CHAPTER 08

Land Use and Tenure

CALVERT TO KAGARU ENVIRONMENTAL IMPACT STATEMENT

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

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8.1 Scope of chapter

The purpose of this chapter is to assess the compatibility, and potential impacts of the Calvert to Kagaru Project (the Project) on land use and tenure within the land use and tenure study area (the land use study area) and to identify appropriate mitigation measures to address these impacts. The land use study area is defined in Section 8.4.1.

This chapter identifies the land use and tenure aspects relevant to the Project, addressing:

- The relevant legislative context for land use and tenure for the Project (refer Section 8.3)
- The existing land tenure for properties within the land use study area, including those required for construction (refer Section 8.5.1)
- The existing land use values within the land use study area, including those required for construction (refer Section 8.5.2)
- The likely and planned future land use environment (refer Section 8.5.2.6)
- The potential impacts of the Project on tenure (refer Section 8.6.1)
- The potential impacts of the Project on existing and future land uses (refer Section 8.6.2)
- Mitigation measures relevant to land use and tenure issues (refer Section 8.7)
- An assessment of consistency with the provisions of the relevant land use planning instruments (refer Section 8.8)
- A summary of land tenure and land use impacts (refer Section 8.10).

8.2 Terms of reference

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 Environmental Impact Statement (EIS) against the full ToR is documented in Appendix B: Terms of Reference Compliance Table.

TABLE 8.1: TERMS OF REFERENCE COMPLIANCE TABLE—LAND USE AND TENURE

Terms of Reference requirements		Where addressed
Existing environment		
10.2	Provide real property descriptions of the preferred alignment.	Section 8.5 and Appendix G: Impacted Properties
10.3	Describe and map at suitable scales key transport infrastructure including state-controlled roads, local roads, rail (including tunnels), air, and other infrastructure or services (including gas and water pipelines, and electricity transmission and distribution powerlines) existing, under construction or proposed which may be impacted within the study area.	Section 8.5 Figure 8.1, Figure 8.3, Figure 8.4, Figure 8.5 and Figure 8.6
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 8.5 Figure 8.3, Figure 8.4, Figure 8.5 and Figure 8.6
10.9	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 and likely to be implemented within planning and construction timeframes.	Sections 8.3, 8.5.3.1, and 8.8
11.72	Detail the existing land use values for all areas associated with the preferred alignment.	Section 8.5
11.73	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	Sections 8.5.2 and 8.5.3.1

Terms of Reference requirements		Where addressed
11.73	b) State interests identified in the SPP (e.g. KRA No. 82 Purga)	Sections 8.5.2.4 and 8.5.3.1
	c) Any land characteristics that influenced the choice of the preferred alignment	Section 8.5.2 Chapter 2: Project Rationale, Sections 2.6 and 2.7
	d) 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	Sections 8.5.1, 8.6.1 and Figure 8.3.
	e) An analysis of the agricultural land uses based on the Agricultural Land Audit in the project area	Section 8.5.2.1 and Figure 8.6
	f) Any petroleum and gas pipeline licence tenures and resource tenure holders within the vicinity of the proposed corridor.	Sections 8.5.1.3, 8.5.1.4 and Figure 8.5
Impact assessment		
11.74	Describe the potential for impact on agricultural land uses during construction and operation of the project. The assessment should include consideration of temporary and permanent impacts on agricultural production.	Section 8.6.2.1
11.75	Describe the potential for impact on existing holders of resource tenures, including consideration to safety and resource sterilisation where appropriate.	Section 8.6.2.3 Chapter 5: Stakeholder Engagement, Sections 5.3.4 and 5.6
11.76	Identify tenure required for the project to proceed, including proposed easements, leases or licences including the timing of such acquisitions or tenure changes.	Sections 8.6.1 and 8.7.1
11.77	Provide evidence of consultation with the relevant owners/licensees of gas/petroleum pipelines in the vicinity of the rail corridors. Provide detail of agreed risk management strategies for project construction and operation with regard to the gas/petroleum pipelines. Demonstrate that the construction and operation of the project will not inhibit the safe and efficient operation of the pipelines.	Section 8.6.4 Consultation undertaken for the Project is detailed in Chapter 5: Stakeholder Engagement, Sections 5.5 and 5.6, and Appendix C: Consultation Report, Sections 4.4.12.2 and 6.9)
11.78	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.	Sections 8.6.1 and 8.6.2 Appendix G: Impacted Properties
11.79	Discuss the proposal in the context of the applicable Regional Plan and local planning schemes.	Sections 8.3, 8.5.3.1 and 8.8
11.80	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. 82 Purga) should describe the:	Sections 8.5.2.4, 8.6.2 and 8.6.2.3 Chapter 9: Land Resources, Section 9.5.1.2, Figure 9.4 and Figure 9.5
	a) Geological properties that may influence ground stability (including seismic activity), and how this might compromise rail infrastructure and operation over short and long-term time horizons	
	b) Location, volume, tonnage and quality of natural resources present which will be potentially impacted by the project	
Mitigation measures		
11.81	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 8.7
11.82	Where coexistence with agriculture is not possible, provide mitigation and management measures to address associated impacts.	Section 8.7.3.1

Terms of Reference requirements		Where addressed
11.83	Provide an outline of the land acquisition and compensation processes for properties directly impacted by the project.	Sections 8.6.1 and 8.7.2 Chapter 16: Social, Sections 16.9.1, and 16.10.2
11.84	Provide details of measures to be undertaken to avoid, minimise and mitigate identified impacts on KRA No. 82.	Section 8.6.2.3
Native title		
11.85	Identify existing and potential Native Title rights and interests possibly impacted by the proposed project and describe how those impacts will be managed.	Sections 8.5.1.5, 8.6.1.4 and 8.7.2.2

8.3 Legislation, policies, standards and guidelines

The legislative requirements relevant to the Project are outlined in Chapter 3: Project Approvals. The Commonwealth and State legislation, and local laws, 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	
Native Title Act 1993 (Cth) (NT Act) Native Title (Prescribed Bodies Corporate) Regulations 1999 (Cth)	The NT Act provides the legal principles for the recognition of native title and the integration of this form of property right into the existing land title system. The NT Act also establishes the processes involved in having native title recognised and the role and responsibilities of the different bodies involved in this process. The NT Act also establishes the ways in which future development affecting native title may proceed. The NT Act establishes the National Native Title Tribunal. Native title interests and rights may exist within the land use study area over land that is unallocated State or Crown land, some state forests, national parks and public reserves, waters that are not privately owned, some leases such as non-exclusive pastoral and agricultural leases, or 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 being first addressed either by agreement with the relevant native title parties, or by compulsory process. The Project is subject to active and potential native title claims.
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 will be required for the construction and operation of the Project.
Economic Development Act 2012 (Qld)	The Minister for Economic Development Queensland may declare a Priority Development Area (PDA) under the *Economic Development Act 2012*. PDAs are parcels of land within Queensland (QLD) identified for development to deliver significant benefits to the community. When a PDA is declared, Economic Development Queensland works closely with local government and other stakeholders to plan, assess and guide development within a PDA. Economic Development Queensland manages development projects in some PDAs and supports development in regional and urban areas. Acting as a master developer, Economic Development Queensland drives economic growth and projects include urban renewal, community developments, and renewable energy. The land use study area intersects the Greater Flagstone PDA.

Legislation, policy or guideline	Relevance to the Project
Environmental Protection Act 1994 (Qld) (EP Act)	The EP Act is QLD'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. The EP Act and its subordinate legislation provides a range of tools to ensure that the objectives of the EP Act are met, including the provision for a licensing system for environmentally relevant activities (ERAs). The Project traverses, or is in proximity to, ERAs prescribed under the EP Act.
Land Act 1994 (Qld) (Land Act)	The Land Act provides for the administration and management of non-freehold land. The Land Act is administered by the Department of Natural Resources, Mines and Energy (DNRME) and regulates the management of land in QLD by having regard to sustainability, evaluation development, community purpose, protection, consultation and administration. State land administered by the Land Act will be required for the construction and operation of the Project.
Land Access Code 2016 (Qld)	The *Land Access Code 2016* is provided under Section 36 of the *Mineral and Energy Resources (Common Provisions) Act 2014*, which allows for the making of the Land Access Code by regulation. The *Land Access Code 2016* provides best practice guidelines for communication between the holders of resource authorities and owners and occupiers of private land. The document also imposes mandatory conditions concerning the conduct of resource activities on private land. The Project traverses land subject to authorised resource activities (petroleum tenures under the *Petroleum and Gas (Production and Safety) Act 2004*).
Native Title (Queensland) Act 1993 (Qld)	Consistent with the NT Act, the *Native Title (Qld) Act 1993* is the law of QLD that provides for the validation of certain historic acts done in QLD that were invalidated because of the existence of native title and confirms that particular acts previously done in QLD have resulted in the extinguishment of native title. The Act was also developed to ensure that QLD law is consistent with standards set by the Commonwealth NT Act for future dealings with affecting native title. The Project is subject to active and potential native title claims.
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 Project is subject to a number of land use planning frameworks regulated under the provisions of the Planning Act.
State Development and Public Works Organisation Act 1971 (Qld) (SDPWO Act)	A key provision of the SDPWO Act is the function of the Coordinator General appointed as a corporation, to represent the Crown. The Coordinator-General holds powers to declare a project to be a 'coordinated project' and coordinate the environmental impact assessment process for the project. Coordinated projects under the SDPWO Act can include: ▸ Complex approval requirements, involving local, state and federal governments ▸ Significant environmental effects ▸ Strategic significance to the locality, region or state, including for the infrastructure, economic and social benefits, capital investment or employment opportunities it may provide ▸ Significant infrastructure requirements. In addition the SDPWO Act, Section 77 declares State Development Areas (SDAs), which are clearly identified areas of the State that are declared by regulation when the Governor in Council is satisfied that the public interest or general welfare of persons resident in any part of the State requires it. The Project traverses land within the Bromelton SDA at Kagaru.

Legislation, policy or guideline	Relevance to the Project
Stock Route Management Act 2002 (Qld)	The *Stock Route Management Act 2002* provides for the 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) (TI Act) also include relevant provisions for stock routes and associated grazing access. The Project does not traverse any known or mapped stock routes.
Transport Infrastructure Act 1994 (Qld) (TI Act)	The overall objective of the TI Act is to provide a regime that allows for and supports effective integrated planning and the efficient management of a system of transport infrastructure. In particular, the objectives of the TI Act are to allow the State to have a strategic overview of the provision and management of all transport infrastructure, including roads, rail (heavy and light), busways, ports, air and public marine transport. The Project will be considered government supported transport infrastructure under the TI Act and the Planning Regulation 2017. 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. The Project predominately aligns with the Southern Freight Rail Corridor (SFRC) that was gazetted under the TI Act as future railway land.
Transport Planning and Coordination Act 1994 (Qld)	The *Transport Planning and Coordination Act 1994* aims to achieve overall transport effectiveness and efficiency through strategic planning and management of transport services. Under the *Transport Planning and Coordination Act 1994*, the chief executive is afforded powers to support this objective including: ▸ Authority to acquire, hold, dispose of or otherwise deal with land for the purposes of transport, an incidental purpose and transport associated development ▸ Acquire land through resumption processes for the purpose of transport infrastructure, transport associated development or for an incidental purpose. Acquisition of a number of properties will be required to facilitate the Project. A constructing authority is afforded powers to acquire land for the Project under the Act.
Land use planning frameworks, strategies and statutory guidelines	
South East Queensland Regional Plan 2017 (*ShapingSEQ*) (August 2017)	In QLD, 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 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 Project is located within the SEQ region, of which *ShapingSEQ* applies as the relevant statutory regional plan. The Project is also identified as a major enabling infrastructure for SEQ.
State Planning Policy (SPP) (July 2017)	The SPP is a key component of the QLD land use planning system, which articulates the QLD 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 the 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 compliance with the SPP is provided in Section 8.8.

Legislation, policy or guideline	Relevance to the Project
2006 Consolidated Ipswich Planning Scheme[1]	The *2006 Consolidated Ipswich Planning Scheme* is the primary planning instrument for land within the Ipswich City Council (ICC) local government area (LGA). The Project is located within part of the ICC LGA.
Scenic Rim Planning Scheme 2020[1]	The *Scenic Rim Planning Scheme 2020* is the primary planning document within the Scenic Rim Regional Council (SRRC) LGA. The *Scenic Rim Planning Scheme 2020* sets out SRRC's intention for future development within the LGA over the next 20 years. The Project is located within part of the SRRC LGA.
Logan Planning Scheme 2015[1]	The *Logan Planning Scheme 2015* is the primary planning document for land located within the Logan City Council (LCC) LGA. *The Logan Planning Scheme 2015* is intended to assist LCC with managing population growth, planning for a sustainable future for Logan and guide land use and development within the LGA. The planning scheme sets out LCC's intention for future development over the next 20 years. Approximately 300 m of the Project alignment is located within the LCC LGA.
Bromelton State Development Area Development Scheme (December 2017)	The Bromelton SDA was declared in 2008 with an area of approximately 15,610 hectares (ha) and is located within the SRRC area. The purpose of the Bromelton SDA is to promote economic development through providing for the growing demand for greenfield land suitable for medium- to large-scale industrial activities of regional, State and national significance. The location of the Bromelton SDA to the Sydney to Brisbane rail corridor was identified as an ideal location for industries, such as freight and logistic operations, to access intrastate and interstates markets. The *Bromelton SDA Development Scheme* is the regulatory instrument that controls development it applies to within the Bromelton SDA. The Project traverses the northern area of the Bromelton SDA at Kagaru. The SFRC is also recognised within the *Bromelton SDA Development Scheme*.
Greater Flagstone Priority Development Area Development Scheme 2011	The Greater Flagstone Priority Development Area (PDA) was declared in October 2010 and covers an area of 7,188 ha. Once developed, the Greater Flagstone PDA is anticipated to provide approximately 50,000 dwellings to house a population of up to 120,000 people. The *Greater Flagstone PDA Development Scheme 2011* is the planning instrument that assists with planning, carrying out, promoting, coordinating and controlling the development of land within the Greater Flagstone PDA. The Project intersects a small portion of the Greater Flagstone PDA.

Table note:

1 In relation to the planning schemes identified in Table 8.2, it is noted that 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 local government planning schemes listed above do not apply to the Project. Notwithstanding this, the zoning intents for the area as determined by the *2006 Consolidated Ipswich Planning Scheme*, *Scenic Rim Planning Scheme 2020* and *Logan Planning Scheme 2015* have been taken into consideration when determining impacts of the Project on future land uses in the area.

8.4 Assessment 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 8.4.1, 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 the 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). Verification of these land uses was also undertaken by means of a Project drive-through undertaken 15–16 August 2018, combined with consultation feedback
  - Agricultural uses, including land identified by the *Queensland Agricultural Land Audit* (the Audit) as important to current and future agricultural production in QLD; 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
  - Key resource areas (KRAs), exploration and mining leases and licences, petroleum and gas resource interests
  - Infrastructure, including railways, road reserves, utilities and pipelines
  - Intermodal terminals
- Strategic planning and land use planning provisions of the relevant State and local planning instruments were reviewed 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 ICC, SRRC and LCC LGAs
  - Coordinated projects declared under the SDPWO Act
  - Current environmental authorities for environmentally relevant activities in accordance with the EP Act
  - Development projects undertaken by Economic Development Queensland
  - Declared PDAs in accordance with the *Economic Development Act 2012*
  - Declared SDAs in accordance with the SDPWO Act
  - Private infrastructure facilities in accordance with the SDPWO Act
  - *Infrastructure Australia Infrastructure Priority List* and *Australian Infrastructure Plan*
  - *QLD Government State Infrastructure Plan*
  - *QLD Government Transport and Roads Investment Program*
  - QLD regional projects under the QLD Government's *Building our Regions* infrastructure program and the *Transport Infrastructure Development Scheme*
  - Infrastructure designations in accordance with the Planning Act
- Review of landholder and community consultation data to understand their feedback on the potential land use impacts and issues associated with the Project
- Consultation with relevant State and local government agencies including:
  - ICC in relation to proposed new developments
  - LCC in relation to proposed new developments
  - SRRC in relation to planning provisions and proposed new developments
  - Department of Transport and Main Roads ((DTMR) (formerly Queensland Transport)) in relation to realignment and acquisition of the SFRC gazetted railway corridor
- Consultation with utility infrastructure providers, including Energex, Essential Energy, NBN Co, NextGen, Optus, QUU, Santos, Telstra, TPG and Powerlink

- Assessment of potential impacts 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
- Feedback the findings documented in this chapter into the Project design to ensure relevant matters are addressed in the design of the Project where possible
- 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 methodology detailed in Chapter 4: Assessment Methodology and illustrated in Figure 8.2. The potential impacts are provided in Section 8.6.

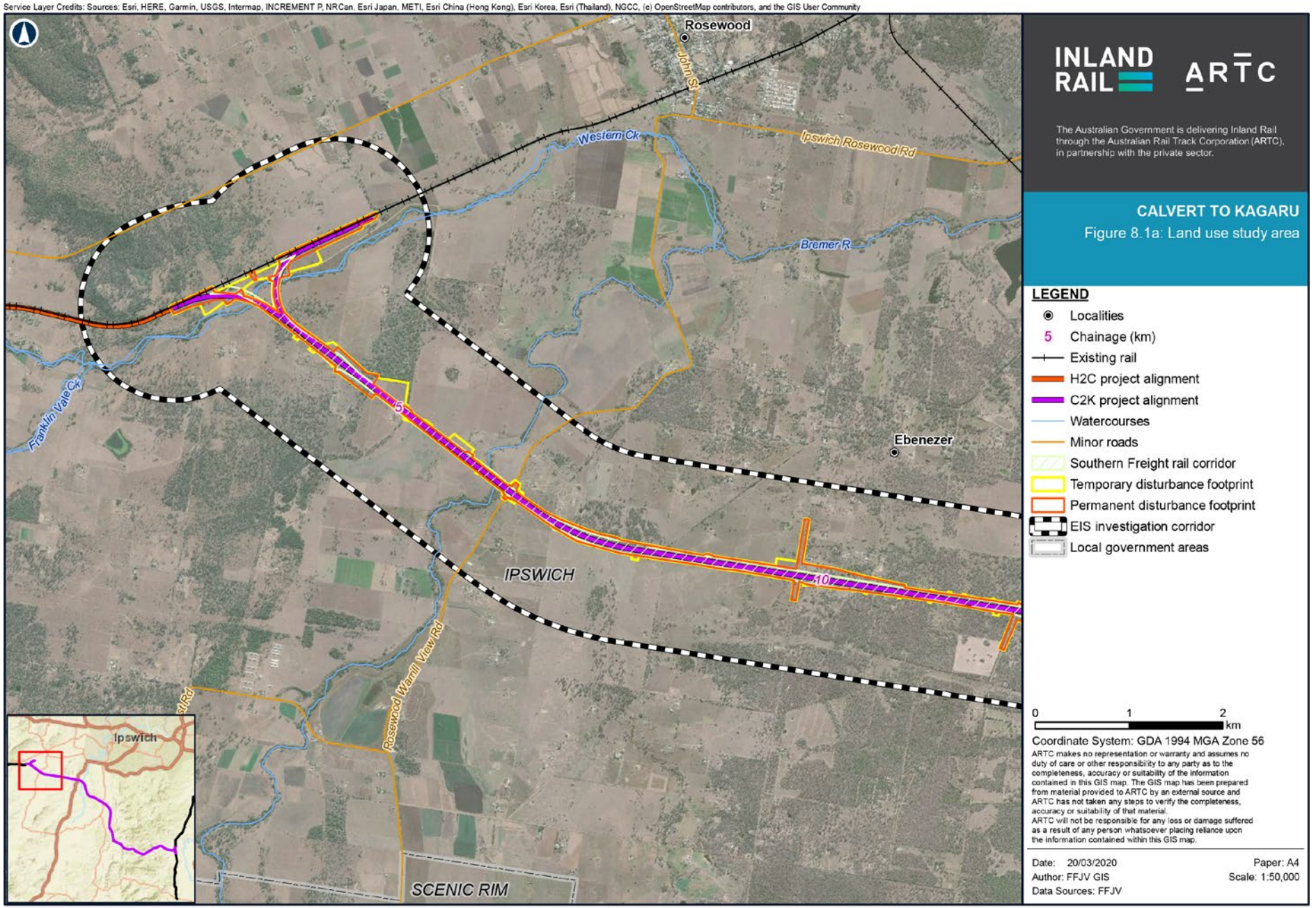
8.4.1 Land use study area

The land use study area is defined as the disturbance footprint and includes:

- Permanent disturbance footprint: The rail corridor, extent of earthworks, rail formation, tracks and associated infrastructure, as well as other permanent works associated with the Project (e.g. where changes to the road network are required). The rail corridor is a minimum of 40 m wide; however, it is wider, as required, to accommodate the earthworks associated with large cuts and fills, drainage works, rail infrastructure, access roads and fencing. The rail corridor width also allows for future possible upgrades of the crossing loops to accommodate trains up to 3,600 m in length.
- The corridor will extend to a maximum width of 340 m in the undulating terrain between the eastern end of the tunnel and the Undullah Road crossing. The corridor is generally wider through this area due to large earthwork cut and fill sections, and the allowance for a tunnel access road to the eastern portal.
- A 20 m road corridor has typically been allowed for all new and realigned roads.
- Temporary disturbance footprint: Construction footprint where only temporary disturbance is proposed (e.g. laydown areas and compound sites). The temporary disturbance footprint allowance provides for a minimum 5 m footprint beyond the permanent footprint for fencing and temporary drainage structures, erosion and sediment control and utilities connections. The temporary disturbance footprint also provides for the temporary disturbance to construct the roadworks associated with the construction of the railway, including realigned and new roads.

Notable land uses within the wider EIS investigation corridor (approximately 1 km either side of the land use study area) are also assessed to capture potential instances in which indirect impacts to land use and tenure may occur. This may include where the Project is within proximity to mining operations or where traversing agricultural land, which may result in both direct and indirect impacts on agricultural activities adjacent to the Project. The EIS investigation corridor is defined in Chapter 1: Introduction.

The land use study area is depicted on Figure 8.1.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Rosewood
John St
Western Ck
Ipswich Rosewood Rd
Bremer R
Franklin Vale Ck
Ebenezer
IPSWICH
Rosewood Warrill View Rd
SCENIC RIM
Ipswich
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
CALVERT TO KAGARU
Figure 8.1a: Land use study area
LEGEND
Localities
Chainage (km)
Existing rail
H2C project alignment
C2K project alignment
Watercourses
Minor roads
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
0 1 2 km
Coordinate System: GDA 1994 MGA Zone 56
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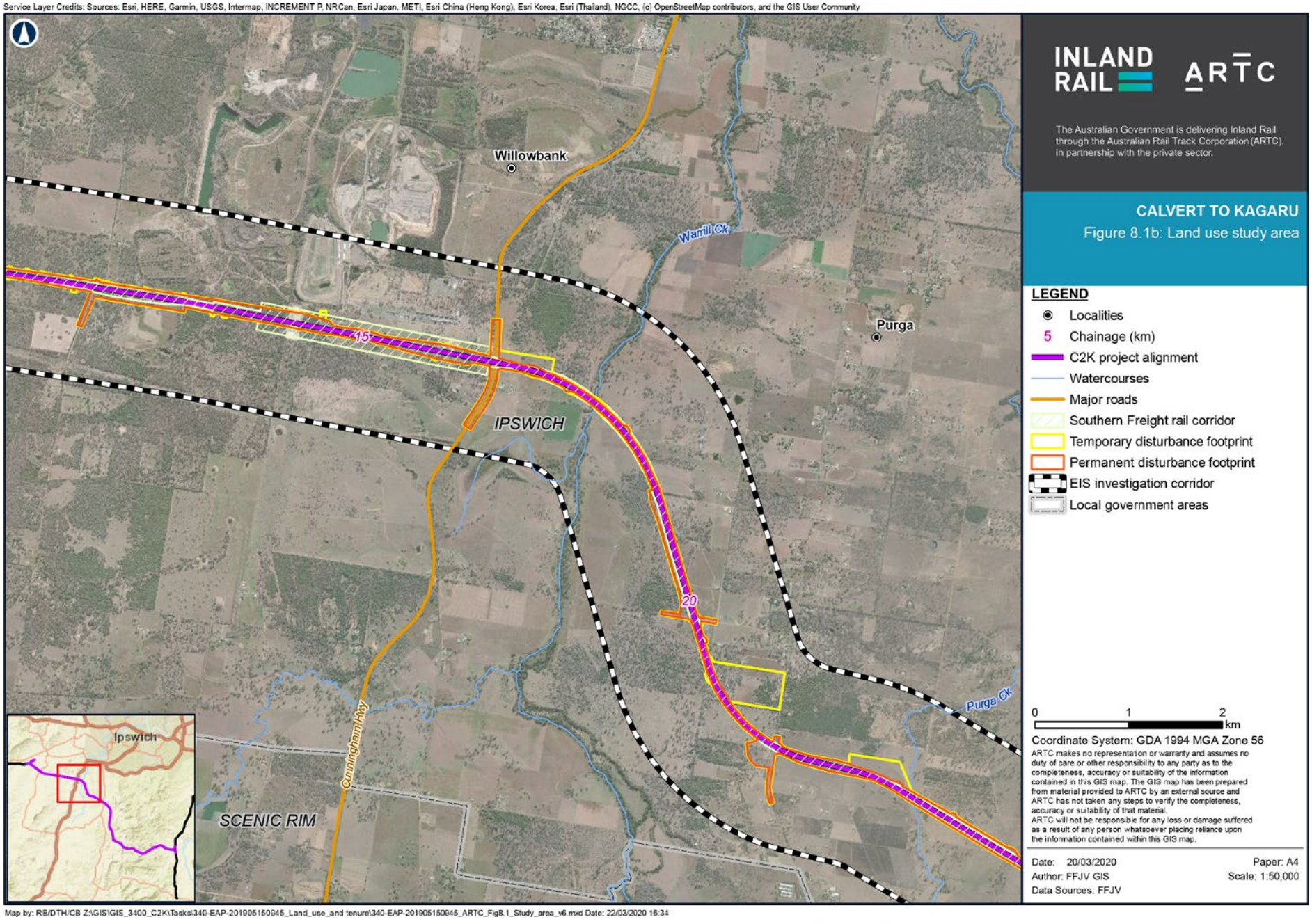
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Willowbank
Warrill Ck
Purga
15
IPSWICH
20
Purga Ck
Cunningham Hwy
SCENIC RIM
Ipswich
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
CALVERT TO KAGARU
Figure 8.1b: Land use study area
LEGEND
Localities
Chainage (km)
C2K project alignment
Watercourses
Major roads
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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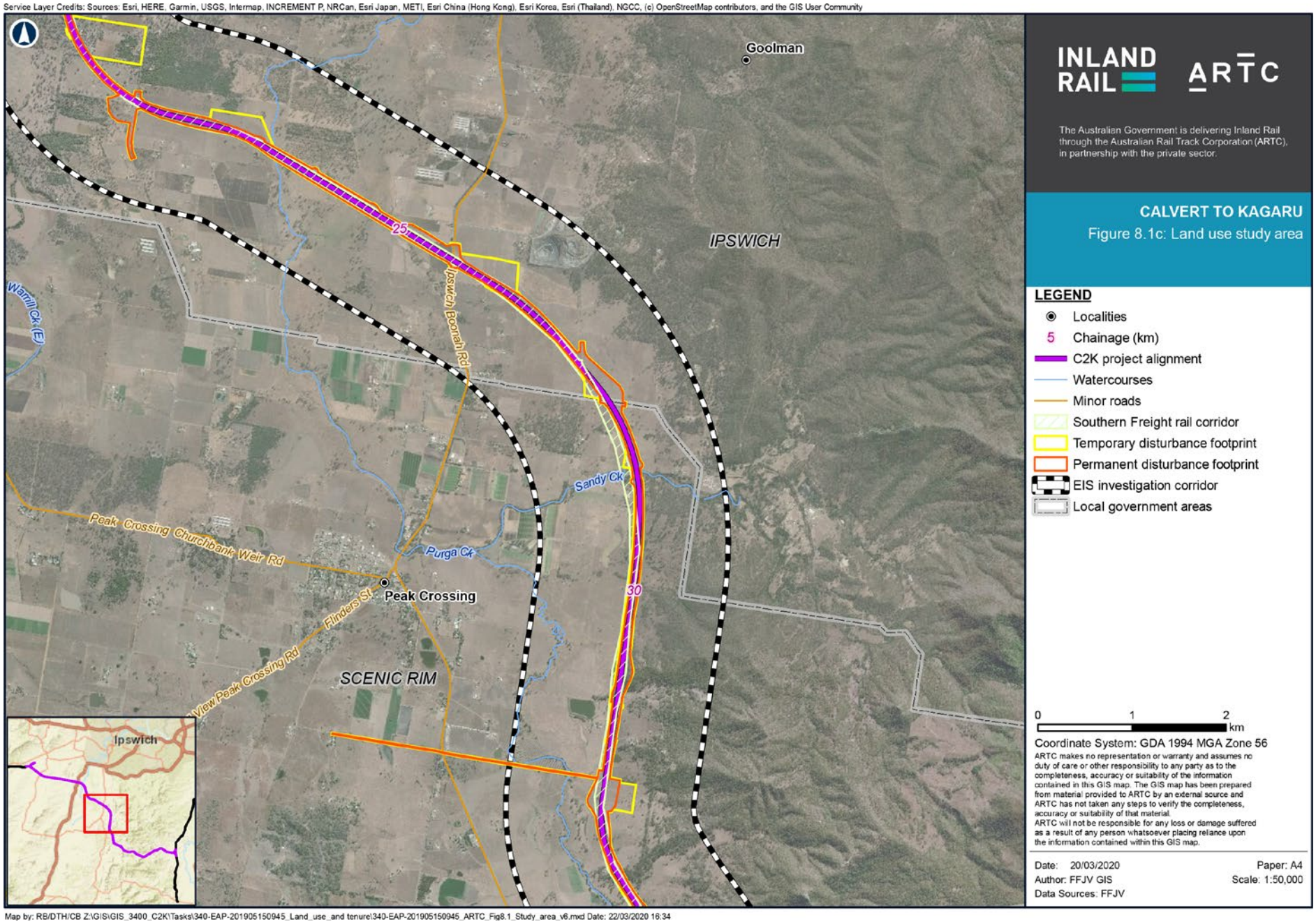
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Goolman
IPSWICH
SCENIC RIM
Peak Crossing
Warril Ck (E)
Ipswich Boonah Rd
Sandy Ck
Purga Ck
Peak Crossing Churchbank Weir Rd
Flinders St
View Peak Crossing Rd
25
30
Ipswich
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
CALVERT TO KAGARU
Figure 8.1c: Land use study area
LEGEND
Localities
Chainage (km)
C2K project alignment
Watercourses
Minor roads
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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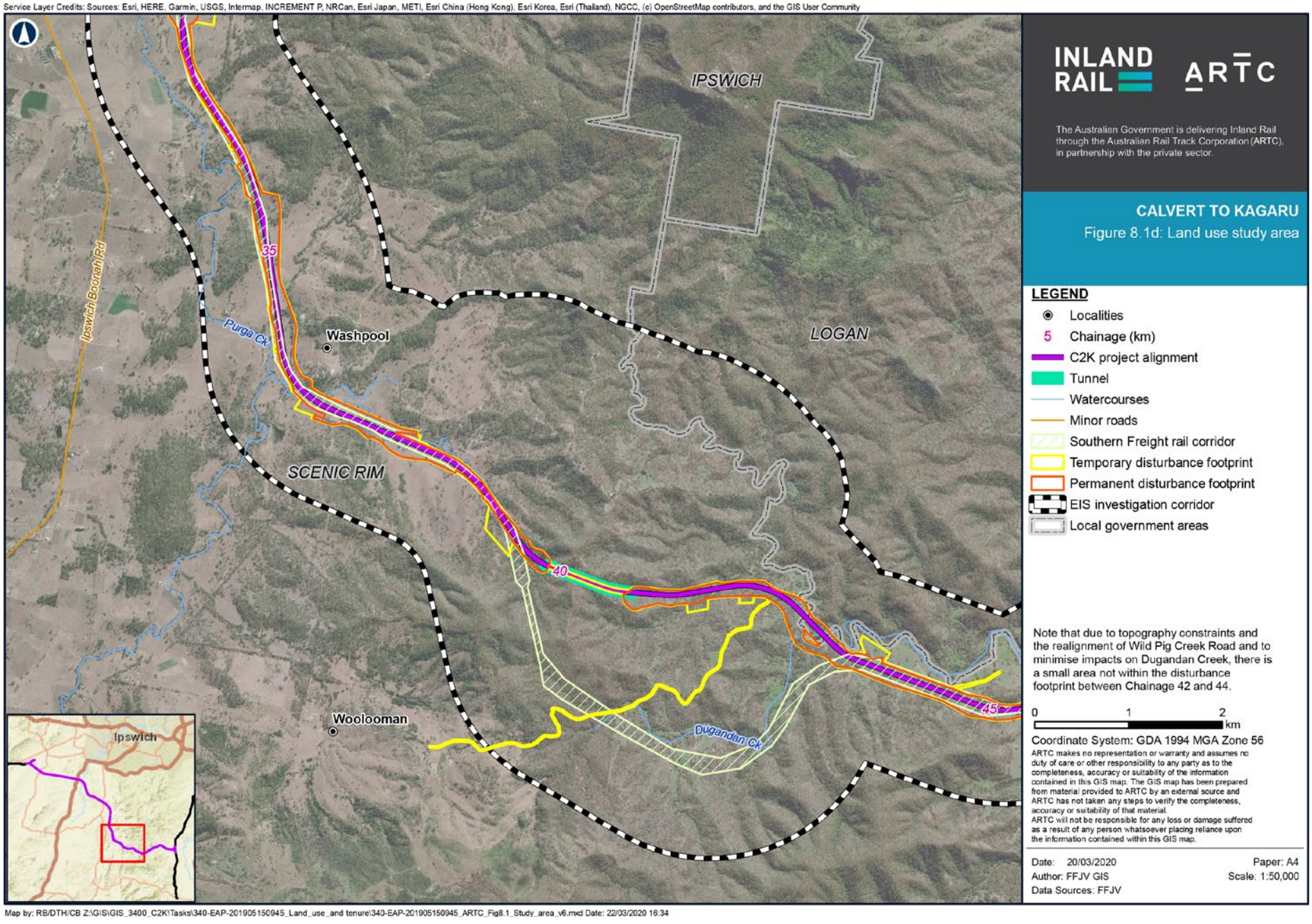
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IPSWICH
LOGAN
SCENIC RIM
Washpool
Wooloooman
Purga Ck
Dugandan Ck
Ipswich Boonah Rd
35
40
45
Ipswich
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
CALVERT TO KAGARU
Figure 8.1d: Land use study area
LEGEND
Localities
Chainage (km)
C2K project alignment
Tunnel
Watercourses
Minor roads
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
Note that due to topography constraints and the realignment of Wild Pig Creek Road and to minimise impacts on Dugandan Creek, there is a small area not within the disturbance footprint between Chainage 42 and 44.
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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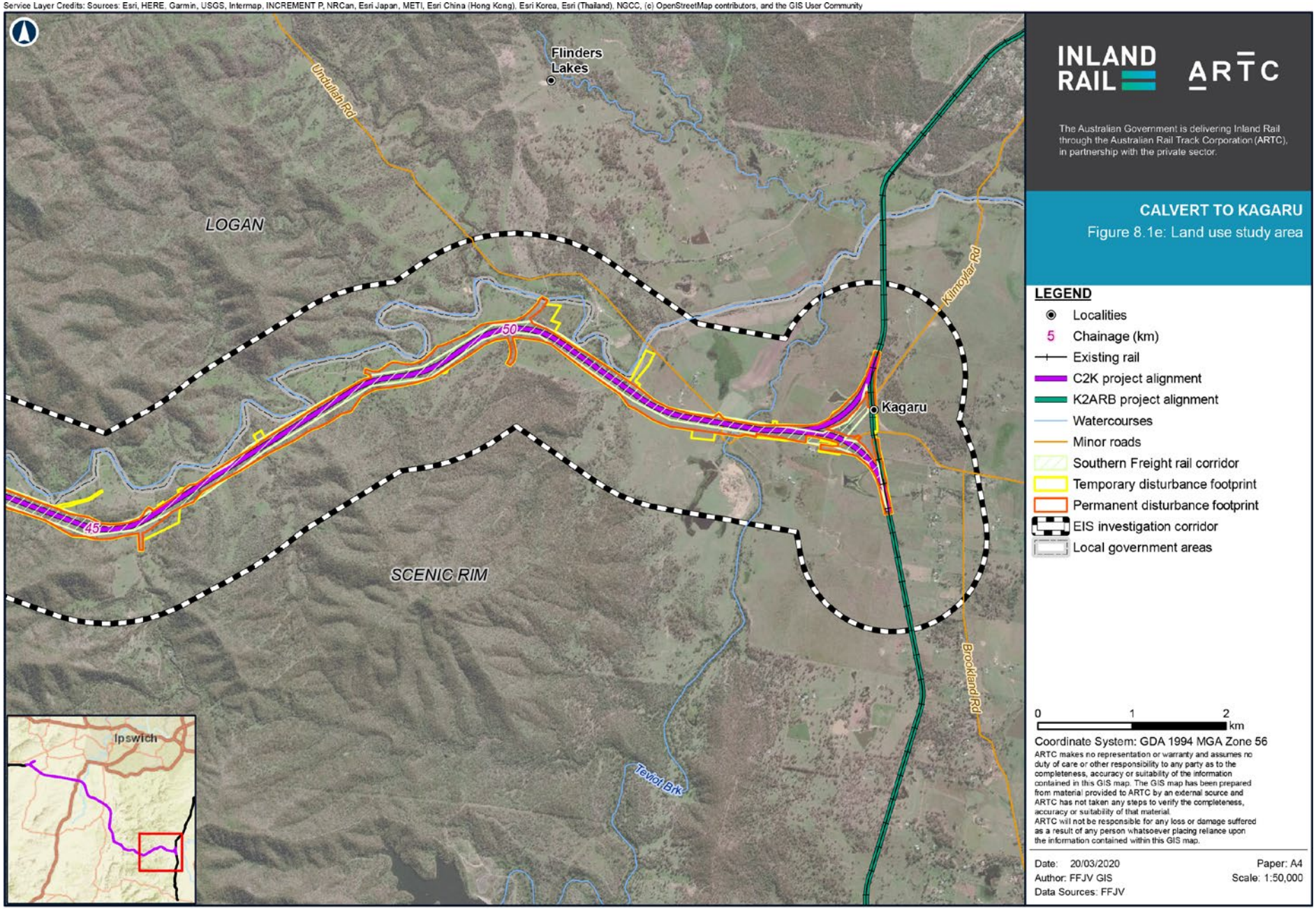
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Flinders Lakes
Undullah Rd
LOGAN
Kilmoylar Rd
50
Kagaru
45
SCENIC RIM
Brooklands Rd
Teviot Brk
Ipswich
INLAND RAIL
ARTC
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CALVERT TO KAGARU
Figure 8.1e: Land use study area
LEGEND
Localities
Chainage (km)
Existing rail
C2K project alignment
K2ARB project alignment
Watercourses
Minor roads
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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8.4.2 Impact assessment methodology

