CHAPTER

10

Landscape and Visual Impact Assessment

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

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10. Landscape and Visual Impact Assessment

10.1 Scope of chapter

The purpose of the landscape and visual impact assessment (LVIA) chapter is to assess the impact of the Inland Rail—Border to Gowrie project (the Project) on landscape, visual and lighting values, including potential impacts on landscape character and views.

This chapter addresses the 'Land' section of the Terms of Reference for an environmental impact statement: Inland Rail—Border to Gowrie project (November 2018) (ToR) inclusive of ToR items 11.84 to 11.87 and additional information requested for the Project by the Coordinator-General. Appendix A2: Terms of Reference Cross-reference Table provides a cross-reference for each ToR against relevant sections in the revised draft Environmental Impact Statement (EIS).

The key objectives of the LVIA include to:

- Undertake a baseline assessment describing existing environmental values of the impact assessment area (defined in Section 10.3.1) with respect to landscape character and visual amenity, including scenic viewpoints
- Describe the existing landscape, including references to any landscape or visual values identified in planning schemes (landscape receptors), and identify those people who experience and value views of the landscape (visual receptors)
- Identify key Project impacts on landscape and/or visual values during the day (and consider the potential for any night-time impacts)
- Evaluate the significance of the impacts of the Project activities on landscape, views and visual receptors during the construction works and operations stages during day and night
- Describe any Project modifications or management techniques that can mitigate identified landscape and visual impacts
- Illustrate the visual impacts using visualisation techniques to assist members of the public in understanding potential impacts.

This chapter should be read in conjunction with Appendix K: Landscape and Visual Impact Assessment.

Since the draft EIS, the Project's reference design has been revised in response to engagement with key stakeholders, assessment of field verified survey data and review of design optimisation opportunities as described in Chapter 5: Project Description. Relevantly for the LVIA these changes include:

- Road-rail interface changes as described in Chapter 5: Project Description
- A Material Distribution Centre (MDC) at Whetstone. Further detail regarding the Whetstone MDC is provided in Chapter 5: Project Description, with a summary of the revised draft EIS impact assessment findings specific to the Whetstone MDC site provided in Appendix AE: Whetstone Material Distribution Centre: Supporting Technical Information.

10.2 Regulatory environment

An LVIA can assist the development of a design that is integrated into its landscape context across the whole Project. For this reason, it is necessary to consider policies and guidelines (particularly at the higher national, State and regional levels) that may extend beyond the immediate context in which the Project is sited, as well as those that apply at the local level. As an example, consideration of urban design principles set out in both New South Wales (NSW) and Queensland guidelines will ensure that a common approach is adopted that fulfils the separate requirements of these jurisdictions while ensuring design consistency across borders.

Similarly, as potential landscape and visual impacts may cross boundaries (e.g. views between adjoining local government areas (LGAs)), consideration has also been given to the policies applying to adjacent jurisdictions at the local level.

The list below identifies relevant policies, standards and guidelines that exist to protect or manage landscape and visual values in the context of the Project. A detailed discussion of the relevance of each to the Project is presented in Appendix K: Landscape and Visual Impact Assessment. The relevant local planning schemes do not apply to the Project (Chapter 3: Legislation and Project Approvals Process) but are appropriate to consider in terms of local context for landscape and visual amenity.

- National:
  - *Australian Standard (AS)/New Zealand Standard (NZS) 4282:2019* Control of the obtrusive effects of *outdoor lighting* (Standards Australia and Standards New Zealand, 2019a)
  - *AS4970:2009 Protection of trees on development sites* (Standards Australia, 2009b)
  - *Disability (Access to Premises—Buildings) Standards 2010* (Cth).

- State:
  - Queensland:
    - *Road Landscape Manual* Edition 2 (Department of Transport and Main Roads, 2013b)
    - *Crime Prevention through Environmental Design; Guidelines for Queensland* (Queensland Government, 2021)
    - *South East Queensland Regional Plan* (ShapingSEQ) (Department of State Development, Infrastructure, Local Government and Planning (DSDILGP), 2023a)
    - *ShapingSEQ Background paper 4: Sustain* (Department of Infrastructure, Local Government and Planning, (DILGP) 2017b)
    - *South East Queensland Regional Plan Implementation Guideline No 8 Identifying and protecting scenic amenity values* (Department of Infrastructure, 2007)
    - *Darling Downs Regional Plan* (Department of State Development, Infrastructure and Planning (DSDIP) 2013a)
  - New South Wales:
    - *Beyond the Pavement: Urban design approach and procedures for road and maritime infrastructure planning, design and construction* (Transport for NSW, 2020a)
    - *Guideline for landscape character and visual impact assessment, Environmental impact assessment practice note EIA–N04* (Transport for NSW, 2020b)
    - *Bridge Aesthetics: Design guideline to improve the appearance of bridges in NSW* (Transport for NSW, 2019a)
    - *Sustainable Design Guidelines Version 4.0* (Transport for NSW, 2017)
    - *Crime prevention and the assessment of development applications* (NSW Department of Urban Affairs and Planning, 2001)
    - *Urban Green Cover in NSW—Technical Guidelines* (Office of Environment and Heritage, 2015)
    - *Healthy Urban Development Checklist* (NSW Health, 2009)
- Local:
  - Queensland:
    - *Goondiwindi Region Planning Scheme 2018* (Goondiwindi Regional Council (GRC), 2018a)
    - *Toowoomba Regional Planning Scheme* (Toowoomba Regional Council (TRC), 2012)
    - Toowoomba Regional Council–*Scenic Amenity Study* (Conics, 2009)
    - Toowoomba Regional Council–*Open Space Strategy* (Toowoomba Regional Council (TRC), 2016)
    - *West Toowoomba Land Use Investigations* (TRC, 2017a)
    - *Toowoomba Region Landscape and Urban Character Study* (Lat27, 2021a)
    - *Toowoomba Region Scenic Amenity Study* (Lat27, 2021b)
  - New South Wales:
    - *Moree Plains Local Environment Plan 2011* (NSW Government, 2011)
    - *Moree Plains Shire Growth Management Strategy* (Moree Plains Shire Council, 2009).

In addition to the above, reference was made to guidelines and techniques used in Australia and internationally to develop the methodology for LVIA. These include the following:

- *Guidance Note for Landscape and Visual Assessment* (Australian Institute of Landscape Architects, 2018)
- *Guidelines for Landscape and Visual Impact Assessment, Third Edition* (Landscape Institute and the Institute of Environmental Management and Assessment, 2013)
- *Guidelines for Landscape and Visual Impact Assessment, Second Edition* (Landscape Institute and the Institute of Environmental Management and Assessment, 2002)
- *Technical Guidance Note: Photography and Photomontage in Landscape and Visual Impact Assessment, Public Consultation Draft 2018-06-01* (Landscape Institute, 2018)
- *Landscape Institute Advice Note 01/09: Use of photography and photomontage in landscape and visual assessment* (Landscape Institute, 2011)
- *Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity* (Scottish Natural Heritage and The Countryside Agency, 2006)
- *Guidance Note 01/21 The Reduction of Obtrusive Light* (Institution of Lighting Professionals, 2021).

