CHAPTER 8

Land Use and Tenure

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

IR_1536

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

Contents

Figures

Tables

8. Land Use and Tenure

8.1 Summary

This chapter describes the land use and tenure aspects of the Gowrie to Helidon Project (the Project), to identify the Project's potential impacts and mitigation measures.

The Project generally follows the Gowrie to Grandchester future state transport corridor under the Public Passenger Transport Guideline (No. 1) 2019 made under the *Transport Planning and Coordination Act 1994* (Qld) (TPC Act) in 2005. This aligns with the direction from the State to follow the future state transport corridor. Further, the Project design is for freight but does not preclude high-speed passenger services at a future date along this corridor. The Project has also been co-located with Queensland Rail's (QR) West Moreton System rail corridor for approximately 5.6 kilometres (km).

Excluding untenured land, including waterways and road reserves, the Project will directly impact 151 land parcels, 94 land parcels within the Toowoomba Regional Council (TRC) local government area (LGA) and 57 land parcels within Lockyer Valley Regional Council LGA, along with 41 interests (e.g. easements, strata parcels, etc.). Some of the land parcels have been acquired by the Queensland Department of Transport and Main Roads (DTMR), including land for the Toowoomba Bypass or owned by QR.

Of the 151 land parcels, 82 land parcels (~54 per cent) are located within the Gowrie to Grandchester future state transport corridor, with an additional 10 land parcels within the West Moreton System rail corridor. There are ten land parcels located in both the Gowrie to Grandchester future state transport corridor and the West Moreton System rail corridor.

Of the 151 land parcels, 109 will be acquired (full or partial) for the purposes of railway land or road infrastructure, with an additional 30 land parcels subject to volumetric resumption (i.e. no change to tenure of the overlaying land or land use) for the purposes of the Toowoomba Range Tunnel. An additional 12 land parcels are required for construction purposes only. The acquisition process will be undertaken by the constructing authority through agreed negotiation or resumption for the freehold land parcels (123). State land (28, excluding roads and waterways) parcels will be managed under the *Land Act 1994* (Qld) (Land Act).

Land use in proximity to the Project is predominantly mapped as grazing land, combined with other agricultural land uses including cropping; irrigated seasonal horticulture; and other land uses, such as residential; other minimal use (consisting of areas of land that are largely unused, e.g. residual native vegetation); and services. The Project also traverses infrastructure, including highways, main roads, local roads, gas pipelines and other utilities.

Notable land uses in proximity to the Project include areas where there are recreational and commercial uses as well as land uses of State significance, including the Wetalla Wastewater Treatment Plant, Baillie Henderson Hospital, Harlaxton Key Resource Area, Withcott Quarry, Withcott Seedlings and the Helidon Magazine Reserve.

Land tenure within the Project disturbance footprint is predominantly freehold, where greenfield rail corridor is required, and lands lease where using the existing West Moreton System rail corridor. The Project is also located within one native title claim area. This claim, which is registered for the Yuggera Ugarapul People, is yet to be determined by the National Native Title Tribunal.

Following the identification of existing land use and tenure within the land use study area (defined in Section 8.5.1), an impact assessment process was implemented to assess the degree of any impacts and to identify measures to mitigate or manage potential impacts on land use and tenure. Potential impacts to land use and tenure include:

- Change in tenure and loss of property, as discussed in Section 8.7.1
- Use of land subject to a native title claim, as discussed in Section 8.7.1.1
- Change in land use, including the sterilisation of agricultural land and disruption to agricultural practices, as discussed in Section 8.7.2.1
- Impacts to accessibility within the land use study area, including impacts to the existing road network and to property access, as discussed in Section 8.7.3
- Disruption to services and utilities, as discussed in Section 8.7.4
- Potential to generate a number of beneficial impacts, including supporting future industries, improving access to and from regional markets, and acting as a catalyst for development in the land use study area, as discussed in Section 8.7.5.

Where adverse impacts cannot be avoided, the extent of impacts will be carefully managed through the implementation of mitigation measures that will reduce remaining impacts over the life of the Project. Potential mitigation measures for land use and tenure impacts are outlined in Section 8.8.

Given the alignment predominantly follows the existing West Moreton System rail corridor and the Gowrie to Grandchester future state transport corridor, the Project is generally consistent and compatible with the intent of State and regional land use and infrastructure planning for the area. This includes the State Planning Policy and ShapingSEQ (Department of Infrastructure, Local Government and Planning (DILGP), 2017a), which identifies the Inland Rail Program as key region-shaping infrastructure that supports the vision for South East Queensland (SEQ).

8.2 Scope of chapter

The purpose of this chapter is to assess potential impacts of the Project on land use and tenure within the land use study area and to identify appropriate mitigation measures to address such impacts. The land use study area is defined in Section 8.5.1.

This chapter identifies the land use and tenure aspects relevant to the Project and, in doing so, addresses the following:

- The relevant legislative context for land use and tenure for the Project (refer Section 8.4)
- The existing land tenure for properties within the land use study area, including those required for construction (refer Section 8.6.1)
- The existing land use values within the land use study area (refer Section 8.6.2)
- The likely and planned future land use environment within the land use study area (refer Section 8.6.4)
- The potential impacts of the Project on tenure within the land use study area (refer Section 8.7.1)
- The potential impacts of the Project on existing and future land uses within the land use study area (refer Section 8.7.2)
- Mitigation measures relevant to land use and tenure issues (refer Section 8.8)
- Assessment of consistency with the provisions of the relevant land use planning instruments (refer Section 8.9)
- A summary of land tenure and land use impacts (refer Section 8.11).

8.3 Terms of Reference requirements

This chapter addresses the relevant land use and tenure Terms of Reference (ToR) for the Project, as summarised in Table 8.1. Compliance of the EIS against the full ToR is documented in Appendix B: Terms of Reference Compliance Table.

TABLE 8.1: TERMS OF REFERENCE REQUIREMENTS

	Terms of Reference requirements	Where addressed in the Chapter and the broader EIS
Existing Environment		
10.5	Describe and illustrate specific information about the proposed project including the precise location of the preferred alignment in relation to designated areas, such as transport corridors, protected areas and areas of regional interest and agricultural land uses identified in the Queensland Agricultural Land Audit. Consideration should also be given to Key Resource Areas (KRAs) petroleum and gas pipelines, explosive magazines (storage and manufacturing facilities) abandoned mines and mining (exploration and production) tenures.	Section 8.6, Figure 8.3a–e, Figure 8.4a–e, Figure 8.5a–e and Figure 8.6a–e
10.10	Describe the planning schemes, regional plans, state policies and government priorities for the preferred alignment including those that have been publicly notified. This description should include those instruments currently under development that may be implemented within the project's planning and construction timeframes.	Sections 8.4 and 8.9

Terms of Reference requirements		Where addressed in the Chapter and the broader EIS
11.72.	Detail the existing land use values for all areas associated with the preferred alignment. Discuss the compatibility of the Project with land that includes the proposed alignment and surrounding land which will be impacted by the Project. The discussion should include: a) Existing and proposed land uses in and around the preferred alignment, referring to regional plans and the local government planning schemes b) State interests identified in the State Planning Policy (SPP) (e.g. KRA No. 8: Harlaxton)) c) Any land characteristics that influenced the choice of the preferred alignment d) Any explanation of the process for compensation for landholders directly impacted by the Project e) A description and illustration of any tenures overlying and adjacent to the preferred alignment, and any to be applied for as part of this Project and the legal implications and requirements of this tenure f) An analysis of the agricultural land uses based on the Agricultural Land Audit g) Any petroleum and gas pipeline licence tenures and resource tenure holders within the vicinity of the proposed corridor	a) Section 8.6.2 b) Section 8.6.2 c) Section 8.6.2 d) Section 8.8.1 e) Section 8.6.1 f) Section 8.6.2.1 g) Sections 8.6.1.3 and 8.6.1.4
Impact Assessment		
11.73.	Describe the potential for impact on existing holders of resource tenures, including consideration to safety and resource sterilisation where appropriate.	Sections 8.7.1 and 8.7.2
11.74.	Identify tenure required for the Project to proceed, including proposed easements, leases or licences including the timing of such acquisitions or tenure changes	Section 8.7.1
11.75.	Describe impacts on existing uses of State land and uses either allowed by current tenures or publicly proposed by government at the time of preparation of the EIS	Section 8.7.1
11.76.	Discuss the proposal in the context of the applicable Regional Plan and local planning schemes	Section 8.9
11.77.	Describe the potential impact of the construction and operation of the Project on existing land uses and land uses permitted under the relevant planning scheme along the preferred alignment and adjacent areas including impacts on Council assets and KRAs. Discussion in relation to KRAs (particularly KRA No. 8: Harlaxton) should: a) Identify the extent of the KRA and the impacts the Project would have on utilisation of its resources b) Identify and discuss any new or planned quarry and processing expansions to KRA No. 8 and the impacts on rail infrastructure and operations c) Quantify the future supply of resources in the region if the expansions are prevented by the Inland Rail Project d) Identify the location and nature of extractive processes including associated equipment, methods and techniques and how these might impact on the rail infrastructure and operation describe the geological properties that may influence ground stability (including seismic activity), and how this might comprise rail infrastructure and operation short and long-term time horizons e) Describe the location, volume, tonnage and quality of natural resources present and which will be potentially impacted by the Project	a) Section 8.6.2.2 b) Sections 8.6.2.2 and 8.7.2.4 c) Sections 8.7.2.3 and 8.7.2.4 d) Section 8.6.2.1 e) Section 8.6.2.2
Mitigation Measures		
11.78.	Identify the measures that would be used to avoid or mitigate any impact on land values, including the management of existing infrastructure remaining on reconfigured land parcels	Section 8.8.1.1
11.79.	Provide details of measures to be undertaken to avoid, minimise and mitigate identified impacts on KRA No. 8.	Section 8.8.2.2
Native Title		
11.80.	Identify existing and potential Native Title rights and interests possibly impacted by the proposed Project and describe how those impacts will be managed	Sections 8.6.1.5, 8.7.1.3 and 8.8.1.2

8.4 Legislation, policies, standards and guidelines

The legislative requirements relevant to the Project are outlined in Chapter 3: Project Approvals. The Commonwealth, State and local legislation, land use planning frameworks, policies, plans and guidelines that regulate and guide land use planning and tenure within the land use study area are outlined in Table 8.2.

TABLE 8.2: LAND USE AND TENURE REGULATORY CONTEXT

Legislation, policy or guideline	Relevance to the Project
Commonwealth legislation	
Native Title Act 1993 (Cth) (NT Act)	The NT Act establishes a framework for the protection and recognition of native title, including by conferring on Indigenous people who hold (or claim to hold) native title rights and interests in respect of any land or waters, the right to be consulted on, and in some cases to participate in, decisions about activities proposed to be undertaken on the land (or in the waters). The NT Act provides for the validation of past Commonwealth acts and makes the same provision for each of the states and territories. The NT Act also establishes the processes involved in having native title recognised and the roles and responsibilities of the different bodies involved in this process. The NT Act adopts the common law definition of 'native title' and establishes the National Native Title Tribunal. Native title interests and rights may exist within the study area over land that is unallocated State or Crown land; some State forests, national parks, public reserves; some leases, such as non-exclusive pastoral or agricultural leases; waters that are not privately owned; as well as on certain land held by, or for, Aboriginal people or Torres Strait Islanders. The NT Act prescribes statutory processes to enable State and Territory governments to grant freehold and other interests in land subject to native title to private entities, subject to native title being first addressed either by agreement with the relevant native title parties or by compulsory process. Tenure within the Project disturbance footprint is predominately freehold where native title rights and interests have been extinguished, except in the instance where freehold tenure has been invalidly granted. There is one current native title claim, the Yuggera Ugarapul People claim (QC2017/005), which has been accepted for registration, but yet to be determined within the Project's EIS investigation corridor.
State legislation	
Acquisition of Land Act 1967 (Qld) (AL Act)	The AL Act provides the process for the acquisition and resumption of land by a constructing authority. The AL Act provides for the taking of an interest in land for a purpose under Schedule 1 of the AL Act. Schedule 1 Part 1 includes purposes relating to transportation, including railways and related purposes. The acquisition of land and interests in land will be required for the construction and operation of the Project, including aboveground and volumetric land parcels. The acquisition of land and interests will be through agreed negotiation by ARTC or undertaken by a constructing authority (yet to be determined).
Electricity Act 1994 (Qld) (Electricity Act)	The Electricity Act is the main legislation governing Queensland's electricity industry and provides a framework for the generation, transmission and distribution of electricity in Queensland. Under the Electricity Act, the Department of Energy and Public Works issues generation, transmission and distribution authorities. The Project interfaces with existing electricity infrastructure and easements operated by Ergon Energy Queensland and Powerlink. This includes the proposed rail alignment crossing under or over infrastructure, new access tracks through easements, and altering current access roads.
Environmental Protection Act 1994 (Qld) (EP Act)	The EP Act is Queensland's overarching environmental legislative framework for the protection and management of environmental values. The EP Act regulates activities that will, or may have the potential to, cause environmental harm and prescribes several mechanisms to ensure the objectives of the Act are met, including the provision for authorising Environmentally Relevant Activities (ERAs). The Project traverses, and is in proximity to, land where ERAs prescribed under the EP Act are being undertaken.

Legislation, policy or guideline	Relevance to the Project
Land Act 1994 (Qld) (Land Act)	The Land Act prescribes the framework for the allocation of non-freehold land tenure and its subsequent management. The Land Act is administered by Department of Resources and regulates the management of State land in Queensland for the benefit of the people, by having regard to seven key principles: sustainability, evaluation, development, community purpose, protection, consultation and administration. State land and local roads are generally managed under the Land Act. The Project will require access to State Land (including local roads) for construction and operation.
Mineral Resources Act 1989 (Qld)	The *Mineral Resources Act 1989* provides the framework for exploration, development and mining tenures. Under the *Mineral Resources Act 1989* the following mineral or coal authorities can be granted (in order of ascending hierarchy): ▸ Prospecting permits ▸ Exploration permits ▸ Mineral development licences ▸ Mining claims ▸ Mining leases. The Project does not impact on any mineral resource interests or areas where coal or mineral exploration permits have been granted under the *Mineral Resources Act 1989.*
Native Title (Queensland) Act 1993 (Qld)	Consistent with the NT Act, the *Native Title (Queensland) Act 1993* provides for the validation of certain historic acts done in Queensland that were invalidated because of the existence of native title. The *Native Title (Queensland) Act 1993* confirms that particular acts previously done in Queensland have resulted in the extinguishment of native title. The *Native Title (Queensland) Act 1993* was also developed to ensure that Queensland law is consistent with standards set by the Commonwealth NT Act for future dealings affecting native title. Tenure within the Project disturbance footprint is predominantly freehold where, pursuant to the *Native Title (Queensland) Act 1993*, native title rights have been extinguished, except in the instance that freehold tenure has been invalidly granted. The Project disturbance footprint is subject to active and potential native title claims and contains lands where registered Aboriginal parties can claim native title. The Project disturbance footprint traverses State land, including reserves and waterways where native title is unlikely to have been extinguished.
Petroleum and Gas (Production and Safety) Act 2004 (Qld)	Several different authorities for petroleum and gas exploration and production activities in Queensland are regulated under the *Petroleum and Gas (Production and Safety) Act 2004* (Qld). Petroleum and gas authorities are granted for: ▸ Exploration ▸ Production ▸ Infrastructure development ▸ Information gathering. The Project traverses infrastructure regulated under the *Petroleum and Gas (Production and Safety) Act 2004* (Qld), being land subject to a petroleum pipeline licence (PPL)—the Roma Brisbane Gas Pipeline (PPL 2).

Legislation, policy or guideline	Relevance to the Project
Planning Act 2016 (Qld) (Planning Act)	The purpose of the Planning Act is to establish an efficient, effective, transparent, integrated, coordinated and accountable system of land use planning, development assessment and related matters that facilitate the achievement of ecological sustainability. The Planning Act establishes a hierarchy of State and local planning instruments being: ▸ State planning policies (including temporary policies) ▸ Regional plans ▸ Planning schemes ▸ Temporary local planning instruments ▸ Planning scheme policies. The coordinated project declaration for the Project under the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act) does not exempt ARTC from the need to obtain relevant development approvals or infrastructure designation under the Planning Act. Development for the construction of transport infrastructure, where the infrastructure is 'government supported transport infrastructure' is exempt from assessment under a local government planning scheme by Schedule 6, Part 5, Section 26(2) of the Planning Regulation 2017 (Qld).
Stock Route Management Act 2002 (Qld)	The *Stock Route Management Act 2002* (Qld) provides for stock route network management. Under the Act, a stock route means a road or route ordinarily used for travelling stock or declared under regulation to be a stock route. A stock route has no separate title or tenure from the underlying road reserve, and the same roads are used for walking and agisting stock and vehicular transport. The Land Act and the *Transport Infrastructure Act 1994* (Qld) also include relevant provisions for stock routes and associated grazing access. The Project does not traverse any declared stock routes.
Transport Infrastructure Act 1994 (Qld) (TI Act)	The TI Act provides a framework for integrated planning and the efficient management of transport infrastructure. The objectives of the TI Act are to allow the State government to have a strategic overview of the provision and operation of all transport infrastructure. Chapter 7 of the TI Act prescribes the Minister's powers with respect to rail transport infrastructure, with Section 242 giving the Minister the power, by gazette notice, to declare land as future railway land. Following approval of the Project, the Project will be declared as future railway land under the TI Act.
Transport Planning and Coordination Act 1994 (Qld) (TPC Act)	The TPC Act is the primary legislation relating to transport in Queensland. The TPC Act aims to achieve transport effectiveness through strategic planning and management of transport services so as to improve Queensland's economic, trade and regional development performance, and the quality of life of Queenslanders. For the purposes of the State Planning Policy, a State transport corridor and a future state transport corridor is defined as an active transport corridor and a future transport corridor under a guideline made pursuant to the TPC Act. The Project represents a significant element of transport infrastructure, which will interact with Queensland's existing transport network of rail, State-controlled roads and local government roads. The Project also generally follows the Gowrie to Grandchester future state transport corridor under the Public Passenger Transport Guideline (No. 1) 2019 made under the TPC Act. This aligns with the direction from the State to follow the future state transport corridor.
Land use planning frameworks, strategies and statutory guidelines	
Darling Downs Regional Plan (Department of State Development, Infrastructure and Planning, 2013a)	The *Darling Downs Regional Plan* is the regional plan for the Darling Downs region and came into effect in October 2013. The *Darling Downs Regional Plan* provides the strategic direction and policies to deliver regional outcomes that align with the State's interests in planning and development. The Project is partially located within the Darling Downs Region, of which *the Darling Downs Regional Plan* applies as the relevant statutory regional plan. Details of the Project's consistency with the *Darling Downs Regional Plan* is provided in Section 8.9.2.

Legislation, policy or guideline	Relevance to the Project
Proposed Lockyer Valley Planning Scheme	The Project is partially located within the Lockyer Valley Regional Council (LVRC) LGAs. Under transitional arrangements for councils that were amalgamated as part of the 2008 Queensland local government report, the former Gatton and Laidley Shires were amalgamated to form the Lockyer Valley LGA under the jurisdiction of the LVRC. The Lockyer Valley LGA is presently subject to the provisions of three separate planning schemes: ▸ Gatton Shire Planning Scheme 2007 (LVRC, 2007) ▸ Laidley Shire Planning Scheme 2003 (LVRC, 2003) ▸ Grantham Reconstruction Area—Development Scheme (Queensland Reconstruction Authority, 2011). LVRC resolved to make a new Lockyer Valley Planning Scheme under the Planning Act in November 2017. This planning scheme is to replace the existing planning schemes that apply to the former Gatton Shire and Laidley Shire within the current Lockyer Valley LGA. According to LVRC, the proposed Lockyer Valley Planning Scheme has been prepared and is being reviewed by the State government. Following State government review and approval, public consultation on the scheme will be undertaken. There is no proposed date for the adoption of the planning scheme. In accordance with Schedule 6, Part 5, Section 26(2) of the Planning Regulation 2017, development for the construction of transport infrastructure, where the infrastructure is government-supported transport infrastructure, cannot be made assessable by local categorising instruments. Consequently, the provisions of the proposed LVRC planning scheme will not apply to the Project.
Gatton Shire Planning Scheme 2007 (LVRC, 2007)	The Project is located within part of the LVRC LGA, formerly the Gatton Shire. The *Gatton Shire Planning Scheme 2007* is the primary planning document for land located within the former Gatton Shire. In accordance with Schedule 6, Part 5, Section 26(2) of the Planning Regulation 2017, development for the construction of transport infrastructure, where the infrastructure is government-supported transport infrastructure, cannot be made assessable by local categorising instruments. Consequently, the provisions of the *Gatton Shire Planning Scheme 2007* do not apply to the Project. Notwithstanding this, the zoning intent for the area, as determined by the *Gatton Shire Planning Scheme 2007*, has been taken into consideration when determining the impacts of the Project on future land uses in the area. Details of the zoning intent of the land use study area is provided in Section 8.6.4.1.
Toowoomba Regional Planning Scheme 2012 (TRC, 2012)	The Project is located within part of the TRC LGA. The *Toowoomba Regional Planning Scheme* is the primary planning document for land located within the TRC LGA. In accordance with Schedule 6, Part 5, Section 26(2) of the Planning Regulation 2017, development for the construction of transport infrastructure, where the infrastructure is government-supported transport infrastructure, cannot be made assessable by local categorising instruments. Consequently, the provisions of the *Toowoomba Regional Planning Scheme* do not apply to the Project. Notwithstanding this, the zoning intent for the area, as determined by the Toowoomba Regional Planning Scheme, has been taken into consideration when determining the impacts of the Project on future land uses in the area. Details of the zoning intent of the land use study area is provided in Section 8.6.4.1.
West Toowoomba land use investigations (TRC, 2016b)	The West Toowoomba land use investigation plan is a TRC non-statutory planning policy document to guide future growth and development in West Toowoomba for the next 30 years. The Project is located along the northern boundary of the land use investigation study area at Charlton.

Legislation, policy or guideline	Relevance to the Project
South East Queensland Regional Plan (ShapingSEQ) (Department of Infrastructure, Local Government and Planning (DILGIP), 2017a)	In Queensland, regional planning seeks to provide long-term strategic direction to support the local growth and development of the State's regions as well as the protection of natural resources, having regard to the issues, challenges and opportunities that are important and specific within regional areas. Regional planning is regulated by the Planning Act, the *Regional Planning Interest Act 2014* (Qld) and associated regulations. ShapingSEQ is the regional plan for the SEQ region and was given effect on 11 August 2017. ShapingSEQ provides the regional framework for growth and sets a planning direction for sustainable growth, global economic competitiveness and high-quality living. The SEQ region includes the LGAs of Toowoomba (part only) and Lockyer Valley, where the Project is located, and to which ShapingSEQ applies as the relevant statutory regional plan. The Project is also identified as a major enabling infrastructure for the SEQ region. It is noted that a small area (2,200 m^2) of the Project disturbance footprint is located outside of the ShapingSEQ area. Details of the Project's consistency with the ShapingSEQ are provided in Section 8.9.1.
State Planning Policy (SPP) (July 2017)	The SPP is a key component of the Queensland land use planning system, which articulates the Queensland Government's 17 State interests in land use planning and development across the following five key themes: ▸ Liveable communities and housing ▸ Economic growth ▸ Environment and heritage ▸ Safety and resilience to hazards ▸ Infrastructure. The SPP is a statutory instrument and requires that State interests be integrated into local government planning schemes. Some State interests in the SPP include assessment benchmarks that apply to certain types of development where a local government planning scheme does not appropriately integrate the relevant state interest. A number of the State interests set out in the SPP are relevant to the Project. Details of the Project's consistency with the SPP is provided in Section 8.9.3.

8.5 Methodology

The following tasks were undertaken to describe the existing and future land use environment and tenure arrangements within the land use study area:

- Determination of the land use study area, as defined in Section 8.5.1, to clearly define the area of assessment relating to land use and tenure
- Identification, review and mapping of the existing tenure of the land use study area through a review of Department of Resources (formerly Department of Natural Resources, Mines and Energy (DNRME)) Digital Cadastre Database mapping
- A land use assessment (desktop and site verification) to review, identify and map existing land uses, and the approximate distance of the Project activities to these uses, including:
  - Land uses based on the Queensland Land Use Mapping Program (QLUMP) (Queensland Government, 2020a). Verification of these land uses was also undertaken by means of a Project drive-through undertaken 15 August 2018 to 16 August 2018, combined with consultation feedback.
  - Agricultural uses, including land identified by the *Queensland Agricultural Land Audit* (Department of Agriculture, Fisheries and Forestry (DAFF), 2013a and 2017) to identify current and future agricultural production in Queensland; any areas of regionally significant farmland; areas used for cropping, grazing and/or horticulture; stock routes; and agricultural infrastructure
  - Protected and sensitive land uses, including conservation and forests reserve; national parks; State forests; and native title
  - KRAs; exploration and mining leases and licences; petroleum and gas resource interests

    - Infrastructure, including railways, road reserves, utilities and pipelines
    - Intermodal terminals
    - Notable land uses
    - Other State interests as identified in the SPP.
- Key strategic planning and land use planning provisions of the relevant State and local planning instruments to identify the future land use planning intent
- Identification of current planned development activity and approved development plans over the last five years for the land use study area including but not limited to:
    - Approved and planned development activity within the TRC and LVRC LGAs (e.g. InterLinkSQ and Defence Housing Authority Mount Lofty Development)
    - Coordinated projects declared under the SDPWO Act
    - Resource projects undergoing EIS assessments under the EP Act
    - Current environmental authorities for ERAs in accordance with the EP Act
    - Development projects undertaken by Economic Development Queensland
    - Declared priority development areas in accordance with the *Economic Development Act 2012* (Qld)
    - Declared State Development Areas in accordance with the SDPWO Act
    - Private infrastructure facilities in accordance with SDPWO Act
    - Infrastructure Australia's Infrastructure Priority List and Australian Infrastructure Plan
    - Queensland Government's *State Infrastructure Plan* (SIP)
    - Queensland Government's Queensland Transport and Roads Investment Program (QTRIP)
    - Queensland regional projects under the Queensland Government Building our Regions infrastructure program and *Transport Infrastructure Development Scheme*
    - Infrastructure designations in accordance with the *Integrated Planning Act 1997* (Qld) (repealed), *Sustainable Planning Act 2009* (Qld) (repealed) and the current Planning Act.
- Revision of landholder and community consultation to understand their feedback on the potential impacts and issues associated with the Project
- Consultation with relevant State and local government agencies, including:
    - TRC in relation to planning provisions and proposed new developments
    - LVRC in relation to planning provisions, proposed new developments and the status of the proposed Lockyer Valley Planning Scheme (currently working with the *Gatton Shire Planning Scheme 2007*)
    - Consultation with utility infrastructure providers, including APT Petroleum/APA Group, Energy Queensland (Energex Ergon Energy), Millmerran Operating Co., NBN Co, New Hope Group, Nextgen, Optus Uecomm, Powerlink QLD, Urban Utilities, Telstra and TRC
- Assessment of potential impacts and constraints to land use and tenure, including an assessment of the Project's consistency with the relevant future land use planning intent for the land use study area
- Identification of opportunities for the Project to support future industry development
- Identification of mitigation measures to minimise impacts to land use and tenure.

The assessment of potential impacts to land use and tenure has been undertaken using the impact methodology detailed in Section 8.5.2.

8.5.1 Land use study area

The land use study area is illustrated in Figure 8.1a-e. This study area adopts the EIS investigation corridor, being a 2 km (approximate) wide study area—1 km (approximate) either side of the proposed rail alignment. The land use study area includes the Project disturbance footprint, which encompasses:

- Permanent disturbance footprint:
  - Within the greenfield corridor (excluding the tunnel), the rail corridor is a minimum of 62.5 m wide, which is a sufficient width to allow operation and maintenance of the Project, including drainage structures and fencing, along with additional land required for infrastructure at the western and eastern tunnel portal areas, and the intermediate ventilation shaft at Cranley.
  - Preservation of an underground corridor of approximately 50 m wide and approximately 28 hectares (ha) in area for the tunnel has also been considered, where applicable (i.e. disturbance calculations for land use, agricultural land and vegetation communities do not include this area as there is no surface disturbance proposed)
  - Within sections of brownfield development, reasonable endeavours have been made to remain within the existing QR rail corridor, widening the corridor only where required to accommodate safe operation of the Project and existing QR operations. The Project has also considered land requirements for the proposed road network changes required to facilitate the Project. The land requirements will be confirmed during the detailed design of the Project.
- Temporary disturbance footprint that includes the following temporary areas required for construction purposes:
  - Five metre buffer areas outside the rail corridor for fencing construction
  - Laydown areas and site offices
  - Construction access roads, where these lie outside the permanent disturbance footprint
  - Utilities works due to relocation/removal of services crossing the rail corridor
  - Erosion and sediment controls, including sediment ponds
  - Works associated with local road realignments and/or the construction of new roads.

It should be noted that the subterranean sections of the Toowoomba Range Tunnel will not result in direct disturbances to existing land uses above the tunnel alignment; however, these properties and associated land uses have been considered as part of this assessment.

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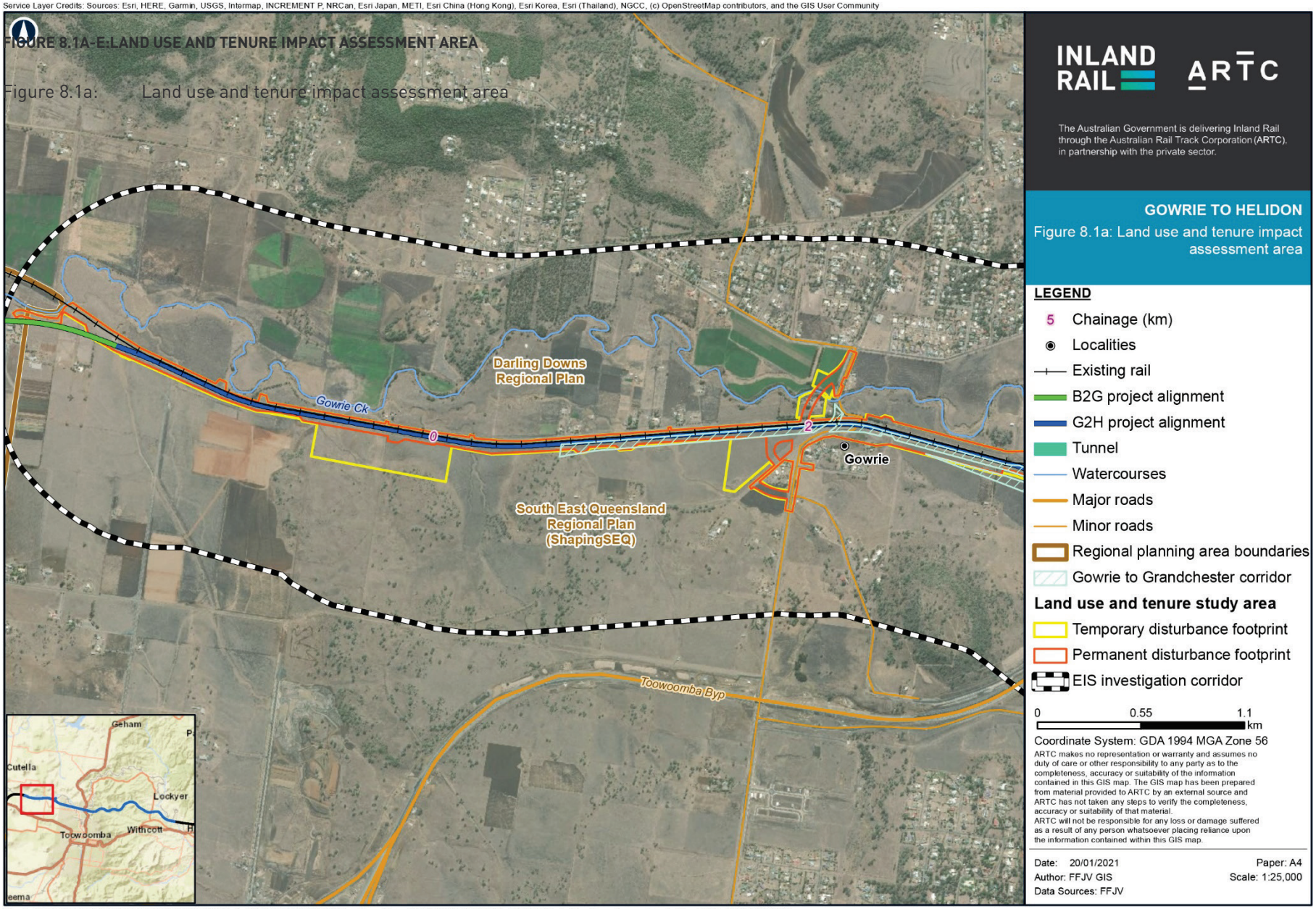

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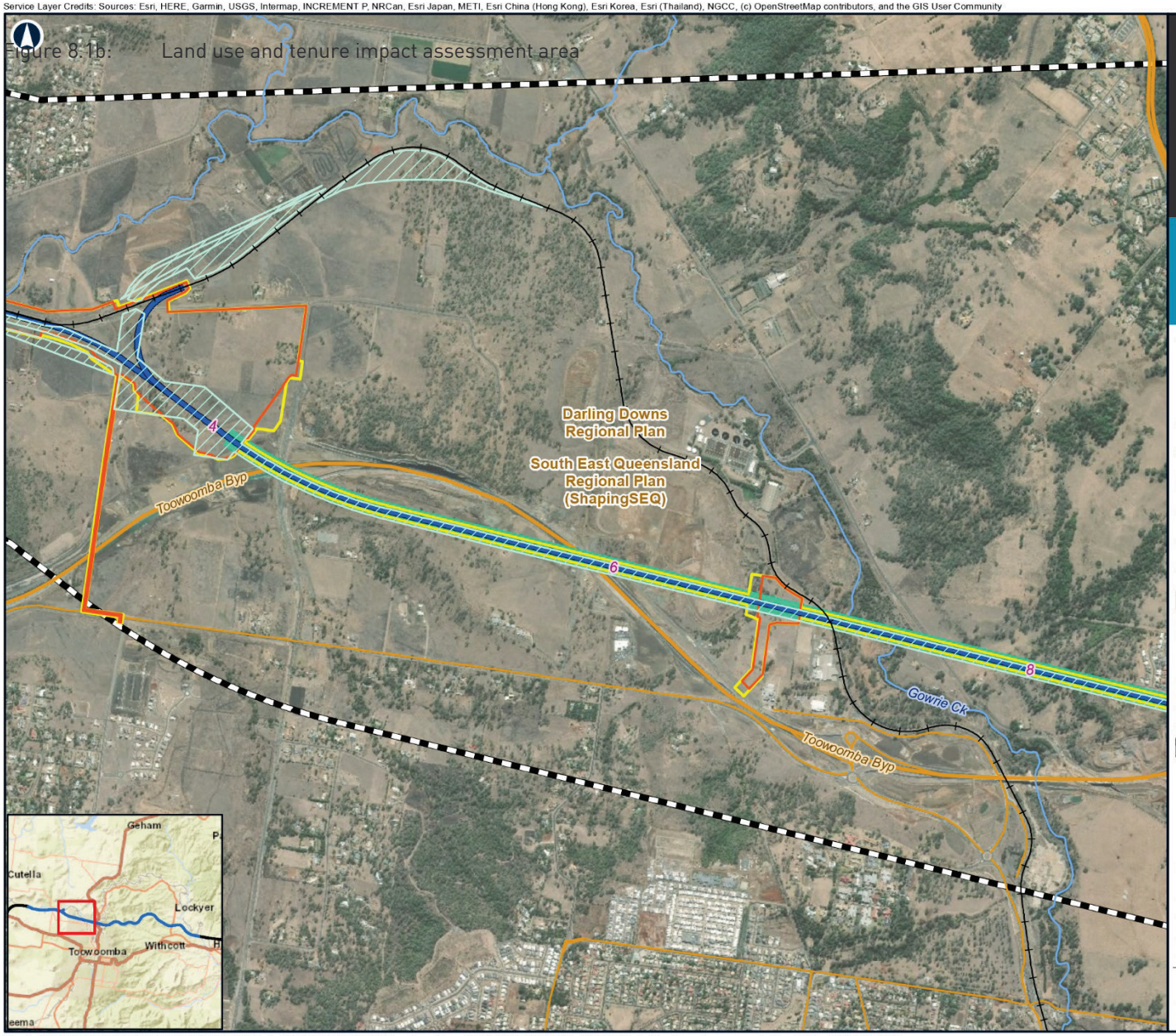
Figure 8.1b: Land use and tenure impact assessment area



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GOWRIE TO HELIDON

Figure 8.1b: Land use and tenure impact assessment area

LEGEND

- 5 Chainage (km)
- Localities
- Existing rail
- G2H project alignment
- Tunnel
- Watercourses
- Major roads
- Minor roads
- Regional planning area boundaries
- Gowrie to Grandchester corridor

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

Date: 20/01/2021
Author: FFJV GIS
Data Sources: FFJV

Paper: A4
Scale: 1:25,000

Map by: DMcP/MF/RB/KG/DTH/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201908121444_Land_use_figures\320-EAP-201908121444_ARTCv2_Fig_8.1_Land_use_tenure_impact_v5.mxd Date: 20/01/2021 09:48

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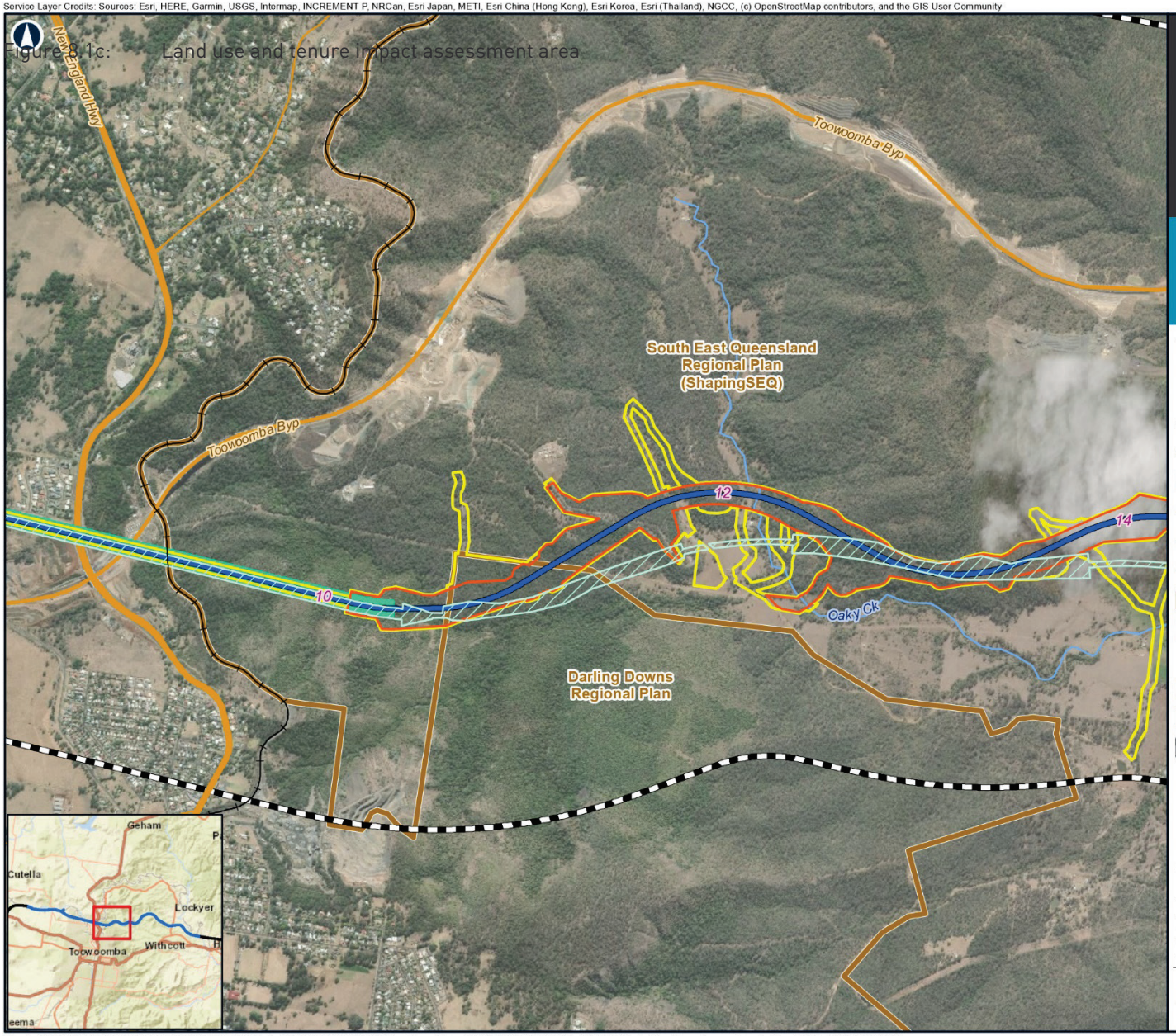
Figure 8.1c: Land use and tenure impact assessment area



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GOWRIE TO HELIDON

Figure 8.1c: Land use and tenure impact assessment area

LEGEND

- 5 Chainage (km)
- Localities
- Existing rail
- G2H project alignment
- Tunnel
- Watercourses
- Major roads
- Minor roads
- Regional planning area boundaries
- Gowrie to Grandchester corridor

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

Date: 20/01/2021 Paper: A4
Author: FFJV GIS Scale: 1:25,000
Data Sources: FFJV

Map by: DMcP/MF/RB/KG/DTH/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201908121444_Land_use_figures\320-EAP-201908121444_ARTCv2_Fig_8.1_Land_use_tenure_impact_v5.mxd Date: 20/01/2021 09:48