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

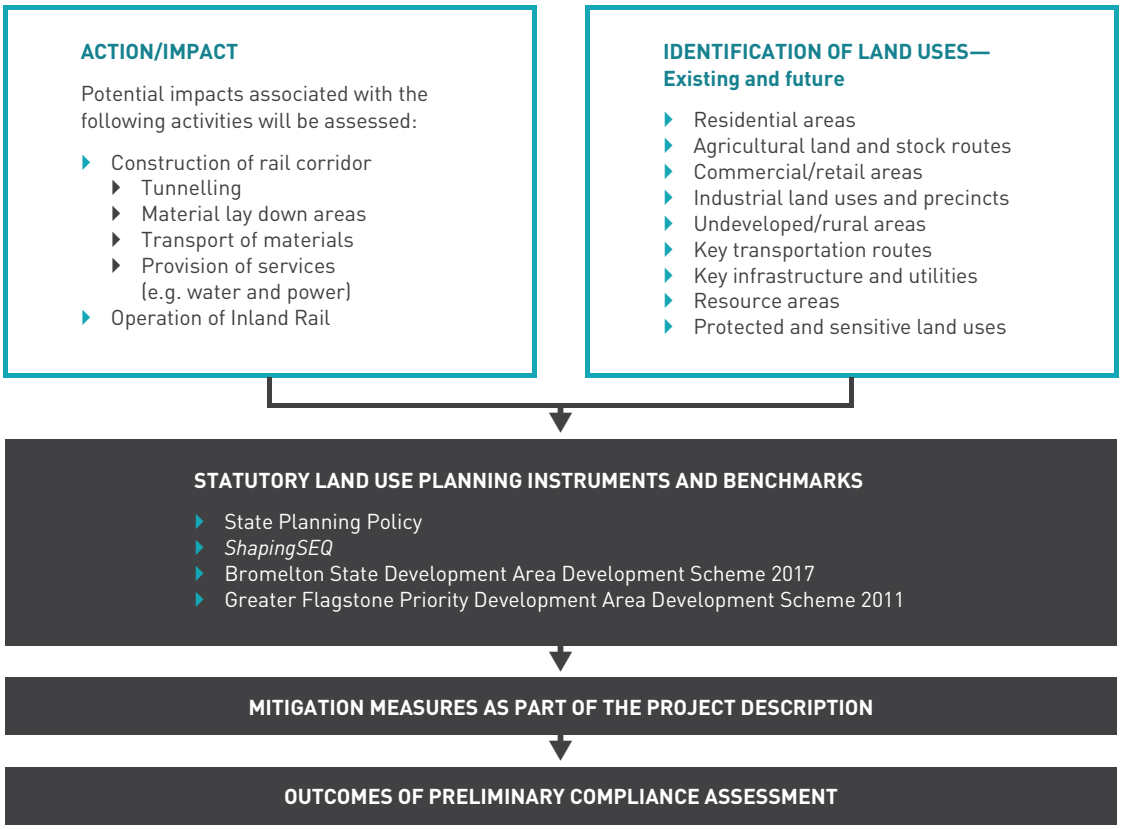


FIGURE 8.2: LAND USE COMPLIANCE IMPACT ASSESSMENT METHODOLOGY

8.4.3 Data sources

This section details the relevant database sources, search dates, and type of information used in the land use and tenure impact assessment (refer Table 8.3).

TABLE 8.3: DATABASE AND DOCUMENT REVIEW SUMMARY

Database/data source name	Data type

Biota
▸ Statewide biodiversity corridors
  ▸ Terrestrial corridor centrelines
  ▸ Riparian corridor centrelines
  ▸ Corridor buffers
	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**

Boundaries ▸ Local government ▸ Locality	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**

Economy
▸ Exploration permits
  ▸ Coal
  ▸ Geothermal
  ▸ Greenhouse gas
  ▸ Mineral
  ▸ Mineral development licence
  ▸ Petroleum
  ▸ Potential commercial area
▸ Infrastructure permits
  ▸ Petroleum facilities licences
  ▸ Petroleum pipeline licence areas
  ▸ Petroleum pipeline licence centrelines
▸ Production permits
  ▸ Geothermal leases
  ▸ Greenhouse leases
  ▸ Mining claims
  ▸ Mining leases
  ▸ Petroleum leases
▸ Resources
  ▸ Coal resources
  – Coal resource boundary
  – Coal resource area
  ▸ Extractive resources
  – KRA transport route
  – KRA haulage corridor
  – KRA transport route separation area
  – KRA resource/processing area
  – KRA separation area
	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**

Environment ▸ Parks ▸ Protected areas	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**

Farming
▸ Agricultural land audit
  ▸ Current agriculture
  – Aquaculture
  – Cattle feedlot
  – Forestry plantations
  – Land based aquaculture
  – Pasture production
  – Piggeries
  – Poultry farms
  ▸ Region boundary
  ▸ Sown pasture
▸ SPP and regional interests
▸ Stock routes
  ▸ Stock routes
  ▸ Stock routes reserves
▸ Water facility
	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**

Imagery and base maps ▸ Imagery	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**

Database/data source name	Data type

Planning cadastre
▸ 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
  ▸ Greater Flagstone PDA
▸ Land use
▸ Lease and reserve parcel
▸ Regional planning
  ▸ Regional planning boundaries
  ▸ *South East Queensland Regional Plan 2017—ShapingSEQ*
▸ SDAs
  ▸ SDAs
  – Bromelton SDA
  ▸ SDA precincts
  – Bromelton SDA precincts
	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**

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
	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**

Transportation ▸ Airstrips, airports and heliports ▸ Ports ▸ Railway line ▸ Railway station ▸ Regulated air services ▸ Roads	QLD Globe data layers (accessed 30 July 2019) from online database: **qldglobe.information.qld.gov.au**
Energex electrical network spatial data	ESRI Shapefile
Ergon Energy utility network	ESRI Shapefile
ICC ▸ Council roads ▸ Lot and property boundaries with ID and type attributes ▸ Council managed utilities/services infrastructure	Geographical Information Systems (GIS) files
LCC ▸ Logan Planning Scheme 2015 ▸ Cadastre ▸ Water and wastewater network information ▸ Road blocks, names and bridges	GIS files
NBN GIS data	GIS files
Optus utility network information	GIS files
Powerlink spatial data	GIS files
Queensland Urban Utilities assets: ▸ Sewer ▸ Water ▸ Recycled water	ESRI file geodatabase
Santos pipeline alignments	MapInfo TAV

Database/data source name	Data type
SRRC ▸ Council roads ▸ Lot and property boundaries with ID and type attributes ▸ Council-managed utilities/services infrastructure	GIS files
Telstra geographic data	DXF format
Seqwater infrastructure	GIS files

8.5 Existing environment

The Project is located within the South East Queensland (SEQ) region and traverses the LGAs of ICC, SRRC and LCC.

The Project extends for approximately 53 km from Calvert at its north-west end, to Kagaru in the south-east. The proposed rail corridor will provide one of the 'missing links' between the existing Queensland Rail West Moreton System and ARTC Interstate line.

The Project largely uses a greenfield corridor identified for future railway land and gazetted under the provisions of the TI Act following the SFRC study in November 2010. The SFRC study commenced in mid-2007 and was a long-term planning study undertaken by DTMR. The SFRC was identified as a major freight link allowing the future growth of rail freight within QLD. The preservation of the route was intended to provide SEQ with a major reserve of freight rail capacity for the State's future economic growth. Since the SFRC was gazetted as a future rail corridor in 2010, no further investigations have been undertaken by DTMR.

Between Calvert and Kagaru, the permanent disturbance footprint traverses 175 properties and 19 interests (i.e. easements, below the depth plans). The temporary disturbance footprint, which also covers the permanent disturbance footprint, traverses 190 properties and 19 interests. The extent of area associated with these properties within the permanent and temporary disturbance footprints, as well as tenure and existing land uses of these properties, are detailed in Appendix G: Impacted Properties.

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

8.5.1 Land tenure

Within Queensland, tenure types are described 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*
- 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. Lands Lease tenure may also be dedicated as State forests
- State land—land that is unallocated State land
- Reserve—land that has been dedicated as a reserve for a public or community purpose.

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
- Unallocated State land—land that may include watercourses.

With the exception of freehold titles, tenure and interests in land in QLD are primarily administered by DNRME under the provisions of the Land Act. Freehold land is held by way of an indefensible title recorded in the Freehold Land Register under the provisions of the *Land Title Act 1994*.

The tenure of land within the land use study area is predominately freehold (91 per cent within the permanent disturbance footprint and 92 per cent within the temporary disturbance footprint). The land use study area also intersects small pockets of Lands Lease, reserve and State land tenure, as well as road parcels and watercourses.

Where the land use study area aligns with the existing West Moreton System rail corridor at Calvert in the north-west and joins the Interstate Line at Kagaru in the south-east, the tenure of the existing rail corridor is Lands Lease, leased by the State to Queensland Rail (QR).

Table 8.4 provides a summary of properties within the land use study area that are traversed by the permanent and temporary disturbance footprint, by type of land tenure, as defined in Section 8.5.1. Tenure within the land use study area is depicted on Figure 8.3a to Figure 8.3e.

TABLE 8.4: TENURE WITHIN THE LAND USE STUDY AREA

Type of tenure	Permanent disturbance footprint			Temporary disturbance footprint		
	No. of land parcels	Area (ha)	% of land within permanent disturbance footprint	No. of land parcels	Area (ha)	% of land within temporary disturbance footprint
Freehold	171	687.98	91.1	185	204.93	92.3
Lands Lease	3	11.16	1.5	3	2.71	1.2
Reserve	1	0.40	0.1	1	0.20	0.09
State land	0	0.00	0.0	1	0.02	0.0
Road type parcel	-	52.30	6.9	-	14.41	6.3
Watercourse	-	2.89	0.4	-	0.97	0.2
Total	**175**	**754.73**	**100.0**	**190**	**222.09**	**100.0**

8.5.1.1 State land

Under the Land Act, unallocated State land 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, unallocated State land may also be dedicated as a reserve for a particular public or 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 Natural Resources, Mines and Energy.

As identified in Table 8.4, the land use study area contains three parcels of Lands Lease tenure, one parcel of reserve and one parcel of State land (unallocated State land). The land use study area also traverses three Lands Lease strata parcels. The types of tenure and associated leases on these land parcels are:

- Lot 251 on SP130171—Lands Lease parcel with a perpetual lease held by DTMR
- Lot 232 on SP130091—Lands Lease parcel with a perpetual lease held by DTMR
- Lot 251 on SP130092—Lands Lease parcel with a perpetual lease held by DTMR
- Lot 1 on RL7616—Lands Lease strata parcel with a road licence that does not have an end date
- Lot 145 on CC3280—Unallocated State land with a permit to occupy for grazing issued over the parcel. This parcel is subject to strata parcel Lot 0145 on CC3280
- Lot 146 on CC3359—Reserve for recreation with a term lease for grazing issued over it. This parcel is subject to strata parcel Lot 0146 on CC3359.

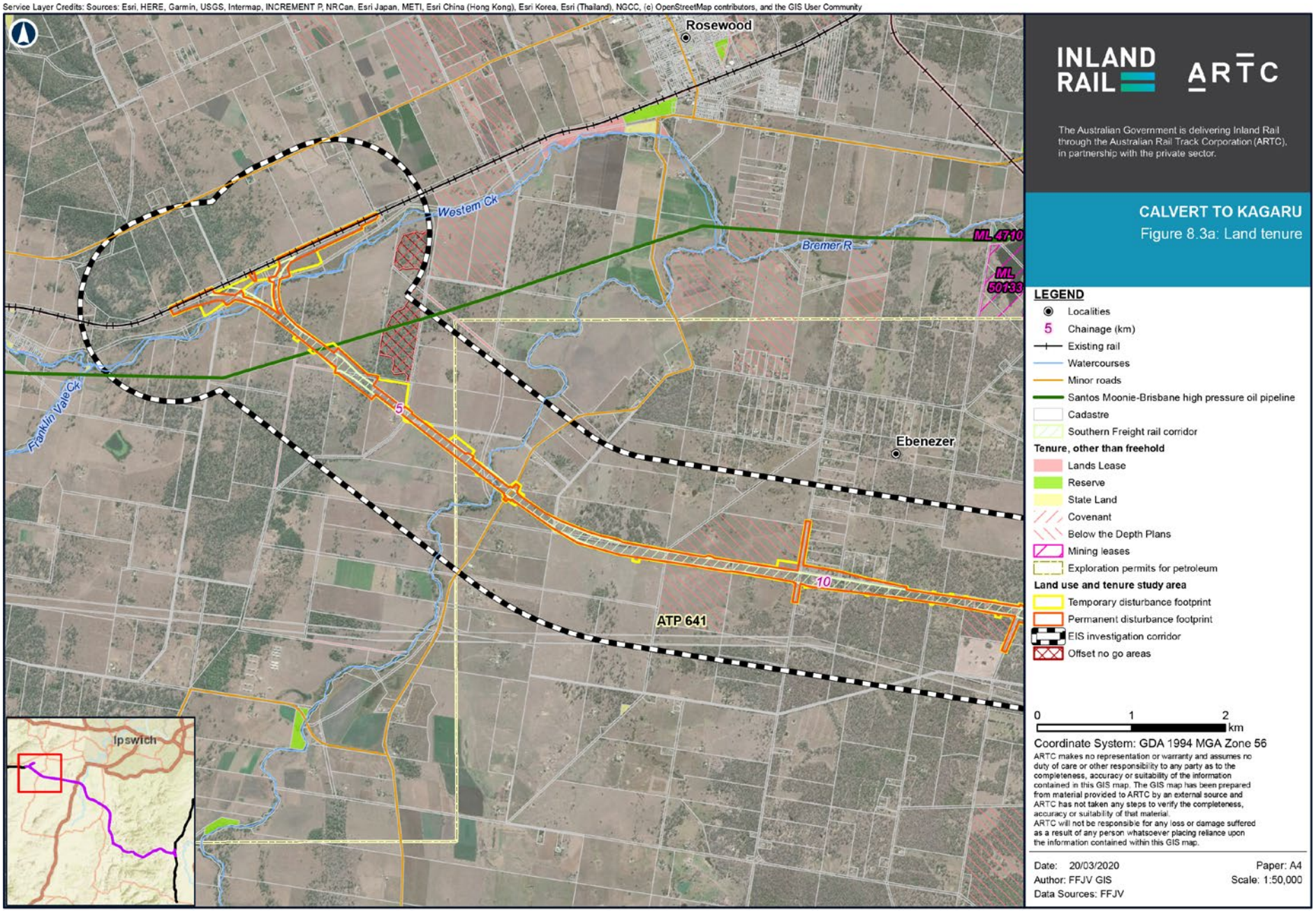
8.5.1.2 Easements and freehold land with depth restrictions

The land use study area includes land that is burdened by easements and some land that is subject to depth restrictions.

An easement gives a person the right to use someone else's land for a specified purpose, for example to gain access to other land. There are 15 easements throughout both the permanent and temporary disturbance footprints. These would be associated with rights to use land for purposes such as crossing land or allowing services to be located on or under the land.

At Ebenezer, the land use study area traverses three parcels with depth restrictions that are identified on the title and the registered plans (Lot 6 on RP219931, Lot 56 on RP218444 and Lot 57 on RP219930). Below the Depth Plans, tenure is a registered right or interest where the location is identified as below a depth or to a depth below the surface of the earth and relate to the underground coal mines in the area. This type of Below the Depth tenure was common before volumetric titles were introduced.