10.3 Methodology

This section summarises the tasks that were undertaken to achieve the objectives of the LVIA. Detailed methodology descriptions are presented in Appendix K: Landscape and Visual Impact Assessment.

10.3.1 Impact assessment area

For the purposes of the LVIA, an impact assessment area has been defined as the area within which the Project has the potential to influence landscape and/or visual values and receptors, as illustrated in Figure 10-2. The impact assessment area is a 10 kilometre (km) buffer from the centre line of the Project alignment; a distance derived from visibility analysis mapping and fieldwork. The impact assessment area commences at the NSW/QLD border, approximately 18 km to the southeast of Goondiwindi near Kurumbul and continues through to the west of Gowrie Mountain and crosses the Warrego Highway before tying into the Gowrie to Helidon Inland Rail project, between Leesons Road and Draper Road, on the southern outskirts of Kingsthorpe.

10.3.2 Existing conditions assessment

A desktop analysis of existing landscape character and visual amenity for the impact assessment area was undertaken, and supplemented with field assessments to ground-truth findings and identify sensitive viewpoints requiring further assessment. Additional field work was also conducted to further assess potential impacts due to changes in the design of the Project associated with the revised draft EIS, and address community and stakeholder concerns.

10.3.3 Assessment of potential impacts

Assessment of potential impacts has included describing infrastructure likely to be associated with the Project, such as embankments, bridges, cuttings, fencing, noise barriers and level crossings. Potential impacts were then assessed using a qualitative significance assessment method (Chapter 4: Assessment Methodology for further details).

It is noted that the LVIA methodology has defined its own thresholds for sensitivity and magnitude that are different from the criteria defined in Chapter 4: Assessment Methodology, and follow criteria and principles more widely used for the assessment of landscape and visual impacts. This is because many landscape values, including views, are rarely listed on statutory State, national or international registers. Assessment at the LGA level of landscape and visual values is also not always available and is frequently inconsistent. Therefore, establishing common criteria specific to landscape and visual values is more likely to result in a fair assessment of values and sensitivity. Similarly, magnitude criteria need to be defined that recognise the range of factors relevant to the LVIA, for example the number of people experiencing a change in view and the intensity of the change.

The significance assessment matrix has also been streamlined to remove ‘major’ for sensitivity and magnitude established in Chapter 4: Assessment Methodology, since these thresholds are difficult to translate to landscape and visual values. For example, major sensitivity elements are not anticipated to be present since there are very limited instances of entirely intact landscapes within the impact assessment area—all have been influenced by human activities (with the exception of more remote parts of Bringalilly and Whetstone State forests). Similarly, major magnitude is unlikely because any Project impacts on landscape or visual values would be reversible, with sufficient time and budget.

10.3.3.1 Landscape assessment

A landscape assessment was carried out based on analysis of landscape character, including landscape features that contribute to the amenity of the area. The assessment also considered landscape values identified in legislation, planning documents or during stakeholder and community consultation. The landscape impact assessment defined the sensitivity of the landscape (Section 10.3.3.4) and the magnitude of change to the landscape (Section 10.3.3.5). The significance of potential impacts on the landscape character were rated based on an evaluation of the sensitivity of the existing landscape to change and the magnitude of change that is likely to occur (Section 10.3.3.6).

10.3.3.2 Visual assessment

A visual assessment was undertaken based on an analysis of views and viewsheds; particularly major views or outlooks identified in legislation or planning documents or through stakeholder and community consultation. Viewpoints and the visual receptor audiences they represent were defined and rated for sensitivity (Section 10.3.3.4). The magnitude of change to views and visual amenity was then determined (Section 10.3.3.5). The magnitude of change is dependent on the nature, scale and duration of the change that is expected to occur. The magnitude of change also depends on the loss, change or addition of any feature in the field of view of the receptor; or any change to the backdrop to, or outlook from, a viewpoint. The significance of the overall potential impacts on visual amenity was then determined based on the sensitivity of existing views to change and the magnitude of change that is likely to occur (Section 10.3.3.6).

Visualisations have been prepared to represent the potential visual impact of the presence of the Project from a selection of the representative viewpoints identified. Visualisations are illustrations/photomontages that aim to represent an observer's view of a proposed development. It is noted that visualisations produced are representative of the Project design as developed at the revised draft EIS design stage, and subject to change during the detailed design stage.

Visualisations have not been prepared for all viewpoints. Visualisations have been selected on the basis of those illustrating key infrastructure elements likely to be of interest to the community and/or the most sensitive viewpoints, such as from regionally significant scenic lookouts.

10.3.3.3 Lighting assessment

A qualitative desktop lighting assessment was prepared based on analysis of representative views identified through the visual assessment. This was supported by a supplementary quantitative obtrusive lighting assessment undertaken in line with *AS/NZS 4282: 2019 Control of the obtrusive effects of outdoor lighting* by a lighting impact professional (and peer reviewed by another qualified lighting engineer) (Standards Australia and Standards New Zealand, 2019a). The methodology and findings of this assessment are included in Appendix K: Landscape and Visual Impact Assessment.

For the qualitative assessment, lighting impacts are considered during both the construction works and operations stages of the Project. The sensitivity of viewpoints with respect to changes in after-dark lighting conditions were defined based on elements such as proximity to a lighting source associated with the Project and the accessibility of the viewpoint to viewers at night (Section 10.3.3.4). The assessment determined that the magnitude of change to views and visual amenity due to lighting depends on the nature, scale and duration of the change to lighting that is expected to occur (Section 10.3.3.5). The magnitude of change also considers any change to the backdrop to, or outlook from, the representative viewpoint. The significance of lighting impact in each representative viewpoint was made by considering the sensitivity of each representative night-time viewpoint and the magnitude of change that is likely to occur (Section 10.3.3.6).

Mt Kent Observatory

Concern has been raised through stakeholder engagement regarding the potential for lighting from the construction works and operations stages of the Project to impact on the operations of the University of Southern Queensland's Mt Kent Observatory. The observatory is Queensland's only professional astronomical research facility and is located approximately 21 km southeast from the Project (closest Project point is Southbrook), beyond the extent of the impact assessment area (University of Southern Queensland, 2024). The Mt Kent Observatory has not been considered in this assessment due to the:

- Substantial distance between the Project and the Mt Kent Observatory
- Limited lighting associated with the construction works (flashing beacons and temporary spotlights in support of short-duration night works, if required) and operations (head lamp on rollingstock and safety lighting at road–rail interfaces) stages of the Project
- Presence of several more substantial light sources that are located closer, or equally distant, to the observatory. These other light sources include:
  - the presence of existing townships in close proximity to the observatory with the potential for night-time lighting, including the settlements of Greenmount, Nobby and Cambooya (approximately 4.5 km, 7.5 km and 9 km from the observatory, respectively) and other townships located further from the observatory, including Pittsworth and Southbrook
  - proximity to the Toowoomba urban area (approximately 22 km to southwestern outskirts)
  - presence of the existing QR South Western System railway (which facilitates freight movements), approximately 4.5 km from the observatory
  - the Gore Highway, which is located between the Project and the Mt Kent Observatory.

