the criteria for damage to buildings.

Ground vibration is also a potential source of ground-borne noise. If ground-borne noise were to occur, the noise environment is expected to be dominated by airborne noise which would mask the ground-borne noise content. The assessment predicted that ground-borne noise and vibration criteria (main source being trains accessing the tunnel) would be achieved at all sensitive receptors, however ground-borne noise and vibration during surface level train pass-bys may be perceptible in these quiet rural areas, subject to e.g. the building construction (e.g. brick, masonry or timber) of sensitive receptors. EIS Appendix P: Operational railway noise and vibration recommends that ground-borne noise levels are reviewed through further assessment during the detailed design phase to confirm the assessment outcomes. There was one sensitive receptor where ground-borne noise would exceed noise criteria, however this building is within the Project disturbance footprint and is likely to be acquired.

Following their realignment, increased traffic on Morris Road and Gowrie Junction Road may also result in exceedances of the road traffic noise criteria for proposed new roads. Further information is provided in EIS Appendix O: Construction noise and vibration technical report which notes that as the road segments are not close to built-up areas with many noise sensitive receptors, noise barriers are likely to be impractical and unreasonable, however, this conclusion is to be reviewed during the detailed design of the Project. Mitigation measures identified in EIS Appendix O: Construction noise and vibration technical report (Section 8.2) include updating the operational road traffic noise and vibration assessment to reflect the detailed design, including incorporation of potential noise treatments, which could include realignment of road segments impacting nearby sensitive receptors, pavement surface treatment provision of acoustic façade treatments to affected sensitive receptors and/or noise barriers in the form of a landscaped earth mound and/or a noise fence.

Noise and vibration mitigation for the Project will follow the hierarchy of noise control options, i.e. control of noise and vibration at source, controlling the pathway for noise to reach the receptors, and control of noise impacts at the receptors. The operational railway noise and vibration levels will be verified through a program of noise and vibration monitoring once the Project is operational. The monitoring program would be undertaken within the initial 6 months post commencement of railway operations (train movements) on the Project.

ARTC will investigate feasible and reasonable mitigation measures where monitored operational noise and/or vibration levels at sensitive receptors are confirmed to be above the railway noise and vibration criteria.

As for the construction phase, but with longer-lasting effects, noise from the Project's operation may be experienced by nearby residents as intrusive and stressful. There is potential for noise to affect quality of life by interrupting conversations or social activities, causing sleep disturbance, aggravating mental health conditions or intruding on the enjoyment of outdoor activities. Where residents experience rail noise as intrusive on daily activities, they are likely to feel stressed and irritated, whilst sleep disturbance can have a range of effects on the state of both mental and physical health (refer Section 7.4.7 and Section 7.4.8).

7.1.4.4 Lighting

Assessment of lighting impacts (EIS Appendix H: Landscape and visual impact assessment technical report) concluded that the Project is unlikely to create any significant obtrusive lighting into the external environment as a result of the likely construction activities. Limited permanent Project lighting is proposed, lighting impacts on viewpoints are anticipated to be low, or negligible during operation.

7.1.5 Local character and identity

Communities in the Project region have expressed a strong connection to the rural amenity, heritage, landscapes and natural beauty of their environment, and the importance of being part of small, friendly communities (refer Section 5.3). They see these qualities as central to the local character and identity of the area. Changes to local character may affect community identity (how the community sees itself) or sense of place (the feeling of connection and belonging to a place). The existing rural and natural character also supports a range of tourism experiences and attractions.

7.1.5.1 Cultural heritage

Assessment of non-Indigenous cultural heritage (EIS Chapter 18: Cultural heritage) identified one State listed heritage place (Mainline Railway (i.e. QR West Moreton System Main Line between Toowoomba and Helidon) and two local heritage places (Bicentennial National Trail and the former rifle range at Mount Lofty) within the Project disturbance footprint. Impacts however are considered to be neutral, with the Project traversing:

- Under the Mainline Railway at Ballard at a depth of 175 m with no potential for impacts)
- The northern limits of the Mount Lofty Rifle Range, approximately 200 m north of the known heritage elements
- Over the Bicentennial National Trail on viaduct.

In addition to listed heritage sites, six areas of interest (e.g. homesteads, dairies, culverts under the existing rail corridor and former rail infrastructure) with the potential for local heritage values were identified within the EIS investigation corridor. The works will result in the direct disturbances to these pleases including the likely removal of timber stumps that may have been part of the Gowrie Junction railway station, timber structures including dairy sheds at Bells Road and Howmans Road and a culvert/siding at Airforce Road. The impact assessments found that, with appropriate mitigation and management measures (e.g. refinement of design to minimise impact during detailed design and digital archival recording where the impacts cannot be avoided), Project impacts to the three registered cultural heritage places and the six sites with potential local heritage values could be reduced to neutral or slight.

On this basis, damage to non-Indigenous cultural heritage is not expected to result in a detraction from local character.

Consultation with Traditional Owners identified culturally important landscapes and the potential to compound the current effects of infrastructure such as the Warrego Highway on Aboriginal people's connections to the cultural landscape. As noted in Section 7.1.1, Indigenous cultural heritage values and Project impacts to these values will be managed under approved CHMPs (CLH017009) that have been developed with the relevant Aboriginal Parties for the Project. Cultural heritage awareness training will be provided for Project personnel in consultation with Traditional Owners.

7.1.5.2 Sense of place

There is strong community concern that railway infrastructure, including the tunnel portals and associated infrastructure, viaducts, bridges and double stacked train carriages will have a negative impact on the Project region's scenic and natural qualities.

Project design measures which have reduced potential impacts on scenic character include:

- The Project's horizontal alignment has avoided direct impacts on nationally or regionally protected landscape areas such as the Lockyer National Park and Lockyer State Forest
- The design has been developed to utilise the existing rail corridor for around 5.6 km and to be in tunnel for approximately 6.2 km, to protect and minimise land severance and impacts to natural and rural landscapes
- The Project has designed to utilises existing road reserves where possible
- The Project disturbance footprint defined in Project design has aimed to minimise vegetation clearing extents and reduce the extent of impact on watercourses and their landscape setting
- The extent of cut and fill including the height of structures and embankments has been kept to the minimum consistent with required engineering design and requirements for cross-corridor connectivity for people and vehicles
- The Project alignment has been kept away from settlements to the greatest extent possible, albeit noting that complete avoidance is not possible in this settled landscape.

Depending on location, the Project could impact some or all of the qualities that contribute to the local character and residents' sense of place, including:

- The alteration of familiar valued landscapes, including changes to vegetated natural areas.
- The intrusion of noise and vibration in otherwise quiet locations during construction or operation
- The intrusion of cuttings, structures and double-stacked freight trains on views and rural vistas.

Changes to local character and visual amenity will commence during pre-construction, with clearing of vegetation for laydown areas, the corridor and access tracks, and the construction of temporary buildings and hard-stand areas.

During construction, residents near laydown areas would experience a change to local character due to land clearing, or increased noise and dust, whilst the appearance of laydown areas may be incongruent with the natural or rural surrounds, which may collectively impact on local character in some areas.

Visual impacts during construction were identified from viewpoints at Keira Court, Blue Mountain Heights, Katoomba Point Lookout (Prince Henry Drive, Prince Henry Heights), Jubilee Point Lookout (Bridge Street, Prince Henry Heights), Picnic Point Lookout and Picnic Point Parklands (Rangelands), from Gowrie Junction (Hilltop Drive Park, Treeline Court and Junction Street bridge), from Murphys Creek Road (near the Toowoomba Bypass) and from Helidon Spa (Ashlands Drive).

Assessment of landscape impacts (EIS Appendix H: Landscape and visual impact assessment technical report) has identified impacts during construction and operation of significance in forested uplands within the

Toowoomba escarpment, in dry croplands (at Biddeston, Wellcamp, Gowrie Mountain and Gowrie Junction), in grazing landscapes (at Postmans Ridge), in rural settlements (in Kingsthorpe, Gowrie Junction and northern and eastern outer residential areas in Toowoomba), and rural living (in Postmans Ridge).

During operations, the Project's embankments, bridges and viaducts are likely to change views and vistas, which may lead to distress about the change to its scenic character and may alter community members' feelings of connection to place.

Visual impacts during operations of up to high significance were identified as associated with viewpoints from Paulsens Road, Gowrie, looking southwest towards Gowrie Junction Road bridge; Junction Street, Gowrie, looking east towards western tunnel portal; looking southeast from Keira Court, Blue Mountain Heights; looking north from Katoomba Point Lookout on Prince Henry Drive, Prince Henry Heights; looking northeast from Picnic Point Lookout within Picnic Point Parklands, Rangeville; Warrego Highway near Gittins Road, Postmans Ridge, looking west; and Murphys Creek Road near Toowoomba Bypass, looking north.

The majority of elevated structures that could affect scenic amenity are located in unpopulated areas in the Lockyer Valley, however residences are located within approximately 500 m of elevated structures at Gowrie Junction Road/Old Homebush Road, Wallens Road, Gittins Road, Squires Road (near the Murphys Creek Road Viaduct), Ashlands Drive and Lockyer Creek. ARTC is meeting with residents living near elevated structures to discuss the impacts and potential mitigation such as tree screening which will reduce the effects on views from homes, but due to the height of elevated structures and embankments, this would not fully mitigate impacts on vistas from homes. This may affect resident's appreciation of their local environment and cause distress about the loss of their previous views.

EIS Appendix H: Landscape and visual impact assessment technical report recommends a range of mitigation measures to mitigate impacts on visual amenity during construction and operations, including:

- Minimising vegetation clearance where possible in specific areas
- Preparing a Rehabilitation and Reinstatement Plan for areas within the EIS investigation corridor that do not form part of the permanent works
- Designing infrastructure (such as structures, embankments/cuttings, tunnel portals, tunnel control centre, viaducts and bridges) in accordance with an integrated design process with regard to landscape character and views
- Minimising the height of stockpiles to the greatest extent possible to reduce their visual impact
- Temporary treatments (such as hoardings and screens) to site compounds
- Avoid or minimise unavoidable out of hours works within close proximity to residences and, where construction light impacts are predicted, implement attenuation measures in discussion with potentially affected residents
- Landscape design that enhances the rural landscapes including planting and screening to integrate the railway and associated structures and features, e.g. planting strips could be introduced adjacent to significant embankments to reduce visual impact and assist in integrating the landform into the existing landscape setting.

In finalising plans for landscape design, the Project will consult with the owners of all homes located within approximately 500 m of elevated structures e.g. at Gowrie Junction Road/Old Homebush Road, Wallens Road, Gittins Road, Squires Road, Ashlands Drive and Lockyer Creek, to seek and consider their feedback in finalising and implementing the landscape design.

The Project will also involve key stakeholders in consideration of placemaking initiatives, as outlined in Section 8.5.4.

7.1.6 Community cohesion

Community cohesion refers to a community's connectedness, and its capacity for social relationships and mutual help. Local communities are closely knit, as is typical of rural communities where people know each other well and mutual help is a cornerstone of daily life, so social networks are particularly important. The SIA community survey indicated that local residents were concerned about their communities' capacity to cope with change, so protection of community cohesion is particularly important.

To date, two landowners have requested full acquisition, however this number may increase during the EIS display and detailed design processes. Assuming that up to an estimated 20 households (or approximately 50 people based on the Project region's average household size) would relocate as the result of land acquisitions, this may affect neighbourhood cohesion through the loss of people from local social networks but would have no appreciable effect at regional level. There is also potential for community conflict about the Project to affect community harmony.

Roadworks during construction may discourage people from travelling to interact with others, however this would be temporary. Where roads would be closed, alternative access would be provided to ensure all residents can access the road network. During operations, the Project's grade-separated rail crossings would avoid any impacts on movement patterns which could affect community cohesion.

ARTC's investments in local communities will include a focus on programs and services which strengthen local social networks and provide opportunities for people to meet and participate in community activities. These could be delivered via ARTC's Community Donations and Sponsorship program, direct project funding to community organisations and/or partnerships with relevant councils or government agencies, which will be detailed as part of the Project's Community Well-being Plan (refer Section 8.5.4).

7.1.7 Disadvantage

The Project passes through communities experiencing socio-economic disadvantage in the Lockyer and Helidon areas, with these communities among the 40 per cent most disadvantaged SA1s in Queensland (refer Section 5.2.7 and 5.7.2). In the Helidon Spa and Helidon area, there is potential for construction noise or dust to affect the amenity of properties within and near the Project alignment, in areas where residents have low levels of social resources to help them cope with change and as noted in Section 7.1.3, there is potential for construction noise exceedances in the northern suburbs of Toowoomba (Cranley, Cotswold Hills, Rockville, Wilsonton Heights and Harlaxton) which also exhibit indicators of disadvantage.

Many farmers, businesses and community members have been affected by drought, floods and/or by the impact of road works for the Toowoomba Bypass, and local businesses have also been affected by COVID-19 restrictions. Residents who are already stressed by factors such as these may feel particularly vulnerable to impacts such as construction noise and traffic disruption and will require attention in ARTC's communication and engagement process during the detailed design phase. The Project also traverses communities in Lockyer Valley (e.g. Lockyer, Helidon and Helidon Spa) who are still traumatised by the 2011 floods and will need particular care with respect to communication about Project impacts and mitigation. Gowrie Junction area was also impacted by the 2011 flood event.

Some people are already experiencing stress or anxiety as a result of the Project's perceived or potential impacts. Efforts will be required to identify and assist these residents to avoid causing them future disadvantage. This will require a close focus on communicating with residents and community and working with them to mitigate the impacts at the local level. Whilst percentages of people who spoke a language other than English at home were lower than the State average in most local communities, there are also people who speak a language other than English at home, with the most common languages including Mandarin, Arabic, Korean, Punjabi, Tinka, Tagalog and Afrikaans. Backpackers and students from many countries also spend time in the Lockyer Valley.

As a general rule, Project communications will need to clear and accessible, particularly given the high level of people with limited educational attainment within the Project region and the existence of disadvantage in areas near the Project. Information about the Project's EIS and construction schedule will be made accessible to people with low or no proficiency in English via promotion and use of a telephone interpretation service. The Project will also undertake engagement with the Toowoomba International Multicultural Society and the Lockyer Multicultural Association regarding any need to translate or otherwise directly communicate ARTC's safety information to residents with low English proficiency, and/or or short-term residents with a lack of familiarity with rail networks.

Prior to Project construction, the Project will consult with the Department of Communities, Housing and Digital Economy (DCHDE) to identify any potential for Project-related stresses on local services, to enable a cooperative response to community needs between DCHDE, ARTC and community organisations. ARTC has also made donations and sponsorships available to community organisations in potentially impacted communities, to enable them to strengthen the provision of community programs.

At the broader level, a positive impact would result with construction employment sustaining the income personnel and their families.

7.1.8 Connectivity

Connectivity refers to the movement network that supports community members' ability to move around their home region. This subsection discusses potential impacts on local movement patterns.

7.1.8.1 Construction

Disruption to traffic can be expected during Project construction as equipment, materials and people are transported to and along the rail corridor, and as roads are closed or re-aligned. Communities' experience of changes to local connectivity during construction of the Toowoomba Bypass were not positive - affected communities have expressed frustration and anger at the lack of alternate routes provided and the level of communication about planned works and associated travel delays.

No level crossings are proposed for the Project. The Project proposes the construction of grade separated crossings where the Project interfaces with:

- Toowoomba Bypass, Gittins Road, Jones Road, Murphys Creek Road, Wallens Road and Cattos Road (rail over road crossings)
- Gowrie Junction Road and McNamaras Road (road over rail crossings).

The construction of grade separated crossings will involve traffic detours and/or traffic delays. Pedestrian and cyclist access in Gowrie Junction may also be impeded during construction of the Gowrie Junction Road bridge.

The Project proposes elimination of the existing Paulsens Road level crossing, requiring construction of a proposed road over rail bridge approximately 400 m west of the existing level crossing to maintain north-south connectivity, and with Gowrie Junction Road to be realigned. The new grade separation will encroach onto private land and will cross over the existing rail corridor, along with the Project's rail alignment, Paulsens Road, a realigned section of Morris Road and Gowrie Creek.

Gowrie Junction Road will be raised starting near McMahons Road, which will impact on the existing Gowrie Junction Road/Krienkes Road intersection, while some properties along Gowrie Junction Road will no longer be able to directly access Gowrie Junction Road.

To the north of Gowrie Creek, Gowrie Junction Road will tie into Old Homebush Road south of the existing roundabout, with access also provided directly off Gowrie Junction Road onto Old Homebush Road to the south. This will ensure access to Old Homebush Road to the south, along with Paulsens Road (both East and West) from Gowrie Junction is maintained. To mitigate impacts from the realignment of Gowrie Junction Road, the Project proposes:

- Krienkes Road/Gowrie Junction Road intersection will be relocated approximately 300 m south, adjacent to the existing Gowrie Junction Road/Ganzer Road intersection and a new section of road approximately 800 m long required, primarily located in an undeveloped road reserve
- Morris Road will be extended to the west under the proposed road over rail bridge and will provide access via the existing and realigned section Krienkes Road to Gowrie Junction Road, ensuring access is maintained to properties fronting Gowrie Junction Road and Morris Road
- McMahons Road will be slightly raised at the existing intersection with Gowrie Junction Road
- New access to the south from Krienkes Road will be provided to the houses that front the existing Gowrie Junction Road.

Where the Project disturbance footprint deviates to the southeast from the existing QR West Moreton System east of Gowrie, a new rail connection to the east is proposed. Morris Road will be closed, approximately 750 m east of Gowrie and 650 m west of Boundary Street, to facilitate the rail corridor at this location. Provision for access over the rail corridor is not proposed due to the presence of a crossing loop and because the realigned Gowrie Junction Road provides north-south connectivity. East-west connectivity will be maintained via Hermitage Road. To the west of the Project, Morris Road will be realigned to the south and west to ensure access is maintained to properties within this area.

It is also proposed to close the existing rail underpass linking East Paulsens Road to Morris Road, with access maintained through an upgrade of East Paulsens Road (for approximately 1 km) between Old Homebush Road and the underpass.

The Project's disturbance footprint would interface with the Gowrie State School – Toowoomba school bus route which is further discussed in Section 7.4.1.

Other proposed changes to the road network which will result in temporary traffic delays during construction include:

- Closure of Drapers Road, where the section runs east - west parallel to the existing QR West Moreton System rail corridor
- Closure of Ganzer-Morris Road near the Morris Road intersection , currently an unformed road corridor that is not required for property access or to maintain network connectivity
- Realignment of an approximately 700 m section of Wallens Road to the east under the proposed Oaky Creek Viaduct (i.e. grade separation)
- Closure of a 400 m wide undeveloped section of Howmans Road with the eastern section of Howmans Road extended to the rail corridor and the western section from Gittins Road (approximately 1.3 km) to also upgraded
- Closure of an Unnamed Road in the rural locality of Lockyer, currently an unformed road corridor that is not required for property access or to maintain network connectivity
- Closure of Cattos Road near the intersection with Airforce Road. Cattos Road services one property and it is proposed to realign the road to the west and extend it north parallel to the QR West Moreton System and under the Lockyer Creek viaduct, to then link back to Airforce Road with a new intersection approximately 1.2 km from the existing intersection.

Access to private properties will be maintained during construction, unless an acceptable solution is agreed with the property owner.

Stakeholders have urged ARTC to ensure local TMPs take into consideration the need to maintain community connectivity and reduce travel time delays and the risk of further community grievance. The Project will consult with DTMR, LVRC and TRC in the development of a TMP during the detailed design phase. The TMP will be communicated to all site personnel during site induction, including requirements for traffic routes and designated parking areas which will be supplied within construction areas e.g. laydown areas and will be designed to minimise the potential for noise from the parking to affect any nearby residents or businesses.

Information about the timing and scale of changes to traffic and transport conditions on traffic networks in the vicinity of construction works will be provided in advance to the local community and road users. A travel demand management campaign will also be developed and implemented to inform the public on works and its effect on network operations, to enable road users to plan their travel to minimise inconvenience. Further discussion of traffic impacts is provided in Section 7.4.10.

7.1.8.2 Operation - road network

The Project will cross State-controlled roads, local government (TRC and LVRC) roads and private roads.

No level crossings are proposed for the Project, satisfying stakeholders' preferences for grade separated crossings to avoid causing additional traffic congestion and traffic delays whilst trains are passing. The proposed bridges will avoid long-term impacts on connectivity across the corridor as outlined in Table 7.1.

In total, the permanent disturbance footprint has 17 public road interfaces, two of which occur on State-controlled roads managed by DTMR and 15 of which are local roads managed by local governments.

Eight road rail interfaces will involve grade separations, including rail over road and road over rail (e.g. the crossing of the Toowoomba Bypass at Withcott is a rail bridge over the road where the bridge piers are located outside of the roadway with a single clear span over the entire Toowoomba Bypass). The Project will not result in the addition of any new level crossings. As noted above, sections of Draper Road, Morris Road, Ganzer Road, Cattos Road (with a grade separated crossing of Cattos Road proposed), an undeveloped section of Howmans Road and an unnamed road in Lockyer would be closed. Alternative road accesses will be maintained for residents and businesses, but road closures may cause inconvenience to road users. In particular, TRC believes that the closure of Morris Road and loss of the existing level crossing and underpass under the rail corridor would cause unacceptable impacts on the connectivity of this road (between the Toowoomba city centre and Gowrie Junction) and their preference is that it remains open. Discussion between ARTC and TRC is ongoing on this issue which will be resolved as part of the detailed design process.

There is also potential for rail traffic which would otherwise have used the West Moreton Rail system through Toowoomba to divert to the Project and decrease traffic congestion due to delays at level crossings in Toowoomba.

On this basis, and subject to a satisfactory resolution of disagreement on the closure of Morris Road, disruptions to the public road network are not anticipated during operations.

7.1.8.3 Operation – private roads

In addition to the public road rail interfaces outlined above, the Project would have 36 private road interfaces. ARTC will ensure an appropriate level of access is maintained for landowners across existing crossings or through their property where affected by the rail corridor. Crossings of roads on private properties will be designed in consultation with the landowners and will include consideration of the need to move stock, large equipment and vehicles across the corridor. The State and National Rail Safety guidelines and policies are

safety-focused, and ARTC will work with each landowner to find solutions that provides optimal access on a case-by-case basis based on the following considerations:

- Feedback from consultation with landowners on specific property requirements
- Safety standards (criteria for minimum sight distances for trains and vehicles)
- Alternative access arrangements
- Rail design and landform
- Stock movements
- Vehicle access requirements (for example farm machinery and frequency of use).

Typical treatments include underpasses for stock passage and vehicles, subject to topography, and diversion to adjacent public road/ public road crossings. This will minimise impacts on the movement of stock and equipment.

7.1.8.4 Operation - pedestrian and cycle networks

Toowoomba is a popular cycling destination with a dedicated urban cycle network, recreational cycle pathways and designated mountain bike trails. The Lockyer Valley also offers access to the natural environment through pedestrian, horse and cycle networks.

The traffic impact assessment (refer Appendix U: Traffic impact assessment) includes a review of the Queensland Principal Cycle Network, which identified an existing road-rail interface at Paulsens Road/Gowrie Junction Road. A grade-separated crossing would replace the current crossing which would improve the current arrangements and includes provision in the design for cyclists and pedestrians. As there are no level crossings proposed, there would be no pedestrian, cycle or equine interfaces with the Project.

Several of the proposed construction traffic routes coincide with existing cycle networks and traverse through areas of moderate to high activity in the centres of Toowoomba city, Helidon and Withcott. The TMP will provide specific pedestrian management measures to be put in place in this area which will be subject to site planning.

The safety of pedestrians and cyclists accessing the general road network will require attention in the Project's CEMP and TMP. The Bicentennial National Trail intersects the Project disturbance footprint on Gittins Road and there is potential to affect the Ravensbourne to Helidon motocross trail where it is near Airforce Road to the Lockyer National Park as discussed in Section 7.4.5. While there may be some visual changes, all other significant reserves and hiking trails are at a sufficient distance from the alignment to avoid being impacted by either construction or operation.

The Project is likely to result in the movement of some freight which currently uses the QR West Moreton System rail corridor to Inland Rail network, which would decrease the number of freight trains travelling through Toowoomba and along the Great Dividing Range, and result in decreased traffic congestion related to level crossings in this area. This would be a substantial benefit to Toowoomba and Lockyer Valley LGAs residents and businesses.

7.1.9 Flooding

Local communities are highly sensitised to the impacts of flooding, as the result of the 2011 floods which caused the deaths of community members and the destruction of towns, homes and farms, along with the local road and rail networks. Concern about the Project's potential to change or increase flood impacts is a considerable source of anxiety for many community members.

The Project has undertaken consultation with stakeholders as part of flood and hydrology assessment, with this information used to calibrate the flood models and identify potential impacts on properties and dwellings.

EIS Appendix M: Hydrology and flooding technical report discusses the results of flood modelling in relation to the Project's proposed design. The assessment confirmed that the proposed design would meet the nominated drainage and flooding performance requirements, and achieve the required one (1)% Annual Exceedance Probability (AEP) event flood immunity for the rail formation and the 1 in 10,000 AEP for the tunnel portals. The modelling also indicated that there will be negligible change to overland flow downstream of the Project (i.e. most of the impacts are restricted to the rail corridor).

In summary, the assessment predicted that the Project would result in:

- No increases in flooding levels of greater than 10 mm affecting habitable dwellings
- An increase of 350 mm on a property access road under the 1% AEP event, requiring further refinement and assessment during the detailed design phase of the Project.

This is due in part with the Project paralleling Gowrie Creek rather than crossing perpendicular through the creek and floodplain and where intersecting across a floodplain (in Lockyer Valley), the Project is on structure. There is also potential to improve the resilience of some roads and a section of the Western Line to flooding.

Regardless of the results of flood modelling, anxiety about the Project's potential impacts on flood patterns may affect feelings of security and cause anxiety.

7.1.10 Population changes

Property acquisitions would result in very small decreases in the populations of local neighbourhoods, for example in Gowrie Junction and Helidon Spa. There is a possibility that displaced residents may relocate elsewhere within the region, and in the context of the Project region's population of almost 200,000 people, population change at the regional level would be negligible.

With a portion of the construction workforce to be sourced from nearby communities, and the remainder expected to commute daily from within the Project region or adjacent LGAs, the daytime population of the Project region would increase by an average of up to 264 people during the construction period, with a consequent increase in the number of (mostly) males. Again, in the context of a regional population of some 200,000 people, this would not cause any noticeable change to the population composition. No other impacts on the population are expected.

7.2 Workforce

This section discusses the Project's likely employment and training benefits, workforce management and the potential for the Project's labour requirements to impact on other stakeholders.

7.2.1 Employment opportunities

7.2.1.1 Construction

Pre-construction activities are anticipated to require a small workforce (up to 50 personnel) over a period of approximately six months.

Construction is planned to commence in 2022 and be completed by 2027. During the core construction period, the workforce will consist of professional staff, supervisors, trades workers and plant operators, with earthworks crews, bridge structure teams, capping and track-works crews working at different periods though the construction phase. The size and composition of the workforce will vary depending on the construction activities being undertaken and the staging strategy adopted. The approximate number of personnel will be as follows:

- A peak of 545 and an average of 202 personnel in Year 1
- A peak of 596 and an average of 466 personnel in Year 2
- A peak of 504 and an average of 397 personnel in Year 3
- A peak of 253 and an average of 128 personnel in Year 4
- A peak of 44 and an average of 11 personnel in the final six months of construction.

Over the full construction period (estimated at 4.6 years) an average of 264 personnel will be required.

Construction employment opportunities would include:

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

Shifts of ten hours (allowing two hours per day traveling time) will be available to the construction workforce. There will likely be two shifts working on tunnel construction which will be undertaken 24 hours a day/7 days a week and is scheduled for a period of up to 48 months (including set up, tunnel boring and commissioning). Similarly track possessions will likely be 24 hours a day/7 days a week but will be scheduled to minimise impacts on existing rail operations where possible.

This will enable the construction workforce to be drawn primarily from communities within the SIA study area and nearby LGAs, with employment benefits extending to construction industry workers across the region. The availability of employment over the construction period would be a strong opportunity for those personnel and their families.

As described in Section 5.4.1 the Project region's Indigenous population had lower labour force participation rates than the non-Indigenous population, and higher unemployment rates in 2016 (refer Section 5.7.5). Consultation with Indigenous stakeholders identified a strong focus on employment opportunities and Inland Rail has a focus on optimising Indigenous employment in its projects, as discussed further in Section 7.2.3.

Procurement processes and construction contracts will contain desired outcomes relating to social performance including local, Indigenous and female employment goals. ARTC will monitor the Contractor's progress towards employment goals and may require the Contractor to initiate corrective actions to its training and/or recruitment practices if sufficient progress is not being achieved.

7.2.1.2 Operation

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

- Maintenance staff, including for the track, associated infrastructure, and maintenance of the tunnel ventilation and safety system
- Signallers
- Environmental monitoring and management of land and infrastructure in the railway corridor.

This is likely to include a mix of:

- Local personnel (e.g. for maintenance of access tracks and/or environmental management)
- Mobile crews moving between sections of Inland Rail (e.g. for major track and ballast maintenance) some of whom may be from the Project region
- Personnel based in operations centres (e.g. managers and signallers).

The Project will also facilitate third party employment of train drivers.

A portion of the operational workforce and contractors will be drawn from the Project region and nearby LGAs. This will require identification of local people including young people who are interested in Project employment, and collaboration to develop training programs which will equip local people for employment on the Project. ARTC commitments to local and Indigenous employment include:

- Working with local communities (including Indigenous communities) to strengthen the capacity of the local workforce to participate in Inland Rail 's operation
- Having a clear and efficient process for people to seek information about employment opportunities and register their interest in Inland Rail employment
- Providing a workplace that is inclusive and values the contributions of Indigenous employees.

7.2.2 Skills availability

The Project will require labourers and skilled trade workers (such as mobile plant operators, crane operators, structural steel workers, earthmoving operators, bridge construction workers and tunnelling crews). The SIA study area's construction industry workers numbered approximately 7,363 people in 2016, of whom 1,307 people (17.8 per cent of the total) lived in the Lockyer Valley LGA and 6,056 people (79.3 per cent of the total) lived in the Toowoomba LGA (refer Section 5.4.1).

Regional level labour projections for the 2018-2023 period indicate that the Darling Downs region (which includes Toowoomba LGA) was projected to have an average annual average surplus of construction workers between 2018 and 2028, whilst the West Moreton region (which includes Lockyer Valley LGA) was projected to have an average annual average surplus in construction workers to 2022, with a shortage predicted for 2023-2028 (NIEIR, 2018).

The economic impact assessment undertaken for the Project (EIS Appendix R: Economic impact assessment) indicates that labour market conditions during the construction phase will be somewhere between those characterised by the 'slack' labour market (where there are sufficient unemployed and under-employed workers to accommodate the increase in demand for labour without increasing real wages) and a 'tight' labour market (where wages are bid up to attract currently employed workers to the businesses contracted to construct the Project). Noting that several concurrent and overlapping construction projects have the potential to contribute to cumulative economic impacts alongside those of the Project, the economic impact assessment (EIS Appendix R: Economic impact assessment) assumes, based on the industry employment and

occupation of the local workforce, that the local labour market has the capacity to supply a significant portion of the workforce requirements of the Project, without major disruption to other industries.

Based on ARTC's experience with the construction of the Inland Rail Parkes to Narromine (P2N) project, a large proportion of the construction workforce are unskilled labourers from the P2N project region who have been equipped (where necessary) through training and on the job experience to work in project construction (noting that the P2N project is a brownfield project which requires a lower proportion of skilled workers than projects incorporating greenfield sections).

The Project region had a collective unemployed workforce of approximately 5,201 people in June 2019, including 4,096 unemployed people in the Toowoomba LGA and 1,105 unemployed people in the Lockyer Valley LGA (refer Section 5.4.1).

Collectively, the construction industry workforce and unemployed workers represent a significant regional pool of existing skilled labour and workers who could be trained (if required) for construction work on the Project.

Given the availability of both skilled construction workers and unemployed people, difficulties accessing adequate local labour for construction are not expected. It is however possible that local access to specialist labour may be constrained or competitive at times.

Skills shortages in specific trades may be exacerbated by Project construction, particularly in the context of cumulative demands for construction labour as discussed in Section 7.6. Relevant industry clusters for which data are collected for Queensland include structural steel and welding trades workers, where there were no shortages detected, civil engineering professionals, where there were widespread shortages, and construction project managers, where the level of vacancies filled was currently at its lowest level in eight years (DESSFB, 2019). ARTC is working with CSQ to identify potential shortages in trades and professions that will be required for construction of the Project and other projects in the Inland Rail Program. This will inform the development of Inland Rail training and development programs, which are described in Sections 7.2.3 and 8.3.1.

As a relatively modest requirement, the movement of up to 596 personnel to Project employment in the context of regional supply is not expected to place undue pressure on the local or regional labour market. This is further discussed in EIS Appendix R: Economic impact assessment. However, there may be shortages in specific trades (such as specialist welders) which could be exacerbated by Project construction. Cumulative demands for construction labour are also possible, as discussed in Section 7.6.

ARTC will work with CSQ, Contractors and other stakeholders including training providers to ensure the proposal achieves employment of local residents, including targeting Indigenous people and young people (refer Section 8.3).

7.2.3 Training and development opportunities

The Project's construction phase represents an important source of potential training and career pathway development for Project region residents, including young people, women and Indigenous people.

ARTC has a strong commitment to training local and Indigenous people. Training pathways through the Project's construction and operation will be achieved by working with:

- The Contractor, to ensure appropriate training and apprenticeship targets are set and delivered upon for the Project
- Local business networks, employment agencies and Indigenous community networks, to encourage applications and increase the number of local and Indigenous people applying for jobs in Project construction

- Key partnerships as part of the Inland Rail Skills Academy to link training and development programs with other initiatives and local industries to provide the greatest regional benefit, and provide long-term outcomes through training, mentoring and other support programs.

ARTC has established the Inland Rail Skills Academy which is a collection of projects and partnerships with the aim to facilitate local employment and procurement opportunities regionally by 'priming the market' in each region in which Inland Rail would be constructed, and making it easy for Inland Rail contractors to employ and procure trained and competent people locally (refer Section 8.3.1).

The Inland Rail Skills Academy will provide the framework for all training and development opportunities to be developed for the Inland Rail Program. The partnerships and projects which make up the Inland Rail Skills Academy are in progress, with some activities commenced in late 2019.

The Inland Rail Skills Academy will focus on regional development of skills and businesses, and through its partnership with Australasian Rail Association, the development of skills for the rail industry. This will help to ensure that young people and Indigenous people in the Project region have the opportunity for skills training which will equip them for the construction industry and will be transferrable to future major projects, and for training and development which would enable them to apply for operational roles. This will also result in an increase in the skilled labour force in the Project region.

ARTC's engagement with RSIS coordinators for the Toowoomba and Lockyer Valley LGAs has resulted in alignment of Inland Rail and RSIS training priorities, and development of joint training proposals as part of DESBT's SQW program. A training program focussing on development of skills in working in rail operations has been planned with TRC, and with LVRC, the joint initiative will focus on construction skills training as part of upgrading a community sporting facility in Laidley.

Additional initiatives which were identified as part of SIA consultation with Indigenous stakeholders include:

- Consultation between Traditional Owners, ARTC and other stakeholders such as CSQ and local councils to identify potential opportunities for early skilling programs for Indigenous workers
- Consultation with Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships (DSDSATSIP) and training providers regarding training and employment programs which are culturally appropriate and targeted to Indigenous people
- A meeting between Traditional Owner representatives and the Contractor (when appointed) to discuss targeted initiatives such as training and mentorship for Indigenous workers
- Communication between ARTC and Traditional Owners regarding the range of business opportunities which will be available during construction, the availability of Indigenous businesses to participate and the types of capacity building programs that Indigenous businesses may need to prepare for involvement in the Project supply chain.

ARTC will require the Contractor to provide a workforce management plan which includes commitments to local and Indigenous employment, and identifies the Contractor's training and apprenticeship goals, as further discussed in Section 8.3.3.

7.2.4 Impacts on employment and livelihood in other industries

The Project would acquire land within farming and grazing properties (refer Section 7.5.1) and construction activities such as roadworks may also result in travel delays which may impact on farmers' or grazier's routes to markets. The majority of grazing properties are managed by their owners with the assistance of family or contract labour when required, and minimal impacts are expected on cropping properties, so a significant impact on the availability of employment on agricultural properties is not anticipated.

Withcott Seedlings is a major commercial supplier of vegetable seedlings and a large employer in the Project region. ARTC has worked closely with Withcott Seedlings to minimise the extent of land acquisition and

avoid major infrastructure (i.e. dams), minimising impacts on the business and its capacity to employ agricultural industry workers and supply the horticultural sector.

There is also potential for construction works for the rail line and Gowrie Junction road bridge to impact on the amenity of businesses in Gowrie Junction, including the Gowrie One Stop Shop and Gowrie Landscape Supplies, with potential for noise, dust or traffic disruptions These impacts would be temporary and are not expected to affect the businesses' employment capacity, however regular communication will be required between the Contractor and these businesses to ensure that the mitigation measures provided are satisfactory.

The Project traverses under a number of other businesses where it is in tunnel and will not directly impact business operations.

There may also be an increase in employment in other sectors as an indirect result of the Project, including quarry operations, waste management and the relocation of built infrastructure.

Impacts on the amenity of tourism attractions may impact their visitation and trading levels (as discussed in Section 7.5.3) with potential for impacts on their capacity to offer employment. Tourism employment levels are affected by a multitude of variables (such as individual businesses' current trading levels and plans) and cannot be quantified. There is potential for Project personnel to patronise local cafes, service stations and general stores which may offset impacts.

The use of local contractors by the Project may place a draw on casual labour which could affect the availability of labour. The Inland Rail Skills Academy plans to offer training and skills development programs which are applicable to the agricultural industry, which is likely to mitigate this impact. Impacts on grazing and farms are further discussed in Section 7.5.1. EIS Appendix R: Economic impact assessment provides the results of economic impact assessment undertaken for the Project.

7.2.5 Workforce management

Construction personnel will be working in close proximity to homes and businesses. Some residents may be concerned about family safety and privacy, given personnel may not be known to them, and the fact that works will be in close proximity to homes in some areas.

ARTC will ensure that the Contractor has appropriate workforce management policies and procedures, to avoid the potential for any impacts on community safety and reduce the potential for impacts on the privacy of homes. This will include a workforce Code of Conduct which will apply to all personnel when they are at work, travelling to and from work, and in public places, and will include:

- Expected standards of behaviour
- Respect for private property, including driveways and fence lines, and for the privacy of residents
- Guidelines for respectful engagement between the workforce and local residents and businesses
- Respect for local community values, e.g. family-friendly public places and safe streets
- Safe, legal and courteous driving
- Prohibition of all forms of sexual harassment and assault
- Prohibition of racist behaviour, racist language and discrimination.

Non-compliance with the workforce Code of Conduct would risk termination of employment.

Construction personnel's traffic behaviour is a source of concern for residents. In addition to an increase in traffic and vehicle noise as personnel arrive at and leave work sites, non-local personnel may be inconsiderate of existing road users. Construction personnel and transport drivers will be provided with guidance regarding roads to be used, the standard of driving behaviour required of all personnel and drivers,

fatigue management, and the sanctions for driving behaviour that is not in accordance with the Project's standards.

A TMP will be prepared prior to construction. This plan will identify the impacts that construction traffic (including workforce commuting) is likely to have on the local transport infrastructure and road users, and detail ameliorative measures required to avoid, reduce or mitigate all identified impacts of the project. The TMP will be developed in consultation with DTMR, relevant local governments and emergency services.

ARTC's complaints management process will be made available to local residents and businesses, which will ensure a fast and effective resolution to any issues experienced.

7.3 Housing and accommodation

This section discusses the potential for impacts on the settlement pattern in the Project region, population change which could affect demand for housing, concerns regarding property values, and potential impacts on short-term accommodation of housing availability.

7.3.1 Settlement pattern

The predominant land use within and near the Project disturbance footprint is grazing land. As the Gowrie to Grandchester future State transport corridor was protected as future railway land in 2005, the future intent to construct a rail corridor through the area is consistent with the intended land use planning expectations for the area (refer EIS Chapter 8: Land use and tenure).

ShapingSEQ and/or the relevant LGA planning schemes identify land that has been designated for future residential and rural living purposes. For the purposes of this assessment, the settlement pattern is considered likely to be altered on land that is within 250 m of the alignment as future development may be deterred due to noise or visual impacts. Table 7.2 describes the likely impact of the Project on towns and rural residential communities in proximity to the Project corridor.

The alignment is not anticipated to impact the urban settlement pattern as it passes in tunnel through most of the urban footprint of Toowoomba (as designated in the ShapingSEQ), and elsewhere is buffered from land designated for urban purposes.

Rocky Creek forms the northern border of the Withcott Urban Footprint as designated by the ShapingSEQ. There is a minimum distance of approximately 800 metres between the urban footprint boundary and the Project disturbance footprint, so effects on the settlement pattern in this area are not anticipated. The nearest currently developed lots in this area are approximately 1.5 km south of the Project disturbance footprint and are not expected to be affected.

The Project may change the settlement pattern in the areas designated for rural living at Helidon Spa (between Ch 26.0 km and Ch 27.0 km) and Postmans Ridge Road (between Ch 23.0 km and Ch 24.0 km) where land is within 250 m of the alignment.

Defence Housing Australia (DHA) lodged a Development Application with TRC for the development of a 342-lot master planned residential community over a former rifle range site (Lot 1 on RP46221) at Rifle Range Road and 1 Henry Street, Mount Lofty in 2018, within the Rifle Range Priority Development Area. The future of this site is uncertain after it was announced that the DHA had withdrawn their application (SBS, 2020), however a new development approval application has been lodged with TRC by another party. As any development proposed for the site is likely to retain the bushland buffer which provides koala habitat, future development is likely to be more than 1 km from the Project disturbance footprint with no potential to affect the settlement pattern in this area.

Planning and development measures may need to be adopted by relevant councils to ensure that appropriate mitigation is applied to the future development of housing and other sensitive uses near the Project, to reduce their exposure to noise and vibration impacts from the Project.

Table 7.2 Potential Project impact on settlement patterns

Settlement	Relationship to Project	Impact
West of Gowrie	The Project traverses an area between Gowrie and Kingsthorpe designated in the ShapingSEQ 2017 as Urban Footprint near Ch 1.0 km. This area is indicated in the Toowoomba Regional Planning Scheme Strategic Framework (TRPSSF) for urban purposes but is yet to be developed. The Urban Footprint is more than 800 m from the rail alignment at its nearest point.	No significant change.
Gowrie Junction	The Project is within an area designated under ShapingSEQ 2017 as Urban Footprint and Rural Living Area at Gowrie Junction (Ch 1.0 km to Ch 4.0 km), with the nearest property boundary about 400 m from the alignment. The area is largely developed at this location. Undeveloped urban land indicated in the Toowoomba Regional Planning Scheme in the balance of the area is more than 700 m from the rail alignment.	No significant change.
Toowoomba Urban Footprint	The Project passes in tunnel through an area within the Urban Footprint designated for Toowoomba by the ShapingSEQ 2017 and zoned Urban or Rural Residential in the TRPSSF between Ch 4.2 km and Ch 8.8 km.	No significant change
Mount Lofty	DHA land is traversed by the Project in Harlaxton, though the proposed master plan area which may be developed in future approximately 1 km south of the rail alignment between Ch 10.6 km and Ch 11.8 km.	No significant change.
Lockyer	This area is primarily designated as Regional Landscape and Rural Production Area in ShapingSEQ 2017, though there is a cluster of houses associated with Squires Road. The rail alignment (around Ch 22.0 km) passes approximately 220 m south of the development at Squires Road.	No significant change
Postmans Ridge	The Project passes predominantly to north of the Postmans Ridge Rural Living Area designated in the ShapingSEQ 2017. The north-eastern edge of this area is approximately 800 m south of the rail alignment at Ch 21.2 km.	No significant change
Postmans Ridge Road	The area west of Helidon Spa between Ch 23.0 km and Ch 25.0 has been designated a Rural Living Area in the ShapingSEQ 2017, with the Project passing through the north-eastern sector.	Potential to constrain future development of rural residential homes on lots closest to the rail alignment
Helidon Spa	The area south of the Project between Ch 26.0 km and Ch 27.0 km has been designated a Rural Living Area in the ShapingSEQ 2017, including land within 250 m of the rail alignment (south of Lockyer Creek).	

7.3.2 Housing

7.3.2.1 Property acquisition

The extent of property acquisition will be confirmed by the appointed Constructing Authority in consultation with landowners, during the detailed design phase. For the purpose of estimating changes to the population of communities and the Project region (refer Section 7.1.10), this assessment has assumed that approximately 20 households or an estimated 50-60 people would relocate from rural residential and urban properties as the result of property acquisitions for the Project, and that many of these households are likely to seek new homes in the Project region.

In the context of the Project region's housing stocks, with ample homes available for purchase (refer Section 5.5), property acquisition for the Project is not expected to have an impact on housing availability or asking prices. Consultation with DTMR has identified the potential for one tenant to be displaced as the result of the removal of DTMR-owned dwellings in the Project disturbance footprint, so significant impacts on the availability of affordable housing as a result of property acquisition are considered unlikely.

Rental housing availability

During Year 1, Project construction would require an average of 202 personnel and a peak of 545 personnel. Year 2 would see an average workforce of 466 personnel and a peak of 596 personnel. As the majority of the construction workforce is expected to be drawn from the Project region, adjacent LGAs and the Greater Brisbane region, returning home at night, the number of personnel requiring accommodation is expected to be small, however there is potential for cumulative demands for labour to result in a requirement for non-local personnel (refer Section 7.6.2).

As described in Section 5.5.2, rental vacancy rates were very low in local communities during 2020, with vacancy rates generally below 1.0 per cent. At June 2020, a total of 135 rental dwellings were advertised as vacant in the four postcode areas of interest (representing Toowoomba suburbs, Helion/Helidon Spa, Kingsthorpe and Gowrie Junction/Postmans Ridge/Withcott), which was a decrease of 173 dwellings or more than 56 per cent since June 2019. By December 2020, this had increased to 180 dwellings reflecting the end-of-year turnover in USQ students in Toowoomba.

If low rental vacancy rates continue throughout 2021-2022, stimulation of investment in rental housing is possible, increasing the availability of rental housing by the peak of the Project's workforce in 2022-2023. Rental housing trends are currently uncertain due to COVID-19-related conditions so it is also possible that investment will not occur in the short term. The following analysis discusses a scenario where up to 10 per cent of the workforce would require housing in the Project region during the construction period, using June 2020 as a benchmark for rental availability, as December typically sees higher numbers of local vacancies (refer Section 5.5.2).

Based on June 2020 availability of rental housing, if 30 personnel (approximately five per cent of the peak construction workforce) moved to the Project region and/or required housing while they were rostered on, and required one dwelling each (as opposed to sharing housing with other workers), this would equate to a demand for 22.2 per cent of the rental housing available in the four postcodes areas at June 2020.

If a requirement for 60 dwellings (approximately 10 per cent of the peak workforce) eventuated, this would be equivalent to up to 44.4 per cent per cent of the available rental dwellings in the four postcodes of interest. This is considered a maximum or worst case given the Project's intention to recruit from within a safe daily driving distance, the fact that non-resident construction workers typically share housing, and the likelihood that a portion of any demand from non-resident workers would be met in short term accommodation (refer Section 7.3.4). In particular, the use of rental housing by construction industry personnel typically involves 3-4 people sharing a rental dwelling, which would reduce this requirement considerably.

Any housing demand from Project personnel is likely to build over a two year period (2022-2023) rather than occur as a surge in any one quarter. Stakeholders advised that the housing market in Toowoomba did not experience any shocks from the construction of the Toowoomba Bypass. The rental cost trend in Toowoomba's central suburbs (where the majority of rental housing is located) in the three years to August 2019 (just prior to completion of the Bypass) saw an increase of 7.4 per cent, which is a low to moderate rate of increase and did not indicate any obvious effect from the construction of the Toowoomba Bypass.

However, if the availability of local rental housing stock remains low, there is potential for Project personnel to compete with local residents for rental housing or increase rental costs, resulting in less housing choice and potentially displacement of low income households from rental housing.

There is also potential for cumulative housing impacts due to the construction of multiple projects in the Project region. In the context of the currently tight rental housing market in local communities (refer Section 5.5.2), cumulative demands could impact on the availability of affordable housing, as further discussed in Section 7.6.2.

ARTC will require the Contractor to provide an Accommodation Management Plan (AMP) for the construction period (refer Section 8.4.4) to mitigate the potential for impacts on local availability of rental housing.

Property investors in close proximity to the Project have raised concerns that their properties may not be tenanted due to construction impacts such as noise and dust. If the Project anticipates requiring rental housing for personnel, it could negotiate with property investors who have vacant rental properties to enable their use. In order to avoid any impacts on the use of caravan parks by tourists or low-income households, the Contractor's AMP will be required to preclude use of caravans and cabins in the Project region.

With a requirement for approximately 15 to 20 personnel during operations, and as some personnel would be drawn from surrounding communities, no significant population change leading to housing demands is expected as a result of the Project's operational workforce.

7.3.3 Property values

Consultation participants in the Lockyer Valley and in Gowrie Junction identified concerns that property values were decreasing in local towns as the result of the Project's proposed location or fears about Project impacts on the amenity of properties. This was a source of considerable anxiety for landowners in relation to their future financial security.

The then-named Department of Natural Resources, Mines and Energy's (DNRME) most recent land valuations (DNRME, 2019e) resulted in differential changes to land values in the Lockyer Valley LGA. Overall, residential localities in the Lockyer Valley LGA saw a median increase in land valuations of 6.8 per cent since 2016, whilst the median value of rural residential land increased by 19.5 per cent and the change in total land value of rural land was 17.2 per cent.

Changes to median valuations of residential land in areas that would be traversed by the Project footprint included increases of 10.8 per cent in Ballard, 10.7 per cent in Withcott, 18.1 per cent in Postmans Ridge, 14.8 per cent in Lockyer, 14.7 per cent in Helidon Spa and 2.3 per cent in Helidon (*Ibid*).

Land values may have increased due to development activity generated by low interest rates or the quality of newer residential developments. A negative effect on property values in areas near the Project was not apparent, acknowledging that a range of other factors also influence market values.

The most recent valuations in Toowoomba LGA (DNRME, 2018) showed minor to moderate growth in the residential and rural residential markets since 2016 when it was last valued. Suburb-based information was not available for this older dataset. Increases in land valuations were attributed in part to the positive economy in Toowoomba associated with the number of major projects there (including the Brisbane West Wellcamp Airport, Grand Central shopping centre development, the Toowoomba Bypass, Charlton Industrial Estate development, the proposed Inland Rail, and the proposed Toowoomba railway precinct and parkland development).

Research on the relationship between property values and infrastructure indicates that property prices are determined by a combination of the properties' actual utility (i.e. use and amenity) and buyers' perceptions about the environmental impacts of infrastructure (Elliott 2008), with responses to perceptions of risk varying. Studies which have examined the effects of noise resulting from transport infrastructure on property values are summarised below. Research on the effects of freight rail lines on property values in Australia was not able to be identified.

A study examining the effect of traffic noise (including road and rail traffic noise) on property values in urban areas around the airport in Memphis, Tennessee (Ozdenerol, et al, 2015) noted that two previous studies had found a level of around 55 decibels dB(A) as the ambient noise level that starts to influence house prices, however Ozdenerol et al's study found that traffic noise levels of 45 dB(A) could affect housing prices in the urban areas surrounding the airport, with properties losing additional value as decibels increased. A

2015 study on rail noise and property values in the Memphis area found a decrease of 13 per cent in the assessed property value of residential property located within the 65 dB(A) contour from the railroad (Walker, 2016). Given the urban setting for these two studies, the applicability of these findings to the Project's rural and regional context is uncertain.

A study undertaken in Cuyahoga County, Ohio (USA) (Simons and Abdellaziz 2004) evaluated the impact of freight railroad tracks on housing markets between 1996 and 1999, using a hedonic price model. The researchers noted that most of the studies they reviewed for the research measured the frequency and level of noise to assess their impact on residents or property values, rather than the effect of proximity to a rail track in terms of distance. Simons and Abdellaziz's findings indicated an average loss in value between $3,800 and $5,800 (5-7 %) for smaller houses located within 750 feet (approximately 230 m) from a freight railroad track.

A study conducted as part of the Western Sydney Airport EIS (JLL, 2016) analysed the effect that aircraft and airport operations (primarily aircraft noise) may have on property prices for residential and large lot land holdings in Sydney, Adelaide, Brisbane and Melbourne. For residential properties, the study identified a strong relationship between house prices and noise exposure in the house sale price data for Adelaide and Brisbane, with an average negative effect on price of around 7 per cent in Adelaide and 11 per cent in Brisbane. For Sydney and Melbourne, the data was far less strongly correlated and indicated that house pricing was not related to or significantly influenced by aircraft noise. Analysis of impacts of aircraft noise on large lot residential properties suggested that there was no discernible or statistically significant relationship between large lot land holdings exposed to excessive aircraft noise and the sale price.

A longitudinal study undertaken by Queensland University of Technology (QUT, 2020) has analysed changes in property values in Brisbane suburbs that are subject to varying exposures to flight paths. The results for 2018 supported the previous analysis for 1988-2017, that '*exposure to aircraft noise is not the only factor that influences buyer choice and subsequent impacts on the investment return for residential property… and the suburbs under the existing runway flight paths and within the inner-city and middle ring locations of Brisbane are still showing higher average annual capital returns compared to other less well-located suburbs of Brisbane*'.

The studies summarised above were conducted in urban contexts and do not provide conclusive guidance for assessment of Project impacts on property values. Property values may be affected by a mix of factors related to the Project, including direct impacts on land and infrastructure (which will be addressed through commercial agreements between ARTC and landowners) or impacts on amenity (e.g. increased traffic or dust during construction, or noise during operation). Impacts would be differential depending on potential buyers' perceptions about potential impacts as well as the actual impacts (such as rail noise). Values may also be affected by factors which are unrelated to the Project, such as property supply and demand, agricultural commodity prices, or the effects of other projects (such as highway realignments).

Landowners' concerns about the Project's potential to change property values are acknowledged, however assessment of the likelihood and magnitude of change is not possible given the individual circumstances of particular properties, other market drivers, the variability of Project impacts, and payment of compensation according to individual agreements with landowners. As such the likelihood and quantum of the Project's impacts on property values cannot be conclusively assessed, however stress and anxiety about the potential for negative impacts on property values will result for some residents near the Project disturbance footprint.

7.3.4 Short-term accommodation

7.3.4.1 Workforce demand

As the majority of the construction workforce is expected to be drawn from Project region, adjacent LGAs and the Greater Brisbane region, the number of personnel requiring accommodation is expected to be small

and irregular, e.g. specialist crews doing short-term construction works, or small groups of engineering and project management personnel

The Project may result in occasional demands for short-term accommodation (i.e. hotels, motels and short stay units) during the construction phase, which would be experienced as a welcome increase in trade for accommodation providers.