At Purga, the land use study area traverses one parcel that adjoins the Purga Nature Reserve and is subject to a Carbon Abatement Interest (D on SP279349) (refer Figure 8.3b). Carbon Abatement Interests are registered interests in land and form part of the Emissions Reduction Fund developed and managed by the Australian Government Department of Agriculture, Water and the Environment and the Clean Energy Regulator.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Rosewood
Western Ck
Bremer R
ML 4710
ML 50133
Franklin Vale Ck
5
Ebenezer
10
ATP 641
Ipswich
INLAND RAIL
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CALVERT TO KAGARU
Figure 8.3a: Land tenure
LEGEND
Localities
Chainage (km)
Existing rail
Watercourses
Minor roads
Santos Moonie-Brisbane high pressure oil pipeline
Cadastre
Southern Freight rail corridor
Tenure, other than freehold
Lands Lease
Reserve
State Land
Covenant
Below the Depth Plans
Mining leases
Exploration permits for petroleum
Land use and tenure study area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Offset no go areas
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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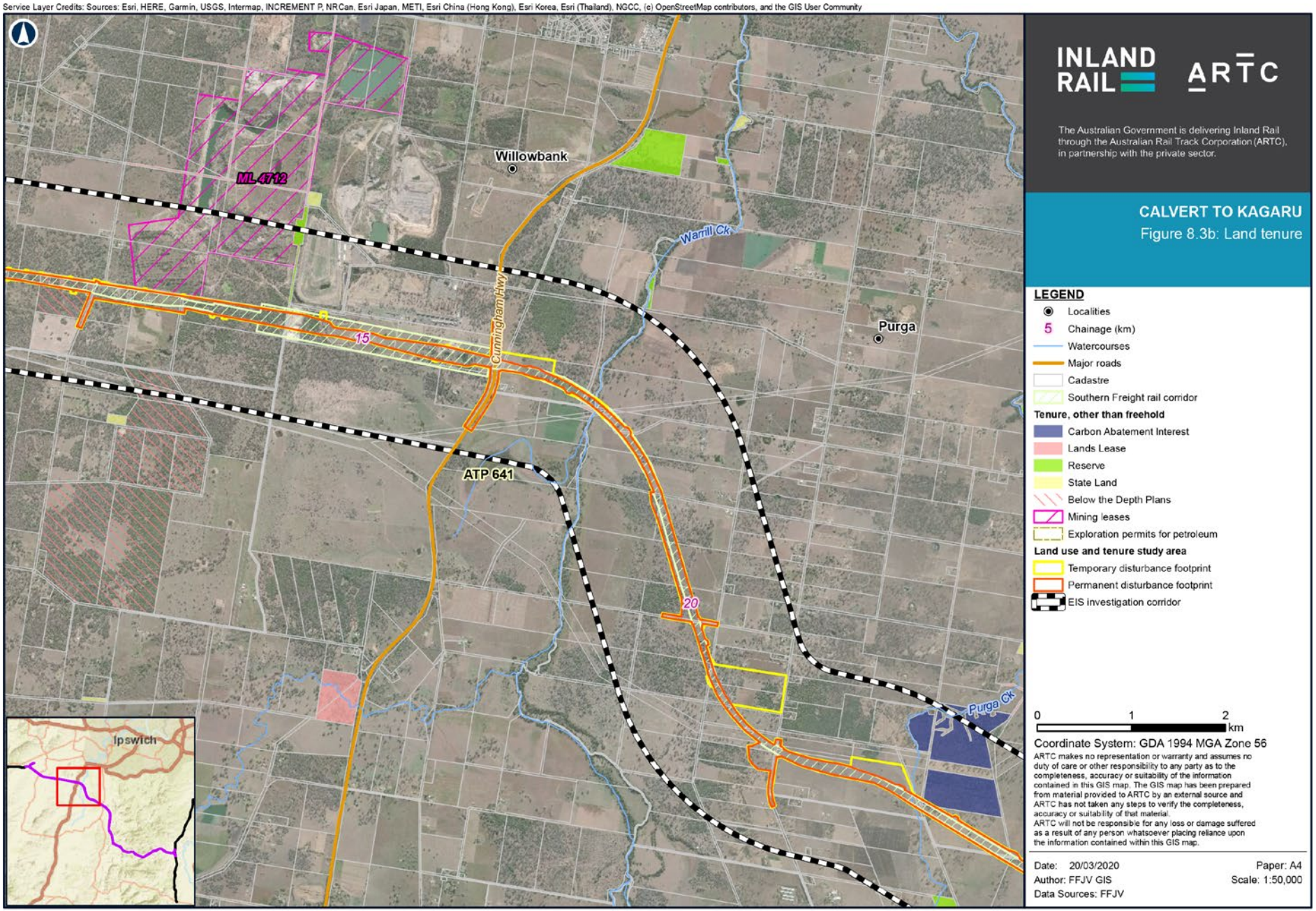
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Willowbank
ML 4712
Warrill Ck
Cunningham Hwy
Purga
15
ATP 641
20
Purga Ck
Ipswich
INLAND RAIL
ARTC
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CALVERT TO KAGARU
Figure 8.3b: Land tenure
LEGEND
Localities
Chainage (km)
Watercourses
Major roads
Cadastre
Southern Freight rail corridor
Tenure, other than freehold
Carbon Abatement Interest
Lands Lease
Reserve
State Land
Below the Depth Plans
Mining leases
Exploration permits for petroleum
Land use and tenure study area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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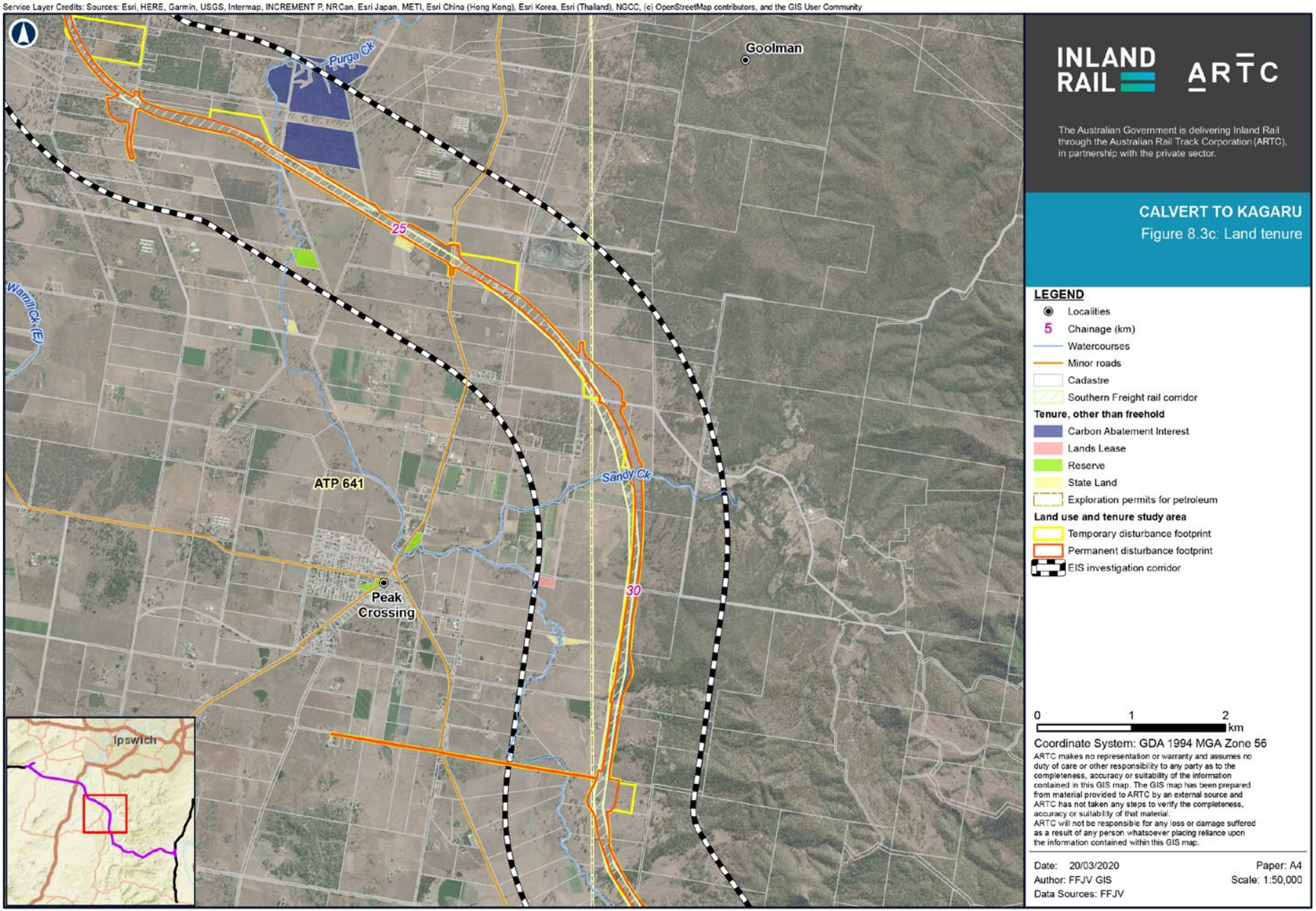
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Goolman
Purga Ck
25
Warrill Ck (E)
ATP 641
Sandy Ck
Peak Crossing
30
Ipswich
INLAND RAIL
ARTC
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CALVERT TO KAGARU
Figure 8.3c: Land tenure
LEGEND
Localities
5 Chainage (km)
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Tenure, other than freehold
Carbon Abatement Interest
Lands Lease
Reserve
State Land
Exploration permits for petroleum
Land use and tenure study area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
0 1 2 km
Coordinate System: GDA 1994 MGA Zone 56
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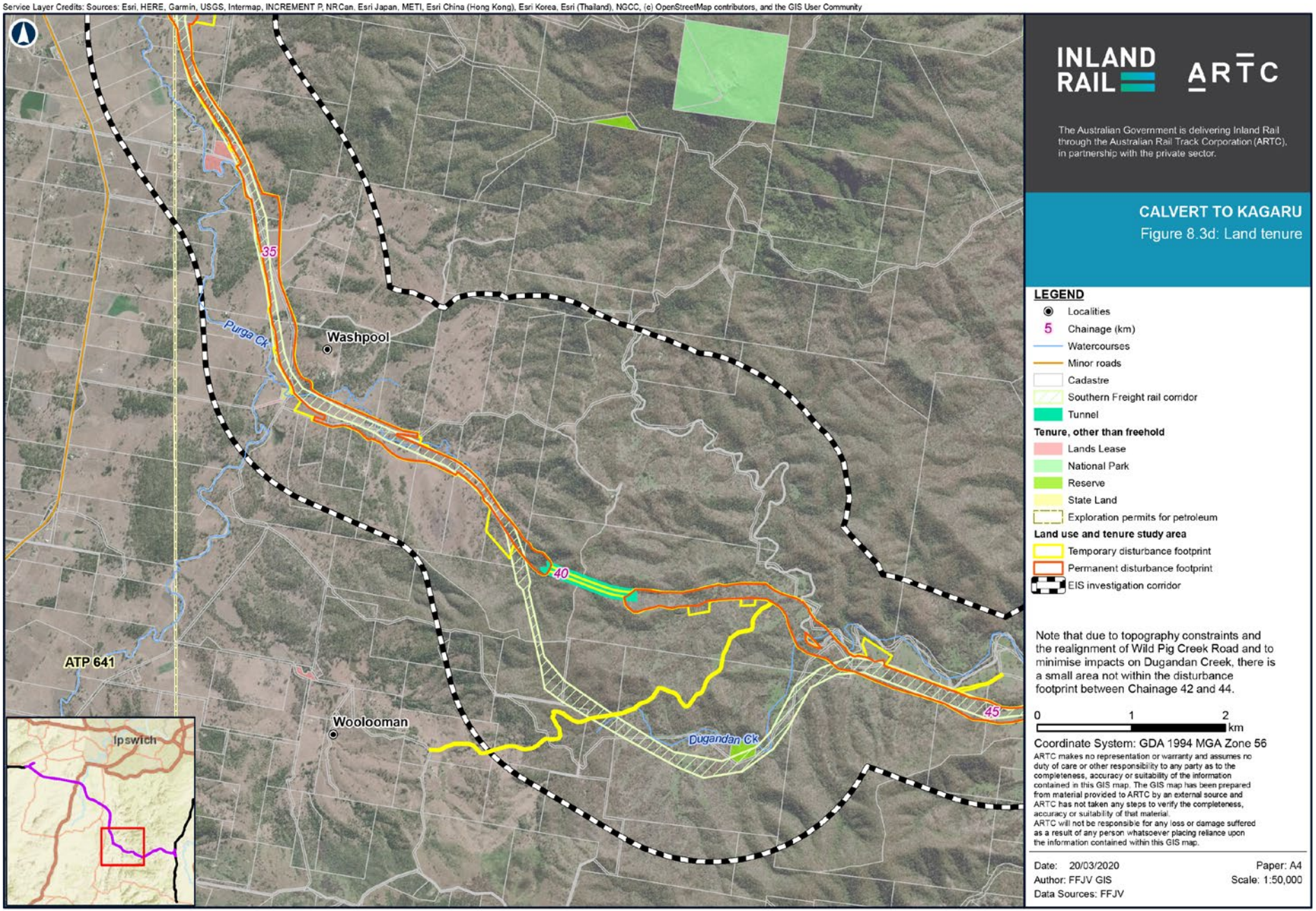
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35
Purga Ck
Washpool
40
45
ATP 641
Wooloman
Dugandan Ck
Ipswich
INLAND RAIL
ARTC
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CALVERT TO KAGARU
Figure 8.3d: Land tenure
LEGEND
Localities
5 Chainage (km)
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Tunnel
Tenure, other than freehold
Lands Lease
National Park
Reserve
State Land
Exploration permits for petroleum
Land use and tenure study area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Note that due to topography constraints and the realignment of Wild Pig Creek Road and to minimise impacts on Dugandan Creek, there is a small area not within the disturbance footprint between Chainage 42 and 44.
0 1 2 km
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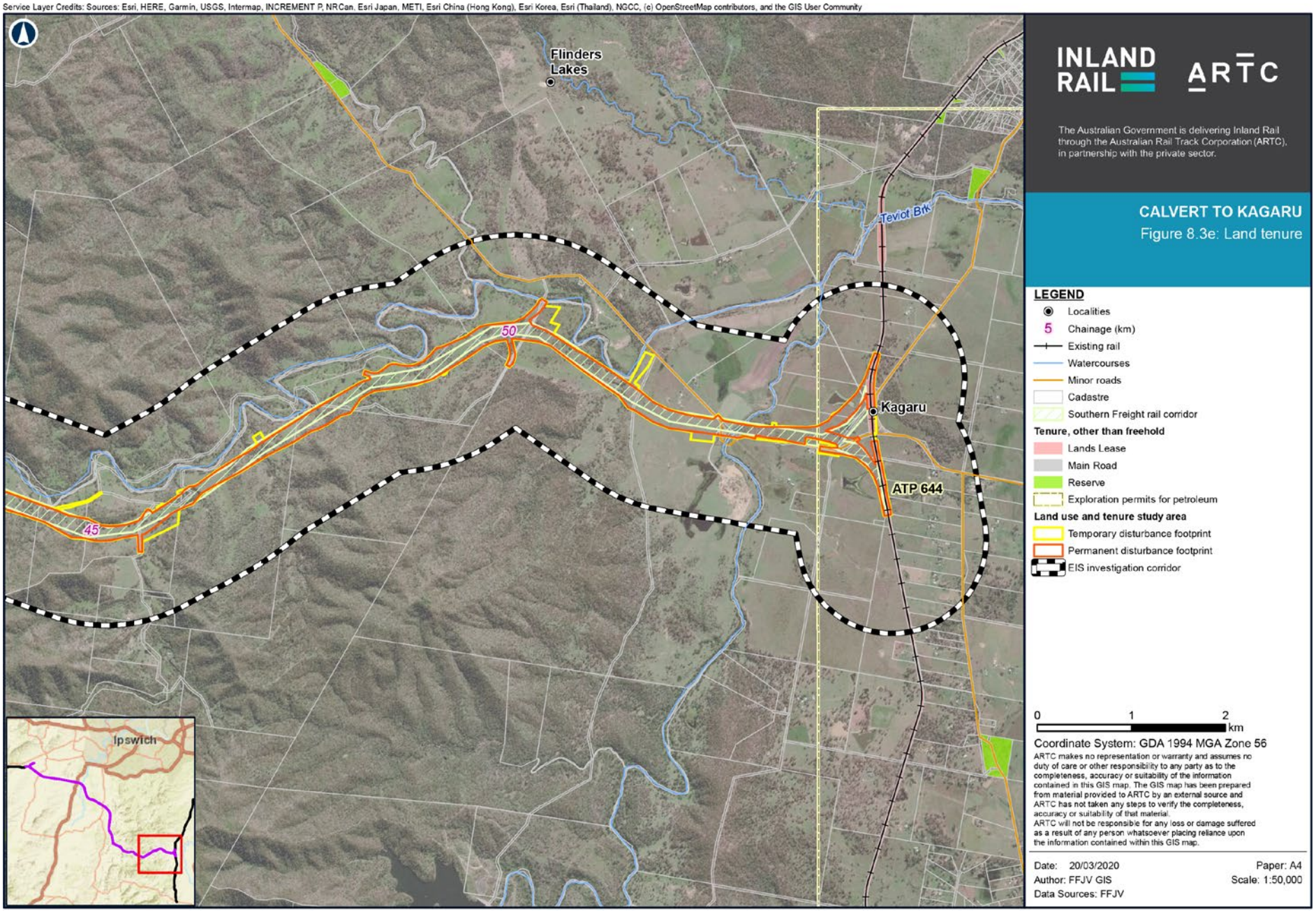
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Flinders Lakes
Teviot Brk
Kagaru
ATP 644
50
45
Ipswich
INLAND RAIL
ARTC
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CALVERT TO KAGARU
Figure 8.3e: Land tenure
LEGEND
Localities
Chainage (km)
Existing rail
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Tenure, other than freehold
Lands Lease
Main Road
Reserve
Exploration permits for petroleum
Land use and tenure study area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
0 1 2 km
Coordinate System: GDA 1994 MGA Zone 56
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Data Sources: FFJV
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8.5.1.3 Mineral resource interests

The *Mineral Resources Act 1989* (Qld) provides the framework for exploration, development and mining tenure. Under the *Mineral Resources Act 1989*, the following mineral or coal authorities can be granted:

- Prospecting permits—a prospecting permit can be sought for any mineral other than coal and entitles the holder to prospect, hand-mine and peg a mining lease or claim.
- Exploration permits—exploration permits allow for more advanced methods to determine the quantity and quality of materials present. Permitted activities under exploration permit includes prospecting, conducting geophysical surveys, drilling and sampling and testing of materials.
- Mineral development licences—mineral development licences are issued to allow the holder to evaluate the development potential of the defined resource. Mineral development licences can be granted if an exploration permit is held where there is a significant mineral occurrence of possible economic potential.
- Mining claims—a mining claim can be issued for any mineral other than coal. A mining claim allows the holder to conduct small-scale mining operations such as prospecting and hand-mining.
- Mining leases—a mining lease allows the holder to conduct larger scale mining operations. Mining leases can be issued for any specified material, with permitted activities within the lease area including machine mining or other activities associated with mining or promoting the activity of mining.

The land use study area traverses one mining lease (ML 4712) held by Zedemar Holdings Pty Ltd at approximate chainage (Ch) 12.4 km to Ch 13.1 km. Although the mining lease is held by Zedemar Holdings Pty Ltd, it is understood the ownership of the resource interest has changed. The mining lease is associated with the Ebenezer coal mine and the disturbance footprint runs adjacent to the southern boundary of the lease area. The Ebenezer coal mine is currently not operational, and the land is planned to be rehabilitated. There is a proposal to transform the disused site into the Wanless Recycling Park, a resource recovery hub.

The mineral resource interests traversed by the land use study area are summarised in Table 8.5. The mining lease area is shown on Figure 8.3a and Figure 8.3b.

There are no granted coal or mineral exploration permits within the land use study area. There are also no applications for mining permits within the land use study area.

8.5.1.4 Petroleum and gas resource interests

Several different authorities for petroleum and gas exploration and production activities in QLD are granted under the *Petroleum and Gas (Production and Safety) Act 2004* (Qld). Petroleum and gas authorities are granted for:

- Exploration—authority to prospect (ATP), potential commercial area (PCA)
- Production—petroleum lease
- Infrastructure development—petroleum facility licence and petroleum pipeline licence
- Information gathering—petroleum survey licence, water monitoring authority and data acquisition authority.

An ATP is granted under Section 41 of the *Petroleum and Gas (Production and Safety) Act 2004.* The holder of the ATP may carry out the following activities within the area of the authority:

- Explore for petroleum
- Test for petroleum production
- Evaluate the feasibility of petroleum production
- Evaluate or test natural underground reservoirs for the storage of petroleum or a prescribed storage gas.

An ATP area can be declared a PCA under Section 90 of the *Petroleum and Gas (Production and Safety) Act 2004.* A PCA retains an ATP beyond its term to provide more time to commercialise the resource.

The land use study area crosses two ATP permits for petroleum exploration (ATP641 and ATP644). Both permits are held by B.N.G. Pty Ltd (Arrow Energy). There are two current applications for PCA for petroleum (PCA 223 and PCA 198), held by B.N.G. Pty Ltd (Arrow Energy), that are located over the ATP permits. These petroleum and gas resource interests traversed by the land use study area are summarised in Table 8.5 and are shown on Figure 8.3a to Figure 8.3e.

There is one pipeline licence located within the land use study area. This pipeline licence is associated with the Moonie to Brisbane (PPL 1) pipeline and is detailed in Table 8.5. Infrastructure and utilities within the land use study area are further discussed in Section 8.5.2.5.

There are no production permits for petroleum within the land use study area.

TABLE 8.5: RESOURCE INTERESTS TRAVERSED BY THE LAND USE STUDY AREA

Permit type	Permit No.	Holder name	Permit status	Location within land use study area (approximate chainage)	Area within permanent disturbance footprint (ha)	Area within temporary disturbance footprint (ha)
Pipeline licence	PPL 1	Moonie Pipeline Company Pty Ltd	Granted	Ch 4.0 km	-	-
Production permit—Mining Lease	ML 4712	Zedemar Holdings Pty Ltd (no longer current landholders)	Granted	Ch 12.4 km to Ch 13.1 km	-	-
Petroleum PCA (Application)	PCA 223	B.N.G Pty Ltd	Application	Ch 5.7 km to Ch 32.7 km	279.74	92.96
Authority to Prospect	ATP 641	B.N.G Pty Ltd	Granted	Ch 5.7 km to Ch 32.7 km	372.70	92.96
Petroleum PCA (Application)	PCA 198	B.N.G Pty Ltd	Application	Ch 53.5 km to Ch 54.5 km	28.07	16.78
Authority to Prospect	ATP 644	B.N.G Pty Ltd	Granted	Ch 53.5 km to Ch 54.5 km	44.85	16.78

As part of consultation undertaken for the Project, holders of resource interests were contacted to inform them of the Project and provide them with the opportunity to talk with the Project team. Where ownership of a resource interest changed during the course of consultation, the new holders were also contacted to inform them of the Project.

Refer Chapter 5: Stakeholder Engagement and Appendix C: Consultation Report for further background.

8.5.1.5 Native title

As identified in Section 8.5.1, tenure within the land use study area is predominantly freehold tenure, where native title rights have been extinguished, except in the instance where freehold tenure was invalidly granted.

Where the land use study area uses existing rail and traverses existing road corridors, native title rights have been extinguished through the establishment of public works. In accordance with Section 253 of the NT Act, public works 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'.*

Elsewhere, the land use study area traverses one parcel of reserve tenure (Lot 146 on CC3359) and one parcel of unallocated State land (Lot 145 on CC3280) in respect of which native title is unlikely to be extinguished. The land use study area also traverses watercourses and unlinked parcels where native title may exist.

Searches of the National Native Title Register and Register of Native Title Claims, administered by the National Native Title Tribunal, were undertaken on 28 January 2020. These identified no successful native title determinations over the land use study area. Two native title claims, by the Yuggera Ugarapul People and the Danggan Balun (Five Rivers) People, have been accepted for registration and are yet to be determined. The Yuggera Ugarapul People claim area covers the majority of the land use study area. The Danggan Balun (Five Rivers) People claim area is partially located within the land use study area at Kagaru and does not traverse the permanent disturbance footprint.

For those areas within the land use study area 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, by compulsory process, to enable the granting of the necessary interests in Crown lands required to construct the Project.

Native title claims relevant to the land use study area are summarised in Table 8.6. Details on consultation undertaken with the native title claimants within the land use study area is provided in Chapter 5: Stakeholder Engagement, Chapter 18: Cultural Heritage, and Appendix C: Consultation Report.

TABLE 8.6: NATIVE TITLE CLAIMS RELEVANT TO THE LAND USE STUDY AREA

Native title status	Name	Tribunal file no.	Summary
Native title claims within the disturbance footprints			
Accepted for registration	Yuggera Ugarapul People	QC2017/005	This active native title claim has been accepted as a registered claim by the National Native Title Tribunal. The claim has not yet been determined by the courts. The permanent and temporary disturbance footprints traverse one parcel of reserve tenure within this native title claim area at approximate Ch 34.0 km. The temporary disturbance footprint also traverses one parcel of unallocated State land within this native title claim area at approximate Ch 36.5 km.
Native title claims located outside of the disturbance footprints			
Accepted for registration	Danggan Balun (Five Rivers) People	QC2017/007	This active native title claim has been accepted as a registered claim by the Native Title Tribunal. The claim has not yet been determined by the courts. The permanent and temporary disturbance footprints do not traverse this claim area.

8.5.2 Land use

The Project is approximately 53 km in length. Starting within the existing West Moreton System rail corridor at Calvert, it deviates south-east from the existing rail corridor following the SFRC and traverses through the localities of Lanefield, Rosewood, Lower Mount Walker, Ebenezer, Willowbank, Purga, Peak Crossing and Washpool. The Project then deviates to the north of the SFRC to pass beneath the Teviot Range at Woolooman and Undullah, realigning with the SFRC on the western side of the Teviot Range, traversing through Undullah and joining the existing Interstate Line at Kagaru.

Grazing land is the predominate land use within the land use study area. The next most common land uses are also generally of an agricultural nature, being land classified as grazing modified pastures, irrigated modified pastures, irrigated perennial horticulture and irrigated cropping. Another land use type that exceeds one per cent of the land use study area is other minimal use, which consists of largely unused land with residual native vegetation cover but may also contain ancillary uses.

Existing land uses within and adjacent to the land use study area as per each locality traversed by the Project is described in Table 8.7.

TABLE 8.7: LAND USES WITHIN AND ADJACENT TO THE LAND USE STUDY AREA

Locality	Land uses within the study area	Land uses adjacent to study area (within the EIS investigation corridor approximately 1 km either side the land use study area)
Calvert	At Calvert, the Project diverts from the existing West Moreton System rail corridor, traversing grazing land. The land use study area also traverses Western Creek.	Land uses within the wider EIS investigation corridor is primarily grazing land and the existing West Moreton System rail corridor.
Lanefield and Rosewood	Land use within the land use study area at Lanefield and Rosewood primarily consists of large parcels of grazing land.	Primarily grazing land with some pockets of irrigated modified pastures, irrigated cropping and rural residential uses.
Lower Mount Walker	Land use within the land use study area at Lower Mount Walker consists of grazing land. Bremer River and Rosewood Warrill Road are also located within the land use study area at Lower Mount Walker.	Primarily large parcels of grazing land with some rural residential properties.
Ebenezer	Land use within the land use study area at Ebenezer consists of grazing land with native vegetation. The land use study area also contains residential uses and land associated with the disused Ebenezer coal mine.	Land uses adjacent to the land use study area at Ebenezer include the disused Ebenezer coal mine, parcels containing open grazing land, residential properties and the Gum Tips Nature Reserve.

Locality	Land uses within the study area	Land uses adjacent to study area (within the EIS investigation corridor approximately 1 km either side the land use study area)
Willowbank	Land use within the land use study area at Willowbank consists of mining and 'other minimal use'. Both of these uses were identified to be associated with a commercial business JNJ Resources, a bentonite product production company. Other land uses at Willowbank include grazing land and the Cunningham Highway.	Land uses adjacent to the land use study area at Willowbank include the Queensland Raceway, Willowbank Raceway and other facilities associated with the Ipswich Motorsports Precinct, and parcels of open grazing land.
Purga	Land use within the land use study area at Purga is primarily grazing land with scattered vegetation, with small pockets of irrigated modified pastures as well as rural residential properties. Warrill Creek and Purga Creek are also located within the land use study area at Purga.	Land uses adjacent to the land use study area at Purga primarily consists of grazing land, with pockets of irrigated modified pastures, grazing modified pastures and irrigated cropping. The Purga Nature Reserve is also located adjacent to the land use study area at Purga.
Peak Crossing	Land use within the land use study area at Peak Crossing consists of primarily grazing land, with some pockets of irrigated modified pastures, grazing modified pastures, services and irrigated perennial horticulture. Ipswich Boonah Road, Sandy Creek and Purga Creek are also located in the land use study area at Peak Crossing.	Land uses adjacent to the land use study area at Peak Crossing consists of grazing land, with pockets of residential uses, irrigated cropping, irrigated seasonal horticulture and grazing modified pastures. Intensive animal uses nearby the land use study area at Peak Crossing include Yackatoon Feedlot and Purga Breeder Farm. The Purga KRA, Ivory's Rock Conventions and Events Centre, which includes a caravan park and camping grounds, and the Flinders Peak Winery are all proximate to the land use study area at Peak Crossing.
Washpool	Land use within the land use study area at Washpool consists of large parcels of grazing land with scattered vegetation and rural residential properties.	Land use adjacent to the land use study area at Washpool primarily consists of large parcels of grazing land with scattered vegetation and rural residential properties.
Woolooman and Undullah	Land use within the land use study area at Woolooman and Undullah primarily consists of grazing land with scattered native vegetation and undulating topography as the land use study area traverses the Teviot Range. Wild Pig Creek and Dugandan Creek are within the land use study area at Undullah.	Land use adjacent to the land use study area when within Woolooman and Undullah primarily consists of grazing land with scattered native vegetation with undulating topography as the land use study area traverses the Teviot Range.
Kagaru	Land use within the land use study area at Kagaru is primarily grazing vegetation with a small pocket of irrigated cropping. The land use study area aligns with the Interstate Line traversing the Bromelton SDA. The land use study area also traverses a small portion of the Greater Flagstone PDA.	Land uses adjacent to the land use study area at Kagaru include a sand mining operation (SEQ Sand and Soil), grazing land and irrigated cropping. The Greater Flagstone PDA is located to the north of the land use study area.

Table 8.8 provides a summary of the land uses within the land use study area, broken down into the permanent and temporary disturbance footprints. Land uses mapped under QLUMP are depicted on Figure 8.4a to Figure 8.4e.

TABLE 8.8: EXISTING LAND USES WITHIN THE LAND USE STUDY AREA

Land use[1]	Permanent disturbance footprint		Temporary disturbance footprint	
	Area (ha)	% of land within permanent disturbance footprint	Area (ha)	% of land within temporary disturbance footprint
Grazing native vegetation	701.70	93.0	202.53	91.2
Grazing modified pastures	16.91	2.2	15.05	6.8
Other minimal use	10.60	1.4	1.49	0.7
Irrigated modified pastures	10.52	1.4	1.19	0.5
Residential	5.77	0.8	0.68	0.3
Mining	3.74	0.5	0.22	0.1
Irrigated perennial horticulture	2.50	0.3	0.42	0.2
Reservoir/dam	1.35	0.2	0.13	0.1
Irrigated cropping	0.74	0.1	0.19	0.1
Services	0.61	0.1	0.10	0.0
Nature conservation	0.29	Less than 0.1	0.07	0.0
Approximate total	**754.74**	**100.0**	**222.09**	**100.0**

Table note:
1 Land uses as per QLUMP

It is noted the permanent disturbance footprint will use the SFRC for approximately 438.6 ha of the total 754.74 ha (58.1 per cent) required for the permanent disturbance footprint. Land within the SFRC is mapped under the QLUMP as the existing land use; however, it should be noted the future intent of the land is for a railway corridor.

The permanent disturbance footprint will also use the existing West Moreton System and Interstate rail corridors for approximately 11.16 ha (1.5 per cent) of the total area of the permanent disturbance footprint. Although land use within the existing rail corridors continue to be mapped as the adjoining land use under QLUMP, the existing rail corridor is not used for agricultural, residential and other non-infrastructure related uses.

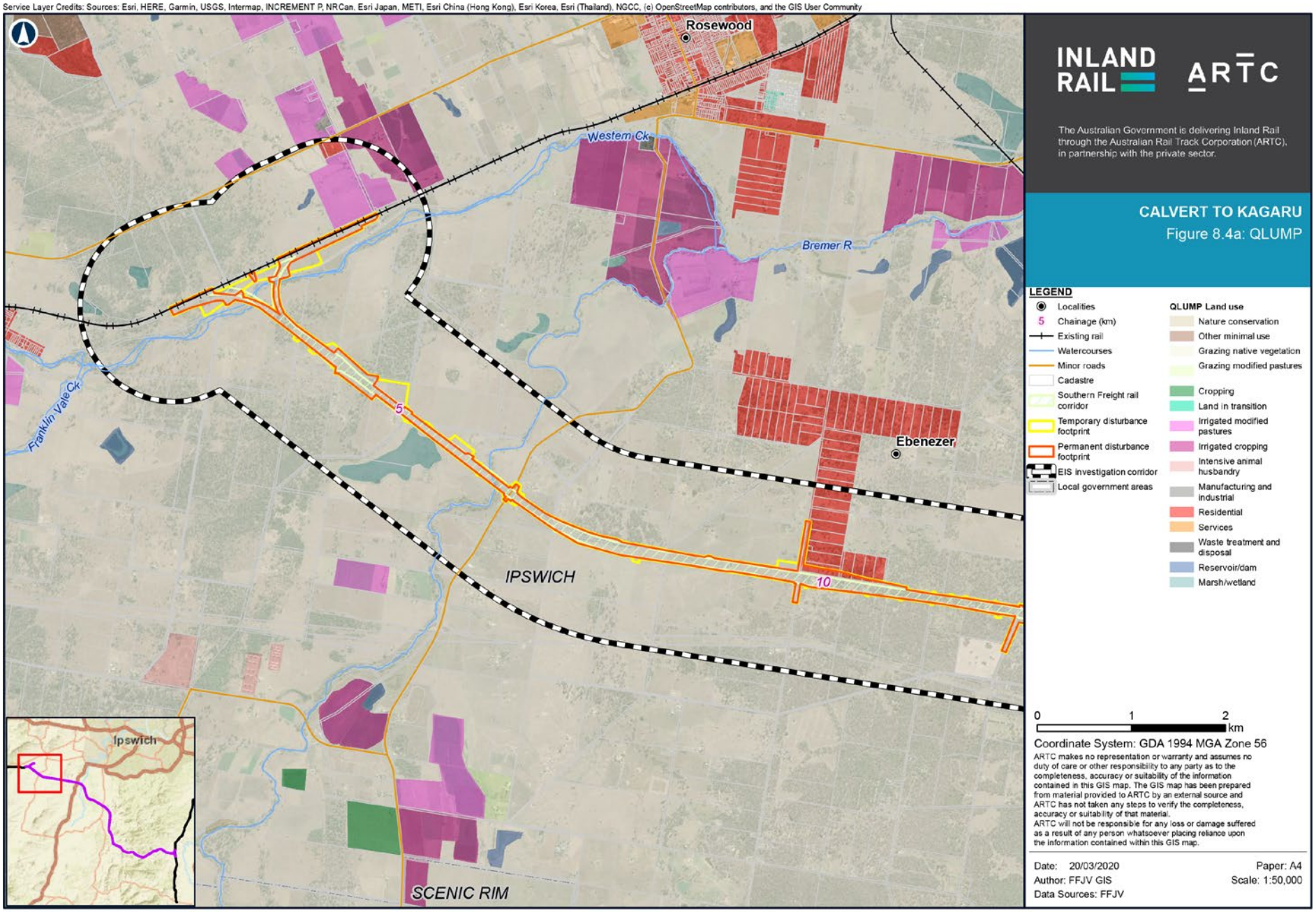
For the areas of the permanent and temporary disturbance footprint outside of the SFRC and existing rail and road corridors, land uses are mapped as being predominately grazing land (greater than 91 per cent). Other rural land uses include grazing modified pastures residential and irrigated modified pastures.

Table 8.9 provides a summary of land uses within the permanent disturbance footprint that are located outside of the SFRC and existing rail corridors.