10.3.3.4 Sensitivity to change

The sensitivity categories used in this assessment are defined in Table 10-1. Separate definitions are provided for the sensitivity of a:

- Landscape
- Viewpoint, and the visual receptor audiences that it represents
- Representative viewpoint to changes in after-dark lighting conditions.

TABLE 10-1 DEFINITIONS OF SENSITIVITY

Sensitivity	Aspect	Attributes of categories
High	Landscape	A landscape protected by national designation (such as a national park) and/or widely acknowledged for its quality and value; a landscape with distinctive character and low capacity to accommodate the type of change envisaged.
	Visual sensitivity	Large numbers of viewers or those with proprietary interest and prolonged viewing opportunities, such as residents and users of attractive and/or well-used recreational facilities. Views from a regionally important location whose interest is specifically focused on the landscape (e.g. a national park).
	Sensitivity to lighting	Easily accessible at night with large numbers of viewers or those with proprietary interest and prolonged viewing opportunities located at very close distances (typically less than 200 metres (m)) to the light source.
Moderate	Landscape	A moderately valued landscape, perhaps a regionally important landscape and/or protected by regional/State designation, or where its character, land use, pattern and scale may have some capacity to accommodate a degree of the type of change envisaged.
	Visual sensitivity	Medium numbers of residents (e.g. rural communities and townships) and moderate numbers of visitors with an interest in their environment (e.g. visitors to State forests, including bush walkers, horse riders and/or trail bikers). Larger numbers of travellers with an interest in their surroundings (e.g. local designated scenic routes).
	Sensitivity to lighting	Relatively accessible at night with medium numbers of viewers, and close to the site or easily accessible with propriety interest but located some distance (typically up to 500 m) from the light source.
Low	Landscape	A landscape valued to a limited extent—perhaps a locally important landscape or where its character, land use, pattern and scale is likely to have the capacity to accommodate the type of change envisaged.
	Visual sensitivity	Small numbers of visitors with a passing interest in their surroundings or transient views (e.g. those travelling along principal roads). Viewers whose interest is not specifically focused on the landscape (e.g. workers, commuters and/or truck drivers).
	Sensitivity to lighting	Typically, location not accessed at night, with small numbers of visitors with a passing interest in their surroundings (e.g. those travelling along principal roads or greater numbers of viewers but located at considerable distance from the light source (typically less than 1 km)).
Negligible	Landscape	A landscape that is not valued for its scenic quality or where its character, existing land use, pattern and scale are tolerant of the type of change envisaged, and the landscape has capacity to accommodate change.
	Visual sensitivity	Very occasional numbers of viewers with a passing interest in their surroundings (e.g. those travelling along minor roads and views from the air).
	Sensitivity to lighting	Rarely accessed at night. Rural locations with very occasional numbers of viewers with a passing interest in their surroundings (e.g. those travelling along minor roads and views from the air or located at greater than 1 km from the light source).

10.3.3.5 Magnitude of change

The magnitude of change categories used in this assessment are defined in Table 10-2. Separate definitions are provided for the magnitude of change to a:

- Landscape
- Viewpoint and the visual receptor audiences which it represents
- Representative viewpoint to changes in after-dark lighting conditions.

There is no standard methodology for the quantification of the magnitude of effects; however, it is generally based on the scale or degree of change to the landscape or visual resource, the nature of the effect and its duration.

TABLE 10-2 DEFINITIONS OF MAGNITUDE OF CHANGE

Magnitude	Aspect	Attributes of categories
High	Landscape	Dominant change: A clear and frequent/continuous change in landscape characteristics affecting an extensive area, which is likely to fundamentally change the character of the landscape.
	Visual	Dominant change: Major changes in view at close distances, affecting a substantial part of the view, continuously visible for a long duration, or obstructing a substantial part or important elements of view. Generally, short distances (typically < 250 m) to the nearest Project infrastructure element.
	Lighting	Dominant change: Occurs when a dark landscape becomes an area with high district brightness due to proposed Project lighting.
Moderate	Landscape	Considerable change: A considerable change in landscape characteristics, frequent or continuous and over a wide area, or a clear change, but over a restricted area.
	Visual	Considerable change: Clearly perceptible changes in views at intermediate distances, resulting in either a distinct new element in a significant part of the view, or a more wide-ranging, less concentrated change across a wider area. Generally, short-to-medium views (typically 250 m to 1 km) to the nearest Project infrastructure.
	Lighting	Considerable change: Occurs when a dark landscape becomes an area of medium district brightness, or an area considered to have low district brightness becomes an area with high district brightness due to proposed Project lighting.
Low	Landscape	Noticeable change: A noticeable change in landscape characteristics over a wide area or a considerable change over a restricted area but will not fundamentally change the character of the landscape.
	Visual	Noticeable change: Minor changes in views at long distances or visible for a short duration, and/or are expected to blend in with the existing view to a moderate extent. Generally, medium-to-long distance views (typically 1 km to 2.5 km to the nearest Project infrastructure).
	Lighting	Noticeable change: Occurs when a dark landscape becomes an area with low district brightness, an area with low district brightness becomes an area of medium district brightness, or an area of medium district brightness becomes an area of high district brightness due to proposed Project lighting.
Negligible	Landscape	Barely perceptible change: An imperceptible, barely or rarely perceptible change in landscape characteristics.
	Visual	Barely perceptible change: Change which is barely visible at a very long distance or visible for a very short duration, and/or is expected to blend with the existing view. Distant views (generally more than 2.5 km) to the nearest Project infrastructure.
	Lighting	Barely perceptible change: Occurs when a landscape experiences negligible changes from the existing lighting conditions due to proposed Project lighting.
No impact	Landscape, visual and lighting	No change in landscape, visual or lighting characteristics due to no proposed Project lighting.

10.3.3.6 Significance of impact

An evaluation of overall potential effect has been based on a combination of the sensitivity to change and the magnitude of change that is likely to occur, and has been determined using the matrix presented in Table 10-3. As described in Section 10.3.3, the LVIA significance matrix has been modified from the criteria defined in Chapter 4: Assessment Methodology.

TABLE 10-3 SIGNIFICANCE OF IMPACT MATRIX

Level of effect	Magnitude of change			
Sensitivity	**High** (dominant change)	**Moderate** (considerable change)	**Low** (noticeable change)	**Negligible** (barely perceptible change)
High	Major	High	Moderate	Low
Moderate	High	Moderate	Low	Low
Low	Moderate	Low	Negligible	Negligible
Negligible	Low	Low	Negligible	Negligible

Where magnitude of change is 'no impact' the level of effect is 'no impact'.