Should a demand for short-term accommodation occur, it would most likely be experienced in Toowoomba which has a range of accommodation options. If the Project required an average of 60 rooms (equating to 10 per cent of the peak workforce) to accommodate non-local workers, this may equate to approximately 13.5 per cent of the short-term accommodation rooms assumed to be available in the Project region. This is unlikely to have to have a significant impact on tourist's access to accommodation, as there is a significant supply of short-term accommodation in Toowoomba, with other options in Helidon Spa and in nearby Gatton.

However, itinerant workers and travellers for other industries occupy short-term accommodation in the potentially impacted communities, and the Project will need to monitor demands for accommodation to ensure that these workers are not being displaced. This will include requiring personnel who need short-term accommodation to seek it in hotel and motel accommodation and avoid seeking accommodation in local caravan parks, to avoid displacing other users such as seasonal workers. The Contractor will develop an AMP to manage use of short-term accommodation (refer Section 8.4.4).

For the operational phase, the majority of workers would also return home at night, with a small number potentially accommodated locally (e.g. drivers on fatigue breaks). As such, impacts on the supply of housing or short-term accommodation are not expected.

7.3.4.2 Temporary relocation

The Project will implement a range of measures to manage and mitigate the potential impacts as summarised in EIS Chapter 23: Draft Outline EMP. Where the impact cannot be appropriately managed and mitigated (i.e. residual impacts) an option is for the temporary relocation of affected residents for the duration of the impact. This action would need to be negotiated between ARTC, the Contractor and the resident(s) on a case-by-case basis.

As described in Section 7.1.3, and assuming worst-case vibration propagation, the construction noise and vibration assessment (refer EIS Appendix O: Construction noise and vibration technical report) predicted exceedances of the most stringent night-time criterion (35 dB(A) LAS_{Max}) at up to 72 residential receptors which are located within 390 m of the tunnel. This is despite the tunnel being at a depth of over 200 m below surface level at some points. The noise and vibration model(s) will be refined during detailed design in response to detailed geotechnical data; final design and to reflect the type of tunnel boring machine being used. This information will verify the extent of impacts, inform discussions with impacted landholders and the noise and vibration monitoring program to be adopted during construction to confirm impacts.

For the purpose of assessment, a conservative approach has been undertaken to assess impacts on the short-term accommodation as a result of temporary relocations.

Approximately 12 of the dwellings affected are single dwellings on rural or rural residential lots. Assuming half of these households choose to temporarily relocate, and all choose to use temporary accommodation in the Project region, this would see approximately six households requiring accommodation over the course of tunnel construction. As these households would require accommodation at different times during the tunnel construction period this would not result in a noticeable demand for short-term accommodation.

Approximately 60 dwellings in the Habitat residential estate on the New England Highway in Mount Kynoch are also predicted to be affected by ground-borne noise exceedances. These dwellings are clustered together, with some within approximately 100 m of the tunnel construction area. As the duration for noise exceedances is not known, it has been assumed here that exceedances may be experienced by individual

receptors for up to one month. Given the proximity of these homes to the tunnel construction area, it has been assumed that approximately 75 per cent or 45 households would choose temporary relocation.

As a worst case with all 45 households choosing short-term accommodation in the Project region over other options such as staying with family or friends, up to 45 households may require accommodation for a period which is assumed for the purpose of this assessment to be around one month.

The most recently available data on hotel/motel/serviced apartment vacancies indicates that there are more than 1,300 rooms available in the Project region, of which more than 500, on average, may be available, however accommodation demands spike with major events e.g. the Carnival of Flowers in Toowoomba during September is a peak period for visitors. The demand for up to approximately 45 rooms at a time would be easily absorbed within the capacity of short-term accommodation in the Project region, with most of the demand expected to accrue in Toowoomba, and negligible effects anticipated in relation to competition for short-term accommodation.

7.4 Health and wellbeing

A community's health and wellbeing are shaped by the complex interplay of personal, social, economic, and environmental influences. A safe environment, adequate income, meaningful social roles, secure housing, higher levels of education and social support are all associated with better health. This section examines the impacts of the Project on aspects that influence health and wellbeing. A community wellbeing plan will be prepared for the Project during the detailed design phase as described in Section 8.5.4.

Social infrastructure including schools, health services, emergency services, community facilities and recreational facilities have a vital function in supporting the health, education, cultural and other social development needs of communities, and in helping the development of friendship and support networks.

The provision and location of community facilities is described in detail in Section 5.6.

With the Project located outside of urban centres (except Gowrie Junction), impacts on the amenity of or access to community facilities have been minimised as:

- The nearest childcare centre is located approximately 1.7 km south of the Project disturbance footprint where the Project is in tunnel
- Gowrie State School is the only school located within 1 km of the Project disturbance footprint (with the existing Western Line approximately 650 m to the south)
- Ballie Henderson Hospital is the only health facility within 1 km of the Project disturbance footprint
- The nearest aged care centres are more than 2.5 km from the Project disturbance footprint
- With the exception of Gowrie Junction Community Hall, the nearest community halls and centres are located more than 700 m from the Project where it is in tunnel
- The nearest church is located approximately 800 m from the Project where it is in tunnel.

With respect to recreational facilities, the Project intersects with the Bicentennial National Trail, the Helidon to Ravensbourne trail, would require acquisition of volumetric tenure under a reserve used by the Toowoomba Horse Riding for the Disabled Association Inc, and would acquire the northwest corner of the Toowoomba and Lockyer Valley Kart Club. Other recreational facilities within 1 km include McMahon Park in Gowrie Junction approximately 400 m north near of the existing rail line and Harlaxton Blocks Park, approximately 600 m south of the Project where the Project is in tunnel and where impacts are not expected.

Figure 7.1 shows the location of the Project in relation to nearby community facilities and regional land uses.

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Map by: MFALCT/GN/RB Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20200213093l_Social_Impact_Assessment\320-EAP-20200213093l_FFJV_Figure7.1_Settlements, land use and social infrastructure_v4.mxd Date: 8/05/2020 11:36

1 Northridge Haven Aged Care & Village
2 Infinite Aged Care
3 Mount Lofty Heights Nursing Home
4 Palm Lake Resort
5 Funberry Kids Childcare Centre
6 C&K Fairview Heights Kindergarten
7 Kate's Place Early Education
8 Helidon and District Community Centre
9 Gowrie Junction Community Hall
10 Heights Community Centre
11 Harlaxton Community Hall
12 Harlaxton Neighbourhood Centre
13 Teen Challenge Care Qld
14 Gateway Church Toowoomba
15 Toowoomba North Church of Christ
16 Ballie Henderson Hospital
17 Mount Lofty Lookout
18 McMahon Park
19 Darling Downs Field Archers
20 Kooringa Valley Park
21 Greenwattle St Park
22 Harlaxton Blocks Park
23 Jubilee Park
24 Withcott Acquatic Centre
25 Toowoomba and Lockyer Valley Kart Club
26 Fairview Heights State School
27 Harlaxton State School
28 Sacred Heart Primary School
29 Wilsonton State School
30 Downlands College
31 Toowoomba West Special School
32 Good Samaritan College
33 Toowoomba Christian College
34 Kingsthorpe State School
35 Withcott State School
36 Wilsonton State High School
37 Toowoomba State High School
38 Helidon State School
39 Gowrie State School
40 Rockville State School
41 Postmans Ridge Pioneer Memorial Hall
42 Katoomba Point Lookout
43 Picnic Point Lookout
44 Toowoomba Horse Riding for the Disabled

Kingsthorpe
Gowrie Junction
TOOWOOMBA
Charlton
Cranley
Blue Mountain Heights
Ballard
Mount Kynoch
Toowoomba
Lockyer
Postmans Ridge
Helidon Spa
Helidon
Withcott

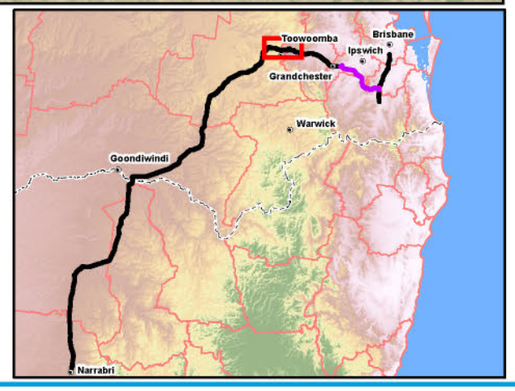
Legend

- 5 Chainage (km)
- Localities
- Existing rail
- B2G project alignment
- G2H project alignment
- H2C project alignment
- Bicentennial National Heritage Trail (BNT)
- SIA Study Area
- Local Government Areas

Regional land use categories

- Regional Landscape and Rural Production Area
- Rural Living Area
- Urban Footprint

- Aged Care
- Childcare
- Community Centres
- Hospital
- Recreation and Culture
- Schools
- Tourist Point



A3 scale: 1:100,000
0 1 2 3 4 5km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 06/05/2020 Version: 4
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Figure 7.1: Settlements, land use and selected social infrastructure

7.4.1 Schools

The nearest school to the Project is the Gowrie State School, at approximately 700 – 800 m north of the Project alignment where it is co-located with the existing rail corridor, near Ch 2.0 km.

Potential exceedances of noise criteria could occur at the Gowrie State School during both construction and operation. ARTC has consulted with the Queensland Department of Education with respect to potential noise exceedances at Gowrie State School, and will address the Department of Education's Learning Environment Guidelines with respect to mitigation of noise impacts on Gowrie State School. ARTC also met with the Gowrie State School principal and P&C president in July 2020 to discuss the Project's potential impacts on the school's environment. As advised by the school principal, in 2020 the school had approximately 200 students, with the number of new enrolments (particularly prep students) increasing each year. The Principal noted that the current rail line noise was 'in the background', with little to no noise disturbance.

In addition to mitigation of noise impacts at source (as outlined in Section 7.1.3), ARTC advised Gowrie State School representatives that mitigation of potential noise impacts at the school may include provision of architectural treatments such as façade treatments, supplementation of fences, and/or air-conditioning of affected buildings. Noise monitoring may also be conducted during construction and the early years of operation to ensure mitigation measures are effective.

The only school bus route which interfaces with the Project disturbance footprint is the Gowrie State School-Toowoomba service. The current level crossing on Gowrie Junction Road would be removed and replaced with a grade separated crossing, works would be required to Old Homebush Road, and Morris Road would be closed. This would require a suitable detour route around the works during construction in this area, but is not expected to have a significant impact on travel times. For the operational phase, the grade separated crossing would provide great safety for the school bus route with no impact on travel times.

Construction routes are expected to interact with a wide range of school bus routes on roads within the Project region (refer EIS Appendix U: Traffic impact assessment). Prior to the construction phase of the Project, bus operators and schools will be consulted and made aware of the various construction activities.

Appropriate construction traffic controls will be implemented where construction traffic is required to travel on school bus routes during pick-up and set-down times on school days. This may include limiting construction traffic at these times or installing appropriate school bus infrastructure.

Effective communications with affected communities about planned roadworks will help to mitigate the effects of traffic delays, with alternate route detours provided when appropriate.

There is potential for the cumulative impacts of road works for the Project's construction of a rail bridge over Cattos Road and the tie-in to the Inland Rail H2C project, and the H2C project's works to Warrigal, Andersons and Seventeen Mile Roads, to result in cumulative impacts on road access to the Helidon State School, e.g. traffic congestion and delays. The Project's TMP will consider the scheduling of Project works and H2C project works with respect to the key access routes to Helidon State School to minimise the potential for cumulative impacts which could result in traffic delays and/or increased travel times for families' or school buses' trips to and from the school. This may also include minimising works on access roads to the school during peak drop-off and pick-up times.

Potential impacts on schools are summarised in Table 7.3.

Table 7.3 Potential impacts on schools

Facility	Proximity to alignment (estimate)	Potential impact – construction	Potential impact – operation
Schools			
Gowrie State School	Project alignment (existing rail line) is 600 m to the south	Exceedance of noise criteria predicted due to construction works Interface of Project works with school bus route Possible minimal increase in travel time as the result of a detour being required during construction of the grade separated crossing	Exceedance of noise criteria predicted due to rail operation of 4 dB(A) above the daytime criterion on 40 dB(A) which could be reduced if windows were closed or facades installed to control the intrusion of noise Travel safety benefit through the provision of a grade separated crossing over the rail line including pedestrian and cycling facilities
Helidon State School	1.7 km to the south east of the eastern extent of the Project	Potential for cumulative impacts of Project road works and H2C road works to increase travel times to and from the school	Nil
Schools throughout the Project region	No other schools located within 1 km of the Project disturbance footprint	Potential for construction traffic to use school bus routes	No impact

7.4.2 Community facilities and services

As the majority of the Project's construction and operation workforce is expected to be drawn from the local labour pool, the Project is not expected to generate increased demands on existing education, childcare, community or recreational facilities.

Exceedances of construction noise criteria are possible at the Postmans Ridge Pioneers Memorial Hall, which is approximately 1.3 km south of the Project alignment at Ch 20.0 km, for the period during which construction activities would occur in this area. ARTC will work with the owners of this facility to identify any feasible changes which could be made to the construction methodology or timing to reduce impacts on the facilities' use and amenity.

Construction noise exceedances were not predicted for other facilities, however there may be potential for construction noise to be audible whilst construction works are nearby at:

- Gowrie Junction Community Hall on Old Homebush Road which is approximately 500 m north of the Project alignment near Ch. 2.0 km
- Harlaxton Community Hall on Gleeson Crescent Harlaxton, which is approximately 700 m south of the Project where it is in tunnel at approximately Ch 9.5 km
- Harlaxton Neighbourhood Centre on Coonan Street Harlaxton, which is approximately 900 m south of the Project where it is in tunnel at approximately Ch 9.0 km
- Gateway Church Toowoomba on Gleeson Crescent in Harlaxton approximately 800 m south of the Project where the Project is in tunnel near Ch 8.5 km.

The Project will consult with the managers of each of these facilities to explain the noise modelling results and establish communication between facility managers and the Project team, which will enable a corrective response to any noise impacts on the use of facilities. The Project will also communicate the noise modelling

results to all community facilities within 2 km of Project works and ensure they have access to Project updates and communication channels throughout the construction period.

Gowrie community members have identified the opportunity for ARTC to provide support for a newly established Gowrie Junction Multi-Purpose Community Facility. This opportunity is being considered by the Project team along with the B2G project team and will be the subject of further consultation during the post-approval stage.

Community and family support services may experience increased demands prior to and during construction, to assist people to cope with Project-related stress and/or disruptions to households' circumstances for those who would need to relocate. Community members are also likely to seek social support through community networks such as those supported by local halls and community centres.

Whilst consultation participants did not identify specific deficits in community support services, the capacity of services changes over time in response to community demands and government funding priorities. In addition to the mental health partnership described in Section 7.4.8, ARTC will consult with DCHDE prior to construction commencing, and annually during construction, to identify any Project-related stresses on local services, and if stresses on services are identified, enable a cooperative response to community needs between DCHDE, ARTC and community organisations. ARTC has also made donations and sponsorships available to community organisations in potentially impacted communities, to enable them to strengthen the provision of community programs.

Potential impacts on access to and the amenity of community facilities are summarised in Table 7.4.

Table 7.4 Potential impacts on community facilities

Facility	Proximity to alignment (estimate)	Potential impact – construction	Potential impact – operation
Community halls			
Postmans Ridge Pioneers Memorial Hall	Project alignment is approximately 1.3 km north	Exceedance of noise criteria predicted due to construction works	No impact
Gowrie Junction Community Hall	Project alignment is approximately 500 km south	Potential for audible noise (not noise criteria exceedances) due to construction works Possible delays to traffic along Gowrie Junction Road	No impact
Harlaxton Community Hall, Harlaxton Neighbourhood Centre, Gateway Church Toowoomba	Project alignment is approximately 700 – 900 m to the north, in tunnel	Potential for audible noise (not noise criteria exceedances) due to construction works	No impact

7.4.2.1 Impacts on utilities

Site preparation includes modification, diversion or realignment of any utilities and associated infrastructure which interface with the Project disturbance footprint. The Project has 184 known utility interactions, including the Roma Brisbane Gas Pipeline, TRC rising sewer main, Wetalla water pipeline and a range of power and telecommunications utilities.

ARTC will obtain the relevant agreements with the utility providers to access and work in their easements including, where required, relocation of utilities which may be done by the utility provider under relevant legislation. Utility owners have different requirements and drivers related to treating impacted assets. It is also common for impacted assets owned by the same utility owner to have varying requirements depending on the characteristics and criticality of each asset to the owner.

ARTC has held multiple discussions and workshops with utility providers to discuss Project interfaces with utilities, access to easements, proposed resolutions and the new connections process (if applicable).

The acquisition of interests in land will be undertaken in consultation with interest holders and in accordance with the AL Act compulsory acquisition process. Partial or full parcel acquisition of a property and/or acquisitions for easements and licences will be determined on a case by case basis and will consider factors such as parcel size, alignment effect, land use and operability following construction. ARTC may also acquire land by negotiation in some cases and this may occur ahead or in parallel with the compulsory acquisition process. These acquisitions will be voluntary private treaty transactions between ARTC and the property owner.

During construction, surrounding residences and businesses may experience temporary disruption to services from time to time as these services are relocated or upgraded. The Project will work with the utility provider to minimise the potential for service interruptions. Affected businesses and residences will be notified in advance of any planned interruptions.

Once operational, the Project will not impact on services and utilities within the area.

7.4.3 Health facilities and services

The Project falls across two Queensland HHS Districts (described in Section 5.6.4). The Darling Downs HHS is the major provider of public hospital and healthcare services in the Toowoomba LGA, and the West Moreton HHS provides services to the potentially impacted communities in the Lockyer Valley LGA communities.

West Moreton HHS have advised that health resources in Lockyer Valley communities are limited, with community mental health services still experiencing demand for support from people traumatised by the 2011 floods. The Project may result in increased demands for mental health services but is not expected to otherwise generate community demand on primary health care services.

The workforce of up to 596 personnel may generate an increase in demand for hospital and health services. It is likely that for the most part this would involve minor injuries and illnesses typically treated by construction team paramedics, local general practitioners and health services. Consultation with the Darling Downs HHS has indicated that patients requiring significant medical care would be treated in the Toowoomba Hospital which has capacity for the anticipated increase in demand. The District's smaller hospitals have limited ability to deal with additional trauma cases, but are unlikely to be affected. The Darling Downs HHS has recommended that:

- Paramedics be employed at worksites to reduce demand on local services as far as possible
- Workforce health care needs be planned for in advance in consultation with Darling Downs HHS to inform health service planning needs
- Helicopter access be planned for at regular intervals along the corridor to facilitate emergency responses.

Teen Challenge

Teen Challenge Care Queensland (a not for profit substance addiction treatment service) has a Teen Challenge facility at Bedford Road, Cranley near Ch. 5.5 km. Volumetric tenure would be required over the northern corner of the property which is used by livestock. The Project would be in tunnel some 350 m north of the facility's buildings, at a depth of approximately 105 m and whilst exceedances of ground-borne noise criteria were not identified for this facility, and with little likelihood of impacts on the amenity of the facility, the potential for ground-borne noise to be audible at the facility should be communicated to Teen Challenge Care Queensland.

7.4.3.1 Baillie Henderson Hospital

The Baillie Henderson Hospital is a specialist psychiatric care facility located approximately 1 km south of the Project and in line with the intermediate ventilation building at Cranley. The Queensland Government has identified the hospital site as the preferred location for a major health precinct (Darling Downs Health. 2019). Baillie Henderson Hospital representatives were advised about the indicative Project location during SIA consultations in 2018, while they were commencing master planning for the new hospital campus.

ARTC met with Baillie Henderson Hospital representatives during August 2020 to provide an update on the Project, receive an update on the planned new hospital campus and receive feedback on the Project's potential impacts including noise, vibration, traffic impacts and air quality. Discussion included the function of the intermediate ventilation shaft (i.e. draw down of air, with the release of air during an emergency) and discussion of any potential for the intermediate ventilation shaft to conflict with the flight paths of helicopters accessing the hospital. Baillie Henderson Hospital representatives indicated that construction of the hospital will most likely commence after the Project is complete and will take approximately four- five years.

While the alignment is in tunnel as it passes the hospital, the noise exceedance criteria are lower for hospitals, and assessment of construction noise impacts has identified the potential for exceedances of noise criteria (ground-borne noise) within the hospital campus. There may be potential for noise from construction works such as those required or the intermediate ventilation tunnel to be audible at the Hospital. A draft master plan has been developed for the new hospital and involves construction of a collection of four-story structures over 75 ha, in a phased manner over time. The current draft master plan does not propose development of land closest to the Project corridor.

The hospital plant and equipment (which is not sensitive to vibration) will be closest to the Project tunnel alignment at approximately 980 metres. Mental health in-patients were sensitive to vibration during the construction of the Toowoomba Bypass, however the ward that was affected will be moved as a result of the hospital redevelopment so this is not of concern.

There may be potential for construction traffic on roads used to access the hospital (e.g. Hermitage Road), and this will be discussed with Hospital representatives during the detailed design phase when construction haulage routes are confirmed to identify any specific considerations with regard to hospital access roads during construction, to be considered as part of the TMP.

The tunnel ventilation building height may be of concern in relation to helicopter flight paths to the hospital, and it was agreed that this would be further considered in planning the hospital campus in order to avoid any impacts on existing or future planned helicopter flight paths. ARTC will provide information on the ventilation outlet design, location and construction timeframe when this is confirmed as part of the detailed design to support this planning.

The LVIA (refer EIS Appendix H: Landscape and visual impact assessment technical report) determined that while there would be a change to views from the Ballie Henderson Hospital as a result of the intermediate ventilation building, due to the distance the magnitude of change would be low.

The air quality impact assessment (Appendix K: Air quality technical report) indicates that tunnel venting would not worsen air quality at any sensitive receptor, including Baillie Henderson Hospital, and hospital representatives were not concerned about changes to air quality as a result of the Project's operation.

ARTC will continue to engage with Baillie Henderson Hospital representatives during the detailed design phase to provide Project updates and discuss any potential for construction traffic impacts on access roads to the hospital to be considered in the TMP. ARTC will also continue consultation with Queensland Health during the Project's detailed design process, to ensure co-operation and co-ordination during construction of the Projects and the proposed new Toowoomba Hospital at the Baillie Henderson Hospital site.

7.4.4 Police and emergency services

Emergency services are provided from police, ambulance and fire stations based in Toowoomba, Gowrie Junction, Highfields, Oakey and Helidon. Large scale emergency support is provided from Toowoomba. Disaster management in the Project region is co-ordinated through local disaster management plans for each LGA, administered by the TRC and LVRC under the Section 57(1) of *the Disaster Management Act 2003 (Qld).*

The construction workforce would see a minimal redistribution of the 'daytime' population in the Project region, but may lead to an increase in demand for traffic policing on roads used to access the Project. Emergency service providers anticipate that the Project would increase demands on their resources during construction through a combination of:

- Workplace accidents
- Remoteness of and difficulty of access to some worksites
- Technical requirements for in-tunnel incidents
- Increased traffic accidents associated with workforce commuter traffic and an increase in heavy haulage and large load vehicles
- Theft of materials from laydown areas (in particular, metal theft)
- Disputes about land acquisition or protests about the Project.

Accessibility for emergency services could be impeded during construction at rail-road interfaces or where changes to road networks are proposed. The Project will establish effective communications with first response services, and notify them in advance of planned road closures/interruptions and large load movements.

Emergency access has been addressed during the Project design process. A Rail Maintenance Access Road (RMAR) strategy has been developed as a part of the design to provide access to the rail corridor during construction and operation for emergency service vehicles. The RMAR aims to provide access to the full length of the alignment and regular access has been provided from the RMAR to public roads. In addition, a number of' 'hi-rail' access points were added to enable hi-rail vehicles (a dual-mode vehicle which can operate both on rail tracks and a conventional road) to access the full length of the corridor even if there is a train breakdown, with the provision that the rail line would be shut down in an emergency. There would be several possible helicopter landing sites along the rail corridor and at the tunnel portals. Helicopter access arrangements require complex calculations and will require consultation between the Contractor, relevant specialists and emergency services during the detailed design process.

Consultation with QFES and local rural fire brigades during the detailed design phase will continue including discussions on the location and design of access tracks servicing the Project, emergency access and egress from the Project, along with the actions required of the Project in order to ensure emergency services continued access to areas that they are currently able to service.

Early planning and clear, regular communication would be needed to ensure that service providers are well briefed on the nature of incidents that may be occur, enabling them to plan ahead for the additional resources needed. Measures to reduce the impacts of Project construction on emergency services include:

- Advice to providers about pre-construction works, the construction schedule, the number and nature of vehicles and plant to be used, construction hours and construction personnel numbers
- Provision of a forward schedule for Project activities requiring oversized vehicle escorts to police in all emergency services bases

- Early engagement with police and emergency services to develop a clear understanding of roles and command responsibilities (particularly in relation to in-tunnel incidents), co-operative mechanisms and protocols for emergency responses
- Ongoing, regular co-operation with police and emergency services providers to plan for the operational phase.

The local disaster management group may be an appropriate forum to discuss some of these matters.

Early and regular communication would also be needed between the rail operator and the local disaster response co-ordinator (including the QPS, QFES and QAS) to be continued for the life of the Project, to plan for effective disaster management co-ordination and emergency response. This may need to include a protocol between the rail operator and relevant emergency service providers that clearly sets out roles, responsibilities and expectations for communications.

The operational workforce would not create any significant population increase and is therefore unlikely to result in any increased demand for local health services. However, any road/rail accidents associated with derailments, in tunnel incidents such as fire, rail load loss, hazardous goods spills or other major incident would place significant demands on health and emergency services resources for immediate response (police, ambulance and fire services).

The removal of the level crossing on Gowrie Junction Road would improve accessibility for police and emergency services to Gowrie Junction. The use of viaducts to main accessibility across the Project including on known evacuation routes will also benefit police and emergency services. Measures to reduce the impacts of Project operation on emergency services include:

- Developing clear understanding of roles and command responsibilities (particularly in relation to in-tunnel incidents), co-operative mechanisms and protocols for emergency responses between the rail operator and police and emergency services
- Ongoing, regular co-operation with police and emergency services providers to plan for the operational phase
- Removing all level crossings and employing on grade separated crossings at rail / road interfaces.

7.4.5 Recreational and cultural facilities

The Toowoomba Horse Riding for the Disabled Association (THRDA) is located on a reserve (Lot 10 on AG89) near Ch 7.5 km. The proposed Toowoomba Range tunnel traverses under the land parcel at a depth of 105 m in this area. Dependent on geological factors there is a possibility that ground-borne noise maybe experienced during tunnel construction, which could scare riders or horses, however if it occurs this will be a temporary impact.

ARTC has consulted with the THRDA, advising that volumetric acquisition of the reserve would be required, and that there is potential for ground-borne noise to affect the reserve whilst the TBM is in the vicinity. Based on the noise and vibration assessment a 390 m distance has been identified where the Project does not meet the criteria for a sensitive receptor (i.e. house and open space).

Engagement with THRDA has also involved provision of funding through ARTC's Community Donations and Sponsorship program to enable an upgrade to the facility's fencing.

The Project is located on the northern boundary of the reserve utilised by THRDA, removed from the Association's facilities and yards, but the northern boundary area can be used for riding activities. Ground-borne noise could affect the reserve for a period of approximately 1-2 months at some point in the construction schedule, depending on the progress of the TBM.

THRDA are well-practiced in maintaining safety for their riders and this will be supported by ongoing communication with THRDA to ensure any risks to riders are avoided. This will require advice during the detailed design phase of the indicative timing for the TBM's passage near and under the reserve, and advice at least one month prior to the point where the TBM would be 500 m from the reserve's boundary, including predicted ground-borne noise levels, the area that could be affected and the duration of the impact. This will enable THRDA to avoid use of the area which may be affected during that timeframe, and to advise their riders and staff/volunteers about the cause of any noise heard and the areas to be avoided.

The Project will require surface acquisition of the northeast corner of the Toowoomba and Lockyer Valley Kart Club property at Helidon Spa. ARTC has met with representatives of the Kart Club to explain the potential for land acquisition and to negotiate land access. There should be no impacts to the Kart Club's operations as the track and club facilities would not be impacted by the Project footprint. The club allows training at limited times during the week and holds monthly race meetings (on Sundays when Project construction would not occur) and occasional weekend carnivals. There is the possibility that construction of the viaduct over Lockyer Creek and the existing Main Line will result in noise affecting the amenity of the facility during Project construction, however the Kart Club facility generates significant noise itself, so this is not expected to affect its use or amenity.

The Project will intersect the Bicentennial National Trail on Gittins Road near Ch 17.0 km (north of Withcott) and works required to construct the viaduct over Gittins Road may disrupt access or amenity of the Trail during construction. ARTC met with a representative of Bicentennial National Trail in June 2020 to provide a Project update with particular detail about the Murphy's Creek - Withcott area. It was noted that there could be a temporary interruption to the Trail's connectivity during construction, but grade separations would preserve the connectivity of the Trail during operation. The possibility of temporary disruptions to the Trail's connectivity was not identified as a significant concern. ARTC has committed to consideration of the Trail's connectivity as part of detailed design, in consultation with the Bicentennial National Trail Ltd Board, to minimise the extent of any disruption to access. The Project would also be located adjacent to Airforce Road in Helidon, which is part of the route for the Helidon to Ravensbourne circuit through the Lockyer National Park, requiring consideration of pedestrian and mountain bike access during construction.

LVRC officers have raised the need for consideration of use of land not needed after construction (i.e. within the temporary disturbance footprint) with potential to connect these parcels to existing trails and public spaces or fire access trails, supplementing the amenity of trails. The appointed Constructing Authority will make decisions about the future use of land which is acquired for construction purposes and not required for the permanent footprint, and will be advised of Council's suggestion. Table 7.5 summarises the potential for impacts on parks and recreation facilities.

Table 7.5 Potential impacts on parks and recreation facilities

Locality	Facility Impacted	Proximity/Affect	Nature of potential impact
Withcott	Bicentennial National Trail	Intersects with Project disturbance footprint near Ch 16.8 km	Works required to construct the viaduct over Gittins Road may disrupt connectivity or amenity during construction. Connectivity would be maintained during operation.
Helidon	Helidon to Ravensbourne Trail circuit, a mountain bike trail	Follows Airforce Road west of Helidon adjacent to the disturbance near Ch 25.0 km	The realignment of Cattos Road to the west and north and then linking back to Airforce Road, north of the existing Airforce Road/Cattos Road intersection may disrupt traffic along Airforce Road, property access or amenity during construction. Connectivity would be

Locality	Facility Impacted	Proximity/Affect	Nature of potential impact
			maintained during operation. The new intersection may also provide a better line of sight.
Helidon Spa	Toowoomba and Lockyer Valley Kart Club	Northwest corner of lot directly affected by Project disturbance footprint near Ch 24.0 km	Direct land requirement Construction noise and dust
Prince Henry Heights	Katoomba Point Lookout (also representative of Jubilee Point Lookout)	3.4 km south of the Project disturbance footprint near Ch 13.0 km	Impact on views over multiple bridge and laydown areas during construction, and over alignment and structures during operation.
Rangeville	Picnic Point Lookout	6.5 km south of the Project alignment near Ch 13.0 km	Noticeable visibility of the Project due to vegetation clearing for the construction of the alignment, viaduct structures, laydown areas, road alterations during construction, and over structures and freight trains during operations.
Cranley	Toowoomba Horse Riding for the Disabled Association Inc	The Project traverses under the property (Lot 10 on AG89) which is State Land between the QR West Moreton System and Goombungee Road	Volumetric resumption Ground-borne noise from tunnel construction and operation. Potential safety issue should noise alarm horses and cause a fright and flight risk
Cranley	Cranley Escarpment (scenic attraction)	1.2 km southwest of the alignment near Ch 5.0 km	Impact on visual amenity not identified

7.4.6 Access to natural resources

7.4.6.1 Project impacts on groundwater and surface water

The Project's potential to affect landowners' access to water was a key community concern, heightened by the long periods of drought that farmers and graziers in the Lockyer Valley and Toowoomba LGAs have endured. Farms and agribusinesses in and near the Project disturbance footprint rely predominantly on groundwater (primarily through water bores) and surface water extraction (e.g. dams and licenced water allocations from creeks). Some properties have access to water supplied by Queensland Urban Utilities.

Landowners and other community members are concerned that water storage or collection infrastructure could be damaged, and that the Project's use of water will restrict access by other water users.

There are 14 registered bores within the temporary disturbance footprint (not within the predicted drawdown extent) where the potential exists for these bores to be damaged or become inaccessible or more difficult to access, and these are likely to be decommissioned. Two bores are located above the Toowoomba Range tunnel and these may also be decommissioned to protect the integrity of the tunnel or avoid impacts during tunnelling activities. There may also be additional bores that are made inaccessible through land severance, and there is potential for unregistered landholder bores to be present within the predicted impact extent.

As noted in EIS Chapter 14:

- landowners directly affected by the Project will be consulted to confirm the location of registered bores, establish the presence of any unregistered bores within the Project footprint, and where a groundwater bore is expected to be decommissioned or have access to it impaired as result of the Project, agree 'make good' measures with the affected landowner which may include monetary compensation developed on a case-by-case basis.

- a groundwater bore survey will be undertaken during the detailed design phase to accurately capture all groundwater bores (registered and unregistered) within the groundwater study area, including identification of landowners with unlicensed bores (i.e. those with stock and domestic bores) (Section 14.8)
- the Project will continue collection of baseline groundwater monitoring data (levels and quality) during the detailed design phase to establish a baseline against which construction phase impacts can be monitored and compared. Baseline groundwater monitoring data will be used to derive location/bore specific groundwater monitoring procedures, establish location/bore specific impact thresholds and establish responses to impact threshold exceedances, including 'make good' agreements (EIS Chapter 14 Table 14.29).

ARTC consultation with landholders near the proposed tunnel section alignment in early November 2020 identified interest in whether the tunnel through the Toowoomba Range could result in groundwater drawdown, and how this water would be treated. An undrained tunnel (as proposed by the Project) is designed as a watertight structure, to limit groundwater ingress into the tunnel and minimise groundwater level drawdown (refer EIS Appendix N: Groundwater technical report). As discussed in EIS Appendix N: Groundwater technical report, any water inside the tunnel will be collected via drainage pits throughout the tunnel, connected by a drainage pipe to convey to the tunnel collection sump(s) located at the eastern tunnel portal and then to a Water Treatment Plant, with any separated pollutants held for collection by a licensed waste contractor.

An assessment of the groundwater resources within and near the Project disturbance footprint identified the potential to impact groundwater users during construction, due to a temporary drawdown of localised groundwater levels and the possibility that groundwater drawdown as a result of tunnelling activities could occur. This has the potential to temporarily affect the availability of groundwater from bores (refer EIS Appendix N: Groundwater technical report). As currently assessed, a total of 48 registered bores were identified within the drawdown extent, of which two are within the Project disturbance footprint and would be decommissioned. The extent of drawdown on individual bores will range widely and the likely extent of impact on each bore has not yet been determined.

ARTC plans to make good impairments resulting from the construction and/or operation of the Project on a case by case basis to ensure that the bore owner has access to a reasonable quantity and quality of water for the water bore's authorised use or purpose.

EIS Appendix N: Groundwater technical report provides detailed proposed mitigation measures for the potential impacts on groundwater resources, including:

- Engaging with relevant landholders to confirm the location of existing bores, identification/confirmation of new monitoring bore locations, and procure access agreements to existing registered groundwater bores
- Continued collection of baseline groundwater monitoring data (levels and quality)
- Engaging with licensed user to determine an appropriate mitigation strategy
- Entering into make-good arrangements with the owners of groundwater bores as necessary.

The Project's potential to impact on other users' access to surface water (e.g. from creeks and drainage catchments) was assessed in EIS Appendix L: Surface water technical report. The impact to water plans (supply and conveyance) within the disturbance footprint was assessed as minimal due to limited overland flow interference and no diversion of defined watercourses. Surface water will be diverted downstream of the western tunnel portal and there are unlikely to be changes to overland flows associated with known farm dams as a result of the Project.

EIS Appendix L: Surface water technical report notes that potential impacts on surface water users relate primarily to impacts on water quality (e.g. from increased debris, altered water quality and hydrology, an increase in erosion and sedimentation or introduction of contaminants), and that this may have transient impacts to local water users, potentially restricting access to human drinking water, stock water and crop irrigation

The assessment identified that for the Project's construction and operational phases, the combination of design considerations and mitigation measures (refer EIS Appendix L: Surface water technical report) relevant to surface water quality would be sufficient to mitigate most potential impacts, such that the residual significance would be low.

7.4.6.2 Project construction water requirements

The Project construction water requirement is predicted to be 700 megalitres, including raw and potable water. The TBM operations will require a significant amount of water, some of which may be sourced from within the Project disturbance footprint during construction (i.e. groundwater infiltration into the tunnel).

As discussed in the EIS Appendix L: Surface water technical report, sources of construction water will be finalised as the construction approach is refined during the detailed design phase of the Project (post-EIS) and will be dependent on:

- Climatic conditions in the lead up to construction, including soil moisture
- Confirmation of private water sources acquired for the Project (e.g. acquisition of land and registered interests such as farm dams and water entitlements)
- Confirmation of private water sources made available to the Project by landholders or other stakeholders under private agreement, including recycled water
- Confirmation of access agreements with local councils and State government agencies/corporations for sourcing of mains water for such activities as concrete batching purposes, including the water network operated by Queensland Urban Utilities within the area east of Murphys Creek Road.

ARTC has met with TRC to discuss construction water requirements and the options available, and has also met with current users of water from the Wetalla Wastewater Treatment Plant (New Hope Group and Millmerran Power Station) who noted that they have capacity under their existing arrangements with TRC to supply water for the Project's construction. Potable water is also required, with a pipeline proposed to link the western tunnel portal into the TRC water network (primarily for firefighting purposes), while in the Lockyer Valley LGA, potable water will be sourced from Queensland Urban Utilities' water network.

ARTC's consultation with private groundwater bore owners indicates that some are strongly opposed to the use of their bores, whilst some are very willing to offer access to bores for the Project's construction as this would provide a source of income whilst bores are being used.

Landowners who identified groundwater drawdown during the construction of the Toowoomba Bypass which they related to the construction of new groundwater bores to supply the construction of the Bypass were concerned that the Project would also require new bores. Drilling of new bores has been included as the Project's hierarchy of preference for accessing construction water as the least preferred option.

Construction water sources and demand will utilise a hierarchical approach to confirming the suitability of water sources. EIS Appendix L notes that the hierarchy of preference for accessing construction water is generally anticipated to be as follows:

- Commercial water supplies where capacity exists including existing infrastructure, well understood water systems, available water volumes known, licensing in place
- Use of treated recycled water from tunnel dewatering activities during construction

- Treated water, e.g. from wastewater treatment plants (e.g. Wetalla Wastewater Treatment Plant) or recycled water pipelines
- Public surface water storages, i.e. dams and weirs
- Permanently (perennial) flowing watercourses
- Privately held water storages, i.e. dams or ring tanks, under private agreement
- Existing registered and licensed bores, e.g. the use of water allocations and licenses associated properties earmarked for acquisition, or use by agreement with the owners of bores
- Drilling of new bores (least preferred option).

This will include identification of opportunities to utilise dewatered artificial impoundments (where impacted along the alignment) for construction purposes.

This hierarchy is expected to avoid or minimise impacts on other water users. An assessment of the suitability of each source will need to be made for each construction activity requiring water during the detailed design phase.

Licenses, approvals and agreements to access water from sources identified in the finalised construction water strategy will be obtained and may include water licenses under the Water Act 2000 (Qld) or access agreements with bulk water suppliers or private landholders. ARTC is seeking clarification from the Department of Regional Development, Manufacturing and Water (DRDMW) regarding the process for obtaining water authorisations (e.g. water licence or water permits) relevant to the different water plans applicable to the Project and the proposed purpose of use, and criteria for selection of options to minimise impacts on stakeholders who hold existing water licences.

In summary, effects on stakeholders' water access are expected to include direct impacts on bores within the Project disturbance footprint and indirect (drawdown) impacts on other bores. The Draft Outline EMP (EIS Chapter 23: Draft Outline EMP) provides that ARTC will undertake a landholder bore survey to identify the location of any bores (licenced or unlicensed) that may be lost due to construction or operation, and engage with bore owners to determine an appropriate mitigation strategy (for example replacement of water supply, if required). A groundwater monitoring strategy is also recommended to provide an ongoing assessment of potential impacts on bores. This is expected to reduce the potential for impacts on groundwater users in relation to registered and unregistered bores, and it has been assumed here that mitigation strategies including make good arrangements where necessary will neutralise any impacts on other water users.

ARTC will consult with affected bore owners to identify compensation or 'make good' arrangements (i.e. replacement of the water source), however the loss of bores or loss of water from bores may lead to short-term impacts on farm management.

7.4.6.3 Wildlife

The potential for impacts on wildlife, including koalas, is a concern to the community. The Project's potential impacts on terrestrial and aquatic ecology have been assessed and are detailed in EIS Appendix I: Terrestrial and aquatic ecology technical report which describes the potential to impact on flora and fauna (predominantly during the construction phase) e.g. through habitat loss, change, or fragmentation, injury to fauna, displacement of flora and fauna by weed and pest species, noise, or barrier effects (i.e. changing fauna's movement patterns).

The Project includes the Toowoomba Range tunnel and elevated structures which will assist to maintain the connectivity of wildlife corridors. In addition, fauna fencing and fauna crossings to facilitate safe and effective movement of fauna will be provided where a risk of population fragmentation occurs (refer EIS Appendix I: Terrestrial and aquatic ecology technical report). Vegetation within the alignment will also be removed in

these areas to ensure that fauna are not encouraged into the active track area. Where there is a high presence of koala movements within an area, fauna fencing will be designed as koala fencing.

The footings of the structures have also been designed to avoid impacts to riparian zones and instream habitats. EIS Appendix I: Terrestrial and aquatic ecology technical report provides a suite of management measures to avoid or reduce impacts on flora and fauna. Compensation in the form of compensatory habitat, land rehabilitation and/or contribution to research are also identified as offsets to account for the residual impacts potentially resulting from the Project.

An Environmental Offset Plan for the Project will be prepared as part of the Project's detailed design phase, supported by further investigations and in consultation with the relevant State and Commonwealth departments.

7.4.7 Health and environmental qualities

7.4.7.1 Noise and vibration

The World Health Organization (WHO) states that “excessive noise seriously harms human health and interferes with people’s daily activities at school, at work, at home and during leisure time" and can disturb sleep, cause cardiovascular and psychophysiological effects, reduce performance and provoke annoyance responses and changes in social behaviour (WHO, 2013).

WHO’s noise Guideline Development Group notes that the main body of evidence for its recommendations on railway noise was based on annoyance studies, with few reliable studies for other health outcomes available, so there is uncertainty about the effects of rail noise on health. Sleep deprivation is known to affect physical and mental health. The potential for ground-borne vibration to annoy people was also noted (*Ibid*).

As noted in Section 7.1.3, the Project’s construction will result in noise levels which could exceed the Project’s noise criteria, and may cause frustration and anger for residents exposed to noise, particularly those who would experience noise for longer periods e.g. in relation to viaduct and bridge construction. ARTC and its contractors will implement the mitigation and management measures proposed in EIS Appendix O: Construction noise and vibration technical report, which are expected to reduce the level and/or frequency of noise exceedances. ARTC will also undertake proactive consultation with residents within 1,000 m of the rail corridor to identify specific concerns and where possible, tailor any site-specific noise mitigation which are required to address residents’ needs.

With the exception of tunnel construction, works which could cause exceedances of night-time noise criteria would not generally be conducted. As described in Section 7.1.3, vibration from the operation of the TBM would result in ground-borne noise for residents near the tunnel whilst the TBM is operating near them, with (as a worst case) up to 72 residential receptors affected over the course of tunnel construction. Mitigation measures for this impact will be developed in consultation with the affected residents and may include residents’ temporary relocation.

With respect to operations, the maximum rail noise trigger levels are designed to manage the potential for sleep disturbance impacts. The assessment of rail noise (refer Appendix P: Operational railway noise and vibration) determined that there were up to 32 residential receptors along the Project alignment where the predicted noise levels were above the maximum night-time trigger levels, triggering investigation of mitigation for these properties. The noise assessment also identified two roads which will be impacted by road noise, while no noise impacts (exceedance of relevant thresholds) are anticipated as a result of tunnel operations.

ARTC and the Contractor will implement the mitigation and management measures proposed in EIS Appendix O: Construction noise and vibration technical report and EIS Appendix P: Operation railway noise and vibration, which is expected to minimise the potential for noise impacts to result in sleep disturbance.

ARTC will also establish consultative arrangements that are accessible to all residents living near the Project footprint, including implementation of ARTC's Complaints Handling Management Procedure (refer Section 8.2.5). If complaints about noise or vibration indicate that a particular section of the rail line or a specific freight rail service is contributing to unacceptable impacts on amenity, ARTC will investigate and implement measures to address the cause of the concern.

7.4.7.2 Air Quality

This analysis of health and air quality relies on the results of the air quality impact assessment reported in EIS Appendix K: Air quality technical report.

Construction activities such as earthworks, blasting, land clearing and truck movements over unpaved surfaces during (e.g. and blasting) may generate airborne contaminants (such as silica) that may pose a health risk, with a particular risk to tunnel construction workers (further details are provided in EIS Chapter 20: Hazard and risk, Section 20.8.2 and Section 20.10). The assessment of hazards reported that no naturally occurring asbestos was found to be present during geotechnical investigations undertaken in relation to the Project, however asbestos-containing materials may be present in infrastructure within the Project footprint including sheds, houses and existing rail infrastructure (EIS Chapter 20: Hazard and risk, Section 20.7).

As noted earlier in Section 7.1.3, the results of air quality risk assessment for the Project indicate that while unmitigated air emissions from the construction phase of the Project could pose a risk to human health, with effective mitigation of construction dust sources, the residual impact on both dust deposition and human health will not be significant.

Residents living near the Project (and particularly near crossing loops) have raised concerns that diesel emissions from freight trains will affect air quality, with potential to have adverse impacts on their health. Diesel emissions contain concentrations of particulates, including black carbon, and have been declared a carcinogen by the World Health Organisation (New South Wales EPA, 2019). Residents are also concerned about the potential for the tunnel's ventilation system to purge and distribute emissions which could harm their health, and about the potential for coal dust to affect their amenity or health during operations. There is also potential for plumes from the tunnel portals to be visible to residents, depending on weather conditions. This is likely to raise concerns regarding effects on air quality.

Overall, there is limited research on human exposure to $PM_{2.5}$ (fine particulate matter) emissions from diesel trains (Jaffe et al. 2015). Studies have reported that emissions from diesel trains are a potential health hazard, though they may only be significant in rail yards and enclosed rail stations (Jaffe et al. 2015, Rail Safety and Standards Board, 2016). The ventilation system design has been developed with consideration to the movement of passenger trains through the tunnel.

The Project will cater for existing freight operating in the QR West Moreton System rail corridor, including coal freight. Coal dust has been raised as an issue by the local communities. There is limited Australian research on links between coal dust from trains and health impacts to residents along the alignment. A Queensland investigation into PM_{10} and $PM_{2.5}$ particle levels along SEQ's Western and Metropolitan rail systems evaluated the effectiveness of a coal wagon veneering trial. It found little difference in particle level variations associated with different trains during both the pre- and post-veneering monitoring periods, suggesting that coal dust was not likely to be a significant pollutant. Based on these findings, the Queensland Department of Health concluded that the dust concentrations measured were unlikely to result in any additional adverse health effects (Department of Science Information Technology and Infrastructure 2014). By contrast, an article on environmental justice and health by researchers from the University of NSW and others describes 'environmental injustice in the way health authorities respond to residents' health concerns about coal dust', citing data on residents' lived experience as evidence that coal dust causes ill health (Higginbotham et al 2010).

The results of air quality impact assessment for the Project's operation indicate that compliance with air quality goals has been predicted for all pollutants of concern, including drinking water impacts for all identified sensitive receptors, with the exception of one dwelling which is in the Project disturbance footprint and would be acquired. Full details are provided in EIS Appendix K: Air quality technical report.

However, community concerns about air quality changes may persist regardless of the EIS findings. Clear and transparent communication about the EIS air quality assessment findings may assist to reduce community concerns.

ARTC would establish consultative arrangements that are accessible to all residents living near the Project footprint, including implementation of ARTC's Complaints Handling Management Procedure (refer Section 8.2.5). If complaints about dust indicate that a particular section of the rail line or a specific freight rail service is contributing to unacceptable levels of dust, ARTC will investigate and implement measures to address the cause of the concern.

7.4.7.3 Waste management

Waste and resource management is discussed in EIS Chapter 21: Waste and resource management including the source and relevant waste streams during the different Project phases, impacts, mitigation measures and management strategies pertaining to Project wastes, with an emphasis on adhering to the waste management hierarchy. It also describes the Project's generation and management of waste which will include green waste from vegetation clearance, construction and demolition waste, general waste, hazardous waste and recyclables.

Waste disposal from the Project and will predominantly occur at commercial facilities. Available and permissible annual capacity of waste management facilities will be confirmed in consultation with the relevant operators once the timing for construction of the Project is determined.

The risks of excessive green waste, reduction of community access to landfill, controlled or uncontrolled release of waste affecting land, surface waters or dependant ecosystems were rated as possible during the construction phase, whilst an increase in greenhouse gas emissions and a decrease in amenity arising from waste transportation activities were rated as likely. During the operational phase, controlled or uncontrolled release of waste was rated as possible, whilst maintenance works could also potentially affect community access to landfill facilities, or result in an increase in waste-related transportation.

EIS Chapter 21: Waste and resource management outlines mitigation based on an assessment of design data and infrastructure availability, following the waste management hierarchy with avoidance/reduction of waste as the most preferred management option, and disposal the least preferred option. EIS Chapter 7: Sustainability provides an assessment of the Project against sustainability objectives and identifies opportunities to improve sustainable outcomes.

7.4.8 Mental health

Anxiety, depression and hypertension are amongst the most common health issues in Australia and can have either a temporary or prolonged effect on a person's quality of life and day-to-day functioning (Harrison et al. 2017; Commonwealth of Australia. 2004). Mental health is one of eight national health priority areas designated by the Australian Government and the State governments (Australian Institute of Health and Welfare, 2018). When people are in good mental health, they are generally able to manage day to day events, work towards their goals and function effectively in society. The Project is likely to have both positive and negative effects on community mental health through creating employment for some and affecting the quality of life for others.

Community engagement for the SIA has revealed stress and anxiety already present in the community about the potential for the Project to erode local quality of life for some as the result of property acquisition, noise and visual impacts, or disruption to farms and other business/investment opportunities. It was also noted that

some local communities have been severely stressed by floods and by drought, making some community members more vulnerable to mental health issues, and raising anxieties that the Project would impact on water resources or exacerbate flooding risks. Some community members identified having Post Traumatic Stress Disorder as the result of working in the defence forces and/or flooding events. Community members who participated in the SIA community survey also perceive change to be difficult, rating their capacity to adapt to change lower than other community attributes (refer Section 6.3.1).

Consultation has also revealed feelings of anger, fear and distrust relating to the Project's potential impacts. Research shows that for people who oppose them, major projects can raise stress levels, erode peoples' sense of control and cause distress induced by environmental change (University of Melbourne, 2018).

7.4.8.1 Construction

Many people whose properties would be acquired for the Project are experiencing stress and anxiety about property resumptions, and in relation to concerns about Project impacts on their amenity quality of life. Several of the potentially impacted communities are still recovering from the impacts from construction of the Toowoomba Bypass, and feel unable to endure another major infrastructure project in their community.

Consultation with Traditional Owners emphasised that there are a number of features with cultural heritage value to Indigenous people in the Project region (refer Section 6.3.5). Indigenous people view their health in a holistic context that encompasses mental health, physical, cultural and spiritual health, with land also central to wellbeing (NACCHO, 2019). Any severance from or damage to these features may add to an ongoing sense of cultural loss and dislocation, with potentially of negative effects on health (Laverty et al., 2017; Australian Government Department of Health and Ageing, 2013).

Construction at road/rail crossings is likely to impede travel times for residents, businesses, school bus services and emergency services, which may also cause frustration for local people.

In summary, property acquisitions, construction noise, disruption to cultural associations, and disruption to local connectivity and travel times are likely to generate frustration and anxiety within the local communities, potentially impacting mental wellbeing and health for some. The primary triggers would be:

- Uncertainty for landowners about impacts on property values (including compensation), acquisition process (including timing and duration), ability to achieve future plans and potential for property acquisition
- Concern about the potential for homes, farms and roads to be impacted by floods or increased flood duration
- Noise and vibration disturbance, particularly for residents in proximity to the Project disturbance footprint
- Disruptions caused by route severance and travel time delays for everyday community mobility needs, and for conducting business, farming, emergency and other service activities
- Needing more information about Project impacts which will not be available until the EIS is complete and/or detailed design is undertaken for the Project.

In isolation or in combination, these triggers for stress and anxiety may affect individual, family and community wellbeing.

Inland Rail is committed to supporting the wellbeing of communities impacted by the Inland Rail Program and recognises that early activities during the feasibility stage may cause concern or anxiety in the community. To address this, ARTC has developed a mental health partnership initiative with the Darling Downs and West Moreton PHN to:

- Promote local, independent mental health services which are accessible to stakeholders at no cost

- Ensure local mental health services, including General Practitioners, are aware of Inland Rail progress in local areas
- Provide resources to services to mitigate any increased demand caused by Inland Rail.

Early implementation has resulted in increasing the availability and access to Beyond Blue's New Access program. The service provides mental health support for residents in communities along the Inland Rail alignment which can be easily accessed through a phone call. This program has been selected as it is utilising and strengthens existing mental health services rather than replicating and competing with existing providers. Additionally, mental health training for ARTC staff who engage with stakeholders has been undertaken.

ARTC will provide transparent and accessible information to landowners and local community members about the property acquisition process, disruptions to the road network, the results of the EIS, and the strategies proposed to mitigate impacts on health, amenity and connectivity.

The Project will maintain ongoing engagement with landowners who are adjacent to the disturbance footprint throughout the construction phase (subject to their agreement, as some will be fatigued by Project consultation). This engagement will focus on supporting affected residents' wellbeing, through assistance to access and understand Project and EIS information, support for effective resolution of complaints, and timely information about environmental changes such as demolition of dwellings within the Project disturbance footprint, road realignments and activities which will cause noise.