TABLE 8.9: LAND USE WITHIN THE LAND USE STUDY AREA OUTSIDE OF THE SOUTHERN FREIGHT RAIL CORRIDOR AND EXISTING RAIL CORRIDORS

Land use[1]	Permanent disturbance footprint		Temporary disturbance footprint	
	Area (ha)	% of land	Area (ha)	% of land
Grazing native vegetation	260.80	92.5	161.60	91.4
Grazing modified pastures	9.86	3.5	13.05	7.4
Residential	4.81	1.7	0.68	0.4
Irrigated modified pastures	3.98	1.4	0.71	0.4
Irrigated perennial horticulture	0.96	0.3	0.15	0.1
Reservoir/dam	0.90	0.3	0.13	0.1
Services	0.52	0.2	0.10	0.1
Nature conservation	0.15	0.1	0.07	Less than 0.1
Irrigated cropping	0.07	Less than 0.1	0.05	Less than 0.1
Other minimal use	-	-	0.23	0.1
Total	**282.06**	**100.0**	**176.77**	**100.0**

Table note:
1 Land uses as per QLUMP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Rosewood
Western Ck
Bremer R
Franklin Vale Ck
Ebenezer
IPSWICH
SCENIC RIM
Ipswich
5
10
INLAND RAIL
ARTC
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CALVERT TO KAGARU
Figure 8.4a: QLUMP
LEGEND
Localities
Chainage (km)
Existing rail
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
QLUMP Land use
Nature conservation
Other minimal use
Grazing native vegetation
Grazing modified pastures
Cropping
Land in transition
Irrigated modified pastures
Irrigated cropping
Intensive animal husbandry
Manufacturing and industrial
Residential
Services
Waste treatment and disposal
Reservoir/dam
Marsh/wetland
0
1
2
km
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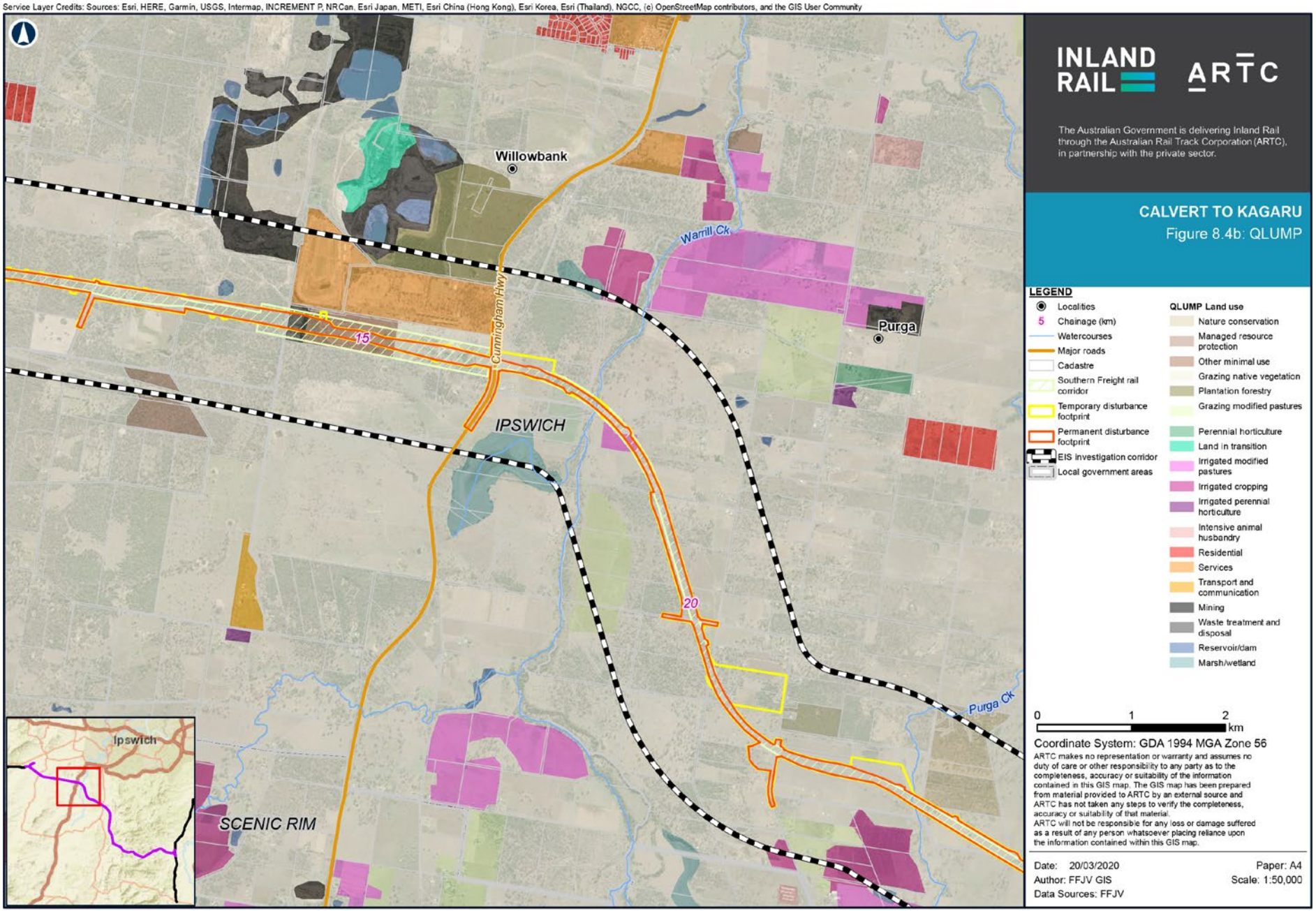
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Willowbank
Warrill Ck
Cunningham Hwy
Purga
15
IPSWICH
20
Purga Ck
Ipswich
SCENIC RIM
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
CALVERT TO KAGARU
Figure 8.4b: QLUMP
LEGEND
Localities
Chainage (km)
Watercourses
Major roads
Cadastre
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
QLUMP Land use
Nature conservation
Managed resource protection
Other minimal use
Grazing native vegetation
Plantation forestry
Grazing modified pastures
Perennial horticulture
Land in transition
Irrigated modified pastures
Irrigated cropping
Irrigated perennial horticulture
Intensive animal husbandry
Residential
Services
Transport and communication
Mining
Waste treatment and disposal
Reservoir/dam
Marsh/wetland
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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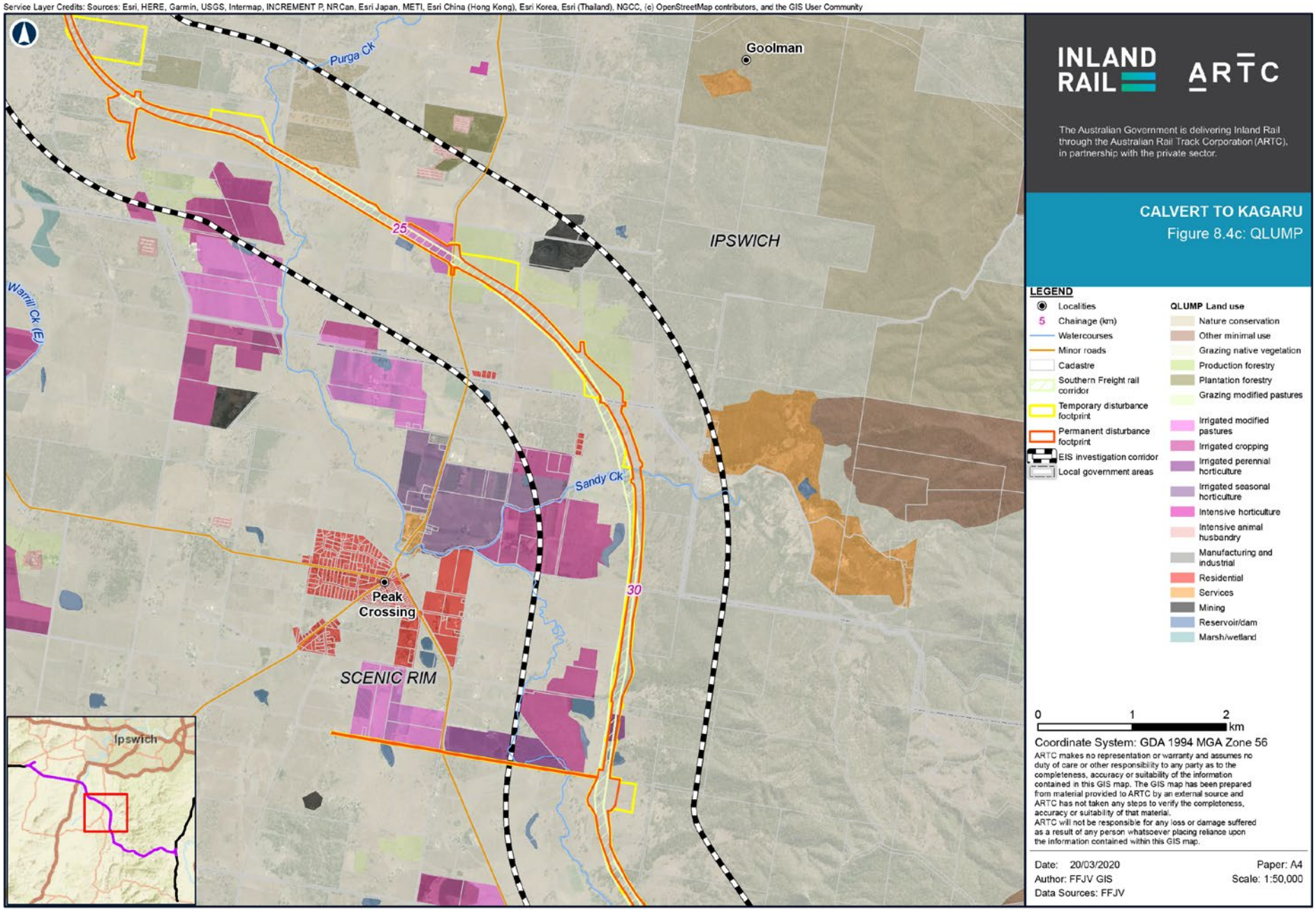
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Purga Ck
Goolman
IPSWICH
25
Warrill Ck (E)
Sandy Ck
30
Peak Crossing
SCENIC RIM
Ipswich
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
CALVERT TO KAGARU
Figure 8.4c: QLUMP
LEGEND
Localities
Chainage (km)
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
QLUMP Land use
Nature conservation
Other minimal use
Grazing native vegetation
Production forestry
Plantation forestry
Grazing modified pastures
Irrigated modified pastures
Irrigated cropping
Irrigated perennial horticulture
Irrigated seasonal horticulture
Intensive horticulture
Intensive animal husbandry
Manufacturing and industrial
Residential
Services
Mining
Reservoir/dam
Marsh/wetland
0
1
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km
Coordinate System: GDA 1994 MGA Zone 56
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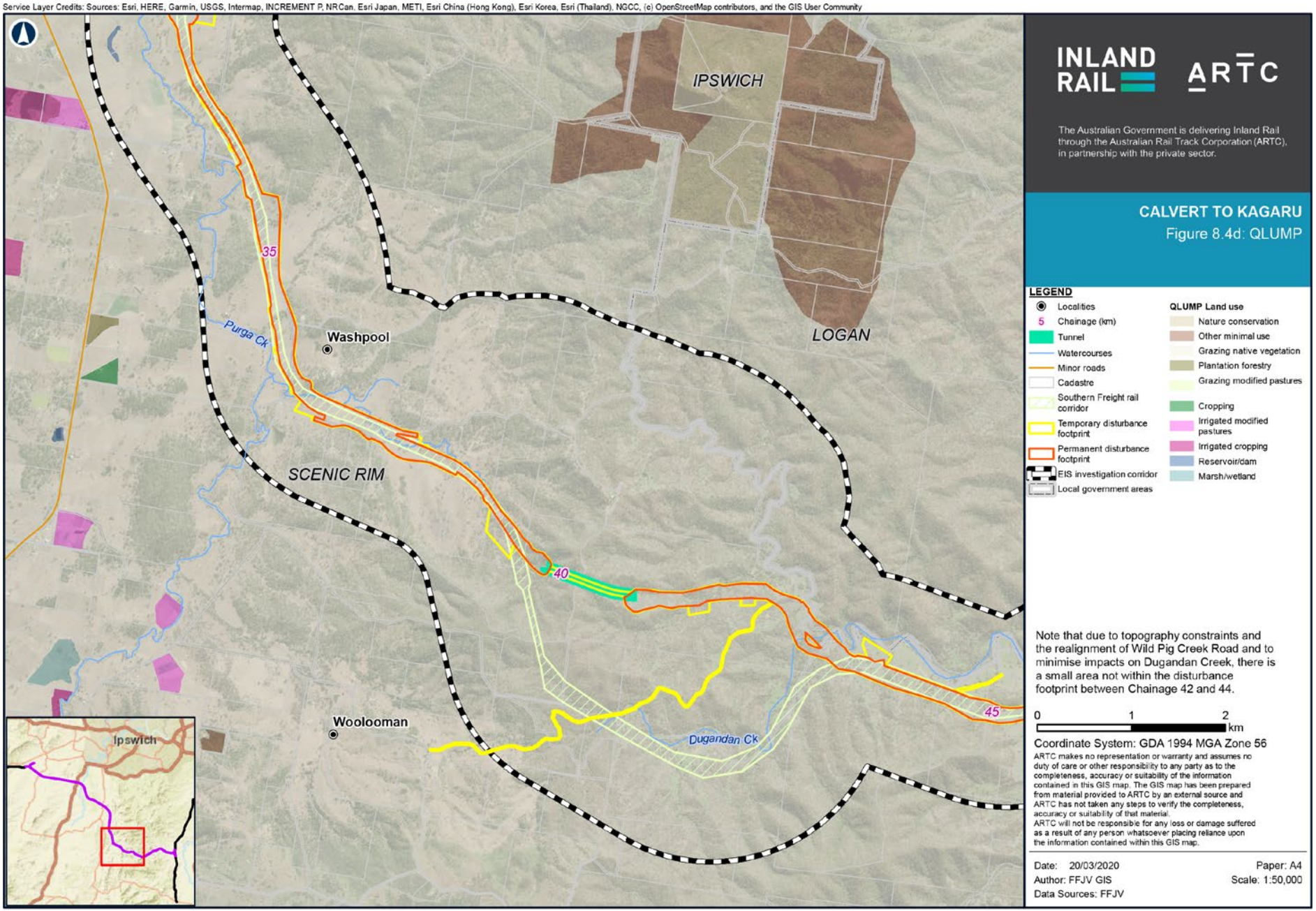
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IPSWICH
LOGAN
SCENIC RIM
Washpool
Purga Ck
Wooloolman
Dugandan Ck
35
40
45
Ipswich
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
CALVERT TO KAGARU
Figure 8.4d: QLUMP
LEGEND
Localities
Chainage (km)
Tunnel
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
QLUMP Land use
Nature conservation
Other minimal use
Grazing native vegetation
Plantation forestry
Grazing modified pastures
Cropping
Irrigated modified pastures
Irrigated cropping
Reservoir/dam
Marsh/wetland
Note that due to topography constraints and the realignment of Wild Pig Creek Road and to minimise impacts on Dugandan Creek, there is a small area not within the disturbance footprint between Chainage 42 and 44.
0 1 2 km
Coordinate System: GDA 1994 MGA Zone 56
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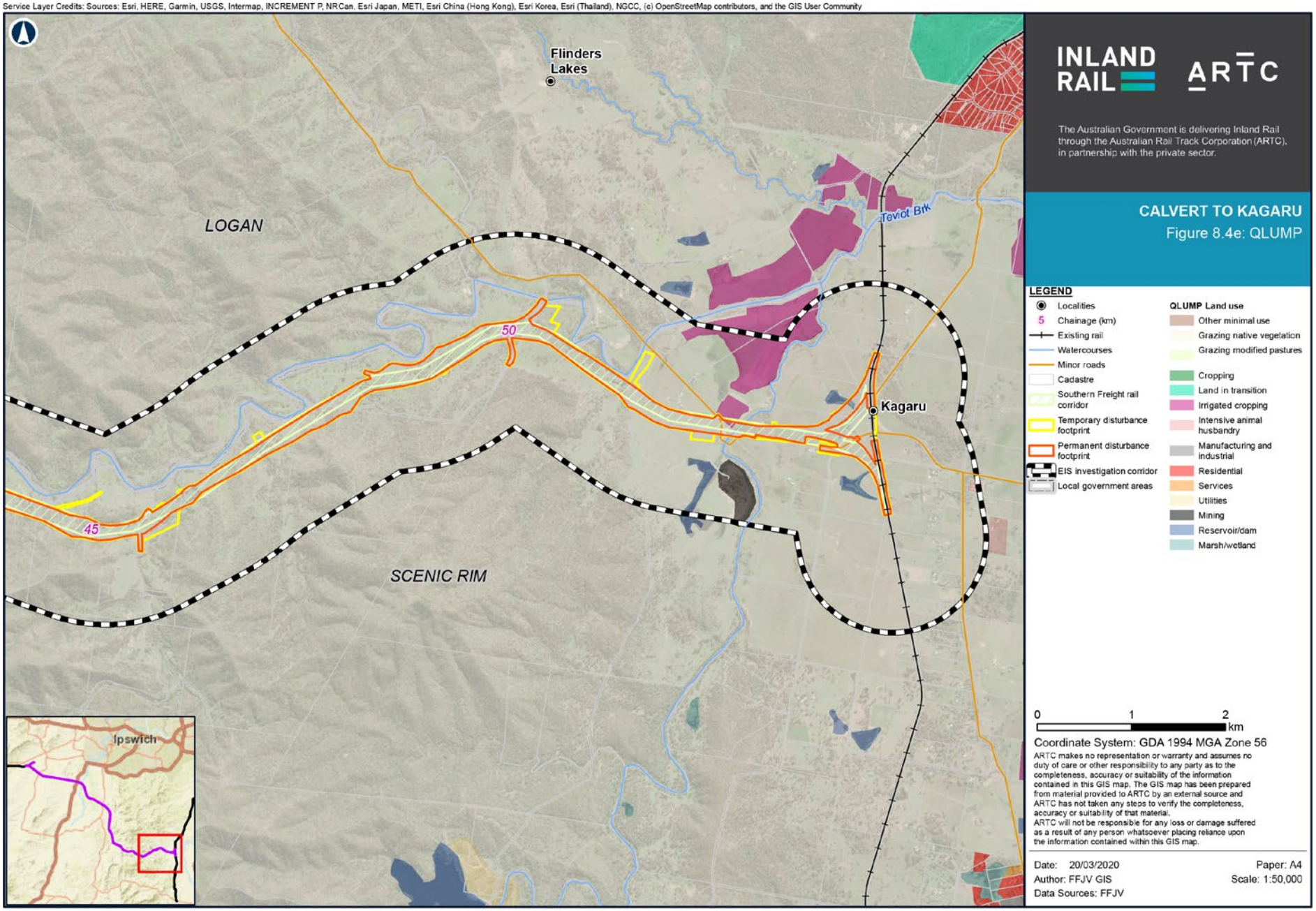
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Flinders Lakes
LOGAN
Teviot Brk
50
Kagaru
45
SCENIC RIM
Ipswich
INLAND RAIL
ARTC
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CALVERT TO KAGARU
Figure 8.4e: QLUMP
LEGEND
Localities
Chainage (km)
Existing rail
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
QLUMP Land use
Other minimal use
Grazing native vegetation
Grazing modified pastures
Cropping
Land in transition
Irrigated cropping
Intensive animal husbandry
Manufacturing and industrial
Residential
Services
Utilities
Mining
Reservoir/dam
Marsh/wetland
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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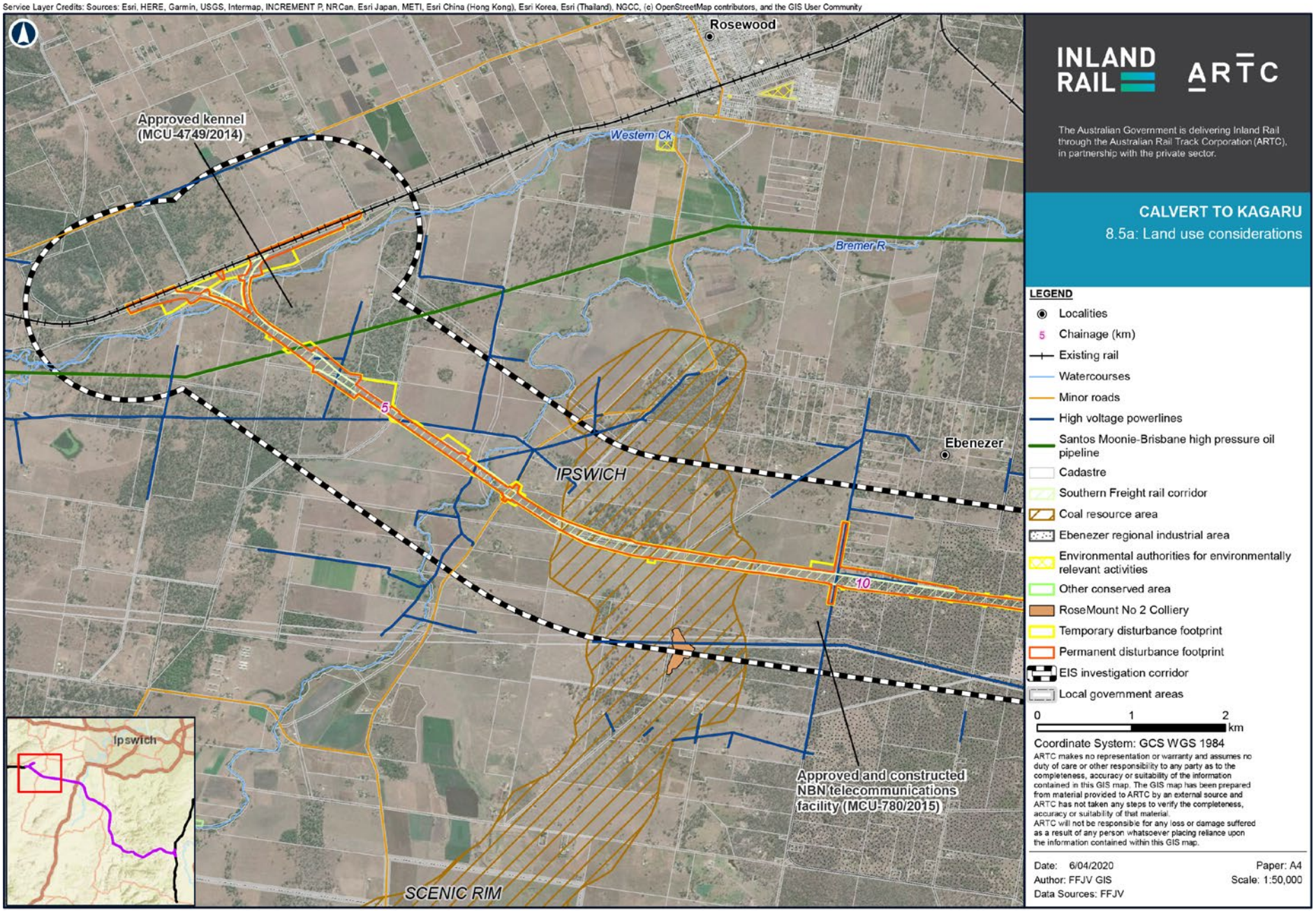
Notable land uses within, or in proximity to, the land use study area are summarised in Table 8.10 and shown on Figure 8.5a to Figure 8.5e. Notable land uses include areas where there are multiple residential and commercial uses, mining operations and land uses of State significance (i.e. reserves and KRAs).

TABLE 8.10: NOTABLE EXISTING LAND USES

Notable existing land uses	Description and location	Relation to land use study area	Approximate chainage
Gum Tips Nature Refuge	The Gum Tips Nature Refuge is an area of land protected for nature conservation while allowing compatible land uses to continue	Approximately 660 m south of the land use study area at Ebenezer	Ch 13.0 km
Disused Ebenezer coal mine	The Ebenezer coal mine is no longer in operation, with the land of the former mine site under rehabilitation. As of January 2020, there is a proposal to transform the disused site into the 'Wanless Recycling Park', a resource recovery and recycling precinct. The development application is currently under assessment by ICC	Partially within the land use study area at Ebenezer	Ch 12.4 km to Ch 13.1 km
JNJ Resources—Bentonite product production	JNJ Resources is a commercial operation that produces bentonite products	Partially within the land use study area at Willowbank	Ch 14.3 km to Ch 16.3 km
Ipswich Motorsport Precinct	Facilities within the Ipswich Motorsport Precinct include the Ipswich Kart Club, Ipswich City Dirt Kart Club, Ipswich West Morton Auto Club, Queensland Raceway, Rally School and Willowbank Raceway Drag Strip	Partially within the land use study area at Willowbank	Ch 14.3 km to Ch 16.3 km
Purga Nature Reserve	The Purga Nature Reserve is located approximately 100 m to the north of the land use study area at Purga. The Purga Nature Reserve is owned by ICC and offers facilities that include a bushwalking track	Approximately 100 m north of the land use study area at Purga	Ch 21.8 km
Irrigated cropping and modified pastures	Multiple land parcels that are identified to be used for more intensive agricultural practices other than grazing, including irrigated cropping and irrigated modified pastures	Within and adjacent to the land use study area when passing through Purga and Peak Crossing	Ch 23.0 km to Ch 32.0 km
Purga KRA (KRA 82)	The Purga KRA is a quarry operated by Boral	Approximately 100 m to the north-east of the land use study area at Purga	Ch 26.4 km
Ivory's Rock Conventions and Events Centre	Ivory's Rock Conventions and Events Centre is a large outdoor recreational facility that offers conferences and events throughout the year. This facility includes a caravan park and camping grounds that were opened in June 2020.	Approximately 1 km to the east of the land use study area at Peak Crossing	Ch 28.6 km
Teviot Range	The Teviot Range is predominantly rugged and mountainous terrain with native vegetation	The land use study area passes through the Teviot Range	Ch 40.0 km to Ch 44.0 km
Sand and soil quarry (SEQ Sand and Soil)	SEQ Sand and Soil is a commercial operation that produces sand and soil products	Approximately 300 m to the south of the land use study area at Kagaru	Ch 52.5 km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Rosewood
Approved kennel (MCU-4749/2014)
Western Ck
Bremer R
5
IPSWICH
Ebenezer
10
Approved and constructed NBN telecommunications facility (MCU-780/2015)
SCENIC RIM
Ipswich
INLAND RAIL
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CALVERT TO KAGARU
8.5a: Land use considerations
LEGEND
Localities
Chainage (km)
Existing rail
Watercourses
Minor roads
High voltage powerlines
Santos Moonie-Brisbane high pressure oil pipeline
Cadastre
Southern Freight rail corridor
Coal resource area
Ebenezer regional industrial area
Environmental authorities for environmentally relevant activities
Other conserved area
RoseMount No 2 Colliery
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
0 1 2 km
Coordinate System: GCS WGS 1984
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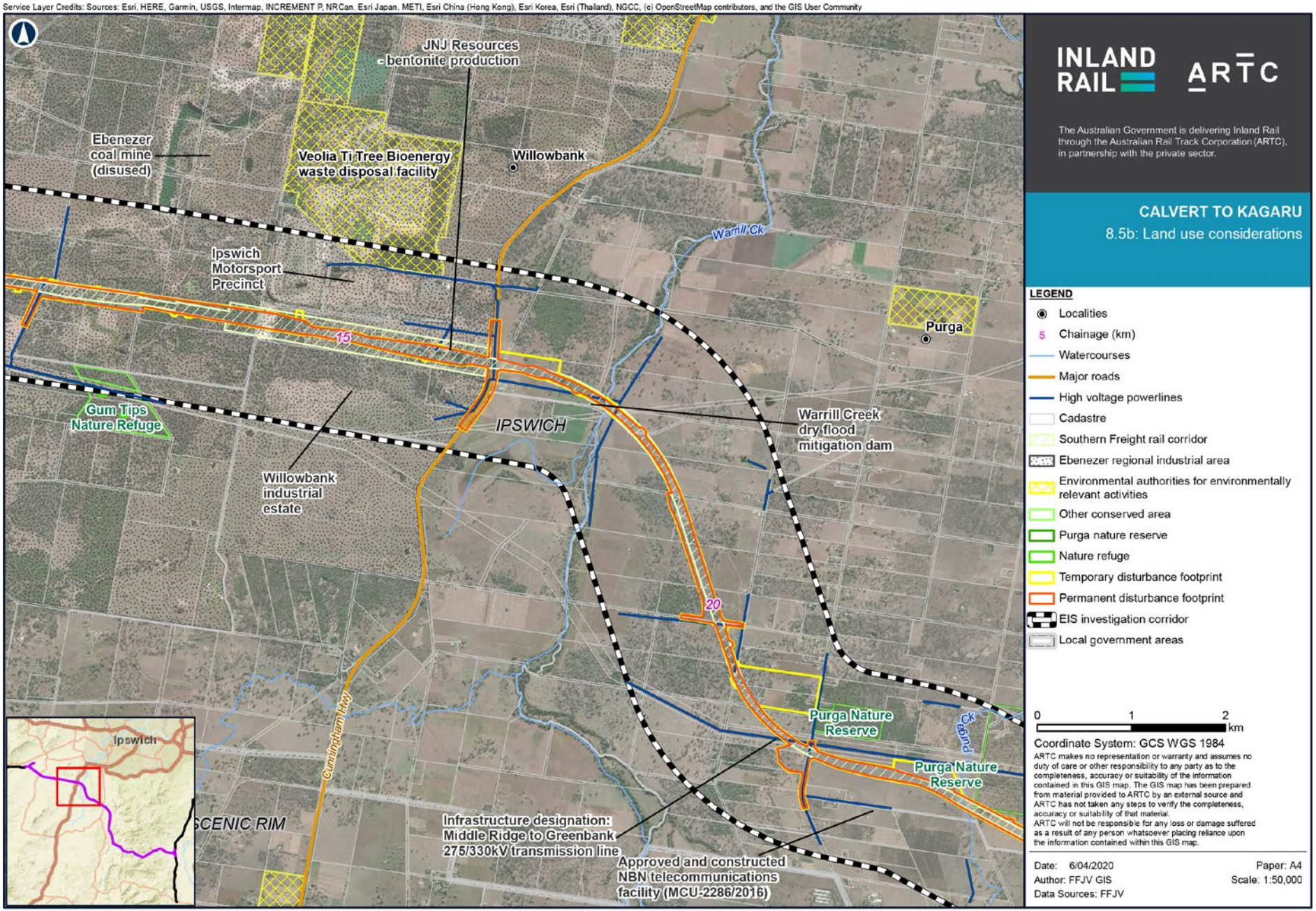
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JNJ Resources - bentonite production
Ebenezer coal mine (disused)
Veolia Ti Tree Bioenergy waste disposal facility
Willowbank
Warrill Ck
Ipswich Motorsport Precinct
15
Purga
Gum Tips Nature Refuge
IPSWICH
Warrill Creek dry flood mitigation dam
Willowbank industrial estate
20
Purga Nature Reserve
Purga Ck
Purga Nature Reserve
Cunningham Hwy
Ipswich
SCENIC RIM
Infrastructure designation: Middle Ridge to Greenbank 275/330kV transmission line
Approved and constructed NBN telecommunications facility (MCU-2286/2016)
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8.5b: Land use considerations
LEGEND
Localities
Chainage (km)
Watercourses
Major roads
High voltage powerlines
Cadastre
Southern Freight rail corridor
Ebenezer regional industrial area
Environmental authorities for environmentally relevant activities
Other conserved area
Purga nature reserve
Nature refuge
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
0
1
2
km
Coordinate System: GCS WGS 1984
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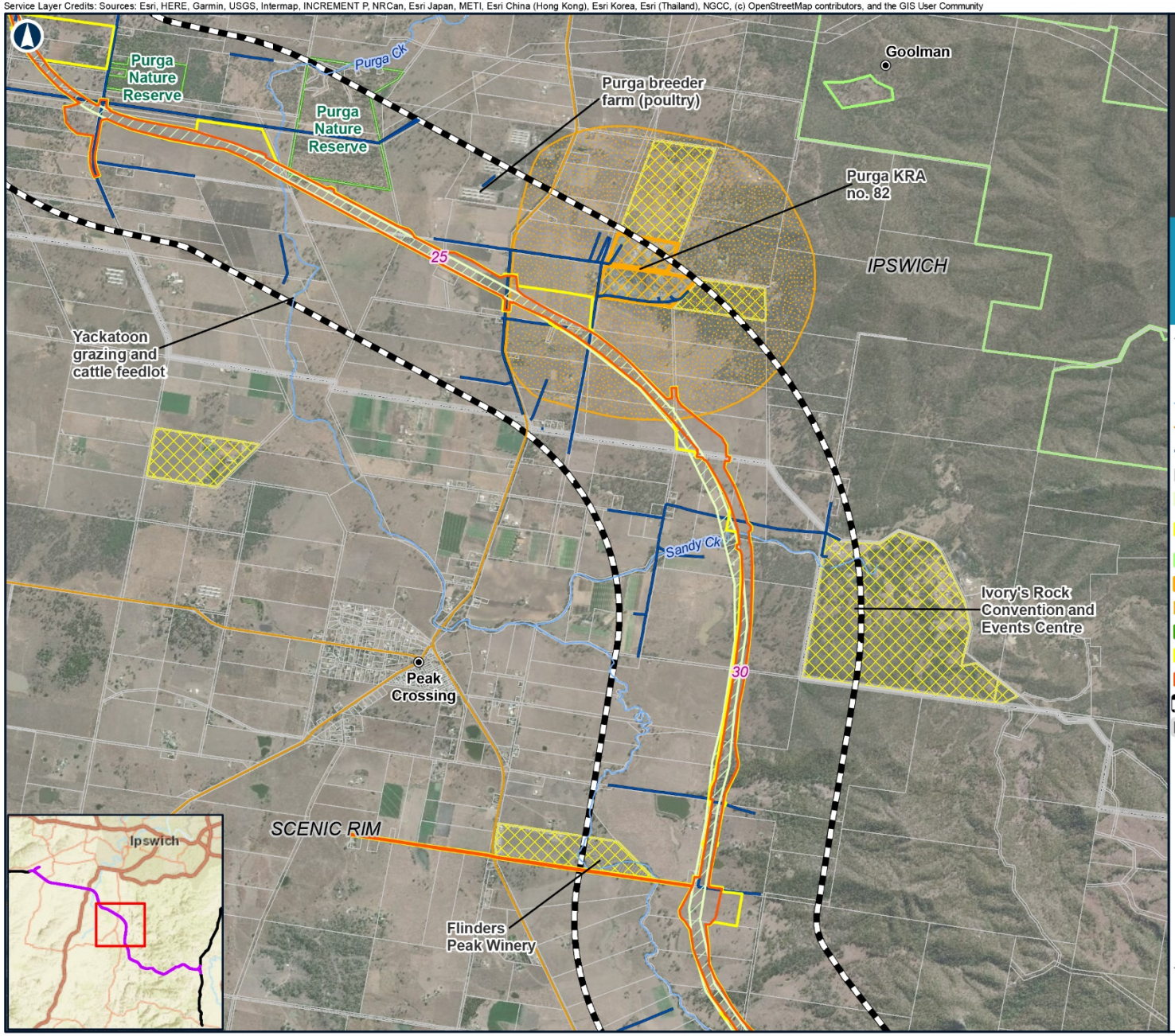