10.4 Existing environment

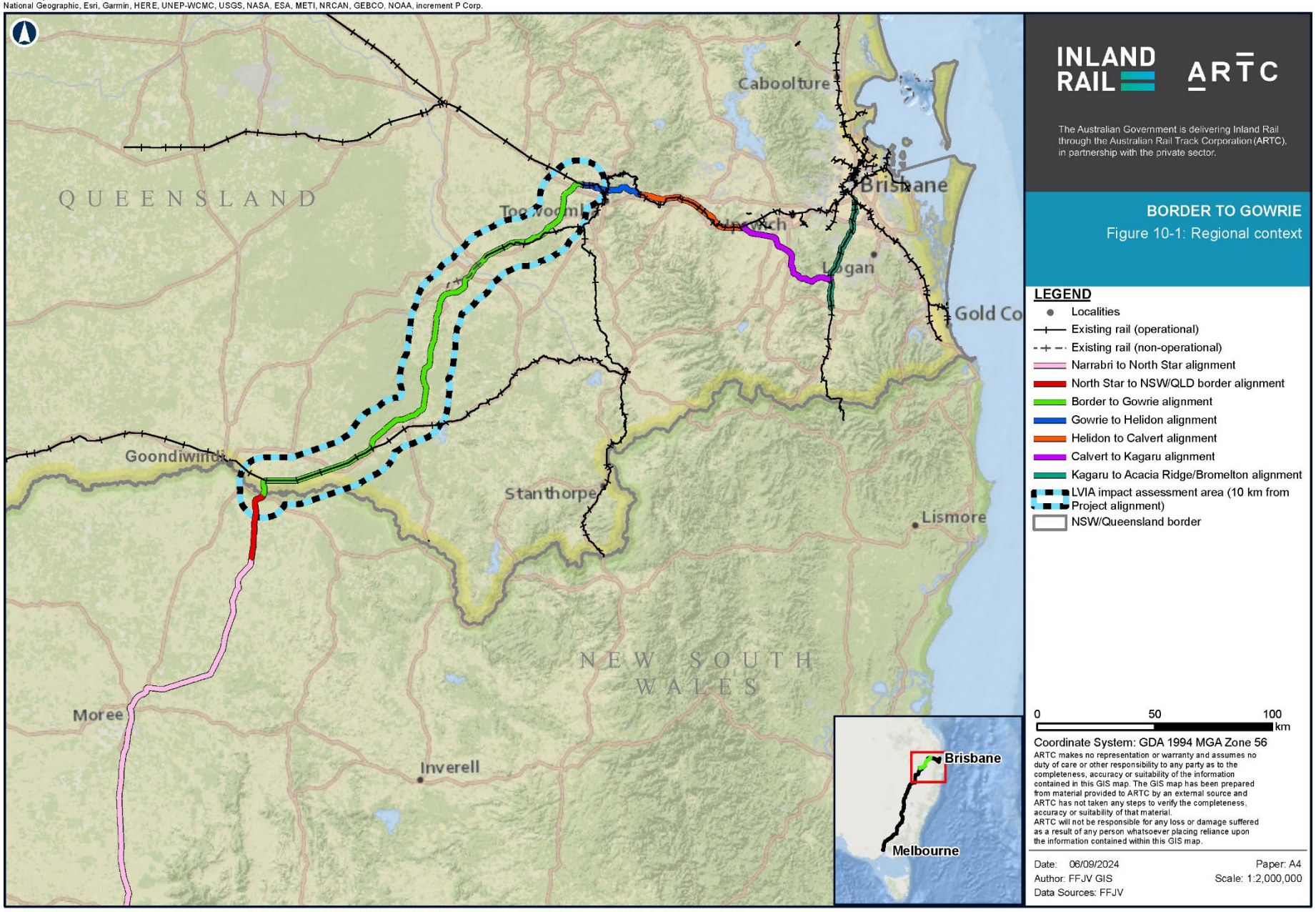
10.4.1 Regional landscape context

The impact assessment area includes extensive areas of agricultural land and State forest areas within the Darling Downs region. In the western part of the impact assessment area, between Goondiwindi and Inglewood, the landscape is dominated by dryland cropping, irrigated agriculture and intensive animal production on the fertile soils and floodplains associated with the Macintyre River, Dumaresq River and Macintyre Brook.

North of Inglewood, the Project passes through the undulating and densely forested landscapes of Whetstone and Bringalily State forests. The Project then traverses the gently undulating agricultural areas near Millmerran before crossing the extensive Condamine River floodplain. The rail alignment deviates from the existing railway line north of Yarranlea to pass through the hilly landscapes surrounding Pittsworth, Southbrook and Athol before crossing Westbrook Creek near Toowoomba Wellcamp Airport and joining the Gowrie to Helidon section of Inland Rail near Gowrie Junction.

Within the impact assessment area, large areas of land have been cleared for pasture, agricultural production, and for rural and urban residential settlements. Tracts of remnant vegetation are also present, limited to the steep, isolated mountains and hills (typically associated with granite and basaltic outcrops and sandstone hills) and State forests.

The Project and its wider landscape context are illustrated in Figure 10-1 and Figure 10-2 and is discussed further below.