The Project would generate direct employment opportunities with a predicted peak workforce of 596 people in year 2. Access to stable employment supports mental health by enabling financial and housing security, self and family care, and social connections, all of which are beneficial to mental health, particularly for people who were previously unemployed. These benefits would be enhanced if the Project employment is obtained by community members in areas and groups where unemployment rates are high (such as in Mount Kynoch, Helidon, Gowrie Junction and Kingsthorpe, as well as Indigenous people and young people in the Project region) (refer Section 5.7.2).

7.4.8.2 Operation

Communities such as in Murphys Creek, Helidon Spa and Helidon are highly sensitised to the impacts of flooding as a result of the 2011 floods which caused the deaths of community members and the destruction of towns, homes and farms, and are concerned about the Project's potential to change or increase flood impacts. Assessment of Project-related changes to hydrology (EIS Appendix M: Hydrology and flooding technical report) indicates that there is minimal cause for concern, but anxiety about flooding is expected to persist, at least until the Project and local communities have endured a major flood event.

The Project's operation would generate low and high frequency noise associated with running trains and trains idling at crossing loops, along with the operation of the tunnel. Whilst noise exceedances are expected to be mitigated by the measures outlined in EIS Appendix P: Operational railway noise and vibration, the Project's operation would generate long-term noise exposure for properties near the rail corridor. Noise exposure is defined as any unwanted, uncontrollable, or unpredictable sound (van Kamp, et al (2008)). Long-term noise exposure is associated with anxiety and depression, and can contribute to headaches, sleep disturbance, and adverse physiological effects (including cardiovascular health, muscular tension and hormonal changes) (Commonwealth of Australia 2004; van Kamp et al. 2008).

An estimated 12-15 per cent of the general population is likely to be extremely sensitive to noise, with people who have an existing mental health issue (such as anxiety or depression) likely to be more sensitive (Commonwealth of Australia. 2004; van Kamp et al. 2008).

Along with noise exposure, other factors which could contribute to stress and/or anxiety include disruptions to farming activities (e.g. movements across the rail corridor) and concerns about property values or flooding

risks. In combination, these stressors have the potential to affect the mental health of affected or adjacent landowners.

ARTC will ensure that adjacent landowners to the Project have access to ongoing engagement mechanisms which support their awareness of Project impacts and mitigation, including noise, air quality, visual and flooding impact management, and ensure a timely resolution to complaints regarding environmental stressors such as noise and vibration.

As noted above, ARTC has developed a mental health partnership to implement a mental health program in the potentially impacted communities.

It may also be necessary for local councils or State Government authorities to develop appropriate land use planning standards to mitigate the noise and vibration impacts on future development along the rail line, to reduce the risk of contributing to health issues for prospective residents.

The Project is expected to lead to the establishment of new and/or expanded businesses and industries, increasing employment opportunities for people in the region, which may have positive mental health benefits for the individuals employed.

7.4.9 Suicide

Suicide occurs at a higher rate when multiple risk factors are present, including mental illness, substance misuse, socio-economic disadvantage and social isolation (Public Health. 2014). Evidence shows that access to a lethal means is a key risk factor in turning thoughts of suicide into actual suicide.

The Project would increase the opportunity for rail-based suicide attempts by providing access to a lethal means. Rail suicide is usually fatal - few survive the incident (82 per cent of all rail fatalities in Australia in 2016/17 were suspected suicide) (Centre for Research and Intervention on Suicide. Undated). Introduction of a lethal means may lead to an increased rate of suicide in communities where there is already an elevated risk such as in the Lockyer Valley – East SA2 (refer Section 5.7.6).

Suicide causes deep trauma within the affected families, friends and communities, and can exacerbate existing mental health issues in communities, particularly in communities where trauma levels are already high (such as in disadvantaged and drought affected communities). Train drivers and rail employees who witness suicide incidents are also affected, and can experience severe mental, physical and emotional trauma with lasting impacts. In many cases employees do not return to work (TrackSAFE Foundation. 2019). Rail suicide also creates significant demands and trauma for first response emergency services such as ambulance and police services.

An international literature review found evidence in support of mitigation strategies that are multifaceted, including:

- Restricting access to the rail corridor
- Media reporting guidelines to reduce the risk of copy-cat behaviour
- Suicide prevention programs including community and school-based programs
- Gate-keeper and primary healthcare provider training
- Telephone-based support services (Toronto Public Health, 2018).

Research also highlights the importance of delivering best practice in trauma counselling and management for rail employees who are impacted by rail suicide (TrackSAFE Foundation, 2019).

The Project incorporates a tunnel of approximately 6.24 km, along with grade separated road crossings and elevated structures such as viaducts, which will reduce access to the rail corridor. ARTC has established a mental health partnership to support access to mental health services (refer Section 7.4.8). As part of its

mental health partnership ARTC will explore the need for suicide prevention programs to be delivered in local communities.

7.4.10 Community safety

Feeling unsafe can influence levels of anxiety and can be a barrier to community participation and accessing services. The responses to the community survey conducted for this SIA valued their community as being family-oriented and safe. On the whole (as reported in Section 5.7.7), there appears to be a high level of perceived personal safety much of the SIA study area. The exception appears to be in the North Toowoomba-Harlaxton/Wilsonton areas where people tended to feel less safe, corresponding with higher crime rates recorded in these areas. The Project is not likely to alter the social circumstances in these areas contributing to feelings of safety.

Given that the Project would be unlikely to generate an influx of new people to the area and that construction would generally be during daylight hours, it is unlikely that perceptions of safety ('stranger danger') would change. However, the location of work sites near private homes might engender anxiety about perceived personal safety for some residents. The Project will implement a range of strategies to reduce residents' concerns about privacy or safety, as outlined in Section 7.2.5.

Opportunistic crime, such as construction materials theft, will be mitigated through the adoption of site security measures (refer EIS Chapter 20: Hazard and risk). No changes to personal or property safety are anticipated during the operation phase.

7.4.10.1 Domestic and family violence

Domestic and family violence (DFV) has significant immediate and longer term impacts on the health and well-being of victims. While the reasons for domestic violence are complex, contributing factors include drug and alcohol abuse, irregular or intermittent work, mental health issues (including anxiety), stress and historical trauma (such as racial discrimination and disadvantage).

Improved access to employment could remove one trigger for domestic and family violence and reduce occurrences. However, heightened anxiety related to disrupted accessibility, travel times, noise and other disturbances associated with the Project could increase the risk of violence. On balance, the Project is not expected to have a significant impact either way on levels of family and domestic violence.

7.4.10.2 Traffic safety – construction

During construction there would be large and oversize loads interacting with other traffic, including school buses, which operate on several of the roads affected by the Project (refer Section 7.1.8). There would also be increased traffic movement generated by employees from within the region driving to work sites. Impacts may include deterioration of road surfaces due to truck weights, dust and safety issues associated with fatigued or inattentive commuters.

Construction works will occur within the Project footprint including the existing rail corridor and existing road reserves.

The traffic impact assessment (refer EIS Appendix U: Traffic impact assessment) considered the potential for construction traffic to affect road safety on the local traffic network, including the transportation of construction equipment and plant, sleepers, concrete, tunnel spoil, construction materials, construction supplies, water and commuting workers. Water will be supplied to various points along the alignment by water trucks for activities including earthworks, haul road maintenance, dust suppression, trackwork and concrete batching.

EIS Appendix U: Traffic impact assessment identified 12 roads with a potentially high safety risk associated with Project construction, but with mitigation applied, the assessment noted that risk can be reduced to a medium level of risk. These roads grouped according to the road asset owner were:

- DTMR Roads: Gatton Helidon Road, Ipswich Motorway, Ipswich-Cunningham Highway Connection Road, Logan Motorway, Murphys Creek Road, New England Highway, Pacific Motorway, Toowoomba Connection Road and the Warrego Highway
- New South Wales Road and Maritime Services: Pacific Motorway (as sleepers will be sourced from Grafton, NSW)
- LVRC: Postmans Ridge Road
- TRC: North Street.

The Project's TMP will outline detailed strategies to mitigate potential impacts on road safety, including a Fatigue Management Plan to manage driver fatigue (applicable to all heavy vehicle operators). A Road Use Management Plan will also be prepared as part of the detailed design phase. This will be supported by communication strategies to ensure stakeholders know about construction traffic routes, peak construction periods, the Project's workforce conduct policies, and how to contact the Project staff in the event of any concerns.

As described in EIS Chapter 23: Draft Outline Environmental Management Plan, road safety measures will be implemented taking into consideration speed restrictions, driver fatigue, in-vehicle communications, signage (e.g. road signs stipulating reduced speed limits as per the relevant TMP), demarcations, maintenance, safety checks, existing level crossings, and interaction with public transport, transport of hazardous and dangerous goods and emergency response and disaster management.

For works within the rail corridor, requirements will be determined in consultation with QR with the aim of minimising disruptions to existing rail traffic. For example, QR track possessions will generally be allocated over weekend periods, with extended track possessions occurring over holiday or non-seasonal periods (i.e. outside of grain movement periods).

ARTC is developing a comprehensive road-rail safety education program which will be initiated in potentially impacted communities during the construction and operational phase.

7.4.10.3 Traffic safety – operation

The traffic and transport assessment for the Project (EIS Appendix U: Traffic impact assessment) concluded that as the operational phase of the Project is expected to be limited to rail maintenance workforce movements and the delivery of maintenance materials, Project operation would have a minimal impact on road and rail network operational performance.

Safety risks associated with Project operation include derailment, tunnel and train fires, runaway trains due to the gradient and railway-based suicide. Design includes egress from the tunnel and the large structures, fire management systems in the tunnel and emergency service access. The Project will enable the diversion of existing rail traffic off some sections of the QR West Moreton System rail corridor which may enhance existing safety.

Road/rail safety issues are not anticipated during operation as there will be no level crossings along the alignment. Fencing will be provided for most of the extent of the rail corridor primarily to limit trespass, along with excluding livestock.

Nonetheless, ARTC will develop a safety education program which has a clear focus on rail safety, and is committed to continued delivery of railway safety messages to the community, through community engagement activities and campaigns to increase public awareness. Fact sheets and guidelines are also available on the ARTC website, which provide guidance to the community regarding safety around rail

infrastructure. A Communication and Education Plan will be designed and implemented prior to the commencement of operations to provide information about Inland Rail operations and safety.

7.4.10.4 Hazards

EIS Chapter 20: Hazard and Risk identifies potential hazards relevant to the Project's construction and operations phases. Risks that remain with a medium residual risk ranking that are relevant to the construction phase include:

- Potential incidents related the risk of bushfire or interference with emergency access
- Flooding or severe weather events, including exacerbation of natural events by climatic conditions
- Impacts on greenhouse gas emissions
- Landslide, sudden subsidence or movement of rocks or soil
- Increased use of road vehicles for the Project
- Construction of the Toowoomba Range tunnel portals (including potential for use of explosives), bridges and viaducts
- Interaction with existing underground and overhead utilities
- Health and environmental impacts from contaminated land.

Risks that are relevant to the Project during operations include dangerous goods freight transport, trespass in the tunnel, restricted fire trail access, and derailment fire in tunnel. The risk assessment considers these hazards to be of low to medium risk. As outlined in ARTC's Risk Management Procedure, a residual rank of medium is considered tolerable if reduced so far as reasonably practicable given the low frequency of occurrence (or probability or likelihood) or minor impact associated in the event of such incidents occurring, following the proposed mitigation.

Hazard mitigation measures have been developed for the Project and will be applied throughout its lifecycle (discussed in EIS Chapter 20: Hazard and risk). Controls include mitigation measures incorporated into engineering and design development, in addition to management strategies and procedures for construction and operations. The management of risks throughout the life of the Project will involve ongoing reporting, monitoring, reviewing and documentation. The Project will also ensure that the requirements of the safety management system are implemented and communicated to all personnel.

The Project will adhere to ARTC Emergency Management Plan, which provides a work procedure for managing recovery from an investigation of emergency requiring significant and coordinated responses on the ARTC network.

At the national level, the Inland Rail Business Case (ARTC, 2105) anticipates that the Inland Rail Program as a whole will remove 200,000 truck movements from roads each year, resulting in improved road safety, a reduction in serious accidents, reduced truck volumes in regional towns, and a reduction in carbon emissions.

7.4.10.5 COVID-19 Safety

Should appropriate controls not be implemented, workers (as for all community members) could potentially contribute to the spread of COVID-19, which could result in increased strains on health services and could trigger COVID-19 restrictions with implications for social and economic conditions in the Project region. Inland Rail's COVIDSafe Plan and management responses to the COVID-19 pandemic have been informed by close monitoring of guidance provided by various Government Departments, WHS Regulators and industry bodies on controlling the spread of COVID-19 and ensuring workplaces remain COVIDSafe. As

described in Section 8.5.7, ARTC and the Contractor will implement COVIDSafe plans and procedures to minimise any risk of contributing to the spread of COVID-19 infections.

Stringent safety protocols have been put in place in hospitals, healthcare facilities and aged care facilities across Australia to protect healthcare workers and visitors. The Project does not anticipate any physical interaction between construction personnel and aged care or health facilities. Personnel will observe social distancing (and comply with other health advice which pertains from time to time) in all stakeholder interactions and visits to businesses, community facilities and other properties.

7.4.10.6 ARTC support for community projects

Inland Rail's Community Sponsorships and Donations program supports community-initiated projects, events or activities which:

- Are one-off and short-term
- Focus on one or more of Inland Rail's priority areas of culture, safety, environment, recreation and, entrepreneurism
- Align with the core values of Inland Rail which are future thinking, active engagement, no harm, and results.

The desired social outcome for Community Sponsorships and Donations is to contribute to the community's wellbeing, prosperity and/or sustainability.

Sponsorship and donations are open to organisations and community groups which are not-for-profit, legal entities which hold a current ABN, non-incorporated community groups and clubs that are auspiced by an eligible legal entity, Aboriginal Land Councils and Traditional Owner Groups in the alignment area, and Local governments in the alignment area. Community projects funded through the Community Sponsorships and Donations program within communities near the Project alignment to date include:

- A refresh of the Kath Dickson Family Centre Toy Library in Toowoomba
- Purchase of a barbecue for the Darling Downs Historical Rail Society in Drayton
- Enhancement of Western Wakka Wakka People's Banda Culture Centre
- An annual garden party fundraiser run by the Biddeston State School P&C
- Office equipment for the Gambuwal People
- Braking the Cycle (a volunteer driver mentor program) delivered by PCYC in Toowoomba
- Gym equipment for Teen Challenge Care Queensland in Cranley
- Newborn baby care packs for Toowoomba Hospital Foundation
- Replacement and repair of fencing for the Toowoomba Horse Riding for Disabled Association
- Christmas party for the Pyjama Foundation in Toowoomba
- Public speaking course for Lockyer Valley Toastmasters Club
- A facility upgrade for the Locker Valley Netball Association
- The purchase of an AED defibrillator and wall cabinet for Toowoomba Lapidary Club
- Purchase of fitness equipment for Teen Challenge
- Installation of windows blinds for the Gowrie Juncion P&C Association community hub
- Purchase of eight ipads for STEM classes for Withcott P&C Association
- Heat sensing equipment installed in vehicles for Murphys Creek Fire Brigade
- Rollout of a fve-week beginners' course for West Toowoomba Croquet Club
- Removal and replacement of inoperable shade covers for the Toowoomba Bowls Club.

ARTC is consulting with TRC and LVRC regarding other community/Council initiatives to support and enhance community amenity, character and cohesion, as part of the Community Wellbeing Plan described in Section 8.5.4.

7.5 Business and industry

This section discusses the Project's potential impacts and benefits for businesses and local industries.

7.5.1 Farms and agribusinesses

Agriculture is central to the Project region's way of life and economy. The agriculture, forestry and fishing industry, and primarily the agricultural sector, accounts for approximately 3,300 business in the Toowoomba LGA and 850 businesses in the Lockyer Valley LGA. These include farming, cropping, grazing and associated agricultural service businesses, many of which are small family businesses. However, the region also includes Withcott Seedlings which is a large agribusiness supplying farms throughout the Project region.

The Lockyer Valley is widely acknowledged as a highly productive region, which grows a wide range of fruit and vegetable crops. The Lockyer Valley LGA's Community Plan 2027 (Lockyer Valley Regional Council 2017a) aims to continue to position the Lockyer Valley as a leading agricultural production zone in Australia, whilst as noted previously, the Darling Downs Regional Plan notes that the Darling Downs region's economy is largely driven by the agricultural sector, with food processing industries emerging as a strength.

7.5.1.1 Regional productivity

The Project is generally within the Gowrie to Grandchester future State transport corridor which was protected as future railway land and is consistent with State land use planning expectations for the area. The Project crosses agricultural land including irrigated seasonal horticulture and grazing on pasture and native vegetation. Agricultural land classified as being Class A (land that is suitable for a wide range of crops) or Class B (land that is suitable for a narrow range of crops) is the most productive agricultural land in Queensland (Department of Agriculture, Fisheries and Forestry. 2013). The Project will sterilise some productive agricultural land located within the Project disturbance footprint.

Assessment of impacts on agricultural land, detailed in EIS Chapter 8: Land use and tenure, notes that some areas of Class A and Class B have already been sterilised. This includes areas associated with the existing QR West Moreton System rail corridor, road reserves, Toowoomba Bypass and Toowoomba Waste Management Centre.

The land use assessment (EIS Chapter 8: Land use and tenure) indicates that approximately 51.65 hectares (ha) of Class A land and 3.03 ha of Class B land within the permanent disturbance footprint (outside of existing rail and road corridors) will be sterilised as a result of the Project. Approximately 98.81 ha of land within the permanent disturbance footprint is also located within an Important Agricultural Area (IAA).

Within the temporary disturbance footprint (located outside of existing rail and road corridors) approximately 24.17 ha of land classified as Class A land and 3.45 ha classified as Class B land will be temporarily used for construction of the Project. Of these areas, land is primarily used for grazing. Approximately 42.78 ha of land within the temporary disturbance footprint is also within an IAA.

Of Class A land within the permanent disturbance footprint, , 32.82 ha is located in the Toowoomba LGA and 4.58 ha is located in the Lockyer Valley LGA. The areas of land that would be sterilised and no longer available for agricultural use represent less than 0.1 per cent of either LGA's Class A and Class B land.

On this basis, land acquisition requirements are not expected to lead to significant impacts on the Project region's agricultural productivity.

7.5.1.2 Impacts on farming and grazing operations

Land acquisitions are described in Section 7.1.2, noting that the majority of land acquisitions involve partial 'fenceline' acquisitions of cropping and grazing properties in Charlton, Gowrie Junction, Ballard, Lockyer Withcott, Postmans Ridge Helidon and Helidon Spa. Within the Lockyer Valley LGA, the permanent disturbance footprint affects one lot where the predominate use is irrigated seasonal horticulture, which is a carrot farm near Snellings Road at Helidon Spa, and would require relocation of the property's access arrangements. There are also 33 lots within the Lockyer Valley LGA where the predominate use is grazing and acquisition would be required, ranging from acquisition of less than 10 per cent per cent for ten lots, between 10 per cent and 40 per cent for 20 lots, and with full acquisition likely to be required for three lots (ranging in size from approximately 2,000 – 6,000 m^2). Several of these lots are located on steep vegetated land with minimal to no current grazing use.

Within the Toowoomba LGA, the permanent disturbance footprint affects approximately five lots where the designated predominate use is cropping, including three mixed cropping lots in the Gowrie Junction/Krienkes Road area. The percentages of the lots to be acquired ranges from 0.2 per cent to 16.3 per cent, and the Project is engaging with the landowners to implement measures to maintain the connectivity of these properties.

Approximately 44 lots within the Toowoomba LGA where the designated predominate use is grazing would be affected by acquisition, with percentages of the lots to be acquired ranging from 0.2 per cent (small fenceline acquisitions) to 100 per cent for some small lots which are part of larger grazing operations.

Cropping and grazing operations may include several lots, and the loss or relocation of cropping and grazing operations due to land acquisition does not currently appear likely. However, final decisions regarding land acquisition will be made in cooperation between the appointed Constructing Authority and affected landowners.

ARTC has conducted individual consultations with affected landowners to identify and minimise the potential for impacts on highly productive areas, farm management practices and farm infrastructure.

Impacts on grazing and cropping properties include:

- Severance of private roads between land parcels (as discussed in Section 7.1.8)
- Severance of lots where bores and other infrastructure such as drainage structures or fences are located
- Potential for encroachment on pasture production areas
- Traffic delays where routes to markets are affected by traffic or roadworks.

Where loss of agricultural land was unable to be avoided, the Project design placed the rail corridor on or as close as possible to property boundaries to reduce potential fragmentation and sterilisation of properties. Where land would be fragmented or isolated, any impacts on operational farm requirements such as impacts on access, infrastructure and services will be managed and reinstated as soon as possible.

Community members have also raised concerns about how the loss or disruption of use of land for agistment will be managed, and have been advised (through the Lockyer Valley CCC) that agreements will be negotiated with individual landowners about the management of their properties, including establishing and maintaining property access, fencing and maintenance of agistment arrangements.

As noted in Section 7.1.2, landowners will be entitled to claim compensation for the acquisition of land or an interest in land, in accordance with the AL Act, which may include costs related to purchase of replacement comparable land, removal and relocation of assets and infrastructure, compensation for the severance of land and the impact upon the remaining land, and/ or other reasonable financial costs incurred that are a

direct consequence of the resumption of the land. Any significant impacts on property use are expected to be minimised by the terms of mitigation and compensation agreements (discussed in Section 7.1.2).

The Project will provide community liaison staff with local knowledge to work with landowners who are directly affected by or adjacent to the rail corridor, to address property-specific concerns and impacts.

7.5.1.3 Alterations to stock routes

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

As the rail corridor is likely to be fenced or constructed in a manner that prevents stock moving onto the rail line, the Project has the potential to alienate and isolate parcels used for traveling stock. Consultation by ARTC with landholders is ongoing to identify impacts, if any, to these informal stock routes. More generally, the inclusion of viaducts within the Project design will provide ongoing permeability across the Project for stock movements.

7.5.1.4 Land contamination and biosecurity

Project activities, particularly through construction, have the potential to disturb existing contaminated soil or groundwater, or to cause further land contamination through leaks, spills, or the transport and movement of existing contaminated soil or groundwater. The transport and movement of people, vehicles and machinery during construction, or the transport and movement of goods in operation, also have the potential to increase biosecurity risks relating to the spread of weeds. Within the Lockyer Valley LGA, the potential for the Project to contribute to the spread of fire ants was also a concern.

Land contamination, biosecurity risks, changes to water surface hydrology, erosion and sedimentation have the potential to impact on agricultural land, with potential effects including reduced soil quality, reduced productivity, and increase in costs to agricultural operations. These impacts are further discussed in EIS Chapter 9: Land resources, EIS Chapter 11: Flora and fauna and EIS Chapter 13: Surface water and hydrology.

EIS Appendix U: Traffic impact assessment technical report identified a biosecurity risk associated with transporting materials in which pests and weeds can be conveyed (including water, soil and quarry products), potentially impacting agricultural production and practices. Appropriate checks and controls will be required to mitigate this risk (refer EIS Chapter 20: Hazard and risk for further details).

7.5.2 Other nearby businesses

In addition to farms and grazing properties, business traversed or near the Project disturbance footprint include:

- In Charlton, horticultural businesses adjacent to the existing rail line on Leesons Road
- In Gowrie Junction, the Gowrie One Stop Convenience Centre (store and fuel sales) on Old Homebush Road approximately 450 m north of the rail line around Ch 2.0 km, and Gowrie Landscape Supplies on Old Homebush Road, approximately 200 metres north of the rail line around Ch 2.0 km, both of which would also be adjacent to construction works associated with the realigned section Gowrie Junction Road
- In Cranley:
  - Birdsong Market Garden (organic farm) on Boundary Street located approximately 600 m south of the western tunnel portal. The Project passes approximately 70 m beneath Birdsong Market Garden where the Project is within the proposed Toowoomba Range tunnel near Ch 4.5 km

  - Toowoomba Waste Management Centre which is a landfill for waste from large commercial customers, with the Project passing approximately 95 m beneath the landfill where the Project is within the proposed Toowoomba Range tunnel near Ch 6.0 km
  - A lot within the light industrial area near the intermediate ventilation shaft at Ch. 6.8 km, where the predominate use is manufacturing and industrial, and where existing uses are not expected to be affected
  - An agricultural/light industrial use on Bedford Street off Hermitage Road approximately 500 m south near Ch 6.0 km where the Project is within the proposed Toowoomba Range tunnel
  - A bird feed manufacturer and a beef and beef bone stock manufacturer on Hermitage Road, approximately 500 m south near Ch 7.0 km where the Project is within the proposed Toowoomba Range tunnel
- In Ballard, an agricultural/transport enterprise approximately 580 m north near Ch 11.0 km
- In Postmans Ridge, Withcott Seedlings, traversed by the Project at approximately Ch 22.0 km – Ch 23.0 km
- In Helidon, road transport businesses on Airforce Road near Ch 25.0 km.
- InterLinkSQ Global Logistics Site at Lockyer, where the Project would require partial acquisition of land.

Properties that are traversed by the Project will be subject to land acquisition under the AL Act.

Where the Project is in tunnel (from approximately Ch 4.0 km to Ch 10.0 km) the distance between the tunnel and horticultural agricultural/manufacturing and transport businesses is likely to preclude the potential for ground-borne noise, based on the estimated maximum distance of 390 m from the tunnel where ground-borne noise could exceed noise criteria (refer Section 7.1.3). Any impacts such as dust or noise relating to track construction past horticultural businesses would be transitory as works move along the disturbance footprint. There is potential for the businesses identified above to be affected by changes to travel conditions as discussed below.

There is potential for a change to traffic access to be experienced at the landscaping supplies business in Gowrie Junction as the result of its proximity to track construction and a large laydown area, and the Gowrie One Stop Convenience Centre may also be affected by construction noise while works are occurring on Old Homebush Road.

There is also potential for construction works along Airforce Road in Helidon to affect traffic movement of the transport business located near Ch 25.0 km. These businesses requested that road corridor widths for Airforce Road are maintained, particularly as their businesses include transport of explosives, which requires wider turns to access driveways. ARTC has accommodated this request in the design of the Project.

The potential for disruption of access to local businesses during construction is of concern given they are highly dependent on vehicular access. ARTC is working with all businesses where construction noise would impact on their amenity and/or where road access arrangements would change as the result of Project construction works or the Project's operation to ensure a satisfactory level of access is provided for businesses.

The Birdsong Market Garden in Cranley is located approximately 600 m from the western tunnel portal. The Project passes approximately 70 m beneath Birdsong Market Garden when within the proposed Toowoomba Range tunnel at Gowrie Junction and as such will not have a direct impact on the land use or tenure of this property. There is potential for blasting and/or road headers used in construction of the western tunnel portal to cause noise for short periods, and for concern about dust from portal construction and/or the laydown area. Monitoring of air quality/dust deposition at this farm may be required during construction and potentially during the early operations to assure the business' owners that no negative effects are being experienced.

Withcott Seedling Farm is a major agricultural business which is of high importance to local and regional farms. The Project would traverse the Withcott Seedlings, which has been the subject of detailed discussion with the business's owner to minimise the impacts of the Project. The water supply for Withcott Seedlings is located to the west and east of the permanent disturbance footprint when traversing through Withcott. To minimise potential impacts of a loss in water supply and disruption to the internal access, the Project has been re-aligned to minimise direct impacts on water infrastructure, and includes a proposed grade separation over the internal access track which provides access between the water supplies. This will require partial land acquisition for the permanent disturbance footprint.

Laydown areas are proposed to the north and south of Withcott Seedlings to accommodate the construction of the bridge required for grade separation. Where the Project requires land for construction in this area, there is potential to disrupt the farm's operations during construction. The Project would also require partial acquisition of land within the InterLinkSQ Global Logistics Site. ARTC has been working with InterlinkSQ to optimize the interface between the Project and plan for management of impacts on QR and TRC utilities in this area.

Land used by businesses will be acquired via compulsory acquisition or commercial agreement with the property owners, and any significant impacts on their amenity or use are expected to be mitigated by the terms of these agreements.

Project demands may result in shortages in specific trades (e.g. welding) or skilled occupations (e.g. earthworks), particularly in the context of cumulative impacts of Inland Rail and other major construction projects, other affecting other businesses' access to trades.

7.5.2.1 Business access to road network

The Project's construction is likely to lead to temporary disruptions to road access, including road works which may cause delays for product movement, including during harvest periods. The following roads have been considered as connectors for businesses and primary producers to their wider market and may be impacted by construction works:

- Gowrie Junction Road
- Morris Road
- Gittins Road
- Boundary Street
- Toowoomba Bypass
- Goombungee Road
- New England Highway
- Jones Road
- McNamaras Road
- Howmans Road
- Murphys Creek Road
- Air Force Road.

Along with an increase in traffic due to construction or workforce vehicles, roadworks are likely to cause temporary delays to farm transport vehicles and transportation businesses.

The Withcott commercial centre which includes the Withcott Hotel, a supermarket, a pharmacy, café and service station at Jones Road/ Warrego Highway is more than 4 km from the EIS investigation corridor and would not be directly affected by Project works, but depends on Jones Road (where works are required to construct a rail over road bridge) as a primary access route. ARTC has met with the centre's owners and will continue to cooperate with them to minimise impacts on vehicular access to the centre.

In the longer term, the Project could mitigate current issues surrounding the quality and capacity of transport networks to meet current and future requirements (e.g. competition for access to rail freight and bottlenecks in the transport network). Any diversion of rail transport from the West Moreton System to Inland Rail is also likely to improve traffic conditions (e.g. decreased delays at level crossings) in the Toowoomba city centre.

Inland Rail will better connect the Darling Downs and SEQ regions, as well as improve their connections to domestic and international markets. This will also support the development of associated future industries. There is the further potential for private and public partnerships to expand currently available infrastructure and delivery services, and extend the region's road and rail network, further catalysing future development of the region's agribusinesses.

7.5.3 Tourism

The Lockyer Valley and Toowoomba LGAs have growing strengths in tourism, including a strong day-tripper market based around the natural environment (e.g. hiking and camping), farm and food tourism, and community events. The Lockyer Valley Tourism Destination Plan 2018 – 2023 (Stafford Strategies. 2018) notes that visitation to the Lockyer Valley has increased over the past ten years, and that domestic day trippers represented 69 per cent of the LGA's tourism market during 2015-2017.

Direct impacts such as land acquisition or noise exceedances were not identified in relation to tourism businesses. There is potential for road works, earth works, bridge construction and the appearance of laydown areas to affect tourists' general experience of the area and their travel times during construction, with potential to affect visitation levels. The visual impact assessment (EIS Appendix H: Landscape and visual impact assessment technical report) concluded that the Project is considered likely to result in visual impacts up to high significance during construction for three viewpoints, including southeast from Keira Court, Blue Mountain Heights, looking north from Katoomba Point Lookout on Prince Henry Drive, Prince Henry Heights looking northeast from Picnic Point Lookout with Picnic Point Parklands at Rangeville. Other impacts of up to moderate significance are anticipated. These will be temporary whilst construction activities are undertaken in particular areas but some tourists may be deterred from visiting areas near the Project during these times. There is also potential for access to the Bicentennial National Trail north of Withcott to be disrupted during construction as discussed in Section 7.4.5.

There is also potential for diminished scenic amenity due to the Project's location within the rural landscape during operations. As noted in Section 7.1.5, the visual impact assessment concluded that the Project is considered likely to result in impacts of high significance on representative views during operation, prior to the application of mitigation measures, relating to impacts on views from Paulsens Road and Junction Street in Gowrie, Keira Court in Blue Mountain Heights, Katoomba Point Lookout at Prince Henry Heights, Picnic Point Lookout at Rangeville, Warrego Highway near Gittins Road in Postmans Ridge, and Murphys Creek Road near the Toowoomba Bypass, (refer to EIS Appendix H for further detail).

The location of viaducts was also identified as concern by community members and tourism businesses, who were concerned that they would damage the Valley's brand as a scenic and green landscape, and detract from the amenity of businesses with a view to the Valley for the life of the Project. As noted in Section 7.1.5, assessment of landscape impacts (EIS Appendix H: Landscape and visual impact assessment technical report) identified landscape impacts of significance during construction and operation in forested uplands within the Toowoomba escarpment, dry croplands (at Gowrie Mountain and Gowrie

Junction), in grazing landscapes (at Postmans Ridge) and in rural settlements, with visual impacts also identified in relation to viewpoints and lookouts.

As noted in Section 7.1.5, EIS Appendix H: Landscape and visual impact assessment technical report has recommended a rage of strategies to reduce impacts on scenic character during construction and operation. The scale of the impact of changes to scenic amenity on visitation is impossible to ascertain. Some visitors will see the Project as diminishing rural character, and others will find interest in Project structures. The occurrence of rail lines is common in rural areas so the Project may not be seen as intrusive on scenic amenity, however the nature of the change will be significant where elevated structures and the rail line's operation are highly visible.

When the Project's detailed design is confirmed, ARTC will consult with the two Councils (LVRC and TRC), and with tourism-related businesses (including accommodation facilities, farms, restaurants, cafes and specialty shops) located within 5 km of the Project with a view to facilitating a shared understanding of how impacts resulting from Project works, changes to the road network or noise/vibration may affect tourism businesses. The Project will then develop a strategy, working with tourism associations and the Toowoomba and Lockyer Valley Councils, to ensure that generalised impacts on tourism values (such as traffic disruptions on key local tourist routes and impacts on visual amenity) are reduced wherever possible.

The Project will also work with the Lockyer Valley Tourism Association and Tourism Darling Downs to support their monitoring of visitation levels and promotional and marketing campaigns during the construction period and the first two years of operation. This is expected to offset deterrence of tourists as a result of the Project‘s construction.

7.5.4 Local supply opportunities

The Project is likely to provide significant opportunities for local and regional businesses to participate in its supply chain. Supplies and services which will be required during the Project's construction are summarised in Table 7.6. Pre-cast concrete may be sourced from Ipswich, ballast material will be sourced from local quarries, and other major components such as fencing may be sourced within the Project region. Inland Rail is currently undertaking a procurement process for the manufacture and supply of sleepers for the Inland Rail Program. The outcomes of this procurement will determine the location of the sleepers' suppliers.

Project construction will also require a range of services which may be sourced from within the Project region as shown in Table 7.6.

Table 7.6 Construction inputs

Supplies	Services
Pre-cast concrete	Tree clearing
Ballast material	Electrical installation and instrumentation
Concrete sleepers	Rehabilitation and landscaping
Pre-built and panelled turnouts	Trades services (e.g. boiler makers and welders)
Steel	Professional services (e.g. environmental scientists, engineers, human resources)
Fencing	Traffic management and security services
Electrical components	Earthworks
Fuels and oils for plant and equipment	
Rehabilitation supplies (mulch, trees)	

SIA consultation participants noted that local businesses offer an extensive skills base which has recently been strengthened by Toowoomba Bypass construction and gas fields developments.

In 2017, there were 2,539 construction industry businesses in the Toowoomba LGA, and 538 construction industry businesses in the Lockyer Valley LGA (refer Section 5.4.3).

Between 2015 and 2017 the number of construction businesses had increased by 3.9 per cent in Toowoomba (an additional 95 business) and by 10.5 per cent in the Lockyer Valley LGA (an additional 51 businesses), indicating growing industry strength to service major construction projects.

The transport, postal and warehousing industry sector represents a smaller but important sector, accounting for 276 businesses in the Lockyer Valley LGA (7.0 per cent of the LGA's business) and 936 businesses in the Toowoomba LGA. The Project represents an important source of trade for transport businesses during construction. Over time, long haul transport trips are expected to reduce in number, but the Project is likely to facilitate an expansion of opportunities for transport from logistics centres during operations.

The majority of businesses in both LGAs were owner-operated or small businesses with less than 20 employees, with just 2.2 per cent of businesses in the Lockyer Valley LGA and 2.4 per cent of businesses in the Toowoomba LGA employing 20 more people. Consequently, there is a broad business base in the region from which to draw for Project construction. However, there is a large number of small businesses that may need to develop their capacity to participate in the Project's supply chain, a point confirmed in consultation with the Toowoomba and Surat Basin Enterprise and local Chambers of Commerce.

Project supply opportunities during the construction phase may represent a substantial source of trade and an opportunity for local business growth. Businesses located in Toowoomba, or near the Warrego Highway at Helidon or Withcott, include fuel stations, cafes and hotels which are likely to benefit from construction personnel's expenditure as they pass through the Project region.

For the operational period, services will be required for:

- Track maintenance
- Rehabilitation
- Maintenance of electrical and signalling infrastructure
- Level crossing and access track maintenance.

Inland Rail will promote the DSDILGP's online business capability training programs to businesses interested in supplying the Project. The potential for a joint forum with other major projects in the Project region to provide information about a range of projects and their supply requirements was also identified and has been included in Section 8.6.4. Inland Rail is delivering a business capacity building program, as discussed in Section 8.6.4.

The benefits of direct supply to the Project would be more modest during the operations phase, but represent a long-term opportunity which would support the viability of businesses, and contribute indirectly to increased employment opportunities. Further information on economic benefits is provided in EIS Appendix R: Economic impact assessment.

The Inland Rail Program is subject to the *Australian Jobs Act 2013* requirement to develop an Australian Industry Participation Plan (AIPP). ARTC is committed to providing local and Indigenous businesses and social enterprises with full, fair and reasonable opportunity to participate in the supply of goods and services on Inland Rail.

This commitment extends to ARTC's supply chain for Inland Rail. ARTC expects all contractors on Inland Rail to demonstrate the same level of commitment to providing local and Indigenous businesses and social enterprises with the opportunity to compete for work. Upholding this supply chain commitment supports ARTC's social licence to operate.

Proponents for Inland Rail construction projects are required to prepare and submit an Industry Participation Plan that addresses the requirements of the Inland Rail AIPP and demonstrate how they will spread local economic benefit on the Project.

With respect to Indigenous business participation, the Project will maintain communication with Traditional Owners regarding the range of business opportunities which will be available during construction, the availability of Indigenous businesses to participate and the types of capacity building programs that Indigenous businesses may need to prepare for involvement in the Project supply chain.

ARTC commitments relating to the AIPP are as follows:

- Ensure that commitments made within the Inland Rail AIPP are implemented by ARTC and its supply chain
- Require that contractors prepare an Industry Participation Plan during the tender stage for implementation during construction
- Implement a clear and efficient process for businesses to source information about the project and potential supply opportunities, and to register their interest
- Ensure all procurement entities have a detailed understanding of business capability/capacity of the study area and region before seeking bids to supply
- Ensure design specifications take account of Australian standards and, where international standards shall be used, provide avenues for Australian entities to identify how they can comply
- Include local and Indigenous content criterion and clauses in project procurement processes and contract documents
- Provide advance notice of supply opportunities
- Work with supplier advocates to promote supply opportunities and identify capable local suppliers
- Host and/ or participate in supplier briefing and networking events
- Collaborate with government and industry stakeholders to develop and implement training and mentoring support that builds business capability
- Provide support to local and Indigenous businesses and social enterprises which enables them to understand the requirements of supplying to Inland Rail
- Provide formal feedback to suppliers that are unsuccessful in prequalification and/ or tendering
- Report on local and Indigenous industry participation outcomes.

In line with the AIPP, ARTC has also developed a Sustainable Procurement Policy which will ensure that local, regional and Indigenous businesses (as well as other Australian businesses) will have opportunities to supply the Project. ARTC's Sustainable Procurement Policy commits that environmental, community and economic considerations will be embedded in the procurement process and Inland Rail will, wherever possible:

- Require suppliers to provide details of their environmental and sustainability policies and implementation during the tender phase
- Apply sustainability metrics to the evaluation of tenders received (including environmental, social and economic considerations)
- Choose suppliers and products with demonstrable positive environmental and social impacts
- Support procurement from local and indigenous businesses and suppliers

- Procure products and encourage suppliers to procure products that have recognised environmental labels or are from sustainable supply chains
- Assess the program using the Infrastructure Sustainability (IS) rating scheme and target a strong performance for the scheme's procurement credits
- Commit to continuous improvements by reviewing our procurement outcomes and reviewing and updating the policy and appropriate procedures
- Communicate the policy to the public
- Track and regularly report on progress, initiatives and improvements.

7.5.5 Facilitation of development

The economic impact assessment (EIS Appendix R: Economic impact assessment) estimates that the Project is expected to provide a total of $81.54 million (2019) in incremental benefits to the Project region (at a 7 per cent discount rate), which consists of:

- $62.18 million in freight benefits (including freight time travel savings, operating cost savings, and improved reliability and availability)
- $19.36 million in community benefits (including crash reduction, road decongestion benefits, and reductions in environmental externalities i.e. air pollution and greenhouse gas emissions).

Some of these benefits would accrue to local and reginal businesses.

The Inland Rail Program is a nationally significant transport initiative and will provide a high-capacity freight link between Melbourne and Brisbane through regional Australia to better connect cities, farms and mines via ports to domestic and international markets. It is anticipated that the Inland Rail Program will act as an enabler for regional economic development along the Inland Rail corridor.

A report to incentivise the agricultural and livestock industry to utilise rail in Queensland (Transport, Housing and Local Government Committee, 2014) identified a number of constraints associated with the existing rail network. A recommendation outlined in the report was for a more efficient and modern rail connection through the Toowoomba Range. The Project therefore may incentivise the use of the existing and ARTC network by the agricultural and livestock industry. EIS Chapter 2: Project Rationale further describes some of the benefits of the Project and the wider Inland Rail Project.

The Project design has considered cross-overs and connections between the proposed InterLinkSQ at Cranley, including connections between the Project, the terminal and QR's Western Line.

The construction of the Project will likely have a positive impact on increased development in the area and will likely be a catalyst for the construction and industrial uses and development of the InterLinkSQ.

The Project is also likely to support future industries associated within regional hubs such as the Toowoomba Enterprise Hub (previously named Charlton Wellcamp Enterprise Area) which is currently comprised of the Wellcamp Airport, Wellcamp Business Park, InterLinkSQ, Witmack Industry Park and Charlton Logistics Park. The Toowoomba Enterprise Hub is an area is of strategic importance in supporting growth in Toowoomba and the Surat Basin and will host major suppliers of engineering services and logistics.

The Project will also improve access to and from regional markets by providing connectivity opportunities between the existing QR West Moreton System rail line and ARTC interstate lines. The Project may also act as a significant catalyst for development within the region, particularly in relation to rail dependent industries and support industries associated with transport, freight handling, warehousing and logistics.

7.6 Cumulative impacts

Cumulative impacts are those impacts that result from the successive, incremental and/or combined effects of an action, project or activity when added to other existing, planned and or reasonably anticipated future ones (International Finance Corporation. 2013). This assessment has considered the spatial distribution (where projects would be located in relation to the Project and nearby communities) and temporal distribution (the time period in which each project may have an effect on the social environment).

Projects which may contribute to cumulative social impacts and estimations of their construction timeframes are shown in Table 7.7, up until Project year 10, as known. This includes the potential cumulative impacts of construction of major projects in the Project region that are being assessed under the SDPWO Act as identified at the time the EIS ToR were published (i.e. Inland Rail's B2G, H2C and C2K projects and New Acland Coal Mine Stage 3), and other projects deemed to be of local significance. Locally significant projects include:

- Toowoomba Medicinal Cannabis Production Facility which is proposed for a site near the Toowoomba Wellcamp Airport and has been designated as a Major Project under Commonwealth legislation. This designation expires in 2022 so it has been assumed that construction may begin in 2023 and that the planned three stages of development would be completed over three years, requiring a peak construction workforce of 800 personnel (Australian Government Business.gov.au, 2020)
- Proposed redevelopment of the Baillie Henderson Hospital site as a new Toowoomba Hospital. Queensland Health does not have an assessment of workforce numbers, but has advised that coincidence of the new hospital's construction with the Project's construction is unlikely
- Toowoomba Regional Council Waste Management Facility (timing and workforce numbers are uncertain, with commencement of construction estimated to be 2023)
- Bromelton State Development Area (SDA) for which the number of construction jobs is unknown
- GWIZ, which is expected to have a very small construction workforce
- Toowoomba Enterprise Hub projects including Wellcamp Business Park and Witmack Industry Park and Charlton Logistics Park (forecast to have a combined construction workforce of up to 50 people) and InterLinkSQ – Global Logistics Centre and Industrial Park for which construction workforce numbers are unknown.

An application has also been made to TRC for development approval for a residential development on land owned by Defence Housing Australia at Mount Lofty, but workforce numbers, the likelihood of approval and the construction timeframe are unknown.

Projects such as the Toowoomba Enterprise Hub projects and Bromelton SDA may require large construction workforces, however there is no information available to date regarding their schedule or workforce numbers, so impacts associated with these projects have not been considered with respect to cumulative workforce requirements. Smaller projects such as the Gatton West Industrial Zone (GWIZ) are not expected to have significant cumulative impacts, with the exception of facilitating long-term employment opportunities.

The potential for impacts on labour availability due to construction of rail projects in SEQ has also been considered, including:

- Inland Rail's B2G, H2C, C2K and Kagaru to Acacia Ridge-Bromelton (K2ARB) projects
- Cross River Rail (CRR), which commenced construction in late 2019 (CRR. 2019) and is expected to require an estimated average of 1,600 construction personnel and up to 2,200 construction personnel at peak (CRR Joint Venture, 2011)

- Brisbane Metro, with detailed design and construction of infrastructure anticipated for 2019-2022 (Brisbane City Council. 2019)
- Gold Coast Light Rail Stage 3A, expected to begin construction in 2021 (DTMR. 2019).

Approval documents providing peak construction workforce numbers were not available for the Brisbane Metro and Gold Coast Light Rail Stage 3A projects, so peak workforce numbers have been estimated on the basis of various industry and Brisbane City Council media articles at 2,600 personnel and 760 personnel respectively.

Assessment of cumulative labour demands is speculative at best, particularly as construction personnel are highly mobile within and across Australian States, and project schedules will vary from current estimates. Of note, the COVID-19 pandemic has resulted in significant job losses across Queensland and other States, so the availability of labour may increase over current levels, however data supporting analysis of changes to labour availability are not yet available.

Other variables which will influence the potential for cumulative impacts on housing, labour availability, short-term accommodation or social infrastructure include:

- The availability and distribution of construction labour at the time projects commence
- The timing for any coincidence in peak workforce demands
- Projects' plans for recruitment, training, housing and accommodation
- The likelihood that some projects' currently proposed schedules will change.

As such, quantitative assessment of cumulative social impacts is not possible. The following qualitative analysis should be considered as indicative at a point in time, rather than conclusive.

Table 7.7 Cumulative project set - social impacts and benefits

Project	Construction timeframe	Peak workforce (construction)	Estimated potential overlap by Project Year						
			1	2	3	4	5	6	7--10
		Project year	2022	2023	2024	2025	2026	2027	2028-2031
Inland Rail projects									
G2H	2022-2026	596	Construction					Operations	
B2G	2021-2026	950	Construction					Operations	
H2C	2021-2026	410	Construction					Operations	
C2K	2021-2026	620	Construction					Operations	
K2ARB	2023-2025	100		Construction			Operations		
Toowoomba Enterprise Hub projects									
InterLinkSQ – Global Logistics Centre and Industrial Park	2017-2037	Unknown	Construction and operation						
Wellcamp Business Park	Ongoing	20	Construction and operation						
Witmack Industry Park and Charlton Logistics Park	Ongoing	30	Construction and operation						
Other projects in or near the Project region									
Toowoomba Regional Council Waste Management Facility	Unknown - estimated	Unknown		Cons.	Operation				
Residential development Defence Housing Australia site, Mount Lofty	Unknown - estimated	Unknown		Construction				Operation	
Asterion Medicinal Cannabis Production Facility	Unknown - estimated	800		Construction			Operation		

Project	Construction timeframe	Peak workforce (construction)	Estimated potential overlap by Project Year						
			1	2	3	4	5	6	7--10
		Project year	2022	2023	2024	2025	2026	2027	2028-2031
Bromelton State Development Area (SDA)	2016-2031	Unknown	Construction						
GWIZ	2019-2024	14	Construction			Operation			
New Toowoomba Hospital (Baillie Henderson Hospital site)	Unknown - estimated	Unknown							Construction
New Acland Coal Mine Stage 3	2021-2022	260	Construction	Operation					
Other rail projects									
CRR	2019-2024	2,200	Construction			Operation			
Brisbane Metro	2019-2022	2,600 (estimate)	Construction	Operation					
Gold Coast Light Rail Stage 3A	2021-2023	760 (estimate)	Construction		Operation				

7.6.1 Local impacts

The local area of influence for assessment of cumulative social impacts has been defined as including potentially impacted communities (as defined in Section 4.2.2), on the basis that this is the area where the physical interfaces of projects may have a material impact, and/or projects could affect social conditions such as connectivity or community wellbeing.

7.6.1.1 Connectivity

The Project links directly with the adjoining B2G project to the west, approximately 2.5 km south-east of Kingsthorpe. Neither project directly impacts on the settlement pattern or road network within Kingsthorpe. There is potential for the coincidence of works for the two projects to cause temporary traffic delays on Kingsthorpe Tilgonda Road/Drapers Road. There are also two flashbutt welding sites, one within the B2G project area and one within the Project disturbance footprint, which will receive deliveries of track sections and may contribute to increased traffic volumes on these roads whilst track construction is underway. This is unquantifiable, but if it eventuates, will need to be considered in relation to driver safety and emergency services access.

The H2C project will adjoin the Project in an area approximately 400 m north of Helidon Spa and 1.1 km north-west of Helidon. Neither project interfaces with roads within Helidon Spa and Helidon, however roads through Helidon are haulage routes for the projects, and are also used by traffic associated with the Helidon Magazine (explosives) Reserve. There is a requirement to realign Cattos Road (for G2H) and Airforce Road (for H2C) which may result in traffic delays for people entering and leaving the Helidon community during construction. As noted in Section 7.4.1, there is potential for road works for the Project and Inland Rail's H2C project (if they coincide) to result in cumulative impacts on travel times to and from the Helidon State School, requiring consideration of the scheduling of Project works and H2C project works, and in each project's TMP, to minimise the potential for cumulative impacts which could result in traffic delays and/or increased travel times for families' or school buses' trips to and from the Helidon State School.

If construction works for the Project and H2C coincide in the Helidon area, there is potential to disrupt access to the Helidon to Ravensbourne Trail circuit through the Lockyer National Park, where access to the Trail section along Airforce Road may be affected during construction of the Project, and access to the Trail section along Seventeen Mile Road may be affected during construction of H2C. Detailed design for both projects will include consideration of the maintenance of access to the Helidon to Ravensbourne Trail if it is expected to be affected.

Incremental increases in traffic on Project region roads are also expected as the result of a combination of construction for projects such as InterLinkSQ, the Wellcamp Business Park and Witmack Industry Park and Charlton Logistics Park.

Inland Rail projects' TMPs will outline detailed strategies to mitigate potential impacts on road safety, as forecast in EIS Chapter 23: Draft Outline EMP and discussed in Section 7.4.10. The Project's communication and travel demand strategies will include consideration of the potential for works from adjoining Inland Rail projects to affect local conditions, including as a result of construction traffic.

7.6.1.2 Community well-being

As noted in Section 7.4.10, residents may be concerned about the potential risks to community safety relating to increased numbers of non-local workers, including 'stranger danger' and traffic safety, with any cumulative demands for non-local labour likely to increase this concern. Project workforce management strategies which address this include enforcing a Code of Conduct containing requirements for positive behaviours and respect for local residents and businesses and ensuring that ARTC's construction contractors have appropriate work conduct policies and procedures, will be implemented for all Inland Rail work sites.

There is also potential for cumulative traffic increases as the result of workers' commuter vehicles or heavy vehicles impacting on traffic safety at local or regional level, as discussed in Section 7.6.2

Communities in the Project region have recently experienced the construction of the Toowoomba Bypass, which involved the need to participate in engagement processes, impacts on travel times and road conditions, and for residents closest to project works, amenity impacts including construction noise and dust. This has resulted in community fatigue which may discourage residents from participating in Project engagement processes, and exacerbate any anger and stress felt as the result of Project impacts.

Assessment of cumulative impacts on air quality are provided in EIS Chapter 22: Cumulative impacts, and were limited to the two adjacent Inland Rail projects, B2G and H2C.. EIS Chapter 22: Cumulative impacts notes that the environment in which the Project will be constructed and operated is likely to have a number of existing regional and local sources of air pollution and as such, background (existing) estimations of the relevant pollutants in the have already been included in assessments of construction and operational impacts presented in Chapter 12: Air quality. While there is potential for the construction of H2C, the Project and B2G to overlap, EIS Chapter 22: Cumulative impacts notes that dust impacts are likely to be localised to the site locations and managed by ARTC through approved CEMPs. The air quality cumulative impacts from the Project were therefore considered to be of low significance.

7.6.1.3 Amenity and character

As also outlined in EIS Chapter 22: Cumulative impacts, noise from construction activities being undertaken simultaneously on the adjoining H2C and B2G projects has the potential to increase noise levels at nearby sensitive receptors for the Project, however the expected noise due to cumulative construction activities is not expected to significantly increase the predicted noise levels. The cumulative impact of noise will be managed by ARTC through approved CEMPs. In addition, any overlap of construction works is likely to be for a limited time period. Therefore, the predicted cumulative noise and vibration impacts during construction of the Project was considered to be of low significance.

With respect to landscape and visual amenity impacts, construction impacts associated with views of construction areas and increased construction traffic were identified as of low residual significance.

Notwithstanding, the presence of laydown areas, earthworks and roadworks associated with construction of the Project and the adjacent B2G and H2C projects are likely to affect the scenic character of the local roads and highways where works are located. In particular, to the south of the urban area in Gowrie Junction, there are two flashbutt welding laydown areas (one for B2G and one for the Project) which will involve changes in land use, the construction of sheds to accommodate welding of track sections and deliveries of large components. These are likely to detract from the scenic character of the Draper Road/Paulsens Road area whilst track laying is occurring.

There is also potential for construction works for the project and Inland Rail's H2C project to affect the Helidon to Ravensbourne Trail circuit through the Lockyer National Park, where access to the Trail section along Airforce Road may be affected during construction of the Project, and access to the Trail section along Seventeen Mile Road may be affected during construction of H2C.

With regards to the ongoing cumulative impacts of other land development projects, InterLinkSQ, Toowoomba Wellcamp Airport, Wellcamp Business Park, and the Toowoomba Enterprise Hub (Charlton and Logistics Park and Witmack Industry Park) lie close to the Project and the combined impacts from these projects may result in the perception of development intensification, however this is anticipated as part of Council and regional plans.

Assessment of rail noise from the arrival and departure of the trains on the railway infrastructure within the adjacent B2G and H2C project sections did not predict a cumulative increase in daily railway noise levels at the sensitive receptors adjacent to the Project (refer EIS Appendix P: Operational railway noise and vibration).

Operational impacts associated with views of combined, successive and sequential views of adjoining projects were identified as of medium residual significance. This aligns with community views that Inland Rail projects' operation will affect the Project region's scenic character through the placement and use of elevated structures in the landscape. Effects on community members would be differential, as some will find visual interest in Inland Rail structures or operations, some will feel disappointed or upset about the changes, and some may be unaffected either way. Over time, community members are likely to adapt to the landscape changes as they do for other changes to land use and scenic character.

