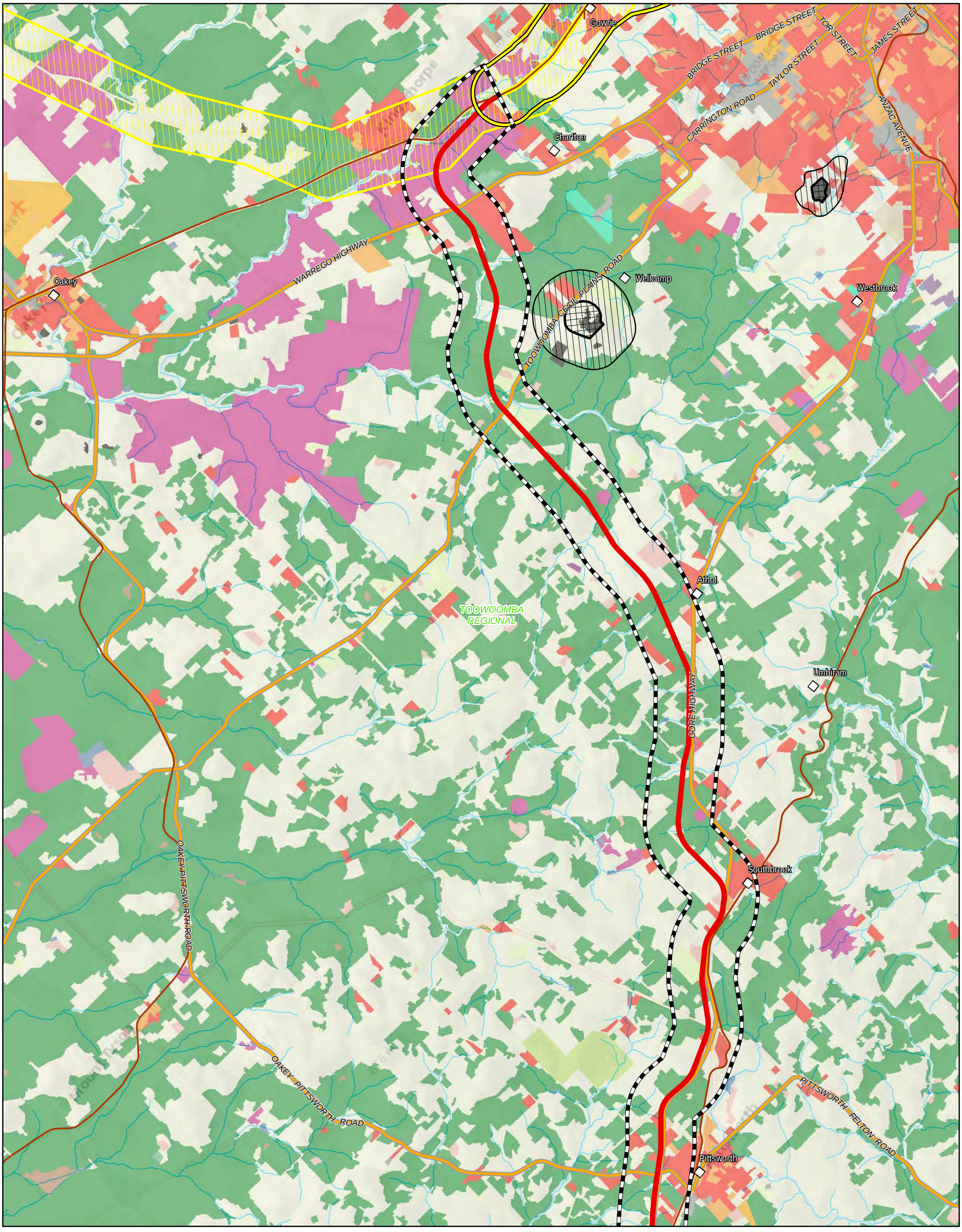

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Coordinate System: GDA 1994 MGA Zone 56
Projection: Transverse Mercator

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Kms

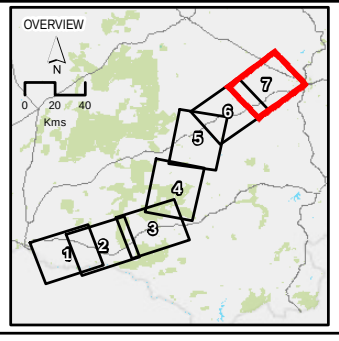
1:100,000 (when printed at A3)

Legend

- Towns
- Existing Rail Network
- Conceptual Alignment
- Major Roads
- Waterways
- Study Area
- Adjacent Inland Rail Project
- Key Resource Area (resource processing area)
- Key Resource Area (separation area)
- Mining Leases
- Mineral Development Licence
- Coordinated Projects
- LGA Boundary

QLUMP Land Use

- Nature conservation
- Managed resource protection
- Other minimal use
- Grazing native vegetation
- Production native forests
- Grazing modified pastures
- Cropping
- Perennial horticulture
- Land in transition
- Grazing irrigated modified pastures
- Irrigated cropping
- Irrigated perennial horticulture
- Irrigated seasonal horticulture
- Intensive horticulture
- Intensive animal production
- Manufacturing and industrial
- Residential and farm infrastructure
- Services
- Utilities
- Transport and communication
- Mining
- Waste treatment and disposal
- Reservoir/dam
- Channel/aqueduct
- Marsh/wetland



Data sources:
Roads and Rail Network - DNRM 2017
QLUMP Land Use - DSITI 2017
Mining Development License / Lease - DNRM 2017
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Initial Advice Statement
Border to Gowrie Project

Land Use

PROJECT ID: 60492124
CREATED BY: JR
LAST MODIFIED: JR - 2/02/2018
VERSION: 3

Figure **5.5**
(7 of 7)
A3 size

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6. POTENTIAL IMPACTS

6.1. Natural Environment

6.1.1. Land Use

The construction and operation of the Border to Gowrie Project has the potential to directly impact upon land use within the Study Area. The impacts would occur during both construction and operation stages, with the majority of the change occurring during construction of the project. The potential impacts to land use associated with the project in both the construction and operation phases are anticipated to relate to one or more of the following:

- Potential air quality, noise and visual impacts to rural residential and residential land uses
- Direct impacts to existing land uses such as loss of rural agricultural land, impacts to existing businesses
- Severance and access impacts

Most of the work associated with the project would be undertaken within either existing gazetted rail corridor (brownfield) or new rail corridor (greenfield).

During construction, there will be temporary changes in land use to accommodate construction activities, such as material haulage, movement of plant etc. During operation, direct land use impacts would result from any change in use associated with the operation of the project and its associated facilities. The Conceptual Alignment has been designed to minimise detrimental land use impacts as much as possible. The Conceptual Alignment will be refined through the detailed design process, in combination with landholder consultation, to mitigate disturbance to current and future land uses.

6.1.2. Geology and Soils

The variable geology along the Conceptual Alignment has the potential to impact the design, construction and operational stages of the Border to Gowrie Project. Potential impacts relating to soils and geology include, but are not limited to, the following:

- Cracking and/or settlement of structures due to the high potential for shrinkage and swelling of the black soils and cracking clays. Cracking may also result from the removal of vegetation with roots in these soils
- Limitations to construction programme due to black soils and cracking clays being non-trafficable during wet conditions
- Slope instability requiring stabilisation of cut faces
- Erosion due to the loamy soils on alluvial plains and terraces
- Reduced potential for re-use of materials and increased requirement for imported materials due to poor engineering qualities of black earth and cracking clays
- Large quantities of material import and export due to the poor founding characteristics of alluvial soils
- Significant cuts as the Conceptual Alignment weaves through basaltic outcrops of the Main Range western slopes.

There are land uses within and adjacent to the Conceptual Alignment that pose a known or possible risk of contamination. This includes sections of the existing rail corridor which have potential to be contaminated from historical operational and maintenance practices.

6.1.3. Water

6.1.3.1. Surface water

The Conceptual Alignment crosses 16 major and 69 minor watercourses as defined under the *Water Act 2000,* these being:

- Macintyre River
- Grasstree Creek (Condamine River South Branch)
- Condamine River Main Branch
- Condamine River North Branch
- Westbrook Creek, crossed twice.

Numerous other natural water features, not defined under the *Water Act 2000*, will also be crossed by the Conceptual Alignment.

Impacts to water quality are expected to be primarily confined to the construction phase of the project. In the absence of appropriate mitigation measures and controls, construction activities such as clearing vegetation, earthworks and vehicle/plant movement on un-sealed roads may result in sediments entering watercourses. There is also potential for release of contaminants from construction plant, equipment and vehicles on site into adjacent receiving waters.

6.1.3.2. Flooding

If unmitigated, the construction of a new rail embankment within floodplains and the establishment of new river crossings have the potential to change existing flooding patterns and impact properties and infrastructure in the vicinity of the rail alignment.

ARTC have established design criteria for the entire Melbourne to Brisbane Inland Rail project, including this Border to Gowrie section. These include the following criteria relevant to flooding:

- 1% AEP flood immunity for the rail
- no change in flood inundation footprint
- no redistribution of flood flows
- minimise changes in flood peak timing
- minimise changes in flood levels with an aim of no net worsening
- minimise downstream erosion and minimise changes in flow velocities.

Preliminary cross drainage solutions have been identified for the Conceptual Alignment in order to achieve the Melbourne to Brisbane Inland Rail project design criteria. These cross drainage solutions were determined through iterative model runs to achieve 1% AEP flood immunity for the rail and comparable areas of potential impact.

Potential impacts to flooding were subsequently assessed for the Condamine River by comparing the TUFLOW model results for the developed case against the results of the existing case model. The results found that there was negligible change to both flooding extent and total duration in flooding by incorporating appropriate cross drainage solutions into the concept design. Further, more refined flood modelling will be required as part of future design development stages to update flood models with actual survey data, and to consider project specific design criteria. Through this process preliminary cross drainage solutions will be challenged and refined in consultation with relevant landholders and stakeholders.

6.1.3.3. Groundwater

The impacts to groundwater elevations from earthworks and bridge piling works would primarily be associated with potential dewatering requirements. However, groundwater infiltration rates into bridge foundation bore holes or cuttings would be minor and temporary given the depth to groundwater in most locations and the relatively short-term nature of these types of works.

There is also the potential for groundwater impacts associated with construction water supply. The water supply requirements for the Border to Gowrie Project are not known at this stage. Investigations undertaken during the EIS will identify the potential for groundwater in the Study Area to be used as a possible source of water during construction activities.

The EIS will identify any nearby sensitive receptors including groundwater dependent ecosystems that would be adversely impacted by temporary drawdown from potential dewatering sites or potential surface chemical spills that may contaminate groundwater quality.