Figure 8.1d: Land use and tenure impact assessment area

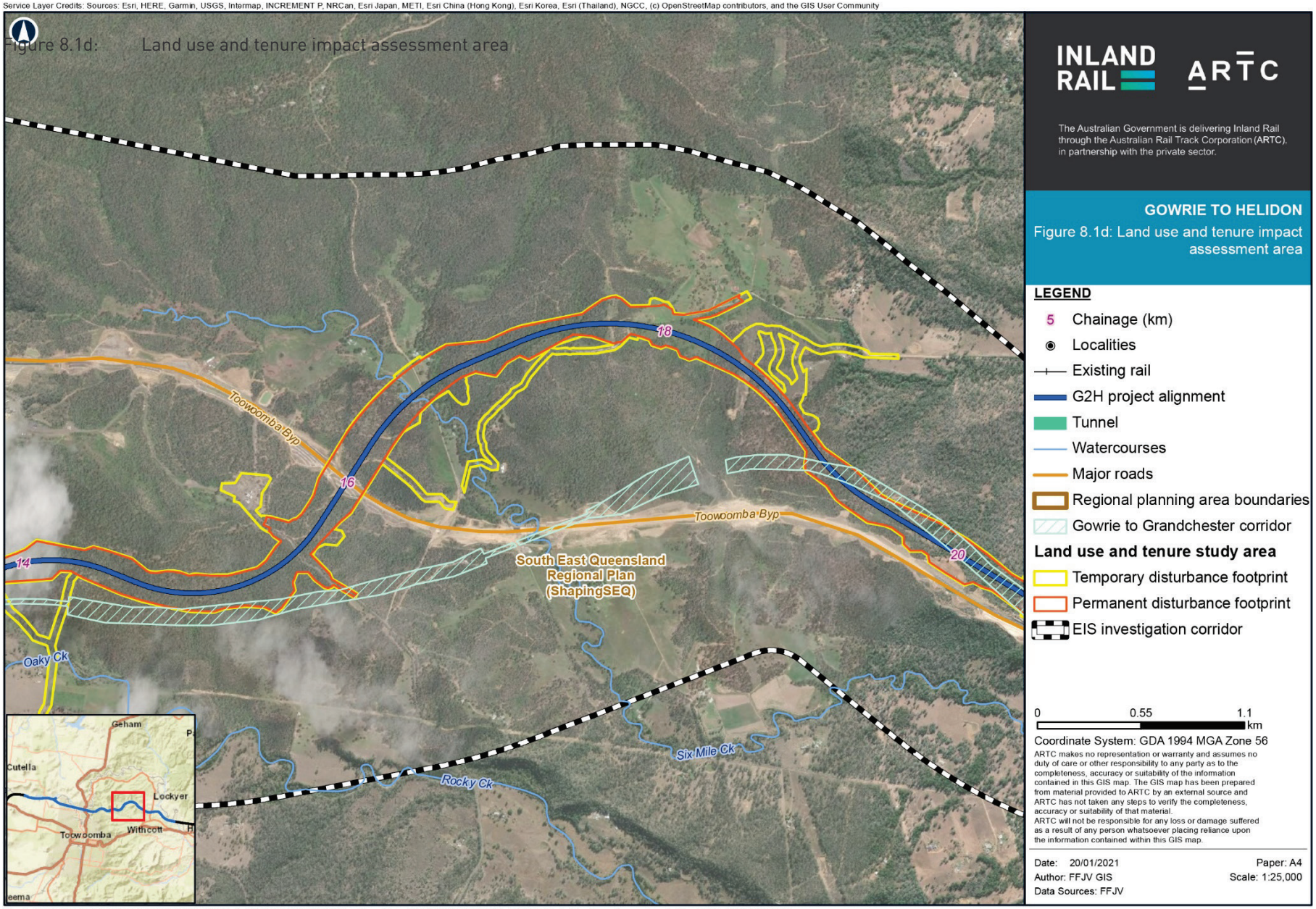

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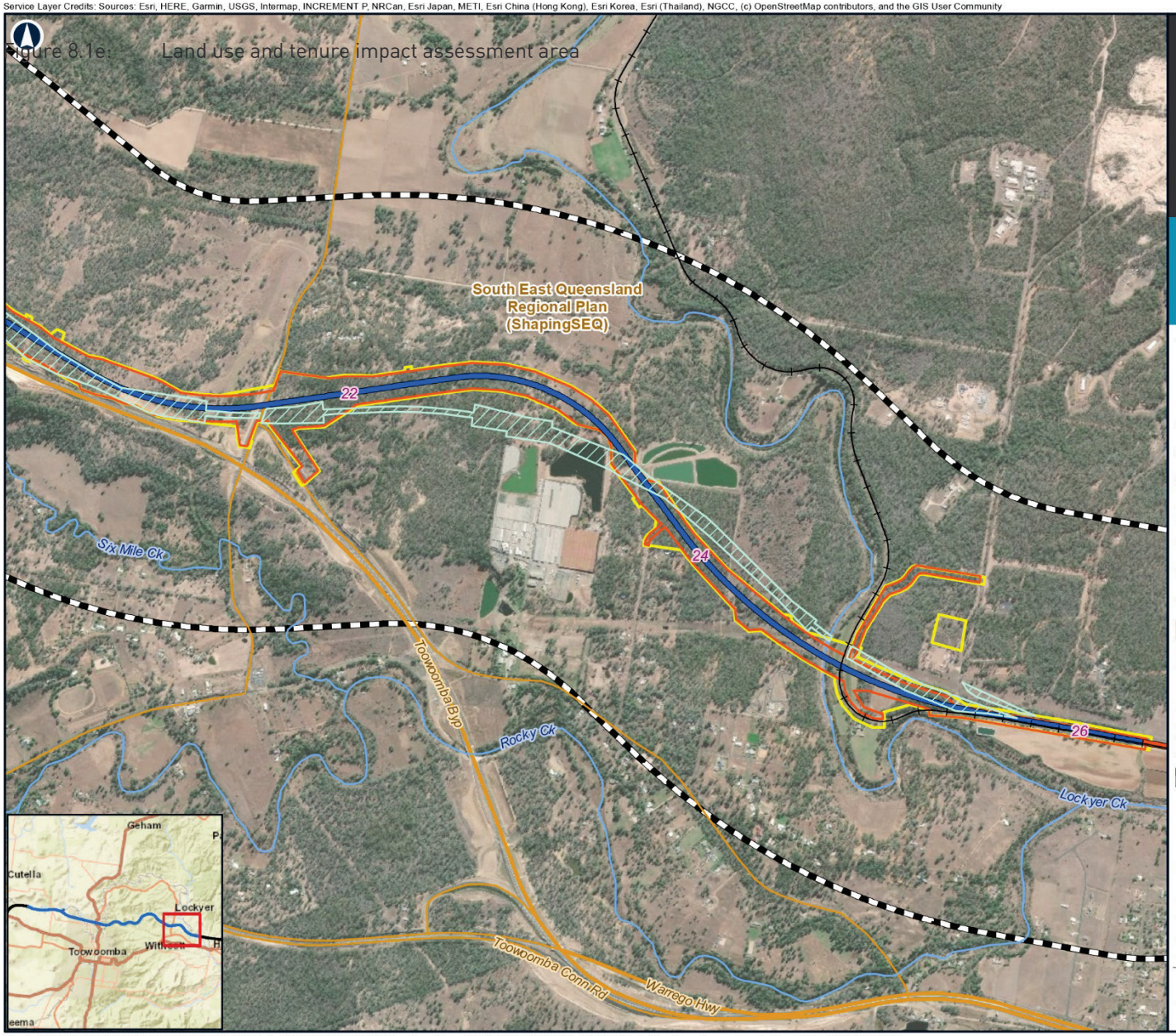
Figure 8.1e: Land use and tenure impact assessment area



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GOWRIE TO HELIDON

Figure 8.1e: Land use and tenure impact assessment area

LEGEND

- 5 Chainage (km)
- Localities
- Existing rail
- G2H project alignment
- H2C project alignment
- Tunnel
- Watercourses
- Major roads
- Minor roads
- Regional planning area boundaries
- Gowrie to Grandchester corridor

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

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Data Sources: FFJV

Map by: DMcP/MF/RB/KG/DTH/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201908121444_Land_use_figures\320-EAP-201908121444_ARTCv2_Fig_8.1_Land_use_tenure_impact_v5.mxd Date: 20/01/2021 09:48

8.5.2 Impact assessment methodology

Chapter 4: Assessment Methodology details the impact assessment methodologies used in this EIS. An impact assessment method has been adopted for the assessment of impacts to land use and tenure (refer Figure 8.2). The impact assessment methodology focuses on assessing the extent of consistency with the land use planning instruments relevant to the land use study area and Project activities.

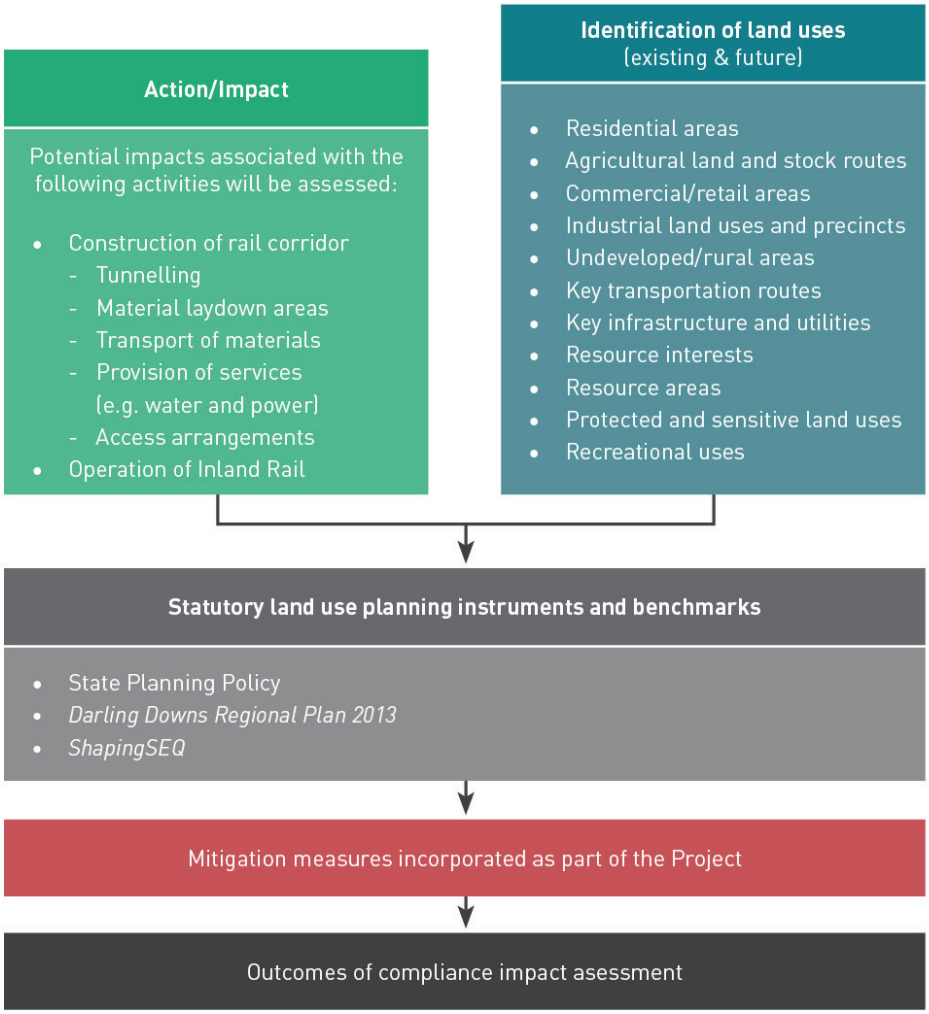

FIGURE 8.2: LAND USE IMPACT ASSESSMENT METHODOLOGY

8.5.3 Data sources

This section details the desktop analysis undertaken to identify existing land uses and land use constraints related to the Project. Details of the relevant database sources, search dates, and the type of information considered for the desktop study are summarised in Table 8.3.

TABLE 8.3: DATABASE AND DOCUMENT REVIEW SUMMARY

Database/data source name	Data type
Boundaries ▸ Local government ▸ Locality	QLD Globe data layers (accessed 29 September 2020) from online database: **qldglobe.information.qld.gov.au**

Database/data source name	Data type
Economy ▸ Resources ▸ Extractive resources – KRA transport route – KRA haulage corridor – KRA transport route separation area – KRA resource/processing area – KRA separation area ▸ Coal resources – Coal resource boundary – Coal resource area	QLD Globe data layers (accessed 29 September 2020) from online database: **qldglobe.information.qld.gov.au**
Environment ▸ Nature refuges ▸ Protected areas under the *Nature Conservation Act 1992* (Qld) and the *Forestry Act 1959* (Qld) ▸ Offset areas.	QLD Globe data layers (accessed 29 September 2020) from online database: **qldglobe.information.qld.gov.au**
Farming ▸ Agricultural land classification ▸ Agricultural land class A, B, C and D ▸ Queensland Agricultural Land Audit Current agriculture – Aquaculture – Cattle feedlot – Forestry plantations – Land-based aquaculture – Pasture production – Piggeries – Poultry farms ▸ Region boundary ▸ Sown pasture ▸	QLD Globe data layers (accessed 29 September 2020) from online database: **qldglobe.information.qld.gov.au** AgTrends Spatial (accessed 29 September 2020) from online database: **qldspatial.information.qld.gov.au/AGTrendsSpatial/**
Imagery and base maps ▸ Imagery	QLD Globe data layers (accessed 29 September 2020) from online database: **qldglobe.information.qld.gov.au**
Planning cadastre ▸ Areas of regional interest: ▸ Priority Living Area ▸ Priority Agricultural Area ▸ Strategic Environmental Area ▸ Strategic Cropping Area ▸ Coordinated projects ▸ Land parcel tenure ▸ Land parcels ▸ Land parcel ▸ Land parcel label ▸ Natural boundary ▸ Rights and interests – Easement parcel – Strata parcel – Volumetric parcel ▸ Road parcel ▸ Priority Development Areas ▸ Land use ▸ Lease and reserve parcel ▸ Regional planning ▸ ShapingSEQ ▸ Darling Downs Regional Plan ▸ SDA	QLD Globe data layers (accessed 29 September 2020) from online database: **qldglobe.information.qld.gov.au**

Database/data source name		Data type

Society
▸ National Native Title Tribunal
  ▸ Registered native title bodies corporate
  ▸ Future act determination applications
  ▸ Future act objections
  ▸ Future act notices current
	▸ Indigenous land use agreements
	▸ Native title determination outcomes
	▸ Native title determinations
	▸ Register of native title claims
	▸ Schedule of native title determination applications
	▸ National Native Title Tribunal
	  ▸ Land subject to Native Title-indication only
		QLD Globe data layers (accessed 29 September 2020) from online database: **qldglobe.information.qld.gov.au and georesglobe.information.qld.gov.au/**

Transportation ▸ Airstrips, airports and heliports ▸ Ports ▸ Railway line ▸ Railway station ▸ Regulated air services ▸ Roads ▸ Transport corridors		QLD Globe data layers (accessed 29 September 2020) from online database: **qldglobe.information.qld.gov.au**

▸ Exploration permits:
  ▸ Coal
  ▸ Mineral
  ▸ Mineral development licence
  ▸ Petroleum
  ▸ Geothermal
  ▸ Greenhouse gas
▸ Production permits:
  ▸ Mining claim
  ▸ Mining lease
  ▸ Petroleum lease
  ▸ Greenhouse lease
  ▸ Geothermal lease
	▸ Infrastructure permits:
	  ▸ Mining lease infrastructure
	  ▸ Pipeline licence area
	  ▸ Pipeline licence centre line
	  ▸ Petroleum facility licence
	▸ Historical production permits
	  ▸ Historical mining claim Historical mining lease
	  ▸ Historical mining lease (points)
	  ▸ Historical mineral freehold selection (points)
	  ▸ Historical geothermal lease
	  ▸ Historical greenhouse lease
	  ▸ Historical petroleum lease
		Mining and exploration permits data layers (accessed 29 September 2020) from online database: **georesglobe.information.qld.gov.au/**

Energex electrical network spatial data		ESRI Shapefile
Ergon Energy utility network		ESRI Shapefile
TRC ▸ Council roads ▸ Lot and property boundaries ▸ Council managed utilities/services infrastructure		Geographical Information Systems (GIS) files
LVRC ▸ Property boundaries ▸ Council managed infrastructure		GIS files
NBN GIS data		GIS files
Optus utility network information		GIS files
Powerlink spatial data		GIS files
Urban Utilities assets: ▸ Sewer ▸ Water ▸ Recycled water		ESRI file geodatabase
Telstra geographic data		Drawing eXchange Format

8.6 Existing environment

The Project is primarily located within the SEQ region, with over half the Project located within the Lockyer Valley LGA. The Project is also located within the Toowoomba LGA, which is part of the Darling Downs region.

It should be noted that the urban extent of Toowoomba is also identified as part of SEQ pursuant to ShapingSEQ. As such, approximately 9.2 km of the Project alignment, where traversing through Charlton, Gowrie Junction and Mount Kynoch, is located within both ShapingSEQ and Darling Downs regions.

The Project is approximately 28 km in length—starting at Charlton at the eastern extent of the Border to Gowrie (B2G) Inland Rail project adjacent to the West Moreton System rail corridor, traversing east through Gowrie for approximately 4.8 km. The Project then deviates southeast from the West Moreton System rail corridor at Gowrie Junction (northwest of Toowoomba), aligning with the Gowrie to Grandchester future state transport corridor and entering the proposed western tunnel portal at the intersection of Boundary Street and the Toowoomba Bypass at Gowrie Junction. The Project continues below ground within the proposed Toowoomba Range Tunnel for approximately 6.24 km, with the exception of above ground infrastructure associated with the intermediate tunnel ventilation shaft located at Cranley.

Where the Project deviates from the existing West Moreton System rail corridor, the Project predominantly follows the Gowrie to Grandchester future state transport corridor, protected as future railway land under the TPC Act.

Travelling in an easterly direction through Mount Kynoch, the Project exits the proposed eastern tunnel portal at Ballard, deviating slightly to the north of the alignment of the Gowrie to Grandchester future state rail corridor and traversing through the localities of Ballard, Mount Lofty and Withcott. The Project continues to remain generally consistent with the Gowrie to Grandchester future state transport corridor through Postmans Ridge, Lockyer and Helidon Spa before realigning with the existing West Moreton System rail corridor for approximately 800 m west of Helidon. A detailed description of the alignment is provided in Chapter 6: Project Description.

Of the total 353.56 ha required for the permanent disturbance footprint, approximately 21 ha is within the existing West Moreton System rail corridor and approximately 62 ha is located within the Gowrie to Grandchester future state transport corridor. An additional 28.41 ha is required where the Project is within the Toowoomba Range Tunnel, which also follows the Gowrie to Grandchester future state transport corridor.

The Gowrie to Grandchester rail corridor was declared a 'future public passenger transport corridor' in 2005 in the *Public Passenger Transport Guideline* pursuant to Section 8E of the TPC Act. This declaration followed the Gowrie to Grandchester study prepared by a joint venture between Queensland Transport (now DTMR) and QR. The purpose of the study was to investigate a rail corridor that would help mitigate constraints on rail operations caused by the Toowoomba and Little Liverpool Range crossings. The study was completed in 2003, identifying the preferred future passenger rail corridor and potential railway station sites (Queensland Rail and Queensland Transport, 2003). Following the corridors' protection, a number of land parcels were purchased by DTMR under DTMR's *Early Acquisition Policy*. The corridor is now recognised as a future state transport corridor under the TPC Act.

The Project design does not preclude the future development of an electrified passenger rail service within the Gowrie to Grandchester future state transport corridor. The Gowrie to Grandchester future state transport corridor in relation to the Project is shown on Figure 8.3a-e.

Excluding untenured land, including waterways and road reserves, the Project will directly impact 151 land parcels, 94 land parcels within the TRC LGA and 57 land parcels within LVRC LGA, along with 41 interests (e.g. easements, strata parcels, etc.). Of the 151 land parcels, 82 land parcels (~54 per cent) are located within the Gowrie to Grandchester future state transport corridor, with an additional 10 land parcels within the West Moreton System rail corridor. There are 10 land parcels located in both the Gowrie to Grandchester future state transport corridor and the West Moreton System rail corridor. The impacts on land parcels is illustrated in Figure 8.3a-e.

The proposed permanent disturbance footprint traverses 109 land parcels, 3 waterways, 24 easements and 6 strata parcels. The temporary disturbance footprint traverses an additional 13 land parcels (78 in total) and 2 easements.

Within the proposed Toowoomba Range tunnel the Project passes beneath 36 properties, 1 waterway, 7 easements and 2 volumetric land parcels. This is inclusive of seven properties that also experience surface disturbance and indirect property impacts as a result of the Toowoomba Range Tunnel and associated aboveground supporting infrastructure. The extent of area associated with properties within the permanent and temporary construction disturbance footprints, as well as tenure and existing land uses of these properties, is illustrated in Figure 8.3a-e and detailed in Appendix V: Impacted Properties.

The Project also traverses road reserves, including unformed road reserves that are not currently being used. State-controlled roads intersected by the Project include New England Highway and Murphys Creek Road, with an additional 10 local government-controlled roads intersected by the Project. It should be noted that Toowoomba Bypass is not located within a road reserve but on freehold land parcels. The Project also traverses waterways land, Gowrie Creek (three separate crossings), Rocky Creek (new access road) and Lockyer Creek.

The land tenure, existing land uses, future land use intent and development activity within the land use study area are outlined below.

8.6.1 Land tenure

Within Queensland, tenure types are generally defined as:

- Freehold—land is alienated from the State and the ownership rests with the owner as an estate in fee simple and is dealt with under the *Land Title Act 1994* (Qld)
- Lands lease—land held by the State where leases are issued for several purposes, including pastoral, grazing and commercial or industrial purposes, or where land is leased to the State for a rail transport purpose
- Reserve land—USL dedicated as a reserve or granted in fee simple in trust for community purposes
- Road type parcel—land that has been designated as road
- Unallocated State Land—land that is not subject to a lease, licence or permit issued by the state or dedicated for a public/community purpose
- State Land—land that cannot be tenured (e.g. waterways).

Where there is no tenure within the cadastral boundary, land may also be identified as:

- Road type parcel—land that has been designated as road
- Unlinked parcel—land with no tenure type under the digital cadastral database mapping, noting that most of these parcels align with land lease strata parcels
- USL that may include waterways
- With the exception of freehold land, tenure and interests in land are primarily administered by the Department of Resources under the provisions of the Land Act. Freehold land is held by way of an indefeasible title recorded in the Freehold Land Register under the provisions of *Land Title Act 1994* (Qld).

The tenure of land traversed by the Project disturbance footprint is predominantly freehold (~81 per cent), including land parcels associated with the Toowoomba Bypass. The Project also intersects small pockets of lands lease and reserve tenure.

Where the Project disturbance footprint overlaps the existing West Moreton System rail corridor, the tenure of the existing rail corridor is lands lease, leased by the State represented by DTMR to QR. It is envisaged that the final tenure of the rail corridor will involve a similar arrangement with the details to be determined in consultation with DTMR, QR and, where applicable, Department of Resources.

Table 8.4 provides a summary of land tenure within the land use study area. Easements and strata parcels are excluded from Table 8.4 and detailed within Section 8.6.1.2. Tenure, other than freehold, within the land use study area is depicted on Figure 8.3a-e. The combined area of the 12 freehold land parcels, required for construction purposes only, is 3.51 ha.

TABLE 8.4: TENURE WITHIN THE PROJECT DISTURBANCE FOOTPRINT

	Permanent disturbance footprint			Temporary disturbance footprint*			Proposed Toowoomba Range Tunnel		
Type of tenure	No. of land parcels	Area (ha)	% of land within permanent disturbance footprint	No. of land parcels	Area (ha)	% of land within temporary disturbance footprint	No. of land parcels	Area (ha)	% of land within tunnel
Freehold	85	300.38	84.96	72	90.68	88.03	32	25.27	99.01
Lands lease	24	22.70	6.42	6	1.43	1.39	2	0.49	0.14
Road**	-	30.04	8.50	-	10.72	10.41	-	0.90	0.30
Water	3	0.44	0.12	3	0.18	0.17	1	0.16	0.10
Reserve	-	-	-	-	-	-	2	1.59	0.45
Total	**112**	**353.56**	**100.0**	**81**	**103.01**	**100.0**	**37**	**28.41**	**100.0**

Table notes:

* The temporary disturbance footprint referred to in the table is the additional construction footprint, where only temporary works are proposed (i.e. the construction footprint minus the permanent footprint)

** The number of road parcels have not been included as these features do not have identifying Lot on Plan details

ha = hectares

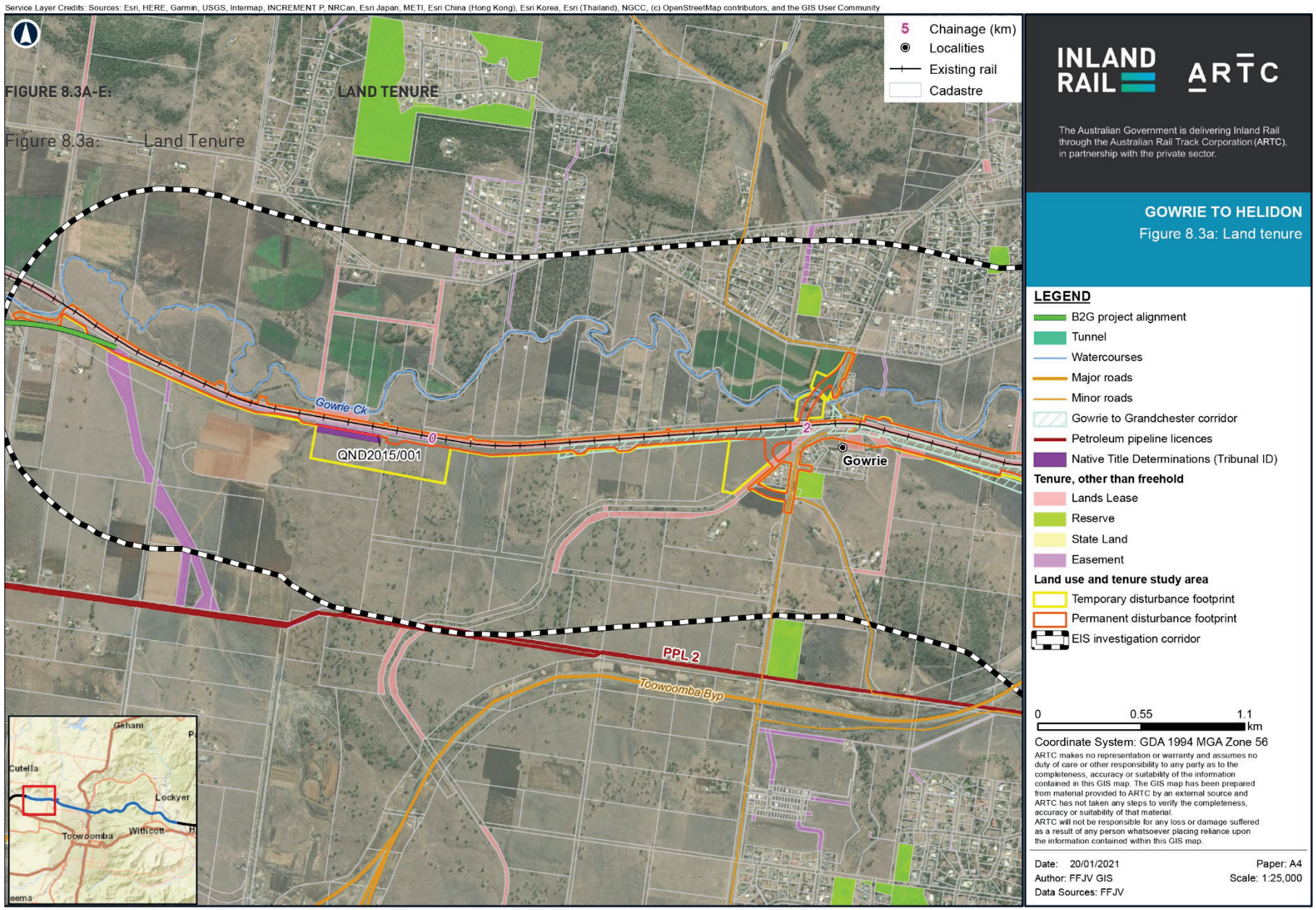
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FIGURE 8.3A-E:
LAND TENURE
Figure 8.3a: Land Tenure
5 Chainage (km)
Localities
Existing rail
Cadastre
Gowrie Ck
QND2015/001
Gowrie
PPL 2
Toowoomba Byp
Geham
Cutella
Lockyer
Toowoomba
Withcott
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GOWRIE TO HELIDON
Figure 8.3a: Land tenure
LEGEND
B2G project alignment
Tunnel
Watercourses
Major roads
Minor roads
Gowrie to Grandchester corridor
Petroleum pipeline licences
Native Title Determinations (Tribunal ID)
Tenure, other than freehold
Lands Lease
Reserve
State Land
Easement
Land use and tenure study area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
0 0.55 1.1 km
Coordinate System: GDA 1994 MGA Zone 56
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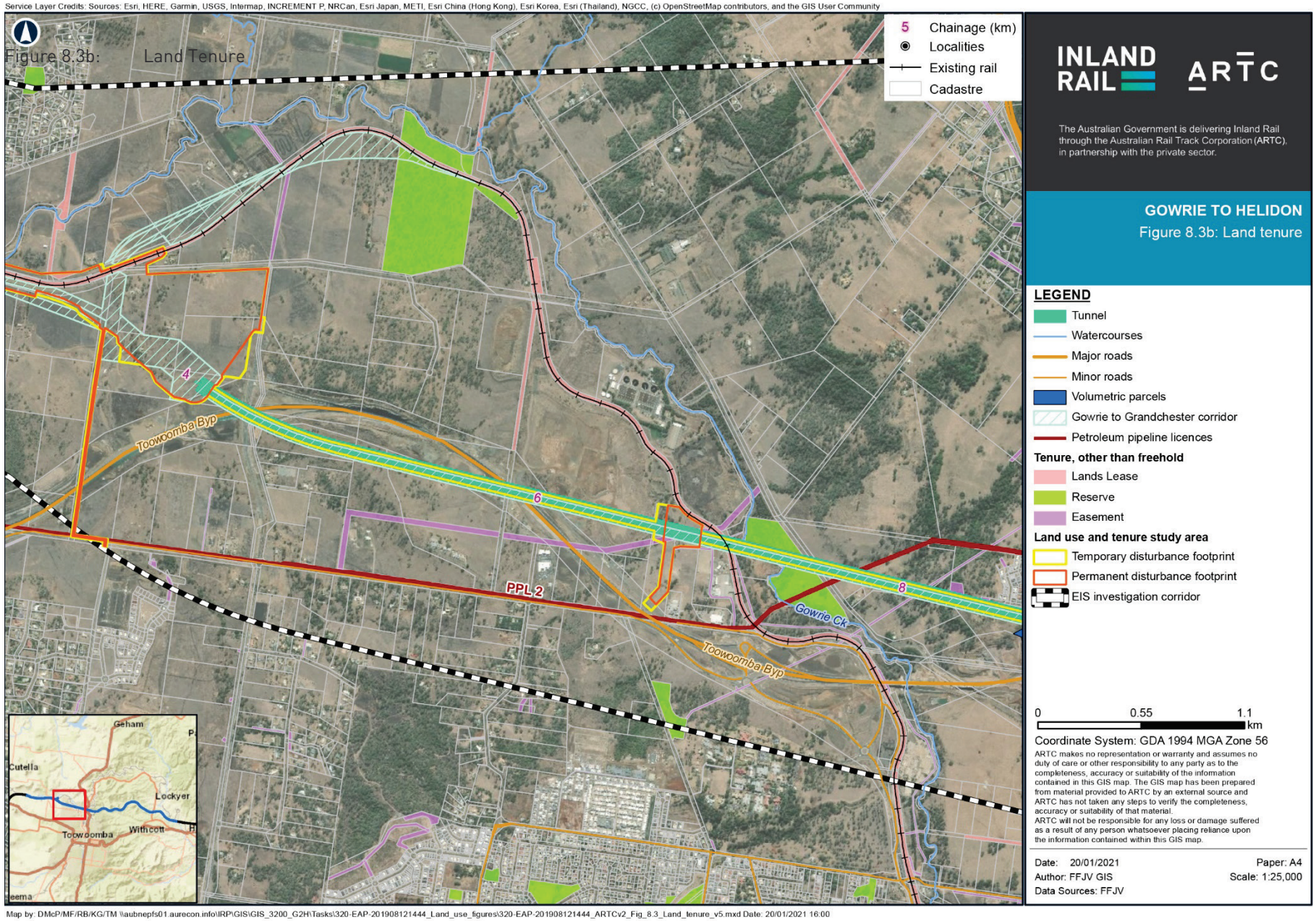
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Figure 8.3b: Land Tenure
5 Chainage (km)
Localities
Existing rail
Cadastre
4
Toowoomba Byp
6
PPL 2
8
Gowrie Ck
Toowoomba Byp
Geham
Cutella
Lockyer
Toowoomba
Withcott
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GOWRIE TO HELIDON
Figure 8.3b: Land tenure
LEGEND
Tunnel
Watercourses
Major roads
Minor roads
Volumetric parcels
Gowrie to Grandchester corridor
Petroleum pipeline licences
Tenure, other than freehold
Lands Lease
Reserve
Easement
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0 0.55 1.1 km
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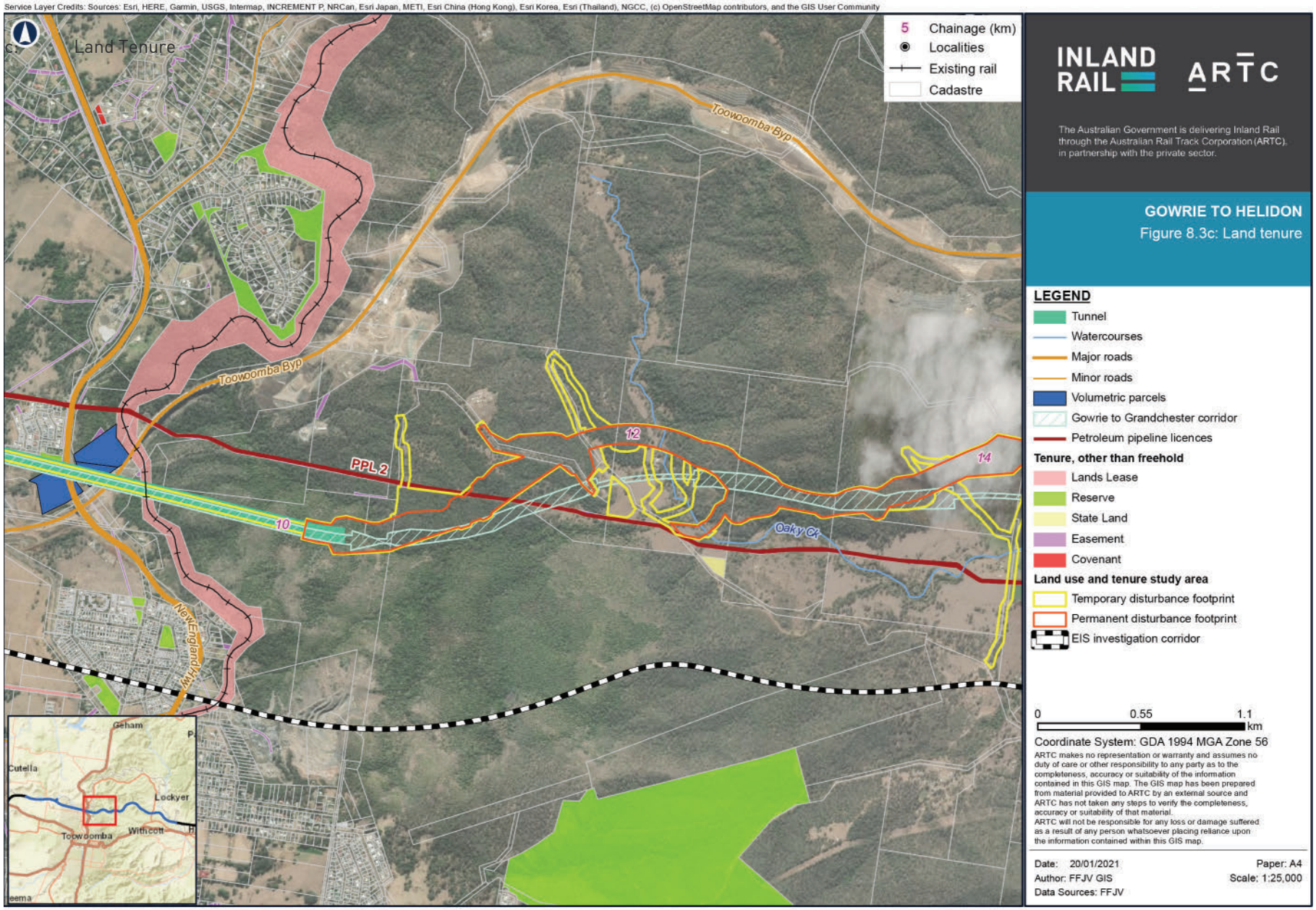
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Land Tenure
5 Chainage (km)
Localities
Existing rail
Cadastre
Toowoomba Byp
PPL 2
12
14
10
Oaky Ck
New England Hwy
Geham
Cutella
Lockyer
Toowoomba
Withcott
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GOWRIE TO HELIDON
Figure 8.3c: Land tenure
LEGEND
Tunnel
Watercourses
Major roads
Minor roads
Volumetric parcels
Gowrie to Grandchester corridor
Petroleum pipeline licences
Tenure, other than freehold
Lands Lease
Reserve
State Land
Easement
Covenant
Land use and tenure study area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
0 0.55 1.1 km
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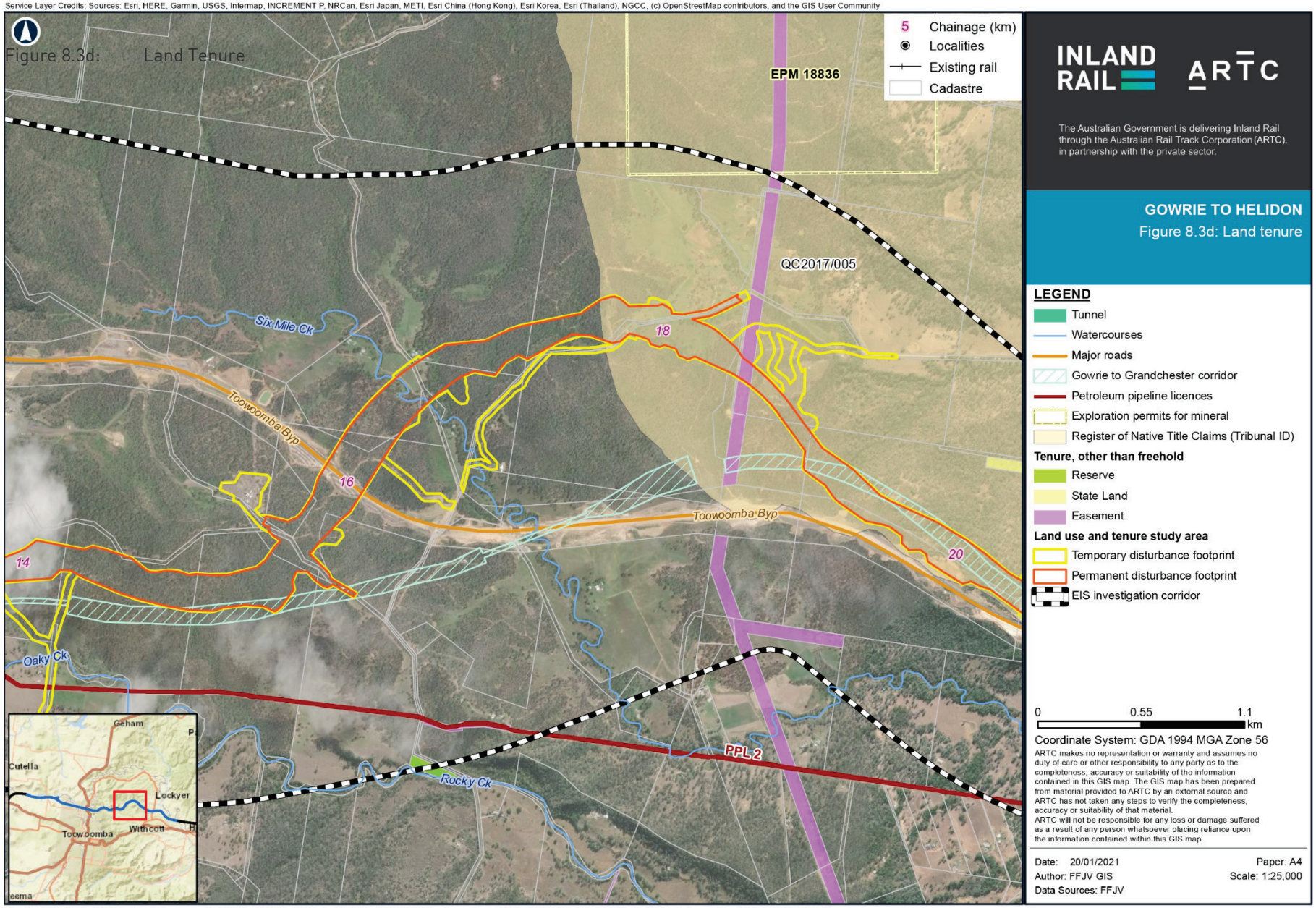
Figure 8.3d: Land Tenure



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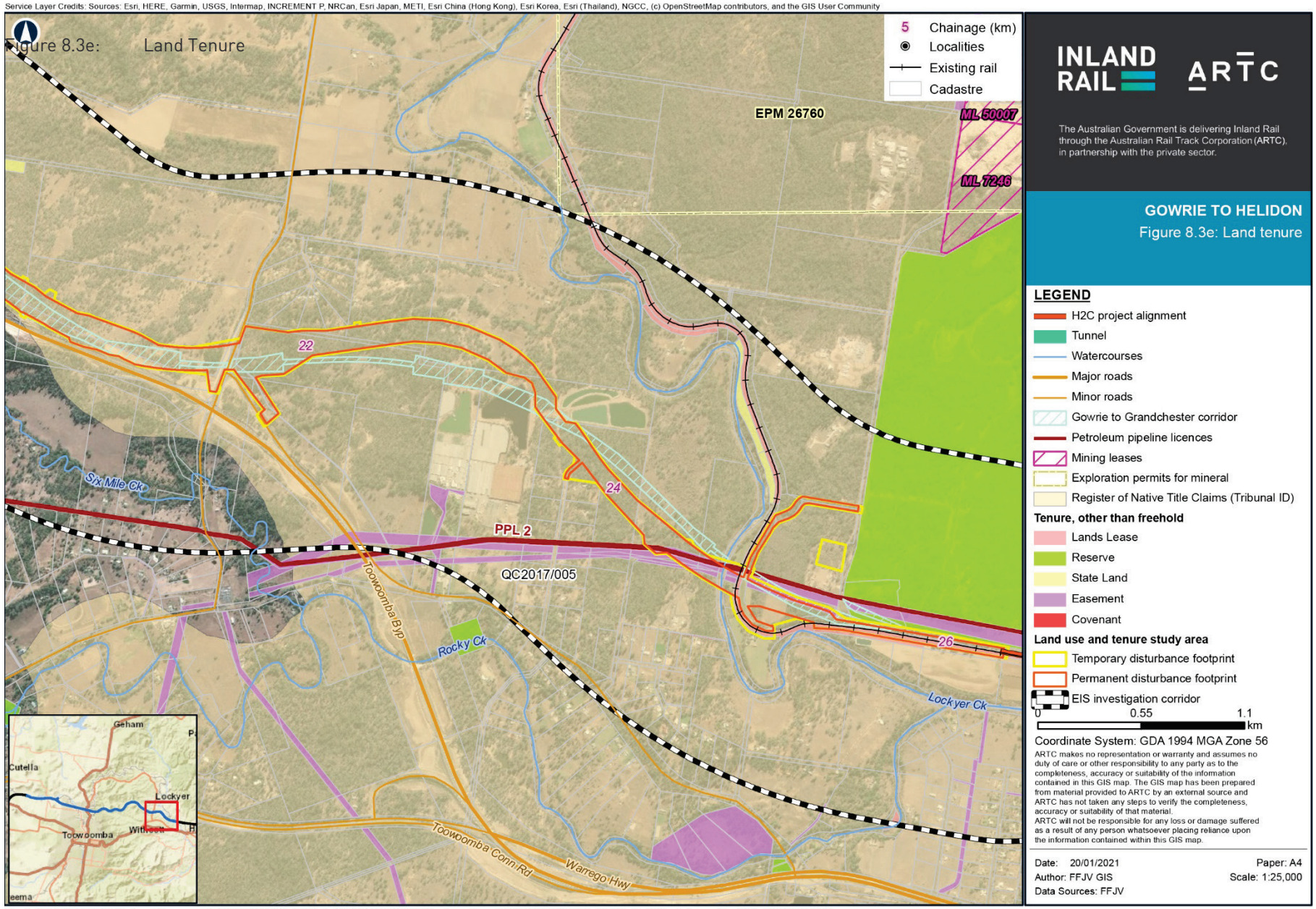
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Figure 8.3e: Land Tenure
5 Chainage (km)
Localities
Existing rail
Cadastre
EPM 26760
ML 50007
ML 7248
22
24
26
PPL 2
QC2017/005
Six Mile Ck
Toowoomba Byp
Rocky Ck
Lockyer Ck
Toowoomba Conn Rd
Warrego Hwy
Geham
Cutella
Lockyer
Toowoomba
Withcott
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
GOWRIE TO HELIDON
Figure 8.3e: Land tenure
LEGEND
H2C project alignment
Tunnel
Watercourses
Major roads
Minor roads
Gowrie to Grandchester corridor
Petroleum pipeline licences
Mining leases
Exploration permits for mineral
Register of Native Title Claims (Tribunal ID)
Tenure, other than freehold
Lands Lease
Reserve
State Land
Easement
Covenant
Land use and tenure study area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
0 0.55 1.1 km
Coordinate System: GDA 1994 MGA Zone 56
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8.6.1.1 State land

Under the Land Act, USL can be made available through various forms of leasehold tenure or dedicated for community purposes, such as roads or reserves. Leases are issued over State land for a specific purpose, which may include pastoral, grazing, commercial or industrial purposes. The Land Act provides for the following types of leasehold tenures:

- Term lease—issued for terms of 1 to 100 years
- Perpetual lease—held by the leaseholder in perpetuity and issued for a specific purpose (e.g. agricultural or commercial use)
- Freeholding lease—where freehold title has been approved but the leaseholder is paying off the purchase price by annual instalments
- Road licence—when a road has been temporarily closed, allowing the licensee to use the land until the licence is surrendered or cancelled
- Permit to occupy—for short-term occupation of State-controlled land.