7.6.1.4 Population, housing and accommodation

The Project expects to draw the majority of its construction workforce from within the Project region and other nearby LGAs, with personnel returning home each night. As such a change to the size or composition of the population is not expected during construction, and a significant influx of personnel requiring housing in local communities is not expected.

If cumulative demands for labour result in local shortages and the Project needed to draw workers from further afield, a contribution to cumulative demands on housing and accommodation is possible. As discussed in Section 5.5.2, rental vacancy rates in postcode areas corresponding to potentially impacted communities indicate a very tight rental market, with vacancy rates of less than 1.0 per cent in many local communities during 2020. Any influxes of non-local personnel seeking rental accommodation due to cumulative labour demands could put pressure on rental housing stocks in local communities, with the potential to deplete rental housing stocks and increase rental costs, which could impact on low income households. Potential housing demands relating to the coincidence of several projects' construction periods would be spread across several LGAs as identified in the previous paragraphs, and are not quantifiable, but could be significant in the context of the limited rental housing availability, if rental vacancy rates remained low and if demand were concentrated in local communities or centres such as Toowoomba.

With potential for some specialist personnel to be sourced from outside the Project region for specific short-term works, and with Project personnel visiting from other regions occasionally, the Project may contribute to cumulative impacts on short-term accommodation (hotels and motels).

Management measures which address the Project's potential contribution to demands on rental housing are detailed in Section 8.4, and similar measures will be required of other Inland Rail projects, which is expected to minimise the Project's contribution to cumulative impacts.

With 15-20 operational personnel, some of whom could be drawn from the Project region, contributions to cumulative impacts on the size or composition of the population are not expected during operation.

7.6.1.5 Use of and access to social infrastructure

A cumulative increase in construction workers within local communities has the potential to affect demands for policing and emergency services with respect to traffic management, site security (e.g. responding to incidents of theft from work sites), road safety policing, and potentially community protests against Inland Rail or other projects. Government funding for police, fire and ambulance services available to local communities may require review by the relevant departments to ensure cumulative project demands do not impact on local community access to services.

As personnel's health service requirements would primarily be met in their home communities, cumulative demands on health services are less likely, but there is potential for workers to be transported to major hospitals in Toowoomba or Ipswich if treatment is required. This is not expected to be a significant drain on major hospitals' services.

There is potential for stresses associated with Inland Rail and other construction projects to increase local demands for support services. As outlined in Section 8.2.3, Inland Rail has developed partnerships with the Darling Downs and West Moreton PHN and Brisbane South PHN, to strengthen local access to mental health services delivered in the Project region. The Project will also consult with DCHDE to identify any

existing service shortfalls and monitor any increases in service demands resulting from the Project, to enable cooperative solutions to address any strain on services resulting from the Project.

The Project will provide workforce ramp-up estimates to the QPS, QAS, QFES, DCHDE and Queensland Health to assist with their planning.

7.6.1.6 Workforce

In combination, projects listed in Table 7.7 have the potential to provide significant employment and business opportunities for local residents during the next five to ten years. This includes significant construction employment opportunities related to the construction of Inland Rail projects, the Asterion Medicinal Cannabis Production Facility, Toowoomba Enterprise Hub projects and the new Toowoomba Hospital.

If multiple other projects as listed in Table 7.7 are constructed in the same time frame as the Project, there may also be a draw on trades and construction labour within local communities. ARTC's strategies addressing labour draw include working with CSQ to identify and address labour shortages, and facilitating the availability of construction skills training, which will help to offset demands which could affect local access to labour, and leave a legacy of increased local workforce skills. There is also potential for increased trade for businesses in Gowrie Junction and Helidon with concurrent Inland Rail projects' workforce expenditure whilst they are in the Project region.

Transport, logistics and industrial hubs are not part of the Project, requiring private investment and separate approvals, however the Project is likely to catalyse industrial development by facilitating the development of intermodal freight facilities such as the Bromelton SDA and InterLinkSQ, at the Toowoomba Enterprise Hub. It may also catalyse development at the Gatton West Industrial Zone, which as noted in ShapingSEQ involves the development of 600 acres of industrial land at Gatton and is one of the few remaining areas within two hours of Brisbane which allows for various forms of heavy industry.

These opportunities may be further enhanced by the strategic link that would be provided between Inland Rail and the interstate railway line operated by QR, potentially serving to attract rail-dependent industries to the region.

Collectively, the operation of Inland Rail projects and intermodal freight facilities would contribute to long-term employment opportunities for the residents of potentially impacted communities. This is likely to be a significant positive driver for community well-being, as supported by access to a diverse range of long-term jobs and business opportunities in the Project region.

7.6.2 Regional impacts

This section refers primarily to cumulative impacts which may be experienced in the Project region as a whole, acknowledging that employment opportunities, supply opportunities and cumulative demand for labour are also relevant to other Queensland regions.

7.6.2.1 Connectivity

The coincidence of construction of projects listed in Table 7.7 will have cumulative impacts on traffic volumes and potentially lead to traffic delays during the construction period, throughout the Project region. Impacts would depend on the timing and location of the works of multiple projects at that time. As outlined in EIS Chapter 22: Cumulative impacts, a large range of mitigation measures relating to safety, intersection impacts, link road impacts, pavement impacts and road/rail interface impacts have been proposed for construction and operation of the Project and are expected to suffice in order to mitigate for the Project's contribution to cumulative impacts on road traffic.

Traffic generation from other developments in the region at planning, design or construction stage have been considered in the draft EIS (refer EIS Appendix U: Traffic impact assessment and EIS Chapter 22:

Cumulative impact assessment). EIS Appendix U provides a large range of mitigation measures for the construction and operation of the Project. EIS Chapter 22 notes that to further mitigate potential cumulative impacts, the other assessable projects will also have to successfully implement similar mitigation measures. The traffic, transport and access cumulative impact assessment concludes that mitigation measures proposed for the Project relating to safety, intersection impacts, link road impacts, pavement impacts, and road rail interface impacts would suffice in order to mitigate for the cumulative impacts as a result of a range of projects. As noted in Section 7.1.3, there will be opportunities to optimise haulage routes and the use of construction material for the projects, including the use and placement of spoil material between adjacent Inland Rail projects. These opportunities will be investigated during the Project's detailed design and will be reassessed by the Contractor in consultation with DTMR, TRC and LVRC at the detailed design stage of the Project.

At this stage it is not possible for an accurate assessment of traffic and transport impacts as the result of spoil transport. This would be undertaken during the detailed design phase and will consider the potential for impacts on other road users. Further discussion of spoil management is provided in Appendix T: Spoil management strategy and Appendix U: Traffic impact assessment.

7.6.2.2 Workforce

The Project has potential to contribute to significant cumulative increases in employment opportunities in the Project region, both directly through construction employment opportunities, and through involvement of local businesses in the supply chain.

Inland Rail projects are currently scheduled to commence construction in 2021 (H2C, C2K and B2G), 2022 (this Project) and 2023 (K2ARB), and it is unlikely that that all workforce peaks would coincide; however the following analysis considers this possibility.

If the Project was constructed simultaneously with Inland Rail's H2C and C2K projects, and all workforce peaks coincided, a peak workforce of up to 1,626 construction personnel would be required across the Toowoomba, Lockyer Valley, Ipswich and Scenic Rim LGAs.

If Inland Rail's B2G project labour force also peaked during the same period, an additional requirement for approximately 950 personnel would result, focussed in the Toowoomba and Goondiwindi LGAs. The construction workforce requirement for Inland Rail's K2ARB project is estimated at approximately 100 personnel, so the cumulative total peak (maximum case) for the five Inland Rail projects could see a requirement for approximately 2,676 personnel working across the Goondiwindi, Toowoomba, Lockyer Valley, Ipswich, Scenic Rim, Logan and Brisbane LGAs. In the context of SEQ's large construction and trades labour force, this is unlikely to cause a significant adverse impact on other industries' access to labour.

There is also potential for the construction of multiple projects in the Project region (including InterLinkSQ, New Acland Coal Mine Stage 3, the Toowoomba Waste Management Facility, the Asterion Medicinal Cannabis Production Facility and GWIZ) and the Bromelton SDA in the Logan City LGA to coincide with Project construction. Information about the timeframes for development and numbers of personnel required for other projects was insufficient to estimate any effects on labour availability, and assessment of cumulative labour demands would be speculative at best, particularly as project schedules will vary from current estimates. If multiple additional projects as listed in Table 7.7 were constructed in the same timeframe, there may be a significant draw on trades and construction labour in the Project region.

The construction periods for Cross River Rail (Dutton Park to Bowen Hills in the Brisbane LGA), Brisbane Metro (Eight Mile Plains to Bowen Hills in the Brisbane LGA) and Gold Coast Light Rail Stage 3A (from Broadbeach South to Burleigh Heads in the Gold Coast LGA) may overlap with Inland Rail project construction phases. Coincidence of the peak requirements for these three SEQ rail projects is unlikely given the variance in their construction periods, however if it occurred, based on Cross River Rail's stated peak construction workforce estimate of 2,200 personnel, and estimates of 2,600 construction personnel required

for Brisbane Metro and 760 personnel required for Gold Coast Light Rail Stage 3A, a peak requirement for approximately 5,560 construction personnel could result. In the very unlikely event that all peak requirements for Inland Rail projects' construction also coincided with these projects' workforce peaks, up to approximately 8,200 personnel would be required. This represents a 'maximum case' estimate in relation to the demands on labour and in relation to employment opportunities.

In combination, the cumulative impacts of railway construction projects in SEQ could lead to significant demands for construction personnel including civil engineering professionals, construction project managers and construction trades and machinery operators and to contribute to skills shortages affecting access to for residents, businesses and other industries.

The expansion in the construction sector would support additional flow-on demand through the construction industry supply chain and additional spending on consumer orientated products by the construction workforce in the Project region. The associated supply of construction materials, the development of associated external infrastructure and complementary services will also require additional workforce beyond those directly associated with Inland Rail and other major projects, stimulating jobs and growth in the region.

The Project is part of the national Inland Rail Program. The Inland Rail Business Case (ARTC. 2015) identifies that the Inland Rail Program is expected to deliver 16,000 new jobs at the peak of construction, and 700 ongoing jobs once operational. It is expected to increase Australia's gross domestic product by $16 billion during its construction and first 50 years of operation. The 10-year delivery schedule would support economic activity in the affected regions and create regional jobs in Queensland, New South Wales and Victoria during both construction and operations.

7.6.2.3 Population, housing and workforce accommodation

As noted in Section 7.6.1, Project contributions to cumulative impacts on population size and composition are not anticipated, but there is a possibility that cumulative project demands will result in the need for rental housing for non-local personnel, and that they will seek housing in towns and centres within the Project region along with construction personnel from other major projects. This could result in regional-level impacts e.g. exacerbation of the current shortage of rental housing in the Toowoomba and Lockyer Valley LGAs, and potentially displacement of low-income households.

Cumulative demands for short-term accommodation such as hotels and motels may also be experienced in the Toowoomba or Lockyer Valley LGAs, and/or in adjacent LGAs. The cumulative demands of several projects being constructed concurrently could then exhaust short-term accommodation in the Project region which would otherwise be used by tourists and other businesses, with the potential for flow-on impacts for tourism businesses. The Project's contribution to cumulative demands for short-term accommodation is expected to be small, however the Project's AMP will include measures to monitor the Project's potential demands for short-term accommodation and enable corrective action if required to reduce Project demands. The Project's contractor will be required to undertake analysis of existing housing conditions and cumulative impacts relating to other Inland Rail projects as part of developing its AMP.

As noted in Section 7.6.1, Inland Rail project contractors will be required to develop and implement an AMP. Section 8.4 describes the requirements for the AMP, which include consultation with Councils and accommodation providers in the AMP's development.

7.6.2.4 Use of and access to social infrastructure

The Project's contribution to cumulative demands on health and emergency services relate primarily to an increase in the day-time population of the Project region during construction. This would increase demands on policing, emergency services, and health services. As these services are typically funded on the basis of their resident populations, consideration of additional Queensland government resourcing for services provided by the QPS, QAS, QFES, DCHDE and Queensland Health in the Project region may be required.

As noted in Section 7.4.4, ARTC will provide workforce ramp-up estimates to these agencies to assist with their planning.

There is also potential for simultaneous construction of several projects to lead to increases in demands for support services to cope with project-related stress. ARTC will participate in monitoring of demands on health and community services as outlined in Section 8.7. Cumulative impacts may need to be monitored by the Queensland government and/or local councils to enable cooperative responses which support local residents to cope with changes relating to multiple projects.

There is also potential for the cumulative impacts of other concurrent projects, including Cross River Rail, Brisbane Metro, Inland Rail, other major infrastructure projects, and coal mines (such as the New Acland Coal Mine Stage 3) to require significant construction workforces within a similar timeframe, leading to cumulative demands on construction labour across Queensland and NSW, and potentially nationally. There are multiple uncertainties in relation to timing of these projects, however, there is potential for the required labour supply to be drawn from other industries, potentially affecting agriculture, police and emergency services, and the range of businesses dependent on construction-related skills and labour.

7.6.3 Summary of cumulative impacts

Potential cumulative social impacts have been evaluated in relation to their likelihood and consequence to the social environment, as summarised in Table 7.8. The significance criteria used to evaluate cumulative impacts are provided in Section 9.

Table 7.8 Potential cumulative social impacts

Projects	Potential cumulative impact	Likelihood (A-E) and Consequence (1-5)	Mitigation measure	Residual significance	Significance
G2H and adjacent Inland Rail projects (construction)	Combined impacts of rail construction (presence of laydown areas, earthworks and roadworks including potential for two flashbutt welding laydown areas in the Gowrie Junction area) and increased traffic on rural character near Helidon, Helidon Spa, Postmans Ridge, Gowrie Junction, and Kingsthorpe	C3	TMPs for the projects will consider potential cumulative impacts on traffic and coordinate traffic management accordingly Design of the landscape earthworks and planting to, screen and integrate the Project wherever practicable	C2	Medium (-)
	Construction works to Cattos Road (for G2H) and Airforce Road (for H2C) may result in traffic delays for residents and motorists travelling to and from Helidon, including access to the Helidon State School	B2	TMPs for the two projects will consider potential cumulative impacts on traffic and coordinate traffic management accordingly	B1	Medium (-)
	Disrupted access to Helidon to Ravensbourne Trail circuit (H2C)	C2	Consideration of the Trail's connectivity in the TMP to minimise disruption to access	C1	Low (-)
B2G, G2H, H2C, C2K, K2ARB (construction)	Potential labour draw in the Project region affecting access by businesses, industries and households	C3	Inland Rail Skills Academy Consultation with Councils and business chambers to monitor labour draw and enable corrective action e.g. refinement of recruitment strategies	C2	Medium (-)
	Project region businesses would benefit from Project and personnel expenditure of the combined Inland Rail projects	B3	N/A	B3	High (+)
	Increase in demands for policing and emergency services	B2	Cooperation with QPS, QAS and QFES to advice on workforce ramp-up and construction activities	B1	Medium (-)
	Potential to provide significant employment opportunities for local residents	B3	Inland Rail Skills Academy	B3	High (+)

Projects	Potential cumulative impact	Likelihood (A-E) and Consequence (1-5)	Mitigation measure	Residual significance	Significance
	Transport of spoil may increase traffic volumes on key routes with potential to affect Levels of Service or traffic safety	C Unknown	To be determined as part of TMP and CEMP in the detailed design phase	C Unknown	Unknown
Any/all construction projects (construction)	Cumulative demand for skilled trades and civil construction labour, affecting access by businesses, industries and households	B3	Inland Rail Skills Academy Consultation with Councils and business chambers to monitor labour draw and enable corrective action e.g. refinement of recruitment strategies	B2	High (-)
	Potential for cumulative demands on rental housing which is currently in short supply, and/or short-term accommodation	C3	AMP required of contractors for all Inland Rail projects	C2	Medium (-)
	Potential for cumulative increases in construction traffic leading to safety concerns and local drivers' fatigue or frustration with road works and traffic congestion	C3	TMPs for the projects will consider potential cumulative impacts on traffic and coordinate traffic management accordingly	C2	Medium (-)
	Community concern relating to increased numbers of non-local workers, including 'stranger danger' and traffic safety	C2	Workforce Code of Conduct required of all Inland Rail project contractors	C1	Low (-)
	Increased demands on health and emergency services leading to reduced access for other residents	C2	Cooperation with Queensland Health, QPS, QAS and QFES to advice on workforce ramp-up and construction activities	D1	Low (-)
	Potential for stresses associated with construction projects to increase local demands for support services	C3	Mental health partnership with PHNs (refer Section 7.4.8)	C2	Medium (-)
	Expansion in the construction sector would support additional flow-on demand through the construction industry supply chain	B3	Not required – local business participation strategies outlined in Section 8.6	B3	High (+)

Projects	Potential cumulative impact	Likelihood (A-E) and Consequence (1-5)	Mitigation measure	Residual significance	Significance
B2G, H2C, InterLinkSQ, Toowoomba Wellcamp Airport, Wellcamp Business Park, Asterion Medical Cannabis Production Facility, Toowoomba Enterprise Hub (operation)	Operational impacts associated with views of other projects are likely to affect the Project region's scenic character, however community members are likely to adapt to landscape changes over time	B2	Develop a Reinstatement and Rehabilitation Plan for areas within the disturbance footprint that do not form part of the permanent works	B2	Medium (-)
Any/all projects (operation)	The operation of Inland Rail projects and intermodal freight facilities would contribute to long-term employment opportunities for the residents of potentially impacted communities	B4	Not required	B4	Extreme (+)

8 Social Impact Management Plan

8.1 Introduction

This section provides the framework for mitigation of social impacts and enhancement of Project benefits and aims to:

- Provide actions for the mitigation of negative impacts on stakeholders and communities
- Incorporate stakeholder inputs on mitigation and enhancement strategies
- Support adaptive management of social impacts, by enabling communication between stakeholders and the Project during the detailed design, pre-construction and construction phases, to identify any need for improvements to management measures
- Describe ARTC's initiatives and partnership opportunities which will maximise local employment and business opportunities and bring about long-term benefits for local communities.

The SIMP includes:

- Information about:
  - SIMP implementation
  - Inland Rail's social performance program
  - The adequacy of proposed management measures
  - How stakeholder input has been considered in the SIMP
  - Engagement with Councils
  - Links to local and state planning
- Five sub-plans including action plans:
  - Community and Stakeholder Engagement (Section 8.2)
  - Workforce Management (Section 8.3)
  - Housing and Accommodation (Section 8.4)
  - Health and Community Wellbeing (Section 8.5)
  - Local Business and Industry (Section 8.6).

Each action plan includes:

- An overview of the key impacts and opportunities identified in Section 7
- Objectives and desired outcomes
- Measures to mitigate social impacts and enhance Project opportunities
- The timing for delivery of mitigation measures, i.e. detailed design, pre-construction and construction phases.

A monitoring program is provided in Section 8.7 to support tracking of SIMP delivery and effectiveness, and enable adaptive management if there are changes to the Project or social baseline values, and to address any emerging or unanticipated issues. Section 9 provides an evaluation of social impacts and opportunities, prior to and following the implementation of the measures outlined in the SIMP.

8.1.1 SIMP implementation

During the EIS process, ARTC has worked with a range of stakeholders to identify issues and priorities and develop management measures to be included in the SIMP.

Management measures that were initiated during the EIS phase include those addressing training and development, business awareness of Project opportunities, mental health service capacity and contributions to community development through sponsorships and donations. Engagement with Councils and Government agencies will continue during the remainder of the EIS phase to review the proposed management measures, develop further detail of initiatives to be implemented in cooperation with stakeholders. and agree specific outcomes, strategies and performance metrics for partnerships.

As noted in Section 4.1, the Project will be delivered by a Contractor. Under this delivery arrangement, the private sector will design, build, finance and maintain this section of the railway over a defined concession period. ARTC will appoint the contractor prior to the commencement of the detailed design phase. The Contractor's role is defined in EIS Chapter 23: Outline EMP as including:

- Prepare, maintain and implement the CEMP
- Deliver the Project in accordance with all laws, including conditions of approvals
- Provide notifications and reports, as required by law, including conditions of approvals
- Ensure the construction workforce are properly and regularly trained in environmental responsibilities, including cultural heritage responsibilities, in accordance with the CEMP
- Establish and maintain a complaints management system, to receive and respond to complaints.

The Contractor will be required to implement SIMP commitments, and ARTC will have dedicated personnel to coordinate and monitor SIMP implementation. Details of respective responsibilities for ARTC and the Contractor will be further developed as part of the tendering and contracting process.

As noted in EIS Chapter 6: Project description, subject to approval of the Project under the SDPWO Act and the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act):

- a construction contractor is expected to be appointed in the second half of 2021, coinciding with the commencement of the detailed design phase of the Project
- pre-construction works will commence once the detailed design phase is substantially progressed, potentially in late 2021 or early 2022
- construction is planned to commence in 2022 and is expected to be completed and the Project commissioned in 2027.

The commencement of each stage will be advised to the Coordinator-General and will trigger the commencement of SIMP actions identified for that stage.

Detail pertaining to each Project phase is provided below.

8.1.1.1 Detailed design and construction planning

The Project is currently seeking primary approval under the SDPWO Act and the EPBC Act. If approved, the Project will transition into detailed design phase, including planning for construction. Changes to the Project design or construction methodology are possible during the detailed design phase, for example:

- Design refinements or decisions by the Contractor and/or the Constructing Authority may result in a change to the number or nature of property acquisitions
- Decisions by the Contractor regarding construction methodologies may result in changes to the location or duration of environmental impacts such as noise

- Changes to the Project design in response to approval conditions, including secondary approvals required for construction
- The Contractor's innovations in impact management may change the frequency or level of impacts.

ARTC will review changes to the design or construction methodology which have potential to change social impacts, and if a material change in impacts is foreseen, SIMP measures will be revised to address the expected change in social impacts.

During the detailed design phase, ARTC will engage with the Contractor and relevant stakeholders to detail and confirm the co-operative measures described in each action plan. This will inform the Contractor's implementation of SIMP commitments and ARTC's social performance program delivery including:

- Partnerships and projects to support mitigation and enhancement of benefits, including outcomes, strategies and performance metrics for partnerships
- The respective responsibilities of the Project and other stakeholders
- The program for implementation
- SIMP monitoring.

Social impacts such as anxiety about land acquisitions or environmental changes are likely to continue during the detailed design phase. The Constructing Authority and where applicable ARTC or the Contractor will be responsible for working with landowners throughout the land acquisition process.

Measures provided for the detailed design phase address land acquisition impacts, but also include other measures which require a collaborative process or a 'lead time' to be effective (e.g. capacity building and training programs).

8.1.1.2 Pre-construction

Project activities commencing during the pre-construction phase include land clearing and establishment of laydown areas and access tracks, which may result in noise and change the character of the land within the Project disturbance footprint. Measures which address these impacts are included in the action plans. As for the detailed design phase, measures which require a 'lead time' ahead of the construction phase are also identified for the pre-construction phase.

8.1.1.3 Construction

Based on the Project's design, SIA has identified a range of potential social impacts and opportunities during the construction phase as detailed in Section 7. Many of the measures pertaining to the construction phase will be initiated during preceding stages and implemented during construction as detailed in Sections 8.2 to 8.6. Measures to be initiated during the construction phase also include actions to prepare for the operations phase.

8.1.1.4 Operations

As detailed in Section 7, potential impacts of the Project's operation include changes to the road network, the potential for railway noise to affect the amenity of properties near the Project, changes to scenic character and the potential for an increased risk of road-rail accidents or rail suicides.

Prior to commissioning the Project, a SIMP for the operational phase will be developed in accordance with ARTC's and/or the Contractor's established management frameworks for rail operation, including rail noise management, safety management, workforce development, complaint management and stakeholder engagement. This will be informed by the monitoring undertaken during the construction phase, which includes stakeholder engagement in monitoring impacts and the effectiveness of mitigation measures.

The SIMP for operations will include a Community and Stakeholder Engagement Plan for the commissioning and operational phases, as detailed in Section 8.2.7.

The SIMP for operations will be implemented during the first three years of operation. Any need for a SIMP following Year 3 of operations will be identified in consultation with the Office of Coordinator-General.

8.1.2 Inland Rail's social performance program

Inland Rail's social performance program has developed in response to SIA/SIMP requirements for Inland Rail projects, Commonwealth guidelines and expectations, stakeholder feedback and corporate polices/approaches being established to support Inland Rail's delivery. Figure 8.1 provides an overview of Inland Rail's social performance approach to maximising local and Indigenous participation.

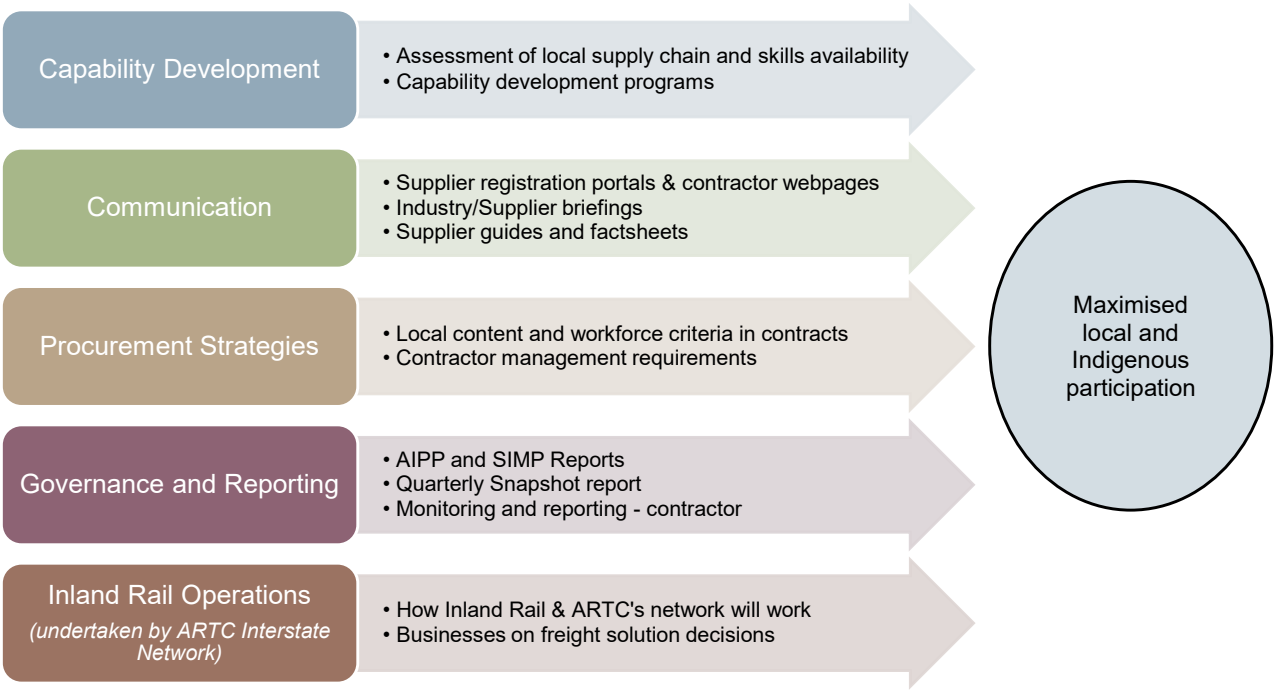


Figure 8.1 Inland Rail social performance approach to maximising local and Indigenous participation

The social performance program has five themes (aligned to the SIMP sub-plans), each with associated desired outcomes as shown in Table 8.1, and with a clear focus on maximising local benefits.

The *Australian Jobs Act 2013* defines 'local' as including Australian entities. To maximise the Project's benefits in the Project region, ARTC has adopted the following hierarchy for workforce and industry participation strategies:

- Project Area: LGAs which the alignment directly passes through (Toowoomba and Lockyer Valley LGAs)
- Region: LGAs outside the Project Area, but within 125 km radius of the Project Area
- Rest of Queensland: All of the State of Queensland other than the Project Area and Region
- Rest of Australia: All of Australia other than Queensland.

Inland Rail initiatives to be implemented for the Project include:

- Australian Industry Participation Plan

- Sustainable Procurement Policy
- Indigenous Participation Plan
- Inland Rail Skills Academy
- Inland Rail Community Sponsorships and Donations Program.

At Project level, the objectives of Inland Rail's social performance program have been contextualised to address the findings of the SIA and ensure that management measures are targeted to the Project's SIA study area. This includes a focus on the Toowoomba LGA, Lockyer Valley LGA, and communities in proximity to the alignment. Links between social performance outcomes and the SIA/SIMP are shown in Table 8.1.

Table 8.1 Social performance outcomes and links to SIA/findings/SIMP measures

Themes	Outcomes	Link to SIA findings/SIMP	Section
Stakeholder and Community Engagement	Inland Rail actively engages with communities on what matters to them and resolves issues swiftly and respectfully	The SIA has been informed by the results of engagement with stakeholders. ARTC will continue to consult with key stakeholders in the review and finalisation of the EIS. The SIMP details ARTC's ongoing engagement with stakeholders to develop and implement mitigation measures and involve stakeholders in the SIMP monitoring process.	8.2
Workforce management	Inland Rail provides employment opportunities for local and Indigenous jobseekers and contributes to building skills in the communities we impact	Employment of local people (particularly from the Toowoomba and Lockyer Valley LGAs) is a key local benefit and a major priority for local stakeholders. The SIMP describes ARTC's focus on local employment including the requirement for contractors to develop contractual targets and commitments in consultation with ARTC for the employment of Toowoomba and Lockyer Valley LGA residents, Indigenous people, young people and women. An overview of outcomes and benefits will be publicly reported on a quarterly basis and include local employment, female employment and Indigenous participation in the Project. The Inland Rail Skills Academy facilitates local skills development to maximise the local workforce's capacity for involvement in Inland Rail and other major projects. For example, the scholarship program initiated with University of Southern Queensland (USQ) is accessible to residents in the project region, and ARTC has agreed with TRC and LVRC that Inland Rail Skills Academy training programs will identify cross-over skills with RSIS priorities in each LGA, and work to develop training programs to build those skills. ARTC's Indigenous Participation Plan has a clear focus on enabling Indigenous participation in Project employment. ARTC is engaged in ongoing consultation with Traditional Owners, DSDSATSIP and CSQ to target training and development programs to local Indigenous people.	8.3
Housing and Accommodation	Inland Rail accommodation solutions minimise negative impacts to local housing markets	In drawing the majority of its workforce from the Toowoomba and Lockyer Valley LGAs and nearby LGAs, requirements for workforce housing or short-term accommodation are expected to be minimal. The Contractor will be required to deliver an AMP which meets ARTC principles for housing and accommodation management and reflects the outcomes sought by stakeholders including LVRC and Indigenous community members, i.e. avoiding workforce housing demands which could displace low income households and managing any	8.4

Themes	Outcomes	Link to SIA findings/SIMP	Section
		demands for short term accommodation to avoid impacts on the local tourism trade.	
Health and Community Wellbeing	Inland Rail recognises its role in supporting and positively contributing to community wellbeing during the changes that Inland Rail will bring	The potential for impacts on amenity, connectivity, local character and mental health is identified in the SIA. The Project has committed to the development of a Community Wellbeing Plan in cooperation with TRC, LVRC and other stakeholders to define, develop and implement measures to support community resilience and wellbeing. Inland Rail Community Sponsorships and Donations Program will also support community wellbeing in local communities.	8.5
Local and Indigenous Industry Participation	Inland Rail is committed to supporting local and Indigenous businesses to ensure they are prepared for and provided full, fair and reasonable opportunity to participate in Inland Rail	The SIA process identified strong interest in Project supply chain opportunities. ARTC's Australian Industry Participation Plan and Sustainable Procurement Policy have a key focus on supporting local industry and procurement. ARTC commenced development of business capability strategies in cooperation with DSDTI (now DSDILGP), including workshops in Gatton and Toowoomba, and will deliver further capability development activities post approval. Additionally, ARTC will require the Contractor to deliver business capability development strategies in the Toowoomba and Lockyer Valley LGAs.	8.6

8.1.3 Adequacy of proposed mitigation measures

The mitigation and management measures outlined in the SIA include:

- ARTC commitments that are being implemented as part of the Project's design
- Environmental management measures provided in EIS Chapter 23: Draft Outline EMP
- Strategies that are part of Inland Rail's Social Performance program and safety program
- Measures that have been identified as part of the SIA process, including through stakeholder engagement.

The adequacy of these measures is discussed below.

8.1.3.1 Design responses

ARTC's design responses have included:

- Locating the Project within the existing rail corridor or road reserves to reduce land acquisitions, severance and impacts on property use and management
- Design generally follows the Gowrie to Grandchester future State transport corridor
- Designing road-rail interfaces to maintain connectivity and safe operation of the road network (i.e. all road rail interfaces involve grade separation)
- A tunnel through the Toowoomba Range under the localities of Cranley, Mount Kynoch and Ballard
- Property-specific measures which respond to landowners' inputs regarding access to and within properties, and avoidance of farm infrastructure where possible.

ARTC design responses have reduced but not removed the potential for impacts due to land acquisition, property severance, disruption of agricultural businesses, and impacts on rural amenity. ARTC has committed to continued engagement with directly affected and nearby landowners to address their specific concerns.

8.1.3.2 Environmental impacts

Measures detailed in the relevant technical reports and summarised in Chapter 23: Draft Outline EMP are designed to avoid or mitigate environmental impacts that could result in social impacts, e.g. noise and vibration, changes to air quality, changes to the road networks and visual amenity impacts. The SIA assumes that the measures identified in the Draft Outline EMP and the CEMP will be effective in reducing environmental impacts during constriction in compliance with the Project's approval conditions.

Uncertainty exists in that, whilst changes to environmental qualities may be within regulatory criteria, individuals react differently to environmental changes, and issues such as noise and dust may still be experienced as diminishing amenity or affecting lifestyles. The Project will ensure the availability of a proactive responsive stakeholder engagement program and a responsive complaints management process to support identification of any issues which may require refinement of mitigation measures.

8.1.3.3 Social performance

ARTC's Social Performance program is being developed in response to the findings of SIAs undertaken for Inland Rail projects, stakeholder feedback, and corporate polices being established to support Inland Rai's delivery. ARTC has set clear social performance requirements for its contractors to support its social performance strategies.

Social performance strategy implementation will be a collaborative process with various stakeholders, and the success of the strategies will be partially dependent on the outcomes of those collaborations. Generally, ARTC's social performance strategies are expected to increase the value of Project benefits to local communities.

ARTC operational programs

ARTC safety programs which will govern the safe operation of Inland Rail projects include:

- Safe Work Interaction guideline which is applicable to workers at all ARTC controlled worksites and personnel involved in ARTC work activities, promoting good safety behaviours
- Safety Policy and Safety Management System, for which the objective is no harm to personnel at work or on the ARTC network
- The Rail Safety Worker Competence program and Contractor Compliance System which provide a framework for safe operation within ARTC's rail corridor.

ARTC will also ensure the availability of a responsive complaints management process to support identification of any issues as the basis of working with stakeholders to resolve issues (such as excessive noise) resulting from the Project's operation.

8.1.3.4 Measures identified through SIA

Additional mitigation measures which are outlined in following sections have been developed in response to stakeholder inputs (refer Section 8.1.4) and based on the SIA consultants' experience in social impact management. The measures are proposed in order to:

- Reduce the likelihood that impacts will occur by:
  - Identifying issues to be considered in further detail during the detailed design phase, in order to avoid or minimise impacts through the design and contracting process
  - Enabling local participation in employment, thereby minimising demands on housing and services
  - Managing workforce accommodation demands and workforce behaviour
- Reduce the consequence of social impacts through:
  - Engagement with stakeholders to refine mitigation measures such as site-specific (e.g. laydown area) and property-specific measures, to avoid or reduce impacts on amenity, property access and connectivity
  - Partnerships and projects which will offset impacts on amenity, community cohesion and local character, and strengthen community resilience
  - Provision of information and engagement strategies which will assist stakeholders to anticipate and cope with changes to environmental qualities, road access or service demands
- Increase the likelihood and local value of Project benefits by:
  - Highlighting employment, training, business and community investment priorities
  - Describing ARTC's existing initiatives which will maximise community benefits.

The risk ratings provided in Section 9 indicate the SIA team's evaluation of the degree to which the likelihood and/or consequence of social impacts will be reduced by the mitigation measures proposed, considering:

- Stakeholder inputs and vulnerabilities within potentially impacted communities
- The duration of impacts
- Project responses to issues raised by stakeholders
- ARTC commitments and social performance strategies
- Measures outlined in EIS Chapter 23: Draft Outline EMP
- Measures identified through the SIA process.

The monitoring framework provided in Section 8.7 will enable ARTC, the Contractor and stakeholders to track the delivery and effectiveness of the SIMP and develop corrective actions (i.e. additional or refined mitigation measures) if required.

8.1.4 Responses to stakeholder inputs

Stakeholders made a range of suggestions and recommendations regarding actions that ARTC could consider to mitigate adverse Project impacts or maximise Project benefits.

Stakeholder suggestions about mitigation and enhancement strategies are provided in Table 8.2, which references how suggestions and recommendations have been addressed.

Table 8.2 Stakeholder inputs on social impact mitigation and enhancement

Impact area	Suggested mitigation	How addressed
Indigenous values	▪ Involvement of Traditional Owners in cultural awareness training for contractors ▪ Create a legacy by addressing the need for an effective Indigenous keeping place for history, art and culture	▪ CHMPs have been developed and signed with the Yuggera Ugarapul People and the Western Wakka Wakka People ▪ Cultural awareness training for Project personnel will be developed and implemented in cooperation with Traditional Owners ▪ Provision of donation to upgrade the Gummingurru facilities to assist with displaying and keeping culturally significant items
	▪ Keep consulting with Traditional Owners to maximise opportunities for Indigenous people to benefit from the Project involvement	▪ ARTC's Indigenous Participation Advisor is working with Traditional Owner groups and local communities to support their consideration of Project opportunities
	▪ Facilitate access to EIS for Traditional Owner groups	▪ ARTC will ensure advice on access to the EIS is provided to Traditional Owner groups, invite them to community information sessions and facilitate assistance with development of a submission to the EIS if requested
Agriculture	▪ Refine the alignment to minimise impacts on agricultural land and property infrastructure	▪ Where possible the Project has been located within the existing gazetted rail and road corridors to limit property severance ▪ Use of the existing rail line, the proposed tunnel and construction of viaducts and bridges will reduce impacts on property severance and access ▪ ARTC is working with landowners to ensure that access to and between adjoining properties is maintained, and to identify actions which will minimise or offset changes to farm management, access or water flows which affect their properties
	▪ Avoid using construction water sources which would result in impacts on other water users and manage water use to avoid impacts on other water users	▪ The Project's hierarchy for construction water sources has been designed to avoid or at least minimise impacts on other water users, including the use of commercial water supplies where capacity exists, treated recycled water from tunnel dewatering activities, wastewater from treatment plants and/or Withcott Seedlings, and recycled water pipelines e.g. Wetalla Water Pipeline ▪ The Project could also use water allocations and licenses associated with properties that would be acquired
	▪ Avoid drilling new water bores which could result in drawdown affecting existing bores	▪ As above, bulk and recycled water sources will be investigated as preferred construction water sources, and existing water entitlements associated with properties to be acquired are expected to be available ▪ Drilling of new water bores is the least preferred option and would require Queensland Government approval under the *Water Act 2000*.
	▪ Offer training which supports the sustainability of the agricultural industry	▪ Training initiatives developed as part of the Inland Rail Skills Academy include a focus on training for agricultural industry workers., including certification of 'cross-over' skills which are relevant to both agriculture and construction

Impact area	Suggested mitigation	How addressed
Residential amenity	▪ Consult with landowners and ensure they are well informed and supported ▪ Ensure noise, vibration and dust control measures are of high quality ▪ Locate crossing loops away from residential areas to reduce noise disturbance ▪ Compensate adjoining landowners for effects on amenity and inconvenience	▪ ARTC is maintaining ongoing consultation with directly affected landowners and other community members to provide updates on the Project's design and EIS findings ▪ ARTC will promote the availability of the EIS to stakeholders and seek their feedback, to be considered in further Project planning and detailed design ▪ EIS Appendices O and P consider the potential for noise impacts and proposed mitigation designed to avoid or reduce noise and vibration impacts ▪ The Project will manage environmental impacts in accordance with existing and proposed environmental management systems to ensure compliance with the approval conditions and Project commitments. ▪ Management measures will be implemented where noise exceedances are predicted to reduce impacts on amenity and access ▪ Measures to support mitigation of impacts on amenity are provided in Section 8.2
Property values	▪ Compensation for any loss of property values ▪ Early acquisitions requested	▪ ARTC has engaged with landowners whose properties would be affected by the Project to identify measures addressing impacts on property management, property access/connectivity and residential amenity ▪ Land acquisition agreements developed by the Constructing Authority will address compensation for direct impacts on properties ▪ ARTC will advise the Constructing Authority of landowners' wishes in relation to acquisitions ▪ The Project will employ a suite of environmental management measures as outlined in EIS Chapter 23: Draft Outline EMP to reduce noise impacts and inconveniences such as traffic delays and dust, to reduce impacts on amenity and therefore the potential for impacts on property values ▪ Support for mitigation of impacts on affected landowners is addressed in Section 8.2
Local character	▪ Construction planning should consider scenic values which support amenity and tourism ▪ Provide planting to cuts and embankments to reduce their visual impacts ▪ Ongoing engagement with TRC and LVRC regarding infrastructure investments, place making, community facility investments and driving economic development	▪ EIS Appendix H: Landscape and visual impact assessment technical report and EIS Chapter 23: Draft Outline EMP provide detailed mitigation measures for impacts on visual amenity and landscape values ▪ Plantings to cuts and embankments will be considered as part of the Project's landscaping strategy in the detailed design phase. Safety design standards and the sustainability of planting will need to be considered. ▪ Initiatives to support the amenity and liveability of local towns and rural localities will be identified through engagement with Councils and communities during the detailed design phase and implemented during construction

Impact area	Suggested mitigation	How addressed
Mental health	▪ Ensure community members have access to open and transparent consultation to reduce uncertainties causing stress ▪ Provide training for community members in recognising and responding to mental health issues	▪ Project consultation during the EIS process including the display period is detailed in EIS Appendix D: Community Consultation ▪ ARTC has initiated a mental health partnership to assist community members who are feeling stress or anxiety related to the Project ▪ As part of the mental health partnership ARTC will consult with the PHNs regarding access to mental health awareness and support training for community members e.g. through men's sheds and community support groups
Connectivity and travel safety	▪ Minimise road closures ▪ Improve and upgrade road networks ▪ Avoid closure of Morris Road ▪ Provide grade separations for all crossings (avoid level crossings) of public roads	▪ Where possible, the Project's design has minimised road closures. Proposed road closures are identified in the EIS ▪ ARTC is working with TRC on an acceptable solution for Morris Road ▪ The Project's design includes grade-separated crossings for all road-rail interfaces, and removes an existing level crossing The TMP will include measures to mitigate impacts on traffic volumes, traffic safety and travel times
Public transport	▪ Include provision for passenger rail inclusion as part of the Project design	▪ The Project has been aligned with the Gowrie to Grandchester future State transport corridor to co-locate the future transport corridors where possible, including avoiding any proposed passenger stations, allowing the corridor to be utilised by QR for future electrified passenger rail service The Project does not propose railway stations or passenger services however the design does not preclude passenger services which are complementary with the current design
Local employment	▪ Define local employment and targets (including Indigenous people and women), to ensure that contractors employ people who live locally ▪ Cater for the spectrum of job seekers, including people with barriers to employment ▪ LVRC is also interested in the potential for a rail maintenance hub to be located in the Lockyer Valley	▪ The construction contract will include specification of Contractor's goals for employment of Indigenous people and people from within the Project region ▪ ARTC is working with DSDILGP, DSDSATSIP, CSQ and education and training providers to identify education and training pathways for local residents to equip them for jobs in Project construction and operations ▪ Decisions regarding the location of maintenance hubs would be made as part of future project phases and would include consultation with LVRC and TRC
Training and employment	▪ Involve CSQ, local high schools and TAFE in providing skills training and qualifications ▪ Provide school-based opportunities for students ▪ Align Project training strategies with Council's RSIS skills training initiatives	▪ ARTC has established the Inland Rail Skills Academy to support workforce training and development ▪ ARTC is working with DITRDC, DSDSATSIP Pand CSQ to develop training programs to be delivered through the Inland Rail Skills Academy ▪ ARTC is working with the two Councils' RSIS coordinators to align skills training programs with RSIS priorities
Indigenous training, employment	▪ Ensure local Indigenous people have access to training and employment opportunities, including young people and mature jobseekers	▪ ARTC is working with Traditional Owner groups to support community members' readiness for employment (refer Section 8.3)

Impact area	Suggested mitigation	How addressed
and business participation	▪ Employ an Indigenous mentor for construction personnel ▪ Require contractors to employ Western Wakka Wakka people and Yuggera Ugarapul People in Project construction as part of contracts	▪ ARTC will require the Contractor to specify and meet Indigenous training and employment goals ▪ The Project will continue to engage with Traditional Owner groups to provide access to information about business and skills requirements ▪ Project personnel will include Indigenous mentors ▪ ARTC is in regular consultation with Traditional owners. This will continue during the detailed design phase, with a particular focus on business and employment opportunities ▪ Indigenous training and employment are addressed in the SIA at Section 8.3
	▪ Opportunity for Traditional Owners to talk with Government agencies that will be involved in Inland Rail projects ▪ Let Traditional Owners know what capacity building programs are available to suit their needs	▪ ARTC has coordinated a meeting between Yuggera Ugarapul People and DATSIP (now DSDSATSIP) ▪ ARTC will coordinate meetings between DSDSATSIP and other Traditional Owner groups to discuss the Project and assistance available for business capacity and training programs
Housing and accommodation	▪ Accommodation plan required for construction workforce to manage potential cumulative impacts on local short-term accommodation	▪ The Contractor will provide an AMP for ARTC's approval ▪ ARTC will monitor the delivery and effectiveness of the AMP ▪ Mitigation of impacts on housing and accommodation is addressed in the SIA at Section 8.4
Health and wellbeing	▪ Provide access to adequate Project information about potential impacts ▪ Ensure people who are anxious or stressed about the project have access to support ▪ Invest in community facilities to address existing issues and/or Project impacts on community cohesion ▪ Consider potential use of land not needed after construction to connect to existing trails and public spaces or fire access trails ▪ Include social infrastructure providers in planning and continue to engage with agencies ▪ Continue engagement with Baillie Henderson Hospital to provide project updates and discuss construction traffic routes	▪ ARTC is undertaking a comprehensive engagement program as part of the EIS process (refer EIS Appendix D: Community Consultation) ▪ The Contractor will initiate a community reference group (CRG) which will be maintained throughout construction, with future need for the CRG to be agreed with CRG members and the OCG following the conclusion of construction ▪ ARTC has initiated a mental health partnership to assist community members who are feeling stress or anxiety related to the Project. ▪ The future use of land within the temporary disturbance footprint and its potential to contribute to community wellbeing will be considered by the Constructing Authority ▪ ARTC will maintain engagement with Queensland Education, LVRC, and Queensland Heath with respect to impacts on social infrastructure e.g. Gowrie State School, and Postmans Ridge Pioneer Memorial Hall, ▪ ARTC will maintain engagement with Baillie Henderson Hospital regarding construction traffic use of roads to the hospital and helicopter flight paths to the hospital ▪ ARTC's Community Donations and Sponsorship program accepts applications for community facility upgrades ▪ Mitigation of impacts on community well-being is addressed in the SIA at Section 8.5

Impact area	Suggested mitigation	How addressed
Schools	▪ Continue engagement with Department of Education and Gowrie State School to confirm noise mitigation measures	▪ Consultation with the Department of Education will be ongoing during the remainder of the EIS phase. When the detailed design and construction methodology are confirmed, ARTC will meet with Department of Education and Gowrie State School to update them on likely construction noise impacts and confirm mitigation measures e.g., façade treatments, supplementation of fences, and/or air-conditioning of affected buildings to be implemented prior to commencement of construction activities which would result in exceedances of Project noise criteria
Emergency services	▪ Early and regular engagement with QFES, QPS, QAS and SES to develop cooperative management measures ▪ Need for information about dangerous good transport (e.g. in the tunnel) ▪ Close cooperation with the emergency services providers including disaster management coordinators was recommended, including orientation to Project alignment ▪ Helicopter access along the alignment needs to be clarified ▪ Paramedics be employed at worksites to reduce demand on local services as far as possible ▪ Workforce health care needs be planned for in advance in consultation with Darling Downs HHS to inform health service planning	▪ Cooperation and engagement with emergency services with is addressed in the SIA at Section 8.5 ▪ ARTC is working with QPS, QAS and QFES as part of hazard and risk management planning which will include consideration of dangerous goods transport and access to the Project during an emergency ▪ During the detailed design phase, ARTC will work with QFES, QAS and QPS to confirm and implement alternative vehicle access points during construction and operation ▪ Emergency access has been addressed during the Project design process. With the provision that the rail line would be shut down in an emergency, there would several possible helicopter landing sites along the alignment ▪ Paramedics will be employed at worksites to reduce impacts on local health services ▪ The Project will advise DDHHS regarding the workforce ramp-up to enable DDHHS to plan for any specific anticipated demands on hospitals
Local businesses' participation in supply opportunities	▪ Provide workshops to businesses to promote the opportunities for business growth and support effective preparation for Project supply ▪ Smaller construction businesses will need help to understand where they fit in the supply chain ▪ Toowoomba Chamber of Commerce stakeholder register can be used to promote opportunities ▪ Workshop on developing capacity statements could be offered in cooperation between ARTC and the Chamber ▪ Support the capacity of local contractors and suppliers to service the Project	▪ The Project will maintain communication with businesses and business organisations to update them on Project timeframes, supply requirements and capacity building programs ▪ ARTC is working with DSDILGP /DESBT to identify local and regional businesses with potential capacity to supply the Project, and to develop capacity building initiatives ▪ ARTC will implement its Australian Industry Participation Plan to ensure local and Indigenous businesses and social enterprises are provided full, fair and reasonable opportunity to participate in the supply of goods and services on Inland Rail ▪ ARTC has conducted business capacity building workshops during 2020 and will hold further workshops during the detailed design phase ▪ Chamber of Commerce or business representative groups will be used to promote supply opportunities ▪ Workshops on requirements of working with major projects e.g. developing capability statements, will be offered in cooperation with DSDILGP and Industry Capability Network

Impact area	Suggested mitigation	How addressed
		▪ Local businesses are encouraged to register on the Inland Rail website and through ICN Gateway ▪ Measures addressing local business opportunities and impacts on businesses are provided in Section 8.6.

8.1.5 Engagement with Councils

The Project has consulted extensively with TRC and LVRC regarding a range of issues which are linked to social outcomes, including design issues, grade separated crossings, flooding risks, environmental management measures, traffic management, waste management and impacts on Council utilities.

As detailed in EIS Appendix D: Community Consultation, ARTC's responses to Council inputs on mitigation of Project impacts have included:

- Development of hydraulic design criteria, bridge and culvert structure design and design refinements addressing Councils' concerns about changes to flooding patterns and debris from flood events
- Measures for the treatment and relocation of utilities
- Identification of suitable road access alternatives for all formed roads that would be impacted during construction and operation in consultation with Councils, emergency services, landholders and DTMR
- Design responses to specific areas of concern to inform the location and preferred treatment for each road–rail interface.

The results of SIA-specific consultation with Councils on social impacts and benefits and proposed management measures are reflected in the:

- Workforce management sub-plan (refer Section 8.3), which includes a strong focus on local employment and training opportunities, Indigenous employment opportunities, and alignment with Council on RSIS regional development priorities and SQW programs
- Housing and accommodation sub-plan (refer Section 8.4) which incorporates LVRC inputs regarding management of workforce demands on short-term accommodation used by tourists
- Health and community wellbeing sub-plan (refer Section 8.5), which includes the framework for co-operation with Councils and other stakeholders to offset impacts on social values such as amenity and local character, and make positive contributions to community cohesion and resilience
- Local business and industry participation sub-plan (refer Section 8.6), which reflects Councils' priorities for maximising the involvement of local businesses in the Project's supply chain, and the importance of tourism to the two LGAs.

ARTC will continue engagement with TRC and LVRC during the draft EIS public display phase and following review of Council submissions to the draft EIS. This will include meeting with the TRC and LVRC to:

- Review the EIS findings
- Agree the program for engagement during the detailed design phase, including issues to be discussed and the program for discussion (e.g. construction water supplies, waste management, road network management and social impact management)
- Progress discussions with TRC and LVRC with respect to community development initiatives that could be delivered in partnership with Councils
- Seek and consider TRC and LVRC feedback with regard to landscape design.

The results of further engagement with Councils during and after display of the draft EIS will be reflected in the information provided to OCG by ARTC prior to the Coordinator-General's evaluation of the EIS. Further details regarding Project consultation with Councils during the detailed design, pre-construction and construction phases is provided in Table 8.7.

8.1.6 Links to State and local planning

Links between mitigation measures discussed in the SIMP and State and local planning priorities (identified in Section 2.4) are summarised in Table 8.3.

Table 8.3 Mitigation measures linked to planning priorities

Plan/Policy	Link with mitigation measures	Section
South East Queensland Regional Plan (ShapingSEQ)	▪ The Project's cooperation with Traditional Owners, including engagement to support employment opportunities, cultural awareness tours and ongoing cultural heritage management activities, recognises Indigenous cultural knowledge and connection to land	8.2
	▪ Measures to maximise local employment and local business participation will support ShapingSEQ goals such as 'grow', 'prosper' and 'sustain' in the Project region	8.3, 8.6
Darling Downs Regional Plan	▪ Measures to maximise local employment and local business participation will support the region's economic diversity and opportunity ▪ Accommodation management measures aim to avoid pressure on affordable housing stocks	8.3, 8.4, 8.6
Toowoomba Regional Community Plan	▪ AMP will address potential impacts on access to affordable, suitable and good quality housing ▪ Measures which address potential impacts on visual amenity will support local character	8.4 8.1.4, 8.5.4
RDA Darling Downs South West Roadmap	▪ The Project's focus on local training and employment and local business involvement will support local economies by building labour force skills and business capacity ▪ Engagement with Department of Education, Queensland Health and other social infrastructure providers will enable the current amenity Social infrastructure including health facilities and community and cultural centres	8.3, 8.5
RDA Ipswich and West Moreton Plan	▪ Measures to maximise local employment and local business participation provide support for diversifying local economies ▪ Measures to mitigate impacts on tourism as a highly valued industry are also provided	8.3, 8.6
Lockyer – Our Valley Our Vision	▪ Provision of training, development and employment opportunities for the LGA's residents will support sustainable economic development ▪ Inland Rail Skills Academy initiatives will support opportunities for lifelong learning and access to specialised training ▪ Measures to support local employment in construction and business supply opportunities will support livelihoods	8.3, 8.6
Lockyer Valley Economic Development Plan 2018 – 2023	▪ Measures to maximise local employment and local business participation provide support for diversifying local economies	8.3, 8.6
Employment and training programs	▪ Inland Rail is cooperating with TRC and LVRC RSIS officers to identify opportunities for cooperation in skills development ▪ The Inland Rail Skills Academy is cooperating with DESBT and DITRDC to align training and development initiatives with Government policies	8.3, 8.6

8.2 Community and Stakeholder Engagement Plan

ARTC has delivered a comprehensive communication and consultation program during the draft EIS phase to ensure that community members are informed about the Project and its potential impacts, have access to the most recently available information, and can contact Project staff to discuss their concerns. Some members of potentially impacted communities have identified uncertainty, anxiety and stress about the potential for the Project to affect local amenity or quality of life as the result of property acquisition, noise or dust impacts, changes to the traffic network and/or impacts on local character.