Service Layer Credits: Esri, Garmin, GEBCO, NOAA NGDC, and other contributors
National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
QUEENSLAND
NEW SOUTH WALES
Caboolture
Brisbane
Logan
Gold Co
Goondiwindi
Stanthorpe
Lismore
Moree
Inverell
Brisbane
Melbourne
INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
BORDER TO GOWRIE
Figure 10-1: Regional context
LEGEND
Localities
Existing rail (operational)
Existing rail (non-operational)
Narrabri to North Star alignment
North Star to NSW/QLD border alignment
Border to Gowrie alignment
Gowrie to Helidon alignment
Helidon to Calvert alignment
Calvert to Kagaru alignment
Kagaru to Acacia Ridge/Bromelton alignment
LVIA impact assessment area (10 km from Project alignment)
NSW/Queensland border
0
50
100
km
Coordinate System: GDA 1994 MGA Zone 56
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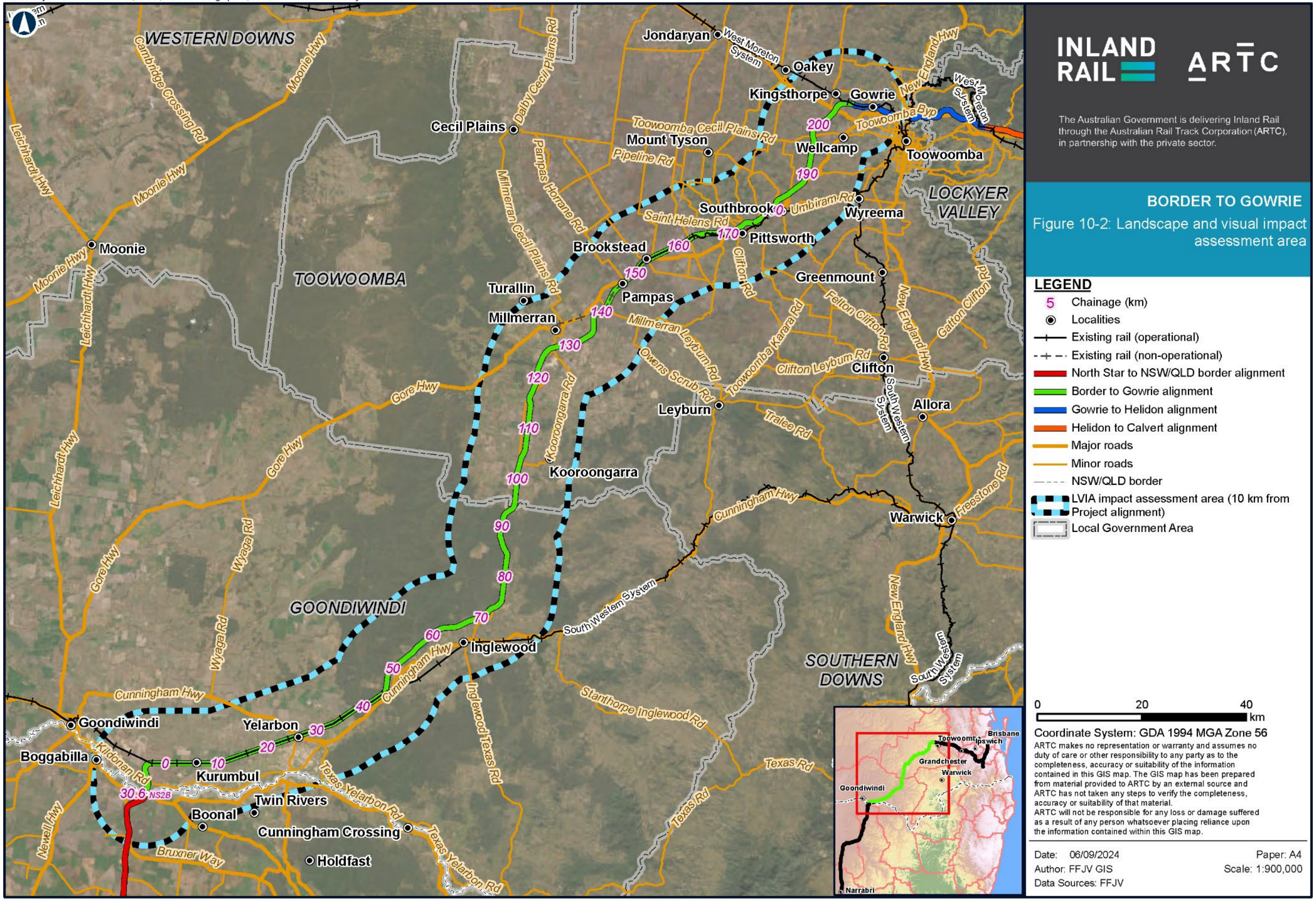

INLAND RAIL
ARTC
The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.
BORDER TO GOWRIE
Figure 10-2: Landscape and visual impact assessment area
LEGEND
5 Chainage (km)
Localities
Existing rail (operational)
Existing rail (non-operational)
North Star to NSW/QLD border alignment
Border to Gowrie alignment
Gowrie to Helidon alignment
Helidon to Calvert alignment
Major roads
Minor roads
NSW/QLD border
LVIA impact assessment area (10 km from Project alignment)
Local Government Area
0
20
40
km
Coordinate System: GDA 1994 MGA Zone 56
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WESTERN DOWNS
TOOWOOMBA
GOONDIWINDI
SOUTHERN DOWNS
LOCKYER VALLEY
Jondaryan
Oakey
Kingsthorpe
Gowrie
Cecil Plains
Mount Tyson
Wellcamp
Toowoomba
Southbrook
Wyreema
Pittsworth
Brookstead
Moonie
Turallin
Millmerran
Pampas
Greenmount
Clifton
Leyburn
Allora
Kooroongarra
Warwick
Inglewood
Goondiwindi
Yelarbon
Boggabilla
Kurumbul
Twin Rivers
Boonal
Cunningham Crossing
Holdfast
West Moreton System
South Western System
New England Hwy
Toowoomba Byp
Toowoomba Cecil Plains Rd
Pipeline Rd
Umbiram Rd
Saint Helens Rd
Clifton Rd
Felton Clifton Rd
Gatton Clifton Rd
Millmerran Leyburn Rd
Owens Scrub Rd
Toowoomba Karara Rd
Clifton Leyburn Rd
Tralee Rd
Freestone Rd
Cunningham Hwy
Gore Hwy
Moonie Hwy
Leichhardt Hwy
Cambridge Crossing Rd
Dalby Cecil Plains Rd
Pampas Horrane Rd
Millmerran Cecil Plains Rd
Kooroongarra Rd
Wyaga Rd
Inglewood Texas Rd
Stanthorpe Inglewood Rd
Texas Rd
Texas Yelarbon Rd
Kildonan Rd
Bruxner Way
Newell Hwy
0
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60
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80
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100
110
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130
140
150
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NS2B
Toowoomba
Brisbane
Ipswich
Grandchester
Warwick
Goondiwindi
Narrabri

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10.4.1.1 Settlement and infrastructure

The presence of a settlement indicates locations where there are likely to be concentrations of people who may be interested in views and visual amenity. The largest settlement in the impact assessment area is the regional city of Toowoomba, situated on an escarpment on the western side of the Great Dividing Range, approximately 700 m above sea level and 130 km west of Brisbane, with a population of 173,204 (Australian Bureau of Statistics (ABS), 2021a). The largest town in the impact assessment area is Oakey, situated 29 km west of Toowoomba with a population of 4,756 (ABS, 2021a). It is noted that Oakey is located on the periphery of the impact assessment area, approximately 10 km from the Project. Westbrook is the second largest town in the impact assessment area, located 10 km southwest of Toowoomba, with a population of 4,408 (ABS, 2021a).

Other towns, rural settlements and localities within the impact assessment area include:

- Athol (population 139)
- Biddeston (population 269)
- Bringalily (population 64)
- Brookstead (population 182)
- Canning Creek (population 21)
- Charlton (population 107)
- Clontarf (population 28)
- Gowrie Junction (population 2,242)
- Gowrie Mountain (population 222)
- Inglewood (population 936)
- Kingsthorpe (population 2,159)
- Kurumbul (population 36)
- Millmerran (population 1,545)
- Millwood (population 22)
- Pampas (population 78)
- Pittsworth (population 3,300)
- Southbrook (population 626)
- Turallin (population 64)
- Umbiram (population 146)
- Wellcamp (population 346)
- Whetstone (population 70)
- Yandilla (population 50)
- Yarranlea (population 82)
- Yelarbon (population 313).