Under the Land Act, USL may also be dedicated as a reserve for a particular community purpose. Trustees may be appointed to run the day to day management of the reserve and may lease or issue a permit over the reserve, subject to approval by the Minister for Resources.

- The proposed Toowoomba Range Tunnel passes beneath the following two parcels of reserve tenure, with TRC the trustee for both land parcels:
- Lot 10 on AG89—reserve for recreation and drainage purpose
- Lot 40 on SP157008—reserve for park purposes.

Reserves within the land use study area are illustrated on Figure 8.3a-e, with the area required outlined in Appendix V: Impacted Properties.

The Project disturbance footprint also traverses State land where intersecting road reserves and waterways. Roads traversed by the Project disturbance footprint are further discussed in Section 8.6.2.3 and the waterways intersected by the Project disturbance footprint are identified in Table 8.4.

8.6.1.2 Easements, strata parcels and volumetric parcels

An easement gives an entity or person the right to use someone else's land for a specified purpose, e.g. to access the land to gain access to other land, sewage, drainage or supply of water or gas. The Project traverses 18 easements within both the permanent and temporary disturbance footprints, with an additional six easements located only within the permanent disturbance footprint and an additional two easements located only within the temporary disturbance footprint. Within the proposed Toowoomba Range Tunnel, the Project disturbance footprint traverses beneath eight easements, including one easement subject to aboveground disturbance. These easements are associated with rights to use land for purposes such as crossing the land, or related to services located on, underneath, or above the land. Such rights include powerline easements, pipeline easements or access easements.

In addition to the lands lease land parcels detailed in Table 8.4, the Project traverses six strata parcels with lands lease tenure located over road parcels. The types of tenure and associated leases on these land parcels are detailed below:

- Lot 1 on RL2085—lands lease parcel with a road licence that does not have an end date
- Lot 1 on RL7496—lands lease parcel with a road licence that does not have an end date
- Lot AA on P14922—lands lease parcel with a permit to occupy for grazing issued over the parcel
- Lot AA on P19426—lands lease parcel with a permit to occupy for commercial/business purposes issued over the parcel (Wetalla Water Pipeline)
- Lot AA on P19427—lands lease parcel with a permit to occupy for commercial/business purposes issued over the parcel (Wetalla Water Pipeline)
- Lot AA on P19429—lands lease parcel with a permit to occupy for commercial/business purposes issued over the parcel (Wetalla Water Pipeline).

These land parcels have been identified as potential areas where native title may still exist, with further investigation in accordance with the Department of Resources native title work procedures required.

The proposed Toowoomba Range Tunnel also passes through two volumetric parcels with freehold tenure (Lot 307 on SP207169 and Lot 5 on SP194139). The volumetric parcels are located at Mount Kynoch and are associated with the Toowoomba Second Range Crossing (TSRC) pilot tunnel. The TSRC pilot tunnel was constructed in 2007 for the purposes of providing geological data to facilitate the design and construction of tunnels proposed for the TSRC project. In later stages of the TSRC project, it was determined that a deep cutting at the top of the Toowoomba Range would be constructed as an alternative to the tunnel solution. The TSRC pilot tunnel remains in-situ and is located approximately 150 m above the proposed Toowoomba Range Tunnel.

Easements, strata and volumetric parcels traversed by the land use study area are illustrated on Figure 8.3a-e and detailed within Appendix V: Impacted Properties.

8.6.1.3 Mining tenures

There are no current mining tenures (exploration and production) located within the Project disturbance footprint. There are two exploration permits for minerals other than coal located within 1 km of the Project. These exploration permits are summarised in Table 8.5 and shown on Figure 8.3a-e.

TABLE 8.5: MINERAL RESOURCE INTERESTS WITHIN THE LAND USE STUDY AREA

Permit type	Permit No.	Holder name	Permit status	Location
Exploration permit minerals (EPM) other than coal	EPM 18836	Zeolite Environmental Global Solutions Pty Ltd	Granted	630 m north of the Project at approximate Project Chainage (Ch) 18.4 km
Exploration permit minerals other than coal	EPM 26760	Scotbar Pty Ltd	Granted	700 m north east of the Project at approximate Ch 23.0 km

Table notes:
No historical mining leases were identified within the land use study area.

8.6.1.4 Petroleum and gas resource interests

Several different authorities for petroleum and gas exploration and production activities in Queensland are granted under the *Petroleum and Gas (Production and Safety) Act 2004* (Qld). The Project intersects one petroleum pipeline license (PPL 2), the Roma Brisbane Gas Pipeline, which is detailed in Table 8.6 and shown on Figure 8.3a-e. Infrastructure and utilities within the land use study area are further discussed in Section 8.6.2.1.

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

TABLE 8.6: PETROLEUM AND GAS RESOURCE INTERESTS TRAVERSED BY THE PROJECT

Permit type	Permit No.	Holder name	Permit status	Location
Petroleum Pipeline licence	PPL 2	APT Petroleum Pipelines Pty Ltd	Granted	At Cranley (Ch 7.8 km), with the rail alignment in tunnel approximately 125 m below ground level At Mount Lofty/Ballard (Ch 11.1 km), with the rail alignment travelling over the easement At Helidon Spa (Ch 24.5 km), with the rail alignment travelling over the easement (Lockyer Creek Viaduct) Access tracks (existing and proposed) also intersect the easement

8.6.1.5 Native title

Searches of the National Native Title Register and Register of Native Title Claims, both of which are administered by the National Native Title Tribunal, were undertaken on 15 December 2020. These searches identified no successful native title determinations over the land use study area. There is one native claim yet to be determined for the Yuggera Ugarapul People, which has been accepted for registration over the eastern part of the Project, from approximate Ch 17.6 km to Ch 26.2 km.

As identified in Section 8.6.1, tenure within the Project disturbance footprint is predominantly freehold tenure, where native title rights have been extinguished.

The Project uses existing rail corridor and traverses existing road corridors, both of which constitute public works under the NT Act. Under the NT Act, if an act consists of the construction or establishment of a public work (which includes a road, railway or bridge that is constructed or established by or on behalf of the Crown, or a local government body or other statutory authority of the Crown, in any of its capacities) then, provided the public work commenced to be constructed or established before 23 December 1996, the act will extinguish native title in relation to the area on which the public work is constructed, established or situated (note that the area of extinguishment will include any adjacent land or waters, the use of which is or was necessary for, or incidental to, the construction, establishment or operation of the public work).

The Project also traverses an area at Gowrie Junction (Lot 33 on SP312428 and Lot on 100 SP270462) where it was determined that native title does not exist (refer tribunal file no. QND2015/001).

Elsewhere, the proposed Toowoomba Range Tunnel passes beneath two parcels of reserve tenure (Lot 10 on AG89 and Lot 40 on SP157008) in respect of which native title is unlikely to be extinguished. The Project also traverses waterways (Gowrie, Rocky and Lockyer creeks) and strata parcels where native title is likely to exist. An assessment in accordance with the native title works procedures will be undertaken during detailed design to confirm where native title rights and interests are present.

For those areas within the permanent disturbance footprint in relation to which Native Title has not been extinguished, ARTC will seek the extinguishment of the native title rights and interests in question prior to construction of the Project, through a compulsory process, to enable the grant of the necessary interests in Crown lands required to construct the Project.

The native title claims relevant to the Project are summarised in Table 8.7 and shown on Figure 8.3a–e. Details of consultation undertaken with the native title claimants is provided in Chapter 5: Stakeholder Engagement and Appendix D: Community Consultation.

TABLE 8.7: NATIVE TITLE CLAIM RELEVANT TO PROJECT

Native title status	Name	Tribunal file no.	Summary
Native title does not exist	Freight Terminals Pty Ltd V State of QLD	QND2015/001	This native title claim was determined on 21 August 2015 with the outcome being that native title does not exist.
Accepted for registration	Yuggera Ugarapul People	QC2017/005	This active native title claim has been accepted as a registered claim by the Native Title Tribunal. As of 15 December 2020, the claim has not yet been determined by the courts.

8.6.2 Land use

As per ShapingSEQ regional land use category mapping, the land use study area is predominately mapped as Regional Landscape and Rural Production Area. The land use study area also traverses areas mapped as Urban Footprint and Rural Living Area within the localities of Cranley, Mount Kynoch, Withcott, Postmans Ridge and Helidon Spa.

Grazing land is the predominant land use traversed by the Project. The next most common land use is land classified as other minimal use, consisting of areas of land that are largely vacant, for example, residual native vegetation cover where the Project traverses the Toowoomba Range. Other land uses within the land use study area include residential, waste treatment and disposal, cropping, irrigated cropping and irrigated seasonal horticulture.

Existing land uses based on the QLUMP, within the land use study area and the Project disturbance footprint, for each locality traversed by the Project is described in Table 8.8 and show on Figure 8.4a-e. The recently constructed Toowoomba Bypass, along with the West Moreton System rail corridor are key land uses in the area not recognised by QLUMP. Further information on notable land uses within the land use study area is provided in Table 8.11.

TABLE 8.8: LAND USE WITHIN AND ADJACENT TO THE LAND USE STUDY AREA

Locality	Land use as per QLUMP within the Project disturbance footprint	Land use as per QLUMP within the land use study area (approximately 1 km either side)
Within existing West Moreton System (Western Line) rail corridor (Charlton to Gowrie Junction)		
Charlton and Gowrie Junction	▸ Grazing native vegetation (including the West Moreton System rail corridor and local road network) ▸ Cropping ▸ Residential It should be noted that some of these land uses overlap with the InterLinkSQ project currently being constructed.	▸ Grazing native vegetation ▸ Irrigated cropping ▸ Cropping ▸ Residential ▸ Services (e.g. educational/school and McMahon Park)
New greenfield rail corridor proposed western tunnel portal (Ch 3.2 km to Ch 4.0 km)		
Gowrie Junction	▸ Residential ▸ Cropping ▸ Grazing native vegetation It should be noted that some of these land uses overlap with the existing road and rail network, including the Toowoomba Bypass.	▸ Residential ▸ Cropping ▸ Irrigated cropping ▸ Grazing native vegetation
Proposed Toowoomba Range Tunnel (west) (Ch 4.0 km to Ch 6.6 km)		
Cranley	▸ Residential ▸ Grazing native vegetation ▸ Waste treatment and disposal (e.g. Toowoomba Waste Management Facility)	▸ Residential ▸ Grazing native vegetation ▸ Other minimal use ▸ Waste treatment and disposal (e.g. Wetalla Wastewater Treatment Plant) ▸ Intensive animal production ▸ Nature conservation ▸ Services
Proposed Toowoomba Range Tunnel intermediate ventilation shaft (Ch 6.6 km to Ch 7.0 km)		
Cranley	▸ Residential ▸ Grazing native vegetation ▸ Manufacturing and industrial. It should be noted that some of these land uses overlap with the existing road and rail network, including the Toowoomba Bypass.	▸ Residential ▸ Grazing native vegetation ▸ Other minimal use ▸ Waste treatment and disposal (e.g. Wetalla Wastewater Treatment Plant) ▸ Intensive animal production ▸ Nature conservation ▸ Services (e.g. Baillie Henderson Hospital)
Proposed Toowoomba Range Tunnel (east) (Ch 7.0 km to Ch 10.4 km)		
Cranley and Mount Kynoch	▸ Residential ▸ Grazing native vegetation ▸ Manufacturing and industrial ▸ Transport and communications (e.g. New England Highway) ▸ Conservation and natural environments (residual native vegetation) It should be noted that some of these land uses overlap with the existing rail and road network (e.g. Jones Road), including the Toowoomba Bypass and the Roma Brisbane Gas Pipeline.	▸ Residential ▸ Grazing native vegetation ▸ Grazing modified pasture ▸ Transport and communications (e.g. New England Highway) ▸ Conservation and natural environments (residual native vegetation) ▸ Manufacturing and industrial ▸ Utilities (e.g. Mount Kynoch Water Treatment Plant)

Locality	Land use as per QLUMP within the Project disturbance footprint	Land use as per QLUMP within the land use study area (approximately 1 km either side)
New greenfield rail corridor (Ch 10.4 km to Ch 25.3 km)		
Ballard and Mount Lofty	▸ Residential ▸ Grazing native vegetation ▸ Conservation and natural environments (residual native vegetation),, including the former Mount Loft Rifle Range It should be noted that some of these land uses overlap with the existing rail and road network, including the Toowoomba Bypass and the Roma Brisbane Gas Pipeline, Commonwealth land and the Harlaxton KRA.	▸ Residential ▸ Grazing native vegetation ▸ Quarry (e.g. Harlaxton quarry) ▸ Conservation and natural environments (residual native vegetation), including the former Mount Loft Rifle Range
Withcott	▸ Residential ▸ Grazing native vegetation ▸ Conservation and natural environments (residual native vegetation) ▸ Perennial horticulture It should be noted that some of these land uses overlap with the existing road network (e.g. Gittins Road), including the Toowoomba Bypass and the Roma Brisbane Gas Pipeline.	▸ Residential ▸ Grazing native vegetation ▸ Perennial horticulture ▸ Cropping
Postmans Ridge and Lockyer	▸ Residential ▸ Grazing native vegetation ▸ Intensive horticulture (e.g. Withcott Seedlings) ▸ Reservoir/dam (e.g. Withcott Seedlings) It should be noted that some of these land uses overlap with the existing road network (e.g. Murphys Creek Road and Postmans Ridge Road), including the Toowoomba and the Roma Brisbane Gas Pipeline.	▸ Residential ▸ Grazing native vegetation ▸ Grazing modified pastures ▸ Conservation and natural environments (residual native vegetation) ▸ Irrigated seasonal horticulture ▸ Intensive horticulture (e.g. Withcott Seedlings) ▸ Reservoir/dam (e.g. Withcott Seedlings) ▸ Cropping ▸ Utilities (e.g. substation)
Helidon Spa	▸ Residential ▸ Grazing native vegetation ▸ Services (e.g. Toowoomba Kart Club) ▸ River (Lockyer Creek) It should be noted that some of these land uses overlap with the existing road network (e.g. Ashlands Road), and the Roma Brisbane Gas Pipeline.	▸ Residential ▸ Grazing native vegetation ▸ Land in transition (now residential) ▸ Services (e.g. Toowoomba Kart Club) ▸ River (Lockyer Creek)
Within existing West Moreton System (Main Line) rail corridor (Ch 25.3 km to Ch 26.2 km)		
Helidon	▸ Grazing native vegetation ▸ Irrigated seasonal horticulture ▸ River (Lockyer Creek) It should be noted that the existing West Moreton System rail corridor is as grazing native vegetation. These land uses also overlap the existing road network (e.g. Airforce Road) and the Roma Brisbane Gas Pipeline.	▸ Residential ▸ Grazing native vegetation ▸ Irrigated seasonal horticulture ▸ Manufacturing and industrial (e.g. Helidon Magazine Reserve) ▸ Services ▸ Reservoir/dam ▸ Land in transition (now residential) ▸ River (Lockyer Creek)

Table 8.9 provides a summary of the total areas of land use within the Project disturbance footprint.

TABLE 8.9: EXISTING LAND USE WITHIN THE PROJECT DISTURBANCE FOOTPRINT

	Permanent disturbance footprint		Temporary disturbance footprint		Toowoomba Range Tunnel	
Land use[1]	Area (ha)	% of land	Area (ha)	% of land	Area (ha)	% of land
Grazing native vegetation	247.54	70.01	77.02	74.70	18.09	63.67
Other minimal use	68.62	19.41	13.86	13.44	4.46	15.70
Residential	26.34	7.45	8.05	7.81	2.61	9.19
Cropping	6.14	1.74	2.06	2.00	0.00	0.00
Irrigated seasonal horticulture	2.67	0.76	1.46	1.42	0.00	0.00
River	0.72	0.20	0.29	0.28	0.00	0.00
Services	0.7	0.20	0.10	0.09	0.00	0.00
Manufacturing and industrial	0.51	0.14	0.00	0.00	0.49	1.72
Irrigated cropping	0.32	0.09	0.00	0.0	0.00	0.00
Perennial horticulture	0.00	0.00	0.26	0.26	0.00	0.00
Transport and communication	0.00	0.00	0.00	0.00	0.32	1.13
Waste treatment and disposal	0.00	0.00	0.00	0.00	2.44	8.59
Total	**353.56**	**100.0**	**103.1**	**100.0**	**28.41**	**100.0**

Table notes:
1. Land use as per the QLUMP.

The Project overlaps with the existing West Moreton System rail corridor, for approximately 21 ha, and existing road corridors within dedicated road reserves, for approximately 41 ha (it is noted that the Toowoomba Bypass is not located within a road reserve but on freehold land parcels and is not included within this area). Although QLUMP classifies land within the existing rail and road networks as either agricultural, residential and other non-infrastructure related uses, the use of the corridors is for transport infrastructure.

Furthermore, the Project overlaps with the Gowrie to Grandchester future state transport corridor for approximately 82.29 ha, including 61.88 ha associated with the permanent disturbance footprint. Land located within the Gowrie to Grandchester future State transport corridor is mapped under the QLUMP as existing land use but the future intent of the land is for a railway corridor.

Table 8.10 provides a summary of land use within the Project disturbance footprint that is located outside of the West Moreton System rail corridor, existing road corridors and the Gowrie to Grandchester future state transport corridor.

TABLE 8.10: LAND USE WITHIN THE PROJECT DISTURBANCE FOOTPRINT LOCATED OUTSIDE OF THE EXISTING ROAD AND RAIL CORRIDORS AND THE GOWRIE TO GRANDCHESTER FUTURE STATE TRANSPORT CORRIDOR

	Permanent disturbance footprint		Temporary disturbance footprint		Toowoomba Range Tunnel	
Land use[1]	Area (ha)	% of land	Area (ha)	% of land	Area (ha)	% of land
Grazing native vegetation	167.18	68.0	62.93	75.5	5.16	64.5
Other minimal use	54.93	22.3	10.73	12.9	1.25	15.7
Residential	17.55	7.1	6.83	8.2	0.74	9.2
Cropping	3.44	1.4	1.71	2.1	0.00	0.0
Irrigated seasonal horticulture	0.98	0.4	0.59	0.7	0.00	0.0
Services	0.68	0.3	0.1	0.1	0.00	0.0
Manufacturing and industrial	0.40	0.2	0.01	0.0	0.13	1.7
River	0.33	0.1	0.15	0.2	0.00	0.0

	Permanent disturbance footprint		Temporary disturbance footprint		Toowoomba Range Tunnel	
Land use[1]	Area (ha)	% of land	Area (ha)	% of land	Area (ha)	% of land
Irrigated cropping	0.32	0.1	0.00	0.0	0.00	0.0
Perennial horticulture	0.00	0.0	0.00	0.0	0.00	0.0
Waste treatment and disposal	0.00	0.0	0.26	0.3	0.71	8.9
Total	**245.81**	**100.0**	**83.31**	**100.0**	**7.99**	**100.0**

Table notes:
1. Land use as per the QLUMP

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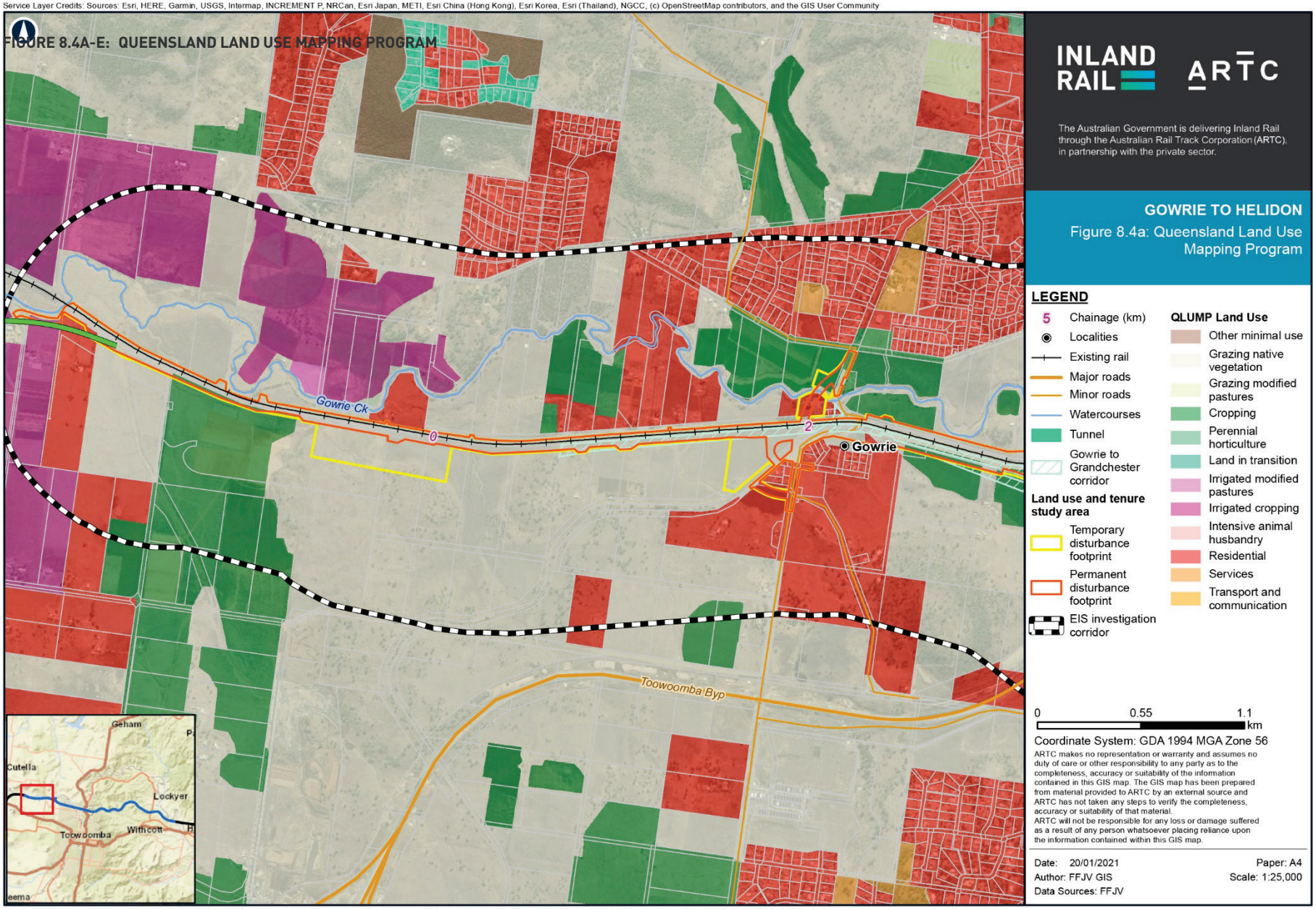

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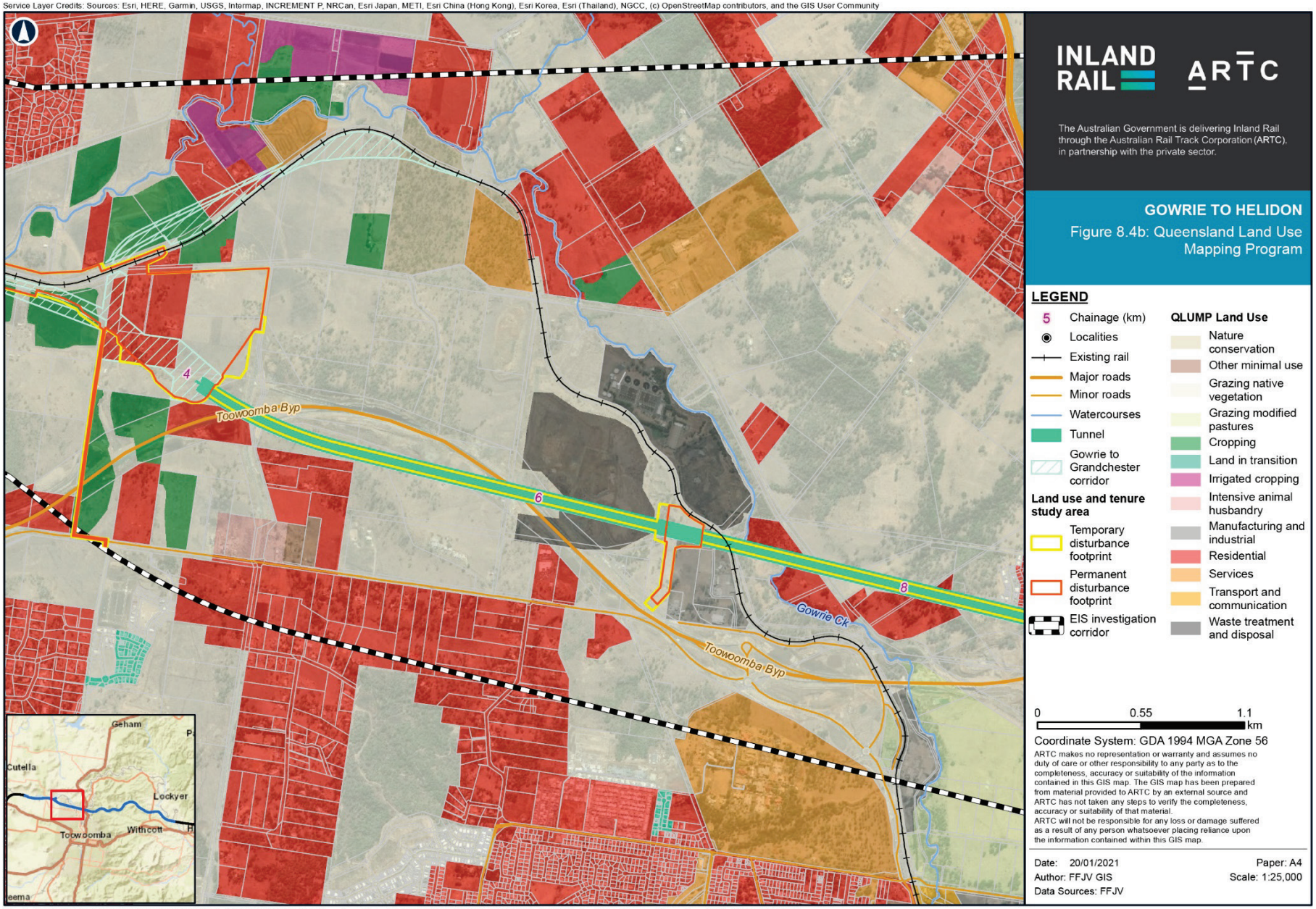

INLAND RAIL

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GOWRIE TO HELIDON

Figure 8.4b: Queensland Land Use Mapping Program

LEGEND

- 5 Chainage (km)
- Localities
- Existing rail
- Major roads
- Minor roads
- Watercourses
- Tunnel
- Gowrie to Grandchester corridor

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

QLUMP Land Use

- Nature conservation
- Other minimal use
- Grazing native vegetation
- Grazing modified pastures
- Cropping
- Land in transition
- Irrigated cropping
- Intensive animal husbandry
- Manufacturing and industrial
- Residential
- Services
- Transport and communication
- Waste treatment and disposal

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

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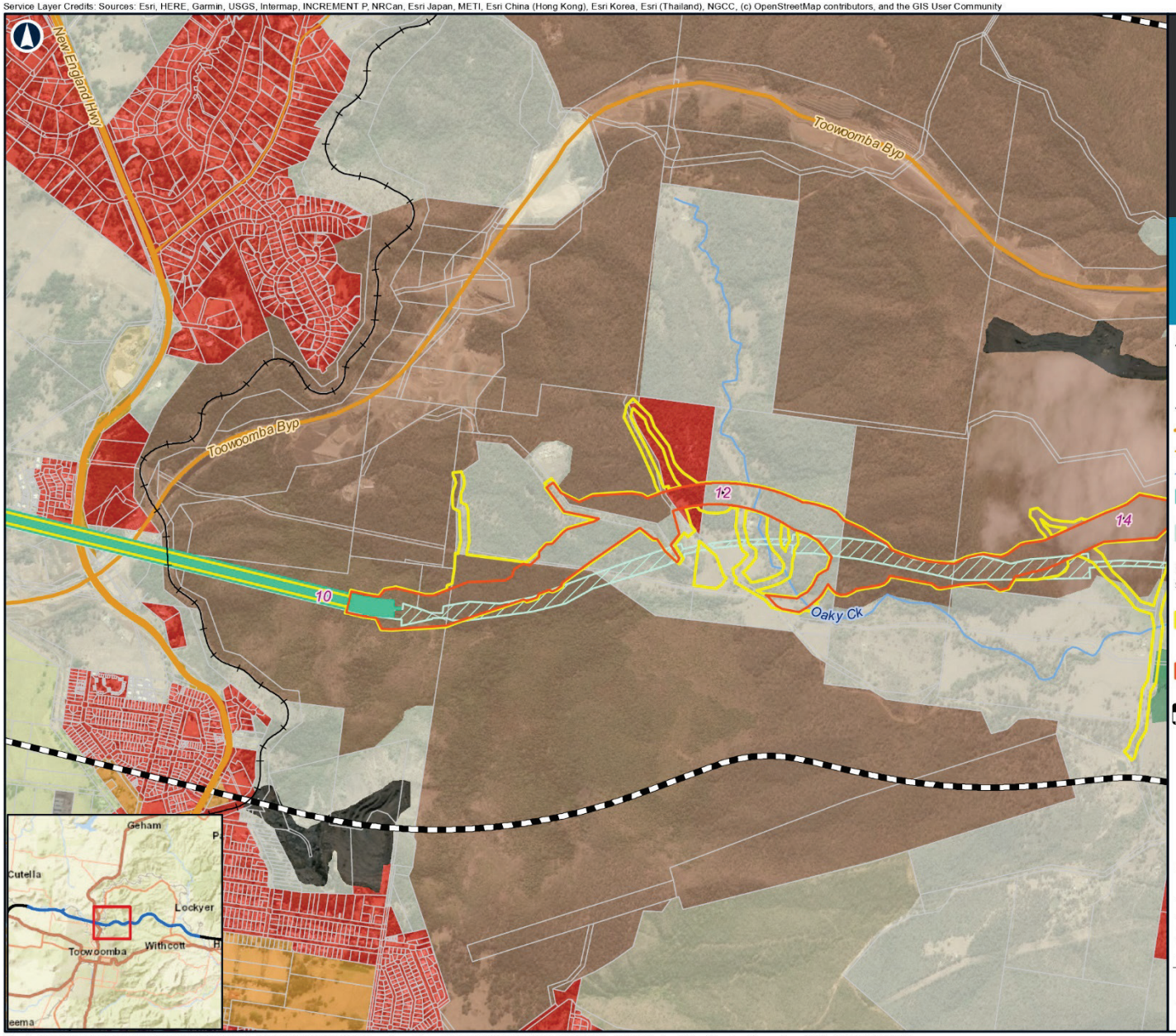

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GOWRIE TO HELIDON

Figure 8.4c: Queensland Land Use Mapping Program

LEGEND

- 5 Chainage (km)
- Localities
- Existing rail
- Major roads
- Minor roads
- Watercourses
- Tunnel
- Gowrie to Grandchester corridor

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

QLUMP Land Use

- Nature conservation
- Other minimal use
- Grazing native vegetation
- Grazing modified pastures
- Manufacturing and industrial
- Perennial horticulture
- Residential
- Services
- Utilities
- Mining

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

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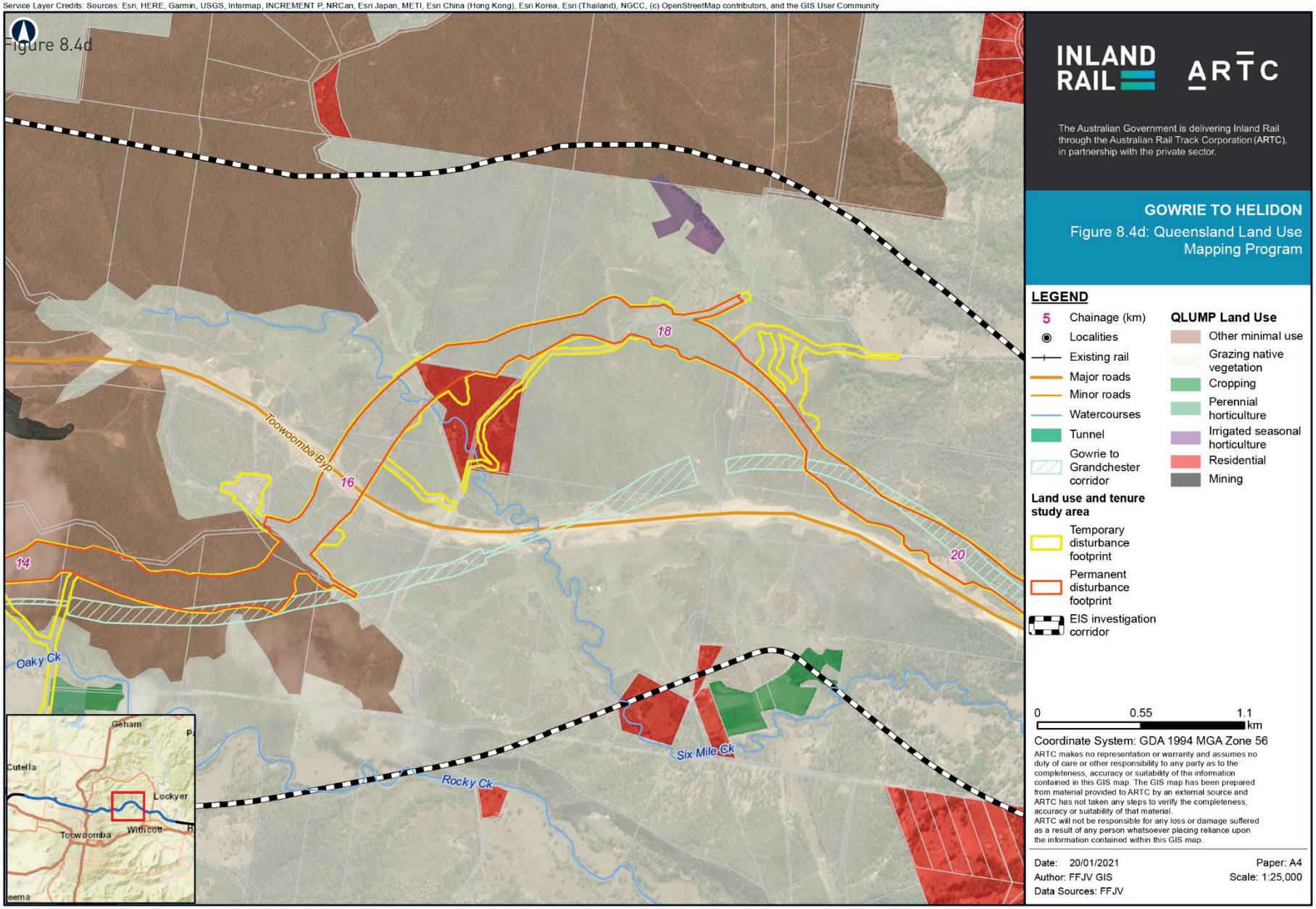
Figure 8.4d



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GOWRIE TO HELIDON

Figure 8.4d: Queensland Land Use Mapping Program

LEGEND

- 5 Chainage (km)
- Localities
- Existing rail
- Major roads
- Minor roads
- Watercourses
- Tunnel
- Gowrie to Grandchester corridor

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

QLUMP Land Use

- Other minimal use
- Grazing native vegetation
- Cropping
- Perennial horticulture
- Irrigated seasonal horticulture
- Residential
- Mining

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

Date: 20/01/2021
Author: FFJV GIS
Data Sources: FFJV

Paper: A4
Scale: 1:25,000

Map by: DMcP/MF/RB/KG/TM \\aubnepfs01.aurecon.info\IRP\GIS\GIS_3200_G2H\Tasks\320-EAP-201908121444_Land_use_figures\320-EAP-201908121444_ARTCv2_Fig_8.4_QLD_Land_Use_Mapping_Prgm_v5.mxd Date: 20/01/2021 14:40

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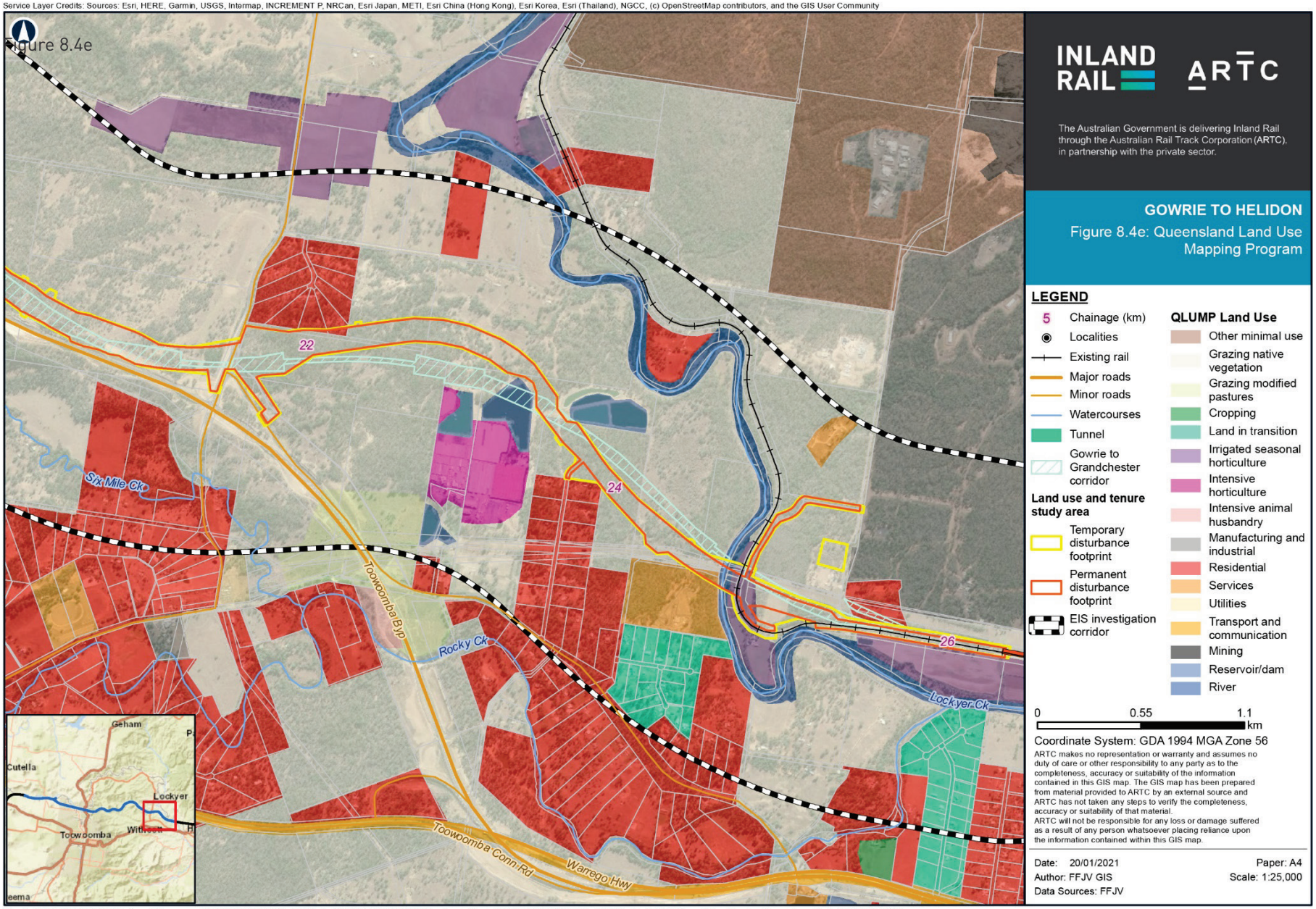

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Notable land use within the land use study area is summarised in Table 8.11 and shown on Figure 8.5a-e. Notable land use includes areas where there are recreational and commercial uses as well as land uses of State significance (i.e. reserves and resource areas).