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CALVERT TO KAGARU

8.5c: Land use considerations

LEGEND

- Localities
- 5 Chainage (km)
- Watercourses
- Minor roads
- High voltage powerlines
- Cadastre
- Southern Freight rail corridor
- Environmental authorities for environmentally relevant activities
- Other conserved area
- Key resource area (resource processing area)
- Key resource area (separation area)
- Purga nature reserve
- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor
- Local government areas

0 1 2 km

Coordinate System: GCS WGS 1984

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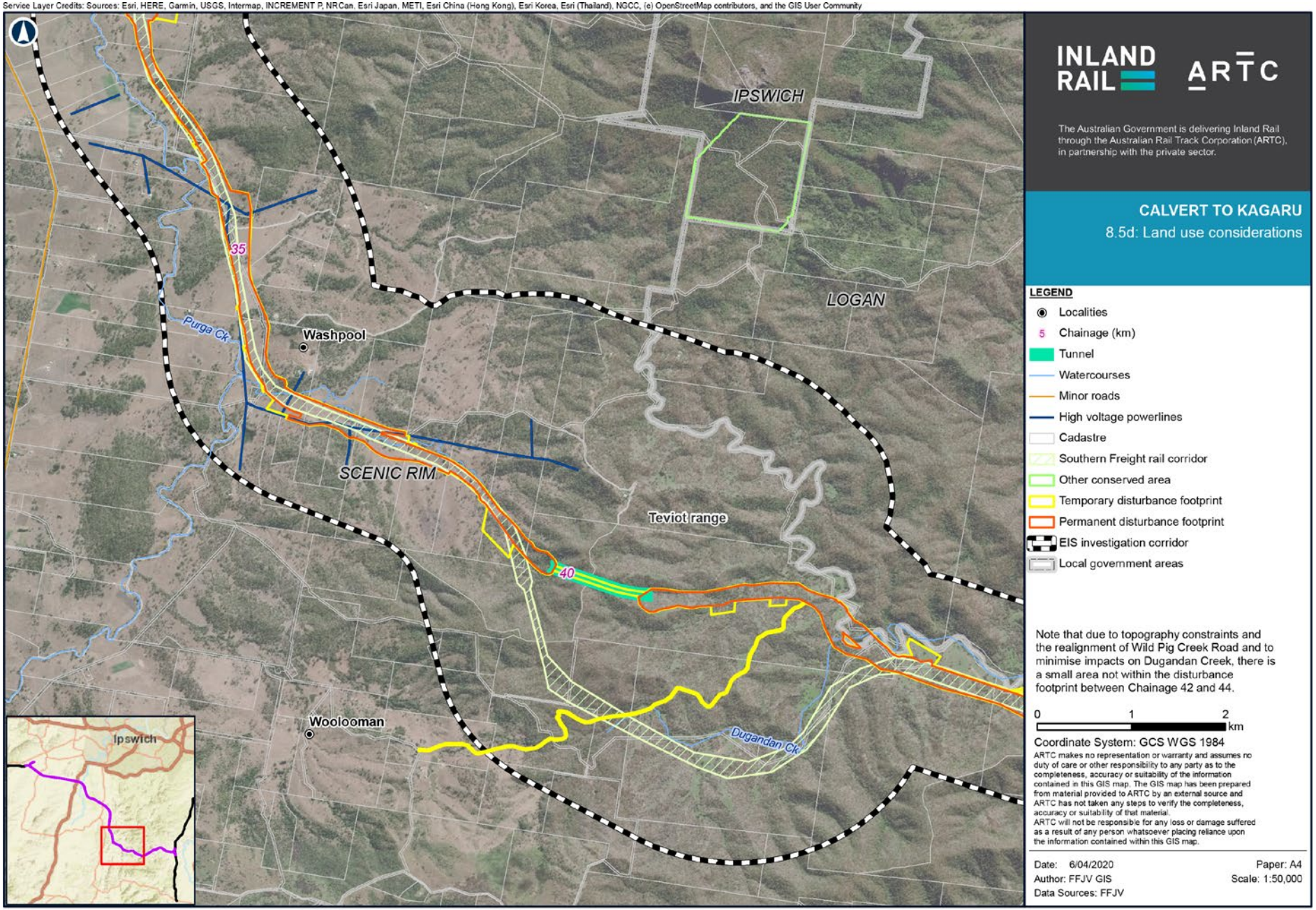
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IPSWICH
LOGAN
SCENIC RIM
Teviot range
Washpool
Purga Ck
Wooloowan
Dugandan Ck
35
40
Ipswich
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ARTC
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CALVERT TO KAGARU
8.5d: Land use considerations
LEGEND
Localities
Chainage (km)
Tunnel
Watercourses
Minor roads
High voltage powerlines
Cadastre
Southern Freight rail corridor
Other conserved area
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
Note that due to topography constraints and the realignment of Wild Pig Creek Road and to minimise impacts on Dugandan Creek, there is a small area not within the disturbance footprint between Chainage 42 and 44.
0
1
2
km
Coordinate System: GCS WGS 1984
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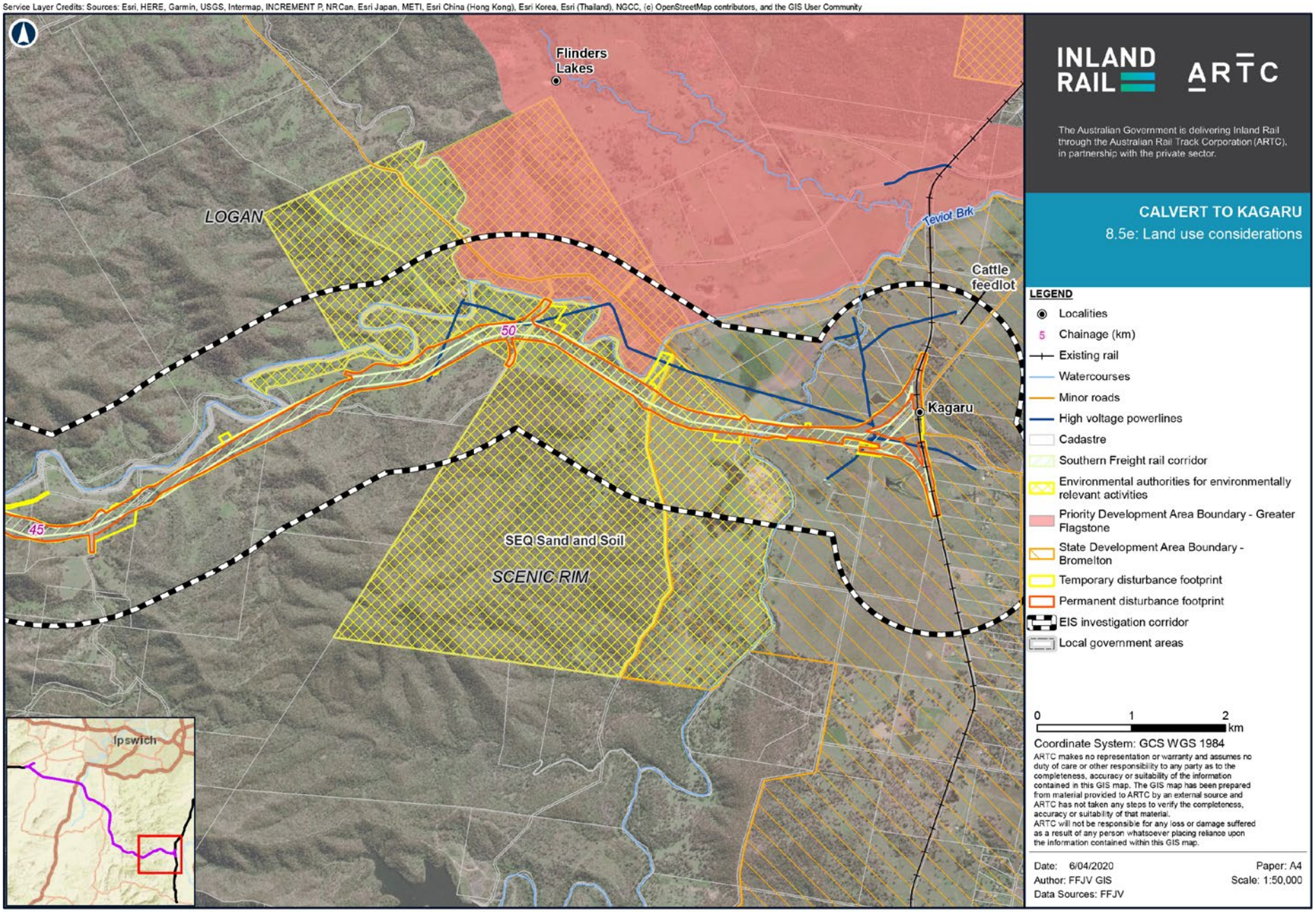
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Flinders Lakes
LOGAN
Teviot Brk
Cattle feedlot
50
Kagaru
45
SEQ Sand and Soil
SCENIC RIM
Ipswich
INLAND RAIL
ARTC
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8.5e: Land use considerations
LEGEND
Localities
Chainage (km)
Existing rail
Watercourses
Minor roads
High voltage powerlines
Cadastre
Southern Freight rail corridor
Environmental authorities for environmentally relevant activities
Priority Development Area Boundary - Greater Flagstone
State Development Area Boundary - Bromelton
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Local government areas
0
1
2
km
Coordinate System: GCS WGS 1984
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8.5.2.1 Agricultural uses and activities

Queensland Agricultural Land Audit

The *Queensland Agricultural Land Audit* (the Audit) identifies land that is of importance to current and future agricultural production across QLD. The Audit seeks to provide information on the location, extent and character of land currently used for agriculture, and to identify areas with potential for future agricultural development.

The Audit assesses current and potential agricultural land uses based on 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, and poultry in SEQ only, eggs 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 QLD Government maintained registers of 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 8.11.

TABLE 8.11: DEFINITION OF AGRICULTURAL LAND CLASSES

Agricultural Land Class	Description
Land Class A—Crop land	Land that is suitable for a wide range[1] 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[2] 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 precludes 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.
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 is an urbanised area.

Table notes:
1 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.
2 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 and Fisheries (2013) *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 QLD, 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 Class B land is the key component of the State's interest in agriculture under the SPP.

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 is 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 (Department of Agriculture, Fisheries and Forestry (DAFF) (now the Department of Agriculture and Fisheries (DAF)) 2013c). 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 QLD in 2013: SEQ; Darling Downs; Wide Bay Burnett; Central West; South West; Central Queensland; Mackay, Isaac and Whitsunday; Charters Towers; Far North Queensland; Gulf; North West; and the Cape. The Project is located within the SEQ region. 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.

The Audit outlines that the dominant agricultural industries in the SEQ region as horticulture, poultry, cattle, dairy and cultivated turf (DAFF, 2013a).

At a local government level, the Audit identifies:

- Land under agriculture production is declining within the ICC LGA; however, recognising that ICC has the established capacity to provide services such as transport and manufacturing to support and expand agriculture in surrounding LGAs
- The current predominant industry within the Scenic Rim is grazing. The Audit notes that the Scenic Rim also supports a diverse range of horticultural crops, extensive poultry production and dairy. The Scenic Rim provides 90 per cent of QLD's carrots. It also produces other vegetables, fruit, flowers and cattle, and has a burgeoning boutique food industry (wines, cheese and olives). The Audit also notes that the dairy sector within the Scenic Rim has declined.

The Audit also identifies the following strengths for the region:

- SEQ is in close proximity to major transport hubs (airport, rail and ports) for interstate and international markets
- The region 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
- The region supplies quarry material (including material from native forests on state land) for infrastructure and construction requirements.

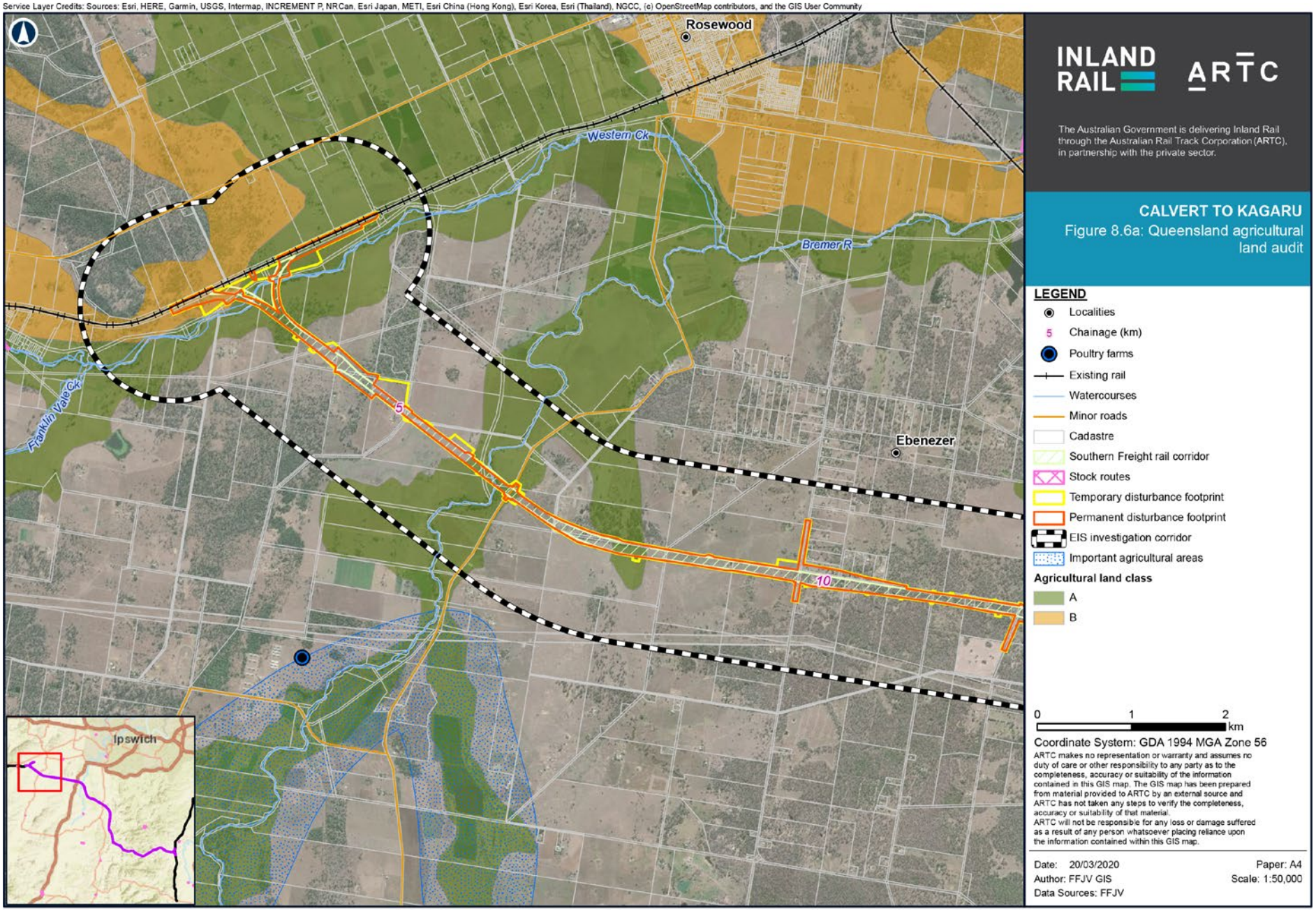
There are three areas identified as IAAs within the SEQ region. The Scenic Rim IAA is located within the land use study area at Peak Crossing and at Kagaru. The Scenic Rim IAA is identified as having opportunity to expand the production areas of perennial horticulture, cropping, annual horticulture and grazing. The soils, water supply and a mild winter climate across the Scenic Rim IAA allows for development of significant agricultural enterprises within close proximity to the Brisbane markets.

Relevance to the Project

Land classified by the Audit located within the land use study area is summarised in Table 8.12 and illustrated on Figure 8.6.

TABLE 8.12: AGRICULTURAL LAND IDENTIFIED BY THE AUDIT WITHIN THE LAND USE STUDY AREA

Agricultural Land Audit Theme	Permanent disturbance footprint		Temporary disturbance footprint	
	Area (ha)	% of land within permanent disturbance footprint	Area (ha)	% of land within temporary disturbance footprint
Land Class A	62.48	8.3	27.82	12.5
Land Class B	17.19	2.3	7.19	3.2
IAA	88.06	11.7	33.55	15.1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Rosewood
Western Ck
Bremer R
Franklin Vale Ck
Ebenezer
5
10
Ipswich
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Figure 8.6a: Queensland agricultural land audit
LEGEND
Localities
Chainage (km)
Poultry farms
Existing rail
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Stock routes
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Important agricultural areas
Agricultural land class
A
B
0
1
2
km
Coordinate System: GDA 1994 MGA Zone 56
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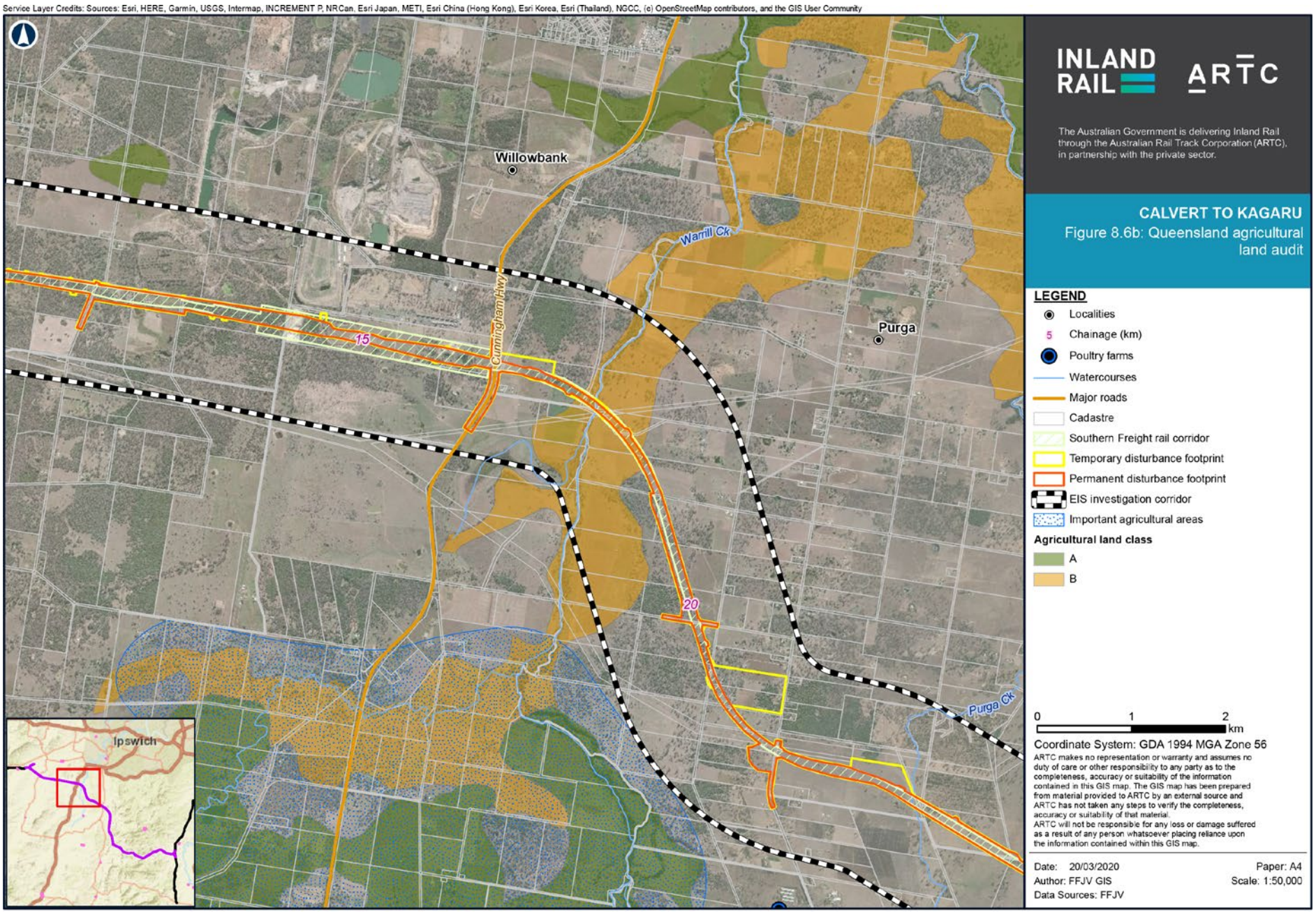
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Willowbank
Warrill Ck
Cunningham Hwy
Purga
15
20
Purga Ck
Ipswich
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CALVERT TO KAGARU
Figure 8.6b: Queensland agricultural land audit
LEGEND
Localities
Chainage (km)
Poultry farms
Watercourses
Major roads
Cadastre
Southern Freight rail corridor
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Important agricultural areas
Agricultural land class
A
B
0
1
2
km
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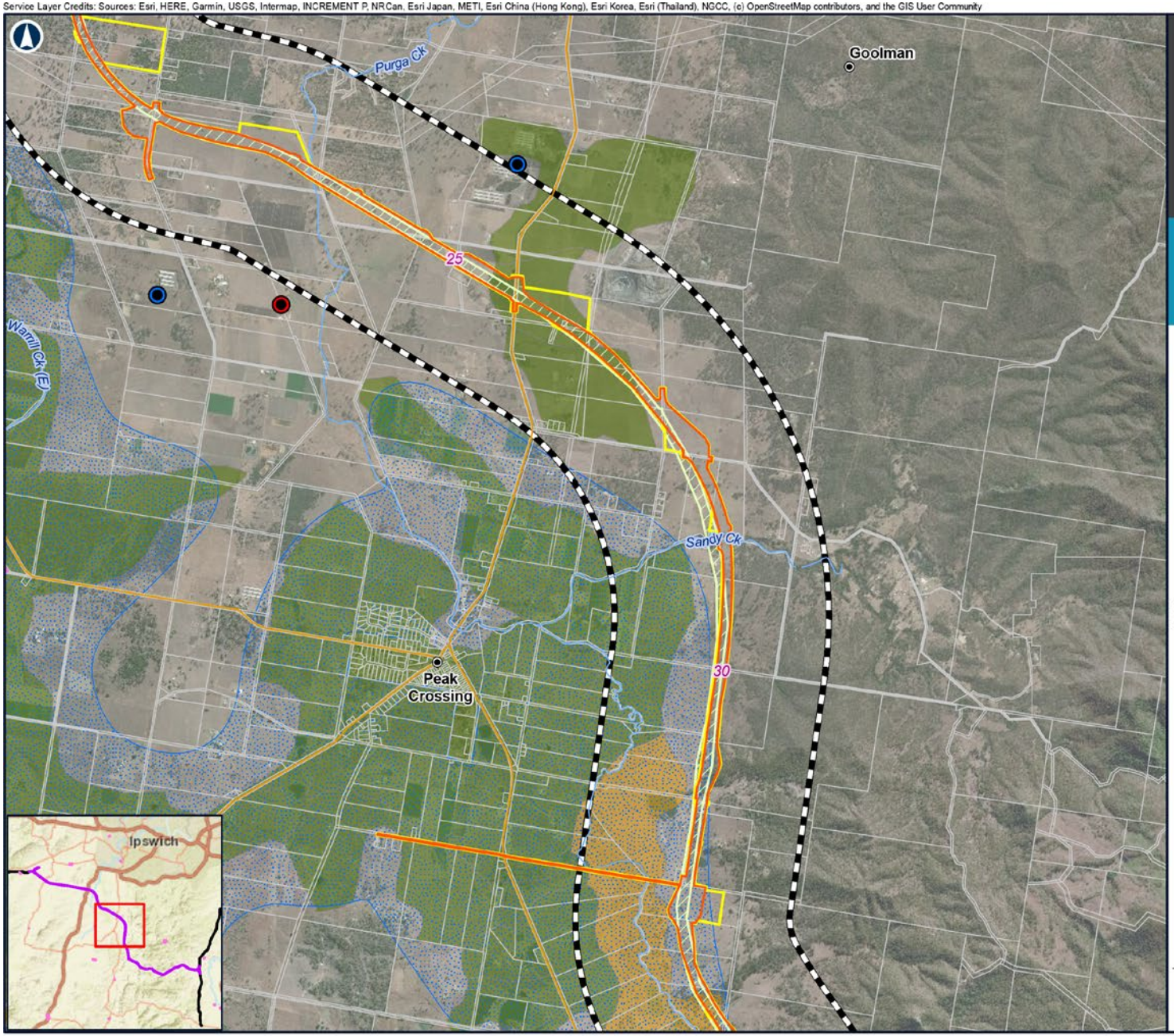

INLAND RAIL ARTC

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CALVERT TO KAGARU

Figure 8.6c: Queensland agricultural land audit

LEGEND

- Localities
- 5 Chainage (km)
- Cattle feedlots
- Poultry farms
- Watercourses
- Minor roads
- Cadastre
- Southern Freight rail corridor
- Stock routes
- Temporary disturbance footprint
- Permanent disturbance footprint
- EIS investigation corridor
- Important agricultural areas

Agricultural land class

- A
- B

0 1 2 km

Coordinate System: GDA 1994 MGA Zone 56

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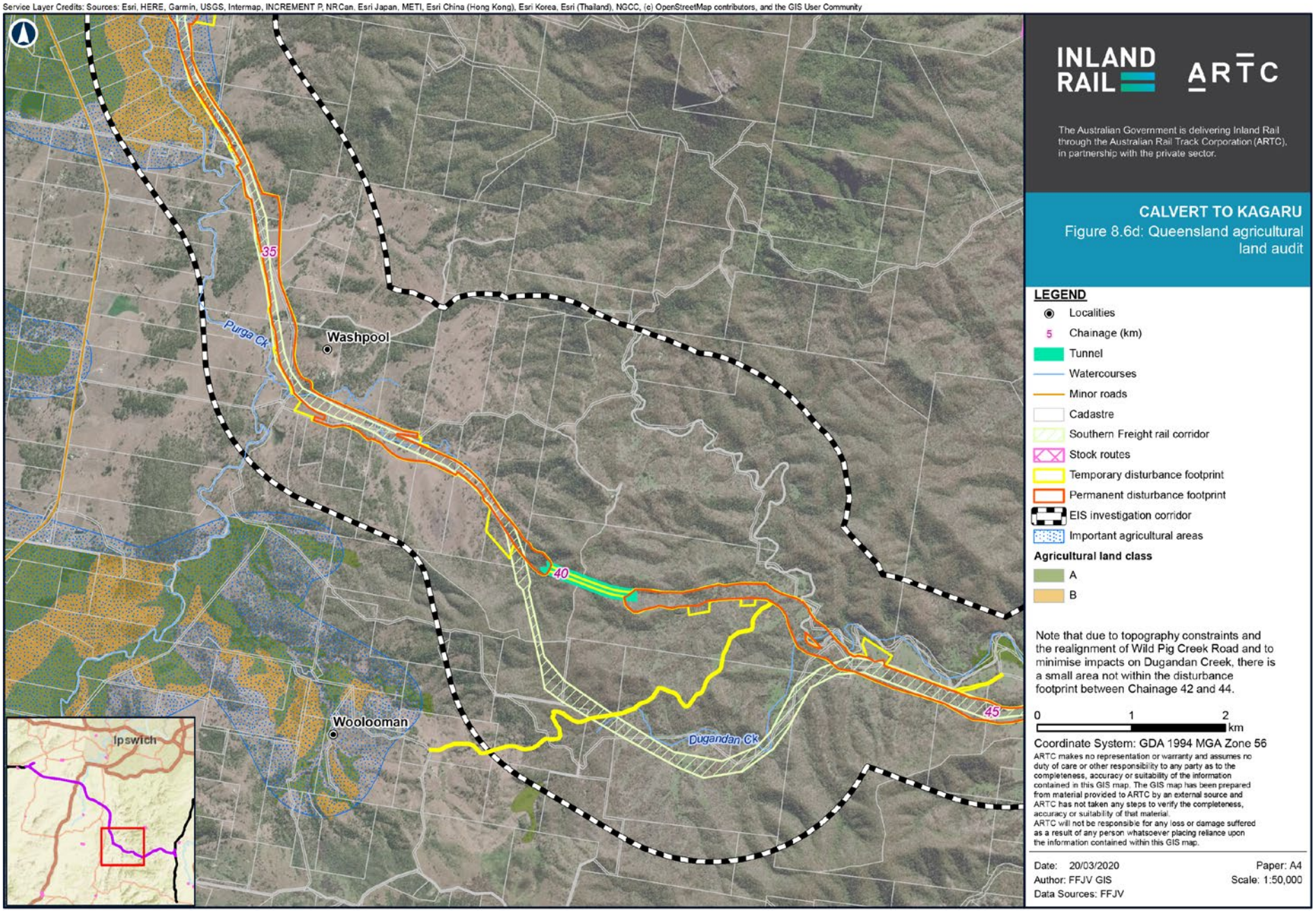
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INLAND RAIL
ARTC
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CALVERT TO KAGARU
Figure 8.6d: Queensland agricultural land audit
LEGEND
Localities
Chainage (km)
Tunnel
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Stock routes
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Important agricultural areas
Agricultural land class
A
B
Note that due to topography constraints and the realignment of Wild Pig Creek Road and to minimise impacts on Dugandan Creek, there is a small area not within the disturbance footprint between Chainage 42 and 44.
0 1 2 km
Coordinate System: GDA 1994 MGA Zone 56
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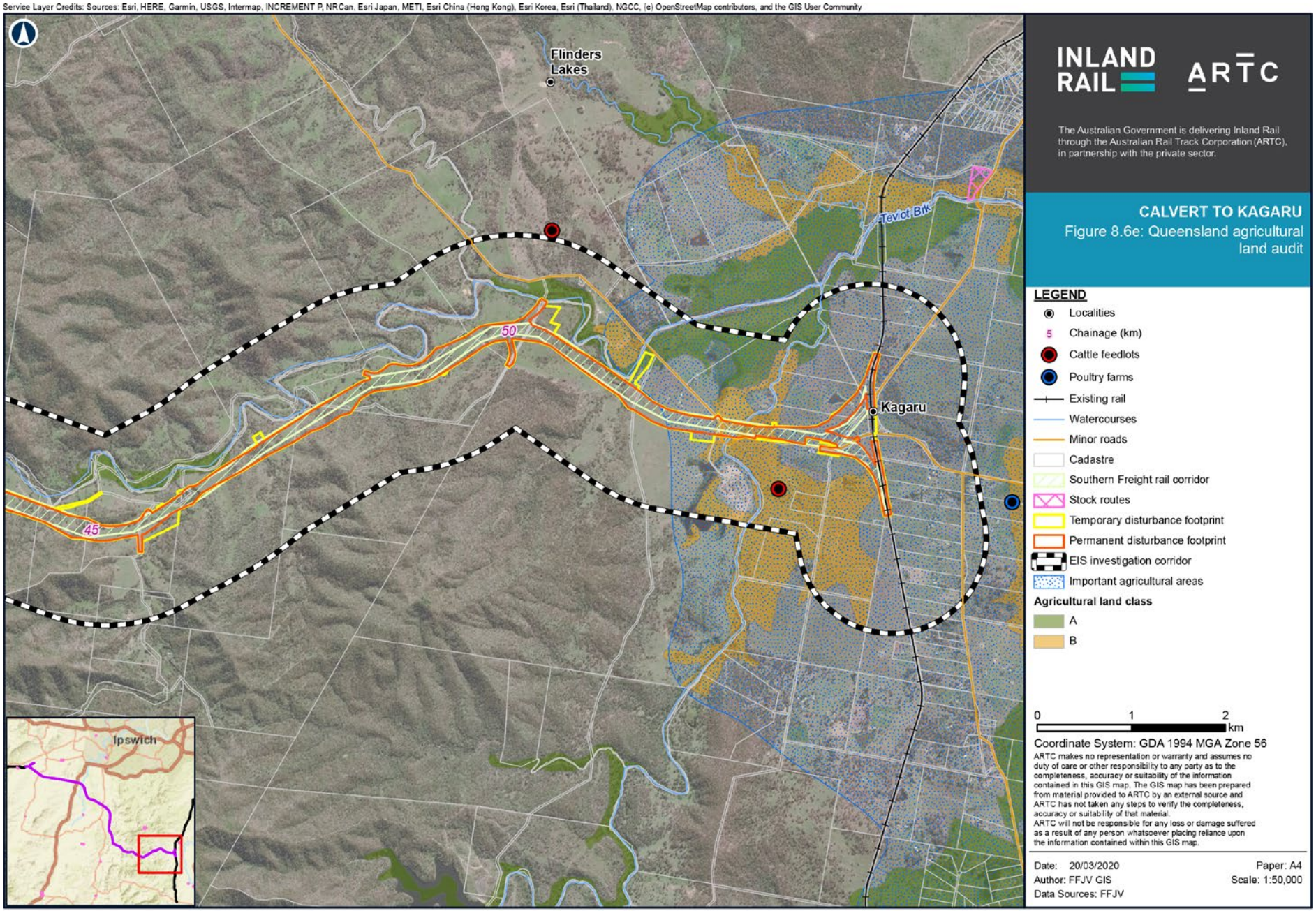
Paper: A4
Author: FFJV GIS
Scale: 1:50,000
Data Sources: FFJV
Washpool
Purga Ck
Woolooman
Dugandan Ck
35
40
45
Ipswich
Map by: RB/DTH/CB/MEF Z:\GIS\GIS_3400_C2K\Tasks\340-EAP-201905150945_Land_use_and tenure\340-EAP-201905150945_ARTC_Fig8.6_Agricultural_land_v8.mxd Date: 23/03/2020 17:13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Flinders Lakes
Teviot Brk
Kagaru
50
45
Ipswich
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
CALVERT TO KAGARU
Figure 8.6e: Queensland agricultural land audit
LEGEND
Localities
Chainage (km)
Cattle feedlots
Poultry farms
Existing rail
Watercourses
Minor roads
Cadastre
Southern Freight rail corridor
Stock routes
Temporary disturbance footprint
Permanent disturbance footprint
EIS investigation corridor
Important agricultural areas
Agricultural land class
A
B
0 1 2 km
Coordinate System: GDA 1994 MGA Zone 56
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It is noted that the permanent disturbance footprint will use the SFRC and existing rail and road corridors for approximately 472.68 ha (62.6 per cent) of the total area of the permanent disturbance footprint. The SFRC and existing rail corridors are mapped as containing Class A land, Class B land and are within an IAA. However, the future intent of land within the SFRC is recognised by the State as railway.