The towns and localities of Highfields, Meringandan, Meringandan West, Meringandan South, Boggabilla and Toomelah Indigenous Settlement are all within the impact assessment area; however, it is considered that there are no direct impacts on these areas as they are at a considerable distance from the alignment.

Transport corridors provide opportunities for travellers to view the landscape and indicate the presence of existing transport infrastructure. There are three major roads within the impact assessment area—the Gore Highway, Warrego Highway and the Cunningham Highway. Other key roads include Toowoomba–Cecil Plains Road, Kingsthorpe–Haden Road, Oakey–Pittsworth Road, Pittsworth–Felton Road, Brookstead–Norwin Road, Millmerran–Leyburn Road, Millmerran–Cecil Plains Road, Millmerran–Inglewood and Inglewood–Texas Road.

Within the impact assessment area, there are several existing railway lines. There are three railway lines relevant to the Project—the QR West Moreton Line, the QR South Western Line and the Millmerran Branch Line. There are also large industrial precincts, feedlots and poultry facilities within close proximity to the Project alignment, including the Toowoomba Wellcamp Airport (Wellcamp), Commodore Mine (Millmerran), Millmerran Power Station (Millmerran), Doug Hall Poultry (Millmerran), Yarranbrook Feedlot (Inglewood), Sapphire Feedlot (Kildonan) and Yarranlea Solar Farm.

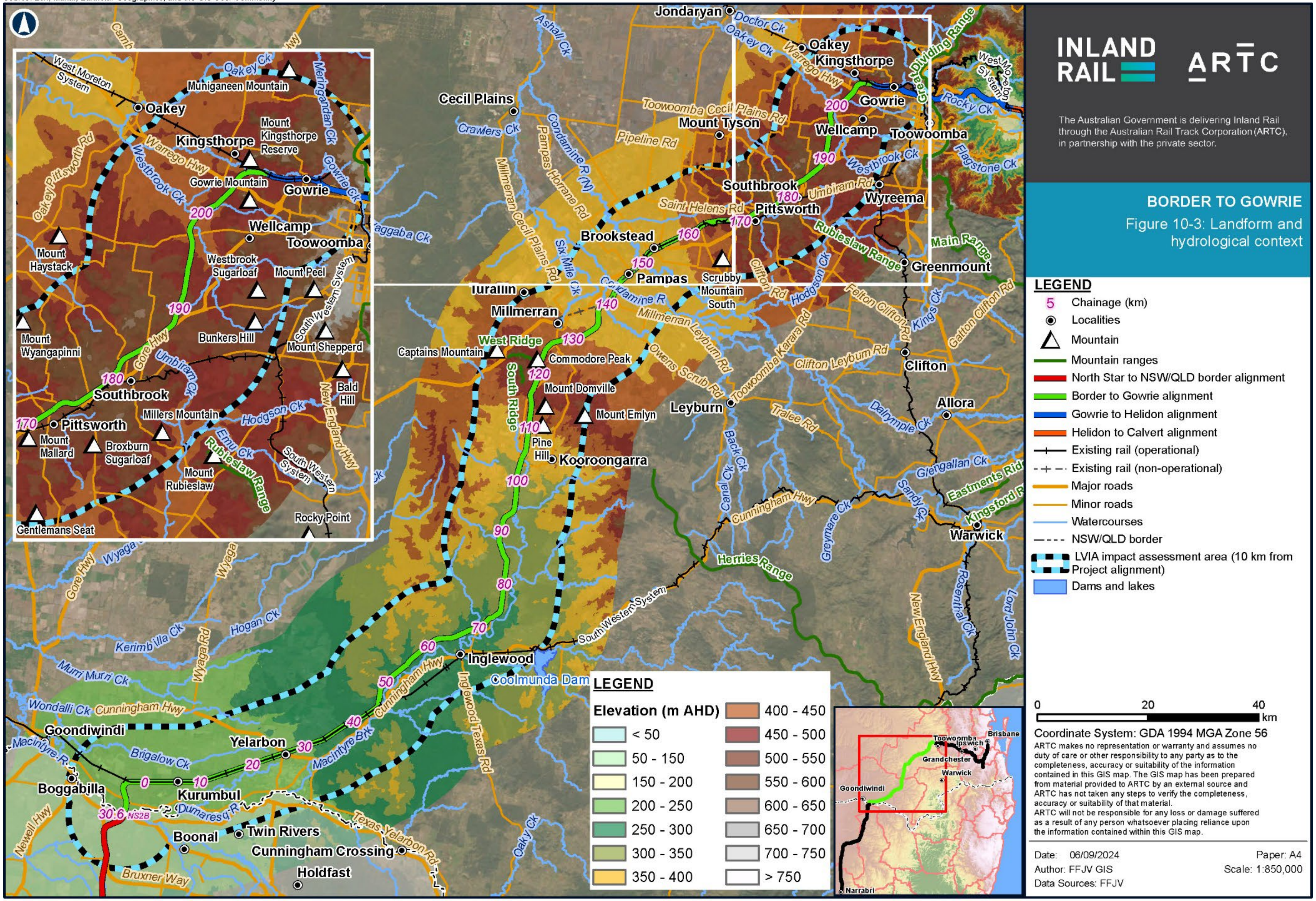
10.4.1.2 Geology, landform and hydrology

Within the impact assessment area, the landscape varies greatly due to the scale of the area, varying landform and underlying geology. Landform indicates elevated locations (that may create the potential for longer range views), which, along with geology and hydrology, forms the basis for the assessment of landscape character. The Project and its wider landform and hydrological context are illustrated in Figure 10-3. There are five distinctive regions within the impact assessment area:

- Low-lying alluvial floodplains of the Macintyre River (typically 200 m Australian height datum (AHD) to 250 m AHD)
- Forested sandstone hills of the Macintyre Brook catchment (typically 250 m AHD to 350 m AHD)
- Undulating grazing lands and peaks near Millmerran (typically 300 m AHD to 650 m AHD)
- Broad cultivated alluvial plains of the Condamine River (typically 300 m AHD to 350 m AHD)
- Basaltic uplands and isolated peaks of the Toowoomba plateau (typically 325 m AHD to 700 m AHD).

Detailed discussion on the occurrence of each region in proximity to the Project is provided in Appendix K: Landscape and Visual Impact Assessment.

Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Map by: RB/LS/TM Z:\GIS\GIS_General\Tasks\Environment\390-ELE-201808061159_LVIA\B2G\390-ELE-201808061159_ARTC_Fig10-3_B2G_ARTC_LandFormHydroContext_rev5.mxd Date: 6/09/2024 10:33

10.4.1.3 Soils, vegetation and land use

Landcover elements, including soils and the vegetation and rural land uses they support, strongly affect the character of the landscape. They also influence the extent to which views can be obtained (e.g. views may be restricted within forested landscapes). Existing land use within and adjacent to the impact assessment area is largely characterised by rural activities on a variety of allotment sizes. A diverse range of other land uses are also present within the impact assessment area, including rural lots, urban development, industrial areas and localised specialist land uses (e.g. poultry farms, cattle feedlots and mining operations).