ARTC has committed to a comprehensive range of environmental and social impact management strategies which will reduce the potential for impacts on amenity or environmental qualities of properties near the proposed rail corridor. EIS Chapter 23: Draft Outline EMP and the relevant EIS appendices provide detailed measures to address noise and dust impacts on amenity, connectivity and traffic safety issues, and the range of environmental impacts that could affect local stakeholders e.g. impacts on groundwater, surface water, visual impacts and biodiversity.

The Project will comply with environmental approval conditions and regulatory standards, however environmental changes during the construction phase would include the introduction of construction noise, and vibration, increased traffic and the existence of laydown areas and bridge construction sites which may detract from rural character. Most impacts will be temporary as construction works move along the corridor, but impacts such as noise and traffic increases related to laydown areas or bridge construction could be experienced for a longer duration.

Positive social changes during construction which may have ongoing benefits would include:

- Access to training and employment opportunities, which will build the local skills base and support the well-being of personnel and families
- Opportunities for local businesses to supply goods and services to the Project, with potential to support business development
- Opportunities for Traditional Owners to work or do business on Country.

The Project's operation would introduce a long-term source of noise in rural and rural residential areas, which, if not mitigated, would have potential to impact the amenity of homes, and/or the potential to affect health through sleep disturbance or stress. EIS Chapter 23: Draft Outline EMP and EIS Appendix P: Operational railway noise and vibration include specific detailed measures addressing railway noise.

Project operations have potential for broader regional and State benefits including support for regional economic development which will sustain employment and business activity for the long-term.

The purpose of the Community and Stakeholder Engagement Plan outlined in the following subsections is to support mitigation and adaptive management of impacts including:

- Changes to land use in the disturbance footprint, with potential to disrupt residential, business or agricultural uses, by involving stakeholders in the development and refinement of management measures addressing their properties
- Disruptions to the use, amenity or access of private properties during construction, by providing guidance for engagement with directly affected landowners and nearby residents regarding environmental changes during the construction phase
- Changes to the road network, with potential to affect how community members, services and business staff move around the Project region, by providing community information about changes to the traffic network, road-rail safety management and a travel demand management campaign

- Land acquisition resulting in stress, by enabling continuity of engagement between the EIS and land acquisition processes, access to support if required, and through ongoing engagement with affected landowners
- Impacts on amenity, connectivity and cohesion, by ensuring that community members and other stakeholders have access to information and communication channels which help them understand the nature, duration and effect of Project works, and how to resolve issues as they arise
- Concerns about property values, by sharing information about environmental impacts and management measures.

The Community and Stakeholder Engagement Plan includes:

- Objectives and performance measures for engagement
- Stakeholders to be engaged
- Partnerships and agreements which are in progress or being developed
- Responsibilities for engagement implementation
- The complaints management handling procedure
- Measures for ongoing engagement, including:
  - Proposed communication tools and activities
  - Engagement prior to and following Project approval
  - Engagement actions that ARTC will undertake and/or require of the Contractor, including the timing for each action i.e. detailed design, pre-construction and construction phases
  - An outline of the CRG/s to be established during the detailed design phase
  - Roles of the Community Liaison Officer and Community Relations Monitor
- Monitoring and reporting provisions for community and stakeholder engagement
- Mechanisms for incorporation of stakeholder inputs in refinement of management measures.

8.2.1 Objectives and performance measures

ARTC recognises that ongoing engagement with landowners, Traditional Owners, communities, Councils, businesses, government departments and other stakeholders that will be impacted by or stand to benefit from Inland Rail is central to the Project's success.

The objectives, desired and performance indicators for community and stakeholder engagement are shown in Table 8.4.

Table 8.4 Engagement objectives, desired outcomes and performance measures

Objective	Desired outcomes	Performance measures
Establish and maintain engagement mechanisms which build relationships between ARTC and its stakeholders	Cooperative and respectful relationships exist between ARTC, the Contractor, construction personnel and community members	▪ CRG feedback confirms ARTC has engendered positive relationships
	Community and stakeholder relationships facilitate information sharing to enable effective management of social impacts	▪ A majority of landowners are satisfied with the management of Project impacts on their properties, as indicated by their feedback to the Project

Objective	Desired outcomes	Performance measures
		▪ Number of complaints about Project impacts
Work with stakeholders to minimise impacts on community values including cultural landscapes, local character and connectivity	Initiatives identified through stakeholder engagement have benefits for local communities and offset impacts on amenity, character and cohesion	▪ Number and outcome measures (to be determined with partners) for community partnerships and programs in potentially impacted communities
	Stakeholder issues and grievances are identified, evaluated, addressed and recorded	▪ ARTC responds to complaints from community members as per the ARTC Complaints Management System ▪ Complaints and their resolution are recorded and reported as part of SIMP reports
Enable adaptive management of impacts on amenity, connectivity and community values during construction	Community members (including those without internet access or with limited English language skills) have access to information and support to assist adaptation to changes resulting from the Project ARTC adapts its social and environmental management measures where required to improve their effectiveness	▪ CRG feedback confirms satisfactory access to timely information about the Project and management measures ▪ Community information is available through paper-based and face-to-face delivery methods ▪ Mitigation measures are refined where necessary in response to stakeholder feedback ▪ Landowners who need to move from within the Project footprint have access to support, if required ▪ Mental health partnership is maintained during the construction phase

8.2.2 Stakeholders

ARTC recognises that community and stakeholder engagement is central to the Project's delivery. The key stakeholders addressed by the engagement measures outlined in Table 8.7 include:

- Landowners in and near the disturbance footprint, including residents and businesses
- Residents, businesses and community and business organisations in potentially impacted communities
- Traditional owners and other Indigenous community members
- TRC and LVRC
- DTMR and public utility providers
- Local businesses, including farming and grazing businesses
- Schools
- Government, agencies including Queensland Health, QPS, QAS, QFES, Department of Education, DESBT, DSDILGP, DSDSATSIP, DCHDE, and DITRDC.

Key stakeholders that are also addressed as part of other SIMP action plans include:

- Education and training providers (Section 8.3)
- Short-term accommodation providers (Section 8.4)

- Community organisations providing community support or outreach services and the managers of potentially impacted community facilities (identified in Sections 7.4.2, 7.4.3 and 7.4.5), Queensland Health, QPS, QAS, QFES and Department of Education (Section 8.5)
- DESBT and DSDILGP (Sections 8.3 and 8.6)
- Businesses and business and industry organisations including Lockyer Valley Tourism Association and Tourism Darling Downs (Section 8.6).

ARTC will maintain a stakeholder register, building on the register developed during previous Project phases, to ensure regular and consistent engagement with stakeholders. Stakeholder interactions will be documented in order to monitor the success of engagement and identify issues to be addressed as part of implementing the Project's environmental management strategies.

8.2.3 Partnerships and agreements

During the EIS process, ARTC has been working with a range of stakeholders to develop partnerships and agreements which will support the management of social impacts and opportunities.

The current status of partnerships and agreements with stakeholders is outlined in Table 8.5. Partnerships and agreements will be further progressed with stakeholders during the Project approval process and after the Project is approved. The Project will be delivered by the Contractor who will have a significant part in implementing specific activities and agreements. The current status of partnerships and agreements with stakeholders is outlined below.

Table 8.5 Status of partnerships and agreements

Impact/benefit	Detail	Status
Use of private property	▪ ARTC has engaged with directly affected landholders to discuss property access, water access, mitigation of impacts on property infrastructure, and minimising impacts to connectivity across the rail corridor. ▪ ARTC will continue consultation during the EIS display period when landholders have access to the EIS ▪ ARTC will provide information about the properties within the corridor to the Constructing Authority (currently identified as DTMR), including the results of any relevant property-specific agreements with landholders	Current and ongoing
	▪ The Constructing Authority will not begin to initiate land acquisition agreements until the corridor is confirmed, the Project is approved, and the gazetted corridor is finalised ▪ During the construction phase, the Contractor will assume responsibility for relationships with landholders	Commencement date to be determined by Constructing Authority
Effects on cultural landscapes	▪ Cultural Heritage Management Plans for the Project have been developed between ARTC and Western Wakka Wakka People and between ARTC and Yuggera Ugarapul People and approved under the *Aboriginal Cultural Heritage Act 2003*.	Executed and ongoing
Impacts on local amenity	▪ Engagement with TRC and LVRC on issues including road re-alignments, grace separated crossings, road use management, waste management, utilities and social impacts and benefits	Commenced during EIS phase and continuing
	Commencement of discussions with TRC and LVRC regarding Council/community projects which the Project could support, and continuation of engagement with TRC and LVRC to identify and implement cooperative actions to support community wellbeing, including: ▪ Placemaking initiatives	Engagement commenced Q2 2021 and is ongoing, with additional work to be undertaken once the Contractor is on board

Impact/benefit	Detail	Status
	▪ Projects which support community cohesion and resilience ▪ Opportunities for alignment with RSIS project officers and Councils' economic development officers on training and development strategies ▪ Council participation in tracking the SIMP's outcomes	
	▪ Council participation in tracking SIMP outcomes and developing adaptive management measures to address any emerging or changing needs.	Commencing during construction
Connectivity	▪ Agreement with Councils that they have the right to approve Road Use Management Plans	Current/confirmed
Training and development opportunities	▪ As part of Inland Rail Skills Academy partnerships, a Memorandum of Understanding (MOU) with CSQ, to: o Provide information and advice on skills shortages to ARTC o Work with ARTC to broker and enable training responses to address identified shortages o Provide targeted construction skills training to Indigenous people, in cooperation with major contractors o Support ARTC and potential contractors to develop and deliver targeted skills development in the Toowoomba and Lockyer Valley LGAs in line with SIMP commitments and Project needs o Work with ARTC to deliver CSQ's Try a Trade' program to be initiated post approval	Current
	▪ Inland Rail Skills Academy partnerships to enable: o University scholarships with a focus on courses which facilitate STEM and regional development outcomes, e.g. engineering and project management. with a partnership with USQ to offer scholarships initiated in 2020. Scholarships are only available to applicants located in communities along the Inland Rail alignment in Queensland o Partnership with University of Newcastle to deliver a STEM education program in high schools along the Project alignment, including linkages to USQ Science and Engineering Challenge for schools in SEQ o Training programs focused on developing skills in rail operation o Development of an online rail skills program available to school and university students in the region, including access to Inland Rail innovation, exposure to rail professions and micro-competencies being explored o Business capacity building programs with small-to-medium enterprises to strengthen capacity in the region for both this Project and other future projects. Programs are being developed in cooperation with DSDILGP and DESBT, for delivery pre- and post-approval o Apprenticeships, traineeships and facilitation of industry accreditation to support employment into Inland Rail projects and other major regional industries, to be progressed when Project is approved	Completed delivery of University scholarships with a focus on courses which facilitate STEM Completed delivery of initial business capacity building program with small-to-medium enterprises Delivery of a partnership with University of Newcastle to deliver a STEM education program and development of an online rail skills program, current and ongoing Other initiatives agreed as noted, to be commenced post approval Further initiatives to be identified during detailed design phase
	▪ Engagement with DSDSATSIP and CSQ to identify specific training programs for Indigenous people, to be implemented as part of the Inland Rail Skills Academy	Current engagement
	▪ Cooperation with the two Councils' RSIS coordinators to align skills training programs with RSIS priorities	RSIS projects are now complete so the opportunity for further

Impact/benefit	Detail	Status
		alignment of training initiatives has passed, but engagement with Council officers on training priorities will continue during the detailed design phase
	▪ SQW partnership with LVRC to provide construction skills training as part of upgrading a community facility	Initiatives agreed and DESBT funding sought, but not achieved during the first two SQW rounds. Engagement with DESBT is ongoing
	▪ SQW partnership with TRC to implement training programs to develop a training program for working in rail operation	
	▪ Engagement with DESBT to discuss existing and future needs for skills training in the Project region and identify DESBT programs which will support individuals and businesses to be ready for opportunities associated with supply to Inland Rail Projects	
	▪ Partnership between Western Wakka Wakka people, Yuggera Ugarapul People and Inland Rail to encourage Indigenous people to participate in CSQ's construction skills program prior to Inland Rail construction commencing	Discussions ongoing
Health and safety	▪ Mental health partnerships with the Darling Downs and West Moreton PHN and the Brisbane South PHN to promote free local access to mental health services and provide resources and services to mitigate any increased demand caused by Inland Rail	Delivery commenced in 2019 and is ongoing
	▪ Lifeline supported to deliver Lifeline's Community Connections program in the Project region to support community cohesion and resilience (delivered through PHN partnership)	Delivery commenced in 2019 and is ongoing
	▪ Partnership with emergency services to build skills and cooperation in emergency responses	To be commenced post approval
	▪ Potential for additional services to be included within the PHN partnership agreements	Discussions commenced and ongoing
	▪ Partnership with 'Mates in Construction' focused on supporting mental health outcomes of construction workers on the Project	Discussions in progress
Local procurement	▪ Engagement with DESBT to discuss existing and future needs for skills training in the Project region, and to identify DESBT programs which will support individuals and businesses to be ready for opportunities associated with supply of goods, services, materials and labour to Inland Rail Projects. ▪ Engagement with DSDILGP and Industry Capability Network to collaborate on business capacity development in the Project region, to prepare small to medium businesses to participate in major projects, foster relationships between suppliers and help match suppliers to Inland Rail opportunities ▪ Working with DITRDC to align Project initiatives with DITRDC's regional development initiatives ▪ Information exchange regarding businesses within the Western Wakka Wakka and Yuggera Ugarapul communities and the business offerings and skills that contractors require, in support of the development of capacity building programs.	SQW identified as a key program for skills training and business capacity building, but SQW funding not received to date (see Section 6.3.6). ICN collaboration commenced. Remaining initiatives to be implemented when the contractor is confirmed.

Impact/benefit	Detail	Status
Indigenous business opportunities	▪ ARTC has engaged with Yuggera Ugarapul People and Western Wakka Wakka People to ensure that they are aware of business supply opportunities and ARTC is aware of Indigenous businesses which have capacity or could build capacity for involvement in the Project's supply chain. ▪ Information exchange regarding Indigenous businesses and the supplies and skills that construction contractors require and capacity building programs available to them is ongoing	Current engagement

8.2.4 Engagement responsibilities

During the remainder of the EIS phase, Inland Rail staff will continue to work with community members and other stakeholders to encourage access to the draft EIS and community participation in the public submission process (refer Section 8.2.6).

Both ARTC and the Contractor will maintain roles in community and stakeholder engagement during the detailed design, pre-construction and construction phases. Table 8.6 summaries key responsibilities for each party by phase. Detailed communication and engagement measures are provided in Section 8.2.6.

Table 8.6 Engagement responsibilities

Phase	Engagement mechanism	Responsibility
Remainder of the EIS phase	Public notification, display and submission process	DSDILGP
	Provide communications collateral (website, community updates, fact sheet) and opportunities for engagement (community information sessions, Council briefings and CRG meetings) to encourage access to the draft EIS and community participation in the public submission process	ARTC
	Review public submissions and provide further information/clarification in response to submissions in Final EIS	
	Subject to DSDILGP's process to finalise the EIS, update and engage with stakeholders to develop responses and resolution of comments received during public submissions	
	Continue to meet with government agencies, impacted landholders and other key stakeholders in regard to Project commitments, approval conditions and secondary approvals, as relevant	
	Meet with TRC and LVRC to discuss proposed management measures, including the scope of the Community Wellbeing Plan and AMP, and any further measures to be included	
Detailed design phase	Write to directly affected landholders when the Constructing Authority is appointed and seek landholder consent for ARTC to advise the Constructing Authority of landholders' wishes identified in engagement to date	
	Undertake engagement with directly affected landholders regarding land acquisition process and compensation arrangements	Constructing Authority
	Engage with Councils, Government agencies and other stakeholders identified to seek input to the AMP (refer Section 8.4.4) and Community Wellbeing Plan (refer Section 8.5.4) , continue implementation of partnerships and agreements, and initiate management measures with long-lead times	ARTC and Contractor
	Provide and implement a Communication and Stakeholder Engagement Management Plan (CSEMP) that: ▪ Demonstrates the ability to develop and maintain a proactive, collaborative and effective working relationship with the community, stakeholders and ARTC ▪ Complies with ARTC policies and procedures	Contractor

Phase	Engagement mechanism	Responsibility
	▪ Includes a communication control plan for key proposed construction sites along the alignment ▪ Details business engagement mechanisms ▪ Describes the process for identifying and establish community initiatives, partnerships and legacy proposals	
	Establish and operate the CRG/s for operation throughout the detailed design. pre-construction and construction phase	Contractor with ARTC
Pre-construction and construction	Provide an oversight and monitoring role to ensure consultation activities are delivered in accordance with EIS commitments and relevant approval conditions, including employment of a Community and Stakeholder Engagement Manager and provision of Community Relations Monitor	ARTC
	Implement Inland Rail Skills Academy partnerships	
	Provision of regular updates about the progress and status of the Project through the Inland Rail website	
	Free call telephone line	
	Road/rail safety campaigns addressing the construction phase	
	Reply-paid address for written correspondence from community members	
	Maintain the Project's webpage, including feedback mechanisms and an enquiry facility.	
	Establish and implement a complaints and enquiries process which is consistent with ARTC's Complaint Management Handling Procedure	Contractor with ARTC
	Engage with community members, community organisations and Councils to identify and establish community initiatives, partnerships and legacy proposals	
	Establish and implement communication and information strategies about the construction program and activities including: ▪ Notification letters and/or email updates ▪ Public notices ▪ Factsheets addressing specific works, impacts or changes to conditions ▪ Website and SMS updates	
	Cooperation with Traditional owners in cultural heritage management	
	Email addresses to ensure community members have direct access to the Project team	ARTC and Contractor
	Provide suitably qualified and experienced community and stakeholder liaison personnel to deliver the engagement program	Contractor
	Provide training for on-the-ground workforce in community engagement protocols and requirements	
	Meet with Councils and other stakeholders with respect to agreed management measures	
	Day-to-day stakeholder liaison relating to construction activities and management of environmental impacts	
	Provide and promote contact details for availability of a Project representative by phone 24/7	
	Partnerships as agreed with the relevant stakeholders (e.g. community organisations and training providers)	
	Road/rail safety campaigns addressing the operations phase	
	Documentation of stakeholder interactions and identification of issues to be addressed as part of implementing the Project's environmental management strategies	

Community Reference Group/s

The Contractor will establish one or more Community Reference Groups during the detailed design phase. The CRGs will replace the CCCs established by ARTC for the EIS phase.

The CRG/s may be formed on a Project basis (e.g. one for each of the Inland Rail projects) or on a locality basis (e.g. one in the Toowoomba LGA and one in the Lockyer Valley LGA). The makeup, number and location of the CRGs will be finalised once the construction contract has been awarded.

The CRG(s) will meet regularly until completion of construction to enable representations of community issues to ARTC and facilitate community review of the effectiveness of SIMP measures. The CRG(s) will:

- Provide a channel to inform communities about the construction phase of the Project
- Provide feedback to ARTC about construction plans and programs
- Receive updates on SIMP implementation, and enable feedback on mitigation and enhancement measures which need to be reconsidered or refined
- Enable CRG members to participate in monitoring the effectiveness of social and environmental management measures (refer Section 8.7).

The CRG membership will be selected through a public process e.g. advertising for members and selection of members according to published selection criteria.

The Contractor will be required to ensure community members and other stakeholders have access to CRG proceedings by providing endorsed copies of minutes and other meeting records for the public record and for display on the Project's webpage.

The need for a CRG for any part of the operations phase will be reviewed in cooperation with the OCG at the completion of construction.

Community Liaison Officer/s

The Contractor will provide one or more Community Liaison Officers during the construction period, to:

- Support communication between the Contractor, landowners and community members
- Provide community feedback to the Contractor in relation to the impacts of construction activities on the community, and suggested refinements to environment management measures
- Establish and maintain a process for receiving, recording and responding to complaints in relation to construction issues
- Facilitate provision of information to the wider community in relation to construction programming, the nature of construction work, and impact mitigation measures.

Contact details for the Community Liaison Officer will be provided to all landowners within 2 km of the Project disturbance footprint, and will be made available to other community members through the Project’s website and ARTC’s other communication channels.

Community Relations Monitor

The Project will engage an independent, appropriately skilled and experienced entity as the Community Relations Monitor for the duration of the construction phase.

The roles and responsibilities of the Community Relations Monitor are set out in EIS Chapter 23: Draft Outline EMP and include:

- Provide monthly reports to ARTC on community issues emerging from the construction and commissioning activities in relation to the Project conditions, the CEMP, complaints, monitoring and community relations
- Communicate with ARTC and the Environmental Monitor with regard to any imposed conditions, the CEMP, SIMP, community consultation strategies and community concerns
- Review complaints procedures and the resolution of complaints and corrective action reporting to assess performance of the Contractor's implementation of the SIMP and CEMP
- Facilitate discussions between the ARTC and the Contractor and affected entities about mitigation measures as required by either the ARTC or affected entity
- Provide advice to the Environmental Monitor in relation to complaints.

8.2.5 Complaints management

The Inland Rail Complaint Management Handling Procedure applies to all employees of ARTC and to all contractors and site visitors. The aim of the procedure is to ensure that complaints are dealt with efficiently and effectively, and that stakeholders have confidence in the organisations complaint system.

A complaint is an expression of dissatisfaction about the policies, operations, activities and projects of Inland Rail or its staff. Complaints can be lodged by any member of the public, landholder or other stakeholder. Information on where and how to lodge a complaint is readily available through established ARTC Inland Rail communication channels.

The Contractor is likely to implement its own complaints management process which will be required to align with ARTC's Complaint Management Handling Procedure.

ARTC ensures the complaint process is flexible and that no one is excluded from making a complaint. Where necessary, ARTC Inland Rail staff will assist those stakeholders requiring assistance to lodge a complaint.

The Complaint Management Handling Procedure includes the following steps:

- Acknowledge: upon receiving a complaint, ARTC Inland Rail staff will take reasonable steps to ensure that the complaint is properly understood and seek clarification or additional information from the complainant where required. ARTC Inland Rail will report the complaint and forward it to the relevant area for appropriate action or information. Where sufficient stakeholder contact details have been provided all complaints will receive formal written acknowledgment of complaint receipt within two business days.
- Assessment: A preliminary assessment of the complaint is conducted to determine whether the complaint is one which ARTC can resolve, or needs to be referred to another appropriate agency or party (for example a local council or government agency).
- Planning: Complaints that are straightforward can often be resolved on first contact. If this is not the case and the complaint requires investigation, a planning process will be undertaken to identify what is to be investigated, the steps involved in investigation, the remedy the complainant is seeking and other possible remedies
- Investigation: ARTC will conduct an investigation into the complaint, based on the principles of impartiality, confidentiality and transparency

- Response: the progress of the complaint will be monitored and communicated to the complainant, until the outcome has been communicated to the complainant
- Follow-up: complainants will be offered the opportunity to seek review of how their complaint was handled and resolved. If a complainant is dissatisfied with an investigator's findings or decision, a review will be carried out by an ARTC officer who has not been involved in the matter. If the complainant is still dissatisfied with the outcome, they will be advised of independent review bodies or mediation mechanisms that are available.

ARTC will regularly monitor the quality and effectiveness of the complaints management system and revise relevant components where appropriate, based on feedback from internal and external sources.

ARTC's stakeholder management system will be used to record details of complaints and their resolution for issues analysis and reporting purposes.

8.2.6 Measures for ongoing engagement

ARTC's commitments to community and stakeholder engagement include:

- Provision of clear and consistent information about Inland Rail and its associated projects
- Building a dialogue between landowners and the Project about land access and acquisition processes
- Working with local communities to understand their concerns and identify emerging social issues that need to be addressed at the Project or Program level
- Provision of clear and consistent information about the Project to community members
- Active engagement and effective communication with stakeholders and the community to enable ARTC to construct and operate the Project with the least social impact
- Provision of support to stakeholders and communities that are facing change due to Inland Rail

Maintenance of communication mechanisms throughout the approval, pre-construction and construction phases including a free call number and email addresses to ensure community members have direct access to the Project team, a reply-paid address for written correspondence from the community, and the Project's webpage, including feedback mechanisms and an enquiry facility.

ARTC will seek feedback on the efficacy of the stakeholder engagement and impact management measures to enable continuous improvement (refer Section 8.2.8).

Engagement measures to be utilised pre-approval and post-approval are described below and detailed in Table 8.7. The Community and Stakeholder Engagement Plan will be reviewed annually during the construction phase, in consultation with the CRG, and updated as required.

Proposed communication tools and activities

During the draft EIS display period, ARTC will communicate the findings of the draft EIS and encourage community engagement in the display process using the following tools:

- ARTC website—consultation locations and link to submission page
- Social media posts—submission release date
- E-newsletter to stakeholders in the Project database
- Community information sessions to encourage community feedback
- Distribution of the Office of Coordinator-General's 'Have your say' factsheets for public consultation.

During the detailed design, pre-construction and construction phases, the Project will utilise the following communication tools and activities:

- Provision of regular updates about the progress and status of the Project by ARTC through the Inland Rail website, printed information and face-to-face contact with stakeholders
- Notification letters and/or email updates prior to works being undertaken e.g. prior to commencement of construction, piling, blasting, disruption of residential, business or public access, disruption of utility service, changes in traffic or transport network conditions, road closures and diversions, or modification of pedestrian routes, cycleways, train stations and bus stops
- Public notices regarding matters such as changes to traffic conditions and high impact work or work packages, based on predictive noise, dust and/or vibration modelling by the Contractor
- The availability of a Project representative by phone 24/7
- A free call telephone line
- Factsheets addressing specific works, impacts or changes to conditions
- Website and SMS updates
- Road/rail safety campaigns addressing the operations phase
- Stakeholder meetings and briefings as discussed below.

Pre-approval engagement

Inland Rail is committed to supporting stakeholder awareness of the EIS process and encouraging community members to participate in the draft EIS submission process conducted by DSDILGP. The Project will support the submission process by undertaking the following activities:

- Providing a link on ARTC's website to the Office of the Coordinator-General website where the EIS is available
- Providing information about the public submission period and submission requirements on ARTC's website
- Producing and distributing a letter to publicise the release of the draft EIS, providing information on the public submission process and how to make submissions
- Emailing key stakeholders registered on the Project's database about the draft EIS and submission period
- Conducting agency briefings, CCC meetings and community information sessions to present the findings of the draft EIS.

Inland Rail personnel will also meet with TRC, LVRC and government agencies to discuss the draft EIS findings including proposed management measures outlined in the SIMP and seek further inputs on community initiatives which should be considered as part of the Project's Community Wellbeing Plan.

Following completion of the public display period, all stakeholder and community feedback will be reviewed and addressed in the final EIS documentation. ARTC will continue to provide information to landowners, community members and other stakeholders regarding changes to the Project as a result of the public notification process, submission of supplementary EIS documentation and the availability of the final EIS.

The decision by the Coordinator-General about whether to approve the Project will be made public via DSDILGP and ARTC Inland Rail's websites.

Engagement actions during detailed design, pre-construction and construction

The community and stakeholder engagement actions outlined in Table 8.7 include details of the following engagement strategies to be employed during the Project's detailed design, pre-construction and construction phases:

Engagement with directly affected landholders to confirm mitigation of property-specific impacts, and with residents living near the Project footprint to enable them to understand potential impacts on household amenity and how to resolve any emerging issues with the Project

Provision of community information and engagement opportunities (including one or more CRGs) for residents of potentially affected communities

Cooperation with Traditional Owners and Indigenous community members to support cultural heritage management and enable their access to Project employment and business supply opportunities

Engagement and cooperation with TRC and LVRC in the adaptive management of environmental and social impacts including management measures for impacts on community facilities, amenity, sense of place and community cohesion

Engagement with groundwater bore owners and water users with respect to groundwater monitoring, approvals and commitments

Engagement with businesses that may be negatively affected to optimise and monitor impact management measures, and actions to increase local businesses' opportunities for involvement in Project supply arrangements

Engagement with Government agencies and community organisations to confirm the detail of mitigation measures for impacts on social infrastructure and implement cooperative arrangements.

Engagement actions that support actions provided in other SIMP action plans are also noted in Sections 8.3 to 8.6 and address:

- Local high schools and training providers to develop training pathways for Project construction and operation (refer Section 8.3)
- Accommodation providers and Councils regarding management of any workforce accommodation requirements (refer Section 8.4)
- Council, Government agencies and community organisations regarding mitigation of impacts on community wellbeing and enhancement of Project benefits for local communities (refer Section 8.5)
- Businesses regarding specific impacts and with tourism associations and operators regarding major event schedules and support for the promotion of local tourism and capacity building programs (refer Section 8.6).

ARTC will deliver the actions and/or require the Contractor to deliver the actions specified in Table 8.7 for each Project phase.

The Project's Community and Stakeholder Engagement Plan for the construction phase will be reviewed annually and updated as required.

Action plan

Table 8.7 provides community and stakeholder engagement measures for each stakeholder group during the detailed design, pre-construction and construction phases.

Performance measures which will assist the Project to track the delivery and effectiveness of mitigation measures are provided in Table 8.13.

Additional stakeholder engagement measures with a focus on workforce management (Table 8.9), housing and accommodation (Table 8.10), community wellbeing (Table 8.11) and business involvement in the Project's supply chain (Table 8.12) are provided in subsequent sub-plans.

Table 8.7 Community and stakeholder engagement

Community and stakeholder engagement measures	
Stakeholders	**Landholders and tenants in and near the Project footprint i.e. within 1 km**
Strategy	Engage with directly affected landholders to confirm mitigation of property-specific impacts, and with residents living near the Project footprint, to enable them to understand potential impacts on household amenity and how to resolve any emerging issues with the Project
Impacts addressed	▪ Disruption of property use and amenity ▪ Impacts on property access, access to water or connectivity ▪ Potential exacerbation of disadvantage ▪ Uncertainty and stress
Timing	**Actions**
Detailed design phase measures	▪ Maintain the availability of the EIS, information about EIS approval conditions, and information about ARTC's compliance with conditions on the Project's website, to reduce the likelihood of negative perceptions about the amenity of properties or near the disturbance footprint
	▪ Meet with the owners of directly affected and adjacent properties to confirm property-specific measures to be implemented during pre-construction and/or construction, including, as relevant: – Property access arrangements – Appropriate access and egress solutions incorporated into the detailed design to enable movements across the rail corridor – Changes to road access – Surface water diversion or impacts on groundwater bores – Any noise mitigation measures where these are triggered – Impacts on agricultural land and/or farm infrastructure – Communication protocols
	▪ Consider landowners' feedback regarding mitigation of impacts on properties in the development of the detailed design and CEMP, and ensure a focus on protecting residents' amenity in the Project's CEMP and Noise and Vibration Management Sub-plan (NVSP), referencing specific measures and SIMP recommendations where relevant
	▪ Consult with owners of properties which could be affected by ground-borne noise exceedances to explain the cause, nature and duration of noise and discuss mitigation option e.g. temporary relocation, to enable their consideration of options ahead of the construction phase
	▪ Engage with people whose properties may experience noise exceedances to ensure the potential for impacts on amenity is clearly explained, and where relevant, to obtain residents' inputs to the development of property-specific mitigation strategies (e.g. architectural treatments where triggered by noise exceedances) to reduce the potential for noise impacts on amenity
	▪ Engage with groundwater bore owners and licensed water users with respect to groundwater monitoring, approvals and commitments

Community and stakeholder engagement measures	
	■ Communicate the need for consideration of landowners' specific circumstances to the Constructing Authority and the Contractor, including any hardship circumstances (with landowners' permission), property access arrangements, reparation of property infrastructure and 'make good' arrangements for any impacts on water infrastructure
	■ In consultation with the Constructing Authority and affected landholders, confirm mitigation arrangements for direct impacts on groundwater bores
	■ Implement ARTC's or the Constructing Authority's Early Acquisition Policy where landowners meet the Policy's provisions for hardship
	■ Provide appropriate information and assistance to landholders during the land resumption process to reduce uncertainties and support their adaptation to changes, including: – Through consultation, identify households where property severance or other changes to amenity may cause distress to residents, ensure their access to communication and complaints mechanisms, and provide referral to support services where required – In consultation with the PHNs, extend the mental health partnership to include provision of services to assist residents (landholders and tenants) whose homes would be removed from the corridor to access alternative accommodation and support services – With due regard to privacy and confidentiality, provide consultation data regarding households who may require assistance to find affordable housing to DTMR and DCHDE, to enable a collaborative response and reduce consultation fatigue ■ Maintain quarterly communication (or as agreed) with residents whose properties would be acquired to keep them updated and ensure their concerns are considered in developing the CEMP
	■ Provide a Community Liaison Officer to work closely with residents whose properties will be acquired and affected DTMR, QR and TRC tenants, to reduce stress related to uncertainty about impacts and the timing of acquisition
	■ Communicate with all residents adjacent to and within 250 m of laydown areas and bridge construction sites in urban areas, and within 500 m in rural areas and above the tunnel construction areas to: – Advise them of the measures provided in the Draft Outline EMP – Provide advance advice of the construction schedule and sequence (e.g. how long specific activities will take) – Describe the nature and causes of noise and vibration, and how noise and vibration will be mitigated – Identify any specific household concerns e.g. the presence of children or seniors who may be affected by noise, dust or change to property access, or the presence of stock, which need to be considered in implementation of environmental management measures
	■ In finalising plans for landscape design, consult with the owners of homes located within approximately 500 m of elevated structures e.g. at Gowrie Junction Road/Old Homebush Road, Wallens Road, Gittins Road, Squires Road, Ashlands Drive and Lockyer Creek, to seek and consider their feedback. Plantings to cuts and embankments will be considered as part of the Project's landscaping strategy in the detailed design phase. Safety design standards and the sustainability of planting will need to be considered
	■ Initiate and maintain communication and co-operation with local landowners during flood alert and recovery periods

Community and stakeholder engagement measures	
Pre-construction phase measures	■ Implement (as relevant to the pre-construction phase) agreements with landholders affected by property acquisition, temporary or permanent use of land or noise exceedances regarding property-specific measures (as outlined in the detailed design phase actions)
	■ Where changes to property access arrangements are required, advise property owners/occupants and communicate with them regarding alternative access arrangements
	■ Establish and promote the complaints management handling procedure
	■ Communicate the Project's land access protocols, construction hours, Code of Conduct and complaints mechanism to residents and businesses adjoining the temporary construction disturbance footprint
	■ Notify directly affected and adjacent landholders, residents, businesses, Councils and other stakeholders before pre-construction work starts in their vicinity and provide regular updates on construction activities and progress, through signage, the local media and other forms of communication such as emails and letters
	■ Maintain regular engagement with landholders who are adjacent to the rail corridor and areas used for construction to share information and identify any issues arising during pre-construction activities, including access to email correspondence, a free-call line and meetings on request
	■ Communicate with all residents within 2 km of laydown areas, tunnel portals and bridge construction sites and above the tunnel construction areas to: – Provide advance warning of the construction schedule and sequence (e.g. how long specific activities will take), and any disruptions to access or services – Identify any specific concerns for the household (e.g. presence of seniors or children) or landowner (e.g. presence of stock) – Describe the nature and causes of noise and vibration, and how noise and vibration will be mitigated – Advise on how long construction work will be heard or seen for each property – Provide 24-hour contact details for construction managers
	■ Consult with residents near and above the Toowoomba Range tunnel (within 400 m) who may experience ground-borne noise exceedances, to explain likely noise levels and confirm mitigation options e.g., temporary relocation and Project compensation of the costs of alternative accommodation
	■ Measures to reduce the likelihood that blasting would frighten people would include: – Establishing a blasting timetable through community consultation for example, blasts times negotiated with surrounding sensitive receptors. – Establishing and communicating the protocol for notifying relevant stakeholders when activities such as blasting are planned to be carried out, with contact details for queries or complaints – Avoiding blasting during wind conditions which are likely to transport dust emissions toward sensitive receptors within 500 m of the blasting location
	■ Establish and promote a complaints and feedback mechanism accessible to all local stakeholders (refer Section 8.2.5)
	■ Provide advance notice e.g. email, letter, SMS or public notices of any significant dust generating activities

Community and stakeholder engagement measures	
Construction phase measures	▪ Maintain the availability of the EIS, Project commitments, information about EIS approval conditions, and ARTC's compliance with conditions, to local and regional community members, to reduce the likelihood of negative perceptions about the amenity of properties or near the Project disturbance footprint
	▪ Communicate the Project's land access protocols, construction hours, Code of Conduct and complaints mechanism to residents adjoining the Project disturbance footprint and in potentially impacted communities, and provide 24 hour/7-day contact details for a Project representative
	▪ Provide monthly advance notices and updates to landholders adjacent to the temporary construction footprint regarding construction activities including noisy or vibration-generating activities are planned, impacts and mitigation measures
	▪ Implement (as relevant to the construction phase) agreements with landholders affected by property acquisition, temporary or permanent use of land or noise exceedances regarding property-specific measures
	▪ Receive and consider feedback from landowners and the CRG in relation to the effectiveness of social and environmental impact management measures
	▪ Maintain regular engagement with directly affected and landholders who are adjacent to the temporary disturbance footprint to enable identification of any issues arising and enable adaptive management of impacts such as property access by Project personnel, disruptions to property accesses, construction noise or dust
	▪ Maintain communication and co-operation with local landholders during flood alert and recovery periods to support readiness and cooperation
	▪ Engage an independent, appropriately skilled and experienced entity as the Community Relations Monitor
	▪ Provide access to the Community Relations Monitor and Community Liaison Officer and promote their availability through Project communications such as newsletters, websites, fact sheets and emails
Stakeholders:	**Other residents and businesses in potentially impacted communities**
Strategy	Provision of community information and engagement opportunities (including one or more CRGs) for residents of potentially affected communities, to support adaptive management of impacts
Impacts addressed	▪ Impacts on the amenity and character of rural areas due to construction works ▪ Disruptions to the traffic network ▪ Community safety ▪ Employment and business opportunities ▪ Impacts on community cohesion
Timing	**Actions**
Detailed design phase measures	▪ Establish and maintain consultation with potentially impacted communities, including: – The CRG/s – Regular engagement with landowners who are adjacent to the rail corridor and areas used for construction – Advance notices and regular updates to directly affected landowners (where they remain on their properties) and households adjacent to the Project footprint, regarding construction programs, impacts and mitigation measures

Community and stakeholder engagement measures	
	– Regular (at least quarterly) updates to potentially impacted communities in a form which is accessible to people without internet access – Updates to the Project's webpage and other locally available communication materials to include the Project's SIMP, quarterly construction updates including detailed explanations of upcoming activities, workforce ramp-up and stakeholder engagement mechanisms – Complaints and feedback mechanisms – Ongoing driver and community safety education – Promotion of the Project's communication channels, engagement mechanisms and complaints process
	▪ Ensure Project communications are accessible to people without internet access, people with low levels of education and people with limited skills in English through provision of face to face consultation options (Community Liaison Officer/s and Project offices), promotion and use of a telephone interpretation service, and printed communication materials
	▪ In consultation with Toowoomba International Multicultural Society and Lockyer Valley Multicultural Association, refine strategies for communication and engagement with culturally diverse residents
	▪ Provide a Community Liaison Officer/s, and ensure contact details are made available in all potentially impacted communities
	▪ Provide information to communities about how noise, dust and traffic delays from the Project will be minimised e.g. via a fact sheets, and consider community feedback about the effectiveness of measures in reviewing the CEMP
	▪ In advance of the commencement of pre-construction works, provide information to landholders, Councils, Traditional Owners and local communities about: – The construction program and activities – The timing, duration and predicted impacts of the works with regard to homes, businesses and community facilities – The predicted effects of construction works on road, rail and pedestrian and cycle network operations – How to contact the Project – The complaints management system
	▪ Ensure residents living within 2 kms of the Toowoomba Range Tunnel or with views to tunnel construction works and portals are provided with information regarding tunnel construction and the period in which they may hear construction noise, recognising that these communities are disadvantaged, and ensuring accessible information for seniors and people with low educational attainment
	▪ Provide respectful and inclusive communication strategies about Project impacts on hydrology, flooding risks and mitigation, recognising that many communities such as Gowrie Junction, Murphys Creek, Helidon and Helidon Spa are still traumatised by the 2011 floods
	▪ Communicate with residents who would have close views to the Project including tunnel portals and tunnel buildings to explain their purpose and operation, the Project's construction program, operational procedures and management measures relevant to their specific concerns

Community and stakeholder engagement measures	
	▪ Consider and address any potential for coincidence of works that could have cumulative impacts in Calvert or Helidon in the Project's TMP and communication strategies
	▪ Ensure that the Project's communications about air quality management include information about tunnel ventilation and air quality outcomes
Pre-construction phase measures	▪ Maintain consultation with potentially impacted communities, including but not limited to: – The CRG/s – Monthly advance notices and updates to directly affected landowners (where they remain in local communities) and adjacent property owners regarding construction activities, impacts and mitigation measures – Regular (at least quarterly) updates to potentially impacted communities about the construction process including disruptions to the road network – Ongoing driver and community safety education – Promotion of the Project's communication channels, engagement mechanisms and complaints process
	▪ Provide accessible information about the Project's impacts and mitigation measures, engagement process, complaints process, construction timeframe and activities to members of potentially impacted communities, including people in rural and rural residential areas, noting a proportion of Project region residents do not have home access to the internet
	▪ Develop a travel demand management community information campaign to inform the public on the proposed construction works and potential effect on local road networks, to allow them to plan their travel
	▪ Communicate ARTC's commitments to environmental management, and EIS approval conditions, to local and regional community members, to reduce the likelihood of negative perceptions about the amenity of properties near the rail alignment
	▪ Develop an incident notification and reporting process, including providing information to the community if an environmental incident occurs
	▪ Provide a clear and efficient process for local people to seek information about employment opportunities and contracting or supply opportunities, and how to register their interest including via employment portals and through local employment agencies
	▪ Prior to construction works which may result in noise impacts, provide sufficient information to sensitive receptors identified in the Noise and Vibration Sub-plan, as well as residents within at least 2 km of the disturbance footprint and other relevant stakeholders, to enable them to understand the likely nature, extent and duration of noise and vibration impacts during construction
Construction phase measures	▪ Maintain communication and engagement strategies initiated during pre-construction, including: – Employment of Community Liaison Officer/s – CRG/s – Provision of the Community Relations Monitor – Landowner liaison – Regular (at least quarterly) Project updates to potentially affected communities. Including the construction schedule and impacts that may be experienced e.g. noise or traffic disruption, and how the Project is mitigating those impacts

Community and stakeholder engagement measures	
	– Traffic and road safety updates – Ongoing driver and community safety education – Updates on the construction schedule, impacts that may be experienced e.g. noise or traffic disruption, and how the Project is mitigating those impacts – Notices and updates to TRC, LVRC, DTMR and DET(in relation to impacts on school bus routes – Information on the Project's workforce conduct policies – Information on how to communicate with the Project and the contractor – Provision of 24 hour/7-day contact details for Project representatives – Promotion of the Project's communication channels, engagement mechanisms and complaints process
	■ Provide regular (at least quarterly) updates to potentially impacted communities including detailed explanations of upcoming activities, workforce ramp-up and stakeholder engagement mechanisms
	■ Update the Project's webpage and other locally available communication materials to include the Project's CEMP and SIMP, quarterly construction updates, detailed explanations of upcoming activities, workforce ramp-up and stakeholder engagement mechanisms, complaints and feedback mechanisms, and annual SIMP reports when available
	■ Update the Project's webpage and locally available communication materials to include: – The Project's EIS, draft Outline EMP, CEMP and SIMP – Quarterly construction updates, including detailed explanations of upcoming activities, workforce ramp-up, employment opportunities, stakeholder engagement mechanisms – SIMP monitoring and review reports
	■ Implement a travel demand management community information campaign to inform the public on the proposed construction works and potential effect on local road networks, to allow them to plan their travel
	■ Ahead of the operational phase: – Provide timely and well-targeted information about potential traffic delays during Project operations, including an indicative schedule of freight train movements, and strategies that ARTC employs to reduce traffic delays – Develop a traffic safety education program which has a clear focus on interactions between the rail corridor, roads and other access tracks, and interactions with rural roads and rural traffic – Renew contact with schools in the SIA study area, to identify any concerns regarding travel delays, and any strategies which could feasibly be applied to reduce inconvenience or other impacts of traffic delays at level crossings
Stakeholders:	**Traditional Owners and other Indigenous community members**
Strategy	Cooperation with Traditional Owners and Indigenous community members to support cultural heritage management and enable their access to Project employment and business supply opportunities

Community and stakeholder engagement measures	
Impacts addressed	▪ Impacts on cultural landscapes ▪ Training and employment opportunities ▪ Business opportunities
Timing	**Actions**
Detailed design phase measures	▪ ARTC's Indigenous Participation Advisor is working with Traditional Owner groups and local communities to support their consideration of Project opportunities, which will continue during the detailed design phase, with a particular focus on business and employment opportunities
	▪ Continue meeting with Western Wakka Wakka People and Yuggera Ugarapul People to enable opportunities to provide input regarding cultural values for consideration in the detailed design
	▪ Plan with Western Wakka Wakka People and Yuggera Ugarapul People for cultural awareness tours for Project personnel including respect for cultural landscape features and cultural heritage sites (in progress during the EIS phase)
	▪ Implement a 'vehicle wrap' program which will commission local Indigenous artists to provide designs for Project vehicles (in progress during the EIS phase)
	▪ Commission local Indigenous artists to produce art works for ARTC offices in the Project region (in progress during the EIS phase)
	▪ Consult with Western Wakka Wakka People and Yuggera Ugarapul People, CSQ, DSDSATSIP, training providers, TRC and LVRC to identify potential opportunities for early skilling programs for Indigenous workers (commenced during the EIS phase)
	▪ Encourage Yuggera Ugarapul People to express their interest in the Indigenous Ranger program to DES
	▪ Enable meetings between Western Wakka Wakka People and Yuggera Ugarapul People board representatives and the Contractor, once appointed, regarding cultural heritage management, cultural awareness, training, targeted training initiatives, mentorship for Indigenous workers, business supply opportunities, and any need for capacity building with Indigenous businesses
	▪ Communicate with Traditional Owner groups regarding the range of business opportunities which will be available during construction, the availability of Indigenous businesses to participate and the types of capacity building programs that Indigenous businesses may need to prepare for involvement in the Project supply chain
	▪ Work with Traditional Owner groups to identify existing business capacity within their communities and help them to identify business capacity building programs to be supported by ARTC, DSDSATSIP and/or DITRDC, to be continued during the pre-construction and if required, construction phases
Pre-construction phase measures	▪ Involve Western Wakka Wakka People and Yuggera Ugarapul People in cultural heritage surveys for any proposed new quarry sites
	▪ Indigenous cultural heritage values and Project impacts to these values will be managed under approved CHMP. ARTC will continue regular engagement with Western Wakka Wakka People and Yuggera Ugarapul People to enable opportunities to provide input regarding cultural values
	▪ Implement Indigenous business capacity building programs in cooperation with DSDSATSIP, DSDILGP and Traditional Owners
	▪ Implement Inland Rail Skills Academy programs (in cooperation with CSQ and others as identified in future Project phases) targeting Indigenous training and development for

Community and stakeholder engagement measures	
	construction works, cross-over skills (to other projects or industries) and business readiness to supply the Project
Construction phase measures	▪ In cooperation with Western Wakka Wakka People and Yuggera Ugarapul People, provide cultural awareness training in relation to Traditional Owners' values, workplace diversity and cultural heritage management requirements to Project personnel
	▪ Continue to engage with Western Wakka Wakka People and Yuggera Ugarapul People to provide access to information about business and skills requirements and the availability of targeted programs for training and business development
	▪ Maintain regular cooperation with Yuggera Ugarapul People and Western Wakka Wakka People in accordance with the terms of the CHMPs
	▪ Continue engagement and training programs with Indigenous community members to ensure operational roles are considered by Indigenous people
	▪ Continue to cooperate with DESBT, DITRDC and local and Indigenous businesses to: – 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
Stakeholders:	**TRC and LVRC**
Strategy	Cooperation with TRC and LVRC in the adaptive management of environmental and social impacts including management measures for impacts on community facilities, amenity, sense of place and community cohesion
Impacts addressed	▪ Impacts on amenity and local character, including noise ▪ Social opportunities ▪ Training opportunities ▪ Community wellbeing ▪ Connectivity ▪ Traffic safety
Timing	**Actions**
Detailed design phase measures	▪ Meet with the TRC and LVRC to: – Review the EIS findings – Agree the program for engagement during the detailed design phase, including issues to be discussed and the program for discussion (e.g. water use, waste management, road network management and social impact management) and Council departments that will be involved
	▪ Seek Council advice on minimising the impacts of roadworks on residents and tourists and where possible, incorporate Council advice on minimising the impacts of roadworks in construction planning
	▪ Consult with TRC and Gowrie Junction residents with regard to the maintenance of pedestrian and cycle connectivity whilst the Gowrie Junction Road bridge is being constructed
	▪ Include consideration of the use of identified cycle routes within the Queensland (PCNP) by construction traffic in the TMP

Community and stakeholder engagement measures	
	■ Continue consultation with TRC and LVRC to: – Plan and implement engagement with community members regarding Project works and social programs to address impacts on rural character and town amenity, e.g. placemaking initiatives, interpretive signage, park or streetscape upgrades, and/or supporting rural localities and towns to upgrade their entrance statements. – Identify partnerships and initiatives to reduce or offset impacts on the character and amenity of local towns, with Gatton, Forest Hill and Grandchester as a key focus – Confirm mitigation measures for Council assets – Confirm alignment of Project initiatives with RSIS projects – Agree on the form of specific mitigations triggered by noise exceedances or changes to access to Council-owned facilities (refer also Table 7.4) – Identify and prioritise Project investments in local communities to strengthen local social networks and provide opportunities for people to meet and participate in community activities and events ■ Identify emerging community needs (e.g. COVID-19 community recovery and activation of community organisations to support cohesion) which could be addressed through targeted funding to community organisations in each LGA
	■ Communicate with TRC and LVRC about EIS results of relevance to rail operations (e.g. noise impacts and road network operation) to support their consideration of any development control measures required to protect the amenity and liveability of residents in areas which are planned for future urban growth
	■ Consult with TRC and LVRC on the scope of the AMP and issues which should be addressed in the AMP
	■ In consultation with the two Councils, prepare a Community Wellbeing Plan to provide a framework for cooperation with key stakeholders to implement mitigation measures addressing impacts on quality of life as the result of Project impacts on amenity, character, cohesion or connectivity (refer Section 8.5.4)
	■ Provide advice to Councils about construction traffic routes, and seek their feedback in finalising the TMP
Pre-construction phase measures	■ Meet with TRC and LVRC to advise the schedule and program for pre-construction, including: – When and where specific works would occur – The timing for commencement of works in road reserves and utility corridors – The schedule for implementation for traffic detours
	■ Engage with LVRC, TRC, and community, health and recreational facility owners (refer Section 8.5) to confirm the detail of mitigation for impacts on community facilities
	■ Provide an update to TRC and LVRC on the Community Wellbeing Plan and AMP, and seek their feedback
	■ Provide information which could assist LVRC and TRC with the development of planning controls which reduce residential exposure to rail noise
	■ Meet with TRC and LVRC at least six monthly to: – Review progress with the Community Wellbeing Plan and seek their feedback on the progress of community initiatives

Community and stakeholder engagement measures	
Construction phase measures	– Coordinate the implementation of initiatives shared between the Project and Councils e.g. place-making, training or tourism marketing initiatives – Seek Council inputs into monitoring the effectiveness of the AMP – Identify partnership opportunities to maximise social opportunities, including support for existing and/or additional community events – Seek Councils' feedback and inputs regarding the effectiveness of the Project's community and stakeholder engagement strategies – Provide advance notice of the works schedule including the construction program, potential impacts of construction works, road closures and traffic diversions, disruption to pathway networks, and work in utility corridors – Monitor the effectiveness of management measures addressing road safety and road network management issues – Discuss other issues and any need for corrective actions as they arise
	■ Continue consultation with local Councils and DTMR to ensure road safety concerns and road network management issues are addressed
	■ In cooperation with Councils, implement initiatives and agreements established in previous phases to mitigate impacts on the amenity and character of towns
	■ Invite Council's review of annual SIMP reports and participation in annual SIMP reviews
Stakeholders:	**Government and community service organisations**
Strategy:	Engagement with Government agencies and community organisations to confirm the detail of mitigation measures for impacts on social infrastructure and develop and implement cooperative arrangements.
Impacts and benefits addressed	■ Stress, anxiety and mental health ■ Demands on social infrastructure ■ Community safety (e.g. traffic safety and emergency service capacity) ■ Contribution to quality of life and community wellbeing
Timing	**Actions**
Detailed design phase measures	■ Provide an update on Project design, EIS findings and the construction program to Department of Education, Queensland Health including Ballie Henderson Hospital, DCHDE, QPS, QAS and QFES
	■ If the likelihood of construction noise impacts on Gowrie State School is confirmed, meet with Department of Education and Gowrie State School representatives to discuss mitigation of noise impacts which may include provision of architectural treatments such as façade treatments, supplementation of fences, and/or air-conditioning of affected buildings. Noise monitoring may also be conducted during construction and the early years of operation to ensure mitigation measures are effective
	■ Meet with the Department of Education and Helidon State School to discuss the potential for construction works (as part of the Project and the H2C project) to impact on key access routes to Helidon State School and consider their feedback in the development of the TMP and CEMP
	■ Meet with the Department of Education Gowrie State School and Helidon State School to: – Provide a Project update including the construction schedule and the nature of road-rail interface treatments developed as part of the detailed design