High risk salinity areas within the Study Area will need to be identified and assessed along the Conceptual Alignment during the EIS. Selecting an appropriate overall salinity management strategy will depend on:

- the extent and nature of the salting problem
- the characteristics of the area - soils, geomorphology, water quality etc.
- access to unaffected areas that are contributing to the salinity problem (recharge and transmission areas)
- economic issues, such as the comparative value of the land and cost of implementing various management practices
- landholder's own specific desires and needs.

6.1.4. Air Quality

6.1.4.1. Operational Air Quality Impacts

The primary operational pollutants of concern are products of combustion (particulate matter, carbon monoxide, nitrogen dioxide, sulfur dioxide, volatile organic compounds) from train locomotives. Some fugitive particulate emissions from loaded grain or cotton wagons or from wheel-generated dust from rail line ballast may also occur; however these are expected to be relatively minor.

Coal dust emissions may occur from existing coal carrying trains, particularly along the existing Western System, between Oakey and Gowrie. Coal dust emissions from existing coal trains along this section are currently managed by way of the South West System Coal Dust Management Plan.

Potential air quality impacts associated with the project will be assessed as part of the EIS and management measures developed where required to mitigate potential impacts.

6.1.4.2. Construction Air Quality Impacts

The primary construction phase pollutant of concern will be particulate matter due to disturbance of earth and rock associated with construction activities such as excavation and land clearing. Emissions of combustion products from construction plant exhaust will also occur. Emission factors (available from the National Pollutant Inventory or USEPA AP-42) for major particulate matter sources are generally based on the volume of material that is being moved (earthworks), and kilometres travelled on unsealed haul roads (wheel-generated dust).

Construction phase emissions will be dependent largely on earthworks volumes and unsealed haul road length.

6.1.5. Ecosystems

Clearing as a result of the project has the potential to impact ecosystems within the Study Area. The Conceptual Alignment has been selected to reduce the impacts on the environment, including the need for clearing. Some aspects of the project will be refined in engineering design and will be preferably located in existing disturbed areas where possible to minimise impacts along the Conceptual Alignment.

The approximate length of Conceptual Alignment that extends through areas of RE is provided in Table 6-1. For likely impacts on the TEC present in the corridor, refer to Section 6.6.2.

Table 6-1 RE along the Conceptual Alignment

VM ACT STATUS	APPROXIMATE LENGTH OF CONCEPTUAL ALIGNMENT (KM)
Endangered	6.4
Of Concern	10.8
Least Concern	16.1
Total	33.3

6.1.6. Flora and Fauna

The Study Area provides potential habitat and movement opportunities for a large number of fauna species listed under the NC Act as well as species listed under the EPBC Act. Loss of habitat, habitat fragmentation and mortality during construction and operation are the key potential impacts to fauna as a result of the project. A rail corridor may form a linear barrier to fauna movement, particularly if exclusion fencing is installed. Habitat fragmentation may isolate populations, which if confined to sufficiently small patches of habitat, may result in localised population decline. Movement barriers may also restrict gene flow across the landscape.

Impacts to flora and fauna that may occur as a result of the project include the following:

- Vegetation clearing and fragmentation
- Fauna injury and mortality during earthworks
- Disturbance to fauna from noise, vibration, lighting etc.
- Loss of breeding habitat
- Importation and/or spread of weeds
- Introduction and/or proliferation of pest fauna
- Degradation of habitat through dust, sedimentation and erosion
- Degradation of aquatic environments.

6.2. Amenity, including noise, vibration, lighting, urban design and visual aesthetics

6.2.1. Noise and Vibration

6.2.1.1. Construction

Construction plant and equipment may potentially impact the local ambient noise environment where construction activities are in proximity to sensitive receivers. If unmitigated, construction noise has the potential to be a source of nuisance to the nearest sensitive receivers.

Earth moving machinery, vibrating rollers and impact plant such as piling rigs and hydraulic hammers are likely to result in perceptible vibration impacts for sensitive receivers in proximity to construction activities.

Construction activities are expected to be generally transitory and potential noise and vibration impacts associated with the works intermittent in nature and short term in duration.

6.2.1.2. Operation

Operational noise emissions will be associated with the movement of rollingstock along the rail line. Detailed modelling will be undertaken as part of the EIS to determine the potential impacts on sensitive receptors.

6.2.2. Landscape and Visual

For the purposes of assessing potential impacts to visual amenity, the Basis of Design for Inland Rail (Parsons Brinckerhoff, 2015) specifies a reference train that is double stacked (7.1 m above rail formation) with an initial maximum length of 1,800 m (with a maximum future length of 3,600 m).

Sections of the Conceptual Alignment have utilised existing Queensland Rail rail corridors. In these areas, where the Conceptual Alignment will re-purpose an existing rail corridor, visual amenity impacts would predominantly be limited to views of the double stacked freight train operating along the corridor.

Where the Conceptual Alignment is a new track (primarily from Whetstone to Yandilla and Yarranlea to Gowrie) or those works involve upgrade of the decommissioned Queensland Rail Cecil Plains narrow gauge rail network, impacts to visual amenity may be greater.

Additional to those visual impacts associated with the movement of trains through the environment, the principal visual amenity issues associated with the project are expected to include, but not be limited to, the following:

- Changes in landform with embankments of varying height up to ~15 m. The railway corridor will typically comprise an elevated ballast and track ~730 mm above natural ground level
- Creation of crossing loops, and associated signals
- Passive crossings, and associated signs
- Active crossings, and associated signs, flashing lights and boom gates etc.
- Multiple new bridges and upgrades to existing bridges, which require a clearance of 9 m
- Culverts where located within the Condamine river floodplain
- Additional road network infrastructure, as a result of road realignments or closures
- Loss of vegetation.

The greatest visual impact will be experienced by residents within close proximity to the rail alignment.

Temporary visual impacts associated with construction works to upgrade the existing track and construction of the project is also anticipated. These may include:

- Localised concentration of machinery and laydown areas
- Equipment and personnel at active construction sites
- Temporary reduction in visual amenity
- Temporary construction camps.

An assessment of the potential visual amenity impacts from the project will be undertaken as part of the EIS and mitigation measures, if required, will be identified.

6.3. Social Environment

The Border to Gowrie Project is likely to create a number of national, state-wide and regional benefits, whilst also creating a number of localised impacts. Potential social impacts will be further investigated as part of the EIS. The following sections identify the potential social impacts associated with the project.

6.3.1. Amenity and Social Cohesion

The Border to Gowrie route was announced by the Minister for Infrastructure and Transport, the Hon Darren Chester MP, following a lengthy options assessment process and period of deliberation.

During construction there may be reduced connectivity between key locations along the Conceptual Alignment as a result of road network disruptions.

Land requirements for the Border to Gowrie Project may result in severance of properties and a reduction in available land for agricultural holdings. The presence of the project may result in long term changes to land use patterns within the Study Area.

During construction and operation there are likely to be amenity impacts to residential, rural residential and rural land uses near the Conceptual Alignment.

6.3.2. Community Health and Safety

Community health and safety risks related to the operation of the Border to Gowrie Project include safety risks associated with access, both pedestrian and for stock, and the type of materials (e.g. hazardous goods) that are transported on the rail line.

Increased road traffic particularly heavy vehicles during construction may also increase the risk of traffic incidents and generate increased noise and dust.

6.3.3. Access

Changes in road access, including increased road/rail interface, has the potential to decrease the accessibility and increase travel times associated with accessing key destinations, facilities and community services for local residents.

Additionally, the crossing of private accesses (i.e. driveways and operational tracks), has the potential to result in significant modification to the operation and useability of single or multiple land holdings.

6.3.4. Housing and Workforce

During construction there is the potential for temporary and localised inflation in property prices and reductions in the availability of rental properties to the influx of additional workers to the area. There is an opportunity to utilise local workforce and enhance economic development opportunities through local supply chains.

A social impact assessment process will analyse potential social impacts in further detail, with input from the community through consultation. This will identify how positive social impacts can be enhanced and negative impacts mitigated and/ or managed.

6.3.5. Cultural Heritage

6.3.5.1. Indigenous Cultural Heritage

In accordance with the *Aboriginal Cultural Heritage Act 2003*, all persons in QLD have a duty to take all reasonable and practicable measures to ensure they do not harm Aboriginal cultural heritage whenever they undertake an activity (cultural heritage duty of care).

Despite large sections of the Study Area having been historically cleared and disturbed there remains a risk that areas although cleared, may contain evidence of prior Aboriginal use.

Based on the results of the desktop assessment, the proposed project is expected to incorporate activities that meet the definition of Category 5 of the duty of care categories listed in the Duty of Care Guidelines. This means the project would traverse, or be in proximity to landscapes which have a higher risk of Aboriginal cultural heritage being present. High risk landscapes include those where natural landscape features are present, such as rock outcrops, caves, wetlands, permanent water holes, creeks, springs, hills and mound formations.

The existence of known tangible and intangible Aboriginal cultural heritage sites and intangible sites within and in proximity to the Study Area, as well as high risk landscape features such as creeks, indicate that there may be a high cultural heritage risk to the Border to Gowrie Project. It is possible that further unidentified Aboriginal cultural heritage values and places exist within the Study Area.

6.3.5.2. Non-Indigenous Cultural Heritage

Historic heritage places, particularly the existing and former Brookstead station buildings, may be subject to direct or indirect impacts. These potential impacts include the introduction of new environmental elements such as noise, altered visual aspects, and alterations to land use patterns in the area as a result of the project. The extent of impact will be assessed through the EIS process. Works that may impact on known heritage-listed places may require approvals from State or local authorities, although investigations show that there are no heritage-listed places intersected by the Conceptual alignment..

6.4. Economic Effects

Economic modelling detailed in the Inland Rail Business case (ARTC, 2015) indicates that the project will increase gross domestic product, provide direct and indirect employment opportunities, and provide other economic benefits across improved productivity and efficiency; safety benefits resulting from the removal of heavy vehicles from the road network; sustainability benefits; and reduced lifecycle costs for asset owners.

It is anticipated that the Border to Gowrie project will deliver significant benefits specific to the Darling Downs region as a whole. With a large agricultural base, the project will reduce transport costs, which may subsequently improve industry competitiveness. Additionally, further export opportunities may arise for the sector by creating additional capacity and a more efficient and reliable supply network that facilitates easier paths to market.

In a local context, the project may also impact the socio-economic environment and values. For the most part, the direct socio-economic impacts associated with the project will be experienced by people owning or operating agricultural land within or immediately adjacent to the project area whose land management practices may be disturbed.

Detailed socio-economic assessment will be conducted to identify and quantify the benefits and impacts of the Border to Gowrie Project. Section 9 provides discussion on the anticipated costs and benefits of Inland Rail and the Border to Gowrie Project.