The impact assessment area has been extensively cleared for agricultural, urban development and industrial land uses, particularly within the low-lying fertile floodplains associated with the Dumaresq River, Macintyre River, Macintyre Brook and Condamine River. These areas are renowned for their fertile soils and productive agricultural landscapes. They are dominated by vertosols and dermosols (alluvial soils), typically found on flat, slightly sloping and undulating land along watercourses in low-lying flood-prone areas, which support irrigated agricultural production. These productive landscapes are surrounded by dryland cropping, cattle grazing (predominately beef cattle) and production forestry on soils with lower fertility dominated by sodosols.

Despite the extensive clearing, the region is rich in biodiversity and supports a range of different ecosystems. Native remnant vegetation varies greatly across the extent of the impact assessment area. There is one national park within the impact assessment area, Wondul Range National Park (14,695 hectares (ha)); one conservation park, the Irongate Conservation Park (29 ha); and seven State forests, including McEwan State Forest (306 ha), Domville State Forest (228 ha), Millmerran State Forest (583 ha), Bringalily State Forest 35,695 ha), Devine State Forest (4,665 ha), Yelarbon State Forest (30,772 ha) and Whetstone State Forest (41,282 ha).

10.4.1.4 ShapingSEQ and local council landscape values

Most of the impact assessment area falls outside the area studied within *ShapingSEQ* and therefore regionally significant scenic amenity mapping is not consistently available across the extent of the impact assessment area. As shown on Figure 10-5, there are no large contiguous areas of high scenic amenity value identified within the impact assessment area; however, the Toowoomba Regional Council *Scenic Amenity Study* (Conics, 2009) does identify the following key areas within the impact assessment area as having high scenic amenity values:

- The mesas, hills and mountains across the central plains and the north eastern ranges (i.e. elevated areas near Toowoomba, Kingsthorpe, Gowrie Mountain and Pittsworth)
- The isolated peaks of Captains Mountain, Commodore Peak and Mount Domville.

Rural landscapes within the TRC area are rated as high in scenic amenity by respondents to the TRC and South East Queensland (SEQ) preference surveys.

The value of rural landscapes is supported by the *Goondiwindi Region Planning Scheme 2018* (GRC, 2018a), which outlines specific outcomes relating to scenic amenity and regional landscape character requiring protection of the productive use of rural land, and the dominance of natural landforms and open space over built form in rural areas.

Areas of ‘regionally significant scenic amenity’ (within the SEQ region) are illustrated in Figure 10-5.

10.4.2 Landscape character

The identified landscape character types (LCTs) and landscape character areas (LCAs) falling within the impact assessment area are shown on Figure 10-4 and summarised in Table 10-4. Full descriptions of the LCTs and their associated LCAs areas are included in Appendix K: Landscape and Visual Impact Assessment, with further discussion presented in Section 10.5.3.

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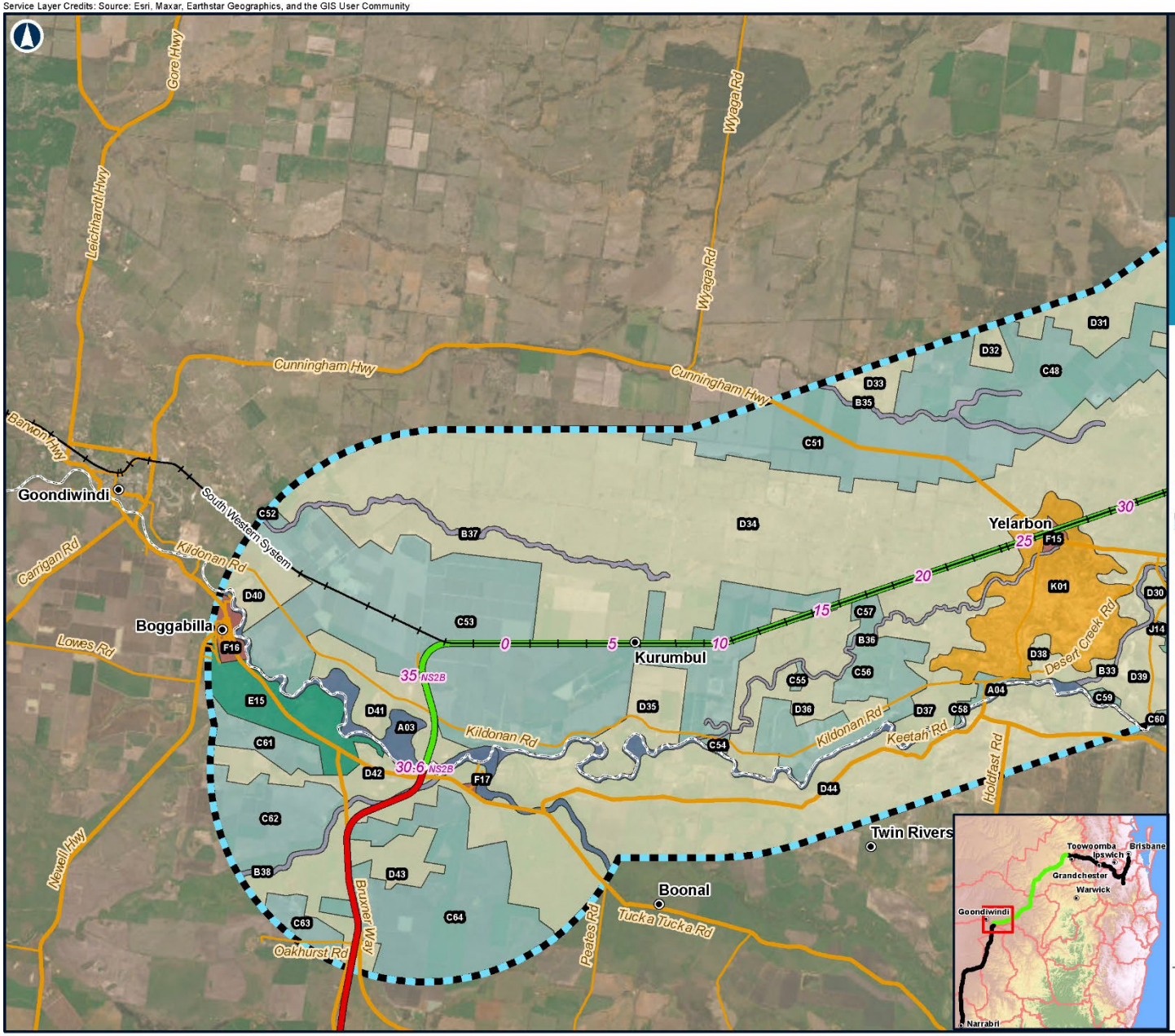