TABLE 8.11: NOTABLE EXISTING LAND USE RELEVANT TO THE PROJECT

Notable existing land use	Description and location	Approximate chainage
Gowrie Junction locality	Gowrie is a locality located on the West Moreton System rail corridor. Notable land uses within the Gowrie locality include residential uses, Gowrie State School and recreational uses, including McMahon Park. The Project traverses through Gowrie when aligning with the existing West Moreton System rail corridor, along with changes to the local road network required to facilitate the Project.	Ch 1.8 km to Ch 2.4 km
Birdsong Market Garden	Birdsong Market Garden is an organic farm located approximately 600 m southeast of the western tunnel portal. The Project passes approximately 70 m beneath Birdsong Market Garden within the proposed Toowoomba Range Tunnel at Gowrie Junction.	Ch 4.6 km
Toowoomba Waste Management Centre	The Toowoomba Waste Management Centre is a landfill for waste from large commercial customers. The Project passes approximately 95 m beneath the landfill within the proposed Toowoomba Range Tunnel at Cranley.	Ch 6.1 km to Ch 6.6 km
Wetalla Wastewater Treatment Plant	The Wetalla Wastewater Treatment Plant is a sewage treatment plant operated by TRC. The Wetalla Wastewater Treatment Plant is located approximately 400 m to the north of the proposed intermediate tunnel ventilation shaft.	Ch 6.8 km
Baillie Henderson Hospital	The Baillie Henderson Hospital is a psychiatric hospital located approximately 600 m to the southeast of the Project at Cranley. It is noted that in September 2018, the Queensland Premier announced that the Baillie Henderson Hospital campus will be the site of a future new Toowoomba Hospital, and a detailed Business Case is currently being undertaken to develop a master plan for the whole Baillie Henderson Hospital campus (Darling Downs Health, 2019).	Ch 7.2 km
Harlaxton Quarry	The Harlaxton Quarry operated by Quarry Products Pty Ltd (land is owned by Sanbeg Pty Ltd) is located in the southern section of KRA 8, approximately 900 m south of the Project. Further discussion on KRA 8 is provided in Section 8.6.2.2.	Ch 10.0 km to Ch 10.3 km
Withcott Quarry	The Withcott Quarry is located approximately 500 m to the northwest of the Project, at Withcott. As of 15 December 2020, operations at the Withcott Quarry have been suspended until further notice.	Ch 14.0 km
Withcott Seedlings	Withcott Seedlings is an intensive horticulture land use as a large commercial supplier of seedlings, including organic seedlings. The Project traverses part of the agricultural business at Withcott.	Ch 23.2 km to Ch 23.6 km
Toowoomba Kart Club	The Toowoomba Kart Club is a recreational go-kart racing club. The Project traverses the north eastern corner of the allotment associated with the Club.	Ch 24.6 km to Ch 24.8 km
Helidon Magazine Reserve	The Helidon Magazine Reserve is located at Helidon and is managed by the Department of Resources, with the primary purpose of ensuring the safe storage, distribution and disposal of explosives. The magazine reserve is located approximately 50 m to the north of the Project, at Helidon.	Ch 25.8 km to Ch 26.2 km

The Helidon Clearing Dip, a cattle tick clearing facility, is located, in part, on Lot 135 on CSH836056 (Air Force Road at Helidon) near Ch 25.8 km, within the Helidon Magazine Reserve area. The lot is a reserve for the purposes of departmental and official purposes, with DAF the trustee. Following consultation, DAF, in June 2020, noted that this facility is no longer operating and as such is not considered further.

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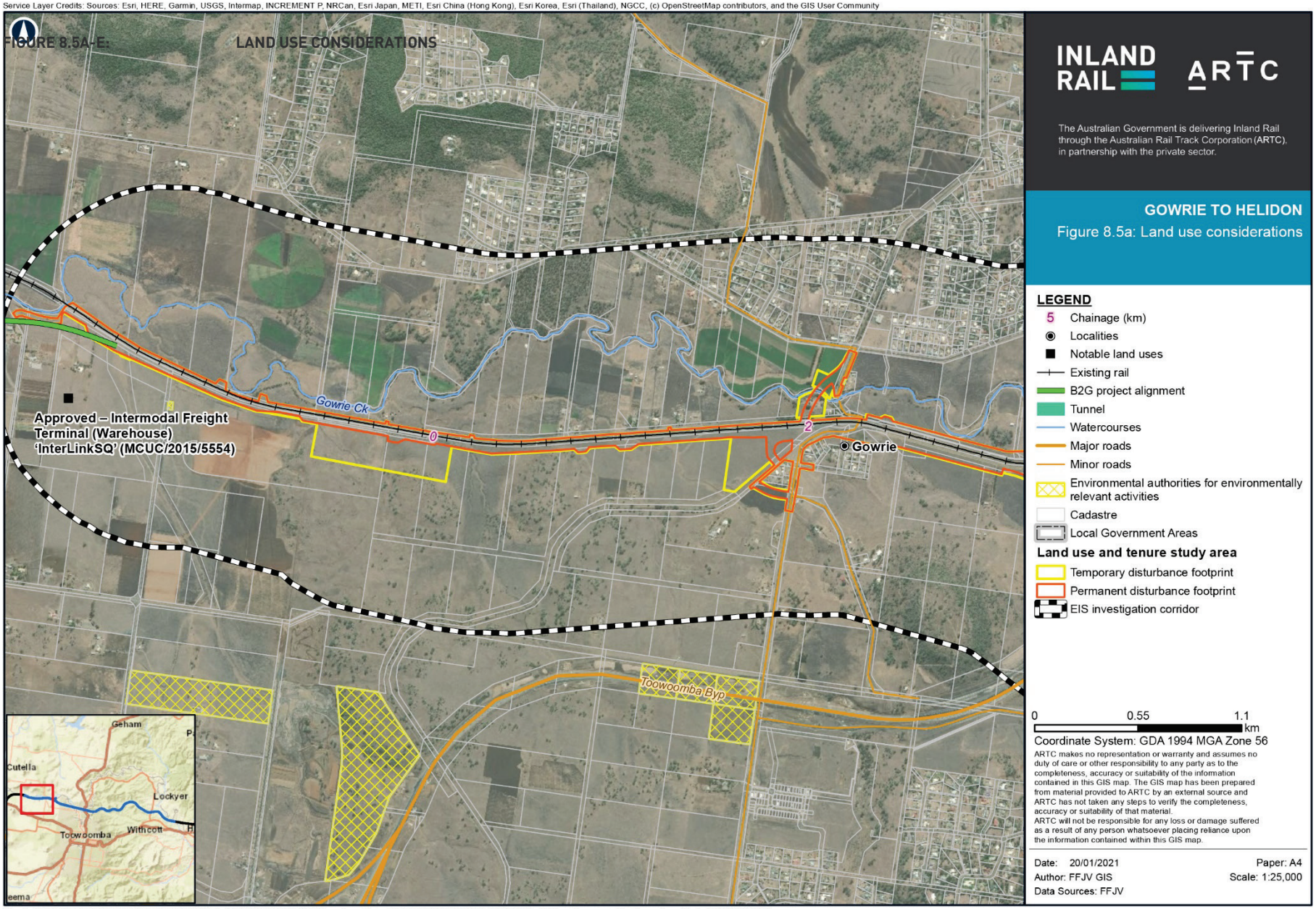

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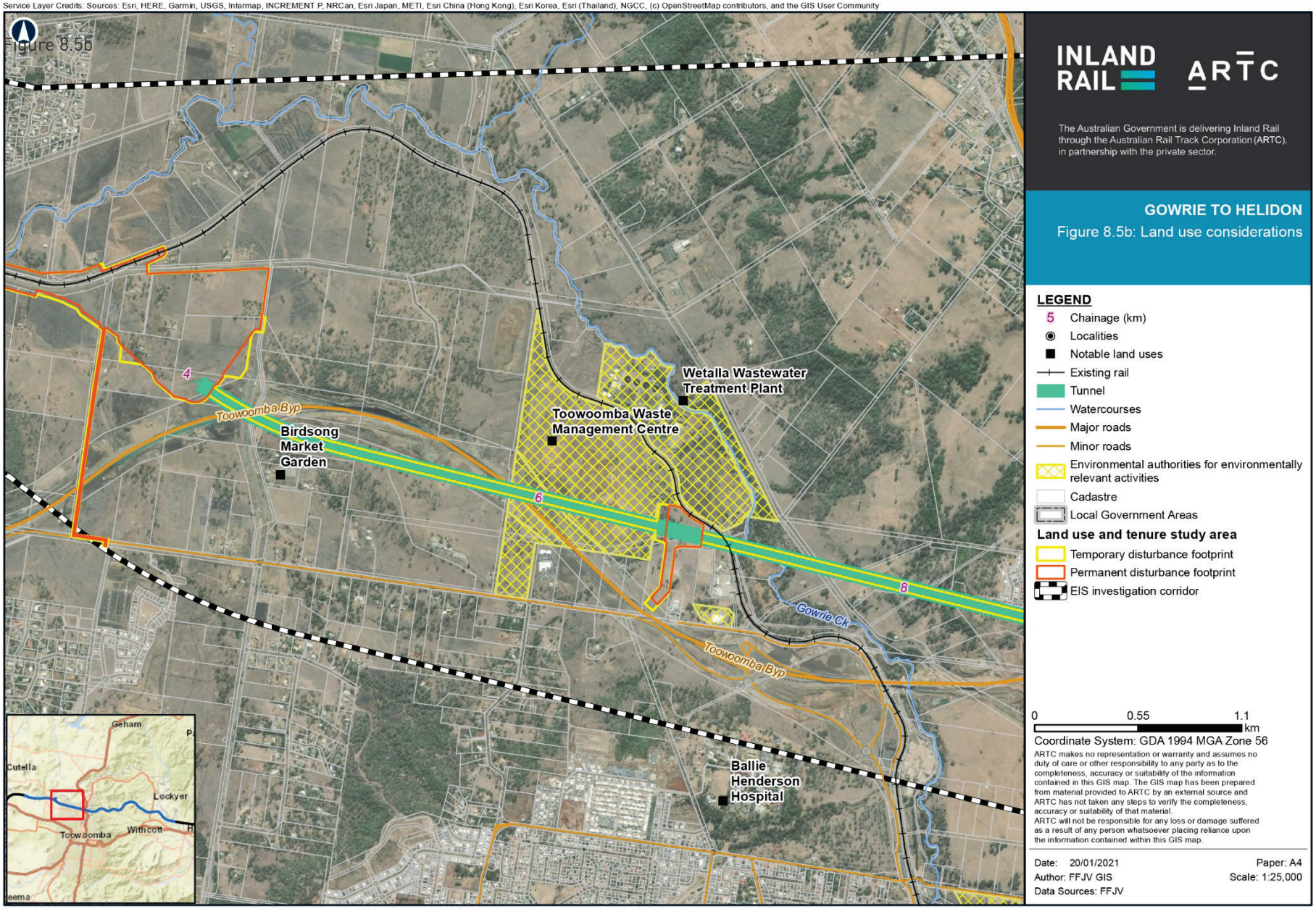

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Figure 8.5b: Land use considerations

LEGEND

- 5 Chainage (km)
- Localities
- Notable land uses
- Existing rail
- Tunnel
- Watercourses
- Major roads
- Minor roads
- Environmental authorities for environmentally relevant activities
- Cadastre
- Local Government Areas

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

Date: 20/01/2021 Paper: A4
Author: FFJV GIS Scale: 1:25,000
Data Sources: FFJV

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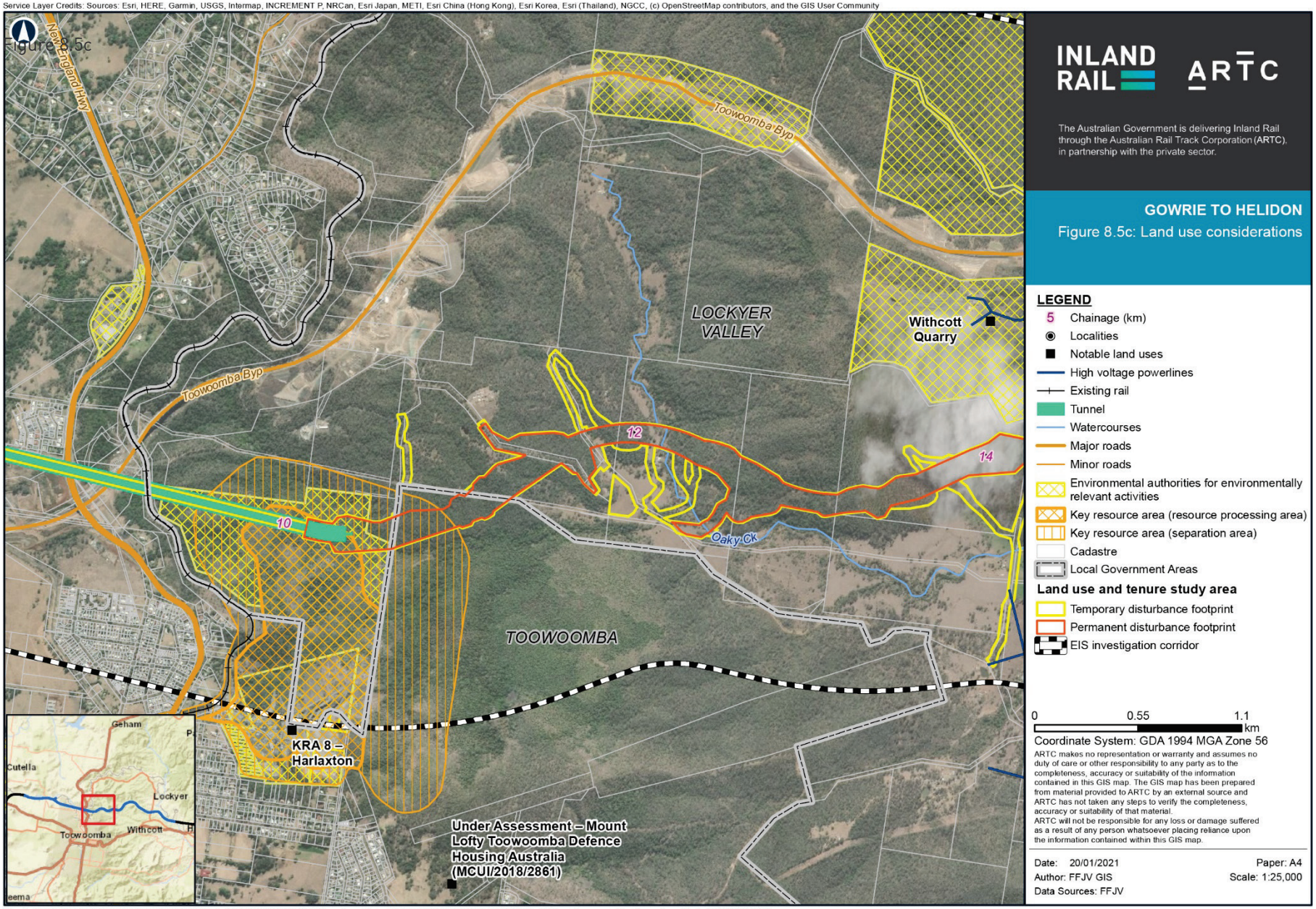

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GOWRIE TO HELIDON

Figure 8.5c: Land use considerations

LEGEND

- 5 Chainage (km)
- Localities
- Notable land uses
- High voltage powerlines
- Existing rail
- Tunnel
- Watercourses
- Major roads
- Minor roads
- Environmental authorities for environmentally relevant activities
- Key resource area (resource processing area)
- Key resource area (separation area)
- Cadastre
- Local Government Areas

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

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Author: FFJV GIS Scale: 1:25,000
Data Sources: FFJV

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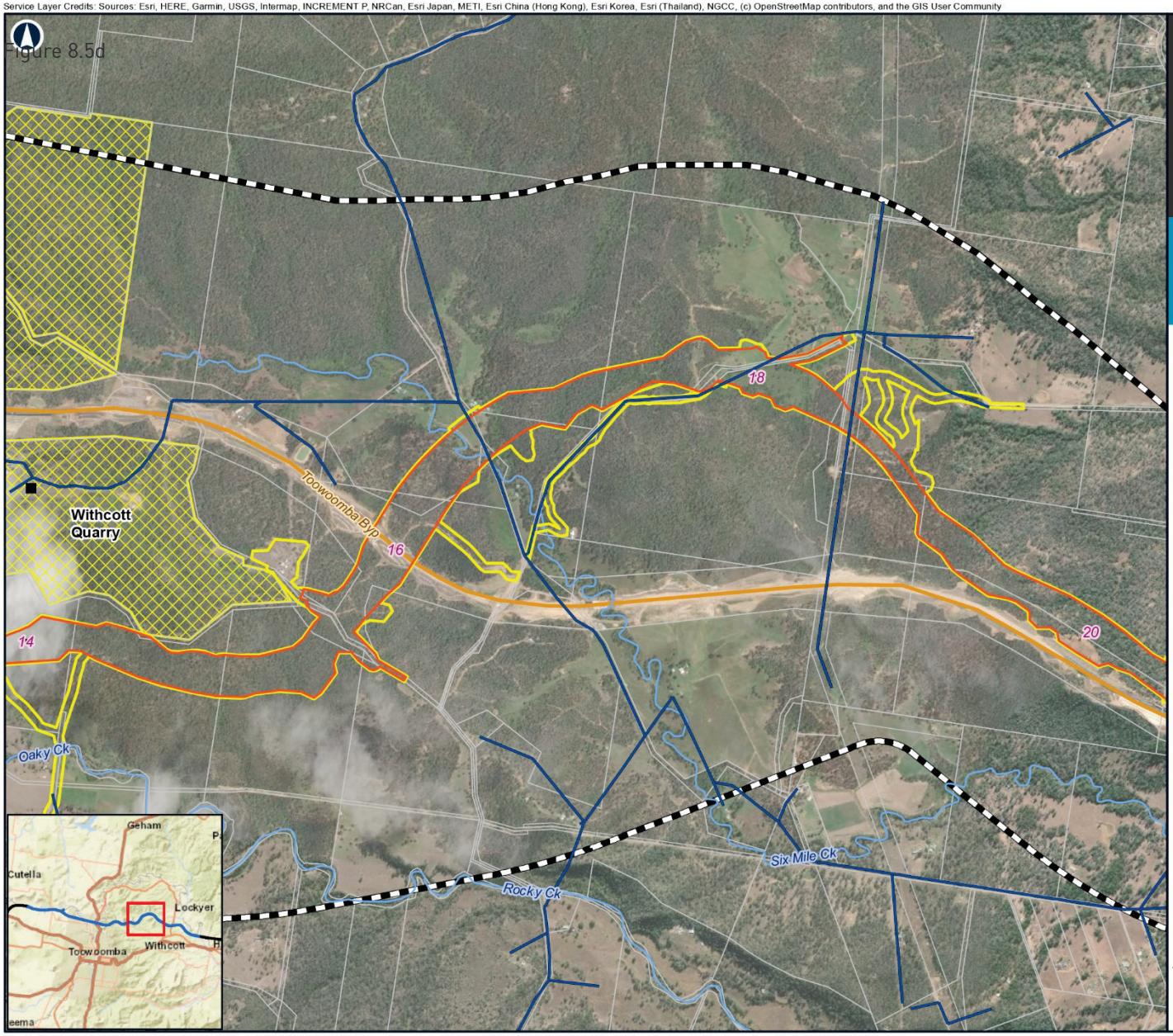
Figure 8.5d



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GOWRIE TO HELIDON

Figure 8.5d: Land use considerations

LEGEND

- 5 Chainage (km)
- Localities
- Notable land uses
- High voltage powerlines
- Existing rail
- Tunnel
- Watercourses
- Major roads
- Environmental authorities for environmentally relevant activities
- Cadastre
- Local Government Areas

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

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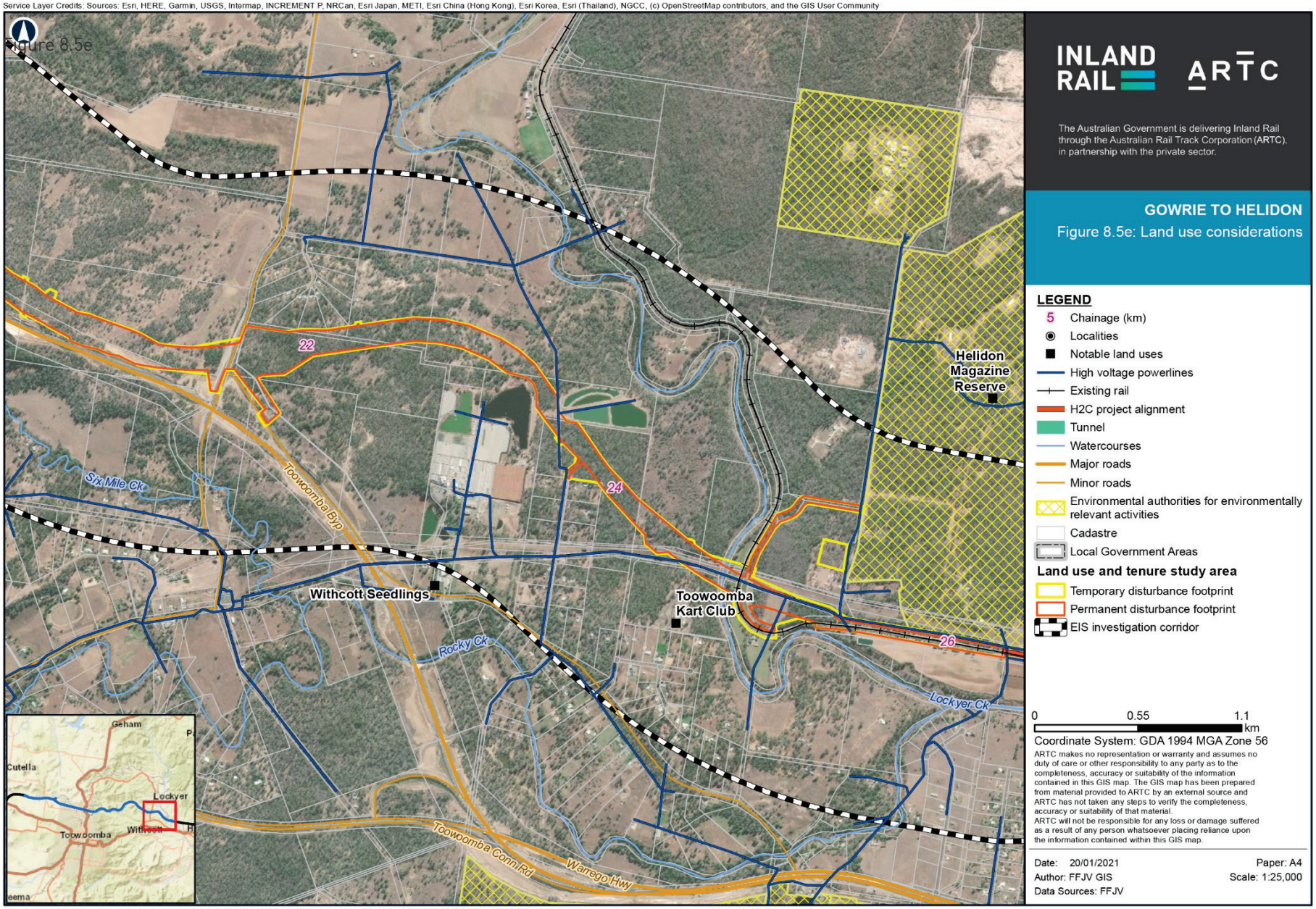

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Figure 8.5e: Land use considerations

LEGEND

- 5 Chainage (km)
- Localities
- Notable land uses
- High voltage powerlines
- Existing rail
- H2C project alignment
- Tunnel
- Watercourses
- Major roads
- Minor roads
- Environmental authorities for environmentally relevant activities
- Cadastre
- Local Government Areas

Land use and tenure study area

- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor

0 0.55 1.1 km

Coordinate System: GDA 1994 MGA Zone 56

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8.6.2.1 Agricultural uses and activities

Queensland Agricultural Land Audit

The Queensland Agricultural Land Audit (Department of Agriculture and Fisheries, 2017) (the Audit) identifies land important to current and future agricultural production in Queensland.

For the purposes of the Audit, current and potential agricultural land use is classified and mapped into the following agricultural land use categories:

- Broadacre cropping (rainfed/irrigated)
- Annual horticulture (irrigated)
- Perennial horticulture (assumed to be irrigated)
- Intensive animal industries (i.e. cattle feedlots and piggeries state-wide, poultry and aquaculture)
- Grazing—sown pasture
- Grazing—native pasture
- Plantation forestry
- Native forestry
- Sugarcane.

Current agricultural land use is mapped across the State predominantly using data from QLUMP, while also including data from the Intensive Livestock Environmental Regulation Unit database for intensive animal industries, and the Safe Food Queensland Egg Register.

The Audit then identifies agricultural potential using a rule-based approach that combines biophysical characteristics of the land, such as the soil, climate and landform, as well as native vegetation and socio-economic spatial data. These rules identify land with characteristics that best match the requirements of each agricultural land use category.

The characteristics of land/soil resources are a fundamental determinant of potential for most agricultural land uses. Soils are classified using a four-tier hierarchy, ranging from Class A (arable land) through to Class D (land that is unsuitable for agriculture). These are described in Table 8.12.

TABLE 8.12: DEFINITION OF AGRICULTURAL LAND CLASSES

Agricultural land class	Description
Land class A—Crop land	Land that is suitable for a wide range[a] of current and potential crops, with nil to moderate limitations to production. ▸ A1—land that is suitable for a wide range of current and potential broadacre and horticulture crops, with limitations to production that range from none to moderate levels ▸ A2—land that is suitable for a wide range of current and potential horticulture crops only, with limitations to production that range from none to moderate levels.
Land class B—Limited crop land	Land that is suitable for a narrow range[b] of current and potential crops. Land that is marginal for current and potential crops due to severe limitations but is highly suitable for pastures. Land may be suitable for cropping with engineering and/or agronomic improvements.
Land class C—Pasture land	Land that is suitable only for improved or native pastures due to limitations that preclude continuous cultivation for crop production. Some areas may tolerate a short period of ground disturbance for pasture establishment. ▸ C1—suitable for grazing sown pastures (with ground disturbance for establishment) or has native pastures on higher fertility soils ▸ C2—suitable for grazing native pastures with or without the introduction of pasture species. Not suitable for ground disturbance to establish pastures. ▸ C3—suitable for light grazing of native pastures in accessible areas and includes steep land more suited to forestry or catchment protection.

Agricultural land class	Description
Land class D—Non-agricultural land	Land not suitable for agricultural uses due to extreme limitations. This may be: undisturbed land with significant conservation and/or catchment values; land that may be unsuitable because of very steep slopes, shallow soils, rock outcrop, poor drainage, salinity, acidic drainage; or land is an urbanised area.

Table notes:
a. A *wide range* is defined as four or more existing crops of local commercial significance. In areas where specialised infrastructure to support an agricultural industry is present, the land may only be currently suitable for two or more crops, providing at least one is regionally significant.
b. A *narrow range* is defined as three or less crops of local commercial significance (or less than two where specialised infrastructure is present).

Source: Department of Agriculture, Fisheries and Forestry (2013b) *Queensland Agricultural Land Audit Method Technical Report*

Agricultural land classified as being Class A or Class B land is the most productive agricultural land in Queensland, with soil and land characteristics that may allow successful crop and pasture production. It is noted that other characteristics such as slope, climate, and socio-economic criteria also impact on the potential for land to be used for agricultural land uses; nonetheless, Class A and B land is the key component of the State's interest in agriculture under the SPP. In July 2020, the Queensland Government (Department of Science, 2020) released updated Agricultural Land Class (ALC) data for identifying productive Class A and Class B land which has been used in this assessment.

In addition to the above, the Audit identifies Important Agricultural Areas (IAAs). IAAs are defined by the Audit as land that has all of the requirements for agriculture to be successful and sustainable, is part of a critical mass of land with similar characteristics and is strategically significant to the region or the State. The significance of the land was based on consideration of a range of criteria that reflect the current or potential contribution that the land can make to the region and State economically and socially (DAFF, 2013a and DAF, 2017). These criteria included:

- Current or potential contribution of agricultural development of the area to economic activity and employment (and other social factors) in the locality, region or State
- Strategic importance of the area for continuity and consistency of supply of particular products or markets locally, nationally or internationally
- Extent of investment required to develop the land for agriculture (e.g. through construction of irrigation schemes, grain storage facilities or sale yards).

The Audit is based on the 12 statutory regional planning boundaries of Queensland, being SEQ, Darling Downs, Wider Bay Burnett, South West, Central West, North West, Central Queensland, Mackay Isaac and Whitsunday, Charters Towers, Gulf, Far North Queensland and the Cape. For each region, an economic and socio-economic profile has been prepared, along with an analysis of the strengths, weaknesses, opportunities and threats for agricultural development in the region.

As the Darling Downs and SEQ regional planning boundaries overlap at the urban extent of Toowoomba, the Project is located within both the SEQ region and the Darling Downs region.

Darling Downs region

The Project is located within the Darling Downs region, from the western extent of the Project to Ballard in the east. The Audit recognises the Darling Downs region to have some of Queensland's best agricultural land. Traditionally, the primary production activities in the region have been grazing (both sheep and cattle), dryland and irrigated cropping, and timber production. The region also supports intensive horticulture and many intensive animal production businesses. Activities undertaken in the south-eastern area of the Darling Downs is predominantly broadacre cropping (DAFF, 2013a).

The Audit identifies the following strengths for the Darling Downs region:

- Linked to SEQ, with access to markets and ports by major road, rail and airport infrastructure
- Strong, established centres in some areas (i.e. towns along the Warrego Highway).

There are four areas identified as IAAs in the Darling Downs region, one of which is traversed by the land use study area, being the Eastern Darling Downs IAA.

The Eastern Darling Downs IAA supports some of Queensland's best cropping lands, producing over 30 per cent of the State's cropping commodity value. The area supports extensive broadacre cropping, horticulture and significant intensive livestock businesses. Cropping in the Eastern Darling Downs IAA is dependent on the high-quality vertosol soils unique to the area. Established infrastructure in the area, including water and further processing facilities, support irrigation and industry needs.

Within the vicinity of the Project, the Eastern Darling Downs IAA is associated with the floodplain areas of Gowrie Creek Catchment, west of Cranley. For the most part, the Project traverses areas of the IAA that overlap with the existing West Moreton System rail corridor and the local road network, along with areas dominated by grazing and residential blocks, with no significant impacts from the Project on the horticultural productivity and land uses within the IAA.

South-east Queensland region

The Project is located within the SEQ region for the entire length of the alignment. The Audit outlines that the dominant agricultural industries are horticulture, poultry, cattle, dairy and cultivated turf (DAFF, 2013a). At a local government level, the Audit identifies:

- The predominant industry within the Lockyer Valley is production horticulture, which contributes significantly to Queensland's overall horticulture production and economic outlook. Vegetable production is dominant within the Lockyer Valley, with the area containing major producers of many fruit and vegetables, as well as milk, beef and grain enterprises. The Lockyer Valley is identified to be the most significant groundwater area in SEQ, supporting a wide range of agricultural produce and, for most of the Lockyer Valley, being the dominant source of water for irrigation.

The Audit identifies the following strengths for the SEQ region:

- In close proximity to major transport hubs (airport, rail and ports) for interstate and international markets
- Supports numerous value-adding/processing enterprises crossing many sectors (poultry, viticulture, fruit juice, ginger, garlic, fresh herbs and dairy), and many LGAs are keen to expand processing and value-adding industries
- Supplies quarry material (including material from native forests on State land) for infrastructure and construction requirements.
- In the SEQ region, three areas have been identified as IAAs, one of which, the Lockyer Valley IAA, is traversed by the Project in the localities of Lockyer, Postmans Ridge and Helidon Spa. The soils and biophysical properties of the area make the Lockyer Valley IAA one of the major annual horticulture areas in Australia. The combination of a unique climate, underground water supply, fertile soils and extensive farming enables the area to be a significant winter, autumn and spring vegetable production area. The close proximity to markets, reliable access to transportation infrastructure and established support services also contribute to the area's agricultural development. The primary horticultural products in the Lockyer Valley include: broccoli, cauliflower, potatoes, onions, pumpkins, lettuce, corn, green beans and carrots.
- Within the vicinity of the Project, the Lockyer Valley IAA is associated with the floodplain areas of Oaky/Rocky Creek catchment, Six Mile Creek catchment and Lockyer Creek catchment. For the most part, the Project traverses areas of the IAA that are dominated by grazing and residential blocks, not impacting on the horticultural productivity and land uses.

Relevance to the Project

Agricultural land classified by the Queensland Government (Class A and Class B land) and the Audit (IAAs) located within the land use study area is summarised in Table 8.14, and shown on Figure 8.6a-e. It should be noted that the mapping includes the recently completed Toowoomba Bypass, along with the West Moreton System rail corridor and the local road network.

TABLE 8.13: AGRICULTURAL LAND WITHIN THE LAND USE STUDY AREA

Land classification	Area (ha)	% of land within land use study area
Land Class A	1,854.29	24.1
Land Class B	315.50	4.1
IAA	2,599.55	33.76

TABLE 8.14: AGRICULTURAL LAND WITHIN THE PROJECT DISTURBANCE FOOTPRINT

	Permanent disturbance footprint		Temporary disturbance footprint		Toowoomba Range Tunnel	
Land classification	Area (ha)	% of land within the permanent disturbance footprint	Area (ha)	% of land within the temporary disturbance footprint	Area (ha)	% of land within the tunnel
Land Class A	86.57	24.4	29.19	28.6	7.25	1.59
Land Class B	3.21	0.9	5.10	5.0	0.00	0.0
IAA	142.04	40.0	49.80	48.8	3.91	13.7

Table 8.15 details land within the permanent and temporary disturbance footprints located outside of existing road and rail corridors. It is important to note that the tunnel area is not included as it does not have any direct impacts on Land Class A, B or IAA.

TABLE 8.15: AGRICULTURAL LAND WITHIN THE PERMANENT AND TEMPORARY DISTURBANCE FOOTPRINTS, WHERE NOT WITHIN EXISTING ROAD AND RAIL CORRIDORS

Land classification	Area (ha)	Percentage of footprint located outside of existing rail and road corridors
Permanent footprint located outside of existing rail and road corridors		
Land Class A	51.65	17.1
Land Class B	3.03	1.0
IAA	98.80	32.6
Temporary footprint located outside of existing rail and road corridors		
Land Class A	25.60	28.5
Land Class B	3.45	3.8
IAA	42.78	47.7

The permanent disturbance footprint will also utilise the Gowrie to Grandchester future state transport corridor for approximately 61.95 ha. The Gowrie to Grandchester future state transport corridor is also mapped as containing Class A land, Class B land and IAA; however, the future intent of land within the Gowrie to Grandchester future state transport corridor is recognised as future railway land.

It is also important, therefore, to assess land within the permanent and temporary disturbance footprints located outside of the existing rail and road corridors as well as the Gowrie to Grandchester future state transport corridor. Table 8.16 details agricultural land within the permanent and temporary disturbance footprints located outside of existing road and rail corridors and the Gowrie to Grandchester future state transport corridor.

TABLE 8.16: AGRICULTURAL LAND WITHIN THE PERMANENT AND TEMPORARY DISTURBANCE FOOTPRINTS, WHERE NOT WITHIN EXISTING ROAD AND RAIL CORRIDORS AND GOWRIE TO GRANDCHESTER FUTURE STATE TRANSPORT CORRIDOR

Land classification	Area (ha)	Percentage of footprint located outside of existing rail and road corridors and Gowrie to Grandchester future state transport corridor
Permanent disturbance footprint		
Land Class A	37.40	15.2
Land Class B	3.03	1.2
IAA	71.01	28.8
Temporary disturbance footprint		
Land Class A	24.17	29.0
Land Class B	3.45	4.1
IAA	38.50	46.2

The Audit also identifies current intensive livestock operations of piggeries, cattle feedlots and poultry farms. Piggeries, cattle feedlots and poultry farms are included in the Audit where there is a current Environmental Authority (EA) for the use under the EP Act.

There are no current intensive livestock operations identified by the Audit located within 1 km of the land use study area; however, one land-based aquaculture operation is noted within the outer limits of the land use study area at Withcott, approximately 1 km south of the Project disturbance footprint.