6.5. Built Environment

6.5.1. Transport Infrastructure Impacts

There is the potential for a number of transport infrastructure crossings of the proposed Border to Gowrie project, including highways, major arterial roads, local and private roads. In future project stages consultation with TMR, local councils and impacted land holders will be conducted to agree the specific treatment of crossings.

During construction, the project will result in localised impacts to existing traffic and transport networks as construction progresses. Likely impacts include:

- Increased light and heavy vehicle traffic on the Cunningham, Gore and Warrego highways, Inglewood-Millmerran Road and other roads in the local area for the transportation of construction personnel, materials and resources for construction
- Local access changes where local roads are required for construction access, this may include temporary road closures or detours.

Construction traffic management will be detailed in future project stages and will include a traffic management plan as part of the Construction Environmental Management Plan (CEMP) and consultation with stakeholders including local and state authorities.

6.5.2. Other Infrastructure Impacts

Public utility plant (PUPs) analysis has focused on backbone/transmission infrastructure as these services have a longer approval time and are more complex to either protect or relocate than local supplies.

These services include; oil, trunk gas, water, backbone fibre and major power transmission lines. The approach taken during development of the design was:

- Identify possible conflicts using Dial Before You Dig and GIS data sets
- Assess high level opportunities to avoid or reduce service impact (design out or protect).

An initial assessment of the number of PUP interfaces is summarised in Table 6-2.

Table 6-2 PUPs details

PUP TYPE	NO. CROSSED BY CONCEPTUAL ALIGNMENT
Gas or oil pipeline	7
Overhead electrical crossings - 11kV and greater	62
Overhead electrical crossings - less than 11kV	14
Telecommunications & optic fibre underground	19

6.6. Matters of National Environmental Significance

The EPBC Act identifies and protects MNES. MNES reflect nationally and internationally significant flora, fauna, ecological communities and heritage.

Following a preliminary evaluation of the Border to Gowrie Project and its potential impact on MNES, it was determined that the project has the potential to have a significant impact on listed threatened species and ecological communities. Based on this initial assessment ARTC will be making a referral to the Commonwealth Minister for the Environment under the EPBC Act.

ARTC intend to coordinate the timing of the EPBC Act referral to correspond with the State SDPWO Act process so that the project may be assessed under the bilateral agreement between the Commonwealth and QLD, if the Commonwealth Minister determines that it is a controlled action.

6.6.1. World Heritage Properties and National Heritage Places

No World Heritage Properties or National Heritage places have been identified as occurring within or near to the Study Area.

The Gondwana Rainforests of the Main Range National Park, recognised as both a world heritage property and a national heritage place, is approximately 90 km immediately east of Study Area (at its closest point). No direct or indirect impacts to this place are anticipated as a consequence of this project.

6.6.2. Threatened Ecological Communities

As discussed in Section 5.1.4.6, six EPBC Act listed TECs are recorded as potentially occurring within the Study Area. Two of these communities, Brigalow and SEVT, have been observed during initial field surveys in the immediate vicinity of the Conceptual Alignment. The extent of potential impact on these communities will be assessed through the EIS phase of the project.

TEC has the potential to be directly or indirectly impacted by the project through:

- Clearing resulting in loss or bifurcation of a TEC
- Importation and/or spread of weeds
- Habitat disturbance through introduction and/or proliferation of pest fauna
- Degradation through dust, sedimentation, erosion and / or altered hydrology.

ARTC's preferred hierarchy of managing potential impacts to TEC will be to:

1) Avoid or minimise impacts through design modification
2) Implement mitigation measures to minimise the extent and severity of impact
3) Establish offsets for residual impacts.

6.6.3. EPBC Act Listed Threatened Fauna

As discussed in Section 5.1.5.2, 22 EPBC Act listed fauna species are likely to occur or are known to occur within the Study Area. The extent of potential impact on these species will be assessed through the EIS phase of the project.

Impacts to EPBC Act listed threatened fauna species may occur by the same processes discussed in Section 6.1.6. Impacts to threatened fauna will be managed by adopting the same hierarchy of principles specified in Section 6.6.2.

6.6.4. EPBC Act Listed Threatened Flora

As discussed in Section 5.1.5.1, 18 EPBC Act listed flora species are likely to occur or are known to occur within the Study Area. The extent of potential impact on these species will be assessed through the EIS phase of the project.

Impacts to EPBC Act listed threatened flora species may occur by the same processes discussed in Section 6.1.6. Impacts to threatened fauna will be managed by adopting the same hierarchy of principles specified in Section 6.6.2.

6.6.5. Migratory Species

Migratory and marine species have potential to be impacted by the same processes identified in Section 6.1.6. No significant impacts to migratory species are expected as a result of the project, as all species known or considered likely to occur in the Study Area are widely distributed and regionally common in south-east QLD.

The migratory and marine species known or considered likely to occur within the Study Area are not dependent on a localised breeding or foraging resource. The project may result in localised losses of woodland vegetation and grassland that provides nesting and foraging resources for these species. However, given the wide availability of suitable habitat within the surrounding landscape, the project is unlikely to have a significant adverse impact on important habitat for the species.

6.6.6. Wetlands of International Importance

No wetlands of international importance occur in or near the Study Area.

The closest wetland of international importance to the project is the Moreton Bay Ramsar Wetland, which is situated approximately 130 km to the east of the Study Area (at its closest point).

7. ENVIRONMENTAL MANAGEMENT AND MITIGATION MEASURES

The following section specifies the management and mitigation measures that will be required in order to minimise foreseeable impacts of the Border to Gowrie Project. It should be noted that the route adopted by the Conceptual Alignment has been determined in consideration of environmental, social, engineering and economic factors.

7.1. Natural Environment

7.1.1. Land

Land use impacts (direct and indirect) are likely to result from the Border to Gowrie Project. Further consideration of potential land impacts (severance, access, direct impact, and amenity) will be undertaken during subsequent project phases. Further design refinements will aim to minimise impacts on property owners where reasonable and

practicable. Construction planning will be required to determine the laydown requirements and optimally locate construction workspaces to minimise property impact.

Geological and soils impacts will influence the design and also require mitigation during construction. Future design stages as part of the EIS process will include detailed geotechnical testing to confirm ground conditions and progress the design accordingly. Design mitigation will include measures to minimise the effect of shrink/swell in soils, minimise slope instability, drainage design to reduce the inflow of water into dispersive soils.

During construction, environmental impacts will be managed through a CEMP which will detail environmental outcomes, performance criteria and mitigation measures.

Further contaminated land investigation will be required in future project stages, including field investigations and testing where risk of contamination is likely.

7.1.2. Water

The following principles and mitigation measures will be investigated during the design phase to minimise impacts to water quality, water courses and on floodplains:

- Adhere to ARTC's design criteria for achieving the necessary flood immunity (refer to Section 6.1.3.2)
- Minimise the number of crossings on each waterway where possible, however multiple perpendicular crossings are Conceptual to crossing of long sections
- Minimise the need for in-stream works, i.e. bridges are preferable to culverts at major waterway crossings
- Where possible, avoid realignment of waterways
- Design bridges such that works are avoided within riparian, littoral and in-stream environments as much as possible
- Design drainage systems to provide stormwater quality treatment prior to discharge to sensitive receptors
- Provide spill containment devices using a risk based approach taking into account sensitive receptor locations
- Identify areas that may require additional scour protection during construction
- Undertake geological investigations to inform the management of erosion prone and alluvium aquifer areas, and determine the risk of soils being impacted by the lowering of groundwater causing the soils to change properties and release contaminants (e.g. salinity)
- Undertake hydrological investigations to determine the size and location of stormwater management devices to collect any excess water and treat stormwater run-off and determine the location of high-risk areas in terms of impacts to groundwater quality and draw down.

Management of impacts during the construction phase will be documented in a CEMP prior to the commencement of construction and will likely include:

- Design and implementation of erosion and sediment control measures to minimise erosion occurring and sedimentation impacting surface waters
- Avoidance of high risk construction activity/earthworks during wet weather
- Minimise disturbance to stream banks and beds
- Rehabilitate and revegetate the worksite after the completion of works (or as areas are no longer required for construction activities)
- If it is determined that groundwater will be extracted and used during construction, minimise the groundwater use.

7.1.3. Air Quality and Noise

7.1.3.1. Construction

Management of potential air quality and noise impacts during the construction phase will be documented in a CEMP prior to the commencement of construction, including measures intended to reduce dust generation, vibration and noise impacts to sensitive receptors. The framework for the CEMP and identification of the range of possible mitigation measures will be included as part of the EIS process.

7.1.3.2. Operation

Air quality and noise modelling will be completed for the Border to Gowrie Project through the EIS process to predict potential impacts and determine appropriate mitigation measures for project design.

7.1.4. Ecosystems and Flora and Fauna

In the first instance, and where possible, the Conceptual Alignment will avoid impacts to substantial ecological constraints. Where this is not feasible, an approach of minimising or offsetting impacts will be adopted.

Where required, species-specific management plans will be prepared in addition to the EMP to detail appropriate impact mitigation actions. Measures of key importance are likely to include the following:

- Where possible, design waterway crossings (temporary and permanent) to comply with the DAF accepted development requirements for waterway barrier works
- Alternative fauna access solutions to maintain opportunities for species movement
- Fauna exclusion fencing is to be installed, particularly in areas of high koala habitat value, to reduce the potential for fauna mortality
- Vegetation clearing is to be undertaken in a sequential manner, and areas for removal are to be clearly demarcated or identified
- Suitably qualified and experienced fauna spotter-catchers are to be present during vegetation clearing and construction to identify and clear breeding sites for threatened (and other) species listed
- Cleared vegetation is to be stockpiled for a short period of time after clearing to allow any remaining fauna time to escape
- Avoid, where possible, clearing of large hollow-bearing trees
- Weed and pest species control and prevention measures are to be implemented. In particular, control of dogs and other feral predators during the construction and immediate post-construction period is critical
- Provision of appropriate environmental offsets
- Where possible, schedule construction to minimise potential impacts to protected fauna species during breeding season.

7.1.5. Landscape and Visual

To reduce the potential landscape and visual amenity impacts, the following mitigation measures are proposed:

- Use of existing rail corridors where practicable
- Investigate opportunities for advanced planting to reduce visual impacts.
- Minimise vegetation removal by protecting existing vegetation adjacent to the Conceptual Alignment where practicable.
- Rehabilitate the temporarily disturbed areas as construction proceeds to encourage rapid screening views and integration of the railway into the wider landscape to minimise visual disturbance.

Landscape and visual treatments can be delivered as part of a coordinated response, integrated with provision of noise, fauna sensitive design and water quality provisions.