Community and stakeholder engagement measures	
	– Explain how traffic network changes and construction traffic will be managed and seek feedback – Discuss concerns regarding changes to road access which may affect students' routes to school or any impacts on road or pedestrian safety, and include relevant actions and accountabilities in the Construction Management TMP – Confirm all relevant school bus services and contact details for their operators, and consult school bus operators about measures to be included in the TMP, including consideration to limiting construction traffic on school bus routes during pick-up and set-down times on school days – Identify any specific considerations (e.g. off-campus activities) which should be considered in the Project's TMP – Confirm contact details for the Contractor
	■ Meet with Queensland Health, to forecast the workforce ramp-up, agree the schedule for communication with the Project (refer also Section 8.5.2) and ensure they are aware of additional resources that may be available through the Project to support mental health in affected communities
	■ Meet with QPS, QAS and QFES, to: – Confirm arrangements to ensure effective communication and cooperation throughout the construction phase, including measures to mitigate impacts on emergency service response times during construction and operation (e.g. direct communication with construction managers – Seek input to the Emergency Response Plan and confirm arrangements for cooperation on emergency responses
	■ Consult QFES in detailing the mitigation measures regarding fire trails, firefighting and a cooperative response to any fire risks affecting the EIS investigation corridor
	■ Meet with DCHDE to identify any emerging community needs (e.g. COVID-19 community recovery) and seek DCHDE feedback on demands for community support services
	■ Meet with DCHDE to ensure that they are aware of any support needed by DTMR, QR or TRC tenants and have an opportunity to provide input to the AMP
	■ When the detailed design including road network changes and construction traffic routes are confirmed with DTMR and the two Councils, undertake consultation with all relevant school bus operators identified through consultation with Department of Education/DTMR to identify any concerns regarding changes to school bus routes, and identify any issues which need to be considered as part of the Project's TMP, e.g. limiting construction traffic on school bus routes during pick-up and set-down times
	■ Cooperate with DESBT, Department of Education, local high schools and training providers, to develop training pathways for employment in Project construction and operation, and identify young people and groups of young people who could be supported to access training for potential employment in the Project's operations
	■ Continue cooperation with DITRDC, DSDSATSIP and CSQ to develop training programs to be delivered through the Inland Rail Skills Academy to equip local people for Project employment
	■ Maintain mental health partnerships with the Darling Downs and West Moreton PHN and the Brisbane South PHN to support these residents and others who may experience stress and anxiety in relation to the Project and regularly review the resources available and the adequacy of services in relation to Project-related demands on mental health services

Community and stakeholder engagement measures	
Pre-construction phase measures	▪ Communicate with Queensland Health to ensure hospital and health services are aware of the construction program and workforce ramp up to enable planning for any minor upgrades to services which may be required.
	▪ Provide support for Lifeline's Community connection programs to help build community cohesion and resilience, and provide community and individual support services for directly affected households, for a term agreed with the PHNs
	▪ Ensure all Queensland Government agencies are registered as stakeholders to receive Project updates, fact sheets and newsletters
	▪ Meet with the QPS, QFES and QAS to update advice on the Project's workforce ramp-up, changes to the road network review co-operative arrangements and ensure any safety or service access issues are identified and addressed
	▪ Through consultation with DCHDE prior to construction commencing, and annually during construction, identify any Project-related increase in demand for community services, and if stresses on services are identified, participate in a cooperative response to community needs between DCHDE, ARTC and community organisations
	▪ Prior to the commencement of Project operations, engage with the PHNs and Queensland Health to gauge the need for any ongoing support for mental health services during the operational period.
	▪ Develop tailored and targeted rail and road safety programs for delivery during construction to local schools and communities in the Project region
Construction phase measures	▪ Meet with DCHDE prior to construction commencing, and annually during construction, to identify any Project-related increase in demand for community services, and if stresses on services are identified, participate in a cooperative response to community needs between DCHDE, ARTC and community organisations
	▪ Provide regular (at least six monthly) updates to with Department of Education, QPS, QFES, QAS, SES and Queensland Health on the workforce ramp-up, construction program, schedule and location for construction activities, changes to the road network, , anticipated impacts and community engagement mechanisms
	▪ Meet with DCHDE to monitor the effectiveness of the AMP, to a schedule agreed with DCHDE
	▪ Engage with high schools and training providers in the Project region to promote training opportunities provided as part of Inland Rail skills Academy and pathways to employment in the Project's operation
	▪ Establish arrangements with QPS, QAS and QFES to enable cooperative responses to any incidents e.g. rail accidents, road-rail or suicides during rail operation and investigate the need for joint training and response exercises to build capacity for Project-associated incident management during operation
	▪ Provide information on train schedules which would help emergency service responders to navigate access arrangements during operations
Stakeholders:	**Businesses in the SIA study area**
Strategy	Engagement with businesses that may be negatively affected to optimise and monitor impact management measures, and increase local businesses' opportunities for involvement in Project supply arrangements
Impacts addressed	▪ Impacts on nearby event/tourism businesses ▪ Impacts on agricultural businesses ▪ Opportunities to supply the Project

Community and stakeholder engagement measures	
Timing	**Actions**
Detailed design phase measures	▪ Hold a workshop or other forum with local Chambers of Commerce, DSDILGP, DSDSATSIP and DESBT to discuss gaps in local business' capacity to work with major projects, e.g. safety management, environmental compliance, working with construction management companies, or specific skills, and discuss and confirm responsibilities for capacity building programs, which may include business forums such as 'Meet the Buyer' or 'Procurement Opportunity updates, skills development workshops or training courses
	▪ Work with directly affected landowners and agricultural and other business owners adjacent to the Project disturbance footprint to refine design and construction planning measures aimed at minimising any impacts on business operations, productivity and/or employment
	▪ Liaise with the following stakeholders to locate specific business capacities of relevance to the Project's supply chain for inclusion in the Project's register of potential suppliers: – DITRDC – RDA – TRC – LVRC ▪ Chambers of Commerce in the Toowoomba and Lockyer Valley LGAs
	▪ Communicate with agricultural landholders in and adjacent to the Project footprint, in writing, and via meetings on request, to: – Describe the construction schedule and the nature and location of works – Explain the land resumption process to landholders whose properties would be acquired and provide contact details for the Constructing Authority – Explain the results of EIS studies on noise and dust, as relevant to specific holdings or businesses – Describe measures to be considered in the detailed design, construction methodology or CEMP to minimise impacts on the movement of stock and produce, access across or between properties, water access, or infrastructure/equipment on agricultural properties and seek feedback – Propose a schedule for engagement between directly affected landholders and the Project during the pre-construction and construction phases
	▪ Consult (via a business forum or workshop) with tourism-related businesses (e.g. wineries, accommodation facilities, hotels, farm stays, restaurants, cafes and specialty shops) located within 5 km of the Project to: – Explain the Draft Outline Environmental Management Plan, TMP and CEMP provisions and accept feedback on measures of relevance to tourism and related businesses – Identify any additional, feasible strategies which would reduce or offset impacts on connectivity or businesses' amenity during construction and/or operation for inclusion in the CMP or TMP – Discuss support for the promotion of local tourism – Share information about opportunities for businesses to supply the Project

Community and stakeholder engagement measures	
	▪ Work with RDA, DSDILGP, DSDSATSIP, TRC, LVRC, the Toowoomba Chamber of Commerce, and Lockyer Valley Chamber of Commerce and Industry to encourage relevant supply chain development, especially for Indigenous businesses, including the delivery of workshops and/or online training with businesses aimed at building their capacity for involvement in major project construction and associated services and projects, including communication of pre-qualification requirements
	▪ In developing the AMP, consult with the Lockyer Valley Tourism Association and Tourism Darling Downs to confirm peak demand periods (noting these may change from year to year in response to major event schedules) and seasonal demands on tourism accommodation, to minimise the potential for the impacts of Project works to affect major events and avoid Project use of accommodation which may displace tourists or event visitors
	▪ Establish consultative arrangements with Lockyer Valley Chamber of Commerce and Industry and Toowoomba Chamber of Commerce to support monitoring of any issues identified in relation to labour draw
	▪ Consult with the Lockyer Valley Tourism Association and Tourism Darling Downs to identify Project initiatives to offset impacts on local character which may affect tourism visitation
Pre-construction phase measures	▪ Cooperate with tourism business owners, Lockyer Valley Tourism Association, Tourism Darling Downs, TRC and LVRC, to develop and implement a strategy to mitigate impacts on tourism values, which may include support for promotional and marketing campaigns during the construction period and/or support for placemaking projects
	▪ Provide business capability workshops (refer Section 8.6.4) including delivery of workshops with businesses including Indigenous businesses aimed at building their capacity for involvement in major project construction and associated services, in Lockyer Valley and Toowoomba locations
	▪ Provide regular updates via emails to local and regional businesses to ensure they have access to current information about the Project
	▪ In consultation with landholders, ensure an appropriate level of access is maintained for agricultural businesses across and between properties affected by the Project, and to the roads which link them to markets during the pre-construction period
Construction phase measures	▪ Maintain regular engagement with landholders and business owners adjacent to the temporary disturbance footprint (at least quarterly during the first year of construction or as agreed with landholders) to monitor the effectiveness of environmental and social impact mitigation measures
	▪ Implement business capacity building programs with RDA, DSDILGP, DSDSATSIP, TRC, LVRC, Toowoomba Chamber of Commerce and Lockyer Valley Chamber of Commerce and Industry as agreed in the detailed design phase, as part of the Inland Rail Skills Academy
	▪ Provide regular Project updates which forecast road works, road realignments and closures, and explain alternative routes, to businesses, agricultural landholders and potentially impacted communities (including residents of rural localities)
	▪ Implement measures agreed with Lockyer Valley Tourism Association, Tourist Darling Downs and the Toowoomba and Lockyer Valley Regional Councils to mitigate impacts on tourism during the construction stage
	▪ Through the Project's CRG, provide feedback to community members on the implementation of proposed measures to reduce the visual impact of rail infrastructure during operation, and seek their feedback

Community and stakeholder engagement measures	
	▪ Promote Government services and programs which are available to businesses considering investment in projects related to Inland Rail

8.2.7 Community and stakeholder engagement during operation

Prior to completion of the construction phase, ARTC and/or the Contractor will develop a Community and Stakeholder Engagement Plan for the commissioning and operational phases, which will include:

- Mechanisms for communication and co-operation with landowners and residents who may experience noise, dust, vibration and/or other impacts
- Promotion of operational employment and supply opportunities to local and regional residents
- Measures to identify and remediate issues such as excessive noise or dust deposition
- Community updates on maintenance and track works
- Emergency services access to a timetable of train movements
- Complaints and feedback mechanisms.

The Project's Community and Stakeholder Engagement Plan for operations will be reviewed in Year 3 of operations to determine any need for revision of the Plan.

8.2.8 Monitoring and reporting

Table 8.8 provides the framework for monitoring and reporting on community and stakeholder engagement including desired outcomes, performance measures, monitoring mechanisms, and the timing for monitoring and reporting during the Project's construction. Further information regarding SIMP monitoring, reporting and review is provided in Section 8.7. The Project's Community and Stakeholder Engagement Plan will be reviewed annually during construction in consultation with Councils and CRG/s and updated as required.

Table 8.8 Community and stakeholder engagement monitoring

Outcomes	Performance indicators	Mechanism	Timing
Co-operative and respectful relationships exist between ARTC, the contractor, construction personnel and community members	▪ CRG feedback confirms ARTC has engendered positive relationships ▪ Number of complaints about Project impacts ▪ Community Relations Monitor identifies positive feedback on the Project's community and stakeholder relations	▪ Contractor will document stakeholder interactions, monitor the effectiveness of engagement programs, report on the complaints register, and identify and report on issues to be addressed as part of environmental management ▪ Contractor will request feedback about stakeholder engagement and relationships as a regular item at CRG meetings ▪ Community Relations Monitor will review and provide advice on the Stakeholder and Community Engagement Plan, and be available to community members	Monthly monitoring, quarterly reporting to CRG, during construction phase

Outcomes	Performance indicators	Mechanism	Timing
Community and stakeholder relationships facilitate information sharing to enable effective management of social impacts	▪ CRG and Council feedback confirms satisfactory access to timely information about the Project and management measures ▪ Households who need to move from within the Project footprint have access to support, if required ▪ Mental health partnership is maintained during the construction phase	▪ Feedback on the effectiveness of community and stakeholder engagement measures requested at each CRG meeting and in meetings with Councils ▪ Community Relations Monitor ▪ Complaints register ▪ ARTC and PHNs will monitor service uptake (mental health and relocation support) from potentially impacted communities	Quarterly during first two years of construction, then as agreed with Community Relations Monitor
Initiatives identified through stakeholder engagement have benefits for local communities and offset impacts on amenity, character and cohesion	▪ Number and outcome measures (to be determined with partners) for community partnerships and programs in potentially impacted communities ▪ CRG will receive reports on SIMP implementation and AMP implementation for their feedback	▪ ARTC and/or the contractor will agree outcome metrics with funded projects and partners ▪ Information on Project-supported initiatives will be provided to the CRG for feedback ▪ Feedback from Council/ community/ government partners	Annually during construction Reports on SIMP implementation at each CRG meeting, and on AMP implementation on a six-monthly basis
Stakeholder issues and grievances are identified, evaluated, addressed and recorded	▪ The Project responds to complaints from community members as per the Contractor's complaints management system which will be aligned with ARTC's Complaints Management System ▪ The Contractor will provide transparency to the resolution of complaints	▪ The Contractor will maintain a complaints register, monitor complaints and the status of their resolution, and provide a report on complaints at each CRG meeting ▪ ARTC Inland Rail will regularly monitor the quality and effectiveness of the complaints management system and require the contractor to revise implementation where appropriate, based on stakeholder feedback	Monthly monitoring, quarterly reporting to CRG during construction
Community members (including those without internet access or with limited English language skills) have access to information and support to assist adaptation to changes resulting from the Project ARTC adapts its social and environmental management measures where required to improve their effectiveness	▪ Project maintains its communication strategies (refer Section 8.2.6) throughout detailed design, re-construction and construction phases ▪ Tele-interpretation services are available to translate Project information for people with limited English skills ▪ Project can demonstrate that mitigation measures are refined where necessary in response to stakeholder feedback	▪ Community and Stakeholder Engagement implementation as reported in annual SIM reports ▪ Record of any changes to SIMP and CEMP measures	Quarterly monitoring and reporting to CRG during construction

8.2.9 Incorporation of stakeholder inputs in development of management measures

As described in Section 8.2.6, ARTC will conduct community information sessions and other meetings with stakeholders during the EIS display period to seek stakeholders' feedback on the EIS.

ARTC will continue engagement with TRC and LVRC during the draft EIS public display phase and following review of Council submissions to the draft EIS. This will include discussion of the SIA's findings and in particular:

- Housing and accommodation: the scope of the AMP (refer Section 8.4.4) and acceptable accommodation solutions
- Workforce management: obtaining an update on Councils' priorities as part of RSIS, SQW, and economic development/recovery initiatives, and confirming Council's interest in joint initiatives
- Community wellbeing:
  - Seeking Council feedback on social issues and community needs in light of COVID-19-related impacts e.g. increased unemployment, population mobility and business conditions
  - Discussion of Council and community initiatives which the Project could support (e.g. placemaking, community facility upgrades, community events) to strengthen local amenity, character and cohesion
  - Seeking input on Council's priorities and community or Council initiatives which could be considered as part of the Community Wellbeing Plan (refer Section 8.5.4) and the process for Council involvement in development of the plan
- Local business and industry: seeking advice on business and tourism conditions following COVID-19 restrictions, and refining Inland Rail Skills Academy business capability strategies to reflect Councils' advice
- Other Council priorities emerging from their consideration of the draft EIS.

The results of further stakeholder engagement during and after display of the draft EIS will be reflected in the information provided to the OCG by ARTC prior to the Coordinator-General's evaluation of the EIS.

During the Project's detailed design, pre-construction and construction phases, stakeholder feedback will be incorporated in the refinement of management measures as follows:

- Consideration of feedback from landowners and other stakeholders on the effectiveness of design, environmental and social impact management measures of relevance to their properties, with CEMP or SIMP measures to be refined if unacceptable or unexpected impacts are identified
- Monthly recording of community complaints to identify any issues or trends that need to be addressed as part of implementing environmental management plans, with any changes reported as part of quarterly reports to the CRG
- Seeking feedback from CRG members on the effectiveness of stakeholder engagement and on SIMP implementation
- Involvement of Councils and CRG members in annual reviews of the SIMP.

8.3 Workforce management

This workforce management sub-plan describes how ARTC will maximise training and employment opportunities for residents in the Toowoomba and Lockyer Valley LGAs and manage the potential for impacts on other industries.

The Project's construction phase offers the opportunity for employment of up to 596 people at peak, and approximately 264 personnel on average throughout the construction period. The size and composition of

the workforce will vary depending on the construction activities being undertaken and the staging strategy adopted. Employment opportunities will be available for professional staff and supervisors, trades workers and plant operators, earthworks crews, bridge structure teams, capping and track-works crews, safety and signalling systems installation crews, fencers, and labourers.

One of ARTC's primary aims is to maximise employment opportunities for residents within the Project region, by:

- Facilitating skills development opportunities through the Inland Rail Skills Academy to build regional capacity in construction and rail operation
- Building partnerships with training providers to strengthen workforce skills in the Project region, and reduce the potential for cumulative impacts to draw labour and skills from other businesses
- Requiring the Contractor to employ locally, and to implement workforce training and diversity strategies.

This will require cooperation between ARTC, the Contractor and a range of stakeholders as outlined below.

8.3.1 Training and development in the Project region

As noted in Section 7.2.3, ARTC has established the Inland Rail Skills Academy to enhance career pathways and workforce skills for people in regions through which Inland Rail would pass. This will include:

- STEM and trades education in schools, including opportunities to 'try' trades and professions associated with rail and construction
- University scholarships with a focus on courses which facilitate STEM and regional development outcomes, e.g. engineering and project management
- Apprenticeships, traineeships and facilitation of industry accreditation to support employment into Inland Rail projects and other major regional industries
- Business capacity building programs with small-to-medium enterprises to strengthen capacity in the region for both this Project and other future projects
- Opportunities for Inland Rail staff to increase skills in a range of areas including safety and sustainability.

Through the Inland Rail Skills Academy, Inland Rail has a signed Memorandum of Understanding with CSQ, an independent body funded by the Building and Construction Industry Training Fund. CSQ provides information to job seekers and employers, introductory trade-readiness courses, and subsidised access to training, traineeships and apprenticeship in the building and construction industry, in partnership with Registered Training Organisations. Consultation with CSQ indicates that the availability of construction skills training, recognised skills pathways and certification courses for construction in SEQ is good, however there are systemic issues with the availability of skills programs for operational skills and maintenance skills. Under the MOU, CSQ will provide information and advice on skills shortages in the Project region to ARTC, and work with ARTC to broker and enable training responses to address identified shortages.

Inland Rail Skills Academy partnerships builds capacity for the involvement of Project region residents in employment and Project supply opportunities and may be transferable to future projects or other industries. Training opportunities provided as part of the Inland Rail Skills Academy will strengthen workforce capacity for both Project construction and Project operation. There is also potential for cross-industry training to be developed to equip experienced agricultural workers with certification which will increase their job opportunities, including with Inland Rail.

To date, this has involved:

- Engagement with the two Councils' RSIS coordinators to support the development of joint training initiatives as part of DESBT's SQW program, to deliver:
  - Construction skills training in partnership with LVRC and a community sporting facility in Laidley, which will also achieve an upgrading of the facility
  - With TRC, delivery of a training program to develop skills in working in rail operations
- A Memorandum of Understanding with CSQ to work with Registered Training Organisations to deliver construction skills training for Project region residents and Indigenous people
- Cooperation with DESBT to develop training pathways for employment in Project construction and operation
- Cooperation with DITRDC to develop program-wide training and development programs to equip Project region residents for construction and operational employment.

Education and training initiatives delivered to date include:

- In partnership with University of Southern Queensland (USQ), ARTC has awarded seven undergraduate scholarships to date valued at up to $20,000 each to USQ students as part of the Inland Rail Skills Academy. The scholarships will support students by providing opportunities for them to graduate into careers which add value to their local regions. The scholarship program is open to undergraduate degree students living within areas close to the Inland Rail alignment and provides financial assistance of $5,000 per year of study. Successful students also receive invaluable support from USQ
- The core samples and data created by the geotechnical team have been filmed as an education resource for primary, secondary and tertiary students, and geotechnical data has been shared with UQ for research purposes
- In partnership with CSQ and Aboriginal Employment Strategy (AES), delivery of an Indigenous Skills Program in Toowoomba to provide construction skills orientation
- the 'Grand Opportunities - Virtual Work Experience' offering to all high school students along the Inland Rail alignment, with six workshops (commencing in May 2021) developed to showcase Inland Rail's business case, professions, education pathways, and the opportunity for students to consider a related 'real-world' problem and a develop a microcredential. This will include a monthly webinar where industry professionals (from Inland Rail and other organisations) will participate in a question and answer session with high school students.

There is also potential for a partnership with QR to access experienced rail operators and maintenance staff as trainers in the Project region, with particular strengths in operations and maintenance skills, which will be further discussed with QR after the Project is approved.

8.3.2 Local employment

As noted in Section 8.1.2, the *Australian Jobs Act 2013* defines 'local' as including Australian entities, however for the Project, ARTC is also focusing on activities which maximise opportunities in the Toowoomba and Lockyer Valley LGAs. The size and composition of the workforce will vary depending on the construction activities being undertaken and the staging strategy adopted. Employment opportunities will be available for professional staff and supervisors, tunnel construction engineers and operators, trades workers and plant operators, earthworks crews, bridge structure teams, capping and track-works crews, safety and signalling systems installation crews, fencers, and labourers.

Labour availability

The SIA has identified established strengths in major project construction within the labour force and businesses in the Project region.

The Project expects to be able to draw a large proportion of its construction workforce from the Toowoomba and Lockyer Valley as:

- Both LGAs have established workforce strengths in construction, with approximately 7,363 construction industry workers in 2016, of whom 1,307 people lived in the Lockyer Valley LGA and 6,056 people lived in the Toowoomba LGA (refer Section 5.4.1)
- There were approximately 2,539 construction businesses in the Toowoomba LGA and 538 construction businesses in the Lockyer Valley LGA in 2016-17 (refer Section 5.4.3)
- At March 2020, there were 3,393 unemployed people in the Toowoomba LGA and 1,178 unemployed people in the Lockyer Valley LGA, for a collective unemployed workforce of 4,571 people (DESE, 2020)
- Between March 2020 and July 2020, the number of Toowoomba LGA residents receiving Jobseeker or Youth Allowance benefits increased from 7,175 people to 10,995 people and the number of Lockyer Valley residents receiving these benefits increased from 1,903 in March 2020 to 2,955 people in June 2020, due to decreased economic activity resulting from COVID-19 restrictions
- The Project's workforce is expected to peak at approximately 596 personnel, with an average requirement across the construction period of approximately 264 personnel, which would not cause a significant drain on the Project region's labour force.

The availability of construction specialists and skilled labour changes rapidly in response to the cumulative demands of major projects. It is possible that in the cumulative context, the Project will compete for labour with other major infrastructure projects (refer Section 7.6.2). It is also possible that COVID-19 restrictions on mobility will affect the availability of labour, e.g. local workers may be less likely to travel to other regions or states for work, increasing their availability, or if areas within the Project region were declared as restricted areas during construction, labour mobility to the region would be constrained. Assessment of likely changes to labour mobility related to COVID-19 restrictions would be speculative at best at this stage.

Maximising local employment and Indigenous employment

ARTC's strategies to maximise local and Indigenous participation in the Project workforce include:

- Analysis - ARTC has a partnership with CSQ to identify skill shortages in the Project region and develop locally applicable training pathways, with other training partners, as part of the Inland Rail Skills Academy
- Training and education – the Inland Rail Skills Academy provides the framework for access to relevant training for residents in the Project region, including access to 'Try a Trade' programs, scholarships and 'Skilling Queenslanders for Work' (SQW) programs which provide training to people who are under-utilised or under-employed in the labour market
- Business Capability Development – based on assessment of local skills availability, delivery of capability development programs for local and Indigenous businesses through Inland Rail Skills Academy workshops supported by DITRDC, with business capacity workshops delivered in Gatton and Toowoomba during the EIS phase
- Communication – sharing information about Project opportunities with local businesses that employ local people through supplier registration portals and contractor webpages, industry/supplier briefings and supplier guides and factsheets
- Contract requirements - Inclusion of local employment targets, activities and criteria in construction contracts, and requirements relating to local training and employment opportunities.

To boost local workforce numbers, the Project's procurement process for the construction contract enables competitive bidding for local employment targets and procurement targets, incentivising the contractors to maximise local benefits. To ensure that tenderers can competitively bid for Project construction, they will be:

- Encouraged to familiarise themselves with the demographic, social and economic features of the Project region as outlined in this SIA Technical Report, to assist in establishing appropriate social performance commitments and targets
- Required to consult with CSQ to understand skills analysis modelling and implications for labour requirements, and to look for opportunities to align skills development activities with broader CSQ and Inland Rail Skills Academy initiatives
- Required to detail the following which will form a key part of the tender evaluation:
  - Targets (numbers and percentages) for employment and workforce development by location (i.e. Project Area/LGA) and demographic (e.g. Indigenous, youth and female employment)
  - Training and apprenticeship goals for the construction phase
  - Strategies for recruitment and training of personnel from the Toowoomba and Lockyer Valley LGAs
  - Workforce Code of Conduct.

ARTC and its contractors will use multiple platforms to advertise job opportunities and promote the availability of employment Expression of Interest forms through community forums, newsletters and Inland Rail websites.

ARTC will require the Contractor to develop and implement a workforce management plan as part of the detailed design phase. This will include:

- Proposed strategies for recruitment and training of personnel from the Project region
- Training and apprenticeship goals
- Youth, female and Indigenous employment goals
- Workforce health and safety strategies
- Workforce code of conduct and management policies
- A Local Employment Register.

Inland Rail's AIPP and Sustainable Procurement Policy will maximise the involvement of businesses with existing capacity, and include a focus on building local businesses' capacity, to increase the number of businesses in the SIA study area that can successfully compete for Project supply opportunities (refer Section 8.6). This will also increase employment opportunities for workers and jobseekers in the SIA study area.

During the construction period, the Contractor will be required to report to ARTC on the delivery and outcomes of these goals and strategies. Regular updates will be provided through a quarterly public snapshot report on the employment and business participation from the Toowoomba and Lockyer Valley LGAs.

There is also the potential for people from local communities to gain employment in Project operations, with roles including maintenance workers, signallers and tunnel control staff. Measures initiated during the construction phase will address development of capacity of the local and regional workforce for employment in the operational phase. Management of the Project's operational workforce will be in accordance with training, recruitment and employment strategies established by ARTC and/or the Contractor.

8.3.3 Indigenous training and employment

Training and employment opportunities are key priorities for Indigenous people who participated in SIA consultation. Inland Rail has a particular focus on optimising Indigenous employment in its projects. Measures identified in consultation with Traditional Owners for implementation in the detailed design phase are detailed in Table 8.9.

ARTC's Memorandum of Understanding with CSQ to provide a framework for the development of construction skills training programs includes a specific focus on training programs targeted towards Indigenous jobseekers.

ARTC has also made specific commitments to training and development opportunities for Indigenous people, including:

- Working with Indigenous communities, industry and government agencies to support the design and delivery of training and development programs to improve local capacity where this is needed
- Working with schools and training providers to provide appropriate training for Indigenous people
- Working closely with the Indigenous community to strengthen community members' capacity for employment, encourage applications and increase the number of Indigenous people applying for Project-related jobs
- Providing a workplace that is inclusive and values the contributions of Aboriginal and Torres Strait Islander employees.

In response to Traditional Owners' suggestions, Project personnel will include Indigenous mentors to support Indigenous people's retention in the construction workforce.

Indigenous businesses are an important source of employment for Indigenous people and will be encouraged and supported to participate in the Project's supply chain, as discussed in Section 8.6.

8.3.4 Impacts on other industries

ARTC is working with the owners of agricultural properties to minimise the impacts of land acquisition on their productivity and therefore on farming employment opportunities, minimising potential for land acquisition to affect the use of farming and grazing properties and therefore access to employment on these properties.

Tourism businesses may experience changes to employment levels if tourists are deterred by changes to scenic character or road works during construction.

As outlined in Section 7.6, there is potential for cumulative social impacts to include exacerbation of current shortages of civil engineering professionals, construction project managers and construction trades, and to contribute to shortages of trades people and machinery operators, which may constrain domestic and business access to tradespeople.

During construction, ARTC will monitor Inland Rail projects' workforce ramp-up and the proportions of local and non-local personnel and consult with local Councils and Chambers of Commerce regarding any pressures they identify on local labour availability. This will provide the basis for refining recruitment and training strategies if the Project is exacerbating labour shortages.

8.3.5 Workforce behaviour

ARTC aims to ensure that the Project is constructed and operated in a manner which protects the health and safety of Project personnel and the local community.

The Contractor will provide a safe and healthy workplace in accordance with the *Work Health and Safety Act 2011* and regulations, and in accordance with subsequent legislative amendments.

The Project will employ the following strategies to reduce concerns and the potential for any impacts of workforce behaviour on community safety or residential privacy:

- Implementing and enforcing a Code of Conduct containing requirements for positive behaviours and respect for local residents and businesses which will apply to all personnel
- Workforce management standards will include prescribed working hours, local access arrangements and parking arrangements for commuter vehicles
- The Contractor will have appropriate work conduct policies and procedures, and complaints mechanisms which ensure fast and effective resolution to any issues experienced.

8.3.6 Action plan

Table 8.9 summarises workforce management and development objectives, outcomes and actions which will maximise the employment of people from the Project region and Indigenous people in the Project's construction workforce, increase the skills profile of the Project region's labour force, manage workforce behaviour, and minimise impacts on other businesses.

Actions undertaken during the construction phase will also address development of capacity of the local and regional workforce for employment in the operational phase.

Table 8.9 Workforce Management

Workforce management measures	
Objective	▪ Enable residents of potentially impacted communities and the Project region to access the Project's construction and operational employment opportunities ▪ Facilitate and support workforce training and development pathways to build workforce skills for Project employment ▪ Minimise impacts on employment in other industries ▪ Provide a safe and healthy workplace for all personnel ▪ Manage workforce behaviour to avoid impacts on community safety and community values
Outcomes	▪ Workers within 125 km of the Project including job seekers living in the SIA study area ARTC and Contractor partnerships contribute to increased training and development opportunities in the Project region ▪ Construction employment opportunities are available to Traditional Owners and local Indigenous people ▪ All project personnel behave with respect and courtesy towards residents, landowners and motorists ▪ Workplace health and safety are supported through a strong safety culture ▪ Impacts on agricultural or tourism employment opportunities are minimised
ARTC Commitments	▪ ARTC will develop strategies to promote engagement of workers from the Project region ▪ Minimum local employment targets will be negotiated and agreed between ARTC and the Contractor ▪ ARTC will endeavour to ensure that contractors seek to encourage employment, training and skills development opportunities by: – Identifying the skills required in the building, construction, equipment and services fabrication and supply, maintenance, operation and support to the Inland Rail Program, for all phases of the Inland Rail Program

Workforce management measures	
	– Arranging timely training, and qualification arrangements to meet the needs of skills development to support all phases of the Inland Rail Program – Ensuring that training and qualification systems meet the requirements of the National Standards Framework. ▪ Provide a clear and efficient process for people to seek information about Project employment opportunities and register their interest ▪ Work with relevant Aboriginal parties and Indigenous communities, industry and government agencies to support the design and delivery of training and development programs and increase the number of Indigenous people applying for Project-related jobs ▪ Provide a workplace that is inclusive and values the contributions of Aboriginal and Torres Strait Islander employees ▪ 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, TAFEs and local training providers to provide appropriate training ▪ Work with the Australian Government to provide long-term outcomes through training, mentoring and other support programs.
Detailed design phase measures	**Local employment** ▪ Work with CSQ, TRC and LVRC to confirm the availability of skills in the Project region and potential shortages in trades and professions that will be required for construction of Inland Rail projects, to inform the development of Inland Rail training and development programs (in progress) ▪ Require the Contractor to develop a workforce management plan to optimise employment of people from the Project region, including: – Proposed strategies for recruitment and training of personnel from the Project region – Training and apprenticeship strategies – Youth, female and Indigenous employment goals and strategies – Workforce health and safety strategies – Workforce code of conduct and management policies – Local Employment Register ▪ Develop contracting requirements to optimise employment of people from the Project region in construction, including requirements for Contractors to document their local and Indigenous recruitment and training strategies ▪ Include requirements for the Contractor to report on employment participation and initiatives for Indigenous people, women, people under 25 years and residents from the Project region **Training and development** ▪ Establish partnerships as part of the Inland Rail Skills Academy to develop training pathways for employment of Project region residents in Project construction and operation ▪ Continue to work with TRC and LVRC RSIS coordinators and economic development teams to identify opportunities to align Inland Rail's workforce training and development initiatives with RSIS projects in the SIA study area, including cross-over skills between construction training and RSIS priorities, and any ongoing opportunities to utilise the SQW program ▪ Consult with DESBT and Department of Education, including local high schools, to identify opportunities to align Inland Rail's workforce training and development initiatives with the Queensland Government's jobs, skills and workforce diversity programs ▪ Continue to work with DITRDC, DSDSATSIP, Registered Training Organisations and CSQ to develop training programs to be delivered through the Inland Rail Skills Academy to equip local people for Project employment.

Workforce management measures	
	Indigenous employment ▪ Require contractors to specify and meet Indigenous employment goals ▪ Consult with Western Wakka Wakka People and Yuggera Ugarapul People, CSQ, DSDSATSIP and training providers, TRC and LVRC to identify potential opportunities for early skilling programs for Indigenous workers ▪ Facilitate a meeting between Yuggera Ugarapul People and DSDSATSIP to discuss the Project and assistance available for business capacity and training programs (complete) ▪ Facilitate a meeting between Western Wakka Wakka People and DSDSATSIP to discuss the Project and assistance available for business capacity and training programs ▪ Enable meetings between Traditional Owner groups and the Contractor to discuss employment, training and business strategies. **Employment in other industries** ▪ Work with directly affected landowners and agricultural and other business owners within and adjacent to the Project disturbance footprint to refine design and construct planning measures aimed at minimising any impacts on business operations, productivity and/or employment ▪ Identify and document baseline data on agricultural and tourism occupations for the Toowoomba and Lockyer Valley LGAs using Regional Australia Institute data on vacancies. **Workforce behaviour** ▪ Review the Contractor's Workforce Code of Conduct to ensure it reflects SIMP commitments regarding respectful and positive behaviour by Project personnel.
Pre-construction phase measures	**Local employment** ▪ Provide information to Project region residents (including those without internet access) regarding the construction timeframe, employment opportunities and how to express interest in employment, contracting or supply opportunities ▪ Establish a Local Employment Register to track and monitor participation in construction employment by people from the Project region, including identification of Indigenous personnel with their agreement **Training and development** ▪ Implement training and development initiatives as part of the Inland Rail Skills Academy which will increase workforce skills applicable to project construction and also applicable to other industries in the region e.g. agriculture ▪ Implement Indigenous training and skills development programs agreed with Traditional Owner groups as part of the Inland Rail Skills Academy and/or as part of the Contractor's delivery plans ▪ Construction personnel will be provided with cultural awareness training in cooperation with Traditional Owners, including respect for cultural landscape features and cultural heritage sites **Workforce behaviour** ▪ Require all Project personnel to comply with the Contractor's approved Workforce Code of Conduct, complemented by complaints mechanisms which ensure fast and effective resolution to any issues experienced ▪ Implement authorisation procedures and means of identification for personnel accessing private property
Construction phase measures	**Local and Indigenous employment** ▪ Monitor delivery of the Contractor's workforce management plan ▪ Use (and require Contractor to use) multiple platforms to advertise job opportunities, and promote the availability of employment including expression of Interest forms, community forums, newsletters and Inland Rail websites (refer for example https://inlandrail.artc.com.au/work-with-us)

Workforce management measures	
	▪ Maintain a Local Employment Register to track and monitor participation in construction employment by people from the Project region, including identification of Indigenous personnel with their agreement ▪ Implement Indigenous training and skills development programs agreed with Traditional Owner groups as part of the Inland Rail Skills Academy and/or as part of Project delivery plans ▪ Require employment of Indigenous mentors to support Indigenous people's retention in the construction workforce. ▪ Monitor the Contractor's progress towards local and Indigenous employment targets and require corrective actions (e.g., improved local training and recruitment strategies) if targets are not being met. **Training and development** ▪ Continue to implement training programs and partnerships to equip local and Indigenous people for construction employment, including programs agreed with Councils that align with RSIS priorities and support SQW programs ▪ Consult with QR and relevant councils about potential for a partnership to support training programs which equip local people for employment in Project operations ▪ Commence implementation of Inland Rail Skills Academy Initiatives ▪ Consult with high schools and training providers in the Project region to identify training pathways and develop programs which will support local people to obtain employment in the Project's operations. **Employment in other industries** ▪ Monitor Inland Rail projects' workforce ramp-up and the proportion of Project personnel drawn from within the Project region ▪ Consult with local Councils and Chambers of Commerce regarding any pressures they identify on local labour availability ▪ Monitor baseline data on vacancies in the tourism and agricultural sectors annually ▪ If the Project is contributing to cumulative pressures on labour availability, ARTC will engage with the Contractor to refine the Project's recruitment and training strategies ▪ Maintain support for training programs which equip local people for construction employment ▪ Consult with high schools and training providers in the Project region to identify and implement training and employment pathways to employment in the Project's operation **Workforce behaviour** ▪ Require all Project personnel to comply with the Contractor's approved Workforce Code of Conduct, complemented by complaints mechanisms which ensure fast and effective resolution to any issues experienced ▪ Require the contractor to report on implementation of and compliance with the Code of Conduct, including respect to local values and residents' privacy ▪ Implement authorisation procedures and means of identification for personnel accessing private property ▪ Provide construction personnel and transport drivers with guidelines regarding roads to be used, the standard of driving behaviour required of all personnel and drivers, fatigue management, and the sanctions for driving behaviour that is not in accordance with the Project's standards.

8.4 Housing and accommodation

This Housing and Accommodation sub-plan describes the measures that ARTC will undertake to mitigate potential impacts on housing and accommodation access in the SIA study area.

Potential impacts on housing or accommodation are summarised below, and measures to mitigate impacts are provided in Table 8.10.

8.4.1 Housing access

The Project expects that construction personnel will be drawn from communities in the Project region and nearby LGAs within the Greater Brisbane region. On this basis, the Project is unlikely to result in a significant increase in demand for housing in the Project region during either construction or operation, or to affect housing availability in nearby communities or the Project region.

Assessment of impacts on housing and accommodation (Section 7.3) indicates that land acquisition would require the removal of a small number of houses, with two landowners to date requesting full acquisition, and the likelihood that one DTMR tenant household would need to relocate. The SIA has assumed that up to approximately 20 privately owned houses within the Project disturbance footprint could be acquired. This will require the relocation of residents, but would not affect housing demand or housing costs. Affected property owners will be compensated for land acquisition under the terms of the AL Act.

ARTC will also provide funding support to community organisations who can provide support to affected landowners and tenants who need to relocate, if required.

There is potential for cumulative labour force demands to result from the construction of multiple projects in the Project region and other parts of SEQ, which may require the Project to source labour from beyond a daily commuting distance (which will be defined by the contractor with reference to shift lengths and fatigue management requirements), resulting in a need for accommodation for personnel.

There is also potential for cumulative impacts for accommodation to impact on rental housing availability, if not appropriately managed.

ARTC has developed program-wide Accommodation Principles for use when developing, selecting and deploying accommodation solutions, to support three desired outcomes:

- Accommodation solutions minimise negative social and economic impacts to potentially impacted communities
- Accommodation solutions contribute social and economic value to potentially impacted communities
- Potentially impacted communities are consulted on accommodation solutions prior to them being decided.

ARTC will require the Contractor to provide an AMP for ARTC's approval. The AMP will provide details of how non-local workers will be accommodated, and how ARTC's program-wide accommodation principles will be addressed, as described in Section 8.4.4.

Property investors have raised concerns that their properties may not be tenanted due to construction impacts such as noise and dust. If the Project anticipates requiring rental housing for personnel, it could negotiate with property investors who have vacant rental properties to enable their use. This may also extend to the use of some of the larger land parcels as laydown areas.

ARTC will also communicate with TRC and LVRC about EIS results of relevance to rail operations (e.g. noise impacts and road network operation) to support their consideration of any development control measures required to protect the amenity and liveability of residents in areas which are planned for future urban growth.

ARTC will monitor the implementation and effectiveness of the AMP and provide the results of monitoring as part of the annual SIMP report.

8.4.2 Short-term accommodation

The Project does not anticipate heavy reliance on short-term accommodation such as hotels and motels during the construction or operations phases. There is potential for occasional use of short-term

accommodation, which will be monitored to ensure Project demands do not unduly affect other accommodation users, including during major events with the Project region.

There is a good supply of hotel, motel and serviced unit accommodation in the Toowoomba LGA, and the Lockyer Valley LGA also has a few accommodation establishments, As described in Section 7.3.4, any demand for short-term accommodation occur would most likely be experienced in Toowoomba which has a range of accommodation options, with other options in Helidon Spa and in nearby Gatton. If the Project required an average of 60 rooms (equating to 10 per cent of the peak workforce) to accommodate non-local workers, this may equate to approximately 13.5 per cent of the short-term accommodation rooms assumed to be available in the Project region. This is unlikely to have a significant impact on tourist's access to accommodation.

There is however potential to contribute to cumulative demands for short-term accommodation which could displace tourists and other business workers, which will be considered in the Project's AMP. In order to avoid any impacts on the use of caravan parks by tourists or low income households, the Contractor's AMP will preclude use of caravans and cabins in the Project region.

The Project will require the contractor to consider use of accommodation in potentially impacted communities to provide a benefit to local accommodation businesses.

8.4.3 Property values

Landowners in the EIS investigation corridor are concerned that their property values will decrease as the result of the Project's construction or operation. Property values may also be subject to change from a range of other factors, e.g. increased demand for residential or agricultural properties. ARTC has committed to a comprehensive range of environmental and social impact management strategies which will reduce the potential for impacts on amenity, use or environmental qualities of properties near the rail corridor. ARTC will also communicate its commitments to environmental management, and EIS approval conditions, to local and regional community members, to reduce the likelihood of negative perceptions about the amenity of properties in or near EIS investigation corridor (refer Section 8.2.6).

8.4.4 Accommodation Management Plan

ARTC will require the Contractor to provide an AMP which will reflect ARTC's accommodation management principles during the detailed design phase, when the construction schedule and workforce profile are confirmed, for ARTC's approval.

The AMP will provide details of how the Contractor will:

- Identify and evaluate accommodation options for non-local personnel
- Minimise the use of rental housing in potentially impacted communities
- Avoid personnel demands on affordable accommodation such as caravan parks
- Avoid coincidence of any peak workforce accommodation demands with peak tourist and event visitor demands
- Enable local accommodation providers to benefit from Project accommodation arrangements, including hotels whose amenity could be affected during construction
- Monitor personnel demands on the availability and cost of rental housing, affordable accommodation provision and short-term/tourism accommodation in the SIA study area
- Institute corrective action to recruitment, training or accommodation strategies if any pressures on housing access or short-term accommodation availability are identified.

The development of the AMP will include:

- Consulting with CSQ on the results of their labour force analysis
- Consulting with TRC and LVRC on the scope of the AMP
- Updating the housing and accommodation baseline to account for changes in availability or cost since the EIS was completed
- Forecasting the number of non-local personnel who may require accommodation and anticipated number of bed nights by quarter throughout the construction period
- Consulting with TRC, LVRC and DCHDE to identify any issues which will be considered in planning for workforce accommodation
- Consulting with hotels and motels in potentially impacted communities, the Lockyer Valley Tourism Association and Tourism Darling Downs regarding the likely availability of short-term accommodation at the time construction personnel may require accommodation, including identification of average occupancy rates and peak tourist demand periods
- Researching the availability of rental housing, vacancy rates and rental costs in potentially impacted communities, to avoid selecting accommodation solutions which would put pressure on access to rental housing
- Identifying potential accommodation solutions based on the availability of short-term accommodation and rental housing in the Project region, with outcomes to include:
  - Avoiding use of caravan parks and mobile home parks in the Project region (e.g. requiring sub-contractors to avoid use of these facilities)
  - Avoiding use of rental housing in Project region postcodes where the rental vacancy rate is less than 3.0 per cent which signifies a tight rental market (e.g. choosing rental arrangements in regional centres with greater housing availability)
  - Use of local accommodation, where this would not displace tourists or event visitors
- Developing an accommodation register identifying acceptable accommodation solutions which may include:
  - Accommodation providers (hotels and motels) in potentially impacted communities
  - Other accommodation providers in the Lockyer Valley and Toowoomba LGAs who are interested in providing accommodation
  - Rental housing use by negotiation with property investors who have vacant rental properties near the Project alignment to enable their use
  - Use of housing on some of the larger land parcels to be used as laydown areas
  - Preferred accommodation solutions which avoid seasonal and event-related peak demands in each LGA
- Provision of a monitoring framework which will track accommodation use by Project personnel and accommodation availability in the Project region
- Considering the potential accommodation demands of other Inland Rail projects to be constructed in the same timeframe, and ensuring a coordinated approach to accommodation management
- Consulting TRC, LVRC and peak tourism associations on the draft AMP
- Finalising the AMP for implementation from the pre-construction period and throughout the construction phase.

ARTC will monitor the implementation and effectiveness of the AMP and may require the contractor to refine their accommodation solutions if adverse impacts on housing and accommodation availability are identified. The results of monitoring will be provided as part of the annual SIMP report.

8.4.5 Action plan

Objectives, outcomes and measures which will support achievement of ARTC's accommodation principles are outlined in Table 8.10.

Table 8.10 Housing and accommodation

Housing and accommodation measures	
Objective	▪ Avoid adverse impacts on the affordability or availability of housing in the Project region ▪ Any workforce accommodation demands are managed to avoid displacement of tourists from accommodation in the Toowoomba and Lockyer Valley LGAs ▪ Minimise potential for impacts on property values due to impacts on amenity or perceptions about Project impacts ▪ Accommodation providers in the Project region benefit from any Project requirements for workforce accommodation
Outcomes	▪ Rental housing vacancy rates in potentially affected communities are not affected by Project workforce demands ▪ Tourists and event visitors are not displaced from tourism accommodation due to Project demands ▪ Accommodation providers in the Project region benefit from any Project requirements for workforce accommodation ▪ Inland Rail projects' cumulative demands for housing in the Project region are monitored, and strategies put in place if cumulative impacts appear likely
ARTC Commitments	▪ The Project will seek to maximise local employment to limit any demands on housing and accommodation in the Project region ▪ ARTC will require the construction contractor to provide an AMP which addresses Inland Rail's program-wide accommodation principles ▪ If monitoring data indicates a decrease in rental vacancy rates in the Project region (from a baseline established prior to construction commencing) to which the Project is contributing, ARTC will require refinement of the AMP to minimise negative social impacts to potentially impacted communities
Detailed design phase measures	**Impacts on access to housing or short-term accommodation** ARTC will require the construction contractor to provide an AMP, which will provide details of how non-local workers will be accommodated and will include: ▪ Alignment with ARTC's program-wide accommodation principles ▪ Identification of the number of personnel who could require short term accommodation or temporary housing and the duration of need ▪ The results of consultation with Councils, short-term accommodation providers in the Project region and peak tourism associations in the Project region regarding the likely availability of accommodation at the time the construction workforce is planned to commence and peak ▪ Accommodation solutions identified in consultation with TRC, LVRC and tourism networks ▪ Measures to avoid impacts on the availability of rental housing and short-term accommodation including a short-term accommodation register which identifies accommodation options in the Lockyer Valley and Toowoomba LGAs with sufficient capacity, including consideration of peak occupancy periods (i.e., high tourist periods), ▪ Measures to avoid impacts on low-income households including avoiding use of caravan parks and mobile home parks in the Project region ▪ Measures to enable local accommodation providers to benefit from Project accommodation arrangements

Housing and accommodation measures	
	▪ Mechanisms to monitor: – the number and percentage of the Project's workforce requiring accommodation – the type of accommodation being used – the number of people being accommodated in the Project region each quarter – rental vacancy rates in potentially impacted communities – any strains on local rental housing stock or short-term accommodation providers' capacity to service tourists ▪ Development of the AMP will include consultation with TRC, LVRC, DCHDE and local accommodation providers ▪ ARTC will communicate with TRC and LVRC about EIS results of relevance to rail operations (e.g., noise impacts and road network operation) to support their consideration of any development control measures required to protect the amenity and liveability of residents in areas which are planned for future urban growth **Property values** ▪ Consider landowners' feedback regarding mitigation of impacts on properties in the development of the detailed design and CEMP ▪ Compensation for acquisition of legal interests in property will be provided in accordance with the AL Act ▪ Provide early advice and sufficient detail about volumetric tenure and tunnelling works to landowners with properties directly above the Toowoomba Range tunnel, and establish communication between them and the Contractor when necessary
Pre-construction phase measures	**Housing and accommodation access** ▪ The Contractor will implement the AMP as relevant to the pre-construction phase ▪ The Contractor will review and, if necessary, update the number of non-local personnel that are expected to be required over the duration of the construction period ▪ The AMP will include monitoring mechanisms to identify any strains on local rental housing stock, including consultation with Council, and short-term accommodation providers' capacity to service tourists, as indicated by consultation with local tourism associations ▪ ARTC will require the Contractor to implement, monitor and report on the AMP ▪ The Contractor will develop a consistent, proactive approach to identifying and minimising cumulative housing and accommodation impacts for the Project and the H2C and B2G projects. **Property values** ▪ Cooperate with landowners (as per Section 8.2.6) to minimise impacts on the amenity of directly affected and adjacent properties ▪ Communicate ARTC's commitments to environmental management, and EIS approval conditions, to local and regional community members, to reduce the likelihood of negative perceptions about the amenity of properties in or near the Project disturbance footprint
Construction phase measures	**Housing and accommodation access** ▪ The Contractor will implement the AMP, which will include: – Monitoring of the number of personnel who could require short-term accommodation or temporary housing – Monitoring of demands on short-term accommodation to avoid displacing visitors to major events or during seasonal peaks, including consultation with accommodation providers, TRC and LVRC as relevant – Measures to avoid impacts on rental availability, including minimising the use of rental housing in potentially impacted communities – Avoiding use of caravan parks and mobile home parks in the Project region. ▪ The Contractor will be required to monitor:

Housing and accommodation measures	
	○ the percentage of the Project's total workforce requiring accommodation ○ the type of accommodation being used ○ the number of people being accommodated in the Project region each quarter ○ rental vacancy rates in potentially impacted communities. ▪ ARTC will monitor the outcomes of the AMP to identify any strains on: ○ Local rental housing stock (as indicated by trends in rental vacancy rates in the relevant postcodes) ○ Short-term accommodation providers' capacity to service tourists, as indicated by consultation with local tourism associations ▪ If any strains on housing or accommodation as a result of the Project are identified, ARTC will work with the Contractor to refine the AMP which may include alternative training, recruitment or accommodation strategies ▪ The delivery and outcomes of the AMP will be reported as part of the Project's SIMP reports.

8.5 Health and community wellbeing

This Health and Community Wellbeing sub-plan addresses the potential for impacts on community facilities and services, community safety and mental health, and community wellbeing due to changes to local amenity, community cohesion or local character, or changes to water access or environmental qualities.

Potential impacts on health or community wellbeing are summarised below, and measures to mitigate impacts are provided in Table 8.11.

8.5.1 Schools and community and recreational facilities

During construction, exceedances of noise criteria may impact on the amenity of the Gowrie State School and the Postmans Ridge Pioneer Community Hall (refer Sections 7.4.1 and 7.4.2). ARTC has consulted with Gowrie State School representatives and identified the provision of architectural treatments such as façade treatments, supplementation of fences, and/or air-conditioning of affected buildings as feasible mitigation options for operational noise, with the detail of measures to be confirmed in consultation with the Department of Education during the detailed design phase, and implemented prior to commencement of construction activities which would result in exceedances of Project noise criteria.

The Project is likely to interface with the Gowrie State School to Toowoomba school bus route, requiring specific consultation as the detailed design develops to confirm an appropriate detour around works in the Gowrie Junction-Old Homebush Road-Morris Road area.

During operation, an exceedance of noise criteria is predicted at the Gowrie State School, requiring engagement with the Department of Education to agree mitigation which will address the Department's Learning Environment Policy.

With the Toowoomba Horse Riding for the Disabled Association facility located adjacent to the tunnel construction, there may be a risk of ground-borne noise scaring the horses or riders. ARTC has consulted with the Association to identify its areas of use and will provide early advice to the Association regarding the timing, duration and level of ground-borne noise, when construction planning has confirmed these details. Temporary and permanent use of land within the Toowoomba and Lockyer Valley Kart Club would also be required, and there is that the potential for construction noise to affect the facility's amenity whilst construction activities are occurring nearby, however this is not expected to impact on the facility's operation

Of relevance to schools and community and recreational facilities, there is potential for disruption to the traffic network during construction to disrupt community access, including potential for cumulative impacts on the road network used to access the Gowrie and Helidon State Schools. There is also the possibility of

Project construction disrupting the connectivity of the Bicentennial National Trail north of Withcott (i.e. Gittins Road) during construction, and of temporary delays to cyclists or pedestrians using the Helidon to Ravensbourne trail circuit through the Lockyer National Park.

Construction noise exceedances were not predicted for other facilities, however construction noise may be audible with the possibility of impacts on amenity whilst construction works are occurring near community facilities such as the Gowrie Junction Community Hall, Harlaxton Community Hall, Harlaxton Neighbourhood Centre and/or the Gateway Church in Harlaxton, which are within 1 km of the Project.

If the detailed design process confirms any potential for construction noise impacts on these facilities, the Project will consult with the managers of each of these facilities to explain the noise modelling results and establish communication between facility managers and the Project team to identify and implement site-specific mitigation where triggered by exceedances of noise levels, and/or where facility managers identify impacts on facilities' functions as the result of construction activities or the Project's operation. The Project will also communicate with all community facilities within 2 km of Project works and ensure they have access to Project updates and communication channels throughout the construction period.

ARTC has established the Inland Rail Community Sponsorships and Donations Program to support non-profit organisations, community groups, Traditional Owner groups, and local government entities with projects, events, and activities that will help achieve community and regional prosperity and sustainability. Eligible groups can apply for amounts between $1,000 and $4,000 for one-off, short-term projects or activities. Examples of funded projects may include community resilience-building days, establishing a mentoring program for young entrepreneurs in the area, and community development projects.

8.5.2 Health and emergency services

Whilst changes to the Project region's population as the result of Project construction or operation are not expected, the Project may result in a small increase in the day-time population and the potential for a small increase in hospital presentations (e.g. for treatment of injuries) during construction. There is also potential to increase demands on emergency services, and cause service delays during construction. QPS has also highlighted the potential for protests or disputes about the Project to strain the capacity of their services.