FIGURE 8.6A-E: QUEENSLAND AGRICULTURAL LAND AUDIT

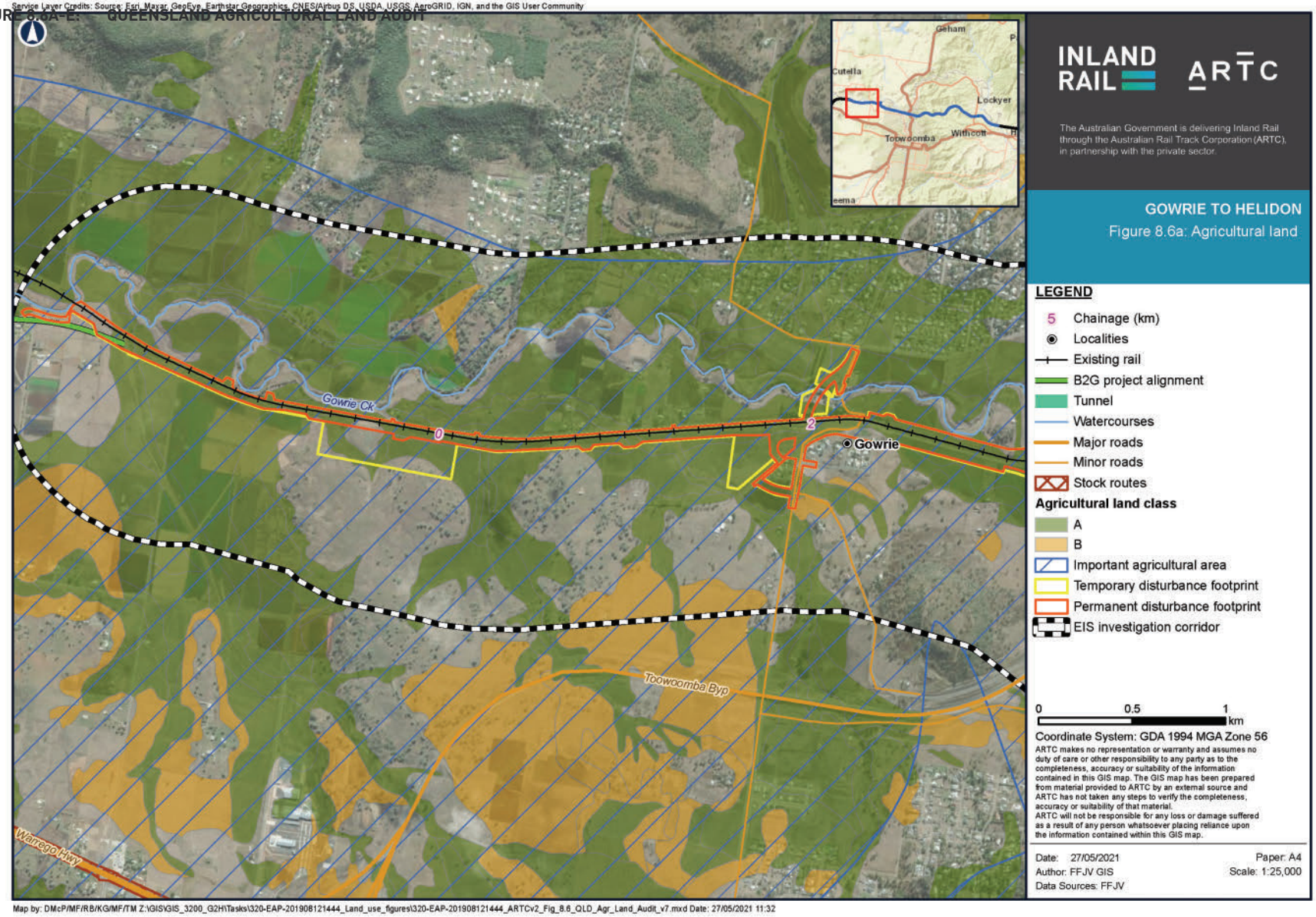
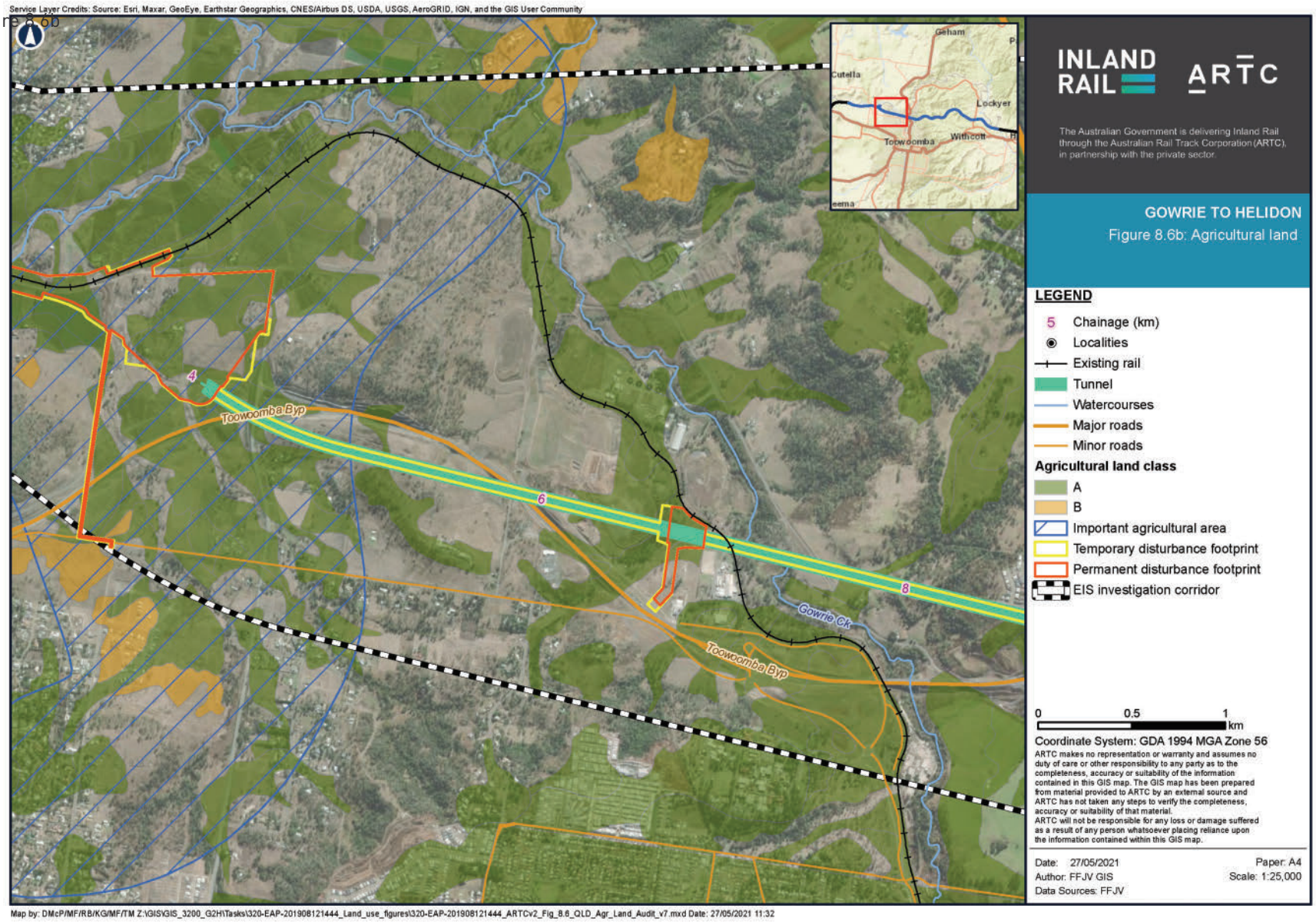


Figure 8.6b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INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
GOWRIE TO HELIDON
Figure 8.6b: Agricultural land
LEGEND
5 Chainage (km)
Localities
Existing rail
Tunnel
Watercourses
Major roads
Minor roads
Agricultural land class
A
B
Important agricultural area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
4
Toowoomba Byp
6
8
Gowrie Ck
Toowoomba Byp
0 0.5 1 km
Coordinate System: GDA 1994 MGA Zone 56
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Author: FFJV GIS
Data Sources: FFJV
Paper: A4
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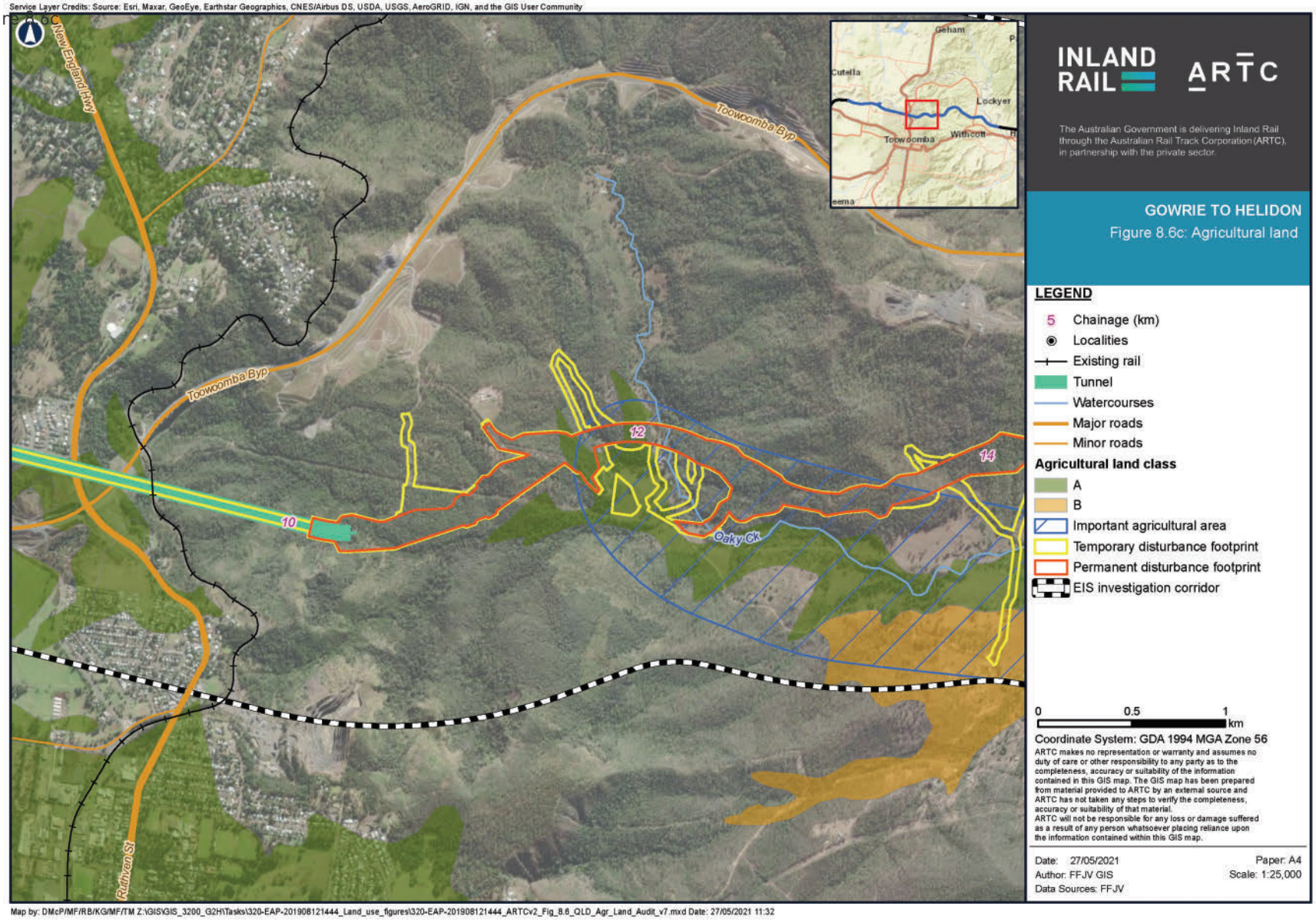
Map by: DMcP/MF/RB/KG/MF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201908121444_Land_use_figures\320-EAP-201908121444_ARTCv2_Fig_8.6_QLD_Agr_Land_Audit_v7.mxd Date: 27/05/2021 11:32

Figure 8.6c


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
New England Hwy
Toowoomba Byp
Toowoomba Byp
12
14
10
Oaky Ck
Ruthven St
Geham
Cutella
Lockyer
Toowoomba
Withcott
INLAND RAIL
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GOWRIE TO HELIDON
Figure 8.6c: Agricultural land
LEGEND
5 Chainage (km)
Localities
Existing rail
Tunnel
Watercourses
Major roads
Minor roads
Agricultural land class
A
B
Important agricultural area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
0 0.5 1 km
Coordinate System: GDA 1994 MGA Zone 56
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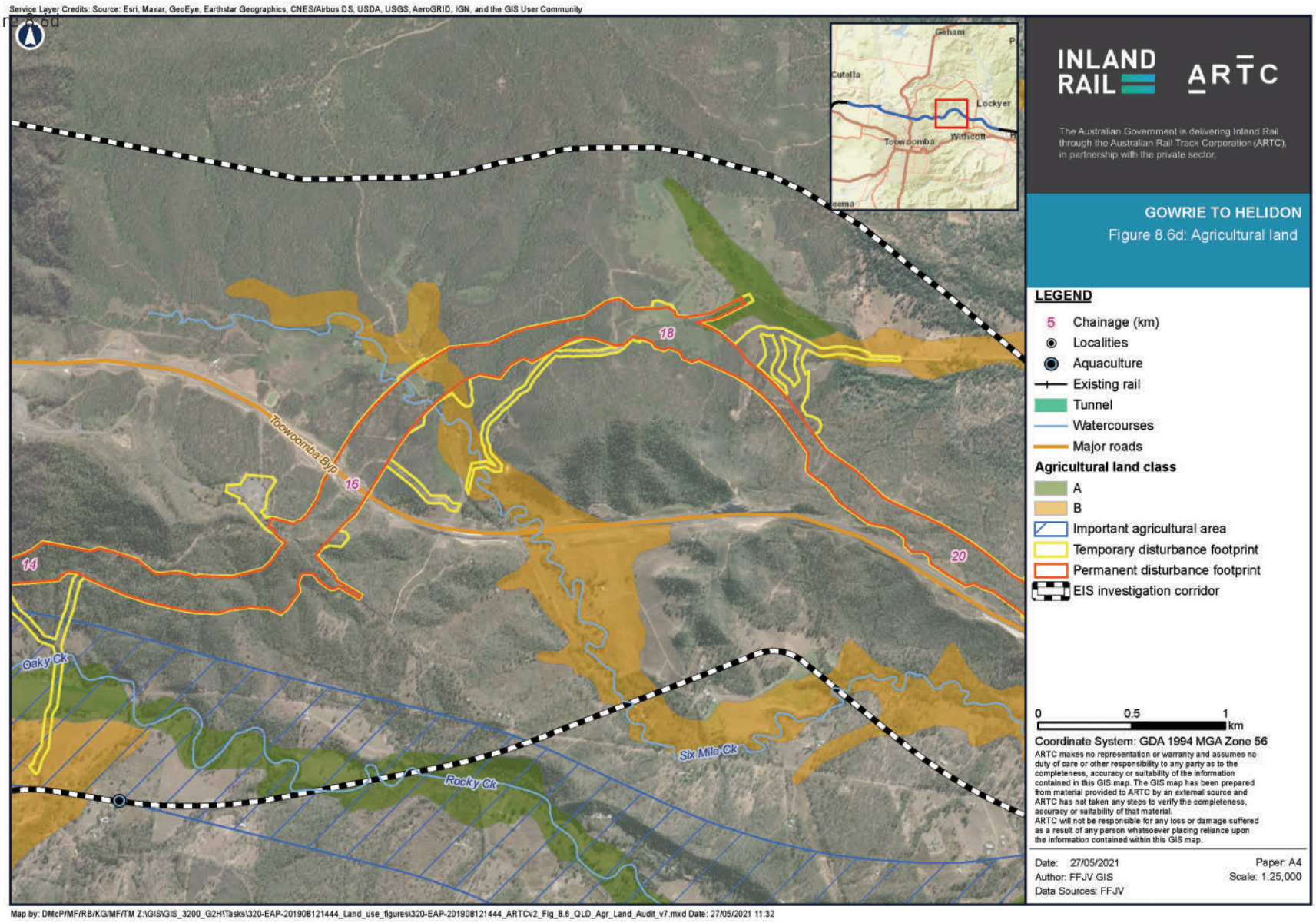
Map by: DMcP/MF/RB/KG/MF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201908121444_Land_use_figures\320-EAP-201908121444_ARTCv2_Fig_8.6_QLD_Agr_Land_Audit_v7.mxd Date: 27/05/2021 11:32

Figure 8.6d


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Geham
Cutella
Lockyer
Toowoomba
Withcott
INLAND RAIL
ARTC
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GOWRIE TO HELIDON
Figure 8.6d: Agricultural land
LEGEND
5 Chainage (km)
Localities
Aquaculture
Existing rail
Tunnel
Watercourses
Major roads
Agricultural land class
A
B
Important agricultural area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
18
16
14
20
Toowoomba Byp
Oaky Ck
Six Mile Ck
Rocky Ck
0
0.5
1
km
Coordinate System: GDA 1994 MGA Zone 56
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Data Sources: FFJV
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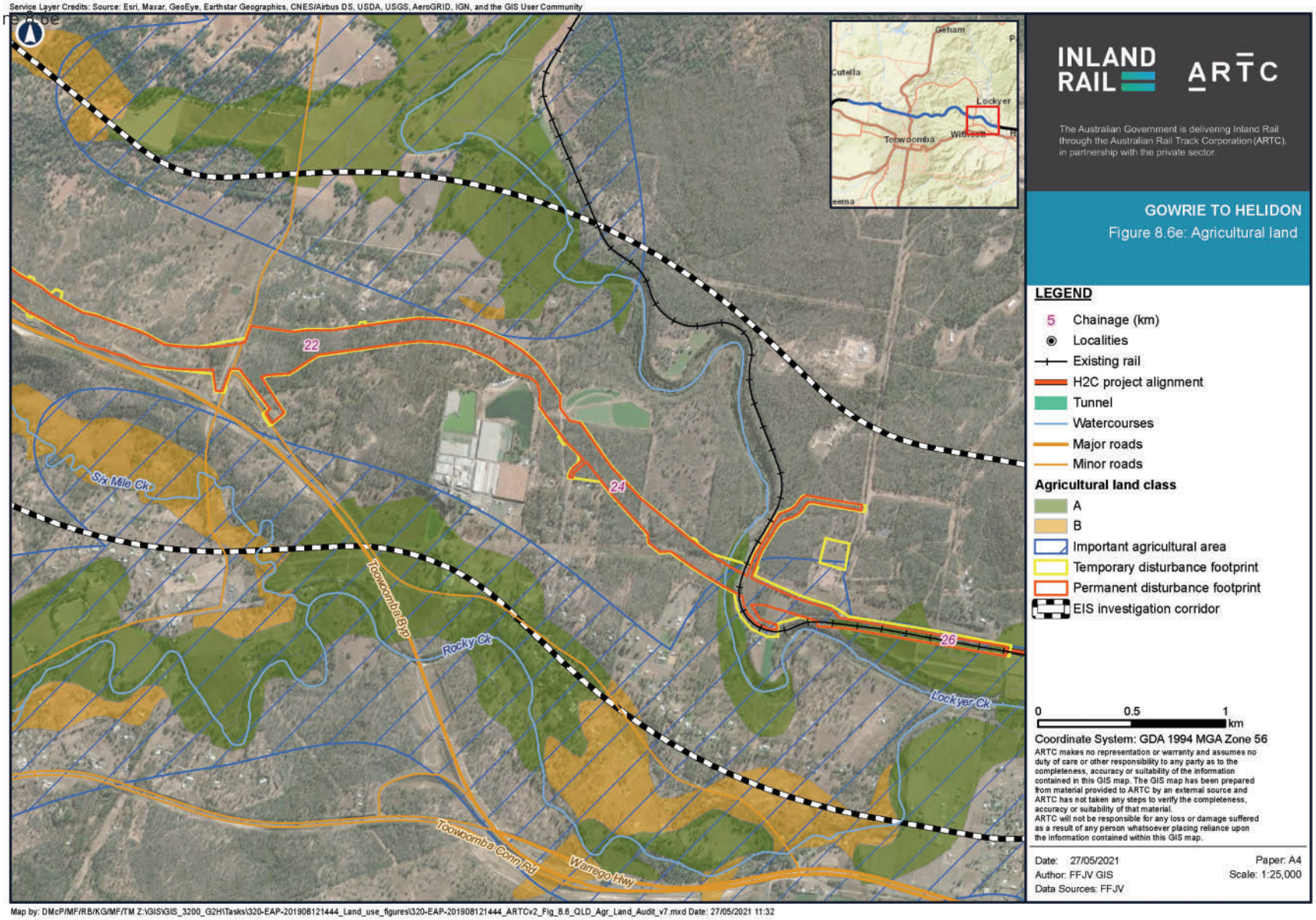
Scale: 1:25,000
Map by: DMcP/MF/RB/KG/MF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201908121444_Land_use_figures\320-EAP-201908121444_ARTCv2_Fig_8.6_QLD_Agr_Land_Audit_v7.mxd Date: 27/05/2021 11:32

Figure 8.6e


Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Geham
Cutella
Lockyer
Toowoomba
Withcott
22
24
26
Six Mile Ck
Toowoomba Byp
Rocky Ck
Lockyer Ck
Toowoomba Conn Rd
Warrego Hwy
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
GOWRIE TO HELIDON
Figure 8.6e: Agricultural land
LEGEND
5 Chainage (km)
Localities
Existing rail
H2C project alignment
Tunnel
Watercourses
Major roads
Minor roads
Agricultural land class
A
B
Important agricultural area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
0 0.5 1 km
Coordinate System: GDA 1994 MGA Zone 56
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Map by: DMcP/MF/RB/KG/MF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201908121444_Land_use_figures\320-EAP-201908121444_ARTCv2_Fig_8.6_QLD_Agr_Land_Audit_v7.mxd Date: 27/05/2021 11:32

Stock routes

Stock routes are corridors on roads, reserves, pastoral leases and USL along which stock are driven on foot and are designated for travelling stock purposes under the relevant State legislation. Currently, the stock route network in Queensland is administered under at least three Acts:

- *Stock Route Management Act 2002* (Qld)
- Land Act
- TI Act.

The land use study area does not traverse any declared stock routes, stock route reserves or stock route water facilities. The closest stock route, the Warrego Highway, is located approximately 2.5 km south of the land use study area at Charlton.

8.6.2.2 Key resource areas

Key resource areas (KRAs) are identified locations containing important extractive resources of State or regional significance, worthy of protection for future use (DILGIP, 2016c). KRAs are included in the SPP and are supported by the *State interest guideline—Mining and extractive resources*.

A KRA is made up of four components:

- The resource/processing area—the extent of the extractive resource and any operational areas associated with the extraction and processing of the resource
- A separation area—to maintain separation from people who might be affected by impacts such as noise, dust and ground vibrations from existing or future operations
- A transport route—from the boundary of the resource area to a major road or railway
- A separation area around the transport route—to minimise impacts on people who might be affected by noise, dust and ground vibration along the route.

The Harlaxton KRA (KRA 8) is located on the northern fringe of the built-up area of Toowoomba and is located within the land use study area at Harlaxton. The Harlaxton KRA comprises a thick basalt sequence and is a major quarry that yields a wide range of crushed rock products (DILGP, 2016c).

The Harlaxton KRA was not identified as a constraint in the *Gowrie to Grandchester Rail Corridor Study*, as the Department of Natural Resources (now the Department of Resources) developed the concept of KRAs in the early 2000s, with the Harlaxton KRA initially identified as the existing quarry and the immediate surrounding area (including the western extent of Lot 1 on RP46221 and the eastern portion of Lot 374 on SP272172) about 600 m south of the Project alignment (Willmott, 2002).

The Harlaxton KRA was subsequently amended in the SPP, in December 2013, to the current configuration. The Project, including the Toowoomba Range Tunnel, traverses both the separation and processing area associated with KRA 8 on Lot 374 on SP272172. The proposed eastern tunnel portal will also be located in the north-eastern corner of the processing area, on Lot 374 on SP272172. The Project also traverses the separation area on Lot 20 on CC675 and Lot 1 on RP46221.

The existing transport route for KRA 8 is located along Munro Street to the New England Highway. The Project does not traverse this transport route.

An active quarry, Harlaxton Quarry, operated by Quarry Products Pty Ltd, is located in the southern section of the KRA. The current operation, approximately 23 ha in area, is associated with a spur of the Toowoomba Range, approximately 800 m south of the eastern tunnel portal and to the north of Mt Lofty. The existing operation is serviced by Munro Street, Harlaxton—the designated transport route.

The quarry has been in operation for over 40 years, with the basalt used primarily for high traffic areas on road friction courses. The environmental authority for the operation (EPPR00443813) includes the extraction and screening of between 100,000 and 1,000,000 tonnes per annum. Discussions with the operator have indicated that the existing pit has an operating life of at least another 20 years.

The KRA is shown on Figure 8.5c.

8.6.2.3 Infrastructure and utilities

The Project crosses and aligns with highways, main roads and local roads. In particular, the land use study area crosses the following State-controlled roads where above-ground disturbance is proposed:

- Toowoomba Bypass at approximate Ch 16.0 km
- Murphys Creek Road at approximate Ch 21.6 km.

The Project also traverses beneath the following State-controlled roads when within the proposed Toowoomba Range Tunnel:

- Toowoomba Bypass at approximate Ch 4.2 km to Ch 4.4 km at a depth of 40 m; Ch 5.5 km to Ch 6.0 km at a depth of 100 m; and Ch 9.0 km at a depth of 200 m
- New England Highway at approximate Ch 8.8 km at a depth of 200 m.

In addition to these State-controlled roads, the Project traverses four existing roads managed by TRC and six existing roads managed by LVRC, and will have 17 public road–rail interface points. The land use study area also traverses multiple occupational and private roads.

The Project uses existing West Moreton System rail corridor at Gowrie Junction and at Helidon. The Project also passes beneath the West Moreton System rail corridor when within the proposed Toowoomba Range Tunnel at approximate Ch 7.0 km (at a depth of 100 m) and Ch 9.2 km (at a depth of 200 m).

The Roma Brisbane Gas Pipeline, PPL 2, held by APT Petroleum Pipelines Pty Ltd (a subsidiary of APA Group), is also located within the land use study area. This pipeline is a gas transmission pipeline that transports natural gas between Wallumbilla gas hub, near Roma, to Brisbane. The Project passes approximately 120 m beneath the gas pipeline, at approximate Ch 7.8 km, and above the pipeline at approximate Ch 11.1 km and Ch 24.5 km.

The Wetalla Water Pipeline, owned by New Hope Group, intersects the Project between Cranley and Charlton and is primarily located within existing road reserves. Easements associated with the pipeline are outlined in Section 8.6.1.2. The Wetalla Water Pipeline is a 45 km water pipeline that supplies treated wastewater to the New Acland Coal Mine.

The Project also intersects overhead powerlines owned by Energex, Powerlink and Ergon Energy, pipes owned by TRC and Millmerran Operating Co, optic fibre lines owned by NBNCo, Optus/Uecomm, Telstra and Nextgen and the existing infrastructure (e.g. rising sewer main) owned by TRC.

In total, the Project has 184 utility interactions, including communication, electrical, water, gas and oil utilities. Utilities within the land use study area are summarised in Table 8.17.

Initial consultation with respective infrastructure providers and pipeline licensees has occurred and is detailed within Appendix D: Community Consultation. Consultation will continue throughout the detailed design phase to confirm utility interface solutions.

TABLE 8.17: UTILITIES WITHIN THE PROJECT DISTURBANCE FOOTPRINT

Utility owner	Number of interactions
APA	6
Energex	21
Ergon Energy	26
Millmerran Operating Co.	6
NBN Co	13
New Hope Group	5
Nextgen	9
Optus Uecomm	2
Powerlink	3
Private	2
Urban Utilities	3
Telstra	61
Toowoomba Regional Council	27
Total	**184**

8.6.2.4 Current environmental authorities for environmentally relevant activities

Environmentally relevant activities (ERAs) are industrial or intensive agricultural activities with the potential to release contaminants into the environment. An EA is required to perform an ERA. EAs are administered by a range of Queensland Government and local councils under the provisions of the EP Act.

There are two categories of ERAs:

- Prescribed ERAs (as defined under Schedule 2 of the Environmental Protection Regulation 2019)
- Resource activities (including mining activities, petroleum activities, geothermal activities and greenhouse gas storage activities).

Resource activities relevant to the Project are identified in Section 8.6.1.3 and Section 8.6.1.4. There are two current prescribed ERAs traversed by the Project. These are detailed in Table 8.18 and shown on Figure 8.5a-e.

TABLE 8.18: PRESCRIBED ERAS LOCATED WITHIN THE PROJECT DISTURBANCE FOOTPRINT

Permit number and primary holder	Locality	Description	EA grant date	Relationship to the Project
Prescribed ERA (Permit number: EPPR00625013)—TRC	Cranley	This prescribed ERA is associated with the Toowoomba Waste Management Centre and has the following registered activities: - ERA 56—regulated waste storage, receiving and storing regulated waste - ERA 60—waste disposal, 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(b), (f) > 50,000 tonnes (t) but not >100,000 t - ERA 20—metal recovery, 1: Recovering less than 100 t of metal in a day - ERA 60—waste disposal, 1: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(a), (c) >100,000 t but not >200,000 t	EA granted in May 2017	The Project traverses approximately 95 m beneath the Toowoomba Waste Management Centre at Cranley via the Toowoomba Range Tunnel (Ch 6.1 km to Ch 6.6 km)
Prescribed ERA (Permit number: EPPR00443813)—Quarry Products Pty Ltd	Harlaxton	This prescribed ERA is associated with the Harlaxton Quarry and has the following registered activities: - ERA 16—(2b) & (3b) Extraction and Screening >100,000 t but <1,000,000 tonnes per year (t/yr) - ERA 19—metal forming >10,000 t/yr	EA granted June 2016	The Project traverses beneath and at surface through area mapped for the Harlaxton Quarry (Lot 374 on SP272172) prescribed ERA at Ballard; however, it does not traverse through the existing quarry operations (Ch 10.0 km to Ch 10.3 km)

8.6.3 Areas of regional interest

The *Regional Planning Interests Act 2014* (Qld) (RPI Act) regulates areas of regional interest. There are four areas of regional interest protected under the RPI Act, being:

- Priority agricultural area
- Strategic cropping area
- Priority living area
- Strategic environmental area.

Although the land use study area contains areas mapped as priority agricultural area, strategic cropping area and priority living area, the Project is not a resource activity nor a regulated activity under the RPI Act and, therefore, the RPI Act does not apply.

8.6.4 Future land use intent and development activity

8.6.4.1 Future land use intent

A review of the relevant statutory land use planning instruments has been undertaken to identify the planned future land use intent and preferred pattern of development within the land use study area. The relevant instruments are:

- The SPP (DILGP, 2017b)
- Darling Downs Regional Plan (Department of State Development, Infrastructure and Planning, 2013a)
- ShapingSEQ (DILGP, 2017a)
- Toowoomba Regional Planning Scheme (TRC, 2012)
- Gatton Shire Planning Scheme 2007 (LVRC, 2007).

Furthermore, a review of current development activity was also undertaken to identify recent development approval decisions, current proposed development and the status of key major projects.

State Planning Policy

The SPP expresses 17 State interests in land use planning and development across the following five key themes:

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

A summary of each State interest and its relevance to the Project is provided in Table 8.19.

TABLE 8.19: STATE PLANNING POLICY STATE INTERESTS

State interest	State interest summary statement	Relevance to Project
Liveable communities and housing		
Housing supply and diversity	Diverse, accessible and well-serviced housing, and land for housing, is provided and supports affordable housing outcomes.	✓ The Project traverses, or is located adjacent to, residential land uses in areas including but not limited to Gowrie Junction, Cranley, Mount Kynoch, Withcott, Postmans Ridge and Helidon Spa.
Liveable communities	Liveable, well-designed and serviced communities are delivered to support wellbeing and enhanced quality of life.	✓ The Project traverses the localities of Gowrie Junction and Helidon Spa where land use is characterised by residential and rural residential land uses.
Economic growth		
Agriculture	The resources on which agriculture depends are protected to support the long-term viability and growth of the agricultural sectors. Audit (DAAF, 2013a) information has been used to support the various policy elements of the State's interest in agriculture; in particular, the identification and mapping of IAA, and Agricultural Land Class A and B.	✓ Land use within and adjacent to the Project predominantly consists of native grazing vegetation, with other agricultural land use, including small pockets of cropping and irrigated seasonal horticulture, scatted along the Project. The Project traverses the Eastern Darling Downs IAA, Lockyer Valley IAA and land classified as both Class A and Class B agricultural land (refer Section 8.6.2.1). As noted in Section 8.6.2.1, these areas also overlap the existing road and rail network, along with the Gowrie to Grandchester future State transport corridor where the Project is predominately located.

State interest	State interest summary statement	Relevance to Project
Development and construction	Employment needs, economic growth, and a strong development and construction sector are supported by facilitating a range of residential, commercial, retail, industrial and mixed-use development opportunities.	✓ The Project will generate significant employment and economic growth, and support for the construction sector. The Project is part of the larger Inland Rail Program of works. It is anticipated that 16,000 jobs will be required Program-wide at the peak of construction, with an average of 800 jobs per annum over the 10-year construction period. The construction workforce required for the Project is estimated to peak at 596 full time equivalents (FTEs), with the average number of workers required for the course of the construction period estimated to be 264 FTEs. The workforce will be sourced, where available, from the Toowoomba and Lockyer Valley LGAs. At a local and regional level, the Project also has the potential to catalyse the development and growth of regional intermodal hubs, such as the Toowoomba Enterprise Area, along with providing a more efficient rail corridor.
Mining and extractive resources	Extractive resources are protected and mineral, coal, petroleum and gas resources are considered to support the productive use of resources, a strong mining and resource industry, economical supply of construction materials and avoid land use conflicts where possible.	✓ The Project traverses the Harlaxton KRA 8, as well as the Roma Brisbane Gas Pipeline (PPL 2). There may also be temporary distributions to the supply network (West Moreton System rail corridor) in the short-term, while in the long-term the new rail corridor has the potential to enhance the supply network.
Tourism	Tourism planning and development opportunities that are appropriate and sustainable are supported, and the social, cultural and natural values underpinning tourism developments are protected.	✓ The Project does not traverse any lands protected for natural values. The Project does, however, traverse through the Toowoomba Range, where there are scenic lookouts providing views towards natural scenic amenity and supporting the region's tourism. Details on scenic amenity values of the surrounding area are discussed in Chapter 10: Landscape and Visual Amenity.
Environment and heritage		
Biodiversity	Matters of environmental significance are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological processes. This State seeks to ensure that development is located in areas that avoid significant impacts on matters of environmental significance and, where adverse impacts cannot be reasonably avoided, that they are minimised. This state interest also requires that ecological processes and connectivity are maintained or enhanced by avoiding fragmentation of matters of environmental significance.	✓ The Project traverses areas mapped or known to support species of National and/or State environmental significance. This includes the 'endangered' and 'of concern' regional ecosystems associated with the Toowoomba Range, along with a number of watercourses and wetlands. Details on the Matters of National and/or State environmental significance are discussed in Chapter 11: Flora and Fauna.

State interest	State interest summary statement	Relevance to Project
Coastal environment	The coastal environment is protected and enhanced, while supporting opportunities for coastal-dependent development, compatible urban form, and maintaining appropriate public use of, and access to, long, State coastal land.	✗ The Project is far removed (over 40 km upstream) from the coastal environment, including the Coastal Management District and coastal zone.
Cultural heritage	The cultural heritage significance of heritage places of Aboriginal and Torres Strait Islander cultural heritage, is conserved for the benefit of the community and future generations. This State interest seeks to ensure matters of Aboriginal cultural heritage and Torres Strait Islander cultural heritage, and world, national, State and local heritage are appropriately identified, conserved and considered.	✓ The Project is identified as being within areas of Aboriginal cultural heritage and Torres Strait Islander cultural heritage—further information on the cultural heritage aspects associated with the Project are outlined in Chapter 18: Cultural Heritage.
Water quality (DILGP, 2016c)	The environmental values and quality of Queensland waters are protected and enhanced. This State interest seeks to ensure that development facilitates the protection or enhancement of environmental values and the achievement of water quality objectives for Queensland waters.	✓ The Project is located in the Gowrie Creek and Lockyer Creek catchment, with the Project traversing wetlands and watercourses associated with these two catchments. Waterways traversed by the Project include Gowrie Creek, Oaky Creek, Rocky Creek, Six Mile Creek and Lockyer Creek. As defined under the SPP, Lockyer Creek catchment is a Water Resource Catchment, while a Water Supply Buffer Area overlies Lockyer Creek. The Project will interact with the local aquifers (water source and impacts from the construction and operation of the tunnel), along with the requirement to discharge water that infiltrates into the tunnel into the local receiving environment. Details on water resources, groundwater resources and the associated environmental values are discussed in Chapter 13: Surface Water and Hydrology and Chapter 14: Groundwater.
Safety and resilience to hazards		
Emissions and hazardous activities	Community health and safety, and the natural and built environment, are protected from potential adverse impacts of emissions and hazardous activities. The operation of appropriately established industrial development, major infrastructure, and sport and recreation activities is ensured.	✓ The Project involves the construction and operation of major infrastructure, including the construction and operation of a 6.24 km undrained tunnel and over 6 km of viaducts. The Project also traverses major transport networks and the Roma Brisbane Gas Pipeline. The Project will also result in emissions (e.g. particulate matter and noxious gases)` from construction activities, along with train and tunnel operations. Emissions as a result of the Project are discussed in Chapter 12: Air Quality. Hazards and risk to human health, safety, environment and property imposed by the Project throughout the construction and operational phases are addressed in Chapter 20: Hazard and Risk.

State interest	State interest summary statement	Relevance to Project
Natural hazards, risk and resilience (DILGP, 2017e)	The risks associated with natural hazards, including the projected impacts of climate change, are avoided or mitigated to protect people and property and enhance the community's resilience to natural hazards	✓ The Project traverses steep terrain and areas of challenging geology. In addition to the risk around landslips, these areas are mapped as bushfire prone. Consultation has also been undertaken with the local disaster management groups around evacuation routes, etc. The Project also traverses floodplains associated with Gowrie Creek and Lockyer Creek, which are noted as flood hazard areas with the areas significantly impacted by the January 2011 flood event. Flood modelling has been undertaken for the Project and is discussed in Chapter 13: Surface Water and Hydrology. Hazards and risk to human health, safety, environment and property imposed by the Project throughout the construction and operational phases are addressed within Chapter 20: Hazard and Risk.
Infrastructure		
Energy and water supply	The timely, safe, affordable and reliable provision and operation of electricity and water supply infrastructure is supported, and renewable energy development is enabled.	✓ The Project traverses, and/or is within proximity to, major electricity infrastructure and corridors and water utilities (refer Section 8.6.2.3). There may be a requirement to relocate or provide additional protection, which may temporarily disrupt these services. There will also be a requirement to connect to some of these services for construction and/operations. ARTC has engaged with the relevant service providers to identify measures to avoid or mitigate impacts during construction and operation, along with required approvals and permits. Details on consultation undertaken for the Project are provided in Chapter 5: Stakeholder Engagement.
Infrastructure integration (DILGP, 2017d)	The benefits of past and ongoing investment in infrastructure and facilities are maximised through integrated land use planning. This State interest seeks to ensure that development achieves a high level of integration with infrastructure planning; that it optimises the location of future infrastructure; and that development occurs in areas currently serviced by infrastructure or are located in a logical and orderly location, form and sequence to enable the cost-effective delivery of State and local infrastructure.	✓ The Project generally follows the Gowrie to Grandchester future state transport corridor, in line with the direction by the Queensland government. The Project will also involve the connection of the Inland Rail system within the existing West Moreton System rail corridor at the western and eastern extents. The Project has been strategically co-located with existing transport corridors, where possible, and does not preclude the potential for future passenger rail infrastructure and services. Further details are provided in Chapter 19: Traffic, Transport and Access.

State interest	State interest summary statement	Relevance to Project
Transport infrastructure (DILGP, 2017g)	The safe and efficient movement of people and goods is enabled, and land use patterns that encourage sustainable transport are supported	✓ The intent of the Inland Rail Program is to establish an efficient rail link between Melbourne and Brisbane, to serve future rail freight demand and stimulate growth for inter-capital and regional/bulk rail freight, effectively reducing requirement for long-haul truck freight movements. Locally, the Project will alleviate existing rail operating constraints caused by the Toowoomba Range. The Project also has potential to catalyse development and growth of nearby regional intermodal hubs associated with InterLinkSQ and Charlton Wellcamp Enterprise Area. The Project has been aligned with the Gowrie to Grandchester future State transport corridor to co-locate the future transport corridors, where possible, allowing the corridor to be used by QR for future electrified passenger rail service. The ARTC network is open access and, as such, the alignment can be used by passenger trains subject to the trains being suitable to access the tunnel. The Project does not impact on the proposed railway stations, with the design considering accessibility between the railway station at Withcott and the Project alignment (refer Chapter 2: Project Rationale). Details of the traffic and transport aspects of Project are provided in Chapter 19: Traffic, Transport and Access.
Strategic airports and aviation facilities	The operation of strategic airports and aviation facilities is protected, and the growth and development of Queensland's aviation industry is supported	✓ No strategic airports or aviation facilities are located within the land use study area. As the closest aviation facility is the Toowoomba Airport, located more than 2.5 km to the south of the alignment, the Project will not adversely impact on the safety or viability of the airport.
Strategic ports (DILGP, 2017f)	The operation of strategic ports and priority ports is protected, and their growth and development are supported. This State interest recognises Queensland ports as a major component of both the natural and State supply chain, and defence system.	✗ The Inland Rail Program is planned to terminate at the Acacia Ridge Intermodal Terminal and is not located within close proximity to the Port of Brisbane. The Project will not impact on the safety or efficient operation of any strategic ports. Further details are provided in Chapter 2: Project Rationale and Chapter 19: Traffic, Transport and Access.

Darling Downs Regional Plan (October 2013)

The Darling Downs Regional Plan is the statutory regional plan for the Darling Downs region. The Darling Downs Regional Plan establishes regional outcomes for the region and policies to achieve them, with regional policies that aim to protect priority agricultural land uses while supporting the co-existence opportunities for the resources sector.

The Project is located within the eastern area of the Darling Downs region, from the western extent of the Project to Ballard in the east. The eastern area of the Darling Downs will serve as 'the gateway' to the region, supporting an extensive network of trade routes into and out of the region. Located at the junction of several strategic highways and railway lines, the eastern Darling Downs is the major transport and service hub of the region. The area facilitates the movement of goods and resources between Queensland's south-east and west, enabling access to domestic and international markets through the strategic port facilities along the east coast. The broader Darling Downs region also has major transport linkages to southern markets.

The Darling Downs Regional Plan also identifies priority outcomes sought for the region's transport network. These include the prioritisation of transport programs to improve freight movement and reduce conflicts in urban areas and with other network users. Further freight tasks, including supply chains for coal, petroleum products, grains and cereals, and meat and livestock from the Darling Downs to the Port of Brisbane, are expected to drive the demand for rail transport and infrastructure in the region.

The Darling Downs Regional Plan outlines opportunities for leveraging rail infrastructure to boost economic development in the region. This includes the long-term aspiration of a modal shift towards increased rail usage, to increase capacity while alleviating some of the constraints on the region's road network. The preserved Gowrie to Grandchester future state transport corridor is identified as a consideration for alleviating rail operating constraints caused by the Toowoomba crossing.

Increased rail capacity in the region could provide opportunities for intermodal facilities, including hubs east of Goondiwindi and the proposed logistics hub in Toowoomba's Charlton Wellcamp industrial precinct. Additional rail capacity may also improve the productivity of under-used grain-handling facilities located on the existing rail network.

ShapingSEQ (August 2017)

ShapingSEQ is the statutory regional plan for the SEQ region. Relevant to the Project, ShapingSEQ identifies the Melbourne to Brisbane Inland Rail as a region-shaping infrastructure priority for the State.

ShapingSEQ also identifies Agricultural Land (Class A and Class B) and IAAs (including the Darling Downs IAA and Lockyer Valley IAA) as regionally significant natural resources to be protected from loss and fragmentation.

The Project is located within the western sub-region of the SEQ region. The western sub-region encompasses Ipswich, Somerset, Toowoomba, Lockyer Valley and Scenic Rim LGAs and contains SEQ's major rural production and regional landscape areas. The sub-region is characterised by a predominantly regional and rural lifestyle. ShapingSEQ outlines this region as having a role as the Western Gateway, connecting SEQ to the rural areas of Darling Downs and South Burnett and providing critical freight connections with northern NSW and the southern states.

ShapingSEQ also identifies the Western Gateway as a Regional Economic Cluster, supporting significant agricultural and resource activities and priority sectors of manufacturing, transport and logistics, and health and knowledge. The Western Gateway Regional Economic Cluster is strategically located as the gateway to the west and at the intersection of major transportation infrastructure, including the long-term investment of the Melbourne to Brisbane Inland Rail.

The Helidon Hazardous Industry Precinct (including the Helidon explosives reserve to the north of the Project) is also identified within ShapingSEQ as a special use, to be protected in the long-term from encroachment by sensitive and incompatible activities. The highly specialised land use has significant buffering requirements and is identified as integral to supporting the extractive and construction industries. Opportunities to grow the capacity of the precinct for regionally significant specialised industry operations are to be investigated for the long term.

Local Government Planning Schemes

The Project is located within Toowoomba and Lockyer Valley LGAs.

As part of the 2008 Queensland local government reform, the former Gatton and Laidley shires were amalgamated to form the LVRC. Under the transitional agreements for amalgamated councils, the planning schemes operating in each former shire were to remain applicable in the development assessment process until a consolidated regional planning scheme was prepared. As of February 2021, a proposed Lockyer Valley Planning Scheme had been prepared and was being reviewed by State government. Following State government review and approval, the proposed Lockyer Valley Planning Scheme will be released for public consultation. Once finalised and adopted, the Lockyer Valley Planning Scheme will supersede the current Gatton and Laidley Shire Planning Schemes as well as the Grantham Reconstruction Area—Development Scheme and Temporary Local Planning Instrument 01/2019 Flood Regulation.

As such, the current planning schemes relevant to the Project are:

- Toowoomba Regional Planning Scheme 2012 (TRC, 2012)
- Gatton Shire Planning Scheme 2007 (LVRC, 2007).