7.2. Built Environment

The Border to Gowrie Project will interact with existing infrastructure including road, rail, pipelines and utilities in the Study Area. Mitigation measures for these impacts will be detailed in the EIS but will include:

- Consultation with stakeholders including State and local authorities and utility providers to discuss potential project impacts and design options to avoid or mitigate impacts
- Consider options for minimising impacts through the engineering design process
- Additional survey to identify all utilities and services (including minor utilities etc.) so that they can be considered in design development.

Appropriate approaches to construction traffic management will be investigated through the EIS process, which will include a traffic management plan as part of the CEMP and consultation with stakeholders including local and state authorities.

7.3. Native Title and Cultural Heritage (Indigenous)

The existence of known Aboriginal cultural heritage sites within, and in close proximity to, the Study Area, as well as high risk landscape features such as creeks, indicate that there is a high potential for Aboriginal cultural heritage to exist within the Study Area.

Further assessment and consultation is proposed in future project stages to determine the management measures required for Aboriginal cultural heritage. This includes:

- A cultural heritage field assessment of the entire with the relevant Aboriginal parties to identify Aboriginal and/or historical cultural heritage objects and places
- Development of one or more Cultural Heritage Management Plans under Part 7 of the *Aboriginal Cultural Heritage Act 2003*to establish agreed procedures for the investigation, conservation and management Aboriginal cultural heritage.

The Border to Gowrie Project will require an assessment of Native Title within the Study Area. Where Native Title may continue to exist, the Project may also require consultation with (and the authorisation of) affected Native Title parties under the *Native Title Act 1993* (Cth).

From an Aboriginal cultural heritage perspective, preliminary consultation has been undertaken with the statutory Aboriginal parties for the area covered by the Border to Gowrie Project. The purpose of this initial consultation was to provide an overview of the project, outline the assessment process and ascertain particular areas of cultural and archaeological sensitivity that might be present in the proposed disturbance area which was not identified in the database searches and background literature review.

7.4. Non-Indigenous Cultural Heritage Management

The EIS process will detail mitigation and management measures including a non-Indigenous cultural heritage management plan if required. Measures of key importance are likely to include the following:

- Avoid areas or items of significance through appropriate design modifications
- Establish procedures to be followed should previously unidentified historic sites and/or objects be discovered.

Further heritage assessment and consultation with local heritage groups and regulatory authorities will be undertaken to determine heritage values and required management measures. Appropriate measures may include:

- design refinement to minimise impacts to listed heritage places (i.e. the existing and former station buildings in Brookstead) and unlisted heritage places (such as pre-war housing stock and rail infrastructure which have potential heritage value)
- obtaining relevant heritage permits and approvals for impacts to listed heritage places, if required.

The CEMP would include management measures for the construction phase to describe the measures to minimise impacts to heritage values.

7.5. Greenhouse Gas Management

Construction of the Border to Gowrie Project will generate greenhouse gases (GHG) through the transportation of materials, embodied energy of materials used for construction and the consumption of electricity and other fuels during construction (earthworks). Construction of large-scale infrastructure projects is GHG intensive especially where significant earthworks and bridging is required (Hill et al, 2011).

During operation the key contribution to greenhouse gas emissions will be from diesel consumption from train operations. The Border to Gowrie Project will also have a significant beneficial impact in greenhouse gas generation due to the transfer of freight transport from road to rail. On average, road transport has significantly greater greenhouse gas emissions than rail transport – approximately 62 g CO_2/tonne-km compared to 22 g CO_2/tonne-km (Cefic, 2011).

There are a number of opportunities to minimise greenhouse gas generation during construction and operation of the Border to Gowrie Project, including:

- Selection of construction materials with low embodied energy
- Optimising the cut/fill balance for earthworks to minimise material transport requirements
- Driver assistance systems and speed management.

7.6. Waste Management

The ARTC Environmental Policy (2014) commits to 'preventing or minimising pollution and the generation of waste in all of their activities'. This policy is broadly consistent with the waste and resource management hierarchies of the National Waste Policy (DEE, 2009) and the Queensland Waste Management Strategy (DEHP, 2014) which set an order of preference for options for managing waste—from avoiding/reducing, to reusing, recovering, treating and disposing of waste.

The further development of the Border to Gowrie Project design and construction will be required to manage waste and materials in accordance with ARTC's Environmental Policy and industry standards through procurement requirements. Furthermore, economic incentives to balance earthworks materials to minimise material moved within and into/out of the project area during the construction phase are expected to drive design development and construction approaches.

7.7. Hazard and risk, and Health and Safety

A detailed risk assessment will be undertaken for the Border to Gowrie Project and effective mitigation measures will be developed to manage identified hazards and risks.

Hazards and risks to health and safety as part of the Border to Gowrie Project and their management would include:

- Bushfire and emergency response e.g. fires, explosions, flooding. An emergency response plan will be developed in consultation with state and regional emergency service providers. This plan will be consistent with ARTC's existing Safety Management System and associated procedures.
- Storage, handling and transport of dangerous goods and hazardous materials. Hazardous materials and dangerous goods would be stored, handled and transported in accordance with relevant regulatory requirements and relevant Australian Standards and Codes. ARTC will also prepare and implement an Emergency Management Plan during the operational phase of the project.
- Changing traffic conditions during construction and operation. Community health and safety will be managed through regular consultation and consideration of aspects in the traffic, transport and access management plan.
- Pedestrian and stock access to an operational rail corridor. Mitigation measures in relation to access include fencing the Conceptual Alignment with suitable fencing in densely populated locations and allowance for essential stock management.

7.8. Environmental Management

All ARTC's operations and activities, including those undertaken by their contractors, are required to be undertaken in accordance with ARTC's Environmental Policy (2014) which is available on the ARTC website (www.artc.com.au) and Environmental Management System (EMS). The ARTC Environmental Policy provides a framework for continual improvement of an Environmental Management System and sets our commitments for managing potential environmental risks.

This EMS outlines processes that are designed to guide compliance with environmental laws, statutes, regulations and corporate policies while managing ARTC's environmental impacts.

The principal benefits of operating in accordance with the ARTC EMS include:

- A clear definition of the corporate environmental goals;
- Documented policies and procedures that aim to prevent and / or minimise environmental damage and achieve legal compliance;
- Management of environmental risks;
- Documented roles and responsibilities in the decision making process; and
- Improved community relationships.
- The EMS also provides a structure for staff training, measuring environmental performance, environmental auditing and managing non-conformances.

The Border to Gowrie Project would be procured, designed, constructed and operated with regard to ARTC's policies and systems and relevant legislation, guidelines and standards.

Avoidance and minimisation of environmental impacts has been a key factor in the route selection processes for the Border to Gowrie Project. As the Border to Gowrie Project progresses, impact avoidance and reduction will remain key drivers in design development.

Key aspects to be addressed include:

- Further definition of habitat and vegetation impacts, through iterative design and environmental assessment

- Confirmation of the location of MNES and MSES habitat and species presence, and significance of populations, through targeted ecological investigations, in accordance with relevant State and Commonwealth survey guidance
- Confirmation of other environmental values in the Study Area
- Design development to avoid, reduce or manage impacts to identified environmental values
- Determination of environmental offset requirements for MNES and MSES impacts.

The Border to Gowrie Project's environmental outcomes should also be considered in the context of the overall intent and outcomes of the Melbourne to Brisbane Inland Rail programme. The establishment of a freight rail route that provides a comparable level of service to road freight is expected to negate or delay the need for progressive upgrades of the National Highway and associated environmental impacts.

An environmental management approach including the development of an environmental management plan for the construction and commissioning phases of the Border to Gowrie Project would be developed based on the potential environmental impacts of the Border to Gowrie Project. These impacts have initially been identified in this IAS and will be further assessed, developed and understood during the environmental assessment (e.g. EIS) phase.

7.9. Temporary Infrastructure Decommissioning and Rehabilitation

7.9.1. Laydown Areas, Offices, Stockpiles, Topsoil and Cleared Vegetation

The Border to Gowrie Project will incorporate numerous laydown areas along the Conceptual Alignment. The location and extent of these will be determined during future design phases during the EIS.

During construction the laydown areas will be progressively decommissioned and rehabilitated. This is likely to include the following actions:

- Demountable buildings will be removed progressively and concrete slabs broken up. The surface of all rehabilitated areas will be relieved of compaction prior to rehabilitation. De-compaction (ripping) or aeration will be done in accordance with management plans developed during the EIS. Previously excavated material stockpiled on site will be used to reinstate and the ground form to ensure that it is returned to its pre-existing profile and contour where practicable.
- Some sediment and erosion control measures will be left in place until completion of the rehabilitation of the area. Upon removal of offices, laydowns, stockpiles, topsoil and cleared vegetation will be spread over the area and seeding undertaken according to a Rehabilitation Plan that shall be developed in later phases of the project.
- Permanent erosion and sediment control measures (drainage and berms) may be installed as appropriate prior to re-spreading of topsoils and maintained until rehabilitation goals are achieved.
- Some office facilities may be left for the commissioning phase within the railway corridor.

7.9.2. Access Tracks and Roads

Access roads and tracks that will no longer be used will be decommissioned. Decommissioning of the temporary road/accesses shall achieve complete stabilisation and restoration to a condition generally consistent with the pre-existing area characteristics.

Treatments will be designed and implemented to completely eliminate the road/access track by restoring natural contours, hydrology, and vegetation through mechanical and/or natural means.

8. APPROVALS REQUIRED FOR THE PROJECT

If the Border to Gowrie Project is declared a coordinated project and is also determined to be a controlled action under the EPBC Act it is anticipated that assessment will be progressed under the Bilateral Assessment Agreement between the Commonwealth and Queensland Governments.

Further approvals are likely to be required under separate approvals processes. Furthermore other post-approval management plans may be required to progress implementation of the Border to Gowrie Project.

Table 8-1 summarises the approval and permit requirements likely to be applicable to the Border to Gowrie Project. Approval and permit requirements may vary depending on the final design and construction methodology, and future changes in statutory requirements prior to project implementation. Further detailed review of legislative requirements should be conducted in future project phases.