As part of planning during the detailed design phase, ARTC will engage with stakeholders including TRC, LVRC, Queensland Health, DCHDE, the PHNs, emergency services and community groups, to identify cooperative actions to address emerging or changing needs. During the pre-construction phase, the Project will communicate with Queensland Health to ensure hospital services are aware of the construction program and workforce ramp up to enable planning for any minor upgrades to services which may be required. The Project will also consult with DCHDE in identifying any Project-related stress on community services and organisations in the Project region.

ARTC will take a proactive approach by requiring the Contractor to provide best practice management of safety risks to workers and the public, and will implement a safety education campaign which addresses safety with respect to construction works, rail operation targeting pedestrian, equine and traffic safety.

Assessment of construction noise has identified the potential for noise exceedances at the Baillie Henderson Hospital, which is the preferred site for the future Toowoomba regional hospital. There is also potential for views from the Baillie Henderson Hospital to the intermediate ventilation shaft building to cause staff or patients concern about air quality.

ARTC has meet with Queensland Health's Baillie Henderson Hospital managers to provide information regarding the purpose of the ventilation structure (i.e. draw down of air, with the release of air during an emergency), and the assessment of noise and vibration impacts on the Baillie Henderson Hospital site. The Project will also consider the potential to implement measures to reduce the visibility of the intermediate ventilation shaft building from the hospital. Consultation with Queensland Health will also include discussion

of any potential for impacts on existing or planned rescue helicopter flight paths in the vicinity of the intermediate ventilation shaft.

ARTC will continue to meet with Queensland Health representatives during the Project's detailed design phase to identify effective mitigation for construction noise impacts which will prevent impacts on the hospital's environment, any impacts on helicopter flight paths, and any other impacts (e.g. joint use of construction traffic routes if construction of the Project and the new Toowoomba Hospital coincide) identified in discussion with Queensland Health.

Volumetric tenure would be required over the northern corner of the property used by Teen Challenge Care Queensland at Cranley near Ch 5.5 km, with little likelihood of impacts on the amenity of the facility, but with the potential for ground-borne noise to be audible at the facility. This has been communicated to Teen Challenge Care Queensland, and ARTC will provide early advice to Teen Challenge Care Queensland regarding the timing, duration and level of ground-borne noise, when construction planning has confirmed these details.

Waste management is a key issue in maintaining environmental health. ARTC will implement a waste management hierarchy to minimise impacts on waste management facilities across the Toowoomba and Lockyer Valley LGAs. Similarly, a construction water management strategy will be developed to minimise impacts on the existing water networks (including wastewater).

The Project will also obtain the relevant agreements with utility providers to access and work in their easements including, where required, relocation of utilities which may be done by the utility provider under relevant legislation

During operations, the Project's infrastructure and rail operations may result in demands on emergency services and changes to the noise environment (including vibration) in the EIS investigation corridor. EIS Chapter 23: Draft Outline EMP includes strategies and actions addressing traffic management, hazard and risk management, and application of safety design standards to mitigate safety risks. ARTC is also committed to ongoing engagement with QPS, QAS, QFES and Queensland Health to develop joint arrangements for responses to Project-related demands on services. Planning for ongoing cooperation with emergency services and the Local Disaster Management Groups during the Project's operations will be initiated during the construction phase.

8.5.3 Mental health

The Project's EIS period has involved stress and anxiety for some local residents, due to concerns about property acquisitions, uncertainty around Project timeframes and location, potential impacts on amenity or environmental changes which could result from the Project. Some are still feeling the stress of the Toowoomba Bypass construction phase, and have also indicated that acclimatisation to the operation of the Bypass will take time. Stress is likely to be ongoing for directly affected landowners during the acquisition process, and fears about construction impacts and ongoing operational impacts may continue to cause stress and anxiety for other residents. Stress may impact on people who are already vulnerable due to stressors such as flooding and drought, and may impact on mental health.

Inland Rail has developed mental health partnerships with the Darling Downs and West Moreton PHN and the Brisbane South PHN. The PHNs' role is to provide oversight and coordination of federal funding for mental health (and other health) services. The purpose of the mental health partnership is to:

- Promote local, independent mental health services which are accessible to stakeholders at no cost
- Ensure local mental health services and general practitioners, are aware of Inland Rail progress in local areas
- Provide resources and services to mitigate any increased demand caused by Inland Rail.

As part of the mental health partnership with ARTC, the Darling Downs and West Moreton PHN is working with the Richmond Fellowship Queensland and Lives Lived Well to increase local access to the New Access program. The New Access program provides mental health support for residents in communities along the Inland Rail alignment which can be easily accessed through a phone call. Up to six free coaching sessions for community members struggling with Inland Rail-related issues are offered through the New Access Program. This program has been selected as it is utilising and strengthens existing mental health services rather than replicating and competing with existing providers.

Through the PHN partnerships, Lifeline's Darling Downs and South West Queensland has also been supported to deliver Lifeline's Community Connections program in the Project region and to help strengthen community resilience and social networks. Additionally, PHNs are liaising with general practitioners in potentially impacted communities to ensure they are updated on the Project and aware of the services being supported through the mental health partnership.

There is also potential for additional services to be included within the partnership agreements e.g. support for residents who need to move from within the Project disturbance footprint. These will be developed during later phases of the Project.

Along with stakeholder engagement processes outlined in Section 8.2 and the range of management strategies and commitments in regard to managing environmental changes, further measures are outlined in Table 8.11 aimed at reducing the potential for community members to feel stressed or anxious about Project impacts.

8.5.4 Community wellbeing and quality of life

The SIA has identified likely impacts on residential amenity, local character and connectivity during construction, the potential for Project impacts on community cohesion, and the potential for Project impacts to affect people who are experiencing disadvantage (refer Sections 7.1.3 to 7.1.8). These impacts could individually or collectively affect the well-being or quality of life of residents in potentially impacted communities.

The Project will contribute to the Inland Rail Program's social and economic benefits, which are anticipated to occur at local, regional and national levels. The benefits of employment and local business participation in the supply chain are also likely to be experienced by residents of local communities.

During the detailed design phase, the Project will prepare a Community Wellbeing Plan to provide a framework for cooperation with key stakeholders to implement measures addressing impacts on quality of life as the result of Project impacts on amenity, character, cohesion or connectivity.

The Community Wellbeing Plan will include:

- Objectives and key performance indicators
- Measures to ensure that the level of service provided to the local community by existing social services, facilities and infrastructure is not reduced
- Measures to mitigate potential health and wellbeing impacts on local communities, and enhance potential benefits
- Emergency response arrangements and management measures agreed with emergency service providers, for incidents both on and off the Project site
- Details of community development programs to be implemented, and the outcomes to be achieved
- A monitoring and reporting protocol.

The Community Wellbeing Plan will include relevant measures identified in the SIMP as well as measures identified in consultation with TRC, LVRC, DDWM PHN, DCHDE, and the owners of community facilities that would be affected by noise during the detailed design phase. The Plan will include:

- Initiatives to upgrade community facilities, which could be delivered via ARTC's Community Donations and Sponsorship program (for minor works), direct Project funding to community facilities to implement mitigation or enhancement measures, and/or partnerships with relevant councils or government agencies
- Placemaking initiatives to offset impacts on local character e.g. interpretive signage, treatment of temporary hoardings, park or streetscape upgrades, and/or supporting rural localities and towns to upgrade their entrance statements
- Projects which support community cohesion and resilience, e.g. community events, arts and cultural programs, or skills training for volunteers and community organisations
- Supplementation of local services to address any increase in demand for individual and community support services as a result of the Project, including support services for households (including tenants) displaced by Project property acquisition and/ or removal of publicly-owned dwellings
- Cooperation with QAS, QPS, QFES, SES and Local Disaster Management Groups with respect to day-to-day demands on police and emergency services, and emergency response and recovery arrangements
- Consultative arrangements with key stakeholders to support implementation and monitoring
- Responsibilities for implementation.

Recent consultation with TRC has identified their interests in community development as including potential for support for their proposed skills hub, community interest in developing running/cycle tracks beside the train line, support for social enterprises, and support for tourism plans.

LVRC have agreed to participate in an SIA briefing on the Project and H2C, and will be consulted regarding community development and amenity improvement initiatives, and the scope of the Community Wellbeing Plan, commencing in June 2021.

Initiatives identified by the two Councils will be further discussed with Councils and other stakeholders as part of the Contractor's development of the Project's Community Wellbeing Plan during the detailed design phase.

Implementation of the Community Wellbeing Plan will commence during the pre-construction phase, and be maintained during the construction phase. Progress on the implementation of the Community Wellbeing Plan will be reported to the CRG at each meeting, and annual monitoring of the Plan's outcomes will be included as part of the annual review of the SIMP.

During construction, ARTC will continue to engage with stakeholders to enable them to participate in tracking the SIMP's outcomes, and where required, develop adaptive management measures to address emerging or changing needs.

8.5.5 Environmental qualities

During construction, the Project will introduce noise, vibration and dust sources to rural and semi-rural environments, with associated social impacts as detailed in Section 7.1.3. Assessment of air quality has predicted that the Project could be constructed and operated without affecting human health, though there are likely to be impacts due to construction noise and vibration. In addition, the tunnel construction will be 24 hours a day, 7 days a week and is planned of a period of up to 48 months which may also result in noise or vibration impacts on the local community whilst tunnelling works are within approximately 390 m of homes.

Measures to mitigate potential exceedances of noise and vibration criteria during construction are provided in EIS Chapter 23: Draft Outline EMP.

During the detailed design period, ARTC will continue to engage with the owners of all properties which could experience noise or vibration exceedances during construction, or be exposed to dust, and will also communicate with all residents and business owners within 2 km of the Project regarding key EIS findings. The results of this engagement will inform appropriate mitigation measures, communication with the Constructing Authority regarding landowners' circumstances and development of the CEMP.

The Project's operation may result in noise exposure for nearby properties. Measures to mitigate potential exceedances of noise criteria during operations are provided in EIS Appendix O: Operational noise and vibration technical report.

8.5.6 Access to natural resources

Effects on stakeholders' water access are expected to include direct impacts on groundwater bores that are used for water supply (within the EIS investigation corridor) during construction and potential for indirect (drawdown) impacts on registered bores during the Project's operation. The Project will undertake a landholder bore survey to identify the location of any bores that may be lost due to construction or operation, and engage with the owners of all licensed and unlicensed bores to determine an appropriate mitigation strategy (for example replacement of water supply, if required). Make good arrangements (monetary) are likely to be part of compensation package agreements developed (on a case by case basis) with the impacted landholders. Drilling of a new bore would be the responsibility of the landholder.

A groundwater monitoring strategy is also recommended to provide an ongoing assessment of potential impacts on bores (refer EIS Chapter 23: Draft Outline EMP).

The Project will consult with affected bore owners to identify compensation or 'make good' arrangements (i.e. replacement of the water source), however the loss of bores or loss of water from bores is likely to lead to short-term impacts on farm management. With respect to groundwater drawdown, ARTC plans to make good impairments resulting from the construction and/or operation of the Project on a case by case basis to ensure that the bore owner has access to a reasonable quantity and quality of water for the water bore's authorised use or purpose.

8.5.7 Safety

Workforce behaviour

The location of work sites and laydown areas near private homes may engender anxiety about personal and property safety for some residents living adjacent to the Project. ARTC will require the Contractor to enforce a Code of Conduct and appropriate policies and procedures containing requirements for positive behaviours and respect for local residents and businesses, applying to all Project personnel.

Road safety

The Project will eliminate an existing level crossing which is in line with the Queensland Level Crossing Safety Strategy 2012-2021, providing a new grade separated crossing at Gowrie. In addition, with existing traffic migrating over to the ARTC networks, the risk of rail-road interactions on the existing rail line (Main Line and Western Line) will be reduced (i.e. less traffic on operating on the QR West Moreton System rail corridor including potentially through Toowoomba). East Paulsens Road will also be upgraded providing better access to the residents serviced by this road.

Residents and emergency services have raised concerns that increased traffic and road works may impact on road safety. A traffic impact assessment has been undertaken which has identified impacts on the level of service, required changes to the road network including intersections and other users. A comprehensive

TMP will be provided for the construction stage. A consistent approach to traffic management planning and road safety will be required for adjoining Inland Rail projects.

The Contractor will deliver communication strategies to share information about construction traffic routes, peak construction periods, the Project's workforce conduct policies, and how to contact the Project in the event of any concerns.

Excess spoil material will primarily be generated from the tunnel construction, with material to be stockpiled at the western tunnel portal. There will however be a requirement to transport spoil along the local road network, including between the intermediate ventilation shaft and the western tunnel portal. An accurate assessment of traffic and transport impacts as the result of spoil transport will not be possible until the detailed design phase. A consistent approach to traffic management planning and road safety will be required for adjoining Inland Rail projects.

ARTC will continue to work with the Local Disaster Management Groups to ensure evacuation routes and bushfire trails area accessible during construction and operations. Further consultation will also occur with emergency services to identity opportunities where these services can leverage off the proposed rail corridor.

The Project’s operation also presents the potential for rail accidents, road-rail or rail-pedestrian accidents or suicides.

COVID-19 Safety

As noted in Section 7.4.10, Inland Rail’s COVIDSafe Plan and management responses to the COVID-19 pandemic have been informed by close monitoring of guidance provided by various health authorities and industry bodies on controlling the spread of COVID-19 and ensuring workplaces remain COVIDSafe.

Similarly, contractors with capacity to bid for Inland Rail projects will have established COVIDSafe plans and systems.

In accordance with Inland Rail’s COVIDSafe Plan, provisions for the Project will include:

- Compliance with Government directives on COVID-19 and cooperation with Queensland Health when required
- Development and maintenance of a COVIDSafe Hazard and Risk Control system for the Project
- Management practices including
  - Use of the Safe Work Australia COVIDSafe Checklist at each Project site to support implementation of the Inland Rail COVIDSafe Plan
  - a Fitness for Work Policy which addresses COVID-19
  - travel protocols
  - signage and communications
  - hand and workplace sanitisation requirements,
  - systems supporting identification of close contacts
- Provision of Information to Project personnel on COVID-19, social distancing and self-isolation principles, hygiene, and the availability of mental health support
- Identification of local businesses who can provide thorough cleaning and disinfection if required.

Personnel will observe social distancing as required by Queensland Health (and comply with other health advice which pertains from time to time) in all stakeholder interactions and visits to businesses and other properties.

8.5.8 Action plan

Table 8.11 provides the objectives, outcomes, performance management measures, ARTC commitments and management measures to mitigate impacts on community health and wellbeing during the Project's post-approval, pre-construction and construction phases.

Table 8.11 Health and wellbeing

Health and wellbeing measures	
Objective	▪ Avoid and minimise impacts which may affect community wellbeing including mental health ▪ Maximise communication and co-operation with local stakeholders to address impacts on quality of life or community well-being ▪ Mitigate impacts on the amenity of schools, community and health facilities ▪ Cooperate with police, health and emergency services to manage Project-related demands on services
Outcomes	▪ Changes in the amenity of residential properties and community facilities and the potential for noise to disturb sleep are minimised in accordance with the Project's approval conditions and agreements with affected property owners ▪ Mental health and community support services are accessible to people in potentially impacted communities and are adequate to any increased demand resulting from the Project ▪ Vulnerable residents who could be affected by relocation, construction noise or dust are supported to adapt to changes ▪ Health and emergency services have sufficient information and cooperation with ARTC to anticipate and avoid impacts on service capacity ▪ The wellbeing of residents in the Project region is supported by access to community programs and events which enable community participation
ARTC Commitments	▪ Maintain a focus on creating a safe environment for all and supporting community wellbeing during the changes that Inland Rail will bring ▪ Identify emerging impacts and opportunities that have the potential to impact community wellbeing and, in consultation with the local community, develop appropriate programs or initiatives to address these impacts and opportunities ▪ Identify opportunities and develop programs to improve safety outcomes for local communities ▪ Implementation of ARTC's Community Sponsorship and Donation Program ▪ Ensure ongoing engagement with Indigenous organisations, families and Elders to support Indigenous employees, underpinned by a high level of coordination between contributing programs and agencies ▪ Make good impairments to groundwater bores (e.g. water level decline impairing the bore's ability to provide a reasonable quantity or quality of water for the bore's authorised use or purpose) resulting from the construction and/or operation of the Project, on a case by case
Detailed design phase measures	**Community facilities and services** ▪ Provide an update on Project design, EIS findings and the construction program to Department of Education, Queensland Health, DCHDE, QPS, QAS, QFES and SES ▪ Consult with LVRC and TRC regarding the potential for investment in community facilities in local towns to be included in the Community Wellbeing Plan, and provide funding for initiatives agreed with Councils or other facility owners ▪ In consultation with the PHNs, extend the mental health partnership to include provision of services to assist residents who would need to relocate to access alternative accommodation and support services, if consultation with these residents indicates that support is required ▪ Engage with the Department of Education and Gowrie State School to update them on likely construction noise impacts and confirm mitigation options e.g., façade treatments, supplementation of fences, and/or air-conditioning of affected buildings to avoid,

Health and wellbeing measures	
	minimise or offset noise impacts on Gowrie State School, in accordance with the Department's learning environment policy and guideline ▪ Update Bicentennial National Trail Ltd representatives on detailed design and if necessary, confirm any feasible actions to minimise disruption of access to the Bicentennial National Trail at Gittins Road during construction ▪ Continue engagement with the Gowrie community (in liaison with the B2G project) to discuss opportunities for a partnership to upgrade support for the newly established Gowrie Junction Multi-Purpose Community Facility ▪ When the detailed design has been developed and construction traffic routes are confirmed, consult with the Department of Education, DTMR, local schools and school bus operators to identify measures for inclusion in the TMP to minimise impacts on school bus routes including a specific focus on the Gowrie State School to Toowoomba school bus route ▪ Liaise with QR in relation to potential impacts on rail traffic, including any track possessions and the elimination of the existing level crossing ▪ Provide for maintenance of access to the Helidon to Ravensbourne Trail if it is expected to be affected, in consultation with DTMR and LVRC ▪ Consult with the managers of community facilities within 1 km of Project works to explain the noise modelling results and establish communication between facility managers and the Project team, to enable a corrective response to any noise impacts on the use of facilities ▪ Communicate the noise modelling results to all community facilities within 2 km of Project works and ensure they have access to Project updates and communication channels throughout the construction period ▪ Make donations and sponsorships available to community organisations in potentially impacted communities, to enable them to strengthen the provision of community programs ▪ Engage with the Toowoomba Horse Riding for the Disabled Association and the Teen Care Challenge Facility to provide advice of the indicative timing for the TBM's passage near and under their properties. ▪ Agree compensation arrangements for the acquisition of land associated with the Toowoomba Lockyer Valley Kart Club and Teen Care Challenge, and for volumetric acquisition of land within the Toowoomba Horse Riding for the Disabled Association facility ▪ Obtain the relevant agreements with the utility providers to access and work in their easements including, where required, relocation of utilities which may be done by the utility provider under relevant legislation ▪ As part of construction planning and the Project's TMP, develop measures to address the potential for cumulative impacts (with the G2H project) on travel times to Helidon State School, e.g., minimising the coincidence of road works and inclusion of measures such as minimising works on access roads to the school during peak drop-off and pick-up times within the Project's TMP ▪ Advise the Constructing Authority of LVRC's interest in use of land not needed after construction (i.e., within the temporary disturbance footprint) with potential to connect these parcels to existing trails and public spaces or fire access trails **Health and emergency services** ▪ Consult with QPS, QAS, QFES, Lockyer Valley Disaster Management Group and Toowoomba Disaster Management Group in the development of Emergency Response Plans for construction and operation ▪ Provide information about dangerous goods transport and tunnel rail tunnel to QPS and QFES, and seek their feedback for consideration in emergency response plans ▪ Provide advice to DDHHS regarding the workforce ramp-up and any specific anticipated demands on hospitals ▪ Develop arrangements with QPS, QAS and QFES to ensure effective communication throughout the construction phase, agree on cooperation procedures, and plan

Health and wellbeing measures	
	measures to mitigate impacts on emergency service response times during construction (e.g., direct communication with construction managers) ▪ Continue engagement with the QFES and rural fire brigades to enable a cooperative response to any fire risks affecting the EIS investigation corridor and nearby residences or facilities ▪ Continue engagement with DDHHS regarding Baillie Henderson Hospital/future Toowoomba Hospital site to: o Provide an update on the construction program and any changes to the project design which could affect the hospital campus o Identify and implement measures to avoid construction traffic impacting on access routes to the hospital o Provide information on the ventilation outlet building design, location and construction timeframe when this is confirmed as part of the detailed design. and seek feedback about any Project measures which could to mitigate conflicts with the flight paths of helicopters accessing the hospital in the vicinity of the intermediate tunnel ventilation shaft **Mental health/quality of life** ▪ Consider the potential for particular disadvantage in Helidon/Helidon Spa, Lockyer and Cranley in confirming mitigation measures for construction noise and dust ▪ Communicate the results of hydrology/flooding assessment results to interested stakeholders and address any legitimate localised concerns during the detailed design process ▪ Develop partnerships with community and government organisations who can assist residents to access support services ▪ With the PHNs, explore opportunities to provide training for community members in recognising and responding to mental health issues e.g., through men's sheds and community support groups ▪ Development of a Community Wellbeing Plan as described in Section 8.5.4 ▪ Engage with TRC and LVRC to identify and implement cooperative actions to support community wellbeing, e.g. o Placemaking initiatives o Projects which support community cohesion and resilience o Opportunities for alignment with RSIS project initiatives and Councils' economic development programs on training and development strategies. **Community health** ▪ Consult with landowners and residents who may experience construction noise exceedances to confirm mitigation e.g., architectural treatments, supplementation of fencing, or acquisition of impacted properties ▪ Ensure a detailed focus on protecting residents' amenity in the CEMP, referencing property-specific measures and SIMP commitments where relevant ▪ Plan the construction methodology to avoid work during non-standard hours causing noise or vibration wherever possible, with the exception of tunneling works which will be 24 hours a day/7 days a week ▪ Provide engagement staff to work with residents whose properties would be acquired to provide Project information, ensure their concerns are considered in Project planning, and provide referral to support services where required **Access to natural resources** ▪ Consult with bore owners where impacts are predicted including the process around compensation and 'make good' arrangements (e.g., bore assessment which aim to provide security to the bore owner and ARTC), informing the development of make good arrangements and required resolutions to impacts on bores. ▪ Establish groundwater monitoring mechanisms (refer EIS Chapter 23: Draft Outline EMP) to enable a corrective response or mitigation to any drawdown affecting landowner's access to groundwater

Health and wellbeing measures	
	Safety ▪ Consult with DTMR, LVRC, TRC and QPS in the development of a TMP with a clear focus on road safety, fatigue management and safe interactions with rural roads and rural traffic ▪ Consult with QR in relation to works with the existing rail corridor and the elimination of the existing level crossing ▪ Site-specific measures to manage potential risks to pedestrian and cycle safety where construction traffic routes interface with these routes will be included in the TMP ▪ Develop a consistent approach to traffic management planning and road safety in relation to the transport of spoil material for adjoining Inland Rail projects ▪ Establish and maintain COVIDSafe policies, systems and procedures in accordance with Inland Rail's COVIDSafe Plan.
Pre-construction phase measures	**Community facilities and services** ▪ Engage with Postmans Ridge Pioneers Memorial Hall Inc to develop mitigation to avoid, minimise or offset impacts on the amenity of the Hall during construction ▪ Consult with the Toowoomba Horse Riding for the Disabled Association regarding adoption of safety measures in regard to construction noise ▪ Consult with regional bus service operators and QR to develop mitigation to minimise disruption to services ▪ Through consultation with DCHDE prior to construction commencing, and annually during construction, identify any Project-related increase in demand for community services, and if stresses on services are identified, participate in a cooperative response to community needs between DCHDE, ARTC and community organisations **Health and emergency services** ▪ Develop a protocol with QPS, QAS and QFES to ensure effective communication and coordination of emergency response procedures during construction ▪ Provide a forward schedule for Project activities requiring oversized vehicle escorts to police in all emergency services bases ▪ Provide advance notice and updates on workforce ramp-up and the construction program to Queensland Health, QPS, QAS and QFES to enable Government agencies to plan for increased demands for health, police and emergency services ▪ Ensure access routes to the Project disturbance footprint are communicated and agreed with LVRC, TRC, DTMR (as relevant), QPS and all emergency services, including alternative routes during extreme events such as during flooding or bushfire ▪ Offer site orientation to QPS, QAS and QFES. **Mental health** ▪ Ensure access to communication and complaints mechanisms for all residents in potentially impacted communities ▪ Maintain the mental health partnership ▪ Implement actions agreed in property acquisition and access arrangements ▪ Require Contractor tenders to comply with detailed mitigation measures with respect to managing impacts on amenity, privacy and community values ▪ Implement early initiatives identified in the Community Well-being Plan as described in Section 8.5.4 **Access to natural resources** ▪ Undertake assessment of groundwater bores assessment and finalise any make good arrangements or compensation packages **Safety** ▪ Develop tailored and targeted rail and road safety programs for delivery during construction to local schools and communities in the Project region ▪ Implement communication strategies to advise stakeholders about construction traffic routes, peak construction periods, the Project's workforce conduct policies, and how to contact the Project ▪ Consult QFES in detailing the mitigation measures regarding fire trails, firefighting and a cooperative response to any fire risks affected by the Project

Health and wellbeing measures	
	▪ Maintain and implement COVIDSafe policies, systems and procedures in accordance with Inland Rail's COVIDSafe Plan and Government directives that apply from time to time
Construction phase measures	**Community services and facilities** ▪ Implement noise mitigation measures agreed with the Department of Education with respect to Gowrie State School, prior to commencement of construction activities which would result in exceedances of Project noise criteria ▪ Communicate with all schools, health facilities and community halls and centres in the potentially impacted communities regarding the construction program, and provide regular updates about road closures and roadworks ▪ With DCHDE, monitor the adequacy of community support services to meet Project-related demands, and enable cooperative responses if required e.g. increased funding support for affected services by ARTC or the relevant Government agencies ▪ Provide advice to THRDA and Teen Challenge Care Queensland at least one month prior to the point where the TBM would be 500 m from their properties' boundaries, including predicted ground-borne noise levels, the area that could be affected and the duration of the impact to enable THRDA to avoid use of the area which may be affected during that timeframe and Teen Challenge Care Queensland's provision of information to facility users and staff ▪ Provide information to the Toowoomba and Lockyer Valley Kart Club at least three months in advance of construction activities which would impact on the facility, and including regular updates regarding construction works which may result in noise or dust, and the mitigation measures the Project will utilise to minimise impacts on the Kart Club's operations ▪ Through consultation with the managers of facilities including Gowrie State School, Postmans Ridge Pioneer Memorial Hall, Toowoomba Horse Riding for the Disabled Association, Teen Care Challenge Inc, and Toowoomba Kart Club, monitor the effectiveness of noise, vibration and dust mitigation measures, and initiate corrective measures if facilities are experiencing impacts on their amenity or access ▪ Fund provision of locally based community development projects for residents in and near the Project and in potentially impacted communities to: o Build their capacity to cope with Project-related changes to connectivity, sense of place or community cohesion o Support the growth of social networks o Position local businesses to participate in the Project's supply chain. **Health and emergency services** ▪ Require contractors to have trained paramedic personnel at worksites to reduce impacts on local health services and assist in the promotion of workplace health, and wellness ▪ Hold regular meetings with Queensland Health, QPS, QAS, QFES, Lockyer Valley Disaster Management Group and Toowoomba Disaster Management Group services to update advice on the Project's workforce ramp-up, review co-operative arrangements, provide –review -advice of major equipment movements, and ensure any safety or service access issues are identified and addresses ▪ Provide noise monitoring at the Baillie Henderson Hospital ▪ Develop a protocol between ARTC and emergency service providers, defining appropriate and coordinated responses and communication in the event of emergencies during operations ▪ Investigate the need for joint training and response exercises with QPS, QAS and QFES to build capacity for Project- associated incident management during operation. **Mental health and quality of life** ▪ Implement the Community Well-being Plan as described in Section 8.5.4 ▪ Maintain consultative arrangements that are accessible to all residents in the EIS investigation corridor and potentially impacted communities ▪ Provide regular updates to landowners and communities about how noise, dust and traffic delays from the Project will be minimised, and how to contact the Project

Health and wellbeing measures	
	▪ Implement communication strategies to ensure stakeholders know about construction traffic routes, peak construction periods, the Project's workforce conduct policies, and how to contact the Project personnel in the event of any concerns during construction. ▪ Maintain a responsive complaints mechanism to address community complaints about construction impacts ▪ With the PHNs, monitor mental health service uptake in potentially impacted communities ▪ Adjust the quantum or nature of services provided by the mental health partnership with PHNs in response to monitoring data, if required ▪ Prior to the commencement of Project operations, communicate the results of air quality modelling and management measures (including operation of the tunnel portals and intermediate ventilation shaft) as part of Project communication strategies targeting potentially impacted communities ▪ Prior to the commencement of Project operations, engage with the PHNs and Queensland Health to gauge the need for any ongoing support for mental health services during the operational period. **Community health** ▪ Maintain consultative arrangements that are accessible to all residents in the EIS Investigation Corridor and potentially impacted communities ▪ Provide regular updates to communities about how noise, dust and traffic delays from the Project are being managed and how to contact the Project ▪ Provide information to enable Council or State Government review of current land use planning controls in areas that may be affected by operational noise. **Access to natural resources** ▪ Continue established consultative mechanisms with groundwater bore owners and licenced users involved in groundwater monitoring mechanisms (refer EIS Chapter 23: Draft Outline EMP) **Safety** ▪ Implement workforce fatigue management procedures including in relation to travel ▪ Implement communication strategies to ensure stakeholders know about construction traffic routes, peak construction periods, the Project's workforce conduct policies, and how to contact Project personnel in the event of any concerns during construction ▪ Require the Contractor to implement mitigation measures with respect to managing impacts on amenity, privacy and community values (e.g. Code of Conduct and management of noise) ▪ A Communication and Education Plan will be designed and implemented prior to the commencement of operations to provide information about Inland Rail operations and safety to be delivered through community engagement activities and campaigns to increase public awareness ahead of and during the operations phase ▪ Develop a protocol between ARTC and emergency service providers, defining appropriate and coordinated responses and communication in the event of emergencies during operations ▪ Develop tailored and targeted rail and road safety programs for delivery to local schools, local young people and communities in the Project region during operations (first three years) ▪ ARTC will explore the need for suicide prevention programs to be delivered in local communities as part of its mental health partnership with the PHNs ▪ Maintain, implement and regularly review COVIDSafe policies, systems and procedures in accordance with Inland Rail's COVIDSafe Plan and Government directives that apply from time to time

8.6 Local business and industry participation

This Local Business and Industry Participation sub-plan addresses the potential for Project impacts on businesses including farms, agribusinesses and tourism-related businesses, and describes ARTC's commitments to ensuring that local and regional businesses benefit from the Project.

8.6.1 Farms and agribusiness

ARTC has conducted consultation with landowners to identify the potential for impacts on farms and other agricultural uses, and in some locations has designed the Project alignment to avoid impacts on productive land and high value infrastructure.

Impacts on farms and grazing properties may include disruption to property access, reduction in the usable areas of land, impacts on bores, or severance of movement patterns for stock, equipment and water. Landowners will be compensated for the loss of legal interests in land.

ARTC is working and will continue to work with directly affected landowners to address their property-specific concerns as part of the detailed design phase and in the Project's CEMP. This will include working with agricultural property owners and other business operators to reduce the potential for impacts on business operations including properties' direct access to the road network.

ARTC's Inland Rail Skills Academy includes provision for training and skills development programs which are relevant to the agricultural industry. Longer term, local agribusinesses may have access to better rail-road transport connections for the movement of produce, and through improvements to connectivity opportunities between the existing QR West Moreton System rail line and ARTC interstate lines.

8.6.2 Other businesses

The Project traverses a number of other business operations, including landfills, manufacturers and built infrastructure and telecommunications services which if disrupted may impact on the local community. Land will be acquired by the Constructing Authority, while relocations or other measures will be managed in accordance with agreements with the affected business/service provider.

Businesses near the Project where there is potential for audible construction noise or dust, or disruption to road access due to roadworks, include horticultural businesses, the Gowrie One Stop Convenience centre, a market garden (organic farm) at Cranley, manufacturers on Hermitage Road, Cranley, and a road transport business on Airforce Road, Helidon. There is also potential for construction noise, dust and changes to local road networks to affect businesses' travel times more generally.

ARTC will continue to engage with service providers and relevant businesses to ensure their specific needs are considered in the CEMP and identify opportunities to support the Project. This will include consulting with businesses in Gowrie Junction and each business that is adjacent to the footprint, to take account of their specific needs for access and operation, including consideration of the needs of transport-related operations, and agricultural operations.

Table 8.12 includes measures which address the potential for impacts on businesses.

As a high-capacity freight link through regional Australia, it is anticipated that the Project will act as an enabler for regional economic development along the Inland Rail corridor, including alignment with business and industries developed as part of the Toowoomba Enterprise Hub.

The Project may also act as a significant catalyst for development within the region, particularly in relation to rail dependent industries and support industries associated with transport, freight handling, warehousing and logistics.

8.6.3 Impacts on tourism

The potential for Project infrastructure to reduce tourists' appreciation of views and vistas in the Lockyer Valley is a concern for tourism businesses, many of which rely on the Project region's easy day-trip access from Brisbane and the coast, and on the scenic local character. As noted in Section 7.5.3, when the Project's detailed design is confirmed, ARTC will consult with tourism-related businesses to develop a shared understanding of how the Project may affect tourism, and support the development of measures to ensure that generalised impacts on tourism values (such as traffic disruptions on key local tourist routes) are reduced wherever possible.

Consultation with the TRC, LVRC and local businesses will be undertaken as part of the detailed design process, to obtain input which will assist in refining mitigation measures which address impacts on scenic amenity and road traffic. ARTC will also collaborate with the Lockyer Valley Tourism Association, the Lockyer Valley Chamber of Commerce, Tourism Darling Downs and interested businesses to support their monitoring of visitation levels and develop and fund marketing or business capacity development strategies during the construction period and the first two years of operation.

Displacement of tourists from short-term accommodation in the Project region is unlikely given the options available in Toowoomba, but workforce use of accommodation will be monitored in cooperation with tourism associations to enable any corrective actions to be taken if required.

8.6.4 Local supply opportunities

ARTC is committed to providing full, fair and reasonable opportunities for capable local businesses to compete and participate in the Project's supply chain. ARTC is also committed to ensuring that Indigenous businesses, including those located in the Project region, are identified and supported to engage in the Project's supply chain.

Australian Jobs Act requirements

The Inland Rail Program is subject to the *Australian Jobs Act 2013* requirement to develop an Australian Industry Participation (AIP) Plan. This plan identifies how ARTC and its supply chain will provide Australian entities with full, fair and reasonable opportunity to bid for the supply of key goods or services. A key requirement in delivering upon the Program's commitment to ensure that ARTC commitments cascade through the supply chain and contractors understand their requirements.

The Project will monitor and report on supplier participation at the following levels:

- Local community: referring to spend within the Toowoomba and Lockyer Valley LGAs
- Region: referring to spend with businesses located in LGAs within 125 km of the Project
- State: referring to spend within Queensland
- National/ANZ: referring to spend within Australia and New Zealand.

Indigenous business participation will also be tracked and reported as part of the SIMP annual review report.

The Contractor will be required to demonstrate compliance with the Inland Rail AIPP and *Australian Jobs Act 2013* requirements. Contractors will also be required to prepare and submit to ARTC an AIPP Compliance Report every three months in the format prescribed by the AIP Authority.

Inland Rail's AIPP and Sustainable Procurement Strategy will maximise the involvement of businesses with existing capacity, and include a focus on building local businesses' capacity, to increase the number of businesses in the SIA study area that can successfully compete for Project supply opportunities. This will increase employment opportunities for workers and jobseekers in the SIA study area.

ARTC will work with its various service providers, consultants and contractors in their implementation of the AIPP. As part of implementing the AIPP, ARTC expects that its contractors will:

- Ensure that commitments made within the Inland Rail AIPP are implemented by ARTC and its supply chain
- Prepare an Industry Participation Plan during the tender stage for implementation during construction
- Implement a clear and efficient process for businesses to source information about the Project and potential supply opportunities, and to register their interest
- Ensure all procurement entities have a detailed understanding of business capability/ capacity of the study area and region before seeking bids to supply
- Ensure design specifications take account of Australian standards and, where international standards shall be used, provide avenues for Australian entities to identify how they can comply
- Include local and Indigenous content criterion and clauses in project procurement processes and contract documents
- Report on local and Indigenous employment outcomes.

Sustainable Procurement Policy

ARTC will implement Inland Rail's Sustainable Procurement Policy for the Project providing details on opportunities, outcomes and strategies for local and Indigenous business participation in the Project's construction and operations phases. The Sustainable Procurement Policy commits that environmental, community and economic considerations will be embedded in the procurement process and Inland Rail will, wherever possible:

- Require suppliers to provide details of their environmental and sustainability policies and implementation during the tender phase
- Apply sustainability metrics to the evaluation of tenders received (including environmental, social and economic considerations)
- Choose suppliers and products with demonstrable positive environmental and social impacts
- Support procurement from local and indigenous businesses and suppliers
- Procure products and encourage our suppliers to procure products that have recognised environmental labels or are from sustainable supply chains
- Assess the program using the Infrastructure Sustainability rating scheme and target a strong performance for the scheme's procurement credits
- Commit to continuous improvements by reviewing our procurement outcomes and reviewing and updating the policy and appropriate procedures
- Communicate the policy to the public.

Business capability

The Project region and adjacent LGAs have significant existing capacity for involvement in major construction projects.

ARTC's Business Capability Development Program provides local and Indigenous small to medium enterprises (SMEs) and social enterprises located along the Inland Rail alignment with access to workshops, presentations and mentoring support aimed at improving their understanding of how to supply to Inland Rail. The program helps businesses:

- Prepare a business capability statement
- Create a business profile on ICN Gateway and register their interest in supply opportunities
- Improve their approach to tendering
- Understand Health, Safety and Environment (HSE) requirements
- Effectively manage their contracts.

In support of business capability development within the Toowoomba and Lockyer Valley LGAs, ARTC:

- Has engaged and will continue to engage with DSDILGP and DESBT to discuss existing and future needs for skills training in the Project region, and to identify DSDILGP and DESBT programs which will support individuals and businesses to be ready for opportunities associated with supply of goods, services, materials and labour to Inland Rail Projects
- Will continue to engage with DSDILGP and the Industry Capability Network to collaborate on business capacity development in the Project region to prepare small to medium businesses to participate in major projects
- Is working with DITRDC to align Project initiatives with DITRDC's regional development initiatives.

Workshops were conducted in Gatton and Toowoomba (with an additional, specific workshop for Indigenous businesses in Toowoomba) in late November-early December 2020. Each workshop included one-on-one support, with the option to book a follow-up mentoring appointment. Further workshops are planned during the remainder of the EIS phase and/or detailed design phase.

A Gowrie to Kagaru 'Meet the Proponents' Event was held in March 2021, providing presentations and networking with proponents and supplier advocates/services including DSDILGP, ICN Gateway and CSQ, and was attended by 200 people representing 165 businesses including 29 Indigenous businesses and seven social enterprises. An integrated media (advertising) campaign to raise awareness of opportunities on Inland Rail for local and Indigenous Queensland businesses was conducted during April-May 2021, and a free three-part webinar series in partnership with sustainability specialists is being delivered during May 2021 to help suppliers build sustainability capacity and be more competitive

Inland Rail will also promote DSDILGP 's online business capability training programs to businesses interested in supplying the Project.

As part of AIPP requirements, the Contractor will be required to contribute to building business capability within the Toowoomba and Lockyer Valley LGAs including:

- Providing advance notice of supply opportunities through Chambers of Commerce and to businesses who have registered their interest in Inland Rail through the Inland Rail portal and/or ICN
- Working with supplier advocates to promote supply opportunities and identify capable local suppliers
- Hosting and/or participating in supplier briefing and networking events
- Collaborating with government and industry stakeholders to develop and implement training and mentoring support that builds business capability
- Providing support to local and Indigenous businesses and social enterprises which enables them to understand the requirements of supplying to Inland Rail
- Provide formal feedback to suppliers that are unsuccessful in prequalification and/ or tendering

- Report on local and Indigenous industry participation outcomes.

Indigenous employment and business supply

ARTC is committed to ensuring that Indigenous businesses, including those located in the SIA study area, are identified and supported to participate in the Project's supply chain.

Opportunities which are being explored with Traditional Owners and other Indigenous and government stakeholders include:

- Information exchange regarding Indigenous business capability within the Western Wakka Wakka and Yuggera Ugarapul communities, and the business offerings and skills that contractors require
- Assisting people within the Traditional Owner communities and other Indigenous people in the SIA study area to identify or develop business capacity building programs which can be supported by ARTC, DSDSATSIP and/or DITRDC prior to Project construction commencing
- In cooperation with DSDSATSIP and CSQ, identification of specific training programs (skills development, traineeships and apprenticeships) for Indigenous people, to be implemented as part of the Inland Rail Skills Academy.

Business and industry opportunities development

The Inland Rail Program is a nationally significant transport initiative and will provide a high-capacity freight link between Melbourne and Brisbane through regional Australia to better connect cities, farms and mines via ports to domestic and international markets.

The Inland Rail Business Case (ARTC 2015) identified several benefits which would support regional economic development, including improved linkages and reduced distances travelled within the national freight network; improved access to and from regional markets; and reduced rail costs. It will also allow for improved reliability and greater certainty for freight travelling between Melbourne and Brisbane and anywhere within the Inland Rail alignment.

To assist regional businesses to prepare for Inland Rail once construction is complete, ARTC Interstate Network has a dedicated Business Development Manager to work with potential customers, rail freight owners, terminal owners and industry stakeholders. The Business Development Manager acts as a conduit to ARTC to support businesses as they consider rail solutions for their operations and has a dual focus: to explain and inform businesses how Inland Rail and ARTC’s network will work, and to work with businesses and industry one-on-one, to understand where there may be opportunities to put freight on rail when Inland Rail is operational.

The Inland Rail Business Case (Ibid.) notes that Inland Rail would be a catalyst for complementary supply chain investments, including fleet upgrades, new metropolitan and regional terminals and integrated freight precincts, as well as the potential for creation of new and expanded regional industries. The Project may act as a significant catalyst for development within the Project region, e.g. in relation to rail dependent industries and/or support industries associated with transport, freight handling, warehousing and logistics.

8.6.5 Action plan

Table 8.12 provides the objectives, outcomes, ARTC commitments and management measures for ensuring local and Indigenous business participation in the Project.

Table 8.12 Local business and industry

Local business and industry measures	
Objective	▪ Create local business awareness about supply opportunities and registration and contracting processes for the Project, and build relationships with local businesses to support their involvement in the Project ▪ Provide a framework for full, fair, and reasonable opportunity for local, regional and Indigenous businesses to participate in the supply chain and integrate this framework in construction tender requirements and contracts ▪ Minimise negative impacts on agricultural properties and businesses adjacent to the Project footprint ▪ Support the local tourism industry to develop resilience to Project impacts.
Outcomes	▪ Impacts on businesses including farms and grazing operations are minimised through the implementation of measures outlined in the Project's Draft Outline EMP in cooperation with landowners and business owners ▪ Businesses in the SIA study area benefit from supply opportunities ▪ The Project engages Indigenous businesses in its construction phase and supports Indigenous businesses to develop capacities for supply to the Project's operation and/or other construction projects ▪ Impacts on tourism visitation are minimised ▪ Any cumulative labour draw impacts on local business are identified to enable refinements to recruitment or training strategies.
ARTC Commitments	▪ Implement Inland Rail's AIPP and Sustainable Procurement Policy for the Project ▪ Capacity building programs will be delivered as part of the Inland Rail Skills Academy ▪ Access to services and businesses during construction will be maintained. Where alternative access arrangements are required, these will be developed in consultation with relevant property owners/occupants ▪ Indigenous participation and local participation will be included as key elements of construction tender assessments and ARTC work closely with contractors to achieve agreed outcomes ▪ A clear and efficient process for businesses to seek information about opportunities and register their interest in Project supply is provided ▪ ARTC will work with DESBT, DITRDC and local and Indigenous businesses to: o Build businesses' capacity to participate in the Project's supply chain through business development, mentoring and pre-qualification projects o Support Indigenous businesses to ensure they are prepared for and provided with opportunities to participate o Work with key partners to link training and development programs with other projects and local industries to provide the greatest regional benefit
Detailed design phase measures	**Farms and agribusinesses** ▪ Continued engagement with affected agricultural property owners to explain the land resumption process and/or the result of EIS studies on noise and dust, as relevant ▪ Consult with agricultural property owners within the Project disturbance footprint and ensure an appropriate level of access and egress solutions are incorporated into the detailed design to enable movements across the rail corridor ▪ Work with directly affected landowners to develop cooperative strategies which will reduce impacts on grazing, cropping businesses or other agribusinesses, which may include, as relevant: o Property access and communication protocols o Design measures to mitigate impacts on groundwater bores, fences, stock/product movements or water access o Surface and/or groundwater management o Erosion control o Noise and vibration mitigation

Local business and industry measures	
	○ Weed and pest management. **Other businesses** ▪ Continue engagement with directly affected businesses (where land acquisition is required) and businesses which may experience noise exceedances or significant disruption to their access, to identify and implement mitigation strategies which may include temporary hoardings to provide noise mitigation, road access agreements (e.g. consideration of business' bulk deliveries) and/or business signage ▪ Consult with businesses in Gowrie Junction and each business that is adjacent to the Project footprint, to take account of their specific needs for access and operation, including consideration of the needs of transport-related operations and agricultural operations in the detailed design ▪ Consult with businesses located within the relevant EIS technical study areas regarding EIS findings of relevance to them (e.g. identified noise exceedances, potential dust issues, road access arrangements and business-specific issues), to inform development of the CEMP. **Tourism** ▪ Consult with tourism-related businesses, accommodation facilities, farm stays, hotels, cafes and specialty shops located within the potentially impacted communities to: ○ Explain the Outline EMP, TMP and CEMP provisions and accept feedback on measures of relevance to tourism and related businesses ○ Identify any additional, feasible strategies which would reduce or offset impacts on connectivity or businesses' amenity during construction and/or operation ○ Discuss local marketing and/or business development initiatives which ARTC could support to offset impacts on tourism during construction. **Local and Indigenous business supply opportunities** ▪ Continue consultation with local and regional businesses, Chambers of Commerce, and tourism associations to ensure they have access to current information about the Project and EIS findings ▪ Implement ARTC Inland Rail's Business Capacity Program including workshops and access to mentoring for businesses within the Project region ▪ Promote DSDILGP's online business capability training programs to businesses interested in supplying the Project ▪ Cooperate with any DSDILGP initiative to coordinate a joint forum with other major projects in the Project region to provide information about a range of projects and their supply requirements ▪ Liaise with the following stakeholders to locate specific business capacities of relevance to the Project's supply chain: ○ DSDSATSIP ○ DITRDC ○ RDA ○ Chambers of Commerce in the Toowoomba and Lockyer Valley LGAs ○ TSBE ▪ Direct contractors to existing Indigenous business registers e.g. Black Business Finder to identify Indigenous businesses who could be invited to express interest in Project supply chain opportunities ▪ Communicate pre-qualification requirements to businesses in the Toowoomba and Lockyer Valley LGAs to allow local and regional businesses to achieve the relevant requirement ▪ Communicate with Traditional Owner groups regarding the range of business opportunities which will be available during construction, the availability of Indigenous businesses to participate and the types of capacity building programs that Indigenous businesses may need to prepare for involvement in the Project supply chain.

Local business and industry measures	
Pre-construction phase measures	**Farms and agribusinesses** ▪ Meet with directly affected landowners to confirm the details of property-specific management measures and agree arrangements for engagement for the construction phase ▪ Provide a forum for agricultural businesses in the Project region to learn about the Project's construction phase, potential changes to the road network and alternative access routes ▪ Include a focus on skills and qualifications of relevance to the agricultural industry in Inland Rail Skills Academy projects and partnerships. **Impacts on nearby businesses** ▪ Implement any measures identified in consultation with businesses near the Project to reduce impacts on their amenity or road access, as relevant to the pre-construction period **Tourism** ▪ Work with relevant councils, Chambers of Commerce, tourism associations and tourism service providers in potentially impacted communities to implement the initiatives identified in the detailed design phase ▪ Work with the Lockyer Valley Tourism Association, the Lockyer Valley Chamber of Commerce, Tourism Darling Downs and interested businesses to support their monitoring of visitation levels and develop and fund marketing or business capacity development strategies during the construction period and the first two years of operation **Local supply opportunities** ▪ Implement the AIPP as relevant to the pre-construction phase ▪ Provide updates to local and regional businesses to ensure they have access to current information about the Project ▪ Communicate pre-qualification requirements to businesses in the Project region to allow local and regional businesses to achieve the relevant requirements ▪ Facilitate the delivery of workshops with businesses aimed at building their capacity for involvement in major project construction and associated services ▪ Maintain communication with Traditional Owners regarding the range of business opportunities which will be available during construction, the availability of Indigenous businesses to participate and the types of capacity building programs that Indigenous businesses may need to prepare for involvement in the Project supply chain ▪ Encourage tenderers for construction contracts to set appropriate targets and/or incentives to utilise local and Indigenous businesses ▪ Consult with DESBT, DSDSATSIP, TRC, LVRC and local Chambers of Commerce, to encourage relevant supply chain development, especially for Indigenous businesses.
Construction phase measures	**Farms and agribusinesses** ▪ Maintain regular engagement with landowners and other business owners adjacent to the construction footprint (at least quarterly during the first year of construction or as agreed with landowners) to monitor the effectiveness of environmental and social impact mitigation measures ▪ Provide regular Project updates which forecast road works, road realignments and closures, and explain alternative routes ▪ If required by market gardens or crop farms within 500 m of the rail alignment, provide dust monitoring and implement additional dust mitigation measures if monitoring data indicates the need. **Other businesses** ▪ Engage with businesses affected by Project construction works on a regular basis (e.g., quarterly) to monitor the effectiveness of environmental management measures and institute corrective actions (e.g., modification of environmental or traffic management measures) if required ▪ Implement any measures identified in consultation with businesses in and near the Project to reduce impacts on their amenity or road access, as relevant to the construction period

Local business and industry measures	
	▪ Consult with LVRC, TRC, DESBT and Chambers of Commerce in the Project region regarding any pressures they identify on local labour/skills availability, to enable refinement of recruitment and training strategies if local labour shortages are identified **Tourism** ▪ Work with the Lockyer Valley Tourism Association and Southern Queensland Country Tourism to support their monitoring of visitation levels and promotional and marketing campaigns ▪ Through the Project's CRG, provide feedback to community members on the implementation of proposed measures to reduce the visual impact of rail infrastructure during operation, and seek their feedback **Local supply opportunities** ▪ Implement the AIPP and report on compliance with the AIPP, including participation of businesses from the SIA study area in the Project's supply chain ▪ Implement the Project's Sustainable Procurement Policy to maximise local industry opportunities during the construction phase ▪ Implement capacity building strategies identified in cooperation with stakeholders during the detailed design and pre-construction stages ▪ Promote Government services and programs which are available to businesses considering investment in projects related to Inland Rail.

8.7 Monitoring, Reporting and Review

The purpose of SIMP monitoring is to:

- Track and enable reporting on delivery of measures which mitigate social impacts or increase community benefits
- Ensure that mitigation and benefit enhancement measures are effective
- Support identification of corrective actions to improve the effectiveness of mitigation and benefit enhancement measures.

The monitoring framework for community and stakeholder engagement is provided as part of the Community and Stakeholder Engagement Plan in Section 8.2. The monitoring framework provided in Table 8.13 applies to the construction period and outlines for each of the other SIMP sub-plans:

- Impacts addressed
- Desired outcomes
- Performance measures
- Monitoring mechanisms and data sources, including stakeholder engagement in monitoring
- Monitoring frequency during construction.

ARTC will track SIMP implementation and review performance measures quarterly (where information is available), to facilitate continual improvement of strategies and practices. ARTC is committed to publicly reporting social performance outcomes and will release quarterly snapshot reports outlining employment and business participation achieved by the Project.

SIMP implementation will be reported to the CRG quarterly and a report against performance measures will be presented to the CRG, TRC and LVRC, and where applicable the OCG annually during construction.

The SIMP will be reviewed annually during the construction phase, and where necessary updated based on monitoring results, including stakeholder feedback. This will include a process for reviewing social impact management and benefit enhancement measures to assess whether they are still appropriate, and whether any new issues or initiatives have emerged that should be included in ongoing mitigation measures and/or monitoring.

A review of the SIMP and its implementation will be undertaken by an independent third party by the end of Year 1 of construction and prior to commissioning the Project. These reviews will include consultation with TRC, LVRC, community members (through the CRG) and Queensland government agencies. The independent SIMP reviews will identify the effectiveness of SIMP strategies, and any changes which need to be made to the SIMP to ensure ongoing effectiveness.

As described in Section 8.1.1, prior to completion of the construction phase, ARTC will develop a SIMP for the operational phase in accordance with ARTC's established management frameworks for rail operation. The operational SIMP will be independently reviewed in Year 3 of operations, to support consideration by ARTC and the OCG regarding any future need for the SIMP.

The monitoring program detailed in Table 8.13 applies to the construction phase and will be reviewed prior to operations, revised to recognise the completion of construction, and implemented as relevant for the operations phase.

Proposed roles for Councils in SIMP implementation and monitoring include:

- Involvement in the development of the Community Wellbeing Plan and the draft AMP
- Cooperation in joint initiatives with ARTC
- Defining the desired outcomes of initiatives to offset impacts on amenity, character and cohesion and providing input to ARTC on their effectiveness
- Receiving information and providing feedback on any Project use of housing or short-term accommodation
- Receiving information and providing feedback on local procurement outcomes
- Review of annual SIMP reports
- Participation in annual SIMP reviews
- Participation in independent review of the SIMP at the end of Year 1, prior to commissioning and during Year 3 of operations.

Proposed roles for CRG members in monitoring include:

- Receiving reports on SIMP implementation quarterly, and on AMP implementation on a six-monthly basis, for their feedback
- Providing feedback on the effectiveness of community and stakeholder engagement measures at each CRG meeting
- Receiving and providing feedback on annual SIMP reports
- Participation in annual SIMP reviews.