Toowoomba Regional Planning Scheme

The *Toowoomba Regional Planning Scheme* (TRC, 2012) sets out the purpose and intent for each zone and identifies the preferred development to be achieved. The zones traversed by the land use study area and their relevance to the Project are outlined in Table 8.20. It is also noted that the Inland Rail Program and Gowrie to Grandchester future state transport corridor are both identified within the *Toowoomba Regional Planning Scheme Strategic Framework* as future transport corridors that will provide transport links between Toowoomba and SEQ; however, the future transport corridors are not identified within the planning scheme's zoning or overlay mapping.

TABLE 8.20: TOOWOOMBA PLANNING SCHEME ZONE CLASSIFICATION WITHIN THE PROJECT DISTURBANCE FOOTPRINT, INCLUDING ABOVE THE TOOWOOMBA RANGE TUNNEL

Zone	Purpose/Intent	Relevance to Project
Rural	The purpose of the Rural zone is to provide for a wide range of rural uses including cropping, intensive horticulture, intensive animal industries, animal husbandry, animal keeping and other primary production activities.	Land within the Project disturbance footprint is predominantly within the Rural zone when traversing through the Toowoomba LGA. The Project passes beneath two land parcels (Lot 1 and Lot 2 on SP173941) within the Rural zone at Cranley and Mount Kynoch when within the proposed Toowoomba Range tunnel.
Community Facilities	The purpose of the Community Facilities zone is to provide for community related activities and facilities, whether under public or private ownership. These may include provision of municipal services, public utilities, government installations, hospitals and schools, transport and telecommunication networks and community infrastructure of an artistic, social or cultural nature. The zone facilitates the effective operation and optimum accessibility of community related activities.	The Project traverses land within the Community Facilities zone, including: ▸ The existing West Moreton System rail corridor at Gowrie Junction ▸ Former rail corridor land and rail infrastructure land at Gowrie Junction ▸ The proposed intermediate ventilation shaft building infrastructure and access road at Cranley are located on two land parcels (Lot 11 on SP189518 and Lot 12 on SP106686) zoned as Community Facilities ▸ The former Mount Lofty rifle range. ▸ The Project passes beneath land within the Community Facilities zone when within the proposed Toowoomba Range Tunnel, including: ▸ Land parcels associated with the Toowoomba Bypass at Gowrie Junction, Cranley and Mount Kynoch ▸ The Toowoomba Waste Management Centre (Lot 172 on SP227269) ▸ The existing West Moreton System rail corridor at Cranley (Lot 2 on RP34953) and Ballard (Lot 591 on SP117148) ▸ The Riding for the Disabled facility on Lot 10 on AG89
Medium Impact Industry	The purpose of the Medium Impact Industry zone is to provide for medium impact industry uses. Such uses within the Medium Impact Industry zone may include spray painting and surface coating, and wooden and laminated product manufacturing.	The Project traverses land within the Medium Impact Industry zone located west of Gowrie Junction, including Lot 26 on RP24609, Lot 33 on SP312428 and Lot 100 on SP270462. This Medium Impact Industry zone is associated with the Charlton Wellcamp Enterprise Area and InterLinkSQ.
High Impact Industry	The purpose of the High Impact Industry zone is to provide for high impact industry uses. Such uses within the High Impact Industry zone may include abattoirs, concrete batching plants, boiler making and engineering, and metal foundry.	The intermediate ventilation shaft building infrastructure is located on a land parcel (Lot 2 on RP14473) within the High Impact Industry zone at Cranley. The Toowoomba Range Tunnel also traverses beneath Lot 12 on SP259243 at Cranley.

Zone	Purpose/Intent	Relevance to Project
Rural Residential	The purpose of the Rural Residential zone is to provide for a wide range of rural uses (i.e. cropping, intensive horticulture, animal husbandry and other primary production activities), opportunities for non-rural uses that are compatible with agriculture, the environment, and the landscape character of the rural area; and protect or manage significant natural features, resources, and processes, including the capacity for primary production.	The Project traverses the Rural Residential zone (Lot 11 on SP180260, Lot 2 on SP198597, Lot 2 on RP806906 and part of Lot 100 on SP256697) when within the proposed Toowoomba Range Tunnel at Cranley and Mount Kynoch.
Emerging Community	The purpose of the Emerging Community zone is to identify land that is not currently recognised or developed as urban environment but may be suitable for future urban uses over the next 10 to 20 years.	The Project traverses under a land parcel (Lot 4 on SP194139) within the Emerging community zone when within the proposed Toowoomba Range Tunnel at Mount Kynoch.
Low Density Residential	The purpose of the Low Density Residential zone is to provide for a variety of low density dwelling types, including dwelling houses and community uses and small-scale services, facilities and infrastructure that cater for local residents.	The Project traverses under seven land parcels (Lot 3 to Lot 8 on SP264476 and Lot 14 on Sp157008) within the Low Density Residential zone when within the proposed Toowoomba Range Tunnel at Mount Kynoch. Lot 100 on SP256697 is also partially zoned as Low Density Residential.
Open Space	The purpose of the Open Space Zone is to provide for local, district and regional scale parks that serve the recreational needs of a wide range of residents and visitors.	The Project traverses under a land parcel (Lot 40 on SP157008) within the Open Space zone when within the proposed Toowoomba Range Tunnel at Cranley and Mount Kynoch.
Limited Development (Constrained Land)	The purpose of the Limited Development (Constrained Land) zone is to identify land known to be significantly affected by one or more development constraints (such as past or future mining activities, flooding, land contamination, defence requirements, historical subdivisions and buffer areas). Such constraints pose severe restrictions on the ability of the land to be developed for urban purposes.	The Project traverses under two land parcels within the Limited Development (Constrained Land) zone when within the proposed Toowoomba Range Tunnel at Mount Kynoch, Lot 309 on SP289045 and Lot 9 on SP289045 which is part of the Toowoomba Bypass.

Gatton Shire Planning Scheme 2007

The Gatton Shire Planning Scheme sets out the purpose and intent for each zone and identifies the preferred development to be achieved. The zones traversed by the land use study area and their relevance to the Project are outlined in Table 8.21.

TABLE 8.21: GATTON REGIONAL PLANNING SCHEME ZONE CLASSIFICATIONS WITHIN THE PROJECT DISTURBANCE FOOTPRINT

Zone	Purpose/Intent	Relevance to Project
Rural General	The purpose of the Rural General zone is to provide for agricultural production, other rural activities and the maintenance of the Shire's landscape quality that is important to the overall character of the Shire.	The Project traverses land parcels within the Rural General zone when traversing through Withcott, Lockyer, Postmans Ridge, Helidon Spa and Helidon.
Rural Uplands	The purpose of the Rural Uplands zone is to allow for the visual and landscape quality of land with steep slopes, significant habitat, vegetation, cultural heritage and topographical features to be maintained.	The Project traverses land parcels within the Rural Uplands zone when traversing through the Toowoomba Range at Ballard, Withcott, Postmans Ridge and Lockyer. The tunnel and eastern portal are also located in this zone at Ballard.
Rural Agriculture	The purpose of the Rural Agriculture zone is to provide for good agricultural land to be preserved for agricultural purposes.	The Project land parcels within the Rural Agriculture zone when associated with Jones Road and Oaky Creek, Rocky Creek and in the Lockyer Creek area (Ch 24.5 km to Ch 26.0 km).
Rural Residential	The purpose of the Rural Residential zone is to accommodate residential development at rural residential densities in the following two precincts: ▸ The Homestead Residential precinct—to provide for a semi-rural lifestyle in close proximity to the major centres of the Shire where domestic-scale rural activities may be pursued. ▸ The Existing Rural Residential precinct provides the opportunity to consolidate existing rural residential areas in relative proximity to local facilities, including shops and schools.	The Project traverses three parcels (Lot 18 on SP105106 and Lot 7 and Lot 8 on RP201821) within the Rural Residential (Existing Rural Residential Precinct) at Helidon Spa.
Community Facilities	The purpose of the Community Facilities zone is to protect the continued operation of the Shire's community facilities and infrastructure as well as ensuring Gatton town, and particularly its town centre, remains the focus of the Shire's community activities.	The Project passes beneath land within the Community Facilities zone at Ballard when within the proposed Toowoomba Range Tunnel (i.e. West Moreton System rail corridor). The Project also traverses a lot (Lot 452 on SP117138) designated as a Community Facilities zone (i.e. West Moreton System rail corridor) at Helidon.
Industrial	The Purpose of the Industrial zone is to provide for the establishment of industrial development and industries important to the economic development of the Shire in areas which are used, or suitable for use, for industry purposes.	The Project traverses a land parcel (Lot 87 on CA31624) within the Industrial zone west of Lockyer Creek.

8.6.4.2 Development activity

An assessment of planned future development activity has been undertaken to identify recently[1] granted development approvals or lodged applications for development of note to the Project, as well as investigate the status of major projects within the region. The assessment of projects has included a review of the following:

- Local Council Planning and Development online records for applications assessed under the *Toowoomba Regional Planning Scheme* and *Gatton Shire Planning Scheme*
- Department of State Development, Infrastructure, Local Government and Planning (DSDILGP) coordinated projects

1. Development approvals searches within the past five years were reviewed on 20 December 2020. Accounting for developments approved under the repealed *Sustainable Planning Act 2009* (Qld) with a currency period of four years, with an additional year for robustness. This period also captures recent development approvals under the Planning Act that have currency periods of up to six years.

- Minister of Economic Development Queensland current and approved development applications
- Current EAs for ERAs
- DTMR featured projects
- DSDILGP current and approved Private Infrastructure Facilities
- Infrastructure Australia Infrastructure Priority List
- QLD State Infrastructure Plan
- QLD 'Building our Regions' funded projects
- Infrastructure designations
- Local government infrastructure plans as per the relevant planning schemes.

A summary of development activity is provided in Table 8.22.

TABLE 8.22: DEVELOPMENT ACTIVITY WITHIN THE PERMANENT AND TEMPORARY DISTURBANCE FOOTPRINTS

Project name and Proponent	Locality	Description	Development stage	Relationship to Project
Toowoomba Regional Planning and Development Online				
Material Change of Use—Intermodal Freight Terminal (Warehouse) Freight Terminals Pty Ltd ATF InterLink Industrial Park Trust (formally Freight Terminals Trust)	167 Draper Road, Charlton (Ch -1.4 km to Ch -0.2 km)	A development permit was obtained for a Warehouse and Transport Depot on 24 May 2016, being the InterLinkSQ intermodal facility (TRC reference: MCUC/2015/5554). InterLinkSQ is a 200 ha master planned estate of new transport, logistics and business hubs, involving the establishment of an intermodal freight terminal linking road, rail and ports within SEQ.	Approved	InterLinkSQ is overlapped by the Project at Gowrie. Consultation is ongoing with InterLinkSQ regarding potential interface agreements and land use conflicts.
Mounty Lofty Toowoomba Defence Housing Australia (DHA)	Rifle Range Road, Mount Lofty (Ch 10.6 km to Ch 11.1 km)	The original development application for 342 lots at Mount Lofty was lodged in May 2018 (TRC reference: MCUI/2018/2861). In 2020, DHA considered alternative options and consequently lodged a new DA with TRC for a 50-lot development on a small portion of the former rifle range site at Mount Lofty (TRC reference: RAL/2020/1584). TRC councillors voted against approving the new DA on 16 September 2020. DHA subsequently lodged an appeal against the decision, which has now been withdrawn (DHA, 2020). A referral under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) was lodged on the 28 June 2018 (Reference number: 2018/8198) and is still active.	Development application was refused—DHA continues to work closely with council regarding plans for the future of the site (DHA, 2020)	The land use study area traverses the north-eastern corner of Lot 1 on RP46221, which forms part of the former rifle range site. The Project disturbance footprint is located more than 1 km to the north of the former proposed housing estate development footprint.
Lockyer Valley Regional Planning and Development Online				
No material change of use development approvals or applications were identified within the permanent and temporary disturbance footprints on LVRC's Planning and Development Online records.				

Project name and Proponent	Locality	Description	Development stage	Relationship to Project
Queensland Government DSDILGP Coordinated Projects				
Border to Gowrie— Inland Rail (ARTC)	Goondiwindi Toowoomba LGAs	A new single-track dual-gauge 216 km freight rail line extending from the NSW/QLD Border to Gowrie.	Terms of Reference for an EIS were issued in November 2018. Draft EIS is being prepared by ARTC.	The Border to Gowrie project alignment connects to the Project at its' western extent (i.e. between Kingsthorpe and Gowrie).
Helidon to Calvert— Inland Rail (ARTC)	Lockyer Valley and Ipswich LGAs	A new single-track, dual-gauge 48 km freight rail line extending from Helidon to Calvert.	Terms of Reference for an EIS were issued in August 2017. Draft EIS is being prepared by ARTC.	The Project connects to the Helidon to Calvert project at its' eastern extent (i.e.north-west of Helidon).
Wetalla Water Pipeline	Toowoomba LGA	A 45 km underground water pipeline to supply up to 5,500 megalitres of treated waste water from the Wetalla Wastewater Treatment Plant to the New Acland coal mine, Oakey.	Completed	The Project interfaces with the pipeline in the Gowrie area (refer Section 8.6.2.3). The Project will result in the relocation of sections of the water pipeline.
Economic Development Queensland current and approved development applications				
There are no Economic Development Queensland current or approved development applications located within the permanent or temporary disturbance footprints.				
Infrastructure Australia Infrastructure Priority List				
There are no projects on the Infrastructure Priority List located within the permanent or temporary disturbance footprints; however, the Warrego Highway east corridor improvements, upgrading the Dinmore to Helidon Spa section of the Warrego Highway, is included as a 'Priority Initiative'.				
Queensland State Infrastructure Plan				
There are no notable projects or developments within the Queensland State Infrastructure Plan located within the permanent or temporary disturbance footprints.				
Queensland 'Building our Regions' funded Projects				
One funded relevant project within close proximity to the Project, yet to be completed, is the Toowoomba Escarpment Parks Upgrade, which overlooks the Project alignment.				
Infrastructure Designations				
There is one infrastructure designation made by the Queensland Minister of Health in September 2000 for (h) Hospital and associated institutions relevant to the Project. This infrastructure designation is associated with Baillie Hospital and encompasses the following parcels: ▸ Lot 924 on SP154259 (Baillie Henderson Hospital) ▸ Lot 925 on SP154259 (now Toowoomba Bypass) ▸ Lot 926 on SP154259 ▸ Lot 927 on AG2167 ▸ Lot 2 on SP173941 (traversed by the Toowoomba Range Tunnel at a depth of approximately 105 m) ▸ Lot 10 on AG89 (traversed by the Toowoomba Range Tunnel at a depth of approximately 100 m) ▸ Lot 1 on SP180266 (~800 m north of the Toowoomba Range Tunnel) ▸ Lot 2 on SP180266 (~800 m north of the Toowoomba Range Tunnel) ▸ Lot 3 on SP180266 (~200 m north of the Toowoomba Range Tunnel) ▸ Lot 4 on SP180266 (~200 m north of the Toowoomba Range Tunnel) ▸ Lot 5 on SP180266 (~400 m north of the Toowoomba Range Tunnel) ▸ Lot 6 on SP180266 (~600 m north of the Toowoomba Range Tunnel				

Project name and Proponent	Locality	Description	Development stage	Relationship to Project
Queensland Transport and Roads Investment Program (QTRIP)				
No significant commitments within QTRIP are identified to be within the permanent or temporary disturbance footprints. It is noted that network planning for the Inland Rail Program is identified as a 'State Network' commitment.				
TRC Local Government Infrastructure Plan				
No significant schedule of works other than upgrades to existing roads were identified within the Local Government Infrastructure Plan to be within the permanent or temporary disturbance footprints. Consultation with TRC during the detailed design phase will identify and determine appropriate mitigation measures for potential impacts on the infrastructure within the LGA.				
LVRC Local Government Infrastructure Plan				
No significant schedule of works other than upgrades to existing roads identified within the Local Government Infrastructure Plan were identified to be within the permanent or temporary disturbance footprints. Consultation with LVRC during the detailed design phase will identify and determine appropriate mitigation measures for potential impacts on the infrastructure within the LGA.				

8.7 Potential impacts

The construction and operation of the Project has the potential to result in direct and permanent impacts to land use and tenure within the Project disturbance footprint and indirect impacts on the land use study area.

Potential impacts to land use and tenure associated with the Project relate to:

- Change in tenure and loss of property (i.e. land acquisition for the purposes of rail and road infrastructure):
  - Freehold
  - Impacts to State land
  - Impacts to native title
- Change in land use:
  - Impacts on agricultural use and activities:
    - Loss of agricultural land
    - Land severance and disruption to access and infrastructure
    - Alterations to stock movements
    - Other indirect impacts on agricultural land
    - Opportunities to support the agricultural industry
  - Changes to notable land use (refer Section 8.6.2 and Table 8.11)
  - Sterilisation of mineral and petroleum resources
  - Impacts to the Harlaxton KRA
  - Impacts on current EAs for prescribed ERAs
  - Development activity
- Accessibility
  - Impacts on road network
  - Impacts on rail network
  - Impacts to property access
- Impacts on services and utilities
- Opportunities to support future industry development.

Each of these potential impacts are discussed in the following sections.

8.7.1 Change in tenure and loss of property

8.7.1.1 Permanent change in tenure and loss of property

Between Gowrie and Helidon and excluding untenured land (such as waterways and road reserves), the Project traverses 151 land parcels, including 94 within the TRC LGA and 57 within the LVRC LGA.

The Project has been intentionally aligned to use the existing transport corridors, including the West Moreton System rail corridor, the Gowrie to Grandchester future state transport corridor, where possible, and where necessary, existing local and State road corridors, minimising the extent of 'new' land parcels to be acquired.

The Project traverses 20 land parcels (~13 percent) associated with the existing West Moreton System rail corridor, including the Toowoomba Range Tunnel passing under a property on Western Line and the Main Line. Ten of these land parcels are also within the Gowrie to Grandchester future state transport corridor. It is envisaged that the existing QR rail corridor will not be acquired for this Project, with the existing rail corridor likely to be expanded to incorporate the land required for the Project's rail corridor, and a sublease between the State and ARTC (i.e. land lease tenure).

Similarly, under the TI Act railway works are exempt from acquiring land associated with a waterways (i.e. Gowrie Creek and Lockyer Creek). Though, the Project will require State land for the purposes of a road (i.e. Gowrie Creek is traversed by the realigned Gowrie Junction Road).

There are 82 land parcels (~54 per cent) within the Gowrie to Grandchester future state transport corridor, including 28 land parcels associated with the Toowoomba Range Tunnel, consisting of:

- 68 properties (45 per cent) are freehold, including 5 land parcels only within the temporary disturbance footprint, with one of the land parcels also subject to volumetric resumption. Nine (9) properties are also associated with the Toowoomba Bypass
- 10 properties (6.6 per cent) are lands lease and are associated with the West Moreton System rail corridor. This land to be secured in accordance with the Land Act.
- 3 properties (2 per cent) are lands lease (owned by QR) with the land to be secured in accordance with the Land Act
- 1 property (0.7 per cent) is a Reserve (above the tunnel) with the land to be secured in accordance with the Land Act
- Some of these properties have been acquired by DTMR as an outcome of the *Gowrie to Grandchester Rail Corridor Study* (Queensland Rail and Queensland Transport, 2003) or as a result of the Toowoomba Second Range Crossing project.

In addition, there are 59 land parcels (~39 per cent) located outside of both the West Moreton System rail corridor and the Gowrie to Grandchester future state transport corridor, consisting of:

- 55 (36.4 per cent) freehold properties, with 8 properties (5.3 per cent) only within the temporary disturbance footprint. Five (5) properties are also associated with the Toowoomba Bypass.
- 3 (2 percent) lands lease properties (former rail corridors) with the land to be secured in accordance with the Land Act
- 1 property (0.7 per cent) is a Reserve (above the tunnel) with the land to be secured in accordance with the Land Act.

In addition to the above-ground acquisition, 36 land parcels will require volumetric acquisition as the Project passes beneath each of the land parcels when within the proposed Toowoomba Range Tunnel. Further, 28 of these land parcels have also previously been identified as potentially impacted properties through the *Gowrie to Grandchester Rail Corridor Study* (Queensland Rail and Queensland Transport, 2003), 12 of which have been acquired, including where the western tunnel portal is located, 7 land parcels associated with the Toowoomba Bypass and 3 land parcels where the intermediate ventilation shaft is located.

The other 8 properties (7 freehold and 1 reserve), which include residential housing along Westview Drive, Cassidy Terrace and McShane Drive at Mount Kynoch, are subject to volumetric acquisition as a result of the provisional area around the tunnel (i.e. the tunnel is not directly below these properties).

There are 109 land parcels required for the rail and road infrastructure (i.e. the permanent disturbance footprint), with 21 land parcels entirely within the permanent disturbance footprint. This includes 13 land parcels associated with the existing West Moreton System rail corridor, two land parcels associated with the former rail corridor and 6 freehold land parcels (2 owned by DTMR). A further 30 will be subject to volumetric resumption associated with the Toowoomba Range Tunnel. The acquisition process will be undertaken by, and in consultation with, the constructing authority.

A breakdown of the tenure of these land parcels is provided in Table 8.23. Noting that a further 12 freehold land parcels are only located within the temporary disturbance footprint. The extent of area associated with these properties within the permanent disturbance footprint, as well as tenure and existing land uses of these properties, are detailed in Appendix V: Impacted Properties. The properties identified are to be confirmed following detailed design.

TABLE 8.23: LAND REQUIRED FOR THE RAIL AND ROAD INFRASTRUCTURE

Tenure and ownership	No. of properties within permanent disturbance footprint
Properties within permanent disturbance footprint, also within the existing West Moreton System rail corridor (surface acquisition)	
Lands lease	18
Properties within permanent disturbance footprint, also within Gowrie to Grandchester future state transport corridor but outside of the existing West Moreton System rail corridor (surface acquisition)	
Freehold	45
Lands lease	3
Properties within permanent disturbance footprint, outside of Gowrie to Grandchester future state transport corridor and outside of existing West Moreton System rail corridor (surface acquisition)	
Freehold	40
Lands lease	3
Properties within the proposed Toowoomba Range Tunnel corridor (Volumetric acquisition)	
Freehold	26 (excluding 6 properties where surface acquisition is also required))
Lands lease	2
Reserve	2

Table 8.23 includes properties held in ownership by QR (26 land lease parcels), DTMR (35 land parcels, mainly associated with the Toowoomba Bypass) and TRC (3 land parcels). TRC are also the trustees for the two reserve land parcels above the tunnel. Land parcels associated with the Toowoomba Bypass road infrastructure are likely to be gazetted as road reserve under the Land Act.

As noted in Section 8.6.2.3, the Project also intersects a number of existing road reserves, some of which will be acquired for the purposes of rail infrastructure.

It is noted that additional properties may also be acquired where impacts identified during the detailed design and constructability assessments cannot be avoided or appropriately mitigated and/or acquisition is agreed on in consultation with affected landholders.

The Project will also require the acquisition of land burdened by easements and depth restrictions. The permanent disturbance footprint traverses 24 easements and 6 strata parcels of land with lands lease tenure (four are associated with the Wetalla Water Pipeline and two are for agricultural purposes). The Toowoomba Range Tunnel will traverse 11 interests, including two volumetric land parcels associated with Toowoomba Bypass pilot tunnel.

Potential impacts as a result of land acquisitions have been broadly categorised and include:

- Loss of properties
- Relocation of residents and businesses
- Severance of land parcels, and potential fragmentation of agricultural land, infrastructure and services
- Disruption to access and potentially the existing use of properties.

Impacts resulting from the relocation of residents can lead to loss of community cohesion as well as potential impacts to community identity and values. Such impacts of the Project are further discussed in Chapter 16: Social.

In preference to land acquisition, an easement may be created for services required to support the Project; in particular, the water pipeline required for the fire management system, which is located predominantly in a road reserve.

Consultation with affected landholders, relevant stakeholders and communities has been key to obtaining an understanding of individual property operational arrangements in proximity to the Project. The rail alignment has been positioned to align with existing road and rail corridors, the Gowrie to Grandchester future State transport corridor and property boundaries, where possible, to reduce the severance of land parcels and reduce potential property impacts, particularly in relation to private access, services or agricultural operational arrangements. Details on consultation undertaken with landholder is provided in Chapter 5: Stakeholder Engagement and Appendix D: Community Consultation.

Obtaining tenure for the Project

The AL Act enables 'constructing authorities' to acquire land for public purposes. Constructing authorities (also called acquiring or resuming authorities) include government agencies (e.g. DTMR), local councils and some State-owned corporations.

For the purposes of the Project, the majority of land (part or the whole of property) will be acquired by a constructing authority for the purposes of rail and road infrastructure in accordance with the process in the AL Act. This process will be commenced during the detailed design phase once the Project is approved and the land requirements are confirmed; including refinement of the footprint to minimise land requirements and identifying where additional land is required due to severance impacts (e.g. the new land parcel may be too small to meet development standards of the relevant planning scheme). The process generally takes between one and two years.

The acquisition of interests in land will be undertaken in consultation with interest holders and in accordance with the AL Act compulsory acquisition process. Partial or full parcel acquisition of a property and/or acquisitions for easements and licences will be determined on a case by case basis prior to construction and will take into account factors such as parcel size, alignment effect, land use and operability following construction.

ARTC may also acquire land by negotiation in some cases and this may occur ahead of, or in parallel with, the compulsory acquisition process. These acquisitions will be voluntary private treaty transactions between ARTC and the property owner. Scenarios where this may occur include where there is strong certainty about the alignment location and to protect critical infrastructure (e.g. tunnel portals).

Once land has been acquired, it is expected that ARTC will be granted tenure for construction, and a sub-lease for the rail corridor in accordance with the TI Act.

The AL Act process may also be relevant to the acquisition of a section of Lot 1 on RP46221, a freehold land parcel owned by DHA, a corporate Commonwealth entity. Alternatively, acquisition will be via negotiations between the Australian Government, ARTC and the constructing authority.

Where the Project traverses State land, the following tenure dealings will likely occur in accordance with the Land Act:

- Land with a road licence parcel (Lot 1 on RL2085 and Lot 1 on RL7496) may be amended due to the reduction in size of the road licence area required for the permanent disturbance footprint. These land parcels may also be subject to Native Title rights.
- The size of the land parcels of USL with a permit to occupy (Lot AA on P14922, Lot AA on P19426, Lot AA on P19427 and Lot AA on P19429) will likely be reduced. The permit to occupy will be either amended or cancelled if the permit to occupy area is determined to become unusable.
- Where land required for the Project traverses local roads and waterways, tenure will be dealt with in accordance with the Land Act. Changes to the road network are for the most part already in a road reserve and no change in tenure is required.

The Project will also require volumetric acquisition of properties to facilitate the construction and operation of the Toowoomba Range Tunnel. Volumetric acquisitions associated with the Project require the resumption of land 'below' the surface of the property, with no change of ownership or tenure to the overlying land parcel, or relocation of the land occupier required. Volumetric acquisitions will be undertaken in accordance with the AL Act and, in some instances, will include land parcels that will be acquired (wholly or in part) for the eastern and western tunnel portals or the intermediate ventilation building. Resolution of tenure under the Land Act is also required and includes:

- Lot 10 on AG89—a reserve for recreation and drainage located on the eastern banks of Gowrie Creek at Cranley, with TRC the trustee
- Lot 40 on SP157008—a reserve for parks and gardens located at Mount Kynoch, with TRC the trustee
- Road reserves, including the New England Highway
- A waterway—Gowrie Creek.

Tenure arrangements will be progressed following completion of the Project's EIS process.

8.7.1.2 Temporary loss of property

In addition to the permanent land acquisitions, properties are required to be temporarily used during the construction phase. Of the 151 land parcels within the Project disturbance footprint, 66 will be required for construction and operations, while an additional 12 freehold land parcels, including 3 within the Gowrie to Grandchester future state transport corridor will only be required for construction. Two of the land parcels are owned by DTMR.

A land parcel owned by DTMR and associated with the Toowoomba Bypass, will be subject to volumetric resumption, along with being required for construction purposes only. Details of land parcels required temporarily are provided in Appendix V: Impacted Properties.

These properties will potentially be required for activities such as construction, access and laydown. Land required for construction purposes will be confirmed during detailed design and pre-construction, in consultation with the construction contractor and the constructing authority.

ARTC and/or the construction contractor may enter into a commercial agreement or voluntary private treaty transactions with the landholder, including provision for post development reinstatement activities. There is, however, also a mechanism under the AL Act to compulsorily acquire the land required for the safe construction of infrastructure on a temporary basis.

For State land temporarily required for construction, it is likely to be made available via site-specific agreements with the relevant government agencies.

Properties identified for laydown areas and their use for laydown are detailed in Table 8.24—these properties are also located within the permanent disturbance footprint.

TABLE 8.24: LAYDOWN AREAS AND THEIR USE

Location	Approximate chainage	Area(~ha)	Lot/plan	Tenure	Existing land use	Associated temporary use
Nass Road, Charlton	Ch -0.2 km	13.21	33 SP294200	Freehold	Grazing native vegetation	Flash butt welding facility
Krienke Road, Gowrie Junction	Ch 1.7 km	4.82	466 AG3378	Freehold	Grazing native vegetation	Laydown area
Krienke Road, Gowrie Junction	Ch 1.9 km	0.67	466 AG3378	Freehold	Grazing native vegetation	Laydown area
Old Homebush Road, Gowrie Junction	Ch 2.1 km	1.07	38 AG4092	Freehold	Cropping	Laydown area
Morris Road, Gowrie Junction	Ch 3.8 km	33.81	1 RP34899 & 2 SP198120	Freehold	Grazing native vegetation	Laydown area
Intermediate ventilation shaft, Cranley	Ch 6.8 km	4.45	12 SP106686	Freehold	Grazing native vegetation	Laydown area
Eastern tunnel portal, Ballard	Ch 10.8 km	5.23	1 RP46221	Freehold	Other minimal use	Laydown area

Location	Approximate chainage	Area(~ha)	Lot/plan	Tenure	Existing land use	Associated temporary use
Jones Road, Ballard	Ch 11.9 km	2.05	354 CH312304	Freehold	Grazing native vegetation	Laydown area
Jones Road, Ballard	Ch 12.0 km	8.27	354 CH312304	Freehold	Grazing native vegetation	Laydown area
Jones Road, Ballard	Ch 13.0 km	3.43	355 CH312304	Freehold	Other minimal use	Laydown area
Bells Road, Withcott	Ch 13.8 km	4.69	245 CC315	Freehold	Other minimal use	Laydown area
Bells Road, Withcott	Ch 14.2 km	2.88	245 CC315	Freehold	Other minimal use	Laydown area
Withcott Viaduct 4, Withcott	Ch 15.2 km	0.65	20 SP186717	Freehold	Other minimal use	Laydown area
Withcott Viaduct 4, Withcott	Ch 15.4 km	0.63	20 SP186717	Freehold	Other minimal use	Laydown area
McNamaras Road, Withcott	Ch 15.5 km	1.47	18 SP186716	Freehold	Grazing native vegetation	Laydown area
McNamaras Road, Withcott	Ch 15.6 km	2.93	16 SP186714	Freehold	Grazing native vegetation	Laydown area
Gittins Road, Withcott	Ch 16.5 km	8.92	17 SP186715	Freehold	Grazing native vegetation	Laydown area
Howmans Road, Lockyer	Ch 17.9 km	1.66	11 RP839411	Freehold	Grazing native vegetation	Laydown area
Howmans Road, Postmans Ridge	Ch 18.6 km	1.36	2 RP903777	Freehold	Grazing native vegetation	Laydown area
Howmans Road, Postmans Ridge	Ch 18.9 km	3.18	2 RP903777	Freehold	Grazing native vegetation	Laydown area
Murphys Creek Viaduct Laydown, Lockyer	Ch 21.3 km	5.93	169 SP200753	Freehold	Grazing native vegetation	Laydown area
Bridge, Lockyer	Ch 22.5 km	23.53	197 CH31508	Freehold	Grazing native vegetation	Laydown area
Ashlands Drive, Helidon Spa	Ch 23.8 km	1.52	18 SP105106	Freehold	Grazing native vegetation	Laydown area
Lockyer Creek Bridge, Helidon Spa	Ch 24.7 km	6.04	2 RP32750	Freehold	Grazing native vegetation	Laydown area
Cattos Road, Helidon	Ch 25.1 km	2.23	87 CA31624	Freehold	Grazing native vegetation	Laydown area
Cattos Road, Helidon	Ch 25.3 km	1.87	87 CA31624	Freehold	Grazing native vegetation	Laydown area

Where the Project proposes to use land temporarily for construction, the Project has the potential to disrupt existing operations on and surrounding these properties for the duration of construction and rehabilitation activities, where applicable. Noting that some of the land required for construction purposes only may be acquired for the Project and once construction is completed the land will return to the State or may be sold off.

In identifying such properties, consideration has been given to a number of factors, including but not limited to:

- Properties owned by DTMR and/or other government agencies
- Use of properties that will already be severed and will no longer be viable for the existing land use due to the permanent disturbance footprint
- Alignment with property boundaries and existing access tracks that align with the Project construction access requirements (e.g. where identified track has a gradient of less than 10 per cent)
- Access to main roads
- Avoidance of intensive livestock or cropping land uses
- Avoidance of environmentally sensitive areas.

Impacts resulting from the relocation of residents are considered to include loss of community cohesion as well as potential impacts to community identity and values. These impacts relate to social impacts of the Project and are detailed in Chapter 16: Social.

8.7.1.3 Native title

The proposed Toowoomba Range Tunnel passes beneath two reserves (Lot 10 on AG89 and Lot 40 on SP157008) where native title is unlikely to be extinguished or suppressed (refer to Figure 8.3a–e). The Project also traverses waterways and strata parcels such as Lot 1 on RL2085 or the land parcels associated with the Wettalla Water Pipeline (refer Section 8.6.1.2) in relation to which native title may continue to exist. An assessment in accordance with the native title works procedures will be undertaken during detailed design to confirmed locations where native title rights and interests still exist.

Sections 24KA and 24MD of the NT Act may be relevant to the land parcels within the land use study area with Reserve tenure. Under Sections 24KA and 24MD, if an act such as granting statutory approval or land tenure for land subject to native title was dedicated as a reserve before 23 December 1996, the Act will be valid from a native title perspective provided it fits within the purpose of the reserve (or would have no greater impact on native title than Acts that fit within the purpose of the reserve).

If an Act for the Project is to be undertaken on a reserve and is valid under Section 24MD of the NT Act, the Act itself will extinguish native title if it consists of the construction or establishment of a public work (which includes a road, railway or bridge that is constructed by or on behalf of the Crown, or a local government body or other statutory authority of the Crown, in any of its capacities).

Before any such public works are undertaken, the constructing authority, on behalf of the Australian Government Minister, would need to notify all affected representative bodies and registered native title claimants of the proposed works and give them an opportunity to comment. Native title assessments would be undertaken by the Constructing Authority in accordance with the native title work procedures to confirm requirements.

The parties to be notified for the Project are the relevant representative body and the registered native title claimant for the Yuggera Ugarapul People (registered claim).

Where it is determined native title has not been extinguished within the Project disturbance footprint, ARTC proposes to seek the extinguishment of the native title rights and interests in question prior to construction of the Project, either voluntarily by the surrender of native title under an Indigenous land use agreement or by compulsory process, to enable the grant of the necessary interests in Crown lands required to construct the Project. Extinguishment of native title means that native title holders will no longer be able to fully exercise their traditional rights in the area.

Further consultation with the Department of Resources and DTMR will be undertaken to confirm whether native title rights and interests can be retained for the land parcels subject to volumetric resumption (two reserves and Gowrie Creek) and for the waterways (Gowrie, Rocky and Lockyer creeks).

Further detail on the impact of the Project on indigenous people's interests, including detail on consultation undertaken with Traditional Owner's, is provided in Chapter 16: Social and Appendix Q: Social Impact Assessment.

8.7.2 Change in land use

The predominant land use within the land use study area is grazing land. Other notable land uses are identified and described in Table 8.11. It is noted the Project is co-located with the existing West Moreton System rail corridor and road corridors, where possible. The Project also predominantly follows the Gowrie to Grandchester future State transport corridor, minimising change in the future intent for land use in the area.

The primary impact of the Project will be the cumulative shift from a primarily rural and agricultural land use to transport infrastructure (i.e. heavy freight rail corridor). Potential impacts as a result of this change in land use are discussed below.

Where the Project proposes to use land temporarily for construction, the Project will result in temporary disruption to existing operations within and surrounding these properties.

8.7.2.1 Impacts on agricultural uses and activities

Loss of agricultural land

The Project will sterilise some productive agricultural land located within the permanent disturbance footprint. Of these areas, land is primarily used for grazing, with some parcels used for cropping, irrigated seasonal horticulture and irrigated cropping.

The following assessments have been undertaken to determine the extent of the sterilisation of potential productive agricultural land within the permanent and temporary disturbance footprints:

- Agricultural land within the permanent and temporary disturbance footprints where outside of existing rail and road corridors—as productive land mapped within these existing corridors has already been sterilised
- Agricultural land within the permanent and temporary disturbance footprint where outside of existing rail and road corridors, as well as the Gowrie to Grandchester future State transport corridor—as existing corridors have already been sterilised and the future intent to construct a rail corridor through the area is consistent with State land use planning intent for the area.
- The Project may also sever or isolate parcels of agricultural land that may prohibit or limit internal movements or render the area to no longer be commercially viable, leading to a further reduction and loss of access to agricultural land.

It is noted that the proposed Toowoomba Range Tunnel will pass beneath approximately 7.25 ha of Class A land, 0 ha of Class B land and 3.91 ha of land within an IAA (refer Table 8.14). The construction of the tunnel is not expected to result in subsidence of surface land, with the exception of some minor subsidence associated with the construction of the tunnel portals. The location and degree of subsidence associated with the tunnel construction and infrastructure is unlikely to affect the use of surface land, including agricultural uses. Where only below-ground disturbance is proposed, areas of agricultural land have been excluded from this assessment, as no direct disturbance to aboveground land uses, including agricultural uses, is predicted.

It is noted, however, that the Project may indirectly impact on the aboveground land use by impacting local groundwater resources (including the location of any future groundwater bores) or as a result of ground-borne noise and vibration. Impacts on groundwater resources are discussed in Chapter 14: Groundwater, while noise and vibration is discussed in Chapter 15: Noise and Vibration.

Outside of existing rail and road corridors

Approximately 51.65 ha of Class A land and 3.03 ha of Class B land within the permanent disturbance footprint (outside of existing rail and road corridors) will be sterilised as a result of the Project. Approximately 98.81 ha of land within the permanent disturbance footprint is also located in an IAA (refer to Figure 8.6a-e).

Within the temporary disturbance footprint (located outside of existing rail and road corridors) approximately 25.60 ha of land classified as Class A land and 3.45 ha classified as Class B land will be temporarily used for construction of the Project. Of these areas, land is primarily used for grazing. Approximately 42.78 ha of land within the temporary disturbance footprint is also within an IAA.

Impacts on agricultural land at a local government level have been assessed and details provided in Table 8.25.

TABLE 8.25: LAND TYPE WITHIN THE PROJECT DISTURBANCE FOOTPRINT (OUTSIDE OF EXISTING ROAD AND RAIL CORRIDORS) PER LOCAL GOVERNMENT AREA

	Toowoomba LGA	Lockyer Valley LGA
Land classification	**Area of land (ha)**	**Area of land (ha)**
Permanent disturbance footprint		
Class A	47.03	4.61
Class B	0.02	3.01
IAA	65.23	33.58
Temporary disturbance footprint		
Class A	19.86	5.74
Class B	0.02	3.43
IAA	25.83	16.94

To assist in identifying the significance of this impact on agricultural land within the LGAs, Table 8.26 and

identify the percentage of Class A and Class B agricultural land and IAA that the permanent disturbance footprint (outside of existing rail and road corridors) traverses relative to the total area of these land classes within each of the LGAs.

TABLE 8.26: PERCENTAGE OF LAND TYPE WITHIN TOOWOOMBA LGA

	Toowoomba LGA		
Land classification	**Area within permanent disturbance footprint (ha)**	**Total area within LGA (ha)**	**% of land traversed by land use study area within LGA**
Permanent disturbance footprint			
Class A	47.03	701,672.28	Less than 0.1%
Class B	0.02	57,072.94	Less than 0.1%
IAA	65.23	686,581.29	Less than 0.1%
Temporary disturbance footprint			
Class A	19.86	701,672.28	Less than 0.1%
Class B	0.02	57,072.94	Less than 0.1%
IAA	25.83	686,581.29	Less than 0.1%

TABLE 8.27: PERCENTAGE OF LAND TYPE WITHIN LOCKYER VALLEY LGA

	Lockyer Valley LGA		
Land classification	**Area within permanent footprint (ha)**	**Total area within LGA (ha)**	**% of land traversed by land use study area within LGA**
Permanent footprint			
Class A	4.61	38,672.92	Less than 0.1%
Class B	3.01	7,484.62	Less than 0.1%
IAA	33.58	77,567.02	Less than 0.1%
Temporary footprint			
Class A	5.74	38,672.92	Less than 0.1%
Class B	3.43	7,484.62	Less than 0.1%
IAA	16.94	77,567.02	Less than 0.1%

Outside of existing rail and road corridors and Gowrie to Grandchester future state transport corridor

In considering land outside the Gowrie to Grandchester future State transport corridor, as well as road and rail corridors, approximately 37.4 ha of Class A land and 3.03 ha of Class B land within the permanent disturbance footprint (outside of existing rail and road corridors and the Gowrie to Grandchester future state transport corridor) will be sterilised as a result of the Project. Approximately 98.81 ha of land within the permanent disturbance footprint is also located within an IAA.

Within the temporary disturbance footprint (located outside of existing rail and road corridors) approximately 24.17 ha of land classified as Class A land and 3.45 ha classified as Class B land will be temporarily used for construction of the Project. Of these areas, land is primarily used for grazing. Approximately 42.78 ha of land within the temporary disturbance footprint is also within an IAA.

Impacts on agricultural land at a local government level have been assessed and details provided in Table 8.28.