Table 8-1 Anticipated Approvals

ACT/ PROVISIONS	RESPONSIBLE/ADMINISTERING AUTHORITY	APPROVAL/PERMIT	TRIGGER	APPLICABILITY	COORDINATED/ INDEPENDENT
Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)	Commonwealth Department of the Environment and Energy	EPBC Act referral to the Commonwealth Minister for the Environment and Energy for determination on whether the proposal is a 'controlled action'	Undertaking an action which has or is likely to have a significant impact on matters of national environmental significance	Potential project impacts to matters of national environmental significance including threatened species and threatened ecological communities	Coordinated and assessed under the provision of the assessment bilateral between the Queensland and Australian governments.
State Development and Public Works Organisation Act 1971 (Qld) (SDPWO Act)	Coordinator General (Queensland Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP))	Coordinated Project decision and subsequent EIS or Impact Assessment Report.	Declaration by the Coordinator-General	This IAS is part of the application for a coordinated project declaration.	Coordinated
Native Title Act 1993 (Cth) (NT Act)	National Native Title Tribunal	Where an interest is required on land where native title has not been extinguished, the requirements of the NT Act must be met before tenure can be granted.	Works within areas where Native Title may continue to exist.	Native Title may still exist in areas of the Conceptual Alignment. The Border to Gowrie Project will require an assessment of Native Title within the Study Area. Consultation with, and authorisation of, affected	Independent

ACT/ PROVISIONS	RESPONSIBLE/ADMINISTERING AUTHORITY	APPROVAL/PERMIT	TRIGGER	APPLICABILITY	COORDINATED/ INDEPENDENT
				Native Title parties under the NT Act may also be required.	
Aboriginal Cultural Heritage Act 2003 (Qld)	Queensland Department of Aboriginal Torres Strait Islander Partnerships (DATSIP)	Duty to take all reasonable and practical measures not to harm Aboriginal cultural heritage cultural heritage assessment/ development (and DATSIP approval) of Cultural Heritage Management Plan	Construction works with the potential for impact to Aboriginal Cultural Heritage. Requirement for Cultural Heritage Management Plan where such works are covered by the Project EIS.	The Border to Gowrie Project will require further detailed cultural heritage assessment and the Cultural Heritage Management Plan/Agreement for the works.	Coordinated
Planning Act 2016 (Qld) (PA)	Queensland Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP)	Development Permit for Material Change of Use, Operational Work, Reconfiguring a Lot and/or Building Work. Development assessed against applicable instruments.	Development that is assessable development requires a development permit.	Will be determined by the overall approvals pathway.	Coordinated
Environmental Protection Act	Queensland Department of Environment and Science (DES)	Section 739 Disposal Permit	Disposal of contaminated	Subject to EMR/CLR search and further contaminated	Coordinated

ACT/ PROVISIONS	RESPONSIBLE/ADMINISTERING AUTHORITY	APPROVAL/PERMIT	TRIGGER	APPLICABILITY	COORDINATED/ INDEPENDENT
1994 (Qld) *Planning Act 2016* (Qld)	and DSDMIP		material from a site listed on the EMR or Contaminated Land Register (CLR)	land investigations.	
		Environmental Authority Development approval for a concurrence ERA under the Planning Act 2016	Undertaking an Environmentally Relevant Activity (ERA) listed under Schedule 2 of the Environmental Protection Regulation 2008 (EP Regulation)	Potential ERAs associated with construction to be confirmed in future project phases and may include: • Chemical storage • Extractive and screening activities • Crushing, milling, grinding or screening material • Regulated waste storage/transport	Coordinated
Fisheries Act 1994 (Qld) *Planning Act 2016* (Qld)	Queensland Department of Agriculture and Fisheries (DAF), DSDMIP and DES	Operational works permit for works within a declared fish habitat area	Development in a declared fish habitat area	Not applicable as no declared fish habitat areas in the vicinity of the Conceptual Alignment	Coordinated

ACT/ PROVISIONS	RESPONSIBLE/ADMINISTERING AUTHORITY	APPROVAL/PERMIT	TRIGGER	APPLICABILITY	COORDINATED/ INDEPENDENT
		Development permit for Operational Works that is raising or constructing a waterway barrier	Constructing or raising waterway barrier works in a waterway mapped as a waterway for waterway barrier works under the Fisheries Act.	There are a number of waterways in the Conceptual Alignment that are mapped as low, medium or high risk under the Fisheries Act. Requirement for permit to be confirmed in future project phases, depends on the design and nature of creek crossings and whether crossings can comply with accepted development requirements for permanent or temporary works.	Coordinated
Vegetation Management Act 1999 (Qld) (VM Act) *Planning Act 2016* (Qld)	Queensland Department of Natural Resources, Mines and Energy (DNRM) and DSDMIP	Operational works permit for clearing remnant native vegetation (and possibly regrowth vegetation pending changes to the VM Act)	Clearing of native vegetation	The Border to Gowrie Project will require the clearing of mapped remnant native vegetation. Potential exemptions may be applicable to the Border to Gowrie Project. Extent of native vegetation clearing and applicability of exemptions to be confirmed in future project phases.	Coordinated
Nature Conservation Act 1992 (Qld)	DES	Protected Plant Clearing Permit Protected Plant	Taking protected plants under the NC Act, or within	Parts of the Conceptual Alignment are within the high risk flora survey trigger	Coordinated

ACT/ PROVISIONS	RESPONSIBLE/ADMINISTERING AUTHORITY	APPROVAL/PERMIT	TRIGGER	APPLICABILITY	COORDINATED/ INDEPENDENT
(NC Act)		Exemption Notification.	100 m of protected plants Clearing of vegetation within the high risk flora trigger area.	area, requiring flora survey and identification of protected plants, and if applicable a clearing permit or exemption will be required.	
		Approval to tamper with an animal breeding place.	If an animal breeding place used by an endangered, vulnerable or least concern fauna species requires removal a species-specific Species Management Program (SMP) will require approval by DEHP.	There is the potential for animal breeding places to be present within the Conceptual Alignment. This is to be confirmed in future project phases through detailed fauna survey, and if necessary a SMP will be required.	Coordinated
Queensland Heritage Act 1992 (Qld)	DES and Queensland Heritage Council	Exemption certificate (for a low impact activity which will not significantly detract from the heritage values of the place) or Development Application for impacts to a QLD	Impacts to a QLD heritage place/Local government heritage place	The extent of impact to heritage places should be determined in future project phases to determine if an exemption certificate or approval is required.	Coordinated

ACT/ PROVISIONS	RESPONSIBLE/ADMINISTERING AUTHORITY	APPROVAL/PERMIT	TRIGGER	APPLICABILITY	COORDINATED/ INDEPENDENT
		heritage place/Local government heritage place			
Water Act 2000 (Qld)	DNRME and DSDMIP	Riverine Protection Permit unless the Riverine protection permit exemption requirements (DNRM 2016) can be complied with.	Destroying of vegetation, excavating or placing fill in watercourse, lake or spring	Exemptions from the requirement for a Riverine Protection Permit may apply if the excavation or placing of fill is a necessary part of another permitted activity, or if the project is "prescribed assessable development" under the definition in Section 814 of the *Water Act 2000*. If this is not the case, a Riverine Protection Permit should be obtained for the Border to Gowrie Project.	Coordinated
		Water licence/allocation associated with the taking or interfering with water for construction	Taking or interfering with water	Taking or interfering with water for construction purposes is likely to be required for the Border to Gowrie Project. Construction entities may take water without an allocation, subject to conditions prescribed under a regulation. Creek	Coordinated

ACT/ PROVISIONS	RESPONSIBLE/ADMINISTERING AUTHORITY	APPROVAL/PERMIT	TRIGGER	APPLICABILITY	COORDINATED/ INDEPENDENT
				diversions may also require licences under the Water Act and development permits under PA.	
Transport Infrastructure Act 1994 (Qld) (TI Act)	Queensland Rail	Approval to interfere with a railway (s255)	Crossing of existing rail line or works within existing rail corridor	Subject to detailed design and consultation with Queensland Rail	Coordinated
	Queensland Department of Transport and Main Roads (DTMR)	Road corridor permit for works within a State Controlled Road (s50) Access to State Controlled Road (s62/66)	Works within State controlled roads Access to State controlled road (e.g. during construction)	Subject to detailed design and consultation with DTMR	Coordinated
Environmental Offsets Act 2014 (Qld) and Policy	DES	Offsets Management Plan	An environmental offset under the *Environmental Offsets Act 2014* may be required as a condition of approval where—following consideration of avoidance and mitigation measures—the	The Border to Gowrie Project is likely to have an impact on MSES. The significance of the residual impact would need to be confirmed in future project phases to determine offset requirements.	Coordinated

ACT/ PROVISIONS	RESPONSIBLE/ADMINISTERING AUTHORITY	APPROVAL/PERMIT	TRIGGER	APPLICABILITY	COORDINATED/ INDEPENDENT
			activity is likely to result in a significant residual impact on prescribed environmental matters.		
Local Government Act 2009 (Qld)	Local Government	Work on a local government controlled road permit	Construction works within a local government controlled road.	The Conceptual Alignment intersects a number of local roads. Construction works are likely to occur within local roads.	Independent

9. COSTS AND BENEFITS SUMMARY

9.1. Local, State and National Economies

As described in **Section 3.3.1** and **Section 3.9**, the ARTC Business Case outlines the significant economic benefits of the Inland Rail, which contributes to the efficient movement of freight in Australia and supports economic growth. The Inland Rail is expected to increase Australia's GDP by an estimated $16 billion by 2050.

The Border to Gowrie Project is a key project of the Inland Rail Programme and would bring economic benefits to the region and State by providing a critical element of the State and national freight network. In future project stages the economic costs and benefits would be subject to further detailed study.

In summary the benefits expected to arise from the Border to Gowrie Project include:

- During the construction phase it is anticipated that the workforce would primarily be derived from local and regional sources depending on the nature of the skills required, creating local and regional job opportunities. Workforce numbers and their source would be determined once a construction methodology has been finalised and would be quantified as far as possible in the EIS.
- Job creation has the potential to create flow-on economic benefits in regional centres in the Study Area.
- Regional communities along and adjacent to the rail corridor would benefit through more efficient and effective freight rail access to metropolitan and international markets. The Border to Gowrie Projects proximity to the Toowoomba Enterprise Hub would enable agricultural producers to move grain and cotton more efficiently for export to port.
- Provision of rail transport for freight potentially delays the need for road infrastructure investment and reduces the congestion and safety issues on existing transport routes such as the Warrego Highway.

The Border to Gowrie Project is expected to have a capital cost of $1.4 billion and would require substantial public funding, however the business case demonstrates that operating revenues would cover operating costs (including maintenance), meaning that once delivered, Inland Rail would not require on-going taxpayer support.

Effects on the local and state economy that will be further investigated as part of the EIS may include:

- Local and temporary access disruption during construction and associated impacts on businesses in the region
- Land acquisition and property impacts
- Influx of workers during construction and associated accommodation issues
- Economic benefits to the Darling Downs and South East Queensland regions.