On this basis, it is important to assess land proposed within the land use study area located outside of the SFRC and existing rail corridors.

Of the remaining 282.06 ha of land within the permanent disturbance footprint, approximately 13.87 ha (4.9 per cent) is Class A land, 5.73 ha (2.0 per cent) is Class B land and 34.70 ha is within an IAA (12.3 per cent) (refer Table 8.13).

TABLE 8.13: AGRICULTURAL LAND IDENTIFIED BY THE AUDIT WITHIN THE LAND USE STUDY AREA WHERE LOCATED OUTSIDE OF THE SOUTHERN FREIGHT RAIL CORRIDOR AND EXISTING ROAD AND RAIL CORRIDORS

Agricultural Land Audit Theme	Permanent disturbance footprint located outside of the SRFC and existing road and rail corridors	
	Area (ha)	% of land within permanent disturbance located outside of SFRC
Land Class A	13.87	4.9
Land Class B	5.73	2.0
IAA	34.70	12.3

Intensive animal husbandry

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 activity under the EP Act.

One current intensive livestock operation was identified within the land use study area and an additional two operations were identified to be within 1 km of the land use study area, as summarised in Table 8.14 and shown on Figure 8.6.

TABLE 8.14: CURRENT INTENSIVE LIVESTOCK OPERATIONS TRAVERSED BY, OR WITHIN PROXIMITY, TO THE LAND USE STUDY AREA

Type	Name	Licence number (administered by the Department of Agriculture and Fisheries)	Development approval capacity (maximum standard animal units)	Location	Relation to the Project
Cattle Feedlot	J Allen Pty Ltd (Yackatoon Grazing Co)	F1-0151	288	1042 Middle Road, Peak Crossing	Land parcels associated with the Yackatoon Grazing Co Feedlot are located 300 m to the south-west of the land use study area at Peak Crossing, at approximately Ch 24.0 km.
Poultry Farm	Bartter Enterprises Pty Ltd (Purga Breeder Farm)	200406	1,000 to 20,000	867 Ipswich Boonah Road, Purga	The land parcel associated with the Purga Breeder Farm is located 400 m to the north-east of the land use study area at Purga, at approximately Ch 24.7 km.
Cattle Feedlot	D.E Brennan	FL 363	220	200 Kilmoylar Road, Kagaru	Approximately 0.38 ha of the land parcel associated this registered Cattle Feedlot (Lot 26 on RP860391) is within the land use study area at Kagaru, between approximately Ch 52.8 km to Ch 53.8 km.

Stock routes

Stock routes are corridors on roads, reserves, pastoral leases and unallocated State land 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 QLD is administered under three Acts:

- *Stock Route Management Act 2002*
- *Land Act 1994*
- *Transport Infrastructure Act 1994.*

The land use study area does not traverse any formal stock routes.

8.5.2.2 Protected and sensitive land

Gum Tips Nature Refuge

Nature refuges are established where a voluntary agreement has been entered into between a property owner and the QLD Government to protect areas of land for nature conservation while allowing compatible land uses to continue. A nature refuge is a protected area under Section 14 of the *Nature Conservation Act 1992* (NC Act).

The Gum Tips Nature Refuge at Ebenezer is located approximately 600 m south of the land use study area at approximate Ch 13.0 km and is shown on Figure 8.5a and Figure 8.5b.

Purga Nature Reserve

The Purga Nature Reserve is owned by ICC, offering facilities including a bushwalking track and is identified to contain the Swamp Tea-tree Forest, which is a Threatened Ecological Community under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

The Purga Nature Reserve is located approximately 100 m to the north-east of the land use study area at approximate Ch 21.8 km and is shown on Figure 8.5b and Figure 8.5c.

Biodiversity corridors

Biodiversity corridors are identified within the Biodiversity Planning Assessment (BPA). The BPA draws on the Department of Environment and Science's (DES) certified regional ecosystem (RE) mapping, database information, and expert panel reports and incorporates information about threatened ecosystems and/or species, large tracts of habitat in good condition, ecosystem diversity, landscape context and connection, as well as buffers to wetlands or other types of important areas for ecological processes.

The BPA assigns areas into one of three biodiversity significance levels, including:

1. State significance—areas assessed as being significant for biodiversity at the bioregional or State scales
2. Regional significance—areas assessed as being significant for biodiversity at the sub-bioregional scale
3. Local significance and/or other values—local values that are of significance at the local government scale.

All remnant vegetation will qualify into one of these three categories. Although not legislated, the BPA provides a framework for biodiversity assessment when determining ecological values. Mapping associated with the BPA is used by governments, members of the community and property owners to make planning decisions about appropriate land use.

The Project is located within the SEQ BPA area (Department of Environment and Heritage Protection (DEHP), 2016a, 2016b, 2016c). The BPA mapping for SEQ (QLD Government, 2019a) depicts regional and State corridors within the land use study area, including one regional terrestrial corridor located at approximate Ch 9.2 km to Ch 14.2 km, one State terrestrial corridor at approximate Ch 41.2 km to Ch 46.4 km, and four State riparian corridors at approximate Ch 1.2 km, Ch 6.2 km, Ch 17.6 km and Ch 52.8 km.

Further detail on these biodiversity corridors is provided in Chapter 11: Flora and Fauna and Appendix J: Terrestrial and Aquatic Ecology Technical Report.

8.5.2.3 Abandoned mines and historic collieries

Within the land use study area, there is one known recorded underground historical colliery located at Ebenezer. Historical mapping provided by DNRME indicates the abandoned underground mine workings of the Rosemount No. 2 Colliery, which may include an underground tunnel, located within Lot 162 on SP28500 and Lot 156 on CH3159. Underground mine workings associated with the colliery may also be located within the adjoining Lot 157 on CH3159 and Lot 3 on RP176310. Rosemount No. 2 Colliery is shown on Figure 8.5a.

A review of historical aerial imagery of the EIS investigation corridor is provided within Chapter 9: Land Resources and did not indicate the presence of any infrastructure or vegetation clearing associated with underground collieries. However, there is potential for unrecorded historic underground collieries to exist within the Calvert, Lanefield, Lower Mount Walker and Ebenezer localities.

Chapter 20: Hazard and Risk provides further discussion on the potential impacts and mitigation measures of recorded and unrecorded collieries.

8.5.2.4 Resource areas

Key resource areas

Key resources areas (KRAs) are identified locations containing important extractive resources of State or regional significance worthy of protection for future use (Department of Infrastructure, Local Government and Planning (DILGP), 2016a, 2016b, 2016c, 2017b). 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 Purga KRA (KRA No. 82) is located east of Boonah Road, at Peak Crossing. The Purga KRA is a quarry rock resource and provides a substantial proportion of the aggregate production for the Ipswich and Fassifern Valley districts (DILGP, 2016a).

The land use study area is located approximately 420 m from the south-western corner of the quarry pit for the Purga KRA, avoiding the processing area but traversing land within the southern portion of the separation area.

The transport route of the Purga KRA is located along T Morrows Road to the intersection with Ipswich Boonah Road. The majority of rock is transported to Ipswich to the north, away from the permanent disturbance footprint. However, some material is transported to rural markets elsewhere (DILGP, 2016a). The permanent disturbance footprint does not intersect the KRA transport route.

The KRA is shown on Figure 8.5c.

Coal resource areas

Coal resource areas depict the extent of identified coal resource estimates in QLD as presented in the publication *Queensland Coals—Physical and Chemical Properties Colliery and Company Information, 14th Edition* (Mutton, 2003).

The land use study area traverses the Bremer View East coal resource area located east of Rosewood Warrill View Road at Ebenezer (refer Figure 8.5a). The Bremer View East coal resource area is identified as having the potential to contain small- to medium-size deposits of thermal coal (Mutton, 2003). A summary is provided in Table 8.15.

TABLE 8.15: COAL RESOURCE AREA WITHIN THE LAND USE STUDY AREA

Coal resource area	Total above ground area of coal resource area (ha)	Location within land use study area (approximate chainage)	Area within permanent disturbance footprint (ha)	Area within temporary disturbance footprint (ha)
Bremer View East	1,717.0 ha	Ch 7.0 km to Ch 9.0 km	23.9 ha	2.1 ha

8.5.2.5 Infrastructure and utilities

The Project crosses and runs parallel to highways, main roads, local roads and private roads. In particular, the land use study area crosses the following existing State-controlled roads:

- Cunningham Highway
- Rosewood Warrill View Road
- Ipswich Boonah Road.

In addition to the above State-controlled roads, the land use study area traverses 18 existing roads managed by ICC and 5 existing roads managed by SRRC. The permanent disturbance footprint will have 52 public road/rail interface points. The land use study area also traverses multiple occupational and private roads.

At Lanefield, the land use study area traverses a high-pressure oil pipeline licence (PPL 1) held by Moonie Pipeline Company Pty Ltd. This pipeline has been decommissioned; however, the easement relating to the pipeline remains in place and is held by Santos Limited. The decommissioned pipeline intersects the alignment at approximately Ch 4.0 km.

The land use study area has 183 utility interactions, including communication, electrical and water utilities. Utilities identified to be located within the land use study area are summarised in Table 8.16 and are shown within Figure 6.17 (refer Chapter 6: Project Description).

Initial consultation with respective infrastructure providers and pipeline licensees has occurred and will continue throughout the detailed design phase to confirm utility interface solutions.

TABLE 8.16: SUMMARY OF UTILITIES WITHIN THE LAND USE STUDY AREA

Utility provider	Number of utilities
Electrical	
Energex	60
Powerlink	4
Communications	
Telstra	111
TPG	3
Water	
Queensland Urban Utilities	1
Oil	
Santos	1
Other	
Groundwater bore	2
Private	1

8.5.2.6 Current environmental authorities for environmentally relevant activities

Environmentally relevant activities (ERAs) are industrial or intensive agricultural activities with the potential to release contaminates into the environment. An EA is required to perform an ERA. EAs are administered by a range of QLD Government and local government agencies 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 within Section 8.5.1.3 and Section 8.5.1.4. Current prescribed ERAs within the land use study area are identified within Table 8.17 and shown on Figure 8.5.

TABLE 8.17 : PRESCRIBED ENVIRONMENTALLY RELEVANT ACTIVITIES LOCATED WITHIN PROXIMITY TO THE LAND USE STUDY AREA

Permit number and primary holder	Locality (approximate chainage)	Description	EA grant date	Relationship to the Project
Permit number: EPPR00573913 Primary holder: Veolia Environmental Services (Australia) Pty Ltd	55 Champions Way, Willowbank (Ch 14.0 km to Ch 16.5 km)	This prescribed ERA is associated with the Ti Tree Bioenergy waste disposal facility and has the following registered activities: ▸ ERA 15—Fuel burning, using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour ▸ ERA 53—Composting and soil conditioner manufacturing, Manufacturing, from organic material or organic waste, 200t or more of compost or soil conditioners in a year ▸ ERA 58—Regulated Waste Treatment, operating a facility for receiving and treating regulated waste or contaminated soil to render the waste or soil non-hazardous or less hazardous ▸ ERA 60—Waste disposal: Operating a facility for disposing or, in a year, the following quantity of waste mentioned in subsection (1) (a), (d) more than 200,000t ▸ ERA 61—Waste incineration and thermal treatment, 3: Incinerating or thermally treating, (b) other regulated waste.	EA granted November 2011	This EA is located approximately 700 m to the north of the land use study area at Willowbank
Permit numbers: EPPR00440413; ENRE00413205 Primary holder: Boral Resources (Qld) Pty Ltd	T Morrows Road, Purga (Ch 26.00 to 27.5 km)	This prescribed ERA is associated with the Purga Quarry (KRA No. 8) and has the following registered activities: ▸ ERA 16 Extractive and screening activities Threshold 2(c)extracting, other than by dredging, in a year, more than 100,000t to 1,000,000t of material ▸ ERA 16 Extractive and screening activities Threshold 3(b)—screening, in a year, more than 100,000t to 1,000,000t of material ▸ ERA 8 Chemical storage Threshold 3(a)—storing 10m^3 to 500m^3 of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3.	EA granted February 2012	The south-western corner of this EA is located adjacent to the land use study area at Purga
Permit number: EPPR00412213 Primary holder: Ivory's Rock Foundation	Mount Flinders Road, Peak Crossing (Ch 29.0 km)	This prescribed ERA is associated with the Ivory's Rock Foundation and has the following registered activities: ▸ ERA 63 (1c) Sewage treatment—operating sewage treatment works, other than no-release works, with a daily peak design capacity of—more than 1,500 but not more than 4,000 EP.	EA granted in November 2013	This EA is located approximately 400 m to the west of the land use study area at Peak Crossing
Permit number: EPPR03781216 Primary holder: Rainrose Pty Ltd	1544-1580 Ipswich Boonah Road, Peak Crossing (Ch 32.0 km)	This prescribed ERA is associated with the Flinders Peak Winery and has the following registered activities: ▸ ERA 63 (1a)(i) Sewage treatment >21 to 100 EP—IT or IR.	EA granted in March 2016	This southern boundary of this ERA is located adjacent to the land use study area at Peak Crossing

Permit number and primary holder	Locality (approximate chainage)	Description	EA grant date	Relationship to the Project
Permit numbers: EPPR00590813; EPPR00664413 Primary holder: Pacific International Development Corporation Pty Ltd	Undullah Road, Kagaru (Ch 49.0 km to Ch 50.0 km)	This prescribed ERA is associated with the Flinders Precinct development located within the Flagstone PDA and has the following registered activities: ▸ ERA 16 Extractive and screening activities Threshold 1(b)—dredging, in a year, more than 10,000t to 100,000t of material ▸ ERA 16 Extractive and screening activities Threshold 3(a)—screening, in a year, 5,000t to 100,000t of material.	EAs granted in 2011	This ERA is located within the land use study area at Kagaru
Permit number: EPPR00806913 Primary holder: Kenneth Harold Mantell	Undullah Road, Undullah (Ch 51.0 km to Ch 52.0 km)	This prescribed ERA is associated with sand mining operations at Kagaru and has the following registered activities: ▸ ERA 16 Extractive and screening activities Threshold 2(b)—extracting, other than by dredging, in a year, 5,000t to 100,000t of material ▸ ERA 16 Extractive and screening activities Threshold 3(b)—screening, in a year, more than 100,000t to 1,000,000t of material.	EA granted in 2011	This ERA is located within the land use study area at Undullah

8.5.3 Future land use intent and development activity

8.5.3.1 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.

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 8.18.

TABLE 8.18: STATE PLANNING POLICY STATE INTERESTS

State interest	State interest summary statement	Relevance to the 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.	Yes	The Greater Flagstone PDA is located to the north of the land use study area at Kagaru. The permanent and temporary disturbance footprints do not traverse the Greater Flagstone PDA.
Liveable communities	Liveable, well-designed and serviced communities are delivered to support wellbeing and enhanced quality of life.	Yes	The land use study area traverses through the localities of Lanefield, Rosewood and Lower Mount Walker where land use is predominantly characterised by large rural residential properties and open grazing land. The land use study area also traverses through the Greater Flagstone PDA, which will see significant residential growth, with some areas already developed.
Economic growth			
Agriculture	The resources agriculture depends on are protected to support the long-term viability and growth of the agricultural sectors. Audit 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.	Yes	Land uses within the land use study area predominantly consist of agricultural activities, characterised by open grazing land and small pockets of irrigated cropping, irrigated modified pastures, grazing modified pastures, irrigated perennial horticulture, poultry farming, and rural residential land uses. The land use study area traverses the Scenic Rim IAA and land classified as both Class A and Class B agricultural land.
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.	Yes	The Project will generate significant employment and economic growth, and support for the construction sector.
Mining and extractive resources	Extractive resources are protected and mineral, coal, petroleum and gas resources are appropriate 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.	Yes	The land use study area traverses the separation area for the Purga KRA. Furthermore, the land use study area traverses one mining lease, two authority to prospect permits for petroleum, and one coal resource area.

State interest	State interest summary statement	Relevance to the Project	
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.	Yes	The land use study area traverses near protected and sensitive land uses such as the Gum Tips Nature Refuge and the Purga Nature Reserve, which are components of the region's natural values supporting tourism.
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.	Yes	The land use study area is identified as being within mapped areas of national and state environmental significance.
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, and along, state coastal land.	N/A	The land use study area is far removed from the coastal environment, including the Coastal Management District and Coastal zone.
Cultural heritage	The cultural heritage significance of heritage places and heritage areas, including 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.	Yes	The land use study area is identified as having significance to Aboriginal cultural heritage.
Water quality	The environmental values and quality of QLD 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 QLD waters.	Yes	The land use study area traverses multiple watercourses, including major watercourses Bremer River, Western Creek, Warrill Creek, Purga Creek and Teviot Brook.
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.	Yes	The Project involves the construction and operation of major infrastructure.

State interest	State interest summary statement	Relevance to the Project	
Natural hazards, risk and resilience	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.	Yes	The land use study area is located within identified natural hazard areas including bushfire prone and flood hazard areas.
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.	Yes	The land use study area traverses, and/or is within close proximity to, existing and approved major electricity locations and corridors, and water supply infrastructure.
Infrastructure integration	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.	Yes	The Project will involve the expansion of existing infrastructure, involving the integration of the Inland Rail Program within the existing West Moreton System rail corridor, as well as the ARTC interstate rail corridor at Kagaru.
Transport infrastructure	The safe and efficient movement of people and goods is enabled, and land use patterns that encourage sustainable transport are supported.	Yes	The intent of the Inland Rail Program is to establish a rail link between Melbourne and Brisbane to serve future rail freight demand and stimulate growth for inter-capital and regional/bulk rail freight.
Strategic airports and aviation facilities	The operation of strategic airports, and aviation facilities is protected, and the growth and development of QLD's aviation industry is supported.	Yes	The closest strategic airport is the Royal Australian Airforce (RAAF) Base Amberley. The Project is located within the 8 km and 13 km wildlife hazard buffer zone, and the 45 m and 90 m height restriction zone.
Strategic ports	The operation of strategic ports and priority ports is protected, and their growth and development are supported. This State interest recognises QLD ports as a major component of both the natural and state supply chain, and defence system.	N/A	While the Inland Rail Program proposes to use the existing freight line from Acacia Ridge to the Port of Brisbane, this particular project (Calvert to Kagaru) is not located within close proximity to the Port. The Project will not impact on the safety or efficient operation of any strategic ports.

ShapingSEQ (2017)

ShapingSEQ is the statutory regional plan for the SEQ region. *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 Scenic Rim IAA) as regionally significant natural resources to be protected from loss and fragmentation.

The Project is located within the Western sub-region of SEQ as identified within *ShapingSEQ*. The Western sub-region encompasses Ipswich, Somerset, Lockyer Valley and Scenic Rim LGAs and Toowoomba City, and contains SEQ's major rural production and regional landscape areas. The sub-region is identified to be characterised by a predominantly regional and rural lifestyle, with a reputation as being one of the most fertile farmlands in the world.

ShapingSEQ outlines the Western sub-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 New South Wales and the southern states. The sub-region is identified as an emerging national- and global-oriented economy leveraging major investments in airport, logistics and freight infrastructure.

Within *ShapingSEQ*, Ipswich is identified as an emerging Regional Economic Cluster that has the potential to develop into a major economic hub featuring a diverse mix of economic activities. The area is identified to be within close proximity to major transport infrastructure that is able to provide for long-term opportunities for a transport and logistics hub associated with the future Melbourne to Brisbane Inland Rail line.

The SFRC is also identified within *ShapingSEQ* to serve as a major freight link to connect to the Inland Rail and is identified as a key infrastructure project that will facilitate the long-term development of the Bromelton SDA.

Local government planning schemes

The Project is located within the Ipswich, Scenic Rim and Logan City LGAs. The planning schemes relevant to the Project are:

- *2006 Consolidated Ipswich Planning Scheme* (January 2006)
- *Scenic Rim Planning Scheme 2020*
- *Logan Planning Scheme 2015*.

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 a local categorising instrument. Consequently, the planning schemes do not apply to the Project. Notwithstanding this, the zoning intent for the area as determined by the planning schemes have been taken into consideration when determining impacts of the Project on future land uses in the area.

2006 Consolidated Ipswich Planning Scheme

The *2006 Consolidated Ipswich Planning Scheme* sets out the purpose and intent for each zone and identifies the preferred development to be achieved. Zones traversed by the land use study area when within ICC LGA and their relevance to the Project are outlined in Table 8.19.

TABLE 8.19: 2006 CONSOLIDATED IPSWICH PLANNING SCHEME ZONE CLASSIFICATIONS WITHIN THE LAND USE STUDY AREA WITHIN ICC

Zone	Purpose/Intent	Relevance to Project
Rural A—(Agricultural)	The purpose of the Rural A zone is to protect good quality agricultural land and cater for both traditional and new and emerging agricultural activities.	The land use study area traverses land within the Rural A (Agricultural) zone when traversing between Calvert and Ebenezer.
Rural B—(Pastoral)	The purpose of the Rural B zone is to cater primarily for commercial pastoral activities, forestry or other sustainable rural activities and also catering for rural based tourism and recreational activities.	The land use study area traverses land within the Rural B (Pastoral) zone between Calvert and Ebenezer.
Rural C—(Rural living)	The purpose of the Rural C zone is to cater primarily for rural living opportunities in discrete areas close to rural or urban service centres.	The land use study area traverses the Rural C zone when traversing rural residential properties at Ebenezer.
Regional Business and Industry Investigation (Precinct 3 and Precinct 4 of the Ebenezer—Willowbank sub-area)	The Ebenezer and Willowbank area is identified as an industrial area of regional, State and national significance that connects Brisbane, Sydney and Melbourne with its close proximity to the Interstate Line rail corridor. The intent of the Ebenezer and Willowbank sub-area is to accommodate a range of low- to high-impact industrial uses. Precinct 3 of the sub-area is to provide for new uses and works that support the implementation of the Ipswich Motorsports Precinct Planning Study. Precinct 4 of the sub-area is to provide for future uses, including general industry, parks, service trades use and special industries.	The land use study area traverses through both Precinct 3 and Precinct 4 of the Willowbank sub area.

Scenic Rim Planning Scheme 2020

The *Scenic Rim Planning Scheme 2020* sets out the purpose and intent for each area and identifies the preferred development to be achieved. The land use study area traverses the following zones, as identified by the *Scenic Rim Planning Scheme 2020*:

- Rural
- Recreation and Open Space
- Special Purpose.

Zones traversed by the land use study area and their relevance to the Project are outlined in Table 8.20.

TABLE 8.20: SCENIC RIM PLANNING SCHEME ZONES WITHIN THE LAND USE STUDY AREA

Zone	Purpose/Intent	Relevance to Project
Rural	The purpose of the Rural zone is to provide for rural uses and activities and other uses and activities that are compatible with existing and future rural uses and the character and environmental features of the zone. The Rural zone also maintains the capacity of land for rural uses and activities by protecting and managing significant natural recourses and processes.	The land use study area predominately traverses the Rural zone when within the SRRC LGA.
Recreation and Open Space	The purpose of the Recreation and Open Space zone is to provide for a variety of cultural, educational, leisure, recreation and sporting uses and activities. This includes parks and other areas for the conservation of natural areas.	The land use study area traverses one parcel within the Recreation and Open Space zone when traversing through the Teviot Range.
Special Purposes—Bromelton SDA	Land uses within this Precinct are regulated under the Development Scheme for the Bromelton SDA and are not subject to the planning scheme.	The land use study area traverses land within Bromelton SDA at Kagaru.

Logan Planning Scheme 2015

The *Logan Planning Scheme 2015* sets out the purpose and intent for each area and identifies the preferred development to be achieved. Zones traversed by the land use study area and their relevance to the Project are outlined in Table 8.21.

TABLE 8.21: LOGAN PLANNING SCHEME ZONES WITHIN THE LAND USE STUDY AREA

Zone	Purpose/Intent	Relevance to project
Environmental Management	The purpose of the Environmental Management zone is to protect the natural environmental and scenic amenity values and provide for rural activities within the Rural Environmental Management Precinct and Environmental Management Precinct.	The land use study area traverses one parcel within the Environmental Management zone at Undullah.
Emerging Community	The purpose of the Emerging Community zone is to identify land that is intended for a future urban purpose, to protect land that is identified for an urban purpose in the future from incompatible uses; and to provide for the timely conversion of non-urban land to land for urban purposes.	The land use study area traverses the Emerging Community zone within the Logan City LGA.

Bromelton State Development Area Development Scheme (2017)

The *Bromelton SDA Development Scheme* outlines the vision for the Bromelton SDA, which includes the following:

- The establishment of Bromelton as a major industrial area for industrial development of regional, State and national significance
- Encourage industrial development and support services to take advantage of the access to key rail and road networks
- To maximise the utilisation of the rail network by establishing multi-modal freight and logistics operations, manufacturing and warehousing facilities, and industries that are reliant on rail access.

Where the land use study area traverses the Bromelton SDA at Kagaru, the area is identified to be within the Rural Precinct.

The *Bromelton SDA Development Scheme* outlines that the preferred intent for land within the Rural Precinct is to primarily provide for low-impact rural and agricultural activities but also outlines that development within the Rural Precinct is not to compromise the future development of the SFRC (now the Project).

Greater Flagstone Priority Development Area Development Scheme 2011

The Greater Flagstone PDA is located within the EIS investigation corridor near Kagaru, located to the north of the land use study area, on the opposite side of Teviot Brook (Woollaman Creek). The land where the EIS investigation corridor traverses the PDA is identified to be within the Urban Living zone under the *Greater Flagstone PDA Development Scheme*.

The *Greater Flagstone PDA Development Scheme* outlines that the intent of the majority of the Urban Living zone is to be developed as neighbourhoods that are focused on identifiable and accessible centres comprising of a mix of residential development. The intent of the zone is to also accommodate a wide range of non-residential uses including district and neighbourhood centres, community greenspace network, local employment areas and more specific facilities such as educational establishments.

A development application for a land use plan for 'Flinders Precinct' was approved by the Minister for Economic Development Queensland and is detailed in Table 8.22.

8.5.3.2 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 a desktop investigation of the status of a number of major projects within the region. The assessment of projects has included a review of the following:

- Local Council Planning and Development (PD) Online records
- Greater Flagstone PDA and Bromelton SDA current and approved development applications
- Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) Coordinated Projects
- Minister of Economic Development Queensland current and approved development applications
- DSDMIP current and approved Private Infrastructure Facilities
- *Infrastructure Australia Infrastructure Priority List*
- *QLD State Infrastructure Plan*
- QLD *Building our Regions* funded projects
- Community infrastructure designations
- *QLD Transport and Main Roads Investment Program*
- Local government infrastructure plans.

A summary of activity is provided in Table 8.22. Locations of developments within the land use study area are shown on Figure 8.5a to Figure 8.5e.

1. Development approvals within the last five years were reviewed. This accounts for developments approved under the repealed *Sustainable Planning Act 2009* with a currency period of four years, with an additional year for robustness. This period also captures recent development approvals under the new *Planning Act 2016* which have currency periods of up to six years.

TABLE 8.22: DEVELOPMENT ACTIVITY WITHIN PROXIMITY OF THE PROJECT

Project name and proponent	Locality (approximate chainage)	Description	Development stage	Relationship to the Project
Ipswich City Council				
Intensive Animal Husbandry (Kennel) and Caretakers Residence—Private (Council ref. MCU-4749/2014)	81 Hayes Road, Lanefield (Ch 1.6 km)	Material Change of Use for Intensive Animal Husbandry (Kennel) and Caretaker Residential	Approved	The land use study area traverses the rear portion of the property and may impact on the approved Intensive Animal Husbandry (Kennel) and Caretakers Residence.
Wanless Recycling Park—Wanless Recycling Park Pty Ltd (Council ref. CA—10674/2019)	266–304 & 350 Coopers Road, Ebenezer (Ch 12.2 km to Ch 13.2 km)	A combined Material Change of Use and Reconfiguration of a Lot Development Permit is being sought by Wanless Recycling Park for Waste Activity Use (Landfill & Rehabilitating a Mining Void) and Special Industry (Waste Transfer and Resource Recovery). The Wanless Recycling Park proposes the development of a Resource Recovery Facility and associated landfill activities to rehabilitate existing historic mining voids on the site.	Under assessment	The land use study area traverses to the south of Lot 2 RP197248 which is subject to the development application for the Wanless Recycling Park.
Scenic Rim Regional Council				
There are no notable development applications or approvals located within the land use study area.				
Logan City Council area				
There are no notable development applications or approvals located within the land use study area.				
Greater Flagstone PDA				
Flinders Precinct (DEV2017/844)—Pacific International Development Corporation Pty Ltd	Dairy, Undullah and Wyatt Road, Undullah (Ch 50.0 km to Ch 52.5 km)	Material Change of Use for Whole of Site (commercial; industrial; residential; retail; rural; service, community and other; sport, recreation and entertainment).	Application was approved by Minister for Economic Development Queensland in October 2017.	The land use study area is adjacent to the southern portion of the Flinders Precinct at Undullah.
DSDMIP—Coordinated Projects				
Helidon to Calvert—Inland Rail (ARTC)	ICC LGA, Lockyer Valley Regional LGA (adjoins the Project at Calvert)	ARTC are seeking approval to construct and operate the Helidon to Calvert section of Inland Rail.	ToR for EIS was issued in October 2017. Draft EIS is being prepared by the proponent.	The Helidon to Calvert Inland Rail Project connects to the Calvert to Kagaru Project.