TABLE 8.28: LAND TYPE WITHIN THE PERMANENT DISTURBANCE FOOTPRINTS (OUTSIDE OF EXISTING ROAD AND RAIL CORRIDORS) PER LOCAL GOVERNMENT AREA

	Toowoomba LGA	Lockyer Valley LGA
Land classification	**Area of land (ha)**	**Area of land (ha)**
Permanent disturbance footprint		
Class A	32.82	4.58
Class B	0.02	3.01
IAA	65.23	33.58
Temporary disturbance footprint		
Class A	18.62	5.55
Class B	0.02	3.43
IAA	25.84	16.94

To assist in identifying the significance of this impact on agricultural land within the LGAs, Table 8.29 and Table 8.30 identify the percentage of Class A and Class B agricultural land and IAA that the permanent disturbance footprint (outside of existing rail and road corridors and the Gowrie to Grandchester future state transport corridor) traverses relative to the total area of these land classes within each of the LGAs.

TABLE 8.29: PERCENTAGE OF LAND TYPE WITHIN TOOWOOMBA REGIONAL COUNCIL LOCAL GOVERNMENT AREA

	Toowoomba LGA		
Land classification	**Area within permanent disturbance footprint (ha)**	**Total area within LGA (ha)**	**% of land traversed by land use study area within LGA**
Permanent disturbance footprint			
Class A	32.82	701,672.28	Less than 0.1%
Class B	0.02	57,072.94	Less than 0.1%
IAA	65.23	686,581.29	Less than 0.1%
Temporary disturbance footprint			
Class A	18.62	701,672.28	Less than 0.1%
Class B	0.02	57,072.94	Less than 0.1%
IAA	25.84	686,581.29	Less than 0.1%

TABLE 8.30: PERCENTAGE OF LAND TYPE WITHIN LOCKYER VALLEY LOCAL GOVERNMENT AREA

	Lockyer Valley LGA		
Land classification	**Area within permanent footprint (ha)**	**Total area within LGA (ha)**	**% of land traversed by land use study area within LGA**
Permanent footprint			
Class A	4.58	38,672.92	Less than 0.1%
Class B	3.01	7,484.62	Less than 0.1%
IAA	33.58	77,567.02	Less than 0.1%
Temporary footprint			
Class A	5.55	38,672.92	Less than 0.1%
Class B	3.43	7,484.62	Less than 0.1%
IAA	16.94	77,567.02	Less than 0.1%

Table 8.28, Table 8.29 and Table 8.30, the Project will traverse less than 0.1 per cent of land within both the Toowoomba and Lockyer Valley LGAs classified as being of Class A, Class B or IAA respectively.

Land fragmentation and disruption to access and infrastructure

The Project may result in indirect impacts to agricultural land outside of the permanent and temporary disturbance footprints.

Where the Project does not use or align with existing rail and road corridors, the Project may sever or isolate parcels of agricultural land that may prohibit or limit internal movements, leading to a further reduction and loss of access to agricultural land.

The fragmentation or alienation of properties may cause a disruption in farm operations and enterprises due to impacts to essential farming infrastructure, services or access routes; in particular, the Project may impede the essential access of livestock and machinery to water through temporary and permanent impacts to groundwater bores, drainage lines, diversions, or cutting off water input to and from dams. This potential fragmentation, and alienation of, properties may impact on the economic viability of farming operations and enterprises associated with agricultural land directly impacted by the permanent and temporary disturbance footprints.

Consideration of impacts of the Project on farming operations and enterprises on impacted properties will be assessed on an individual case-by-case basis in consultation with landholders.

Alterations to stock movements

The land use study area does not traverse any declared stock routes administered under the *Stock Route Management Act 2002* (Qld), Land Act or TI Act; however, it is understood that there may be informal stock routes throughout the land use study area used to transfer stock to various grazing paddocks and holding yards. Consultation is ongoing with landholders to identify impacts, if any, to informal stock routes.

The Project has the potential to disrupt stock movement corridors as a result of temporary construction activities and permanent infrastructure and/or property boundary fencing. Consideration of impacts of the Project on stock movement operations will be assessed on an individual case-by-case basis in consultation with relevant/applicable graziers.

Other indirect impacts on agricultural land

The Project may also have the potential to indirectly impact productive agricultural land within the wider land use study area through temporary or permanent impacts from:

- Land contamination
- Biosecurity risks
- Changes in hydrology and water quality
- Erosion and sedimentation
- Groundwater drawdown
- Indirect disruptions to operations and stock behaviour relating to noise and vibration.

The potential effects on agricultural land associated with these impacts include reduced soil quality, reduced productivity, and increase in costs to agricultural operations. The construction and operation of the proposed Toowoomba Range Tunnel may also impact on existing landholder bores—potential impacts may include dewatering and loss or damage to existing landholder bores. These impacts are further discussed in Chapter 9: Land Resources, Chapter 11: Flora and Fauna, Chapter 13: Surface Water and Hydrology, Chapter 14: Groundwater and Chapter 15: Noise and Vibration.

Opportunities to support the agricultural industry

While it is acknowledged that the Project will impact on current agricultural land and land that may have the potential for agricultural use, the Audit identifies several opportunities for the agricultural sector within the Darling Downs and SEQ regions.

Darling Downs region

As the Project is for the development of freight rail infrastructure, the Project has potential to address the following risks and opportunities identified by the Audit for the Darling Downs region:

- There are currently issues surrounding the quality and capacity of transport networks to meet current and future requirements (e.g. load limits on bridges, competition for access to rail freight and bottlenecks in the transport network, competition for access to rail freight)
- Processing industries tend to be located on the eastern side of the Great Dividing Range, whereas production in the Darling Downs region is on the western side. Improved freight transportation infrastructure between the two regions would improve connection between the eastern and western side of the Great Dividing Range.
- There is the potential for partnerships between private and public entities to enable the construction of infrastructure and delivery services, including funded infrastructure projects to expand the road and rail network that can support agriculture currently and into the future.

South East Queensland region

The Project also has potential to address the following risks and opportunities identified by the Audit for the SEQ region:

- Traffic congestion and deterioration of road infrastructure delays access to markets and processors
- Due to the proximity of agricultural production to areas of urban growth, there is an opportunity to expand manufacturing, processing, transport, logistics and knowledge industries (including biotech industries) in SEQ.

The Audit identifies the transportation of goods and services as being vital to SEQ's economic development and growth. The freight task in Queensland has accelerated, with expected demand driven by strong population growth and economic activity, placing increasing pressure on key road and rail corridors. Specific to the land use study area, the Audit identifies the Warrego Highway as being over capacity. The Project, and the Inland Rail Program, will increase the capacity for freight services by reducing congestion on existing road and rail networks, including the Warrego Highway.

On this basis, in contrast to the potential adverse impacts on agricultural land, the Project has the potential to result in beneficial impacts to the agricultural sector within the area. The Project, and the Inland Rail Program, will better connect the Darling Downs and SEQ regions to domestic and international markets and will support associated future industries.

Further discussion on the beneficial impacts of the Project including the agricultural sector is provided in Chapter 2: Project Rationale and Chapter 16: Social.

8.7.2.2 Notable land use

Potential impacts to notable land use within the land use study area are discussed Table 8.31.

The Project may also have the potential to indirectly impact on the above notable land uses due to the loss of amenity. Such indirect impacts and appropriate mitigation measures associated with amenity on land use, including from noise, vibration, dust, light and scenic amenity are further discussed in their respective chapters, including Chapter 10: Landscape and Visual Amenity, Chapter 12: Air Quality, Chapter 15: Noise and Vibration, Chapter 16: Social and Chapter 19: Traffic, Transport and Access.

TABLE 8.31: POTENTIAL IMPACTS TO NOTABLE LAND USE WITHIN THE LAND USE STUDY AREA

Notable existing land use	Potential impacts
Gowrie Junction locality	As the Project is co-located with the existing West Moreton System rail corridor, and the majority of the road networks changes are located within the existing road reserves, the number of properties within Gowrie Junction required for the Project are minimised. Though it is acknowledged there may potentially be impacts from the operation of the Project in these areas (e.g. noise, visual amenity and air quality). There are some local changes to access as a result of the Project (e.g. closing Morris Road and realigning Gowrie Junction Road) with the design ensuring access is maintained to the local properties. There is also the likelihood of temporary disruptions to the access (local and regional) during construction (e.g. traffic controls and diversions), along with local services, primarily as a result of relocation or protection of services. Impacts to groundwater resources may also occur (e.g. piling near an existing groundwater bore). Further detail on construction methodology is provided in Chapter 6: Project Description. No direct impacts are proposed on the school, though, as noted above, temporary disruptions to the road network may impact school bus routes and travel routes (car or bike) to the school. Noise assessments have also indicated potential exceedances of the relevant criteria during construction and operations (refer Chapter 15: Noise and Vibration). Laydown areas within the temporary disturbance footprint are proposed to the south of Gowrie. Where the Project requires land temporarily for construction, the Project has the potential to disrupt existing operations on and surrounding these properties for the duration of construction and rehabilitation. The impacts from the temporary change in land use are further discussed in Section 8.7.1.
Birdsong Market Garden (Lot 1 in SP140208)	The Project is within the proposed Toowoomba Range Tunnel when passing to the north of this business at Cranley and, as such, will not have a direct impact on the land use or tenure of this property. There will be impacts associated with construction via a proposed haul route along Boundary Street, while the western tunnel portal is in relatively close proximity (~ 700 m to the north east) to the business. The tunnel construction, including activities at the laydown area, are proposed to occur 24 hours a day/7 days a week, with the tunnel being the longest duration activity of the infrastructure construction on the entire Inland Rail Program. There may also be disruptions from vibration during the tunnel construction works with exceedances predicted at the sensitive receptor on the land parcel—refer Chapter 15: Noise and Vibration. During operations, no disturbance to aboveground land use will occur as a result of the Project. In addition, exceedances of the relevant noise and vibration criteria, or the air quality criteria as a result of operations at the western tunnel portal or trains, are not predicted to occur at this location (refer Chapter 15: Noise and Vibration and Chapter 12: Air Quality).
Teen Challenge—New Life Centre (Lot 2 on SP173941)	The Project traverses under, at a depth of approximately 100 m, the Teen Challenge—New Life Centre at Cranley. This lot is also recognised as an infrastructure designation under the Planning Act. The Project will require the volumetric acquisition of the tunnel subsurface area from the land parcel, Lot 2 on SP173941, which is State land (i.e. reserve tenure). The tunnel area includes a provisional area to protect the tunnel from future development. Tunnel construction activities, which occur 24 hours a day/7 days a week, may be experienced at this location (e.g. vibration, refer Chapter 15: Noise and Vibration). During operation, no disturbance to aboveground land uses, including the Teen Challenge—New Life Centre, will occur as a result of the Project. In addition, the noise and vibration assessment predicted no exceedances of the relevant noise and vibration criteria during operations, though it is noted that there is no ground-borne noise and vibration criteria for livestock (refer Chapter 15: Noise and Vibration).

Notable existing land use	Potential impacts
Toowoomba Waste Management Centre (Lot 172 on SP227269)	The Project traverses under, at a depth of approximately 100 m, the Toowoomba Waste Management Centre at Cranley, while the intermediate ventilation shaft and supporting infrastructure is located adjacent to the property at surface level. The Project will require the volumetric acquisition of the tunnel subsurface area from the land parcel, Lot 172 on SP227269. The tunnel area includes a provisional area to protect the tunnel from future development. There may also be some impacts to the landfill operations during construction, including the disposal of waste and impacts on local traffic movements. Two groundwater bores are located above the Toowoomba Range Tunnel near the Toowoomba Waste Management Centre, and the integrity of the bores may be impacted by the construction and operation of the tunnel (e.g. vibration, refer Chapter 15: Noise and Vibration). In addition, the bores will be subject to groundwater drawdown predicted to occur during construction and operations. Groundwater impacts and mitigation measures are discussed in Chapter 14: Groundwater and Appendix N: Groundwater Technical Report.
Wetalla Wastewater Treatment Plant (Lot 1 on SP270010)	The Project does not directly impact this facility; however, utilities that link to the plant will be temporarily impacted by the Project, which may impact the operation of the plant. There may also be an opportunity to use recycled water from the treatment plant either directly or indirectly (i.e. through a third party). There may be some impacts on the local road network (e.g. traffic control and diversions) during construction within and around the plant. (e.g. vibration, refer Chapter 15: Noise and Vibration).
Toowoomba Horse Riding for The Disabled Association (Lot 10 on AG89)	The Project traverses under, at a depth of approximately 100 m, the Toowoomba Horse Riding for The Disabled Association Centre at Cranley. The Project will require the volumetric acquisition of the tunnel area from the land parcel, Lot 10 on AG89, which is State land (i.e. reserve tenure). The tunnel area includes a provisional area to protect the tunnel from future development. Tunnel construction activities, which occur 24 hours a day/7 days a week, may be experienced at this location (e.g. vibration, refer Chapter 15: Noise and Vibration). During operation, no disturbance to aboveground land uses, including the Toowoomba Horse Riding for The Disabled Association Centre at Cranley, will occur as only below-ground disturbance is proposed.
Baillie Henderson Hospital (Lot 9 on SP289033)	The Project is located approximately 500 m to the north of the Bailie Henderson Hospital at Cranley and will not have a direct impact on the land use of the hospital. As the Project is predominantly located within the proposed Toowoomba Range Tunnel, when traversing near the hospital, access will not be impacted as no road–rail interfaces are required at the hospital's access road. There may, however, be some temporary impacts during construction, as Mort Street is a major haulage route for the Project. In addition, changes in the local road network may impact emergency services, though impacts are considered to be negligible. It is noted that the flight path for emergency helicopters may extend over the proposed intermediate ventilation shaft. Impacts from the shaft are negligible as the primary use of the shaft is to draw air into the tunnel rather than for the expulsion of air from the tunnel unless it is an emergency (e.g. fire). Discussions with Queensland Health regarding the master plan development for the hospital occurred in August 2020. Queensland Health noted that a business case of the master plan was yet to be developed and that most of the redevelopment would occur to the south of the existing access road from Mort Street. The main concerns were around noise and air quality, noting that there are no predicted impacts from the Project as a result of these matters at this location during operations; however, construction noise above the relevant criteria may be experienced at this location as a result of construction activities at the intermediate ventilation shaft location at Cranley. Further detail of indirect impacts on sensitive receptors (including Baillie Henderson Hospital), such as air quality and noise and vibration, is detailed in Chapter 10: Landscape and Visual Amenity, Chapter 12: Air Quality, Chapter 15: Noise and Vibration and Chapter 16: Social.

Notable existing land use	Potential impacts
KRA 8—Harlaxton Quarry (Lot 374 on SP272172)	As the Project traverses the northern section of the KRA, the Project will not impact on the existing operations of the quarry (~800 m to the south). In addition, the existing quarry operations are unlikely to pose a risk during construction and operations due to the separation distance and the local topography; however, the Project will likely sterilise resources located in the undeveloped northern spur of the KRA. This includes 4.24 ha of the resource processing area and 11.96 ha of the separation area. Furthermore, approximately 1.2 ha of the resource processing area will be severed as a result of the Project. The quarry operator noted future expansion plans targeting resources along a northern spur of the KRA, which would need to consider the operation of the rail corridor. Further detail on potential impacts to the KRA are provided in Section 8.7.2.4.
Withcott Quarry (Lot 14 on SP186714)	The Project is located approximately 500 m to the south of the quarry. As of 15 December 2020, operations at the Withcott Quarry have been suspended until further notice. If the quarry is operational during the construction of the Project, there is the potential for quarry traffic to be constrained during construction activities, including works on McNamaras Road. There is also the potential for the quarry to support construction activities (e.g. supply quarry material or be used as a laydown or stockpile area). Excess material may also be provided to the operator for rehabilitation activities.
Withcott Seedlings (Lot 20 on SP127094 and Lot 2 on RP205944)	The Project has been purposely designed to minimise impacts on Withcott Seedlings, with the Project intersecting the business (intensive horticultural business) between two major dams (west (potable water supply) and east (wastewater)). A grade separation over the internal access track is proposed, which provides access between the water supplies. This structure may be subject to a volumetric acquisition to allow for use of the area by both parties. Laydown areas within the temporary disturbance footprint are proposed to the north and south of Withcott Seedlings to accommodate the construction of viaducts and other structures. Where the Project requires land temporarily for construction, the Project has the potential to disrupt existing operations on and surrounding these properties for the duration of construction and rehabilitation. The impacts from the temporary change in land use are further discussed in Section 8.7.2. The Project may also temporarily impact access to and from the business during construction (e.g. traffic controls and diversions). There may also be opportunity for the business to support construction through the supply of water during construction, while any excess land in this area may be retained as a buffer. This will be confirmed during detailed design, in consultation with the construction authority, DTMR and Withcott Seedings.
Toowoomba Kart Club (Lot 3 on RP32749)	The Project traverses the north-eastern corner of Lot 3 on RP32749 associated with the Toowoomba Kart Club—partial acquisition of the property (e.g. the area impacted by the Project)) will likely be required for the Project. Impacts of property acquisition include the loss of property and potential disruption to access and use of property where temporarily acquired. Such impacts are noted in Section 8.7.1.
Helidon Magazine Reserve	It is unlikely that the Project will impact on the land use of the Helidon Magazine Reserve as the Project is co-located with the existing West Moreton System rail corridor on the southern side of Airforce Road. Furthermore, the Project will not impact on the cattle dip structure that was previously located within the Helidon Magazine Reserve land parcel, as it is no longer operational. The proposed construction activities in this area, including the changes to Cattos Road, may impact on haulage to and from the Helidon Magazine Reserve. Accessibility impacts of the Project are further detailed in Section 8.7.3. The realignment of Cattos Road would potentially improve road safety along Airforce Road, with the current Cattos Road/Airforce Road intersection located on a bend. Further detail on the realignment of Cattos Road is provided in Chapter 19: Traffic, Transport and Access.

8.7.2.3 Sterilisation of mineral and petroleum resources

Linear infrastructure such as the Project has the potential to sterilise mineral and petroleum resources as it restricts the potential for the resource to be developed. Due to the distance between the Project and current exploration permits (refer to Section 8.6.1.4), the Project will not constrain or inhibit mineral or petroleum and gas exploration activities associated with these permits.

Whilst no historical mining leases or abandoned mines are recorded in the land use study area, there is a potential to cause harm if the Project is constructed above an abandoned mine without knowledge. Chapter 20: Hazard and Risk provides further discussion on the potential impacts and mitigation measures of recorded and unrecorded abandoned mine workings (including pits, shafts, tunnels and underground workings).

8.7.2.4 Harlaxton Key Resource Area

The Project disturbance footprint traverses the resource processing (4.24 ha) and separation areas (11.96 ha) associated with the Harlaxton KRA, between approximate chainage Ch 10.0 km to Ch 10.3 km, with the proposed eastern tunnel portal located at approximate chainage Ch 10.3 km. As detailed in Table 8.17, there is an existing EA (EPPR00443813) for extractive, screening and metal forming ERAs that covers the KRA.

The existing quarry pit is located on a north-east trending spur in the southern portion of the KRA resource processing area. The Project is located approximately 800 m to the north of the northern edge of the existing quarry pit. As the existing quarry pit is located to the south of the rail alignment, the Project is not anticipated to impact the operation or the available resources of the existing quarry pit. It is anticipated that hard rock resources located in the southern spur will be able to be fully developed during and following the construction of the Project. Discussions with the operator have indicated that the existing pit has an operating life of at least another 20 years.

The northern portion of the resource processing area is currently undeveloped (i.e. natural landscape dominated by native vegetation). The undeveloped area consists of remnant native vegetation and is separated from the existing quarry pit by a deeply incised gully.

Where the Project crosses the KRA, the underlying resources will be sterilised, though as the Project intercepts lower sections of the spurs there is the potential that the Project is unlikely to intersect high-quality basalt.

Eleven geotechnical boreholes have been constructed along the Project alignment within and in close proximity to the KRA. The boreholes range in depth from 15 m to 120 m, with basalt intercepted at three borehole locations, with another two locations having basalt present but as a colluvium layer. Two of the locations are located west of the KRA processing area, above the Toowoomba Range Tunnel:

- A basalt layer was encountered above the tunnel at Ch 9.6 km west of the resource processing area. The layer was encountered at a depth between 4 and 25.04 m below ground level (bgl), with the total depth of the borehole being 146 mbgl.
- A basalt layer was encountered above the tunnel at Ch 9.8 km west of the resource processing area. The layer was encountered at a depth between 7.7 and 8.6 mbgl, with the total depth of the borehole being 80.63 mbgl.
- A basalt layer was encountered above the tunnel at Ch 10.0 km within the resource processing area. The layer was encountered at a depth between 2.26 and 33.88 mbgl, with the total depth of the borehole being 80.17 mbgl.
- Four other boreholes above the tunnel (Ch 10.1 to 10.3), within the resource processing area, did not intercept basalt, with the boreholes at a depth between 40 and 80 mbgl.

Basalt was encountered at three boreholes in the eastern tunnel portal area, though it was considered to be colluvial material. These boreholes are generally in a gully or on a southwest trending spur outside of the resource processing area.

It is also noted that information on the quantity and quality of potential hard rock resources in the northern spur have not been made publicly available. Nevertheless, the northern spur of the resource processing area is likely to contain significant quarry resources that may be intended to be developed in the future.

During the public notification for the Project ToR, the operators of the Harlaxton Quarry provided a schematic of proposed expansion works into this undeveloped area (i.e. northern pit operations). The proposed northern pit generally aligns with the resource/processing area of the KRA on Lot 374 on SP272172 and, as such, overlaps the Gowrie to Grandchester future State transport corridor. As noted, the Project generally follows this transport corridor; therefore, the proposed northern pit also overlaps a portion of the Toowoomba Range Tunnel and the eastern tunnel portal.

The proposed northern pit encompasses a similar but smaller north-east trending spur to that which is associated with the operations of the southern pit. The spur extends out in a north-easterly direction to the eastern tunnel portal, with the spur approximately 200 m Australian Height Datum (AHD) above the portal or 300 m upgradient at its highest point.

There is a risk of slippage from any operations on the spur, with colluvial material a key feature of the local surface geology. Slippages were experienced during the construction of the Toowoomba Bypass, while slippages are also evident on the existing southern pit, though the slippages are generally restricted to batter walls.

Future operations associated with the northern pit has the potential to impact the Toowoomba Range Tunnel via ground vibrations from blasting, along with the unloading of material. There are no specific vibrations limits for a rail tunnel and the operating railway. While the blasting limits outlined in the existing EA (EPPR00443813) are applicable to sensitive places, which excludes railways:

- For vibration more than 35 hertz, peak particle velocity 25 millimetres per second
- For vibration less than 35 hertz, peak particle velocity 10 millimetres per second.

Australian Standard *AS 2187.2: Explosives – Storage, transport and use* (Standards Australia, 2006a) notes that for occupied non-sensitive sites, such as factories and commercial premises, the threshold value in the British Standard *BS 7385-2:1993: Evaluation and measurement for vibration in buildings—Part 2: Guide to damage levels from ground borne vibration* should apply (British Standards, 2003). The limit is a peak particle velocity 25 millimetres per second, which would require a radial distance of between 70 (50 kg charge mass) and 110 m (100 kg charge mass) from the Toowoomba Range tunnel. The material within the radial distance may also be sterilised, noting a provisional area around the tunnel (total 50 m in diameter) will be acquired as part of the volumetric resumption to assist in protecting the tunnel.

The radial distance is conservatively based on peak particle velocity limits for assumed ground conditions and sub-surface properties. Structure-specific vibration limits will be confirmed during detailed design, with consideration of additional geotechnical data within and adjacent to the Project footprint and final tunnel elements (rail formation, tunnel lining, segment types, concrete grade, reinforcing ratio). The targeted structure-specific vibration limits will allow the nominated zone of influence to be confirmed, which will be conveyed to the quarry operator, as well as Department of Resources in regard to KRA mapping, to inform future expansion plans, along with the blast management plan. ARTC and Quarry Products Pty Ltd will develop specific measures to accommodate works within and near the nominated zone of influence, including the management of flyrock (i.e. personnel exclusion zone and where applicable track inspection) and undertake blasting or works when there are suitable traffic-free windows.

Discussions with the quarry operator have also indicated that, to accommodate their future plans, there may be a need to relocate the existing processing area, along with the haulage route. The Project, along with the local topography, is also likely to constrain the relocation of this infrastructure (e.g. a haulage route to the north over the Project is unlikely); noting that any future development plans with or without the Project would be constrained by the existing Gowrie to Grandchester future State transport corridor.

Preliminary advice from the Department of Resources confirmed that the infrastructure corridor has 'precedence' over the KRA, in that it has an overriding need that can only be met by the nullification of the KRA outcome, i.e. the protection of the extractive resource.

Overall, the Project will have no impact on the existing operations within the KRA and the existing operations are also unlikely to impact on the construction and operation of the Project. There will, however, be some sterilisation of the KRA resource processing area (4.24 ha, with an additional 1.2 ha severed), though, given existing data, the main deposit of basalt is located on a north-west trending spur above and to the south of the Project. This deposit can be developed at a future date subject to the relevant approvals, though measures will need to be implemented to manage potential impacts from blasting on the Toowoomba Range Tunnel and the eastern tunnel portal areas.

Consultation with the operators of the Harlaxton KRA has occurred and will continue throughout the detailed design phase to manage the interface between the two projects. Refer to Appendix D: Community Consultation.

8.7.2.5 Impacts on current environmental authorities for prescribed environmentally relevant activities

Potential impacts to land subject to an existing EA with prescribed ERAs traversed by the Project, as identified in Section 8.6.2.2, are outlined in Table 8.32. Further details on potential contamination associated with ERAs is provided within Chapter 9: Land Resources.

TABLE 8.32: IMPACT OF PROJECT ON EXISTING ENVIRONMENTAL AUTHORITIES FOR PRESCRIBED ERAS

Permit number and primary holder	Relationship to project	Potential impacts
Permit number: EPPR00625013— Toowoomba Regional Council (Toowoomba Waste Management Centre)	The Project traverses beneath the Toowoomba Waste Management Centre at Cranley	As the Project is located within the proposed Toowoomba Range Tunnel when passing beneath the facility, it is unlikely the Project will have an impact on the activity. The groundwater bores may be impacted during construction as a result of vibration (refer Chapter 14: Groundwater). Additionally, the activity subject to the EA is not anticipated to impact on the Project, with TRC being consulted regarding the risk of contamination (refer Chapter 9: Land Resources; however, volumetric acquisition of the land parcel subject to the EA will be required.
EPPR00443813— Quarry Products Pty Ltd (Harlaxton Quarry)	The Project traverses land (Lot 374 on SP272172) associated with this EA at Ballard	The Project traverses an undeveloped portion of the lot along its northern boundary. It is unlikely the Project will have an impact on the current quarrying activity. Additionally, the current activity subject to the EA is not anticipated to impact on the Project; however, acquisition of the land parcel subject to the EA will be required, noting the land parcel is owned by Sanbeg Pty Ltd. Further detail on the impacts of the Project to the Harlaxton Quarry is provided in Section 8.7.2.3.

8.7.2.6 Development activity

Potential impacts to development activities located within the Project disturbance footprint as identified in Section 8.6.4, are outlined in Table 8.33.

TABLE 8.33: IMPACT OF THE PROJECT ON FUTURE DEVELOPMENT WITHIN THE PROJECT DISTURBANCE FOOTPRINT

Project name and Proponent	Relationship to Project	Impact to Project
Toowoomba Regional Council		
Material Change of Use— Intermodal Freight Terminal (Warehouse) Freight Terminals Pty Ltd ATF Interlink Industrial Park Trust (formally Freight Terminals Trust)	The Project traverses the InterLinkSQ development area at Charlton. The Project is located between the existing West Moreton System (Western Line) rail corridor and InterLinkSQ.	The Project overlaps the InterLinkSQ development area west of Gowrie. Land owned by InterLinkSQ will be required for the purposes of the railway infrastructure. InterLinkSQ has been consulted as part of the Project's design development, with the design considering mechanisms to tie in into the Project and/or the QR rail line, as shown in Chapter 2: Project Rationale. The presence of the rising sewer main and other utilities also constrains design options in this area, with discussions ongoing with TRC and InterLinkSQ on these matters. The construction of the Project will likely have a positive impact by facilitating increased development potential in the area and will likely be a catalyst for the construction and industrial uses and development of the InterLinkSQ site as well as other industrial uses within the Charlton-Wellcamp Enterprise Area.

Project name and Proponent	Relationship to Project	Impact to Project
Mounty Lofty Toowoomba Defence Housing Australia	The Project traverses the north-eastern corner of Lot 1 on RP46221, which forms part of the former rifle range site, located on Commonwealth land. The Project is located more than 1 km to the north of the housing estate development footprint.	On review of the current development plans submitted to TRC and the Department of Agriculture, Water and the Environment (DAWE), the Project is located more than 1 km north of the housing estate's development footprint and will not be impacted by the Project. Furthermore, access to the site is proposed via the south and will not be impacted by the Project.
Queensland Government DSDILGP Coordinated Projects		
Border to Gowrie—Inland Rail (ARTC)	The Project connects with the B2G project in the west	The Project will connect with the B2G project where the Project uses the West Moreton System (Western Line) rail corridor at Charlton. As the projects are expected to be constructed within the same timeframes, there is an opportunity to share resources (material and people) across the projects.
Helidon to Calvert (H2C)—Inland Rail (ARTC)	The Project connects to the H2C project in the east	The Project will connect with the H2C project where the Project uses the West Moreton System (Main Line) rail corridor at Helidon. As the projects are expected to be constructed within the same timeframes, there is an opportunity to share resources (material and people) across the projects.

8.7.3 Accessibility

8.7.3.1 Impacts on public road network

In total, the permanent disturbance footprint has 17 public road interfaces, two of which occur on State-controlled roads managed by DTMR and 15 of which are local roads managed by local governments. Where the Project traverses these roads, potential impacts include: a disruption to traffic and emergency services; an increase in travel time; and a decrease in accessibility to community services, facilities and key destinations within, and in proximity to, the land use study area through changes to access road arrangements.

Eight road–rail interfaces will involve grade separations, including rail -over-road and road-over-rail (e.g. the crossing of the Toowoomba Bypass at Withcott is a rail bridge over the road where the bridge piers are located outside of the roadway, with a single clear span over the entire Toowoomba Bypass). The Project will not result in the addition of any new level crossings. The existing level crossing at Paulsens Road (referenced as Gowrie Junction Road by QR) over the West Moreton System rail corridor will close and relocate to the proposed Gowrie Junction Road grade separation.

Where the Project is located within the proposed Toowoomba Range Tunnel, no impacts to the local road networks are anticipated during the construction and operational phases of the Project.

The current design will also require the permanent closure of a section of Morris Road and Ganzer Morris Road where the Project deviates to the southeast off the existing rail corridor into the tunnel; along with a section (undeveloped) of Howmans Road and the existing Cattos Road/Airforce Road intersection. There is also likely to be temporary closures and traffic diversions during construction to accommodate the proposed road network changes.

There is also a requirement to alter the local road network to facilitate the Project, including changes to sections of:

- Gowrie Junction Road
- East Paulsens Road
- Krienke Road
- McNamaras Road
- Jones Road
- Cattos Road.

The majority of the realignments will occur within the existing road reserves but some of these works will occur on private land (i.e. outside the road reserve), with the land to be acquired under the AL Act for the purposes of a road under the Land Act.

There will also be a requirement to undertake the construction of pipelines and new access points within the existing road reserves, e.g. the water pipeline required for the fire management system at the western tunnel portal crosses beneath the Toowoomba Bypass and Hermitage Road. The works may require temporary closures or changes to the local traffic conditions during construction.

Surrounding land uses, including industrial and farming operations, will likely be impacted by potentially extended travel times along public roads, where alternative access will be provided. Longer journey times may result in disruption to the commercial operations of agricultural activities due to the potentially extended transportation time to and from these land uses.

Further to the above, disruption to traffic can be expected during construction, as equipment, materials and people are transported to and along the permanent disturbance footprint.

Further details are provided in Chapter 19: Traffic, Transport and Access.

8.7.3.2 Impacts to existing rail corridors

The West Moreton System is a critical link in export supply chains (particularly thermal coal and grain), supporting the movement of significant volumes of commodities to the Port of Brisbane. Planning of exports to international markets involves significant lead times to coordinate landside logistics, shipping schedules and client demand. Supply chain stakeholders will need sufficient time to develop contingencies to mitigate potential disruption.

Poorly timed track closures and inadequate consultation and communication could have significant adverse impacts (cost and potentially reputational) for Queensland stakeholders in international supply chains currently reliant on the West Moreton System.

The Project is co-located with the existing West Moreton System for 5.6 km, while it is also proposed for a road-over-rail bridge to be constructed at Gowrie (i.e. Gowrie Junction Road bridge of the Western Line) and a rail-over-rail grade separation at Helidon (i.e. Lockyer Creek Viaduct over the Main Line).

The staging of the works within existing rail corridors, and their associated impacts, will be the subject of an interface agreement between ARTC and QR. The design spacing between the existing and proposed tracks has been undertaken in a manner where the proponents can occupy sections of existing corridor and avoid the need for constrained, short-term possession works. The suitable timing of works will need to be determined in consultation with QR, the rail manager and, where applicable, key supply chain stakeholders in order to identify periods of minimum disruption.

In accordance with Section 255 of the TI Act, works cannot commence within the existing rail corridor without QR's written approval. If the construction of Project components within the existing rail corridor is completed during a temporary possession of the rail corridor, then works will be completed in accordance with the conditions of the temporary possession and/or wayleave agreement granted to ARTC by QR.

The Project will also tie into the West Moreton System at Gowrie and Helidon allowing for interoperability between the two networks. Consultation with QR as rail manager of the West Moreton System and DTMR as the landholder of the future rail corridor is ongoing and will aim to formalise tenure arrangements, interface agreements, safety systems etc.

Further details are provided in Chapter 19: Traffic, Transport and Access and Appendix U: Traffic Impact Assessment.

8.7.3.3 Impacts to property access

The Project may result in the severance of driveways and informal private access roads to individual properties. The severance of private access points has been avoided where possible. Where severance cannot be avoided, private access arrangements to properties have been considered in the Project design. Such consideration has included ensuring that legal access to properties is retained through the provision of alternative access roads, grade separation and changes to the road network, where appropriate. No new or existing occupational crossings have been identified for the Project.

The works associated with the realignment of Gowrie Junction Road will sever existing access to houses located on Gowrie Junction Road between Ganzer Road and McMahon Road, Gowrie Junction. Alternative access will be provided from Krienke Road and an access road between the houses and Gowrie Junction Road (within the existing road corridor) Refer to Appendix U: Traffic Impact Assessment for further details.

Houses that are currently accessible by Morris Road will not be impacted, due in part to the realignment of Morris Road; however, access to Ganzer Morris Road from Morris Road will not be possible and alternative access will be provided from Ganzer Road. Similarly, no permanent impact is proposed on property access along Krienke Road, McMahon Road, Ganzer Road, Paulsens Road, East Paulson Road or Old Homebush Road. Though it is acknowledged that travel times may increase slightly as a result of the road network changes.

Cattos Road at Helidon, which primarily services Lot 13 on CH31259, is impacted by the Project. The design cannot safely accommodate traffic under the proposed rail line and, as such, the road has been purposely realigned. The realignment follows existing road reserves and provides an alternative access from the north and east to Lot 13 on CH31259, via an existing occupational crossing over the West Moreton System rail corridor at Helidon.

Consultation with affected landholders is ongoing to identify where impacts to private property access occurs and to determine appropriate agreements and measures to mitigate these impacts.

During construction, private access to individual properties may be temporarily disrupted and restricted where land is required temporarily for the construction footprint adjacent to the permanent disturbance footprint.

Further details are provided in Chapter 19: Traffic, Transport and Access.

8.7.4 Impacts on services and utilities

The Project has 184 known utility interaction with impacts ranging from negligible (e.g. traversing under the infrastructure on an existing road) to major (e.g. where the infrastructure needs to be relocated). The impacts associated with the Project are identified below:

- Access tracks for the Project will cross under or above a range of services, including the Roma Brisbane Gas Pipeline, telecommunication cables and a number of powerlines. Depending on the type of vehicles or machinery moving across these areas, there may be a requirement for temporary protection measures to be employed.
- Disruptions to access for maintenance of these services and utilities are likely to occur during construction due to temporary roads closures, traffic control and movement of machinery and equipment. Long-term there may also be changes to access tracks and roads in the area used by maintenance crews maintaining these services and utilities but these changes are likely to be negligible.
- There are a number of services and utilities within the West Moreton System rail corridor (including QR assets) and the road reserve (e.g. TRC sewer main and recycled water). Some of these services and utilities will require protection (temporary and permanent) to minimise the risk of damage during the construction activities within the rail corridor or road reserve while others will need be relocated. This will minimise the risk of works compromising the structure and integrity of the services, which may result in the release of material to the environment, an explosion or loss of service.
- The Project also impacts a number of services and utilities associated with easements, including the Roma Brisbane Gas Pipeline and Powerlink's Transmission Line between Middle Ridge and Tarong. Some of these services will require protection (temporary and permanent) to minimise the risk of damage during construction, while others will need be relocated. This will minimise the risk of works compromising the structure and integrity of the service, which may result in the release of material to the environment, an explosion or loss of service. As noted in Section 8.7.1.1, rights and interests in easements will be also be subject to acquisition works under the AL Act, and potentially the Land Act, in detailed design.
- The pipelines will need to be relocated where they intersect the Project disturbance footprint. Consultation with utility and infrastructure providers, has occurred and is ongoing to determine and minimise potential impacts to the pipeline and to develop mitigation strategies for the construction phase of development. There is the opportunity for the Project to potentially extract water from the pipeline during construction.
- Indirect impacts from changes to local hydrology is also a risk from the Project; with the potential for increased flows and time of submergence along the pipelines/easements. Impacts from vibration and/or or changes to hydrology on these assets are outlined in Chapter 15: Noise and Vibration and Chapter 13: Surface Water and Hydrology.

Relocation and upgrades of utilities and services will be undertaken in accordance with the relevant regulatory provisions and, where those works are undertaken by the utility providers, the works are not part of the EIS. It is noted that land requirements for relocation activities outside existing easements are currently not considered as part of the EIS, with the parties having authority to acquire land under the AL Act or other legislative mechanisms, where required.

During construction, surrounding residences and businesses may experience temporary disruption to services from time to time as these services and utilities are relocated or upgraded. Once operational, the Project may impact on access to services and utilities where utilities intersect the permanent disturbance footprint.

Consultation with the various utility providers has commenced and will continue throughout the detailed design phase to determine requirements for relocation or protection of the services impacted by the Project and the responsible parties. Details on consultation undertaken for the Project is detailed in Chapter 5: Stakeholder Engagement and Appendix D: Community Consultation.

8.7.5 Opportunities to support future industry development

In addition to the potential adverse impacts identified above, the Project has the potential to create a number of beneficial impacts. The Inland Rail Program is a nationally significant transport initiative and will provide a high-capacity, efficient freight link between Melbourne and Brisbane through regional Australia, to better connect cities, farms and mines via ports to domestic and international markets. It is anticipated that the Project will act as an enabler for regional economic development along the Inland Rail corridor.

Of relevance to this assessment, the Project is likely to support future industries associated within regional hubs, such as the Toowoomba Enterprise Hub (previously named Charlton Wellcamp Enterprise Area), which is an area of strategic importance in supporting growth in Toowoomba and the Surat Basin. The privately-owned enterprise hub will host major suppliers of engineering services and logistics for the resource industry sector, and is currently comprised of the Wellcamp Airport, Wellcamp Business Park, InterLinkSQ, Witmack Industry Park and Charlton Logistics Park.

The Project will improve access to and from regional markets by providing connectivity opportunities between the existing West Moreton System rail line and ARTC interstate lines. The Darling Downs will have improved access to key local and international markets and ability to move greater volumes of grain and other agricultural commodities via rail. The Project may also act as a significant catalyst for development within the region, particularly in relation to rail-dependent industries and support industries associated with transport, freight handling, warehousing and logistics.

Further discussion on the beneficial impacts of the Project on the facilitation of industrial development and resulting social and economic impacts associated with the Project is provided in Chapter 2: Project Rationale and Chapter 16: Social.

8.8 Potential mitigation measures

This section outlines the land use and tenure mitigation measures included as part of the Project design and the proposed mitigation measures for the Project to manage predicted land use and tenure impacts during construction and operation.

The mitigation measures and controls presented in Table 8.34 have been factored into the design for the Project. These design considerations are proposed to minimise the impacts of the Project on land use and tenure.

TABLE 8.34: INITIAL MITIGATION MEASURES OF RELEVANCE TO LAND USE AND TENURE

Aspect	Initial mitigation measures
Land use and tenure	▸ The Project has been co-located with the existing West Moreton System at Gowrie and Helidon. The design minimises potential conflicts with the existing operations of the West Moreton System at Ballard and Helidon. ▸ The Project is generally located within the Gowrie to Grandchester future state transport corridor, minimising the need to develop land that has not previously been dedicated as future railway land ▸ The Project provides a connection with the existing West Moreton System at Gowrie and Helidon, including a spur line allowing direct access between Toowoomba and Brisbane. The design has also considered the interface between ARTC, InterLinkSQ and QR. ▸ Where the Project is within the proposed Toowoomba Range Tunnel, impacts to land uses above ground are minimised, including impacts to agricultural and industrial businesses. The Project also passes under a number of local and State-controlled roads, along with built infrastructure, including the Roma Brisbane Gas Pipeline. ▸ Changes to the road network are generally restricted to the existing road reserves, minimising the extent of private land required for road purposes ▸ There is approximately 6.7 km of viaducts proposed, which will reduce the impacts associated with property severance and access by maintaining access beneath the operational system ▸ The overall disturbance footprint has been reduced to the minimal area required for the safe construction and operation of the Project ▸ Intensive livestock operations, including feedlots, poultry farms and aquaculture and other notable land uses (such as Withcott Seedlings) have been avoided or considered in the design, where possible, to minimise impacts to the operations during construction and operation ▸ Where the Project traverses (not in tunnel) the existing West Moreton System, along with major roads, such as Murphys Creek Road and the Toowoomba Bypass, grade separation is proposed. This will ensure the Project will not result in any long-term impacts to traffic along these high-volume routes. ▸ The Project has been designed to minimise structures within the Toowoomba Bypass road corridor and the Roma Brisbane Gas Pipeline easement ▸ Legal access has been retained across the Project, including changes to the local road network to facilitate access.

The Project has been designed and refined to minimise impacts to land use and tenure. Where possible, the Project will use existing road and rail corridors, as well as the Gowrie to Grandchester future state transport corridor. Where the Project is located within the proposed Toowoomba Range Tunnel, impacts to land uses aboveground are minimised. Where impacts cannot be avoided, the extent of impacts will be managed and mitigated. The following outlines the mitigation measures proposed to be applied to reduce and manage the remaining impacts.