9.2. Natural and Social Environments

Without Inland Rail, consideration of other freight solutions would be required. This could include upgrades to the National Highway network, or the existing coast railway corridor. The establishment of a freight rail route that provides a comparable level of service to road freight is expected to negate or delay the need for progressive upgrades of the National Highway and associated environmental impacts. Furthermore, it provides opportunities for regional development and supports regional agricultural business by providing improved access to freight services.

The Border to Gowrie Project has the potential for both temporary and longer term environmental and social effects that may require further management and mitigation. Environmental and social matters that will be investigated further as part of the EIS may include:

- Clearing of regulated vegetation and fauna habitat for species listed under State and National legislation

- Potential impacts to fauna movement as a result of rail infrastructure
- Air quality and noise impacts
- Potential changes to flooding and watercourses due to crossing of floodplains and watercourses
- Landscape and visual impacts particularly at significant embankments, cuttings and viaducts
- Potential impacts to known and unknown Indigenous and historical heritage places.

Social benefits are expected to arise from the economic benefits and opportunities of the Border to Gowrie Project that is described above.

Environmental and social impacts and benefits will be subject to further assessment in the SIA and the EIS with the development of mitigation and management measures where required. There is also an opportunity for design refinement in future phases to minimise or remove some of the impacts identified. A programme-wide biodiversity offset strategy is currently being investigated in the event that significant residual impacts are identified.

10. COMMUNITY AND STAKEHOLDER CONSULTATION

There has been a wide range of consultation undertaken for the Inland Rail programme, and specifically the Border to Gowrie project between 2015 and February 2018. Accordingly, the Border to Gowrie project is generally known to stakeholders. Consultation undertaken for the Border to Gowrie project to date has included consultation with local councils, businesses, farming and mining exporters, motoring organisations, the general community and adjoining landholders.

Consultation with the following stakeholder groups is ongoing:

- State and Commonwealth representatives, departments and agencies
- GRC and TRC representatives and executive management.
- Business and tourism stakeholders (e.g. local Chamber of Commerce).
- Agricultural stakeholders.
- Freight stakeholders.
- Environmental and natural resource management stakeholders.
- Service providers (e.g. community, medical, emergency).
- Indigenous groups.
- Community groups.
- Landholders.

ARTC values active engagement with stakeholders and the community and all consultation will be undertaken in line with ARTC's Communication Strategy. A community engagement plan has been prepared for the Border to Gowrie Project that would guide proposed consultation activities.

10.1. ARTC Consultation 2015 –October 2016

The purpose of engagement completed between March and May 2016 was primarily to facilitate the 'ground – truthing' of desk-top studies through field studies, establish positive relationships with key stakeholders and raise awareness of the programme status with the broader community.

Stakeholder groups engaged included Councils (Goondiwindi and Toowoomba), landowners (where field access was desired), peak bodies (relevant to the focus of the field studies) and regional communities.

10.1.1. Council technical sessions and workshops

Technical sessions were held with each Council in the local government areas to discuss issues and opportunities and how these could be addressed. Technical sessions were held on 23 March 2016 with Goondiwindi and Toowoomba Regional Councils. A workshop was held with Toowoomba Regional Councillors and management on 8 June 2016 and a discussion with Goondiwindi Council on 7 June 2016.

Key issues raised were:

Toowoomba Regional Council

- Road/rail interface and optimisation

- Flooding and hydrology
- Commodore Mine
- Alignment suggestions for Inglewood-Millmerran Road, Millmerran to Brookstead and Condamine Flood Plain, Brookstead to Mt Tyson (to avoid cropping land), Gowrie Junction and Kingsthorpe
- Tunnel portal area of the adjacent Inland Rail project (Gowrie to Helidon)
- Terminal locations
- Supply of quarry materials

Goondiwindi Regional Council

- Rail/rail interface and optimisation
- Level crossings and grade separation
- Flooding and hydrology mitigation
- Moving alignment to go through State Forest Areas and north of McIntyre Brook
- Connecting south-west of existing Millmerran line
- Avoidance of farm severance
- Ability for farmers to move stock and equipment
- Ability to add spurs to line and potential for terminal sites.

10.1.2. Landowner engagement

Engagement with landowners was undertaken to enable initial investigative works to assist preliminary engineering and environmental assessments. Fifteen landowners were engaged during the field access process.

Key issues raised were:

- Flooding and hydrology impacts of the rail corridor
- Impact of the rail corridor on farming operations where land is segmented
- Appropriateness of black soil for this type of infrastructure.

10.1.3. Peak body workshops

Initial briefings were undertaken in peak bodies to determine their interest in the Inland Rail project and to invite their participation into a stakeholder workshop held on 12 May 2016. Peak bodies including the Border Rivers Chamber of Commerce, Condamine Alliance, Inglewood Chamber of Commerce, Millmerran Commerce and Progress Inc., Millmerran Power, Queensland Farmers Federation, Regional Development Australia, McIntyre Brook Irrigators and Toowoomba Surat Basin Enterprise were involved in identifying opportunities and constraints in the two kilometre wide study corridor.

Key issues raised were:

- Flooding and hydrology management, particularly through the Condamine River Flood Plain
- Alternative alignment suggestion taking the corridor away from farming properties and through forestry area
- Impact of the corridor on farming operations, particularly for the movement of stock and machinery
- Soil types – black soil and sodic soils – and their implications for construction

Opportunities identified included:

- Location of existing quarries and relevant grade material
- Option to construct a workers camp and hub at Millmerran to service the project.

10.1.4. Community Information Sessions

Community Information Sessions were held in four locations for the Border to Gowrie project between 13 and 16 June 2016. Project representatives also attended adjacent sessions for Gowrie to Helidon and North Star to Border in the weeks of 20 June and 27 June respectively, in the event community members attended with an interest in the Border to Gowrie project. A community-led information session was also attended on 5 July 2016 at the request of the local community between Millmerran and Inglewood.

Key issues identified included:

- Impact to farming land between Brookstead and Oakey and between Inglewood and Millmerran. Alternatives suggested avoiding this land.
- Flood management and mitigation of hydrological impacts.
- Noise implications for both greenfield and brownfield areas.
- Operational impacts for farms intersected by the corridor – stock and machinery crossings etc.

In addition to aforementioned stakeholder engagement, ARTC engaged directly with Intergen (Millmerran Power Station) and the Hon. Lawrence Springborg MP (State MP and Landowner).

Millmerran Power Station/Commodore Mine

Key issues and opportunities included:

- Opportunity for rail alignment to be located between current mine operations and Millmerran Inglewood Road where there is a 200 metre buffer
- Potential impacts of rail alignment on future mine operations.

Hon Lawrence Springborg MP (State MP and Landowner)

Key issues and opportunities included:

- Concerns about survey work and ‘pink tape’ markers in local area.
- Concerns many people think the concept alignment later in the year is the final alignment.

- Concerns about impact of corridor on farming land and opportunity for route optimisation to minimise impacts on productive agricultural land.

10.2. November 2016 – September 2017

10.2.1. Corridor Options Review and Project Reference Group

In October 2016 the Australian Government determined that four possible Inland Rail corridor options between Yelarbon and Gowrie would be assessed independently and the assessment process would be overseen by the Yelarbon to Gowrie Project Reference Group. The then Minister for Infrastructure and Transport, the Hon Minister Chester announced the appointment of Mr Bruce Wilson AM as the Inland Rail Queensland Community Advisor and Chair of the Reference Group on 30 November 2016. The Project Reference Group (PRG) process was established in November 2016 by the Department of Infrastructure and Regional Development (DIRD) to provide local community input into a like-for-like review of four alignment options for the section of Inland Rail between Yelarbon and Gowrie in Queensland.

PRG members appointed represented a range of peak organisations representing:

- farming peak bodies;
- chambers of commerce and business groups;
- environmental and conservation organisations; and
- community and progress associations.

Relevant elected officials and State agencies also attended meetings of the Reference Group as observers.

The role of the PRG was to:

- Review and comment on the planned approach to the investigation of the alternative routes
- Provide feedback on investigation findings as they are shared
- Provide local input into investigations, particularly where anecdotal data and local knowledge will assist in enhancing investigations or shaping the process
- Seek feedback and input from local networks on specific issues as requested
- Provide final endorsement of the approach taken and the rigor behind the comparative analysis of the various options.

The PRG met seven times between 14 December 2016 and 10 April 2017. The topics covered at each of these meetings is summarised in Table 10-1

Table 10-1 Project Reference Group consultation

Date	Location	Topic
14 December, 2016	Toowoomba	Introduction to project and assessment methodology. like-for-like evaluation. Information request.

Date	Location	Topic
1 February, 2017	Warwick	Technical Update. MCA Assessment Framework & Case Study.
20 February, 2017	Millmerran	Technical Update Assessment of integration of PRG. Hydrological inputs. Data results and inputs for MCA. Cost estimate approach.
27 February, 2017	Toowoomba	Question and Answer session. Blockage Assessment. Route Changes. Typical Culvert detail.
15 March, 2017	Toowoomba	Question and Answer session. Blockage hydrological modelling. Rail crossings, approach, typical details, frequency. Typical undertrack crossing. Assessment of alternate Warwick Route.
22 March, 2017	Toowoomba	Assessment of alternate Leyburn Route. MCA outcomes presentation. Comparative cost estimate.
10 April 2017	Toowoomba	Details of construction capital cost estimates for options Options for ongoing consultation Finalising work of the PRG

To further engage with the broader community outside of the PRG, the PRG Chair, Mr Bruce Wilson AM conducted four public meetings over three days where the technical engineering consultant team were in attendance together with officers of the Department of Infrastructure & Regional Development. The meetings were advertised via local press and radio and located as follows:

- Millwood, 8 March 2017
- Brookstead, 9 March 2017
- Felton, 9 March 2017

- Southbrook, 10 March 2017

The purpose of these meetings was to give the community the opportunity to ask questions and provide further input for the project. The locations were as agreed to by PRG members. The sessions were then facilitated with the assistance of PRG members at the nominated locations.

The community were given the opportunity to register with DIRD for future correspondence and were provided with details to enable them to provide information and make submissions.

Following the meetings of the PRG and the public meetings, a Corridor Options Report (AECOM 2017) was developed and submitted in April 2017. This report was one of several inputs considered by the Australian Government and informed the decision on the study area for the Border to Gowrie project.

10.3. September 2017 - 2018

Following the announcement of the study area on 21 September 2017, the overall focus of ARTC's engagement has been to inform the community about the nominal corridor and study area, the proposed project assessment and approvals process, and securing future access to private properties in order to carry out environmental and technical investigations.

Stakeholder groups engaged included Goondiwindi Regional Council and Toowoomba Regional Council, landowners (where field access was desired) and those within the proposed study area, relevant peak bodies and organisations (e.g. Queensland Farmers Federation, Toowoomba Chamber of Commerce and Toowoomba Surat Basin Enterprise TSBE), interested community groups and local communities.