Table 8.13 Social monitoring framework

Impact areas	Outcomes	Performance Measures	Mechanisms	Monitoring Frequency
Workforce management				
▪ Local and Indigenous employment ▪ Training and development opportunities ▪ Workforce behaviour /community safety ▪ Skills shortages	Workers within 125 km of the Project including job seekers living in the SIA study area are involved in the construction workforce, with a particular focus on providing opportunities for residents in potentially impacted communities	▪ Number of people from the Project region that are employed in Project construction, in line with outcomes agreed between ARTC and the Contractor	▪ Contractor employment register identifying personnel's postcodes ▪ Quarterly public snapshot report proving information on employment and business participation from the Toowoomba and Lockyer Valley LGAs	▪ Six monthly
	ARTC and Contractor partnerships contribute to increased training and development opportunities in the Project region, reducing labour draw from local businesses	▪ Number of trainees and apprentices involved in construction work compared to targets agreed between ARTC and the Contractor ▪ Number of people from the Project region involved in training opportunities facilitated by the Project ▪ Traineeship completion/retention rate	▪ ARTC's Inland Rail Skills Academy monitoring process in cooperation with training partners ▪ Contractor's trainee and apprenticeship register	▪ Six monthly
	Construction employment opportunities are available to Traditional Owners and local Indigenous people	▪ Number of Indigenous people involved in construction employment, in line with outcomes agreed between ARTC and the Contractor	▪ Contractor's employment register, identifying personnel's Indigenous identification, by agreement with personnel ▪ ARTC monitoring of workforce management plan implementation	▪ Quarterly

Impact areas	Outcomes	Performance Measures	Mechanisms	Monitoring Frequency
	All Project personnel behave with respect and courtesy towards residents, landowners and motorists	▪ Number of substantiated complaints regarding workforce behaviour	▪ Contractor monitoring of Code of Conduct implementation and compliance ▪ Complaints register ▪ CRG feedback	▪ Monthly – complaints register ▪ Quarterly - CRG
	Workplace health and safety are supported through a strong safety culture	▪ Implementation of Contractor's Work Health and Safety Plan ▪ Lost Time Incident rate in comparison to relevant national standard	▪ Workplace Health and Safety records ▪	▪ Monthly
	Impacts on agricultural and tourism employment opportunities are minimised	▪ Management measures for agricultural properties are implemented in accordance with agreements with landowners, to minimise impacts ▪ Job vacancies data do not show any upward trend in tourism occupation vacancies or downward trend in agricultural industry vacancies attributable to the Project	▪ Contractor engagement with landowners to monitor the effectiveness of management measures ▪ Construction contractor engagement with Lockyer Valley Tourism Association and Tourism Darling Downs to monitor tourism visitation ▪ Monitor Regional Australia Institute Regional Jobs vacancies (annual report) to identify any upward trend in tourism occupation vacancies or downward trend in agricultural industry job vacancies	▪ Six monthly – landowner engagement ▪ Annually – Regional Jobs vacancies and liaison with Tourism associations

Impact areas	Outcomes	Performance Measures	Mechanisms	Monitoring Frequency
Housing and accommodation				
▪ Potential for cumulative demands to impact on housing access and affordability ▪ Potential to displace tourists or community event visitors from tourist accommodation	Rental housing vacancy rates in potentially affected communities are not affected by Project workforce demands	▪ No displacement of local residents from housing due to Project-related increases in housing demand	▪ Consultation with real estate agents in potentially impacted communities ▪ Pricefinder/SQMResearch data on rental vacancy rates and rental price trends ▪ ARTC will monitor the effectiveness of the AMP, in consultation with DHPW, TRC and LVRC, including requests for provision of Councils' feedback regarding any housing/accommodation use	▪ Quarterly
	Tourists and event visitors are not displaced from tourism accommodation due to Project demands	▪ Hotel/motel operators report adequate capacity for tourist trade in the Project region, including for major event periods	▪ Consultation with tourism accommodation providers to identity occupancy baseline at commencement of construction, and to monitor and enable management of any potential to displace tourists	▪ Six monthly
	Accommodation providers in the Project region benefit from any Project requirements for workforce accommodation	▪ Workforce accommodation solutions include accommodation providers in the Project region	▪ Accommodation register ▪ Consultation with providers of accommodation used by Project personnel to identify effects on occupancy rates	▪ Quarterly during first two years of construction (during which workforce numbers will peak)
	Inland Rail projects' cumulative demands for housing in the Project region are monitored, and strategies put in place if cumulative impacts appear likely	▪ The construction contractor has a coordinated approach to monitoring and mitigating the demands of Inland Rail projects on	▪ Consultation with DHPW, TRC, and LVRC to seek input to evaluation of cumulative impacts	▪ Quarterly during construction

Impact areas	Outcomes	Performance Measures	Mechanisms	Monitoring Frequency
		housing and accommodation and will enable corrective action if strains on housing or accommodation are identified	▪ Pricefinder/SQMResearch data on rental vacancy rates and rental price trends	
Health and community wellbeing				
▪ Impacts of noise on lifestyles/sleep ▪ Increased demands for health, community support and/or emergency services ▪ Impacts on mental health through stress and anxiety related to the Project ▪ Impacts on community/traffic safety, or emergency vehicle responses ▪ Community benefits for participation in Project employment, supply chain or community initiatives supported by the Project	Changes in the amenity of residential properties and community facilities and the potential for noise to disturb sleep are minimised in accordance with the Project's approval conditions and where relevant, agreements with affected property owners	▪ Number of complaints about noise and dust issues ▪	▪ CRG feedback ▪ Queensland Health ▪ QPS feedback ▪ ARTC and partners' reports on initiatives, agreements and partnerships ▪	▪ Quarterly
	Mental health and community support services are accessible to people in potentially impacted communities and are adequate to any increased demand resulting from the Project	▪ Number of people from potentially impacted communities accessing mental health service provided by ARTC-PHN partnership, over time ▪ Increased ARTC support for mental health/community support services if consultation with the PHNs or Queensland Health identifies the need to supplement existing services provided through the mental health partnership with PHNs	▪ With the PHNs, ARTC will monitor mental health service uptake in potentially impacted communities ▪ ARTC or the Contractor will consult with DCHDE in identifying any Project-related stress on community services and organisations in the Project region, to enable cooperative responses if required e.g. increased funding support ▪ CRG, TRC and LVRC feedback on the benefits of community projects funded	▪ Quarterly – with PHNs ▪ Annually – with DCHDE and CRG

Impact areas	Outcomes	Performance Measures	Mechanisms	Monitoring Frequency
		▪ Community donations and sponsorship-funded projects provide demonstrated benefits for local community members		
	Vulnerable residents who could be affected by relocation, construction noise or dust are supported to adapt to changes	▪ Landowners and tenants in and adjacent to the EIS investigation corridor agree that they have access to timely Project information and an established Project contact ▪ All residents who would need to relocate from the disturbance footprint have access to support if required	▪ Community Relations Monitor ▪ CRG feedback ▪ ARTC/PHN records of support services provided to relocating residents ▪ With DCHDE, ARTC or the Contractor will monitor the adequacy of community support services to meet Project-related and cumulative demands on support services, and enable cooperative responses if required e.g. funding support for affected services by the ARTC, the Project or the relevant Government agencies	▪ Six monthly
	Health and emergency services have sufficient information and cooperation with ARTC to anticipate and avoid impacts on service capacity	▪ Queensland Health, QPS, QAS and QFES confirm that ARTC's advice on workforce ramp-up and cooperative arrangements are adequate to support planned responses, including measures to manage any changes to emergency vehicle response rates	▪ ARTC or Contractor will consult regularly, to a schedule agreed with Queensland Health, QPS, QAS and QFES ▪ Requests for Councils feedback on community needs six monthly during construction	▪ Quarterly during the first two years of construction

Impact areas	Outcomes	Performance Measures	Mechanisms	Monitoring Frequency
	The wellbeing of residents in the Project region is supported by access to community programs and events which enable community participation	▪ Number, financial value and outcome measures for community partnerships and programs in potentially impacted communities ▪ Community donations and sponsorship-funded projects provide demonstrated benefits for local community members	▪ Monitoring of delivery and effectiveness of Community Wellbeing Plan ▪ Records of Contractor partnerships with community and government organisations ▪ Record of ARTC sponsorships and donations ▪ Funded organisations' reports on outcomes of projects funded by the Project ▪ Requests for provision of LVRC and TRC feedback six monthly during construction on the results of initiatives to offset impacts on amenity, character and cohesion	▪ Six monthly
Local business and industry				
▪ Impacts on agricultural operations ▪ Potential deterrence of tourists ▪ Local and Indigenous business opportunities ▪ Draw of labour from local businesses	Impacts on businesses including farms and grazing operations are minimised through the implementation of measures outlined in the Project's Draft Outline EMP	▪ Ongoing engagement with directly affected landowners and business owners supports effective mitigation and where necessary adaptive management of impacts on farms, businesses and grazing operations	▪ Contractor will engage with landowners (to schedules agreed with landowners) to monitor the effectiveness of management measures relevant to on-property or road access impacts	▪ Annually
	Businesses in the SIA study area benefit from supply opportunities	▪ Demonstrated alignment of major contracts and contractors to the AIPP goals and ARTC's	▪ Project's Local Regional and Indigenous Supplier register ▪ AIPP reports	▪ Annually

Impact areas	Outcomes	Performance Measures	Mechanisms	Monitoring Frequency
		Sustainable Procurement Policy ▪ Number and value of contracts with businesses located in the Toowoomba and Lockyer Valley LGAs as a percentage of all supply contracts for the Project ▪ Percentage of expenditure in the Project region compared to overall annual Project expenditure for construction	▪ Requests for provision of Council feedback on local procurement outcomes	
	The Project engages Indigenous businesses in its construction phase and supports Indigenous businesses to develop capacities for supply to the Project's operation and/or other construction projects	▪ Number and value of contracts with Indigenous businesses in the Toowoomba and Lockyer Valley LGAs, as a percentage of all supply contracts for the Project	▪ Contractor's supplier register and procurement records will identify involvement of Indigenous businesses to enable reporting ▪	▪ Quarterly
	Impacts on tourism visitation are minimised	▪ Project impacts e.g. roadworks or changes to scenic character are mitigated in accordance with the Project's Draft Outline EMP	▪ Establish baseline information on tourism visitation (Toowoomba LGA and Lockyer Valley LGA) ▪ Contractor engagement with Lockyer Valley Tourism Association and Tourism Darling Downs to monitor any decreases in visitation established as attributable to the Project, to enable corrective actions	▪ Annually

Impact areas	Outcomes	Performance Measures	Mechanisms	Monitoring Frequency
	Any cumulative labour draw impacts on local business are identified to enable refinements to recruitment or training strategies	▪ ARTC monitors labour draw from local business and initiates corrective actions to recruitment and training strategies if labour draw is identified as affecting local businesses	▪ The Project will consult with LVRC, TRC, DESBT and Chambers of Commerce in the Project region regarding any pressures they identify on local labour/skills availability, to enable refinement of recruitment and training strategies if local labour shortages are identified	▪ Six monthly

9 Impact assessment

This section summarises the significance of social impacts and benefits for local communities and stakeholders and the Project region. Table 9.1 provides the risk assessment ratings.

Table 9.1 Risk assessment ratings

			Consequence Level				
			1 Minimal	2 Minor	3 Moderate	4 Major	5 Catastrophic
Likelihood	A	Almost certain	A1	A2	A3	A4	A5
	B	Likely	B1	B2	B3	B4	B5
	C	Possible	C1	C2	C3	C4	C5
	D	Unlikely	D1	D2	D3	D4	D5
	E	Rare	E1	E2	E3	E4	E5
Significance of Social Impact Ratings							
	Low		Medium		High		Extreme
	Project benefits and opportunities						

Source: NSW DP&E 2017.

The likelihood of social impacts and opportunities occurring has been assessed with reference to the social baseline (e.g. findings regarding community vulnerabilities), stakeholder inputs and the results of the relevant technical reports as referenced in Section 7.

'Consequence', as defined in Table 9.2, has been assessed based on how the social impact may be experienced by the relevant stakeholders, considering:

- Stakeholder feedback on impacts and benefits
- The duration of impacts and benefits, being either short-term (during construction) or long-term (during operation)
- Sensitivity, including stakeholders' specific vulnerabilities and resilience to impacts
- The severity of potential effects on stakeholders and magnitude of potential benefits.

The magnitude of benefits has been qualitatively assessed in relation to the number of people it would benefit, the potential to address inequities such as high unemployment amongst local and Indigenous people, and the duration of the benefit.

Table 9.2 Consequence Criteria

Rating	Impact (-)	Benefit (+)
Minimal	Local, small-scale, easily reversible change on social characteristics, or the values of the community of interest, or communities can easily adapt or cope with change	Local small-scale opportunities emanating from the Project that the community can readily pursue and capitalise on
Minor	Short-term recoverable changes to social characteristics and values of the communities of interest, or the community has substantial capacity to adapt and cope with change	Short-term opportunities emanating from the Project
Moderate	Medium-term recoverable changes to social characteristics and values of the communities of interest, or the community has some capacity to adapt and cope with change	Medium-term opportunities emanating from the Project
Major	Long-term recoverable changes to social characteristics and values of the communities of interest, or the community has limited capacity to adapt and cope with change	Long-term opportunities emanating from the Project
Catastrophic	Irreversible changes to social characteristics and values of the communities of interest, or the community has no capacity to adapt and cope with change	N/A

Source: Adapted from Department State Development, Infrastructure and Planning (Qld.) Social impact assessment guideline July 2013.

Table 9.3 summarises:

- Potential social impacts and benefits as a result of the Project, including potentially affected stakeholders
- A preliminary evaluation of the significance of potential social impacts and benefits, after considering ARTC's existing commitments
- Project-specific management measures
- An evaluation of residual significance, in consideration of Project-specific measures which aim to reduce the likelihood or the consequence of impacts on communities and stakeholders.

Symbols used include:

- -, denoting negative impact
- +, denoting positive impact.

Project phases are shown as:

- Construction (C), which includes pre-construction, and represents a period of up to five years
- Operation (O), which represents a period of up to 100 years
- C&O, denoting impacts which commence in construction and continue for the Project's life.

Preliminary (prelim) risk refers to the assessed level of significance to stakeholders and communities prior to application of mitigation strategies, and residual risk refers to the assessed levels of significance following mitigation.

Community adaptation to social impacts such as changes to connectivity, community cohesion or amenity may take some time. Evaluation of residual significance (after Project-specific mitigation measures are applied) has assumed that the Project-specific mitigation measures (as refined with stakeholders and in response to social monitoring data) will be effective in reducing the likelihood and consequence of impacts experienced.

Table 9.3 Social impacts and benefits

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
COMMUNITIES AND STAKEHOLDERS							
Indigenous connection to land	The Project will add additional large structures to creeks and valleys, and additional severance to the landscape, with incremental increased impacts of infrastructure on Indigenous people's connection to cultural landscapes.	C&O	-	Yuggera Ugarapul People and Western Wakka Wakka People	A4	Cultural awareness training for Project personnel, including respect for cultural landscape features and cultural heritage sites Indigenous art programs initiated in cooperation with Traditional Owners Management of impacts on cultural heritage in accordance with the CHMP or in accordance with agreements with Traditional Owners, as relevant	A3
Land acquisition impacts	Some landowners have endured an extended period of uncertainty about potential Project impacts including potential acquisitions and impacts on amenity, which has been stressful.	C	-	Residents and businesses in and near the Project disturbance footprint	A3	Continuing engagement with directly affected landowners Funding for mental health and community support services which support local residents	A2
	Based on the Project design, acquisition of volumetric tenure (underground land) would be required for approximately 26 freehold lots, two lands lease lots and two Reserve lots, excluding six properties where surface land acquisition will also occur. Locations where volumetric tenure is required include Gowrie Junction, Cranley, Mount Kynoch and Ballard. Land uses where volumetric tenure is required include residential properties, grazing properties and land owned by businesses, a property owned by Teen Care Challenge Inc and a reserve currently used by the THRDA, as well as	C	-	Landowners above the Toowoomba Range tunnel buffer zone of 50 m	A2	Early advice and sufficient detail about volumetric tenure, depth of cover, tunnelling works and potential for ground-borne noise or vibration, to allay concerns	A1

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	land owned by DTMR (Toowoomba Bypass), and land owned by TRC (Toowoomba Waste Management Centre). This would not affect land use or amenity, but landowners may have concerns about the potential for the tunnel to affect their land (e.g. through vibration or subsidence).						
	Surface land acquisition would affect approximately 85 freehold lots including 45 freehold lots within the Gowrie to Grandchester future State transport corridor and 40 freehold lots outside the Gowrie to Grandchester future transport corridor, including in Charlton, Gowrie Junction, Cranley, Ballard, Lockyer, Withcott, Postmans Ridge, Helidon and Helidon Spa. This would result in inconvenience to landowners while they are adjusting to the changes resulting from land acquisition and may cause stress and anxiety to some landowners.	C&O	-	Directly affected landowners	A3	Compensation for land acquisition, in accordance with compulsory acquisition process requirements Provide information and assistance to landowners to reduce uncertainties and support their adaptation to changes, including referral to support services if required Ongoing engagement with directly affected landowners to monitor the effectiveness of mitigation measures	A2
	To date, two property owners have expressed a desire for full acquisition of their properties. This number may increase over time and has been estimated for the purposes of the SIA at up to 20 households. A small number of households would need to relocate, which may lead to distress, disruption to lifestyles and farming livelihoods, and disturbance to social links.	C	-	Directly affected landowners – full acquisitions	A3	Compensation for land acquisition, in accordance with compulsory acquisition process requirements, including assistance with relocation expenses Community investments in services and networks which can support residents to adapt or relocate ARTC's mental health partnership with PHN	A2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
Amenity	Large numbers of sensitive receptors would experience construction noise as works move along the Project corridor. This would be intrusive on the amenity of homes, and outdoor spaces, and may affect residents' quality of life during construction. Some affected community members are already fatigued by the Toowoomba Bypass construction process.	C	-	Adjacent landowners in Gowrie Junction, Helidon, Helidon Spa, Postmans Ridge and Withcott	A4	Detailed strategies outlined in the Draft Outline EMP to minimise noise and dust impacts Engagement with residents and business owners within 1 km of the Project Timely and accessible information about the construction process, schedule, impacts and mitigation Complaints process Avoid noisy work during non-standard hours wherever possible	A3
	Ground-borne noise may exceed noise criteria whilst tunnelling occurs within approximately 390 m of homes in Gowrie Junction, Ballard, Cranley and Mt Kynoch, with exceedances of the most stringent night-time criterion (35 dB(A) LAS_{Max}) at up to 72 residential receptors. The extent and duration of noise exceedances would vary depending on dwelling construction and their proximity to the tunnel. Ground-borne noise may affect amenity and is likely to result in inconvenience and a temporary disruption to the affected households' lifestyles.	C	-	Residents and landowners within approximately 390 m of the tunnel	B3	Mitigation measures selected in consultation with affected residents during the detailed design phase, which may include temporary relocation of residents	B2
	Construction of the tunnel's western tunnel portal may affect the amenity of nearby dwellings through noise, vibration or dust.	C	-	Residents and landowners within approximately 500 m of the portal	B3	Noise and dust mitigation measures within the Draft Outline EMP Consultation with residents near the western tunnel portal during the detailed design phase to identify mitigation for impacts on amenity	B2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	Dust from corridor construction, earthworks or bridge construction may cause a nuisance to homes, business and facilities as works move along the proposed corridor.	C	-	Residents within the EIS investigation corridor	C3	Detailed dust management strategies within the Draft Outline EMP Dust monitoring for organic farm and Withcott Seedlings Consultation with landowners adjacent to construction footprint to identify sensitivities and potential mitigation for consideration in CEMP Dust monitoring if reasonably required by crop farms or homeowners	C2
	Laydown areas, access tracks and the construction of bridges may affect the amenity of nearby dwellings through a combination of noise, dust, temporary effects on rural character of the roads and/or increased traffic, for extended periods.	C	-	Nearby landowners and residents	A3	Consultation with landowners within 1,000 m of laydown and bridge/viaduct construction areas to identify particular sensitivities and mitigation for consideration in CEMP Property-specific agreements with owners of land where partial acquisitions are required Consideration of respite arrangements (e.g. suspension of noisy works, or offering alterative accommodation) during noise-intensive works, to be addressed in the CEMP	A2
	Without mitigation, operational noise levels are predicted to be above ARTC's noise assessment criteria at 31 sensitive receptors for railway operations at Project opening, including 13 receptors on Paulsens Road, Gowrie Junction, five receptors in the Krienke Road/Junction Street/ Morris Road area	O	-	Affected residents near proposed rail corridor	B4	Mitigation measures provided in EIS Appendix P: Operational railway noise and vibration, including monitoring during operation to ensure noise exceedances are avoided	C2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	in Gowrie Junction, two receptors on Jones Road, Ballard, two receptors on Gittins Road, Withcott, one receptor on Howmans Road, Withcott four receptors on Squires Road, Lockyer, and four receptors on Ashlands Drive, Helidon Spa. An additional receptor (Daniel Street, Gowrie Junction) is also predicted to be affected by operational railway noise from 2040. Noise from the Project's operation may be experienced by nearby residents as intrusive and stressful, with potential to affect quality of life (further discussed below under health impacts).					Consult with adjacent landowners to confirm mitigation measures (e.g. architectural treatments) Complaints process	
	Ground-borne noise levels resulting from the movement of trains through the Toowoomba Range tunnel may trigger an investigation of feasible and reasonable mitigation options for one receptor.	O	-	Residents above tunnel	B3	Acquisition of property within disturbance footprint	B2
	The proposed realignment of Morris Road and Gowrie Junction Road may result in exceedances of the road traffic noise criteria.	O	-	Adjacent landowners and residents	B3	Consultation with adjacent landowners to identify particular sensitivities and mitigation measures for consideration in detailed design and CEMP	B2
Local character and identity/sense of place	Clearing of vegetation, activities at laydown areas and increased traffic and noise and may collectively impact on local character, resulting in sadness about the changes, though temporary. Flashbutt welding laydown areas for B2G and the Project may detract from the scenic character of the Draper Road/Paulsens Road area in Gowrie Junction whilst track laying is occurring.	C	-	Residents, landowners and visitors	B3	ARTC will work with the LVRC, TRC and community groups in impacted communities to develop projects to mitigate temporary impacts on character, e.g. placemaking initiatives	B2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	In some areas where elevated structures or embankments are required, the Project would impact on the qualities that contribute to the scenic character of natural, rural and rural residential areas which is likely to lead to distress about the loss of views or local character. There is also potential for cumulative impacts associated with the operation of other major projects in the Project region.	C&O	-	Residents, landowners	A4	Measures identified in EIS Appendix H: Landscape and visual impact assessment technical report, e.g. tree screening	A3
	Residents with views to the western tunnel portal from Gowrie Mountain and to the eastern tunnel portal from Blue Mountain Heights may experience a change to the visual amenity of the natural landscape in this area.	C&O	-	Residents in the Gowrie Junction and Blue Mountain Heights	B3	Communication with residents to whom tunnel buildings would be visible to explain purpose and operation	B2
	The Baillie Henderson Hospital site and residents with a view to the intermediate ventilation shaft building will experience a small change to the semi-industrial visual character of this area (rated by the Project's LVIA as low).	O	-	Queensland Health Cranley residents	B2	Consultation with Queensland Health regarding any design measures which could lessen visual impact	B1
	The cumulative impacts of B2G, G2H and H2C Inland Rail projects may include changes to social character, amenity and perceptions of safety in the vicinity of Gowrie Junction, Kingsthorpe, Helidon, Helidon Spa and Postmans Ridge whilst construction works occur.	C	-	Gowrie Junction, Kingsthorpe, Helidon, Helidon Spa and Postmans Ridge residents TRC LVRC	B3	Management of Inland Rail projects in accordance with approval conditions Implementation of strategies to reduce impacts (e.g. landscape design strategy) detailed in Appendix H: Landscape and visual impact assessment technical report	B2
Community cohesion	The relocation of up to an estimated 20 households may affect neighbourhood cohesion but would not be significant at the regional level. Impacts on local	C	-	Residents and community organisations, LVRC, TRC	C3	Social investment in community projects which strengthen cohesion and community development, to be identified in	C2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	connectivity during construction or community conflict about the Project could also affect cohesion.					the Project's community well-being Plan	
Disadvantage	There is potential for construction noise and operational noise to affect the amenity of properties in areas where residents have low levels of social resources to help them cope with change e.g. Lockyer, Helidon or Murphys Creek, and the northern suburbs of Toowoomba. Residents who have been affected by drought and/or floods, or by the impact of road works for the Toowoomba Bypass may feel particularly vulnerable to impacts such as noise and traffic disruptions.	C	-	Residents near EIS investigation corridor	B3	Facilitation of support for people who will need to relocate Employment of engagement staff with local knowledge to work with directly affected landowners and other residents near the Consideration of the needs of residents in disadvantaged and flood-traumatised communities in communication strategies Funding for community support services to assist residents who require community support, if indicated by ongoing engagement with DCHDE	B2
	Farming paddocks and infrastructure may be affected by land acquisition, with potential to affect farm operations and therefore their owners' livelihoods.	C&O	-	Directly affected landowners – farming and agriculture	B3	Compensation payable under AL Act provisions, including assistance with reparation of property infrastructure and 'make good' arrangements for any impacts on water infrastructure	B2
	At the regional level, a positive impact would result with construction employment sustaining the income of personnel and their families.	C	+	Project personnel and families	B2	Requirement for Contractor to involve local and regional residents in the construction workforce	B3
	The Project is likely to support the development of future industries associated within regional hubs such as the Toowoomba Enterprise Hub and may also act as a catalyst for development of rail dependent industries and support industries associated with transport,	O	+	Project region residents, businesses, LVRC, TRC	B3	None required	B3

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	freight handling, warehousing and logistics. This will increase long-term employment opportunities in the Project region, and may reduce unemployment rates.						
Connectivity and travel behaviour	Traffic flows on local roads would be impacted by bridge construction, construction traffic and road realignments, impacting on school bus services and people travelling by motor vehicle.	C	-	Residents, businesses service providers and visitors QPS, QFES, QAS, LVRC, TRC, DTMR	A3	Regular Project updates which forecast road works, road realignments and closures, and explain alternative routes Community education strategy focussed on safety during the construction period Travel demand management campaign	A2
	Pedestrian and cyclist access between Gowrie and Gowrie Junction may be impeded during construction of the Gowrie Junction Road bridge.	C	-	Residents, businesses service providers, QPS, QFES, QAS,	B3	Consultation with TRC as part of detailed design to optimise pedestrian and cyclist connectivity near Gowrie Junction Road bridge	B2
	Property accesses will be interrupted and the closure of private roads may affect connectivity within properties. Access to the road network would be maintained for all affected properties.	C	-	Residents, businesses (including service providers), landowners and visitors	A3	Alternative property accesses provided where required Closure and reconfiguration of roads on private properties agreed as part of detailed design phase	A2
	There is potential for the coincidence of Inland Rail's B2G, G2H and H2C project works to affect travel times and cause driver frustration in the Kingsthorpe and Helidon areas, including increases in travel times to and from the Helidon State School. There is also potential for cumulative increases in traffic related to several major projects in the region to impact on traffic volumes and cause concerns about traffic safety.	C	-	Residents, businesses service providers and visitors QPS, QFES, QAS, LVRC, TRC, DTMR	C3	Regular Project updates which forecast road works, road realignments and closures, and explain alternative routes Consideration of the scheduling of Project works and in the TMP to minimise the potential for cumulative impacts on travel times to and from the Helidon State School	C2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	If rail traffic is diverted from the QR West Moreton system to the Project, a decrease in congestion related to level in Toowoomba crossings may occur.	O	+	Toowoomba residents, businesses and motorists, TRC	C2	None required	C2
Population change	Acquisition of properties may displace up to an estimated 20 households, resulting in a small population loss at the local level but with no appreciable differences to housing access or cost.	C	-	Residents of properties to be acquired	B1	None required	B1
WORKFORCE							
Construction employment	The construction workforce would peak at approximately 596 personnel in Year 2 and over the full construction period an average of approximately 264 personnel would be employed. This will benefit construction industry personnel and unemployed people in the Project region and adjacent LGAs.	C	+	Project region residents seeking employment and their families	A2	Locally targeted training and recruitment strategies Requirement for contractors to target and report on employment of people in the Project region	A3
Training and development	The construction phase represents an important source of training and career development for young people and Indigenous people in the Project region.	C	+	Local residents experiencing unemployment and their families	B3	Inland Rail Skills Academy Partnerships to identify training pathways and programs for local people Indigenous training partnerships and employment pathways Comprehensive training strategies to increase workforce capacity in the Project region	B4
Operational employment	A workforce of approximately 15 to 20 personnel is expected for the Project's operation, with potential for Project region residents to obtain long-term well paid employment.	O	+	Project region residents seeking employment and their families	B1	Inland Rail Skills Academy Partnerships to implement training pathways and programs for local people	B2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	As part of the Inland Rail Program, the Project would facilitate complementary private investments which may contribute to long-term employment opportunities in the Project region.	O	+	Residents	C2	Business capacity building and training strategies	C3
Skills and labour availability	Project demands may result in shortages in specific trades (e.g. welding) or skilled occupations (e.g. earthworks), particularly in the context of cumulative impacts of Inland Rail and other major construction projects, other affecting other businesses' access to trades.	C	-	Local residents and businesses	B3	Partnerships to implement training pathways and programs for local people Local business capacity building programs	B2
Employment in other industries	There is potential for changes to the road network or changes to scenic character during construction to affect tourists experience and deter visitation.	C	-	Various businesses and service providers	B3	Place making strategies agreed with TRC or LVRC as relevant Support for tourism marketing Communication with businesses in the tourism sector	B2
	There is potential for coincidental construction of multiple infrastructure projects to affect the availability of construction labour or skilled trades, and/or cause labour to be drawn from other industries.	C	-	Residents, various businesses and service providers	C3	Skills development strategies and partnerships as part of the Inland Rail Skills Academy	C2
Workforce impacts on community values	Workforce behaviour may contribute to concerns about privacy or safety, or to amenity impacts (e.g. noise).	C	-	Residents near the Project disturbance footprint and in potentially impacted communities	C3	Workforce Code of Conduct, including travel behaviour	C2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
HOUSING AND ACCOMMODATION							
Settlement pattern	The Project may change the settlement pattern in the areas designated for rural living at Helidon Spa and Postmans Ridge Road where land is within 250 m of the alignment	C&O	-	TRC, LVRC	B2	Provide information which could assist Councils with the development of planning controls which reduce residential exposure to rail noise	B1
Housing demand	If cumulative or specialist labour force demands result in a requirement for construction personnel from outside a daily driving distance, a small number of personnel may require rental housing. Any demand is likely to build over a two year period prior to the workforce peak. Depending on the availability of rental housing, a requirement for 30 – 60 rental homes (at 5 -10 per cent of the peak workforce) could compete with local households for housing and/ or cause an increase in rental housing costs. Cumulative housing impacts are possible if the construction of several projects coincides.	C	-	Residents and service providers	C4	AMPs required of Inland Rail contractors, to include monitoring of personnel uptake of housing in nearby communities and strategies to minimise impacts on local housing access Local training and recruitment strategies Business capacity development	C3
Property values	The potential for amenity impacts during Project construction or operation to affect property values is a considerable source stress and anxiety for some residents near the Project. Changes in property values are dependent on a range of factors and the Project's potential to change property values cannot be determined.	C&O	-	Landowners in and near the EIS investigation corridor	A4	Noise mitigation strategies (EIS Appendices O and P) Consideration of refinements during detailed design to reduce visual amenity impacts Clear information about approval conditions, and effective delivery of mitigation, to reduce the likelihood of impacts on property values	B3

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
Short-term accommodation	Some demand for short-term accommodation is anticipated and will be a benefit for by accommodation providers. Displacement of tourists or other short-term accommodation users is not anticipated as the result of Project personnel's requirements but accommodation demands will be monitored.	C	Neutral	Tourism accommodation providers, Lockyer Valley Tourism Association, Tourism Darling Downs, Chambers of Commerce	C2	AMP required of contractor, to include monitoring personnel uptake of short-term accommodation in consultation with the Lockyer Valley Tourism Association and Tourism Darling Downs	C1
HEALTH AND WELLBEING							
Air quality	Air quality assessment (EIS Appendix K: Air quality technical report) indicates that the Project's operation poses a low risk of human health impacts and a low risk of dust nuisance after recommended mitigation measures are implemented.	O	-	Residents, Queensland Health	D1	Air quality mitigation and management measures as detailed in Appendix K: Air quality technical report	E1
	Assessment of air quality impacts concluded that compliance is predicted for all pollutants at all sensitive receptors. Emissions vented from the tunnel may be visible and be a source of anxiety for residents.	O	-	Residents in nearby communities and rural localities	C3	Explanation of results of air quality modelling and management measures as part of Project communication strategies targeting potentially impacted communities	C2
Noise	There are up to approximately 32 individual receptors where the predicted noise levels were above the maximum night-time trigger levels with the potential to cause sleep disturbance impacts. If not mitigated, operational rail noise could impact on the health and wellbeing of households where noise would exceed Project criteria. Rail noise within regulatory limits may also cause stress.	O	-	Affected residents near EIS Corridor	B4	Consult with adjacent landowners to confirm mitigation e.g. architectural treatments, supplementation of fencing, acquisition of impacted properties or relocation of homes within the property to achieve noise criteria Information to support Council or State Government review of current land use planning controls will be provided Complaints mechanism	C3

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
Flooding	Hydrological assessment predicted that the Project would result in negligible increases in flooding levels however anxiety about the Project's potential impacts on flood patterns may affect feelings of security.	O	-	Residents in nearby communities and rural localities	B3	Consultation during detailed design to explain hydrology assessment results and address any localised concerns	B2
Impacts on schools, community and recreational facilities	If unmitigated, construction noise exceedances at the Gowrie State School could affect the school's learning environment. Rail noise exceedances may also affect Gowrie State School during operations.	C&O	-	Gowrie State School community and Department of Education	B3	Engagement with Department of Education to agree mitigation to avoid, minimise or offset impacts on Gowrie State School, in accordance with the Department's Learning Environment Policy and Guidelines, for construction and operation Noise monitoring to ensure mitigation are effective	C2
	There would be disruption to the Gowrie State School bus route requiring a short detour, and potential for construction traffic to operate on school bus routes throughout the Project region.	C	-	Residents, school bus services and school students (walking/cycling) and school employees	B3	Consultation with the Department of Education, DTMR, local schools and school bus operators to confirm measures for inclusion in the TMP	B2
	There is potential for construction noise exceedances at Postmans Ridge Pioneers Memorial Hall to affect the amenity of users.	C	-	Postmans Ridge Pioneers Memorial Hall Inc. owners and users	C3	Engagement with Postmans Ridge Pioneers Memorial Hall Inc to develop mitigation to avoid, minimise or offset impacts on the amenity of the hall	C2
	Noise may be audible (albeit not exceeding noise criteria) at community facilities near the Project e.g. such as the Gowrie Junction Community Hall, Harlaxton Community Hall, Harlaxton Neighbourhood Centre and/or the Gateway Church in Harlaxton, which are within 1 km of the Project.	C	-	Community facility managers, facility users, TRC	C3	Consultation with managers of facilities within 1 km of the Project to identify and where practicable address any issues affecting facility use Ongoing Project updates to community facilities within 2 km of the Project	C2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	The Bicentennial National Trail intersects the Project on Gittins Road and construction works could affect the connectivity of this nationally significant trail. There is also potential for cumulative effects (with H2C) on access to the Helidon to Ravensbourne Trail near Helidon.	C	-	Bicentennial National Trail Ltd and Trail users	C3	Consultation with the Bicentennial National Trail Ltd Board and LVRC to identify and implement design refinements or work-arounds to preserve the connectivity of the Trails	C2
	Toowoomba Horse Riding for the Disabled Association facility is located adjacent to the tunnel and may be affected by ground-borne noise whilst tunnelling works pass by, scaring horses or riders.	C	-	Toowoomba Horse Riding for the Disabled Association and members	C3	Advice to the Toowoomba Horse Riding for the Disabled Association regarding potential for ground-borne noise when the TBM is 500 m ahead of the facility's boundary	C2
	The Project's construction would require use of land during construction within the Toowoomba and Lockyer Valley Kart Club at Helidon Spa as well as permanent acquisition of a small area of the facility (not affecting its operations). Noise and dust may also occur as a result of construction works however the Kart Club facility generates noise and dust itself.	C	-	Toowoomba and Lockyer Valley Kart Club and facility users	A2	Compensation for use of land negotiated with the Kart Club Consultation with the Club to identify and implement mitigation of construction noise (if required), and to monitor noise and dust to enable corrective action if required	A1
Health facilities and services	Baillie Henderson Hospital, the preferred site for a new Toowoomba hospital, could experience noise exceedances during construction if mitigation measures are not implemented and effective. Noise is not expected to affect sensitive facilities within the hospital campus.	C	-	Queensland Health – DD HHS, hospital patients and staff	C3	Engagement with DD HHS to identify and implement noise mitigation measures to avoid impacts on the hospital's environment and the health of patients or staff Noise monitoring during construction	C2
	During operations, views from Baillie Henderson Hospital would include the intermediate ventilation shaft building,	O	-	Queensland Health – DD HHS	C3	Engagement with DD HHS to identify and implement mitigation measures if needed to reduce	C2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	which may cause concerns regarding air quality or the quality of scenic vistas from the hospital.					visibility of the intermediate ventilation shaft building from the hospital	
	Construction personnel may require occasional access to local health services for treatment of injuries.	C	-	Queensland Health DD and WM HHS, local health services	C3	Prior advice and updates to DD and WM HHS on workforce ramp-up and the nature of injuries which may be experienced by rail construction personnel	C2
	Increased stress and anxiety may require an increase in community support and mental health services.	C	-	Residents, community and government agencies	B3	Delivery of ARTC's mental health partnership program in the Project region Monitoring of service capacity to meet Project-related demand Funding for community organisations to provide emotional and practical support to affected residents	B2
Police and emergency services	Accessibility for emergency services will be delayed at road crossing and road re-alignment construction sites, and when encountering oversized vehicles on roads, which may increase emergency response times.	C	-	QPS, QAS, QFES residents and landowners	B4	Draft Outline EMP measures addressing traffic management, hazard and risk management, and safety design standards Ongoing engagement with QPS, QAS, QFES and Queensland Health to develop joint arrangements for responses to Project-related demands on services. Development of communication protocols supporting Project responses (such as provision of alternative access across the rail corridor) and enabling services to plan around interruptions	B3

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	The Project would increase demands on emergency service providers during construction through a combination of workplace or traffic accidents, remoteness of some worksites, and potentially, theft from construction sites and Project-related disputes. There is also potential for cumulative impacts on police and emergency services in relation to Inland Rail projects and other major construction projects.	C	-	QPS, QAS, QFES	A3	Early and close cooperation with QPS to develop cooperative arrangements Regular liaison to monitor and address issues affecting community or traffic safety Develop cooperation protocols with emergency services for flood events	A2
	During operations, any accidents associated with derailments, in-tunnel incidents such as fire, rail load loss, hazardous goods spills or other major incidents would place significant demands on health and emergency services resources.	O	-	QPS, QAS, QFES, State Emergency Service	C5	Consultation with QPS, QAS and QFES on Emergency Response Plans Cooperation with QPS, QAS and QFES to agree emergency response protocols	C3
Mental health	The Project may affect local residents' mental health through stress and anxiety relating to property acquisitions, fears about changes to property values, noise exposure, fears about the Project's potential to exacerbate flooding, and/or visual impacts impacting on sense of place.	C&O	-	Residents and business owners in potentially impacted rural residential areas and rural and agricultural landowners	B3	Ensure community members to the Project have access to information and engagement mechanisms which supports their awareness of Project impacts and mitigation Transparent and accessible information about the property acquisition process and Project impacts Ongoing engagement with landowners who are adjacent to the EIS investigation corridor throughout construction Mental health partnership	C3

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	The Project would provide construction employment opportunities for Project region residents, supporting households' wellbeing. During operation, personnel may include Project region residents with access to well-paid long-term employment.	C&O	+	Residents, especially jobseekers	A2	Inland Rail Skills Academy - training and development pathway programs	A3
	The Project would increase the opportunity for rail-based suicide, resulting in family and community trauma. This would be heightened in communities where trauma levels are high (such as in communities affected by major floods).	O	-	Residents who are vulnerable to mental health issues, emergency responders, Queensland Health DD and WM HHS, local health services	C5	Restricting access to the rail line Mental health partnership program including suicide prevention service provided in the Project region during the first five years of operation and if indicated by monitoring, for the longer term	D5
Access to natural resources (water)	Effects on stakeholders' water access are expected to include direct impacts on groundwater bores within the EIS investigation corridor and indirect (drawdown) impacts on bores. The loss of bores or groundwater drawdown is likely to lead to short-term disruption to households and farming/grazing businesses whilst water access is being restored.	C&O	-	Landowners with affected bores	A2	Engage with all water users to determine appropriate mitigation e.g., replacement of water supply/make good arrangements Groundwater monitoring strategy to provide ongoing assessment of potential impacts on bores	A1
Community safety	The location of work sites and laydown areas near private homes may engender anxiety about perceived personal and property safety. There may also be concerns about the cumulative impacts of several major project workforces on feelings of safety.	C	-	Residents near the alignment and laydown areas	C3	Identification of local values incorporated in ARTC's workforce Code of Conduct for all personnel ARTC agreements with residents for property access are articulated in requirements for the Contractor	C2
Traffic safety	Large and over-size vehicles, laydown and bridge construction sites and increased traffic may increase the risk of	C	-	Road users QPS, QFES, QAS, LVRC, TRC, DTMR	C4	TMP Rail, pedestrian, equine and traffic safety education campaign	C3

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	road accidents and demands on emergency services.					targeting school, kindergarten and childcare centre communities	
	Excess spoil material will be transported using the road network, and may increase traffic volumes on key routes with potential to affect Levels of Service or traffic safety. An accurate assessment of traffic and transport impacts as the result of spoil transport will not be possible until the detailed design phase.	C	-	Road users QPS, QFES, QAS, LVRC, TRC, DTMR	C3	TMP considering spoil management which considers the potential for impacts on other road users Consistent approach to spoil management and transport between adjoining Inland Rail projects	C2
Hazards	Incidents related to dangerous goods transport, trespass, pedestrian and community safety, interface with live trains, derailment and impediments to emergency access are possible and could affect community safety.	C&O	-	Residents, motorists, QPS, QFES, QAS	C5	Hazard mitigation measures have been developed for the Project and will be applied throughout its lifecycle	D5
BUSINESS AND INDUSTRY							
Agricultural businesses	The Project will result in the loss of agricultural land, impacts on property infrastructure such as fences and private roads, and potential to interrupt stock and product movements. There is also potential for destruction or dewatering of water bores which may affect property management whilst access to bore water is being restored. Property-specific measures agreed with landowners and compensation under the AL Act are anticipated to minimise the longer-term impacts of rail operation on agricultural properties.	C&O	-	Agricultural producers, particularly small farms	A3	Consultation with landowners to develop property-specific interface arrangements and Compensation in accordance with the AL Act Landholder liaison staff with local knowledge Make good arrangements where required for loss or dewatering of bores	A2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
	Increases in traffic due to construction or workforce vehicles and roadworks are likely to cause temporary delays to farm transport vehicles and transportation businesses, which could impact on travel times to markets or transport schedules.	C	-	Agricultural producers Transportation companies	B3	Work with farm owners and business operators to reduce the potential for impacts on property access to road network Regular Project updates which forecast road works, road realignments and closures, and explain alternative routes	C2
	The Project will traverse Withcott Seedlings, with small areas of land to be acquired. Construction activities may disrupt the operations, but the Project's horizontal alignment preserves the farm's connectivity and water access during operations.	C	-	Withcott Seedling Farm, dependent businesses	B2	Detailed design to preserve the Project design's avoidance of major impacts Property-specific agreement and compensation arrangements (including arrangement to maintain access under the viaduct)	B1
	The Project could address current issues surrounding the quality and capacity of transport networks to meet current and future requirements (e.g. competition for access to rail freight) and improve access to and from regional markets by providing connectivity opportunities between the existing QR West Moreton System rail line and ARTC interstate lines.	O	+	Agricultural producers, farms Transportation companies	B3	None required	B3
Impacts on other businesses	Businesses whose properties may be affected by noise, traffic/access disruptions or road closures include horticultural businesses in Charlton, the Gowrie One Stop Convenience centre, Gowrie Landscape Sales, a market garden and beef stock/bird feed manufacturers in Cranley, and a road transport business at Helidon.	C	-	Businesses within the EIS investigation corridor	A3	Consultation with businesses within the EIS investigation corridor to identify measures for inclusion in the CEMP to mitigate impacts on their access or amenity	A2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
Impacts on tourism businesses	There is potential for road works, bridge construction and the visual impact of laydown areas during construction to affect tourists' general experience of the area or affect travel times, affecting tourism visitation	C	-	Tourism business owners and staff, tourists	B3	Measures identified in EIS Appendix H: Landscape and visual impact assessment technical report Consult with tourism associations and Councils to develop mitigation e.g. a marketing strategy and monitoring of visitation levels Consideration of the potential impacts of roadworks and construction noise on tourism visitation in the CEMP	B2
	The nature of the change to scenic amenity will be significant where elevated structures and the rail line's operation are visible. The potential impact of changes to scenic amenity on tourist visitation is uncertain as some people will find interest in the structures and some will see them as detracting from scenic amenity.	O	-	Tourism business owners and staff, tourists, LVRC, TRC	A3	Measures identified in EIS Appendix H: Landscape and visual impact assessment technical report Work with the Lockyer Valley Tourism Association. LVRC, TRC and Toowoomba Chamber of Commerce to support tourism promotion and marketing campaigns	A2
Impacts on labour access	There is potential for cumulative demands for labour to draw tradespeople and professional staff from within local communities, affecting the availability of tradespeople and other business staff. As most small farms are owner-run with the assistance of casual and seasonal labour, significant impacts on farm labour are not expected.	C	-	Businesses and residents	C3	Inland Rail Skills Academy Local training and employment pathway programs, including training and skills development of relevance to the agricultural industry Business capacity building strategies Require Contractors to use businesses in impacted communities in their supply chain	C2

Impact area	Impact description	Phase	Nature (+/-/0)	Stakeholders affected	Prelim. risk	Project-specific strategies	Residual risk
Local supply opportunities	The Project will provide opportunities for local and regional businesses to participate in its supply chain. It is also likely that businesses would benefit from increased trade from the construction workforce.	C	+	Local businesses	A2	Sustainable Procurement Policy AIP	A3
	The operational phase would offer service and supply contracts over the long-term and could involve businesses in the Project region.	O	+		B3	Sustainable Procurement Policy AIP	B4
	The Project facilitates the growth of industries associated with logistics and freight terminal hubs, supporting the establishment of businesses which will be a source of long-term employment for Project region residents.	O	+	Businesses in the Project region, job seekers	B3	None required	B3
	During operations, Inland Rail will better connect the Darling Downs and SEQ regions, as well as connecting to domestic and international markets, and will support associated future industries	O	+	Farms and businesses in the Project region	B3	None required	B3

10 Conclusions

This section discusses distributional equity (the effect of differing impacts across groups, areas and time), and summarises residual social impacts and Project benefits.

10.1 Distributional equity

As for all major projects located near human settlements, negative impacts are more likely to be experienced by those living closest, whilst Project benefits often accrue at a broader regional level. This has been noted by residents in the SIA study area who anticipate negative impacts but are uncertain that significant benefits in the form of employment or business opportunities will result during construction, and of the potential for local communities to benefit during the Project's operation.

Distributional equity considerations for the Project during construction include:

- Up to an estimated 20 households within the EIS investigation corridor would need to relocate to enable the Project's construction
- The potential for social impacts resulting from land acquisition, construction noise or dust, travel delays and changes to local character to affect residents, farmers, graziers and businesses in communities through which the Project would pass during construction
- The potential for construction noise exceedances to affect residents in Gowrie Junction, Helidon, Lockyer/Postmans Ridge, Withcott, Helidon Spa and northern Toowoomba suburbs which experience disadvantage, where particular care will be needed to support residents through the changes resulting from the Project
- The potential for operations and management of farms and agribusinesses could be affected whilst landowners adjust to land acquisition impacts
- Specific social impacts where not identified for Kingsthorpe outside of impacts such as travel delays that would be experienced by other Project region residents and potential for cumulative impacts on rural character during construction
- Specific social impacts where not identified for Blue Mountain Heights, with the exception of views to the eastern tunnel portal affecting scenic amenity around the tunnel portal.

In applying the consequence criteria shown in Table 9.2, assessment of residual risks acknowledged that some construction impacts may occur throughout the duration of the construction period of approximately five years, and that it may take time for residents to adjust to changes resulting from the Project. With a design life of 100 years, the Project's operational impacts and benefits would be experienced for the long-term. The Project would involve a significant freight route through rural areas with potential for rail noise to affect amenity in proximity to the rail corridor. This concern is keenly felt by local residents who believe that they will experience impacts, but do not believe that significant benefits in the form of employment, business opportunities, or other benefits community benefits will result during operation.

Communities in the SIA study area have experienced a long period of severe drought, with effects on mental health and financial wellbeing, community resilience and business vitality. It is therefore particularly important that the Project's impacts are minimised and benefits for local communities are maximised.

Potential Project benefits and opportunities include:

- Employment for a peak of 596 personnel in Project construction, including people within the Project region and nearby LGAs, with indirect employment also likely to be stimulated, sustaining the income of personnel and their families
- Training and career pathway development for young people, Indigenous people and unemployed people, who are disadvantaged in the labour market
- Opportunities for local, regional and Indigenous businesses to participate in the Project's construction supply chain, and potential for businesses to benefit from increased trade from the construction workforce
- Development of labour force skills and business capacity which will enable future employment and business opportunities for Project region residents
- Support for the development of future industries associated within regional hubs and potential to act as a catalyst for development of rail dependent industries and support industries which will increase long-term employment opportunities in the Project region.

The Project is part of the Inland Rail Program, which will make a strong contribution to regional, State and national development. Inland Rail will slow the increase in road freight on regional roads, which will lead to broader benefits for people living near road freight corridors or using roads and highways which are currently dominated by trucks, with potential for traffic safety benefits.

10.2 Residual risks

Residual risks to social values were identified in Table 9.3. Residual risks of moderate or major consequence are shown in Table 10.1, along with measures to address the residual risks.

Table 10.1 Potential residual impacts of moderate or major consequence

Social conditions	Potential residual impact	Measures to address residual impacts
Community values	The Project will introduce additional linear infrastructure to the landscape, contributing to cumulative impacts on Indigenous people's feeling of connection with Country.	ARTC will maintain engagement with the Western Wakka Wakka People and the Yuggera Ugarapul People as the Traditional Owners of Country in which the Project is located, to ensure their awareness of Project works and operations, and the Project's awareness of cultural values and community aspirations. Engagement with Traditional Owners may identify projects or initiatives to strengthen their connection to country and/or community recognition of their connection to Country.
	Construction noise may be intrusive on the amenity of homes, outdoor spaces and community facilities.	Construction noise would be mitigated in accordance with the measures outlined in EIS Chapter 23: Draft Outline EMP and detailed in EIS Appendix O: Construction noise and vibration technical report. The Project will communicate with landowners within 1,000 m of laydown and bridge construction sites and monitor complaints from residents in these areas. If complaints indicate that impacts are affecting households' wellbeing, corrective actions will be implemented as part of the CEMP

Social conditions	Potential residual impact	Measures to address residual impacts
	Impacts on landscape and visual amenity would be mitigated in accordance with the measures outlined in EIS Chapter 23: Draft Outline EMP and detailed in EIS Appendix H: Landscape and visual impact assessment technical report, but distress about the impact of elevated structures or embankments on the scenic character may continue during operations.	The Project will establish engagement mechanisms with tourism business and networks to enable any specific impacts on tourism visitation to be identified, to enable any corrective actions required as part of communication strategies (e.g. regarding road travel and the construction schedule). Engagement planned as part of the detailed design phase may identify additional initiatives to support tourism in the Project region.
	Operational noise exceedances would be mitigated in accordance with measures outlined in EIS Chapter 23: Draft Outline EMP and detailed in EIS Appendix P: Operational ralway noise and vibration, but may be experienced by nearby residents as intrusive or stressful.	If complaints about rail noise indicate that the Project is causing unacceptable noise levels, ARTC will investigate and implement measures to address the cause of concern.
Housing	If cumulative labour demands or cumulative housing requirements from multiple projects result in competition for rental housing, there is potential for low income households to be displaced rom rental housing.	The Project will require the Contractor to prioritise recruitment from the Project region to reduce the potential for impacts on rental housing availability. Inland Rail projects will require Contractors to develop, implement and monitor AMPs, and to take corrective actions such as changes to recruitment or accommodation strategies if impacts on local communities are identified in discussion with key stakeholders.
Community wellbeing	The Project may affect local residents' well-being through stress and anxiety, noise exposure, fears about the Project's potential to exacerbate flooding, and/or visual impacts impacting on sense of place.	ARTC will ensure the availability of regular, timely and accessible information to enable local residents to understand and where necessary adjust to changes resulting from the Project. ARTC will monitor the delivery and uptake of mental health services and any other services provided as part of the mental health partnership program in cooperation with the PHNs, and increase the resources available to support mental health or community support services if this is required to maintain service.
	Changes in property values are dependent on a range of factors and the Project's potential to change property values cannot be determined. Stress and anxiety regarding changes to property values may affect well-being of landowners near the Project.	The Project's CEMP and associated sub-plans will detail management measures to avoid or reduce environmental impacts, which if not mitigated, could otherwise affect the amenity or use of properties, and consequently perceptions of property values. ARTC will provide access to the EIS, information about the Project's environmental management measures and EIS approval conditions, and the Project's compliance with approval conditions, via the Inland Rail webpage to enable informed decisions about property purchases.
	Potential for construction works or road works to affect emergency vehicle response times	Development of communication protocols supporting Project responses (such as provision of alternative access across the rail corridor) and enabling services to plan around interruptions

Social conditions	Potential residual impact	Measures to address residual impacts
	During operations, any accidents associated with derailments, in-tunnel incidents such as fire, rail load loss, hazardous goods spills or other major incidents would place significant demands on health and emergency services resources.	Measures to address hazards and risks to safety are provided in EIS Chapter 23: Draft Outline EMP. The Project will continue its cooperation with QPS, QAS and QFES during operations to monitor and mitigate any hazards or risks to safety.
Safety	Incidents related to dangerous goods transport, trespass, pedestrian and community safety, interface with live trains, derailment and impediments to emergency access are possible and could affect community safety.	Arrangements with QPS, QAS and QFES will enable cooperative responses to any incidents and monitoring of any specific safety risks to enable corrective action if required.
	Large and over-size vehicles, laydown and bridge construction sites and increased traffic may increase the risk of road accidents and demands on emergency services.	The Contractor will monitor the occurrence of traffic accidents related to construction activities or construction traffic in cooperation with QPS If monitoring data indicate that traffic safety is declining as a result of the Project, the TMP will be revised to include corrective actions
	The Project would provide increased opportunity for rail-based suicide for vulnerable people.	Prior to operations, engage with the PHNs and Queensland Health to gauge the need for any ongoing support for mental health services during the operational period Arrangements with QPS, QAS and QFES will enable cooperative responses to any incidents and monitoring of any specific safety risks to enable corrective action

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