8.8.1 Change in land tenure and loss of property

As outlined in Section 8.6.1, the Project traverses predominantly freehold land, including land owned by local, State and Australian Government agencies. During detailed design, the number of impacted properties may be amended to reflect changes in design and construction methodology (e.g. placement of laydown areas), along with the aim to minimise land take and severance.

It is expected that the impacted properties will be acquired (freehold) or leased (State land) by the relevant constructing authority, converted to unallocated State land and dedicated as 'railway corridor land' under the TI Act or, in some cases, a road under the Land Act. The land acquired for 'railway corridor land' will be subject to similar lands lease tenure arrangements to that of the existing West Moreton System rail corridor (e.g. head lease between ARTC and the DTMR).

Land may also be acquired for the purposes of transport and incidental use (road, parking, pedestrian walkways, construction activities, storage and services) and 'transport associated development' as defined under the TPC Act.

Where the Project intends to compulsorily acquire land (freehold), this will be undertaken by the Project constructing authority and in accordance with the requirements of the AL Act. This includes land subject to volumetric resumption. This process is likely to commence during detailed design once the Project disturbance footprint is confirmed and the Project has achieved primary approval.

Where land is compulsorily acquired by the AL Act, compensation will be able to be claimed by every person with an estate or interest in the land after the 'Taking of Land Notice' is published in the Queensland Government gazette. Interest holders will have three years from the Taking of Land Notice in which to claim compensation (this date can be extended by the constructing authority).

Compensation will be assessed on an individual basis based on the market value of the land as at the date of resumption. Additional compensation amounts for disturbance caused by the resumption of a property is also payable. This may include reasonable legal costs, valuation or other professional fees to prepare a claim for compensation, costs related to purchase of a replacement comparable property, including stamp duty costs associated with removal and relocation of assets and infrastructure, or other reasonable financial costs incurred that are a direct consequence of the resumption of the land. Where only part of a land parcel is acquired, an owner may also claim compensation for the severance caused and for the impact of the Project on the balance land. Where impacts on the balance land cannot be appropriately mitigated and managed to the satisfaction of the landholder, the landholder will be able to receive compensation for the property in its entirety at an independently valued market rate.

During construction, land will be required on a temporary basis for construction activities. This land may be acquired under the AL Act; alternatively, purchasing or leasing arrangements for these properties will be investigated in consultation with landholders. The arrangements will consider such matters as impacts on business operations and reinstatement/rehabilitation of the land impacted (e.g. the landholder may want to keep any access tracks constructed for the Project). Following construction, acquired or purchased land not required for the Project is likely to be sold and returned to freehold tenure, or retained by the State.

These mitigation measures will be employed during the pre-construction phase of the Project to ensure impacts can be minimised prior to construction commencing.

8.8.1.1 State land

Where the Project requires the acquisition/resolution of State land, appropriate tenure or interest will be secured under the Land Act. The constructing authority (and ARTC) will consult with the relevant Department of Resources State Land Asset Management Team to discuss options for obtaining tenure or interest for the land required, and to begin proceedings under the Land Act.

Where State land is required for the Project that contains existing infrastructure used for public uses, land use impacts to these properties will be managed in accordance with the measures outlined in Section 8.8.2, with individual management measures to be developed with the trustees of the land.

For State land temporarily required for construction, this area may be freed from the existing parcel in order to allow the necessary activities to proceed. Following construction, the parcel would likely return to its existing tenure arrangement. Noting that there is no State land required solely for construction, however the temporary disturbance footprint overlies four land lease parcels (none of which are associated with West Moreton System rail corridor), waterway and roads.

8.8.1.2 Native title

There are no registered native title claims over the Project; however, there is a yet-to-be-determined native title claim for the Yuggera Ugarapul People, which has been accepted for registration over the eastern part of the Project, from approximate chainage Ch 17.6 km to Ch 26.2 km.

As discussed in Section 8.7.1.3, the Project is located predominantly on freehold land and on State land where native title has been extinguished or suppressed.

- During detailed design, native title assessments will be undertaken by the ARTC and/or the constructing authority, in accordance with the native title work procedures, to confirm native title rights across the Project disturbance footprint. This assessment will also assist in determining the effect on native title (e.g. the date a road is dedicated can influence the native title, with roads dedicated before 1 January 1994 already having native title extinguished).Where the Project is located on land where native title rights may exist, ARTC proposes to seek the extinguishment of the native title rights and interests in question prior to construction of the Project, either voluntarily by the surrender of native title under an Indigenous land use agreement or by compulsory process, to enable the grant of the necessary interests in Crown lands required to construct the Project.

- The non-extinguishment principle may also be considered, where applicable, for the waterways being traversed by the Project (Gowrie Creek and Lockyer Creek) and where volumetric resumption of reserves is proposed. The non-extinguishment principle under Section 24KA of the NT Act does not require the extinguishment or suppression of native title rights and interests for 'facilities for service to public'. Section 24KA would be applied to the Project, meaning native title rights and interests would continue to exist and would not be extinguished. Rights and interests would have no bearing on construction, operation, use, maintenance or repair of the Project. This may be applicable to the change in land use.

8.8.2 Change in land use

The change in land use resulting from the Project has the potential to impact on:

- Individual properties (including properties requiring partial acquisition)
- Properties adjacent to the permanent disturbance footprint, where an impact to current land use/business is identified (such as: change in boundary fencing, new access to road network, etc.)
- Properties proposed to be temporarily used for construction.
- The potential impacts have been identified based on the existing land uses and further impacts may be identified through continued consultation with landholders during the detailed design and property acquisition process.

Where land use impacts are identified, individual management measures will be developed in consultation with the landholder to reduce the potential impacts. Management measures will include:

- Individual property mitigation will be developed in consultation with landholders/occupants with respect to the management of construction on, or immediately adjacent to, private properties. The mitigation measures will detail any required adjustments to fencing, access, farm infrastructure and relocation of any impacted structures, as required.
- Consultation with property owners and occupants will be undertaken in accordance with the communication plan for the Project, to ensure that owners and occupiers are informed about the timing and scope of activities in their area as well as any potential property impacts/changes, particularly in relation to potential impacts to access, services, or farm operational arrangements. This consultation will be ongoing throughout construction.
- Results of consultation will be incorporated in the individual mitigation as appropriate.

Where land is temporarily required outside of the permanent disturbance footprint for access tracks and laydown areas, the land (where applicable) will be rehabilitated in accordance with a rehabilitation strategy and relevant landholder agreement following construction (e.g. access tracks may be left in-situ). This will involve the implementation of a Reinstatement and Rehabilitation Plan (or equivalent) that will outline measures to stabilise, reinstate and restore disturbed sites, in consultation with landholders.

The Project has the potential to impact on the rural amenity of the area both during construction and operation. This impact will result from a loss of rural character by the introduction of a heavy freight rail corridor with potential impacts relating to scenic amenity, air quality, noise and vibration. These are further discussed in their respective chapters: Chapter 10: Landscape and Visual Amenity; Chapter 12: Air Quality; and Chapter 15: Noise and Vibration.

8.8.2.1 Impacts on agricultural land uses and activities

Loss of agricultural land

Where loss of agricultural land was unavoidable, refinement of the horizontal alignment was considered (among other environmental, social, cultural, economic and technical constraints, in addition to maintaining the alignment within existing transport corridors, where feasible) in the selection of the rail and road corridors such that it traversed along or as close as possible to property boundaries. This was to minimise potential fragmentation and sterilisation of Class A land, Class B land and land within an IAA. Intensive livestock operations have also been avoided.

Where the permanent disturbance footprint is unable to avoid the severance of agricultural land and/or viability of enterprises due to the partial acquisition of a property, full property acquisition will be investigated in consultation with landholders. The consideration of acquisition of these properties will be determined on a case-by-case basis, with consultation occurring with individual landholders to determine if the agricultural enterprise can remain viable.

As detailed in Section 8.8.1, compensation for the acquisition of land will be assessed by having regard to the value of the land taken, any damage caused by severance or injurious affection to the balance land, and disturbance costs. ARTC will continue to work with directly affected landholders to develop and implement property specific measures to mitigate impacts on properties that could affect agricultural enterprises. This has included the identification of:

- Landholders' needs regarding access to the properties and the closure of private roads
- Property infrastructure, such as fences and dams, that would be affected and need to be addressed as part of compensation arrangements with the construction (or acquiring) authority
- The potential for changes to groundwater access.

This will inform development of the detailed design and the Construction Environmental Management Plan (CEMP).

Land fragmentation and disruption to access and infrastructure

Where land is fragmented or isolated, any impacts on existing operational farm requirements, such as impacts on access, infrastructure and services, will be managed and/or reinstated as soon as possible. ARTC will work with individual landholders to develop suitable solutions based on individual existing farm management practices. Solutions may include the provision of crossing points or underpasses for access to fragmented or isolated properties. Where disruption to water supply occurs, crossing points will be provided in consultation with landholders.

The overall disturbance of construction areas has been limited, where possible. Where agricultural land is required to be used temporarily during construction, disturbed areas will be rehabilitated in accordance with the Reinstatement and Rehabilitation Plan. It is also noted that construction will occur progressively along the permanent disturbance footprint and, as such, the need (duration) for temporary laydown areas has been minimised at each location.

Further details on construction mitigation measures relating to agricultural land is provided in Chapter 9: Land Resources.

Alterations to stock routes

The Project does not traverse any declared stock routes. Stock movements will be considered during detailed design in consultation with landholders and local government agencies to identify undeclared stock routes across/within grazing properties that may be affected during construction or operation of the Project. Where undeclared/private stock routes are identified, appropriate mitigation measures will be developed in consultation with affected landholders. Mitigation measures may include the provision of alternative access arrangements such as crossing points and underpasses.

Where stock fencing is required, fencing will be constructed in accordance with the Project's fencing strategy. This will occur prior to the removal of existing fencing and prior to any works being carried out on the subject land, unless otherwise agreed with the landholder.

Other indirect impacts on agricultural land

Further details and mitigation measures on other indirect impacts on agricultural land are provided in the following chapters:

- Land contamination—Chapter 9: Land Resources
- Biodiversity—Chapter 11: Flora and Fauna
- Flooding impacts on local land uses (including infrastructure) and impacts to water users—Chapter 13: Surface Water and Hydrology
- Groundwater resources—Chapter 14: Groundwater.
- The Appendix Q: Social Impact Assessment also provides additional assessment of the impacts and mitigation measures on the local and regional communities.

8.8.2.2 Sterilisation of resources within KRA 8

The Project disturbance footprint incorporates approximately 4.24 ha of the processing area, with the impact associated with the Toowoomba Range Tunnel and the eastern tunnel portal. The Project will also impact approximately 11.96 ha of the separation area. An additional 1.2 ha will also be severed as a result of this Project.

Given existing data, the main deposit of basalt is located on a north-west trending spur above and to the south of the Project. This deposit can be developed at a future date, though measures will need to be implemented to manage potential impacts from blasting on the Toowoomba Range Tunnel and the eastern tunnel portal areas. Further information is provided in Section 8.7.2.4.

In addition to the sterilisation of the KRA, there is the potential for the Project to impacted on future expansion of the existing quarry.

As noted during the public notification of the ToR and subsequent meetings with Quarry Products Pty Ltd (operator of the existing quarry), there are concept plans in place to expand operations (i.e. northern pit) overlapping the future state transport corridor and, as such, the plans may be impacted by the Project. Preliminary advice with the Department of Resources is that the infrastructure corridor has precedence over the KRA and that a nullification of the KRA outcome (i.e. the protection of the extractive resource) will be required. The area to be nullified would need to be determined in consultation with the Department of Resources and the operator of the existing quarry, Quarry Products Pty Ltd. The process for the nullification is an administrative process under the SPP.

Consultation with Quarry Products Pty Ltd has commenced and will continue during detailed design. The consultation will aim to confirm the extent of the impacts to the existing KRA and the future expansion plans, including agreeing to a nominated zone of influence and impact on any proposed relocation of the existing access tracks and processing area.

ARTC and Quarry Products Pty Ltd will develop specific measures to accommodate works within and near the nominated zone of influence, including the management of flyrock (i.e. personnel exclusion zone and, where applicable, track inspection) and undertake blasting or works when there are suitable traffic-free windows. Further information is provided in Section 8.7.2.4.

The outcomes of these discussions will inform the area of the KRA subject to the nullification process (i.e. the area directly impacted by the Project, severed resources and the zone of influence). Noting that, based on the data available, the Project will not adversely impede the expansion of existing operations (i.e. the location of the resources to be targeted by the expansion works is outside of the Project disturbance footprint).

The landholder (i.e. Sanbeg Pty Ltd) will be entitled to compensation for the corresponding loss of land through the acquisition process.

8.8.2.3 Current environmental authorities for prescribed environmentally relevant activities

As outlined in Section 8.7.2.5, the Project traverses two land parcels subject to an EA for prescribed ERAs. The Project will not impact on current business practices associated with these two EAs with the impacts summarised in Table 8.35.

TABLE 8.35: MITIGATION MEASURES FOR IMPACTS ON CURRENT ENVIRONMENTAL AUTHORITIES FOR ERAS

Project name and Proponent	Impact to Project	Mitigation measures
Prescribed ERA (EPPR00443813)—Quarry Products Pty Ltd (Harlaxton Quarry)	The Project traverses an undeveloped portion of the Lot 374 on SP272172 along its northern boundary. It is unlikely the Project will have an impact on the current quarrying activity. Additionally, the current activity subject to the EA is not anticipated to impact on the Project; however, acquisition of the land parcel subject to the EA will be required. Further detail on the impacts of the Project to the Harlaxton Quarry is provided in Section 8.7.2.4	A volumetric acquisition of the land will be undertaken for the area of land associated with the Toowoomba Range Tunnel, while land for the eastern tunnel portal will also be acquired under the AL Act (refer Section 8.8.1). As outlined in Section 8.7.2.4, this land is also designated as a KRA. The Project will not impact the existing quarry operations associated with the KRA, although there is a risk that the Project may impact on future expansion plans, which would need approval from the local councils and the state. The Project also has the potential to use materials from the quarry for the purposes of the construction. Consultation with the holder of the ERA (Quarry Products Pty Ltd) and the former DNRME (now Department of Resources) has occurred and will continue to occur during the detailed design phase to determine and minimise potential impacts to future quarry operations.

Project name and Proponent	Impact to Project	Mitigation measures
Permit number: EPPR00625013—Toowoomba Regional Council (Toowoomba Waste Management Centre)	The Project traverses beneath the Toowoomba Waste Management Centre at Cranley. As the Project is located within the proposed Toowoomba Range Tunnel when passing beneath the EA, it is unlikely the Project will have an impact on the activity. Additionally, the activity subject to the EA is not anticipated to impact the Project; however, volumetric acquisition of the land parcel subject to the EA will be required.	A volumetric acquisition of the land will be undertaken for the area of land required for the tunnel and protection of the tunnel beneath the waste management centre. Ongoing consultation regarding the acquisition process, along with general Project updates on the detailed design and construction activities (including haulage routes, tunnel boring machine and groundwater impacts and waste management), will be undertaken.

8.8.2.4 Development activity

Mitigation measures for impacts on development activity as a result of Project activities is summarised in Table 8.36.

TABLE 8.36: MITIGATION MEASURES FOR IMPACTS ON DEVELOPMENT ACTIVITY

Project name and Proponent	Impact to Project	Mitigation measures
Toowoomba Regional Council		
Material Change of Use—Intermodal Freight Terminal (Warehouse) Freight Terminals Pty Ltd ATF InterLink Industrial Park Trust (formally Freight Terminals Trust)	The Project overlaps with InterLinkSQ west of Gowrie. The construction of the Project will likely have a positive impact on increased development in the area and support the development of the InterLinkSQ as well as other industrial uses within the Toowoomba Enterprise Area.	The current design has considered the future development, including the cross-overs and tie-ins of the Project and the QR West Moreton System. The design has also considered the cumulative impact from InterLinkSQ and the Project on built infrastructure in this area; in particular, the rising sewer main. Consultation with InterLinkSQ is ongoing and will continue throughout the detailed design and construction phases to determine and minimise potential impacts (including land acquisition).
Mounty Lofty Toowoomba Defence Housing Australia	On review of the current development plans submitted to TRC and DAWE, it is not expected that the Project will impact on the development footprint of the proposed housing estate. Furthermore, access to the site is proposed via the south and will not be impacted by the Project.	Consultation with Defence Housing Australia is ongoing and will continue throughout the detailed design phase to determine and minimise potential impacts (including land acquisition).

8.8.3 Accessibility

8.8.3.1 Impacts on road network

For State and local road network interfaces, ARTC will continue to undertake necessary consultation with DTMR, councils and the local community in relation to the preferred treatments and changes to the road network. Where grade separation is proposed, the Project has been designed such that no impacts to the existing transport corridors or traffic flows are anticipated.

Further consultation with DTMR, relevant local councils and the local community will be undertaken during detailed design to confirm the preferred treatments and changes to the road network for each interface. The consultation strategy is described in in Chapter 5: Stakeholder Engagement and Appendix D: Community Consultation.

Traffic Management Plans will be developed as part of the CEMP to manage and mitigate potential impacts on the road network during construction. Appropriate management measures will be put in place for each of the identified issues. Furthermore, communication will be undertaken with surrounding affected landholders and businesses to notify of any changes to traffic and access during construction.

Further details are provided in Chapter 19: Traffic, Transport and Access.

8.8.3.2 Impacts to property access

The Project design facilitates the retention of legal property access (e.g. viaducts and tunnel); however, for other properties, changes to the local road network are required to provide new access locations.

The Project also leverages existing access points and tracks within existing properties for the purposes of identifying construction access tracks and operational road maintenance access routes. This minimises additional impacts such as land severances and sterilisation to the impacted properties.

ARTC (or the constructing authority) will work with landholders to find solutions that provide optimal access on a case-by-case basis. Consultation undertaken to date and plans for ongoing discussions to identify potential solutions are described in Appendix D: Community Consultation. Further details on mitigation measures for impacts to property access are provided in Chapter 19: Traffic, Transport and Access.

8.8.4 Impacts on services and utilities

Consultation has commenced with the various utility providers regarding their requirements for relocation or protection of the services impacted by the Project. This includes consultation undertaken with APT Petroleum Pipelines Pty Ltd regarding impacts to the Roma Brisbane Gas Pipeline (PPL2), TRC, in relation to the rising sewer main, Powerlink regarding the Tarong and Middle Ridge high-voltage transmission line and New Acland Coal Pty Ltd (a subsidiary of New Hope Corporation Limited) regarding the Wetalla Water Pipeline. Consultation with the various utility owners will continue through to the detailed design phase to confirm the impacted utilities and develop appropriate mitigation measures (including design solutions and relocations), along with approvals, cost and responsibilities.

With respect to service disruptions during construction, procedures will be developed and implemented to minimise the potential for service interruptions. Affected businesses and residences will be notified in advance of any planned interruptions (including durations).

Secondary approvals including permits, licences and interface agreements (such as access arrangements within utility easements) for the purposes of construction will be determined in the detailed design and pre-construction phases of the Project.

8.8.5 Draft Outline Environmental Management Plan

To manage and mitigate Project risks, a number of mitigation measures have been proposed. These proposed mitigation measures incorporate ARTC's standard practices, as well as industry practice and legislative requirements.

Mitigation measures outlined for the detailed design, pre-construction and construction and commissioning phases of the Project are included in Table 8.37. These measures have been incorporated into the draft Outline Environmental Management Plan (draft Outline EMP) (refer Chapter 23: Draft Outline Environmental Management Plan).

Once operational, the Project will become part of the existing ARTC national rail network, and will be subject to the laws, policies and procedures that already apply to that network. Internal ARTC policies and procedures will be reviewed to include any special operational requirements of the Project. Operational matters are included in Appendix F: Proponent Commitments.

TABLE 8.37: LAND USE AND TENURE PROPOSED MITIGATION MEASURES

Delivery phase	Aspect	Proposed mitigation measures
Detailed Design	Property	▸ Detailed design to further refine the Project disturbance footprint identified and assessed in the EIS, to that which is required to safely construct, operate and maintain the Project ▸ Minimise property acquisition requirements, property severance and disruption to land use, transport networks and State land reserves ▸ Project clearing extents will be surveyed and clearly defined, physically and digitally, prior to Project activities commencing ▸ Property management agreements with directly impacted landholders and trustees, including where the Project impacts State land reserves, will be finalised prior to Project construction activities commencing on the specific property ▸ Interface arrangements with petroleum resource interest holders and public utility providers will be finalised prior to construction activities commencing. This includes further discussion with APT Petroleum Pipelines Pty Ltd regarding impacts to the Roma Brisbane Gas Pipeline. ▸ Consultation with resource interest holders, including operators of Harlaxton Quarry (KRA 8), will continue to be undertaken during detailed design. Where the Project may impact on likely significant deposits within the KRA, appropriate mitigation will be agreed with the resource interest holders.
	Access	▸ Detailed design and construction planning will seek to minimise alteration of the surrounding road and transport network and maintain legal property accesses. Where this is not feasible or practical, alternative solutions will be developed. ▸ Site-specific traffic management plans will be developed with key land uses and businesses adjoining or within proximity of the Project disturbance footprint, to minimise business operations disruptions ▸ Road–rail interface detailed design will be undertaken in accordance with QR, DTMR and local government requirements.

	Reinstatement and/or rehabilitation	▸ A Reinstatement and Rehabilitation Plan will be developed for areas within the Project disturbance footprint that do not form part of the permanent works (e.g. construction compounds, laydown areas, temporary access and some temporary erosion and sediment controls) to return these temporary disturbance areas to pre-disturbance condition and/or conditions that are commensurate to the surrounding environment and land use in accordance with landholder agreements.
		▸ The Reinstatement and Rehabilitation Plan will include and clearly specify:
		  ▸ The location of areas subject to reinstatement and/or rehabilitation
		  ▸ Details of the actions and responsibilities performance criteria and monitoring framework to progressively rehabilitate, regenerate, and/or revegetate areas no longer active.
		▸ A Landscape and Rehabilitation Plan will be developed to define progressive and post-construction installation of the Project landscape design, its establishment and ongoing maintenance and monitoring requirements, in addition to construction contract completion criteria for areas defined in the landscape design and/or identified in the Reinstatement and Rehabilitation Plan.

	Utilities	▸ The location of utilities, services and other infrastructure will be identified and documented during detailed design to confirm requirements for access to, diversion/relocation, protection and/or support ▸ Interface arrangements with impacted public utility providers will be finalised prior to construction activities commencing.
	Stakeholder engagement	▸ A Community and Stakeholder Engagement Action Plan will be developed under the Social Impact Management Plan (SIMP) (refer Chapter 16: Social and Chapter 23: Draft Outline Environmental Management Plan) to provide project updates and upcoming work activities to the identified property owners, occupants and operators for the duration of the Project.

Delivery phase	Aspect	Proposed mitigation measures
Preconstruction, Construction and Commissioning	Stakeholder engagement	▸ A Stakeholder engagement plan will be progressively revised to provide Project updates and upcoming work activities to the identified property owners, occupants and operators for the duration of the Project ▸ A Project Complaint Management Handling Procedure will be developed to ensure that complaints are dealt with efficiently and effectively, and that stakeholders have confidence in the organisation's complaint system ▸ ARTC will progressively reinstate and rehabilitate disturbed sites that do not form part of the permanent works (e.g. construction compounds) in accordance with the Reinstatement and Rehabilitation Plan.
	Fencing	▸ Where practicable, permanent Project boundaries will be fenced in accordance with Inland Rail fencing standards.

8.9 Impact assessment

The impact assessment uses the methodology described in Chapter 4: Assessment Methodology and focuses on determining the extent of consistency with the land use planning instruments relevant to the land use study area and Project activities, including:

- The SPP (July 2017)
- *Darling Downs Regional Plan* (Department of State Development, Infrastructure and Planning, 2013)
- *ShapingSEQ* (DILGP, 2017a).

In accordance with Schedule 6 of the Planning Regulation 2017, local government planning schemes cannot categorise development for transport infrastructure, i.e. government supported transport infrastructure, as assessable development. Consequently, the provisions of the local government planning schemes do not apply to the Project and assessment of the Project's consistency with the planning schemes is not required; however, it is noted that provision is made for the Inland Rail Program and Gowrie to Grandchester rail project within the *Toowoomba Regional Planning Scheme Strategic Framework* to provide transport links between Toowoomba and SEQ.

8.9.1 State Planning Policy

As part of the impact assessment, Table 8.38 details an assessment of the Project's consistency with each relevant State interest. Where these State interests relate to aspects considered in other sections of this EIS, reference has been made to the relevant chapter for further detail.

TABLE 8.38: PROJECT'S CONSISTENCY WITH THE RELEVANT SPP STATE INTERESTS

State interest	Project consistency	EIS reference
Liveable communities and housing		
Housing supply and diversity	The Project alignment and locations of ancillary infrastructure have been investigated and is the result of several iterations of option assessment and consultation with the Queensland Government. The Project has committed to a range of measures to mitigate and manage impacts on the supply and diversity of housing through the implementation of relevant management plans including the Accommodation Management Plan.	Chapter 2: Project Rationale and Chapter 16: Social Appendix Q: Social Impact Assessment
Liveable communities	The Project has committed to a range of measures to mitigate and manage impacts on those community and urban infrastructure that make a community 'liveable', through the implementation of relevant management plans, including the Social Impact Management Plan, which includes the Health and Wellbeing Action Plan.	Chapter 16: Social Appendix Q: Social Impact Assessment

State interest	Project consistency	EIS reference
Economic growth		
Agriculture	Consistent with the agricultural State interest, the Project has considered and assessed potential impacts and risks to agricultural land and resources. The Project alignment and locations of ancillary infrastructure have been investigated and are the result of several iterations of an options assessment, including consideration of the impact on agricultural land uses, and consultation with the Queensland Government, as detailed in Chapter 2: Project Rationale. The Project will be co-located with the West Moreton System rail corridor and existing road reserves, where possible, to minimise adverse impacts to agricultural land uses that may result from the loss of agricultural land (including land mapped to be within IAA, Class A land and Class B land), land fragmentation and disruption to access and infrastructure. The Project will intersect agricultural land where it is located within the Gowrie to Grandchester future state transport corridor; however, the future intent to construct a railway through the area is generally consistent with the expectations for the area following the gazettal of the Gowrie to Grandchester rail corridor as future railway land. Where disturbance to agricultural land cannot be avoided, impacts from this change in land use will be carefully managed and mitigated.	Sections 8.6.2.1, 8.7.2.1, and 8.8.2.1
Development and construction	The Project will generate significant employment and economic growth, and support for the construction sector. A preliminary estimate of workforce required to undertake the Project works is estimated to peak at 596 FTEs. Throughout the course of the construction period, the average number of workers required is approximately 264 FTEs. At a local level, the Project also has the potential to further the development and growth of regional intermodal hubs, such as InterLinkSQ, Toowoomba Wellcamp Airport and Charlton Wellcamp Enterprise Area.	Chapter 2: Project Rationale and Chapter 6: Project Description
Mining and extractive resources	Consistent with the mining and extractive resources State interest, the Project has considered and assessed potential impacts to extractive resources. The Project was identified to traverse a KRA identified under the SPP, and potential impacts and mitigation measures have been provided.	Section 8.6.2.1, Sections 8.7.2.4 and 8.8.1.3
Tourism	The Project has considered and assessed potential impacts to the region's natural values. These areas would support tourism. The Project's permanent disturbance footprint does not traverse areas identified as environmentally sensitive areas (national parks, conservation parks, forest reserve or State forests), which contribute to the State's natural values. In this way, the intent of the SPP is supported.	Section 8.7.2
Environment and heritage		
Biodiversity	Consistent with the provisions of the biodiversity State interest, the Project has considered and assessed potential impacts and risks to biodiversity, including Matters of National and/or State environmental significance.	Chapter 11: Flora and Fauna Appendix I: Terrestrial and Aquatic Ecology Appendix J: Matters of National Environmental Significance
Cultural heritage	Consistent with the requirements of this State interest, the Project has considered and assessed potential impacts to cultural heritage, including international, national, State and local heritage, and Aboriginal cultural heritage.	Chapter 18: Cultural Heritage Appendix S: Non-Indigenous Cultural Heritage

State interest	Project consistency	EIS reference
Water quality	Consistent with the requirements of this State interest, the Project has considered and assessed potential impacts to water quality. The Project traverses the Water Supply Buffer Area associated with the Lockyer Creek under the SPP. The layout and works within this area will consider, where applicable, the SPP Guidance Materials Water Quality and/or the Seqwater Development Guidelines to ensure drinking water quality is protected. Further information is provided in Chapter 13: Surface Water and Hydrology and Appendix L: Surface Water.	Chapter 13: Surface Water and Hydrology Chapter 14: Groundwater Appendix L: Surface Water Appendix N: Groundwater Technical Report
Safety and resilience to hazards		
Emissions and hazardous activities	Consistent with the requirements of this State interest, the Project has considered and assessed potential impacts and risks associated with emissions and hazardous activities.	Chapter 6: Project Description Chapter 12: Air Quality Chapter 20: Hazard and Risk Appendix K: Air Quality Technical Report
Natural hazards, risk and resilience	Consistent with the requirements of this State interest, the Project has considered and assessed potential impacts and risks associated with natural hazards, risk and resilience.	Chapter 20: Hazard and Risk
Infrastructure		
Energy and water supply	The Project will include the provision of its energy and water supply requirements in a safe and reliable manner. With respect to power, opportunities to connect to existing sources will be explored with relevant service providers and, where connections are not available, power will be provided by generators. Water supply will be required for dust control, site compaction and reinstatement during construction. Potential water sources have been investigated, including the use of recycled water, extraction of groundwater or surface water, private bores and watercourses. This will be further explored prior to construction, in consultation with State government agencies, local councils, stakeholders and landholders. Where a water source or connection is not available or practical, it will be transported to the site via tanker truck. Potable water for human consumption will be supplied via bottled water or potable water tanks.	Chapter 6: Project Description
Infrastructure integration	The Project supports the expansion of existing infrastructure associated with the introduction of a heavy freight rail between Melbourne and Brisbane. The Project will also improve efficiencies and performance of rail infrastructure through the Toowoomba Range and interoperability between the ARTC and QR networks.	Section 8.7.5 Chapter 19: Traffic, Transport and Access
Transport infrastructure	The Project supports this State interest by using the existing West Moreton System rail corridor and the Gowrie to Grandchester future State transport corridor where possible. Furthermore, the Project has considered and assessed potential impacts to surrounding transport networks and land uses.	Chapter 19: Traffic, Transport and Access
Strategic airports and aviation facilities	The Project is located more than 2.5 km from the nearest strategic airport, the Toowoomba Airport. When traversing through Gowrie Junction, the Project is located within the 13 km wildlife hazard buffer zone and the 45 m height restriction zone. Given the nature of the Project and its significant separation distance from the Toowoomba Airport, the Project will not attract wildlife that will then migrate onto the Airport. The Project will not create incompatible intrusions or compromise the safety or function of the Toowoomba Airport. Consultation with Toowoomba Airport will be undertaken during the construction and operational phases of the Project.	Sections 8.6.4.1 and 8.9.1.

8.9.2 Darling Downs Regional Plan

The Project is consistent with the intent of the *Darling Downs Regional Plan* (DSDIP, 2013a) (the Plan). The Plan identifies a priority outcome sought for the region's transport network to include the prioritisation of transport programs that improve freight movement. The Project will assist with the region's long-term aspiration for a modal shift towards increased rail usage. Increased rail capacity will particularly benefit the region for the movement of agricultural commodities and improving the inward logistics for the mining sector.

The Project will also assist in alleviating rail operating constraints located in the Toowoomba Range, with the construction of the Toowoomba Range Tunnel and greenfield rail corridor through the area.

The Plan identifies the eastern area of the Darling Downs region as being 'the gateway' to the region, supporting an extensive network of trade routes into and out of the Darling Downs region. The Project is consistent with the intent of the eastern Darling Downs area as being the major transport and service hub of the region. The Project will improve access to and from regional markets and may act as a significant catalyst for development, particularly in relation to rail-dependent industries and support industries associated with transport, freight handling, warehousing and logistics.

Intermodal facilities, including hubs east of Goondiwindi and the proposed Toowoomba Enterprise Hub, would also be supported by the proposed intent to construct a freight railway network of national significance in the region.

Furthermore, the Project will improve road safety, ease congestion and reduce environmental impacts by moving freight from road to rail.

8.9.3 ShapingSEQ (South East Queensland Regional Plan 2017)

The Project is consistent with the intent of ShapingSEQ (DILGP, 2017a) given the Melbourne to Brisbane Inland Rail is identified within the Regional Plan as key region-shaping infrastructure that supports the vision for SEQ.

The Regional Plan acknowledges the importance of infrastructure investments, such as the Inland Rail Project, to connect ports, such as the Port of Brisbane and the Toowoomba Wellcamp Airport, to an extensive freight network of major interstate rail and road connections, reinforcing SEQ as the apex of Australia's strategic freight network. These ports are significant economic assets that provide unrivalled access to a growing global market for our goods and services in traditionally strong areas, such as agriculture and tourism, and emerging sectors such as knowledge and service-based activities. Furthermore, this Project presents significant opportunities for the SEQ regional economy.

ShapingSEQ identifies the Inland Rail Program as being able to support increased capacity to manage freight through SEQ generally and provides specific opportunities in major enterprise and industrial areas in Lockyer Valley and Toowoomba LGAs, such as the Toowoomba Enterprise Hub (previously named Charlton Wellcamp Enterprise Area). Furthermore, the Inland Rail Program has potential to enhance the Western Gateway Regional Economic Cluster. This regional economic cluster supports significant agricultural and resource activities, and priority sectors of manufacturing, transport and logistics, and health and knowledge. Long-term investments such as the Inland Rail will further strengthen this regional hub as a significant inland port.

ShapingSEQ identifies special uses that are to be protected in the long term from encroachment by sensitive and incompatible land uses. The Helidon Hazardous Industry Precinct is identified as a specialised use that requires significant buffering requirements—the precinct is integral to supporting the extractive and construction industries. The Project does not propose a sensitive use and will not be adversely impacted by noise or dust generated from the precinct. Furthermore, the Project would support opportunities for the specialised industry to grow in capacity, providing improvement to major transport infrastructure that provide linkages to local, interstate and international markets.

8.10 Cumulative impacts

Cumulative impacts for the Project were assessed in accordance with the methodology detailed in Chapter 4: Assessment Methodology and Chapter 22: Cumulative Impacts.

It is recognised that the Project may contribute to cumulative impacts, as the removal of agricultural land for the purpose of a rail corridor cannot be fully mitigated. As identified in Section 8.7.2.1, the Project has the potential to impact on Class A and Class B agricultural land and land within an IAA; however, where the Project is located within the West Moreton System rail corridor and the Gowrie to Grandchester future State transport corridor, land use impacts have been minimised. Furthermore, with the application of the identified mitigation measures, the residual land use and tenure impacts of the Project are expected to be low.

The potential for Project impacts to interact with those of other development projects in the region is primarily based on their proximity to Project activities, i.e. the development projects that require land acquisition and change in land use.

Projects considered for the cumulative impact assessment related to land use and tenure are detailed in Table 8.39.

TABLE 8.39: PROJECTS CONSIDERED FOR THE LAND USE AND TENURE CUMULATIVE IMPACT ASSESSMENT

Project and proponent	Location	Description	Construction dates and jobs
Border to Gowrie Inland Rail project (ARTC)	Rail alignment from NSW/QLD Border to Gowrie	Approximately 146 km of new dual-gauge track and 78 km of upgraded track from the NSW/QLD border, near Yelarbon, to Gowrie Junction, northwest of Toowoomba in Queensland.	2021–2026 Jobs: Peak 950 FTE
Helidon to Calvert Inland Rail project (ARTC)	Rail alignment from Helidon to Calvert	The H2C project will include the following: ▸ 47 km single-track dual-gauge freight rail line to accommodate double-stack freight trains up to 1,800 m long ▸ Tunnel through the Little Liverpool Range	2021–2026 Jobs: Peak 410 FTE
InterLinkSQ	13 km west of Toowoomba	200 ha of new transport, logistics and business hubs. Located on the narrow-gauge regional rail network and interstate network. Located at the junction of the Gore, Warrego and New England Highways.	2017–2037
Wellcamp Business Park (Wagners)	Wellcamp, Queensland	The Wellcamp Business Park is a 500-ha industrial and commercial park that forms part of the Toowoomba Enterprise Hub. The Business Park is in proximity to the Toowoomba Wellcamp Airport and other major transportation infrastructure.	Operational—subject to continuing construction and expansion
Witmack Industry Park and Charlton Logistics Park	Wellcamp, Queensland	The Witmack Industry Park is a large industrial land development that offers large industrial land parcels. Businesses situated within the Witmack Industrial Park include the Toowoomba Pulse Data Centre. The Charlton Logistics Park is part of the Toowoomba Enterprise Hub and provides fully serviced 2-ha sites and is well situated for potential transport and logistics operators due to its proximity to transport infrastructure.	Operational—subject to continuing construction and expansion
Gatton West Industrial Zone (GWIZ) (LVRC)	3 km north west Gatton	Industrial development including a transport and logistics hub on the Warrego Highway	2019–2024 Jobs: 13.5 FTE
Defence Housing Authority (DHA) Mt Lofty Development	Toowoomba, suburb of Mount Lofty	Former rifle range redeveloped into a master-planned residential community comprising of 342 lots. Some lots will be retained by DHA, on which homes will be built for Defence members and their families, with remaining lots available for public purchase.	Unknown
New Acland Coal Mine Stage 3 expansion (New Hope Pty Ltd, , a subsidiary of New Hope Corporation Limited)	35 km northwest of Toowoomba	Expansion of the existing New Acland open-cut coal mine to up to 7.5 Million tonnes per annum.	Ongoing

Project and proponent	Location	Description	Construction dates and jobs
Toowoomba Regional Council/Waste Management (non-sewerage)/Lot 7 SP 203236/Queensland/Waste Management Facility, 379 Love Road, Wyreema, Qld (TRC)	Wyreema, Queensland	A new waste-transfer facility that caters for the Toowoomba region's northern and southern growth corridors. Will replace the existing Greenmount landfill and was previously a sewage treatment plant.	Expected to be completed in 2022

The impact of the identified projects across the region may have different land use and tenure impacts to the Project but cumulative impacts include:

- Loss of Class A and Class B agricultural land, and land within an IAA
- Disruption to agricultural operations
- Impacts on accessibility within the wider road network and to private properties
- Temporary disruption to services and utilities.

Due to a lack of quantitative data on land use and tenure impacts for the development projects, a qualitative assessment method has been applied for assessing the cumulative impacts. The qualitative assessment assigns a relevance factor to the potential cumulative impact for the following aspects:

- The probability of impact
- The duration of the impact
- The magnitude/intensity of impact
- Sensitivity of receiving environment.

Assessment of these for the potential impacts identified above is provided in Table 8.40.

TABLE 8.40: CUMULATIVE IMPACT ASSESSMENT FOR LAND USE AND TENURE

Cumulative impact	Aspect	Relevant factor	Sum of relevant factors	Impact significance	Comments
▸ Loss of Class A and Class B agricultural land and land within an IAA ▸ Disruption to agricultural operations ▸ Impacts on accessibility within the wider road network and to private properties ▸ Temporary disruptions to services and utilities.	Probability of the impact	1	6	**Low**	While the Project is situated immediately adjacent to some of the developments specified in Section 8.6.2, the land uses differ from that of the Project. For example, land use impacts differ from site-based developments, compared to a linear transport infrastructure project (the Project). Consequently, land use impacts differ accordingly. There is limited potential for cumulative impacts given the relatively limited land use and tenure impacts associated with the Project. Where the permanent disturbance footprint is located within the West Moreton System rail corridor and Gowrie to Grandchester future State transport corridor, the Project is consistent with existing and future State land use planning for the area. In addition, where the Project is located within the proposed Toowoomba Range Tunnel, impacts to land use aboveground is minimised. The B2G and H2C projects immediately adjoin the Project and are expected to have similar land use and tenure impacts. Land use and tenure impacts from other projects (including upgrades to existing infrastructure or large-scale major land development projects that could potentially generate a cumulative impact on land use and tenure) are localised. Furthermore, the implementation of mitigation measures for all projects will further minimise land use and tenure impacts.
	Duration of the impact	3			
	Magnitude/ intensity of the impact	1			
	Sensitivity of the receiving environment	1			

The significance of the overall cumulative impact on land use and tenure is assessed as low.

8.11 Conclusion

This chapter has addressed the ToR requirements through the identification of existing and proposed land uses, including land characteristics, tenures, agricultural land, petroleum and gas pipeline licences and resource tenures. The chapter provides an impact assessment to identify potential impacts on existing and proposed land uses that may arise because of the Project, providing management measures used to avoid or mitigate potential impacts.

Following the identification of existing land use and tenure within the land use study area, an impact assessment process was implemented to assess the level of any impacts and to identify measures to mitigate or manage the potential impacts on land use and tenure. Potential impacts to land use and tenure include:

- Change in tenure and loss of property
- Disruption to land over which native title has not been extinguished or suppressed
- Change in land use, including the sterilisation of agricultural land and disruption to agricultural practices
- Impacts to accessibility within the land use study area, including impacts to the existing road network and to property access
- Disruption to services and utilities.

Where possible, potential impacts have been avoided. Where impacts cannot be avoided, mitigation measures have been proposed to reduce and manage the potential impacts of the Project.

In addition to the potential adverse impacts identified, the Project has the potential to result in beneficial impacts. Beneficial impacts of the Project and the Inland Rail Program include:

- Likely to support future industries associated within regional hubs such as the Toowoomba Enterprise Hub (previously named Charlton Wellcamp Enterprise Area), which is an area of strategic importance in supporting growth in Toowoomba and the Surat Basin
- Improved access to and from regional markets by providing connectivity opportunities between the existing West Moreton System rail corridor and ARTC interstate lines
- The Darling Downs will have improved access to key local and international markets and ability to move greater volumes of grain and other agricultural commodities via rail
- The Project may also act as a significant catalyst for development within the region, particularly in relation to rail-dependent industries and support industries associated with transport, freight handling, warehousing and logistics.

The Project has been recognised within the SPP, *Darling Downs Regional Plan*, and *ShapingSEQ* and its design generally aligns with the land use intent and relevant land use planning principles of these instruments.