10.3.1. Council technical sessions and workshops

Five technical planning sessions were held with Toowoomba Regional Council (TRC) on 4 August, 7 September, 5 October, 9 November, 6 December 2017. The primary focus of these sessions was the interface of the project with council assets and future development. A briefing to TRC Councillors and Mayor was also delivered on 6 December 2017.

Key issues raised and subject to ongoing engagement include:

- Road/rail interface and interaction with current local roads and future planned upgrades for local roads
- Current and future land use planning considerations for route optimisation (Pittsworth Industrial Precinct Enabling Project, Toowoomba Enterprise Hub)
- Flooding and hydrology (Condamine River, Westbrook Creek and Gowrie Creek)
- Opportunities to learn from the development of other significant infrastructure projects currently being delivered within the TRC local government area.

A meeting was held with Goondiwindi Regional Council (GRC) engineering manager in Inglewood on 16 November 2017 to provide an update on the project and timing. The main issue discussed was the consideration of an alternative alignment through Whetstone and Bringalily State Forests. This issue has been the subject of ongoing correspondence between GRC and ARTC, and was most recently addressed at a meeting between Inland Rail senior executives and GRC Councillors on 24 January 2018.

Other key issues raised and subject to ongoing engagement include:

- Road/rail interface and interaction with current local roads and future planned upgrades for local roads. Additionally, the interaction of the proposed rail line and arterial roads that provide access during for emergency services during significant flood events
- Road/rail interface and opportunities for grade separation to improve safety, specifically in the town of Yelarbon
- Flooding and hydrology (Macintyre River, Macintyre Brook)
- Minimising impacts on farm land and the avoidance of farm severance
- Ensuring the consideration and future ability for farmers to move stock and equipment across rail infrastructure.

10.3.2. Landowner engagement

In addition to community meetings, ARTC has engaged directly with 92 landowners in the project area since June 2016, 32 being contacted since September 2017 for the purposes of obtaining access agreements for environmental and technical investigations required for the project EIS. As at 31 January 2018 ARTC has secured 75% of the land access agreements required for initial field investigations, with four landowners declining to agree to provide access at present.

Key issues raised during meetings have included:

- The regional location of the area, the absence of train operations in certain parts of the study area and the corridor options assessment process delivered by DIRD
- Potential for impact on property value and saleability of property
- Compensation for any property impacts
- Potential for flooding impacts of the rail corridor and possible design solutions
- Impacts of the rail corridor on farming operations (potential changes to property access, potential severance and overall operability of agricultural properties

10.3.3. Community information meetings

Between 20 October 2017 and 21 November 2017, ARTC hosted 14 community information meetings held across seven locations in two 'rounds'. The information meetings were widely advertised in print and on radio and attended by a total of approximately 750 people (although this number includes people who attended more than one meeting). The locations and dates of the community information sessions are detailed in Table Table 10-2.

Table 10-2 Community Information Sessions

Date	Venue	Address
Friday, 20 October 6-8pm	Gowrie Progress Association Community Hall	24 Old Homebush Road, Gowrie Junction
Saturday, 21 October 8.30-10.30am	Southbrook Hall	Queen Street, Southbrook
Saturday, 21 October 1-3pm	Millmerran Cultural Centre	45 Walpole Street, Millmerran
Wednesday, 25 October	Inglewood Civic Centre	18 Elizabeth Street, Inglewood

Date	Venue	Address
6-8pm		
Thursday, 26 October 6-8pm	Yelarbon and District Soldiers Memorial Hall	Taloom Street, Yelarbon
Saturday, 28 October 9-11am	Pittsworth Function Centre	42 Hume Street, Pittsworth
Saturday, 28 October 2-4pm	Brookstead Hall	Madelaine Street, Brookstead
Monday, 13 November 6-8pm	Pittsworth Function Centre	42 Hume Street, Pittsworth
Tuesday, 14 November 6-8pm	Inglewood Civic Centre	18 Elizabeth Street, Inglewood
Wednesday, 15 November 6-8pm	Millmerran Cultural Centre	45 Walpole Street, Millmerran
Thursday, 16 November 6-8pm	Yelarbon and District Soldiers Memorial Hall	Taloom Street, Yelarbon
Saturday, 18 November 9-11am	Gowrie Progress Association Community Hall	24 Old Homebush Road, Gowrie Junction
Saturday, 18 November 2-4pm	Southbrook Hall	Queen Street, Southbrook
Tuesday, 21 November 6-8pm	Brookstead Hall	Madelaine Street, Brookstead

The key themes and details of the issues emerging from the Community Information Sessions are detailed in the following Table 10-3.

Table 10-3 Key themes and issue descriptions emerging from Community Information Sessions

Issue Themes	Issue description
Further investigation of an alternative routes	There was broad recognition from attendees that the study area had been determined by the Australian Government and any change to the study area would have to be brought about by the Australian Government, rather than ARTC. A significant number of attendees voiced their view that the study area should be changed but with no consistent views as to where.

Issue Themes	Issue description
Property impacts and compensation	Property impacts and compensation was another theme regularly raised by members of the community. There are concerns at the time it will take to proceed through the EIS process and to determine the land requirements of the project. Landowners were also concerned about perceived loss of value to the property through the EIS process due to the potential construction and operation of the Border to Gowrie project. Potential impacts on properties (physical infrastructure, fencing, access and operability of farming operations) were also raised by the community.
Flooding impacts	Flooding impacts of building Inland Rail continued to be a significant issue, particularly in relation to crossing of the Condamine floodplain.
Train operations	Clarity was provided to the community for the planned operations of trains up to 1800m, noting that train length and composition of freight being carried would vary across trains. The community and business operators are interested in opportunities to transport grain and other goods, as well as the potential for local employment for maintenance and operations and potential sidings and planned future intermodal developments.
Engineering design	The technical engineering feasibility of the proposed rail line across the Condamine flood plain was regularly raised as a concern of the communities. Landowners are concerned about the potential impacts of earthworks and cuttings on surface and groundwater resources.
EIS process	The formal Environmental Impact Statement and approvals process was raised throughout the community information sessions. The communities are keen to have their say throughout the EIS process.
Study area	The community raised concerns about the study area following the announcement of the preferred corridor.
Noise	Potential noise impacts, the estimated number of train movements and potential mitigation measures have been raised.
Liveability and wellbeing impacts	Amenity impacts, liveability and well-being of the small rural communities have been raised by the community.

Issue Themes	Issue description
The nature and extent of future consultation	The ability for the community to be informed and able to engage with ARTC through future project stages was raised during information sessions.

10.3.4. Broader Stakeholder engagement

Briefings have been held from October 2017 and continue to be held with stakeholders about the proposed study area. These briefings and meetings have been primarily to inform the stakeholders of the study area and the process for the development of the engineering design and EIS in addition to providing a forum for the stakeholders to provide feedback and ask questions about the project. Broader stakeholder engagement details are included in Table 10-4.

Table 10-4 Broader stakeholder engagement from October 2017 to January 2018

	Stakeholder
Elected Representatives	• Federal Member for Groom, Dr John McVeigh MP • Federal Member for Maranoa, Mr David Littleproud • Member for Condamine, Mr Pat Weir MP • Member for Toowoomba South, Mr David Janetski MP • Member for Toowoomba North, Mr Trevor Watts MP • Then Member for Southern Downs, Mr Lawrence Springborg • Then candidate (now State Member) for Southern Downs, Mr. James Lister MP
Queensland Government Departments and Agencies	• Queensland Department of Transport and Main Roads • Department of Agriculture and Fisheries • Department of State Development, Manufacturing, Infrastructure and Planning
Other Stakeholders	• InterLink SQ • Smithfield Cattle Company (Sapphire Feedlot) • John Dee (Yarranbrook Feedlot) • InterGen (Millmerran Power Station) • Regional Development Australia • University of Southern Queensland • Toowoomba Surat Basin Enterprise • Toowoomba Chamber of Commerce
Community Groups	• Inner Downs Inland Rail Action Group

	Stakeholder
	• University of the Third Age • Down Steam Tourist Railway and Museum

10.3.5. Community Consultative Committees

ARTC has established two Community Consultative Committees within the project area: Southern Darling Downs Community Consultative Committee (SDCCC) and the Inner Darling Downs Community Consultative Committee (IDCCC). The Committees are respectively chaired by Mr Graham Clapham (nominated by the Queensland Farmers Federation) and Professor. Steven Raine (nominated by the Federal member for Darling Downs).

Members were appointed following a publicly advertised nomination period and nominations were assessed against a set of criteria by an independent party (Brisbane based consultancy Three Plus). Candidates for appointment were then recommended to ARTC and ARTC formally appointed the Chairs and Members of the two committees.

For the SDCCC, 29 nominations were received from which 15 Members were appointed while for the IDCCC there were 38 nominations received from which 16 Members were appointed.

The first meetings of the SDCCC and IDCCC were held on 13 and 14 December 2017 respectively. The committees will meet on no less than a quarterly basis, and more often if required. Meeting summaries and minutes are publicly available on the Inland rail website as are the Membership and governing Charters for each Committee.

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12. GLOSSARY, ACRONYMS AND ABBREVIATIONS

A list of terms, acronyms and abbreviations are provided below.