Project name and proponent	Locality (approximate chainage)	Description	Development stage	Relationship to the Project
Minister for Economic Development Queensland Development Projects				
Willowbank Industrial Estate	Adjacent to the Cunningham Highway, Willowbank (Ch 15.0 km)	The Minister for Economic Development Queensland owns approximately 548 acres of land adjacent to the Cunningham Highway, west of Ipswich, within the Western Corridor Precinct that includes Willowbank. The Minister for Economic Development Queensland forecasts that Stage One of the Willowbank Industrial Estate will deliver over 2,500 FTE jobs by 2035.	The Minister for Economic Development Queensland lodged a development application with ICC for a Reconfiguration of a Lot and Material Change of Use to establish Willowbank Stage One, which includes 18 lots plus 2 balance lots varying in size from 8,000 m^2 to 20 ha.	Stage One of the Willowbank Industrial Estates is located approximately 100 m to the south of the land use study area at Willowbank.
Private infrastructure facilities				
There are no approved Private Infrastructure Facilities within the land use study area.				
Infrastructure Australia Infrastructure Priority List				
There are no projects on the Infrastructure Priority List located within the land use study area.				
QLD State Infrastructure Plan				
There are no notable projects or developments within the land use study area.				
QLD 'Building our Regions'-funded Projects				
There are no completed or shortlisted *Building our Regions* funded projects within the land use study area.				
Infrastructure Designations under the repealed *Integrated Planning Act 1997*, *Sustainable Planning Act 2009* and now *Planning Act 2016*				
The land use study area traverses one Infrastructure Designation made under the repealed *Integrated Planning Act 1997*, for the Middle Ridge to Greenbank 275/330 kV transmission line (Stage 2—Ebenezer to Ripley South) (ID reference 307).				
QLD Transport and Roads Investment Program (QTRIP)				
No significant commitments within QTRIP are identified to be within the land use study area. It is noted that network planning for the Inland Rail Project is identified as a 'State Network' commitment.				

Project name and proponent	Locality (approximate chainage)	Description	Development stage	Relationship to the Project
Brisbane River Strategic Floodplain Management Plan				
Warrill Creek Dry Flood Mitigation Dam	Ch 14.6 km–Ch 21.8 km	The *Brisbane River Strategic Flood Plain Management Plan* (BRSFMP) was prepared by the Queensland Reconstruction Authority (April 2019) and includes a recommendation to undertake a feasibility study for a dry flood mitigation dam at the Southern Freight Railway crossing of Warrill Creek.	Feasibility assessment	The Project generally follows the SFRC and proposes to construct a high-level embankment across Warrill Creek. The proposed Warrill Creek dry dam proposes to use the wall and outlet structure to provide temporary flood storage (flood detention).
Ipswich City Council Local Government Infrastructure Plan				
Transport network schedule of works (multiple upgrades)— ICC	Cunningham Highway to Paynes Road Paynes Road to Coopers Road Coopers Road to Ipswich Rosewood Road Cunningham Highway to Coopers Road. (Ch 14.0 km to Ch 16.0 km)	ICC have plans for four new 2-lane roads/4-lane corridor to be built in Ebenezer with establishment costs of over $17,000,000 for each road.	Established timing is 2041	The land use study area traverses near to following two future road projects: Cunningham Highway to Paynes Road Paynes Road to Coopers Road.
Scenic Rim Regional Council Local Government Infrastructure Plan				
No significant schedule of works within the plan were identified to be within the land use study area. Consultation with SRRC during the detailed design phase will identify and determine appropriate mitigation measures for potential impacts on the infrastructure within the LGA.				
Logan City Council Local Government Infrastructure Plan				
No significant schedule of works within the plan were identified to be within the land use study area. Consultation with LCC during the detailed design phase will identify and determine appropriate mitigation measures for potential impacts on the infrastructure within the LGA.				

8.6 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 land use study area, with the majority of impacts occurring immediately on commencement of land acquisition and construction of the Project.

Potential temporary and permanent impacts to land use and tenure associated with the construction and operation of the Project are related to:

- Change in tenure and loss of property:
  - Freehold
  - Impacts to State land
  - Impacts to native title
- Change in land use:
  - Impacts on agricultural uses and activities:
    - Loss of agricultural land
    - Land fragmentation and disruption to access and infrastructure
    - Alterations to stock routes
    - Other indirect impacts on agricultural land
    - Opportunities to support the agricultural industry
  - Change to notable land uses
  - Sterilisation of mineral and petroleum resources:
    - Purga KRA
  - Development activity
- Accessibility:
  - Impacts on road 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.

8.6.1 Change in tenure and loss of property

8.6.1.1 Permanent change in tenure and loss of property

The Project has been intentionally designed to use the existing gazetted SFRC where possible, minimising the extent of 'new' properties to be acquired. Of the 175 properties within the permanent disturbance footprint, 112 properties are within the SFRC, of which 50 properties are in ownership of DTMR.

This includes two properties that will require volumetric acquisition as the Project passes beneath the property when within the proposed Teviot Range tunnel.

It is noted that additional properties may also be acquired where impacts cannot be avoided or appropriately mitigated and/or acquisition is agreed upon in consultation with affected landholders.

A summary of land acquisitions within the permanent disturbance footprint is provided in Table 8.23. 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 G: Impacted Properties. The properties identified are to be confirmed following detailed design.

TABLE 8.23: LAND ACQUISITIONS WITHIN THE PERMANENT DISTURBANCE FOOTPRINT

Tenure and ownership	Number of properties within permanent disturbance footprint
Within gazetted SFRC	
Freehold in ownership of DTMR	50
Freehold, private property	59
Lands Lease	2
Reserve	1
Outside of gazetted SFRC	
Freehold	62
Lands Lease	1

The Project will also require the acquisition of land burdened by easements and depth restrictions. The permanent disturbance footprint traverses 15 easements and 3 parcels of land with Below the Depth Plans tenure associated with the Ebenezer coal mine. The permanent disturbance footprint also traverses one parcel subject to a Carbon Abatement interest.

Potential impacts as a result of land acquisitions include:

- Loss of property
- Relocation of residents
- Severance of land parcels, and potential fragmentation of agricultural land, infrastructure and services
- Disruption to access and use of property where temporarily acquired.

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.

Consultation with affected landholders 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 the SFRC, roads 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 farm operational arrangements. Detail on consultation undertaken with landholders is provided in Chapter 5: Stakeholder Engagement and Appendix C: Consultation Report.

8.6.1.2 Obtaining tenure for the Project

At the point where the future rail corridor is confirmed and gazetted, properties that have not already been acquired for the SFRC will be acquired to facilitate the Project.

A Constructing Authority that has compulsory acquisition powers under the AL Act will undertake the remaining land acquisitions required for the rail corridor in accordance with the process under the AL Act. 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 tenure arrangements for the Project are the subject of negotiations with the State (Department of Transport and Main Roads) and these arrangements will be finalised prior to the commencement of construction. It is expected that tenure for State-owned land for construction will be managed by way of construction leases granted by DTMR to ARTC. For operation, the rail corridor will be the subject of a lease from the Minister administering the *Transport Infrastructure Act 1994* to the State, which must then be subleased to the railway manager (ARTC). The construction areas and operational corridor will be generally consistent with the land identified in the EIS.

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 or in parallel with the compulsory acquisition process. These acquisitions will be voluntary private treaty transactions between ARTC and the landholder. Scenarios where this may occur include where there is strong certainty about alignment location.

Where the permanent disturbance footprint intersects the south-western corner of the Carbon Abatement Interest (Lot D/SP279349 on Lot 9/RP906566) (refer Figure 8.3b), the land parcel will require partial acquisition. Acquisition of this property will be undertaken in consultation with ICC.

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

- Land with a perpetual lease (Lot 251 on SP130171, Lot 232 on SP130091 and Lot 251 on SP130092) will require a tenure dealing with the State and DTMR
- If the Reserve for recreation that contains a term lease for grazing (Lot 146 on CC3359) can still be used for recreational purposes, the term lease for grazing will be either amended or cancelled and the reserve either amended or revoked
- Land with a road licence parcel (Lot 1 on RL7616) will be amended due to the reduction in size of the road licence area required for the permanent disturbance footprint
- The size of the land parcel of unallocated State land with a permit to occupy for grazing (Lot 145 on CC328) 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 the permanent disturbance footprint traverses local roads, acquisitions will likely be undertaken in accordance with the Land Act.

The Project will also require volumetric acquisition of properties where the Project is located within the proposed Teviot Range tunnel. Volumetric acquisitions will be undertaken in accordance with the AL Act.

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

8.6.1.3 Temporary loss of property

In addition to the permanent land acquisitions, properties are required to be temporarily utilised during the construction phase (refer Table 8.24). These properties will be required for activities such as access and laydown areas.

TABLE 8.24: LAYDOWN AREAS AND UTILISATION

Location	Size	Lot/Plan	Tenure	Existing land use	Temporary use associated with laydown area
Waters Road	17.5 ha	23CC157	Freehold	Grazing native vegetation	Rail, bridge, culverts, Flash Butt Welding (FBW) facility
		24CC158			
Hayes Road	6.1 ha	23CH3150	Freehold	Grazing native vegetation	Sleepers, ballast, bridge, culverts, aggregates, fuel
Rosewood Warrill View Road	2.5 ha	12CH3150	Freehold	Grazing native vegetation	Bridge
Mt Forbes Road	2.0 ha	256CH3159	Freehold	Grazing native vegetation	Bridge, culverts
Paynes Road (west of M Hines Road)	4.9 ha	173CH3162	Freehold	Grazing native vegetation	Sleepers, ballast, culverts, aggregates, fuel
		174CH3162			
		2RP892957			
		3RP892957			
		1RP209603			
Paynes Road (east of M Hines Road)	4.6 ha	18CC3472	Freehold	Grazing native vegetation	Sleepers, ballast, culverts, aggregates, fuel
		20CC3472			
Champions Way	0.9 ha	25SP108209	Freehold	Other minimal use	Bridge
Cunningham Highway	7.1 ha	5RP24575	Freehold	Grazing native vegetation	Bridge, aggregates
		81RP218953			
Middle Road	10.00 ha	3RP178669	Freehold	Other minimal use	Sleepers, ballast, culverts, aggregates, fuel
		4RP178669			
Purga Creek	10.9 ha	7RP198306	Freehold	Grazing native vegetation	Bridge, culverts
Ipswich Boonah Road	12.8 ha	77RP218829	Freehold	Grazing modified pastures	Bridge, sleepers, ballast, culverts, aggregates, fuel, rail
Mount Flinders Road	1.7 ha	43CH3168	Freehold	Grazing native vegetation	Bridge, culverts
Sandy Creek	0.9 ha	46CH3168	Freehold	Grazing native vegetation	Bridge, culverts
Dwyers Road	5.3 ha	57CH31185	Freehold	Grazing native vegetation	Sleepers, ballast, culverts, aggregates
Washpool Road	0.6 ha	41RP22590	Freehold	Grazing native vegetation	Bridge, culverts
Washpool Road	2.6 ha	42RP22590	Freehold	Grazing native vegetation	Bridge, culverts
Washpool Road	1.1 ha	43RP22590	Freehold	Grazing native vegetation	Bridge
Washpool Road	1.5 ha	44RP22590	Freehold	Grazing native vegetation	Bridge

Location	Size	Lot/Plan	Tenure	Existing land use	Temporary use associated with laydown area
Tunnel portal west	6.5 ha	53RP22590	Freehold	Grazing native vegetation	Culverts, aggregates, fuel, batch plant, tunnel
Tunnel portal east	2.9 ha	259RP809310	Freehold	Grazing native vegetation	Sleepers, culverts, aggregates, fuel, tunnel
Tunnel access road	1.8 ha	259RP809310	Freehold	Grazing native vegetation	Sleepers, culverts, aggregates, fuel, tunnel
Tunnel access road	3.7 ha	10SP221796	Freehold	Grazing native vegetation	Bridge, culverts
Wild Pig Creek Road	6.7 ha	1SP163227	Freehold	Grazing native vegetation	Sleepers, ballast, bridge, culverts, aggregates
Wild Pig Creek Road	0.9 ha	22RP908750	Freehold	Grazing native vegetation	Bridge, culverts
Wild Pig Creek Road	3.9 ha	19W31189	Freehold	Grazing native vegetation	Sleepers, bridge, culverts
Wild Pig Creek Road	1.0 ha	19W31189	Freehold	Grazing native vegetation	Bridge
Brennans Dip Road	2.8 ha	19W31189	Freehold	Grazing native vegetation	Bridge
Undullah Road	2.9 ha	3RP180942	Freehold	Grazing native vegetation	Bridge
Undullah Road/Kilmoylar Road	3.9 ha	4CP868996	Freehold	Grazing native vegetation	Rail, sleepers, ballast, bridge, culverts, aggregates, fuel, batch plant, FBW facility

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. In identifying the properties to be used for activities associated with the construction of the Project, consideration was given to a number of factors, including but not limited to:

- Properties already owned by DTMR
- Utilisation of properties that will already be severed or alienated due to the permanent disturbance footprint
- Alignment with property boundaries
- Access to main roads
- Avoidance of intensive livestock or cropping land uses
- Avoidance of environmentally sensitive areas.

As impacts to tenure relate to the direct acquisition or use of land, there is unlikely to be any impacts outside of the permanent and temporary disturbance footprints.

8.6.1.4 Native title

The land use study area traverses one property, comprising reserve land (Lot 146 on CC3359), as well as watercourses and unlinked parcels, in relation to which native title may continue to exist. The temporary disturbance footprint also traverses one property, comprising unallocated State land (Lot 145 on CC3280).

Section 24JA and 24JB of the NT Act may be relevant to the land parcel within the land use study area with reserve tenure. Under Sections 24JA and 24JB, if an act such as the grant of a statutory approval or of land tenure is to occur in relation to land subject to native title that 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 that is to be done on a reserve will be valid under Section 24JB 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 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).

Before any such public works are done, DTMR as 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.

The relevant parties to be notified for the Project are Queensland South Native Title Services (the relevant representative body) and the registered native title claimant for the Yuggera Ugarapul People claim and the Danggan Balun (Five Rivers) People claim.

Where it is determined native title has not been extinguished within the land use study area, ARTC will seek the extinguishment of the native title rights and interests in question prior to construction of the Project by compulsory process, to enable the grant of necessary interests in Crown lands required to construct the Project.

8.6.2 Change in land use

The most common land use within the land use study area is grazing land. Other notable land uses within the land use study area are identified and described in Table 8.10. The permanent disturbance footprint predominately follows the SFRC, a protected future railway corridor. The Project uses this corridor, where possible, minimising the change in land use as railway infrastructure is intended for the area.

The primary impact of the permanent disturbance footprint will be the cumulative shift from a primarily rural and agricultural land use to the infrastructure use of a 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 temporarily disrupt existing operations on and surrounding these properties for the duration of construction and rehabilitation.

8.6.2.1 Impacts on agricultural uses and activities

Loss of agricultural land

The Project will sterilise some productive agricultural land located within the permanent disturbance footprint. When determining potential productive agricultural land sterilisation within the permanent disturbance footprint, it is understood that productive land, which is mapped to be within the existing rail and road corridors has already been sterilised. In addition, as the SFRC was protected as future railway corridor in 2010, the future intent to construct a freight rail corridor through the area is consistent with State land use planning expectations for the area. On this basis, this assessment only considers these areas within the permanent disturbance footprint that are located outside of existing road and rail corridors and the SFRC.

In accordance with the Audit (refer Section 8.5.2.1), approximately 13.87 ha of land within the permanent disturbance footprint is classified as Class A agricultural land and 5.73 ha classified as Class B agricultural land. This equates to a total of 19.6 ha of land within the permanent disturbance footprint as being classified as Class A or Class B agricultural land, which will be sterilised as a result of the Project. Of these areas, land is primarily used for grazing, with some parcels used for irrigated modified pastures, irrigated perennial horticultures and irrigated cropping. Approximately 34.7 ha of land within the permanent disturbance footprint is also within the Scenic Rim IAA.

In accordance with the Audit, approximately 22.01 ha of land within the temporary disturbance footprint is classified as Class A agricultural land and 3.52 ha classified as Class B agricultural land. This equates to a total of 25.53 ha of land within the temporary disturbance footprint as being classified as Class A or Class B agricultural land, which will be temporarily used for construction of the Project. Of these areas, land is primarily used for grazing. Approximately 21.63 ha of land within the temporary disturbance footprint is also within the Scenic Rim 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 LAND USE STUDY AREA PER LGA

Land classification	Ipswich LGA	Scenic Rim LGA	Logan LGA
	Area of land (ha)	Area of land (ha)	Area of land (ha)
Permanent disturbance footprint			
Class A	12.48	1.33	0.06
Class B	5.16	0.57	0.00
Scenic Rim IAA	0.00	34.70	0.00
Temporary disturbance footprint			
Class A	19.79	2.17	0.04
Class B	3.09	0.44	0.00
Scenic Rim IAA	0.00	21.63	0.00

To assist in identifying the significance of this impact on agricultural land within the LGAs, Table 8.26, Table 8.27 and Table 8.28 identify the percentage of Class A and Class B agricultural land and IAA that the land use study area traverses relative to the total area of these land classes within each of the LGAs.

TABLE 8.26: PERCENTAGE OF LAND TYPE WITHIN IPSWICH LGA, TRAVERSED BY THE LAND USE STUDY AREA WITHIN IPSWICH 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	12.48	10,455.86	0.1
Class B	5.16	4,442.37	0.1
Scenic Rim IAA	0.00	3,484.78	0.0
Temporary disturbance footprint			
Class A	19.79	10,455.86	0.2
Class B	3.09	4,442.37	0.1
Scenic Rim IAA	0.00	3,484.78	0.0

TABLE 8.27: PERCENTAGE OF LAND TYPE WITHIN SCENIC RIM LGA, TRAVERSED BY THE LAND USE STUDY AREA WITHIN SCENIC RIM LGA

Land classification	Area within permanent disturbance footprint within LGA (ha)	Total area within LGA (ha)	% of land traversed by land use study area within LGA
Permanent disturbance footprint			
Class A	1.33	92,990.77	Less than 0.1
Class B	0.57	16,039.87	Less than 0.1
Scenic Rim IAA	34.70	92,868.39	Less than 0.1
Temporary disturbance footprint			
Class A	2.17	92,990.77	Less than 0.1
Class B	0.44	16,039.87	Less than 0.1
Scenic Rim IAA	21.63	92,868.39	Less than 0.1

TABLE 8.28: PERCENTAGE OF LAND TYPE WITHIN LOGAN LGA, TRAVERSED BY THE LAND USE STUDY AREA WITHIN LOGAN LGA

Land classification	Area within permanent disturbance footprint within LGA (ha)	Total area within LGA (ha)	% of land traversed by permanent disturbance footprint within LGA
Permanent disturbance footprint			
Class A	0.06	11,055.52	Less than 0.1
Class B	0.00	5,391.72	0.0
Scenic Rim IAA	0.00	11,700.78	0.0
Temporary disturbance footprint			
Class A	0.04	11,055.52	Less than 0.1
Class B	0.00	5,391.72	0.0
Scenic Rim IAA	0.00	11,700.78	0.0

As identified in Table 8.26, Table 8.27 and Table 8.28, the land use study area will traverse less than one per cent of land within the region classified by the Audit as being of Class A, Class B or IAA.

As identified in Table 8.26, the permanent disturbance footprint will traverse 0.1 per cent of Class A and 0.1 per cent of Class B agricultural land within the ICC LGA. The temporary disturbance footprint will traverse 0.2 per cent of Class A and 0.1 per cent of Class B agricultural land within the ICC LGA. The land use study area will not traverse land within an IAA.

Table 8.27 identifies that the land use study area will traverse less than 0.1 per cent of Class A, Class B agricultural land and of land within the Scenic Rim IAA within the SRRC LGA.

Within the LCC LGA, as shown in Table 8.28, the land use study area will traverse less than 0.1 Class A agricultural land and does not traverse Class B agricultural land, or land within an IAA.

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 on the movement of livestock and machinery and on essential access to water through impacts to ground water 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.

Impacts to intensive animal husbandry

The land use study area traverses one intensive livestock operation and is within proximity to two others. Details of potential impacts to these feedlots, and a poultry farm are detailed in Table 8.29. Consultation with landholders is ongoing to further determine potential impacts to these operations.

TABLE 8.29: POTENTIAL IMPACTS TO INTENSIVE LIVESTOCK OPERATIONS TRAVERSED BY, OR WITHIN PROXIMITY, TO THE LAND USE STUDY AREA

Type	Name	Relationship to the Project	Potential impacts
Cattle feedlot	J Allen Pty Ltd (Yackatoon Grazing Co)	Land parcels associated with the Yackatoon Grazing Co Feedlot are located 300 m to the south west of the land use study area at Peak Crossing, at approximate Ch 24.0 km.	The Project will not impact on the land use of the Yackatoon Grazing Co Feedlot as the permanent and temporary disturbance footprints do not traverse associated land parcels. Access is obtained to the feedlot via Middle Road, where a level crossing is proposed. Accessibility impacts to local traffic and increased travel time due to waiting time at the proposed level crossing at this road/rail interface point may occur. Accessibility impacts are further discussed in Section 8.6.3.
Poultry farm	Bartter Enterprises Pty Ltd (Purga Breeder Farm)	The land parcel associated with the Purga Breeder Farm is located 400 m to the north east of the land use study area at Purga, at approximate Ch 24.7 km.	The Project will not impact on the land use of the Purga Breeder Farm as the permanent and temporary disturbance footprints do not traverse parcels associated with the poultry farm.
Cattle feedlot	D.E Brennan	Approximately 0.38 ha of the land parcel associated this registered Cattle Feedlot (Lot 26 on RP860391) is within the land use study area at Kagaru, between approximate Ch 52.8 km to Ch 53.8 km.	As the permanent disturbance footprint traverses through the land parcel, partial or full acquisition of the property will be required for the Project. Temporary disturbance to existing operations on and surrounding the property will also occur for the duration of construction and rehabilitation.

Alterations to stock movements

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

The land use study area does not traverse any formal stock routes administered under the *Stock Route Management Act 2002,* 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.

Other indirect impacts on agricultural land

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

- Land contamination
- Biosecurity risks
- Changes in surface water hydrology
- Erosion and sedimentation.

Land contamination, biosecurity risks, changes to surface water hydrology, erosion and sedimentation all have the potential to impact on agricultural land, with potential effects including reduced soil quality, reduced productivity, and increase in costs to agricultural operations. These impacts are further discussed in their respective chapters:

- Chapter 9: Land Resources
- Chapter 11: Flora and Fauna
- Chapter 13: Surface Water and Hydrology.

Opportunities to support the agricultural industry

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.
- The Ebenezer Regional Industrial Area may provide capacity for food processing and other value-adding/supply-chain industries to locate businesses in the area.
- The Bromelton SDA is being developed with a multimodal industrial facility including a spur connecting it to the Sydney–Brisbane freight railway line. This SDA focuses on large-lot industrial uses, freight and logistics operations, medium- and large-scale manufacturing and warehousing activities, and industry support services. It will provide increased market, transportation and support service access.
- 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 Project has the potential to create a number of beneficial impacts to the agriculture sector within the area. Inland Rail will better connect the region to domestic and international markets and will support associated future industries within the Ebenezer Regional Industrial Area and Bromelton SDA. The Project will improve access to and from these regional markets and may act as a significant catalyst for development within these areas, particularly in relation to rail dependent industries and support industries associated with transport, freight handling, warehousing and logistics. Furthermore, the Project will improve road safety, ease congestion, and reduce environmental impacts by moving freight from road to rail.

Further discussion on the beneficial impacts of the Project is provided in Chapter 2: Project Rationale, Chapter 6: Project Description and Chapter 16: Social.

8.6.2.2 Notable land uses

Potential direct land use impacts to notable land uses within the land use study area, including protected and sensitive lands, are discussed in Table 8.30.

TABLE 8.30: POTENTIAL IMPACTS TO NOTABLE LAND USES WITHIN LAND USE STUDY AREA

Notable existing land uses	Potential impacts
Gum Tips Nature Refuge	The permanent and temporary disturbance footprints do not traverse land within the Gum Tips Nature Refuge and will not impact on the land use of the refuge.
Disused Ebenezer coal mine	The permanent and temporary disturbance footprints do not traverse the mining lease associated with the disused Ebenezer coal mine. Furthermore, the coal mine is understood to no longer be in operation, with the land under rehabilitation and subject to a Development Application for redevelopment into a recycling park. It is therefore considered the Project will not impact the operations associated with the Ebenezer coal mine.
Ipswich Motorsport Precinct	The Project will not impact on the land uses located within the Ipswich Motorsports Precinct as the permanent and temporary disturbance footprints do not traverse facilities within the Precinct. Access to the Precinct is primarily obtained from the Cunningham Highway, located to the east of the Precinct, and can also be accessed via local roads to the west of the Precinct. As grade separation is proposed at the Cunningham Highway road/rail interface point, no impacts to access or operations of the Ipswich Motorsports Precinct will occur.
JNJ Resources—Bentonite product production	The Project will directly impact on the operations of the bentonite product production. As the permanent disturbance footprint traverses directly through land parcels where this commercial business operates, it is likely the entire land parcel will be required for the Project and that the JNJ Resources will be unable to continue operation. Mitigation measures to manage the impacts associated with loss in property are further detailed in Section 8.7.2.
Purga Nature Reserve	The Project will not impact on the land use of the Purga Nature Reserve as the permanent and temporary disturbance footprints do not traverse land identified to be within the reserve.
Irrigated cropping and modified pastures	The permanent disturbance footprint will traverse land used for irrigated modified pastures (approximately 10.52 ha) and irrigated cropping (approximately 0.74 ha). Impacts to these land uses will involve the sterilisation of this agricultural land required for the permanent disturbance footprint. The temporary disturbance footprint will also traverse land used for irrigated modified pastures (approximately 1.19 ha) and irrigated cropping (approximately 0.19 ha). Temporary impacts to these land uses will include temporary loss of agricultural land and disruption to agricultural operations. Impacts of the Project on agricultural land is further discussed in Section 8.6.2.1.
Purga KRA	As the permanent and temporary disturbance footprints are not proposed to cross the resource processing area or the identified transport route of the Purga KRA, it is considered that the Project will not impact on this land use. Potential impacts to the Purga KRA is further discussed in Section 8.6.2.3.
Ivory's Rock Conventions and Events Centre	The permanent and temporary disturbance footprints are not proposed to traverse land associated with the Ivory's Rock Conventions and Events Centre. Access to the Ivory's Rock Conventions and Events Centre is primarily obtained from Mount Flinders Road. As grade separation is proposed at the Mount Flinders Road road/rail interface point, no impacts to access or operations of the Ivory's Rock Conventions and Events Centre will occur.
Teviot Range	The Project will traverse through a tunnel when passing through the Teviot Range. This will involve areas of the existing rugged, vegetated terrain to be changed to a tunnel portal to accommodate the freight rail corridor.
Sand and soil quarry (SEQ Sand and Soil)	The permanent and temporary disturbance footprints do not cross the SEQ Sand and Soil quarry at Kagaru. Access to sand and soil quarry is obtained from Undullah Road. A grade separation is proposed where the permanent disturbance footprint crosses this road/rail interface point. As grade separation is proposed at this road/rail interface point, no impacts to accessibility to the sand and soil quarry are anticipated.

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, including from noise, vibration, dust, light and scenic amenity are further discussed in their respective chapters:

- Chapter 10: Landscape and Visual Amenity
- Chapter 12: Air Quality
- Chapter 15: Noise and Vibration
- Chapter 16: Social.

8.6.2.3 Impacts to mineral and petroleum resources

The permanent disturbance footprint does not traverse the current mining lease (ML 4712) associated with the Ebenezer coal mine. The Ebenezer coal mine is not operational and rehabilitation of the land is currently taking place. It is therefore considered unlikely the Project will impact on the intended land use of coal mining associated with this mining lease or the rehabilitation of the land, as it is no longer taking place within the lease area.

The permanent disturbance footprint traverses approximately 23.3 ha, less than 0.1 per cent of the total 1,717 ha area of the Bremer View East Coal Resource Area between approximate Ch 7.0 km to Ch 9.0 km. Where the permanent disturbance footprint traverses the coal resource area, the Project may potentially impact on the extraction of this land identified to contain deposits of coal.

The permanent disturbance footprint traverses through two ATP permits for petroleum activities and two current applications for PCAs for petroleum activities at approximate Ch 6.0 km to Ch 34.0 km and at Ch 54.0 km. The Project may impact petroleum resources within these tenements as the amount of land within these areas that is available for production will be reduced. Tenement holder B.N.G. Pty Ltd (Arrow Energy) have indicated that they are open to working with ARTC as the project progresses.

Purga Key Resource Area

The permanent disturbance footprint traverses the south of the separation area associated with the Purga KRA, avoiding the resource processing area. The separation area does not form part of the operational area of the quarry but is implemented to maintain separation from people who may be affected by impacts such as noise, dust and vibrations from existing or future operations.

The Project does not propose a sensitive use and will not be adversely impacted upon by noise or dust generated by the Purga KRA. With respect to ground vibrations, geotechnical assessments of the Purga KRA operations on the permanent disturbance footprint have found that there will be negligible impacts. The closest point of the permanent disturbance footprint (approximate Ch 26.3 km) is approximately 420 m from the south-western corner of the existing quarry pit. Geotechnical assessments have determined the quarry will have negligible influence on the stability of the permanent disturbance footprint, and vice versa.

As detailed within approval documents for the 'Request to Change an Existing Approval—Development Permit for a Material Change of Use—Purga Quarry (Part Lot 179 CH3199 & Part Lot 61 on CH31211)—Ipswich City Council Reference: 943/98' extraction activities at the quarry are only approved to be undertaken until 23 December 2023. As such, no impacts from blasting activities associated with the quarry will occur when the Project is scheduled to be operational in late 2026 and will therefore have no impact on rail operations.

In assessing potential impacts of the Project on the Purga KRA, the permanent disturbance footprint will not impact on the quarry resources as the permanent disturbance footprint is not proposed to traverse the resource processing area. It is noted that a laydown area is proposed adjoining the quarry. Further consultation with the operator is required to determine any impacts on their existing Environmental Authority and Sales Permit and rehabilitation activities.

Furthermore, the Project is not proposed to traverse the identified transport route for the Purga KRA along T Morrows Road. Where the permanent disturbance footprint intersects Ipswich Boonah Road, a grade separation is proposed to ensure no impacts will arise from the Project to traffic along this route. Further information is provided in Chapter 19: Traffic, Transport and Access.

8.6.2.4 Impacts on current environmental authorities for prescribed environmentally relevant activities

Potential impacts to land with EAs for prescribed ERAs located within the land use study area as identified in Section 8.5.2.6, are outlined in Table 8.31.