TERM	DEFINITION	ACRONYM/ABBREVIATION
Aboriginal Cultural Heritage Act 2003		ACH Act
Annual Exceedance Probability		AEP
Australian Height Datum		AHD
Australian Rail Track Corporation		ARTC
Advance Train Management Systems		ATMS
Benefit-cost ratio		BCR
Border to Gowrie Project	The section of the Inland Rail programme between the NSW/QLD Border to Gowrie	Border to Gowrie
Capital Expenditure		CAPEX
Construction Environmental Management Plan		CEMP
Cultural Heritage Integrated Management System		CHIMS
Carbon monoxide		CO
Department of Agriculture and Fisheries		DAF
Department of Aboriginal and Torres Strait Islander Partnerships		DATSIP
Department of Environment and Science		DES
Department of Natural Resources, Mines and Energy		DNRM
Department of the Environment and Energy		DotEE
Department of Science, Information Technology and Innovation		DSITI
Department of Transport and Main Roads		DTMR

TERM	DEFINITION	ACRONYM/ABBREVIATION
Electrical conductivity		EC
environmental impact statement		EIS
Environmental Management Register		EMR
Environmental Management System		EMS
Environment Protection and Biodiversity Conservation Act 1999		EPBC Act
Endangered, Vulnerable and Near Threatened		EVNT
Gross Domestic Product		GDP
Greenhouse Gas		GHG
Goondiwindi Regional Council		GRC
High Value Regrowth		HVR
Important Agricultural Areas		IAA
Initial Advice Statement		IAS
Inland Rail Alignment Study		IRAS
Key Resource Area		KRA
Local Government Area		LGA
Matters of National Environmental Significance		MNES
Matters of State Environmental Significance		MSES
Planning Act 2016		PA
Priority Living Areas		PLA
Public Utility Plant		PUPs
Queensland Environmental Offsets Policy		QEOP

TERM	DEFINITION	ACRONYM/ABBREVIATION
Queensland		QLD
Queensland Land Use Mapping Program		QLUMP
Queensland Reconstruction Authority		QRA
State Development and Public Works Organisation Act 1971		SDPWO Act
Threatened Ecological Community		TEC
Transport Infrastructure Act 1994		TI Act
Toowoomba Regional Council		TRC
Travelling Stock Routes		TSRs
UXO		Unexploded ordnance
Vegetation Management Act 1999		VMA
Wider economic benefits		WEB
Weeds of National Significance		WoNS
coastal route	The existing rail route from Melbourne to Brisbane via Sydney	
dual gauge track	A line of track that provides for two trains of two separate track gauges	
chainage	A distance measured along such a line.	
embankment	A bank of earth or stone built to carry a railway over an area of low ground	
Inland Rail programme	Programme to deliver Inland Rail	
laydown area	Area to store materials located adjacent to the rail corridor or remote from site	
narrow gauge	Railway track gauge of 1067 mm; used in Queensland except on the interstate line from Sydney to Brisbane	
Crossing loop	A place on a single line railway, often located at a station, where trains travelling	

TERM	DEFINITION	ACRONYM/ABBREVIATION
	in opposite directions can pass each other.	
project footprint	Area of disturbance	
Queensland Rail 'South Western System'	Consists of Toowoomba to Thallon via Warwick as the primary corridor, with branch lines from Warwick to Wallangarra and Wyreemah to Millmerran. The South Western system adjoins the West Moreton System at Toowoomba.	
Queensland Rail 'Western System'	Adjoins the far western section of the West Moreton system at Miles with the Western system branch lines running directly off the West Moreton system	
rail alignment	The route considering design parameters and site constraints	
rail corridor	A strip of land with a width measured in kilometres that is suitable for a railway	
rolling stock	Any vehicle that moves on a railway	
standard gauge	Railway track gauge of 1,435 mm; used on the ARTC network and for the New South Wales railway system	
structure gauge	Specification for the position of structures such as overhead bridges, and platforms relative to a railway track to allow adequate clearance for the passage of trains	

APPENDIX A CONCEPTUAL ALIGNMENT TENURE

LOTPLAN	TENURE
39MH796	Freehold
37MH878	Reserve
10K5781	Freehold
104MH143	Freehold
413SP119197	Lands Lease
1K5781	Freehold
2K5781	Freehold
3K5781	Freehold
4K5781	Freehold
5K5781	Freehold
6K5781	Freehold
7K5781	Freehold
8K5781	Freehold
9K5781	Freehold
411SP119197	Lands Lease
038MH728	Lands Lease
32SP139977	Freehold
484SP119198	Lands Lease
2SP142352	Freehold
38MH728	Reserve
102MH143	Freehold
8SP146067	Freehold
28MH210	Freehold
25MH143	Freehold
27K5781	Freehold
28K5781	Freehold
29K5781	Freehold
30K5781	Freehold
DSP129307	Easement
ESP129307	Easement
ARP216755	Easement
36MH345	Freehold
1RP49163	Freehold
24MH143	Freehold
14SP127017	Freehold
22K5781	Freehold
23K5781	Freehold
24K5781	Freehold
25K5781	Freehold
26K5781	Freehold
21K5781	Freehold
34CP884737	Freehold
1MH461	Freehold
2MH461	Freehold
71SP131782	Freehold
90SP169187	Freehold
58SP169187	Freehold

LOTPLAN	TENURE
AMH842	Lands Lease
54SP129536	Lands Lease
341FTY1881	State Forest
3RP16081	Freehold
1RP124356	Freehold
2SP256680	Freehold
9RP841180	Freehold
5RP841180	Freehold
20RP913044	Freehold
2RP215348	Freehold
21RP913044	Freehold
2RP182048	Freehold
6RP212368	Freehold
52SP104973	Lands Lease
51SP104973	Lands Lease
54SP112651	Lands Lease
62SP104974	Lands Lease
61SP104974	Lands Lease
3RP212365	Freehold
3RP205145	Freehold
7SP209435	Freehold
8SP209435	Freehold
2RP30861	Freehold
2437A341136	Freehold
15RP212368	Freehold
12RP212366	Freehold
22SP104970	Lands Lease
1A341936	Freehold
2RP835800	Freehold
2RP142680	Freehold
1RP182048	Freehold
2RP7465	Freehold
3RP7482	Freehold
1495A34822	Freehold
2RP50027	Freehold
62SP146089	Freehold
61SP146089	Freehold
3RP7485	Freehold
2RP7469	Lands Lease
2RP7463	Lands Lease
2RP205146	Freehold
2RP7479	Lands Lease
2RP14244	Lands Lease
4RP14244	Lands Lease
6RP14244	Lands Lease
8RP14244	Lands Lease
2RP7478	Lands Lease
1AP3377	Lands Lease
JRP103164	Easement

LOTPLAN	TENURE
2RP7477	Lands Lease
2RP7467	Freehold
3RP7468	Freehold
FRP152994	Easement
ERP153406	Easement
8RP208616	Freehold
30RP212415	Freehold
1RP114861	Freehold
2RP7482	Lands Lease
1RP30861	Freehold
22SP125605	Freehold
19SP125605	Freehold
1AG4028	Freehold
4RP208562	Freehold
46MH426	Freehold
2718A341307	Freehold
1789A34919	Freehold
7RP212353	Freehold
2RP212352	Freehold
6RP203202	Freehold
2RP14241	Lands Lease
4RP14241	Lands Lease
2RP14242	Lands Lease
71SP104975	Lands Lease
72SP104975	Lands Lease
92SP104978	Lands Lease
2RP37132	Lands Lease
2RP37103	Lands Lease
5RP37103	Lands Lease
22SP124720	Lands Lease
114SP113906	Lands Lease
113SP113906	Lands Lease
112SP113906	Lands Lease
99DY182	Freehold
111DY182	Freehold
73DY153	Freehold
97DY181	Freehold
44AG109	Freehold
2RP55460	Freehold
1SP260880	Freehold
2SP260880	Freehold
1SP136970	Freehold
3SP136970	Freehold
3RP47093	Freehold
3761DER34129	Freehold
3150DER3484	Freehold
43AG109	Freehold
88MH16	Freehold
151MA3433	Freehold

LOTPLAN	TENURE
76MA3478	Freehold
121MH94	Freehold
245CP902340	Freehold
78MA3480	Freehold
77MA3426	Freehold
371SP116435	Lands Lease
372SP116435	Lands Lease
2RP14272	Lands Lease
5RP14253	Lands Lease
2RP14253	Lands Lease
2RP14248	Lands Lease
6RP14245	Lands Lease
4RP14245	Lands Lease
2RP14245	Lands Lease
5RP14231	Lands Lease
2RP14250	Lands Lease
91SP104978	Lands Lease
1RP14231	Lands Lease
81SP104976	Lands Lease
82SP104976	Lands Lease
121SP104977	Lands Lease
102SP113905	Lands Lease
2RP37133	Lands Lease
103SP113905	Lands Lease
1RP53346	Freehold
4RP220762	Freehold
1AG4150	Freehold
3RP215320	Freehold
4RP215320	Freehold
1RP215319	Freehold
2RP215357	Freehold
2RP215383	Freehold
42RP24623	Freehold
2RP24614	Freehold
1RP24606	Freehold
2RP24615	Freehold
GAP9310	Easement
2AG3200	Freehold
3AG3669	Freehold
863A34637	Freehold
AAP19429	Lands Lease
10D3691	Lands Lease
33SP294200	Freehold
2RP839421	Freehold
1RP36568	Freehold
2RP172596	Freehold
4RP16058	Lands Lease
2RP16058	Lands Lease
2RP16081	Lands Lease

LOTPLAN	TENURE
EMTAG2891	Easement
HCP902066	Easement
9RP37102	Lands Lease
4RP37102	Lands Lease
121SP113907	Lands Lease
122SP113907	Lands Lease
202SP124721	Freehold
201SP124721	Lands Lease
131SP113908	Lands Lease
132SP113908	Lands Lease
6RP37102	Lands Lease
1PER6382	Lands Lease
2RP197967	Freehold
6MH364	Freehold
155MA3432	Freehold
10MH737	Freehold
2RP145435	Freehold
107MH808	Freehold
47MH435	Freehold
9MH365	Freehold
5SP194159	Freehold
1SP204014	Freehold
1RP100482	Freehold
1RP87074	Freehold
27MH367	Freehold
29MH367	Freehold
30MH562	Freehold
51MH562	Freehold
2RP100482	Freehold
169MH786	Freehold
1RP27437	Freehold
31SP118699	Freehold
ASP216725	Easement
2RP110474	Freehold
3RP24614	Freehold
1RL2728	Lands Lease
26RP24609	Freehold
1RP194766	Freehold
2RP155499	Freehold
2RP86319	Freehold
10RP47857	Freehold
5SP158473	Freehold
6SP158473	Freehold
17D3590	Freehold
2RP49965	Freehold
12SP285307	Freehold
11SP285307	Freehold
LSP131547	Easement
1SP166689	Freehold

LOTPLAN	TENURE
3SP166689	Freehold
5SP166689	Freehold
7SP126840	Freehold
8SP126840	Freehold
93MH819	Lands Lease
273MA3478	Freehold
60MA3456	Freehold
413SP119196	Lands Lease
143CP902340	Freehold
71MA3479	Freehold
20SP120712	Lands Lease
2MH784	Freehold
65MA3454	Freehold
66MA3454	Freehold
67MA3454	Freehold
1RP147969	Freehold
64MA3456	Freehold
69MA3454	Freehold
1MH171	Freehold
70MA3454	Freehold
74MA3455	Freehold
73MA3455	Freehold
1RL1245	Lands Lease
72SP173128	Freehold
75MA3455	Freehold
8MH286	Freehold
2RP147969	Freehold
2SP214649	Freehold
2SP109525	Freehold
171MH75	Freehold
124MH79	Freehold
102MH643	Freehold
128MA3430	Freehold
1RP156957	Freehold
2RP156957	Freehold
91MH79	Freehold
33MA34110	Freehold
61MH84	Freehold
62MA3456	Freehold
352SP116434	Lands Lease
79MH94	Freehold
7MH286	Freehold