TABLE 8.31: IMPACT OF THE PROJECT ON EXISTING ENVIRONMENTAL AUTHORITIES FOR PRESCRIBED ENVIRONMENTALLY RELEVANT ACTIVITIES

Permit number and primary holder	Relationship to the Project	Impact
Permit number: EPPR00573913 Primary holder: Veolia Environmental Services (Australia) Pty Ltd	This ERA is located approximately 700 m to the north of the land use study area at Willowbank.	The permanent and temporary disturbance footprints do not impact on land associated with the ERA.
Permit numbers: EPPR00440413; ENRE00413205 Primary holder: Boral Resources (Qld) Pty Ltd	The south-western corner of this ERA is located adjacent to the land use study area at Purga.	The permanent and temporary disturbance footprints traverse the Purga KRA separation area. Impacts of the Project on the Purga KRA are discussed in Section 8.6.2.3.
Permit number: EPPR00412213 Primary holder: Ivory's Rock Foundation	This ERA is located approximately 400 m to the west of the land use study area at Peak Crossing.	The permanent and temporary disturbance footprints do not traverse land subject to this ERA. The Project will not impact on the ERA for sewage treatment associated with the Ivory's Rock Conventions and Events Centre. Consultation with utility providers is ongoing.
Permit number: EPPR03781216 Primary holder: Rainrose Pty Ltd	This southern boundary of this ERA is located adjacent to the land use study area at Peak Crossing.	The permanent and temporary disturbance footprints do not traverse land subject to this ERA. The Project will not impact on the operation of this ERA.
Permit numbers: EPPR00590813; EPPR00664413 Primary holder: Pacific International Development Corporation Pty Ltd	This ERA is located within the land use study area at Kagaru.	The permanent and temporary disturbance footprints traverse land subject to this ERA and may require partial or full acquisition of the property.
Permit number: EPPR00806913 Primary holder: Kenneth Harold Mantell	This ERA is located within the land use study area at Undullah.	The permanent and temporary disturbance footprints traverse land subject to this ERA and may require partial or full acquisition of the property.

8.6.2.5 Development activity

Potential impacts to development activity located within the land use study area as identified in Section 8.5.2.6, are outlined in Table 8.32.

TABLE 8.32: IMPACT OF THE PROJECT ON FUTURE DEVELOPMENT WITHIN LAND USE STUDY AREA

Project name and proponent	Relationship to the Project	Impact
Ipswich City Council LGA		
Intensive Animal Husbandry (Kennel) and Caretakers Residence—Private	The land use study area traverses the rear portion of the property.	The land use study area traverses the rear portion of the property and partial resumption will be required. The Project may impact on the approved Intensive Animal Husbandry (Kennel) and Caretakers Residence.
'Wanless Recycling Park'— Wanless Recycling Park Pty Ltd	The land use study area traverses to the south of Lot 2 RP197248, which is subject to the development application for the Wanless Recycling Park.	The land use study area is located outside of the allotments associated with the Wanless Recycling Park, traversing to the south along Paynes Road at Ebenezer. As the Project is located outside of the land required for the Wanless Recycling Park, land use and tenure impacts to the proposal are unlikely.
Greater Flagstone PDA		
Flinders Precinct (DEV2017/844)—Pacific International Development Corporation Pty Ltd	The land use study area is adjacent to the southern portion of the Flinders Precinct at Undullah.	The permanent and temporary disturbance footprint do not traverse land within Flinders Precinct. The construction of the Project will likely have a positive impact on increased development in the area due to a catalyst of industrial activity.
DSDMIP—Coordinated Projects		
Helidon to Calvert—Inland Rail (ARTC)	The Helidon to Calvert Inland Rail project connects to the Calvert to Kagaru Project.	The Project will connect with the Helidon to Calvert Inland Rail project to the Interstate rail corridor at Kagaru.
Economic Development Queensland Development Projects		
Willowbank Industrial Estate —EDQ	Stage One of the Willowbank Industrial Estates is located approximately 100 m to the south of the land use study area at Willowbank.	The permanent disturbance footprint does not intersect land associated with the Willowbank Stage One of the Willowbank Industrial Estate. Construction of the Project will likely be a catalyst for the construction of industrial uses and development in the Willowbank locality.
Brisbane River Strategic Floodplain Management Plan		
Warrill Creek Dry Flood Mitigation Dam	The Project generally follows the SFRC and proposes to construct a high-level embankment across Warrill Creek.	The proposed Warrill Creek dry dam proposes to use the Inland Rail embankment and outlet structure across Warrill Creek, to provide temporary flood storage (flood detention).
Ipswich City Council Local Government Infrastructure Plan		
Transport network schedule of works (multiple upgrades) —ICC	ICC have plans for new 2-lane roads/4-lane corridor to be built in Ebenezer with establishment costs of over $17,000,000 for each road.	The permanent disturbance footprint traverses the 'Paynes Road to Coopers Road' future road project, although it is noted that the indicative timing of this road project within the Local Government Infrastructure Plan is 2041. Consultation with ICC will be undertaken.

8.6.3 Accessibility

8.6.3.1 Impacts on road network

In total, the permanent disturbance footprint has 25 public road interface points. Three of these roads are State-controlled roads, the remainder are managed by local governments. Where the Project traverses these roads at road/rail interface points, 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 the land use study area through changes to access road arrangements.

The appropriate design solution at each of the road/rail interfaces have been carefully considered to avoid or minimise impacts to the surrounding road network. The design treatment at each of these interfaces has been determined based on multiple factors, including:

- Existing road/rail interface points
- Access to properties, potential traffic levels
- Land use
- Nearby crossings
- Adjoining properties
- The vertical geometry of the rail alignment.

Where the Project crosses State-controlled roads, grade separations (overpass or underpass) have been proposed to ensure the Project will not result in a permanent disruption to traffic on these roads. Grade separations at road/rail interface points have been based on considerations that include implementing grade separations due to the topography and other engineering requirements and where the rail intersects freeways and highways of four or more lanes or limited access roads. In total, the Project will adopt 11 grade-separated intersections at public road/rail interface points.

Where the Project crosses lower-order public roads, some level crossings have been proposed. Multiple factors were considered in determining the establishment of either an active or passive level crossing, including current usage of the roads by adjacent land uses, the volume of traffic and sighting distances. In total, the Project proposes seven active level crossings and one passive level crossing at road/rail interface points. Crossing treatments will be confirmed during the detailed design phase of the Project.

Where level crossings are proposed, disruption to traffic can be expected with each passing train movement. The Project estimates an annual average of 33 train movements a day in 2026 and an expected up to 47 train movements a day in 2040. Surrounding land uses, including farming operations, will likely be impacted from the associated vehicle delay times at level crossings. This will potentially disrupt the commercial operations of agricultural activities due to the potential regular delay in the transportation of water, feed and stock to and from these land uses.

Where it has been determined that a road/rail interface point was unable to provide for a grade separation, active level crossing or passive level crossing, an alternative access route has been proposed. The methodology to determine viable alternative access routes is dependent on the type of interface being consolidated, including existing formed public roads, private access tracks and farm tracks.

Surrounding land uses, including industrial and farming operations, will likely be impacted by potentially extended travel times along alternative access roads. 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.

8.6.3.2 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 when determining the location and type of road/rail interface. Such consideration has included ensuring that legal access to properties is retained through the provision of alternative access roads, grade separation or a level crossing where appropriate. 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 along the permanent disturbance footprint.

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

8.6.4 Impacts on services and utilities

The Project potentially impacts on a total of 183 known utility interactions located within the disturbance footprint, comprising of 64 electricity, 114 communications, 1 water utility, 2 groundwater bores, 1 recycled water utility and 1 oil pipeline. Consultation has commenced with the various utility providers regarding their specific asset interface requirements. Details on consultation undertaken for the Project, including consultation with Santos, is detailed within Chapter 5: Stakeholder Engagement and Appendix C: Consultation Report.

During construction, surrounding residences and businesses may experience temporary disruption to services from time to time as these services are relocated or upgraded.

Once operational, the Project will not impact on services and utilities.

8.6.5 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. Inland Rail is a nationally significant transport initiative and will provide a high-capacity freight link between Melbourne and Brisbane through regional Australia to better connect cities, farms and mines via ports to domestic and international markets. It is anticipated that the 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 Bromelton SDA and Ebenezer and Willowbank. This is especially so for the newly opened SCT Logistics Bromelton intermodal freight hub.

The Project will also improve access to and from regional markets and may act as a significant catalyst for development within these areas, 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 this is provided in Chapter 2: Project Rationale and Chapter 16: Social.

8.7 Potential mitigation measures

This section outlines both the land use and tenure mitigation measures included as part of the Project design and the mitigation measures that are proposed for the Project to manage predicted land use and tenure impacts.

8.7.1 Design considerations

The mitigation measures and controls presented in Table 8.33 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 8.33: INITIAL MITIGATIONS OF RELEVANCE TO LAND USE AND TENURE

Aspect	Initial mitigation measures
Land use and tenure	▸ The Project is generally located within the existing SFRC and has been aligned to be co-located with existing road infrastructure where possible, minimising the need to develop land that has not previously been subject to disturbance for transport infrastructure purposes ▸ Refinement of the horizontal alignment considered placement of the rail corridor so that it traverses around or as close as possible to property boundaries to reduce potential fragmentation and sterilisation of Class A land, Class B land and land within an IAA ▸ The overall disturbance of construction areas has been limited where possible ▸ Intensive livestock operations, including feedlots and poultry farms, have been avoided where possible ▸ The planning of crossing loops at Ebenezer, Purga Creek, Washpool Road and Undullah took into consideration proximity to sensitive receptors ▸ Consideration was given to the movement of stock across the rail line ▸ Where the Project traverses high-order roads such as highway and main roads, grade separation is proposed. This will ensure the Project will not result in any impacts to traffic along these high-volume routes.

The alignment has been designed and refined to minimise impacts to land use and tenure. The Project will use the SFRC, where possible, which is a future rail corridor protected under the TI Act. 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.

8.7.2 Land tenure and loss of property

Where the Project intends to compulsorily acquire land, this will be undertaken in accordance with the requirements of the AL Act.

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 to claim compensation (this date can be extended by the constructing authority).

Compensation will be assessed as at the date of resumption by having regard to:

- The value of land taken
- Any damage caused by severance or injurious affection to the balance land
- Disturbance costs (disturbance costs may include legal costs and valuation, or other professional fees reasonably incurred and costs relating to the purchase of a replacement property).

During construction, land will be required temporarily. Purchasing or leasing arrangements for these properties will be investigated in consultation with landholders. These mitigation measures will be employed during the pre-construction phase of the Project to ensure impacts can be minimised prior to construction commencing.

8.7.2.1 State land

Where the Project requires the acquisition of State land, appropriate tenure or interest will be secured under the Land Act. The Constructing Authority and ARTC will consult with the relevant DNRME 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 utilised for public uses, land use impacts to these properties will be managed in accordance with the measures outlined in Section 8.7.3, with individual management measures to be developed with the trustees of the land.

8.7.2.2 Native title

The Project was deliberately designed to use the existing gazetted SFRC where possible and is located on predominantly freehold land where native title has been extinguished, except in the instance where freehold tenure was invalidly granted.

Where it is determined native title has not been extinguished within the permanent disturbance footprint, ARTC will seek the extinguishment of the native title rights and interests in question prior to construction of the Project by the compulsory acquisition process, to enable the grant of the necessary interests in Crown land required to construct the Project.

8.7.3 Land use

Land use impacts to individual properties, including properties requiring partial acquisition, properties adjacent to the permanent disturbance footprint or properties proposed to be temporarily used for construction, may be identified through consultation with landholders through the detailed design and property acquisition process. If land use impacts are identified, individual management measures will be developed in consultation with the landholder to reduce impacts to an acceptable and agreeable level. Management measures will include:

- Individual property mitigations will be developed in consultation with landholders with respect to the management of construction on or immediately adjacent to private properties. The mitigations will detail any required adjustments to fencing, access, farm infrastructure, and relocation of any impacted structures, as required.
- Consultation with landholders 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; and 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 mitigations as appropriate.

Where land is temporarily required outside of the permanent disturbance footprint for access tracks and laydown areas, the land will be rehabilitated in accordance with a rehabilitation strategy following construction. This will involve the implementation of a Reinstatement and Rehabilitation Plan (or equivalent). The Reinstatement and Rehabilitation Plan will include measures to 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.

8.7.3.1 Agricultural land uses and activities

Loss of agricultural land

Where loss of agricultural land was unable to be avoided, refinement of the horizontal alignment considered (among other environmental, social, cultural, economic and technical constraints), placement of the rail corridor so that it traverses around or as close as possible to property boundaries to reduce potential fragmentation and sterilisation Class A land, Class B land and land within an IAA. Intensive livestock operations, including feedlots and poultry farms, have also been avoided where possible.

Where the permanent disturbance footprint is unable to avoid the severance of agricultural land and enterprises due to the partial acquisition of a property, acquisition will be investigated in consultation with landholders. The consideration of partial or full 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.

Where the permanent disturbance footprint is unable to avoid the severance of agricultural land, the Project will require the acquisition of agricultural land, which may affect the operations of agricultural enterprises and grazing properties. As detailed within Section 8.7.2, 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 which would be affected and need to be addressed as part of compensation arrangements with the Acquiring Authority
- The potential for changes to groundwater access.

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

Land fragmentation and disruption to access and infrastructure

Where land is fragmented or isolated, any impacts on operational farm requirements such as impacts on access, infrastructure and services will be managed and reinstated as soon as possible. ARTC will work with individual landholders to develop suitable solutions based on individual 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 or the relocation of dams or irrigation systems will be undertaken 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 movements

During detailed design, consultation with landholders and local government agencies will be undertaken to identify any informal stock routes across grazing properties that may be affected during construction or operation of the Project. In the event that private stock routes are identified through consultation with landholders, appropriate mitigation measures will be developed in consultation with affected landholders. Mitigations measures may include the provision of alternative access arrangements developed in consultation with affected landholders.

Where stock fencing is required, fencing will be constructed in accordance with the Project's fencing strategy, as detailed in Chapter 6: Project Description. 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 within the following chapters:

- Land contamination risks provided in Chapter 9: Land Resources
- Increased biodiversity risks are provided in Chapter 11: Flora and Fauna
- Details on impacts to surface water drainage pathways are provided in Chapter 13: Surface Water and Hydrology
- Erosion and sedimentation will be appropriately managed through measures incorporated into the CEMP.

8.7.3.2 Sterilisation of mineral and petroleum resources

Holders of resource interests have been contacted to inform them of the Project and provide them with the opportunity to talk with the Project team. Refer Chapter 5: Stakeholder Engagement and Appendix C: Consultation Report for further background.

Further consultation with resource interest holders will be undertaken during detailed design. Where the Project may impact on deposits within the area, such as where within the Bremer View East coal resource area, appropriate mitigation will be agreed with the resource interest holders.

Once the proponent becomes the landholder of the rail corridor, it will consult with petroleum tenure holders, in accordance with relevant aspects of the Land Access Code 2016.

8.7.3.3 Current environmental authorities for prescribed environmentally relevant activities

Mitigation measures for EAs for ERAs the Project may have an impact on is provided in Table 8.34.

TABLE 8.34: MITIGATION MEASURES FOR IMPACTS ON CURRENT ENVIRONMENTAL AUTHORITY FOR ENVIRONMENTALLY RELEVANT ACTIVITIES

Project name and proponent	Impact	Mitigation measures
Prescribed ERAs (Permit numbers: EPPR00590813; EPPR00664413) Primary holder: Pacific International Development Corporation Pty Ltd	Although the permanent disturbance footprint traverses land parcels associated with the Flinders Precinct Development (ERA), the permanent disturbance footprint does not appear to intersect with the main operations associated with extraction and screening.	Consultation with landholders has commenced and will be ongoing through the detailed design. If full or partial acquisition is required, appropriate acquisition and compensation measures will be undertaken in accordance with Section 8.7.2.
Prescribed ERA (Permit number: EPPR00806913) Primary holder: Kenneth Harold Mantell	Although the permanent disturbance footprint traverses land parcels associated with the sand mines (ERA), the permanent disturbance footprint does not appear to intersect with the main operations associated with extraction and screening.	Consultation with landholders has commenced and will be ongoing through the detailed design. If full or partial acquisition is required, appropriate acquisition and compensation measures will be undertaken in accordance with Section 8.7.2.

8.7.3.4 Development activity

Mitigation measures for development the Project may impact are provided in Table 8.35.

TABLE 8.35: MITIGATION MEASURES FOR IMPACTS ON FUTURE DEVELOPMENT

Project name and proponent	Impact	Mitigation measures
Ipswich City Council LGA		
Intensive Animal Husbandry (Kennel) and Caretakers Residence—Private	The permanent disturbance footprint traverses this property.	Consultation with landholders has commenced and will be ongoing through the detailed design. If full or partial acquisition is required, appropriate acquisition and compensation measures will be undertaken in accordance with Section 8.7.2.
Ipswich City Council Local Government Infrastructure Plan		
Transport network schedule of works (multiple upgrades)—ICC	ICC have plans for four new 2-lane roads/4-lane corridors to be built in Ebenezer with establishment costs of over $17,000,000 for each road. The permanent disturbance footprint traverses the Paynes Road to Coopers Road project.	Consultation with ICC will be undertaken to identify the impact on the Project. It is noted that the indicative timing for this future roads project is 2041. Furthermore, the Project is located within the existing SFRC at this location and it is anticipated that consideration of this future roads project is not required.

8.7.4 Accessibility

8.7.4.1 Impacts on road network

For public crossings, ARTC will continue to undertake necessary consultation with DTMR, councils and the local community in relation to the preferred road rail interface treatments for each location.

Where grade separation is proposed, the Project will not result in any impacts to traffic along these routes.

Where level crossings and road diversions are proposed, these were determined based on a number of factors, including the nature of existing access to properties, potential traffic levels, existing land use, location of nearby interfaces, adjoining properties and the vertical geometry of the rail alignment. Vehicle wait time at level crossings, as well as the anticipated change travel time and distance from road diversions, have also been considered when determining appropriate crossings at road rail interfaces. Further details on the mitigation measures for level crossings is provided in Chapter 19: Traffic, Transport and Access.

Further consultation with DTMR, councils and the local community will confirm the location and preferred treatment for each road rail interface. The stakeholder engagement strategy for the Project is described in Chapter 5: Stakeholder Engagement and Appendix C: Consultation Report.

A Traffic Management Plan will be developed as part of the CEMP. 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.

8.7.4.2 Impacts to property access

Legal access to properties has been retained where possible when determining appropriate solutions for the road/rail interface point. ARTC has undertaken consultation with landholders to ensure suitable property access is maintained.

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

8.7.5 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. Consultation with Santos Limited has commenced and is detailed within Chapter 5: Stakeholder Engagement and Appendix C: Consultation Report.

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.

8.7.6 Proposed mitigation measures

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 8.36. These measures have been incorporated into the draft Outline EMP (refer Chapter 23: Draft Outline Environmental Management Plan).

TABLE 8.36: 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 safely construct, operate and maintain the Project. Minimise property acquisition requirements, property severance and disruption to land use and transport networks. Project clearing extents are to be surveyed and clearly defined, physically and digitally, prior to Project works commencing. Consultation is to occur with the resource tenement holders within the disturbance footprint prior to Project works.
	Access	Where feasible, detailed design and construction planning minimises alteration to the surrounding road and transport network and maintain legal property accesses. Develop site-specific traffic management plans with key land uses and businesses adjoining, or within close proximity of, the Project disturbance footprint to minimise business operations disruptions during construction (e.g. businesses that rely on access to Undullah Road). Road/rail interface detailed design to be undertaken in consultation with road/rail authority.
	Reinstatement and/or rehabilitation	A Reinstatement and Rehabilitation Plan will be developed for areas within the 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). The Plan will include and clearly specify: ▸ Location of areas subject to reinstatement and/or rehabilitation ▸ Rail safety operational requirements and constraints ▸ Details of the actions and responsibilities, performance criteria and monitoring frameworks to progressively rehabilitate, regenerate, and/or revegetate areas no longer active. A Landscape and Rehabilitation Management Plan must 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 identified through design processes to date will be further 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 relevant construction activities commencing.
Pre-construction/ construction	Fencing	Where practicable, permanent Project boundaries to be fenced in accordance with Inland Rail fencing standards.

8.8 Impact assessment

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

- SPP (DILGP 2017b)
- *ShapingSEQ* (DILGP2017a)
- *Bromelton State Development Area Development Scheme* (Department of State Development 2017).

In accordance with Schedule 6 of the Planning Regulation 2017, local government planning schemes cannot categorise development for transport infrastructure, that is 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 compliance with the planning schemes is not required.

As the temporary and permanent disturbance footprints are not located within the Greater Flagstone PDA, assessment of the Project's compliance with the *Greater Flagstone PDA Development Scheme 2011* is also not required.

8.8.1 State Planning Policy

As part of the compliance impact assessment, Table 8.37 details an assessment of the Project's compliance 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 8.37: PROJECT COMPLIANCE WITH THE RELEVANT STATE PLANNING POLICY STATE INTERESTS

State interest	Project compliance	EIS reference
Liveable communities and housing		
Housing supply and diversity	The proposed alignment and locations of ancillary infrastructure have been investigated and is the result of several iterations of option assessment and consultation with QLD 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 Social Impact Management Plan (SIMP), which includes the Housing and Accommodation Action Plan.	Chapter 16: Social
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 SIMP, which includes the Health and Community Wellbeing Action Plan.	Chapter 16: Social
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 proposed alignment and locations of ancillary infrastructure have been investigated and are the result of several iterations of option assessment, including consideration of the impact on agricultural land uses, and consultation with community and stakeholder groups and relevant regulatory agencies. The Project will use the SFRC where possible, a future rail corridor protected under the TI Act. Therefore, the future intent to construct a railway through the area is generally consistent with the expectations for the area following the gazettal of the SFRC. Where disturbance to agricultural land cannot be avoided, impacts from this change in land use will be carefully managed and mitigated.	Section 8.5.2.1, Section 8.6.2.1, and Section 8.7.3.1
Development and construction	The Project will generate significant employment and economic growth, and support for the construction sector.	Chapter 2: Project Rationale

State interest	Project compliance	EIS reference
Mining and extractive resources	Consistent with the mining and extractive resources state interest, the Project has considered and assessed potential impacts to extractive resources.	Section 8.5.2.3, Section 8.6.2.3 Section 8.7.3.2
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 intersect the Purga Nature Refuge or other 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 8.5.2.2
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 MNES, matters of state environmental significance (MSES) and matters of local environmental significance (MLES).	Chapter 11: Flora and Fauna Appendix K: Matters of National Environmental Significance Technical Report
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, Aboriginal and Torres Strait Islander cultural heritage.	Chapter 18: Cultural Heritage
Water quality	Consistent with the requirements of this state interest, the Project has considered and assessed potential impacts to water quality. The Project will be constructed and operated in accordance with the Seqwater Development Guidelines (Water Quality Management in Drinking Water Catchments).	Chapter 13: Surface Water and Hydrology Chapter 14: Groundwater
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 12: Air Quality Chapter 15: Noise Chapter 20: Hazard and Risk
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 and storage will be needed for construction activities, dust suppression, vehicle wash down, and operations and maintenance activities.	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.	Section 8.6.5
Transport infrastructure	The Project supports this state interest by predominantly utilising the already gazetted SFRC. Furthermore, the Project has considered and assessed potential impacts to surrounding transport networks.	Chapter 19: Traffic, Transport and Access

State interest	Project compliance	EIS reference
Strategic airports and aviation facilities	The closest strategic airport is the RAAF Base Amberley. The Project is located within the 8 km and 13 km wildlife hazard buffer zone, and the 45 m and 90 m height restriction zone. Given the nature of the Project and its significant separation distance from the RAAF Base Amberley, the Project will not attract wildlife that could then migrate onto the RAAF Base Amberley. The Project will not create incompatible intrusions or compromise the safety of the RAAF Base Amberley.	Section 8.5.3.1 and 8.8.1. Chapter 20: Hazard and Risk

8.8.2 South East Queensland Regional Plan 2017

The Project is considered to be consistent with the intent of *ShapingSEQ* given the Inland Rail Program is identified within the Regional Plan as key region-shaping infrastructure that supports the vision for SEQ.

ShapingSEQ acknowledges the importance of infrastructure investments such as the Inland Rail Program 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 presents significant opportunities for our 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 the Scenic Rim, Ipswich, Lockyer Valley and Toowoomba LGAs, such as the Toowoomba Enterprise Hub (Charlton Wellcamp). Furthermore, the Inland Rail Program has potential to enhance existing regional economic clusters or catalyse new regional economic clusters as follows:

- The **Ipswich Emerging Regional Economic Cluster** at Ebenezer has the potential to develop into a major economic hub featuring a diverse mix of economic activities. Towards the west, there is an emerging industrial corridor anchored by clustering of transport, logistics and manufacturing (aviation and defence). There are also priority sectors around the RAAF Base Amberley and the Amberley Aerospace and Defence Support Centre. Opportunities exist for greater intensification and consolidation of activities within this regional economic cluster. Close proximity to major transport infrastructure will provide long-term opportunities for a transport and logistics hub associated with the Inland Rail Program.
- The **Bromelton SDA** provides long-term industrial land supply and will facilitate industrial activities of regional, state and national significance. Delivery of a number of key infrastructure projects will facilitate long-term development of the SDA. This includes the Inland Rail Program linking to the Sydney–Brisbane Rail Corridor, which will improve connections with SEQ markets and provide efficiencies in freight movement.
- The **Western Gateway 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 Program will further strengthen this regional hub as a significant inland port.

8.8.3 Bromelton State Development Area Development Scheme 2017

As identified in Section 8.5.3.1, the land use study area transects the Rural Precinct of the Bromelton SDA where within the SFRC, which is identified within the *Bromelton SDA Development Scheme 2017*.

Table 8.38 provides an assessment of the Project's compliance with the strategic vision and overall objectives of the Bromelton SDA and preferred development intent for the Rural Precinct.

TABLE 8.38: PROJECT COMPLIANCE WITH THE RELEVANT BROMELTON STATE DEVELOPMENT AREA STRATEGIC VISION, OVERALL OBJECTIVES AND PREFERRED DEVELOPMENT INTENT

Compliance with the Bromelton State Development Area Development Scheme 2017

Strategic vision, overall objectives and preferred development intent in the Bromelton SDA and rural precinct

- The vision for the Bromelton SDA is to:
  - Establish Bromelton as a major industrial area for industrial development of regional, State and national significance
  - Encourage industrial development and support services to take advantage of the access to key rail and road networks
  - Maximise opportunities for the clustering and co-location of synergistic developments, including supporting infrastructure
  - Maximise the utilisation of the rail network by establishing multi modal freight and logistics operations, manufacturing and warehousing facilities, and industries that are reliant on rail access
  - Encourage activities that require large lots, separation distances or other specialist needs
  - Protect the continued operation and future development of existing industrial activities, appropriately located rural activities and the regionally significant extractive resources within the Bromelton SDA from incompatible development and encroachment
  - Leverage the opportunities created by the proximity of the Bromelton SDA to the Beaudesert centre, by fostering synergies between industry and business activity clusters.

The strategic vision is supported by the overall objectives for development and preferred development intents of development precincts within the Bromelton SDA.

- Development within the Bromelton SDA will:
  - Be consistent with the strategic vision for the Bromelton SDA and the development precinct
  - Ensure the integrity and long-term functionality of the Bromelton SDA is maintained and protected from land uses and activities that may be incompatible with, or adversely affect, the continued use of the Bromelton SDA for industrial development of regional, State and national significance
  - Avoid new sensitive land uses and other incompatible land uses that could restrict the ability to establish and operate industrial development within the Bromelton SDA
  - Maximise the efficient use of land, and existing and planned infrastructure
  - Minimise adverse impacts on infrastructure and infrastructure corridors
  - Support the safe and efficient function and operation of existing and planned transport infrastructure
  - Include site specific stormwater and waste water controls to avoid potential adverse impacts on the water quality of receiving waters and water assets
  - Protect and, where possible, enhance the values of water supply catchments and key water supply infrastructure to ensure a safe and secure water supply
  - Manage the risks associated with natural hazards, to protect people and property
  - Avoid adverse impacts on environmental, cultural heritage and community values, or minimise and mitigate impacts where they cannot be reasonably avoided
  - Be located, designed and constructed in accordance with best practice principles
  - Be located and designed to avoid impacts on the ongoing operation of quarries within KRAs and their haulage routes.

The preferred development intent for the Rural Precinct is described below:

- This precinct will provide for low impact rural and agricultural activities which:
  - Are compatible with, and able to safely operate near, more intensive industrial development that is anticipated to occur elsewhere in the Bromelton SDA
  - Does not cause adverse amenity impacts on sensitive land uses outside of the Bromelton SDA
- Development, including for sensitive land uses, that limits the ability to establish and operate industry elsewhere in the Bromelton SDA is unlikely to be supported
- Development does not compromise the future development of the SFRC
- Development recognises and protects the future development of the indicative Bromelton North South Arterial Road
- Defined uses which are generally considered to meet the precinct intent include animal husbandry, animal keeping, cropping, rural industry and wholesale nursery
- Development for high-impact and special industry is unlikely to be supported.

Compliance with the Bromelton State Development Area Development Scheme 2017

Response:

The Project is considered to be consistent with the intent of the Bromelton SDA as the proposed intent to construct a freight railway network of national significance will likely support associated future industries within these areas. The Bromelton SDA encourages industrial development and support services to take advantage of the access to key rail and road networks. The Project may act as a catalyst for significant development within the SDA, particularly in relation to rail dependent industries and support industries associated with transport, freight handling, warehousing and logistics. Further, preferred development intent for the Rural Precinct includes for development not to compromise the future development of the SFRC (now the Project).

Accordingly, the Project is considered to support the intent of the SDA. The Project has been located and designed with consideration to minimise adverse impacts upon existing and future intended land uses. Suitable strategies and mitigation measures have been identified and are detailed in Section 8.7.

8.9 Cumulative impacts

It is recognised that the Project will contribute to cumulative impacts on land use particularly in relation to land acquisition and changes in land use. Primarily these impacts relate to the removal of agricultural land for development of the rail corridor.

The area of influence (AOI) for cumulative land use and tenure impacts was defined by placing a 2 km buffer around the proposed alignment for the Project. This radius was chosen because direct and indirect land use and tenure impacts are considered to be localised to the area within which a project is occurring. Based on this criterion, the subset of projects included in the assessment of cumulative impacts on land use and tenure is:

- Kagaru to Acacia Ridge and Bromelton
- Helidon to Calvert
- Greater Flagstone PDA
- Bromelton SDA
- Ripley Valley PDA.

Although projects across the region may have different land use and tenure impacts to the Project, it was considered that the key potential impacts that are likely to be common to all are:

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

The methodology and outcomes of the cumulative impact assessment are presented in Chapter 22: Cumulative Impacts and for land use and tenure can be summarised as:

- Loss of agricultural land, and land within and disruption to agricultural operations—low significance
- Sterilisation of mineral and petroleum resources—low significance
- Impacts on accessibility within the wider road network and to private properties and temporary disruption to services and utilities—low significance.

8.10 Conclusions

This chapter identifies the land use and tenure aspects relevant to the Project. This chapter addresses 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, providing management measures used to avoid or mitigate potential impacts.

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 generate a number of beneficial impacts. Beneficial impacts of the Inland Rail Program include providing better connections to cities, farms, and mines via ports to domestic and international markets. Further, the Project will provide a link to intermodal terminals and to interstate markets, improving access to and from regional areas identified to be significant areas for outbound containerised freight.

The Project is considered to generally comply with the land use intent within the relevant land use and planning instruments.