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BORDER TO GOWRIE

Figure 10-4a: Landscape character assessment

LEGEND

- 5 Chainage (km)
- Localities
- North Star to NSW/QLD border alignment
- Border to Gowrie alignment
- Existing rail (operational)
- Major roads
- Minor roads
- NSW/QLD border
- LVIA impact assessment area (10 km from Project alignment)
- LCT A: Vegetated Watercourses - Rivers
- LCT B: Vegetated Watercourses - Creeks and Channels
- LCT C: Irrigated Croplands
- LCT D: Dry Croplands and Pastures
- LCT E: Vegetated Grazing
- LCT F: Rural Settlement
- LCT G: Rural Living
- LCT H: Forested Uplands
- LCT I: Settled Hills
- LCT J: Forested Hills and Plains
- LCT K: Salinity Scald
- LCT L: Transitional Landscapes

0 6 12 km

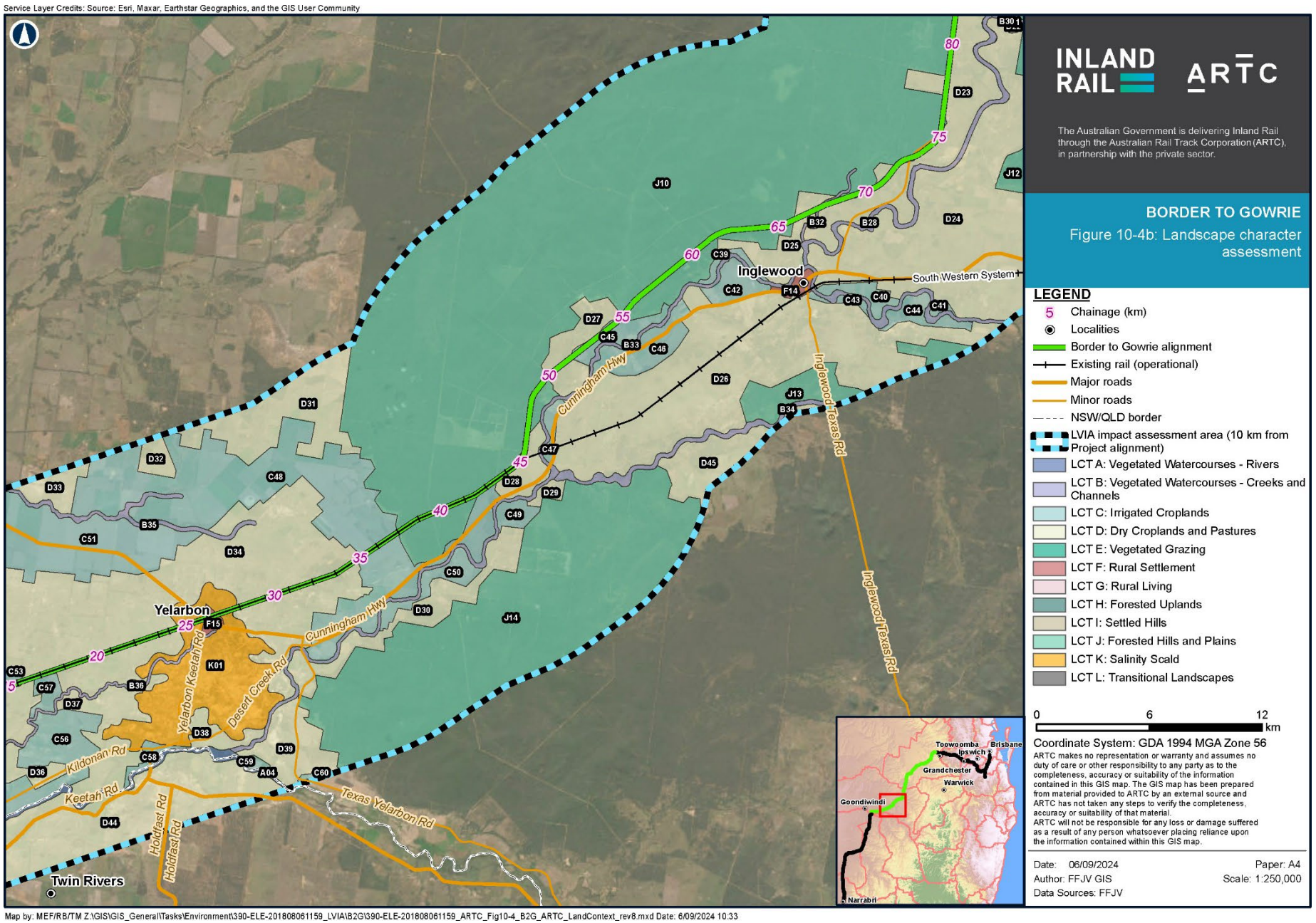
Coordinate System: GDA 1994 MGA Zone 56

Date: 06/09/2024 Paper: A4

Author: FFJV GIS Scale: 1:250,000

Data Sources: FFJV

Map by: MEF/RB/TM Z:\GIS\GIS_General\Tasks\Environment\390-ELE-201808061159_LVIA\B2G\390-ELE-201808061159_ARTC_Fig10-4_B2G_ARTC_LandContext_rev8.mxd Date: 6/09/2024 10:33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BORDER TO GOWRIE
Figure 10-4b: Landscape character assessment
LEGEND
5 Chainage (km)
Localities
Border to Gowrie alignment
Existing rail (operational)
Major roads
Minor roads
NSW/QLD border
LVIA impact assessment area (10 km from Project alignment)
LCT A: Vegetated Watercourses - Rivers
LCT B: Vegetated Watercourses - Creeks and Channels
LCT C: Irrigated Croplands
LCT D: Dry Croplands and Pastures
LCT E: Vegetated Grazing
LCT F: Rural Settlement
LCT G: Rural Living
LCT H: Forested Uplands
LCT I: Settled Hills
LCT J: Forested Hills and Plains
LCT K: Salinity Scald
LCT L: Transitional Landscapes
0 6 12 km
Coordinate System: GDA 1994 MGA Zone 56
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Paper: A4
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Scale: 1:250,000
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Inglewood
Yelarbon
Twin Rivers
Cunningham Hwy
Inglewood Texas Rd
South Western System
Yelarbon Keetah Rd
Desert Creek Rd
Kildonan Rd
Keetah Rd
Holdfast Rd
Texas Yelarbon Rd
Toowoomba
Ipswich
Brisbane
Grandchester
Warwick
Goondiwindi
Narrabri
Map by: MEF/RB/TM Z:\GIS\GIS_General\Tasks\Environment\390-ELE-201808061159_LVIA\B2G\390-ELE-201808061159_ARTC_Fig10-4_B2G_ARTC_LandContext_rev8.mxd Date: 6/09/2024 10:33

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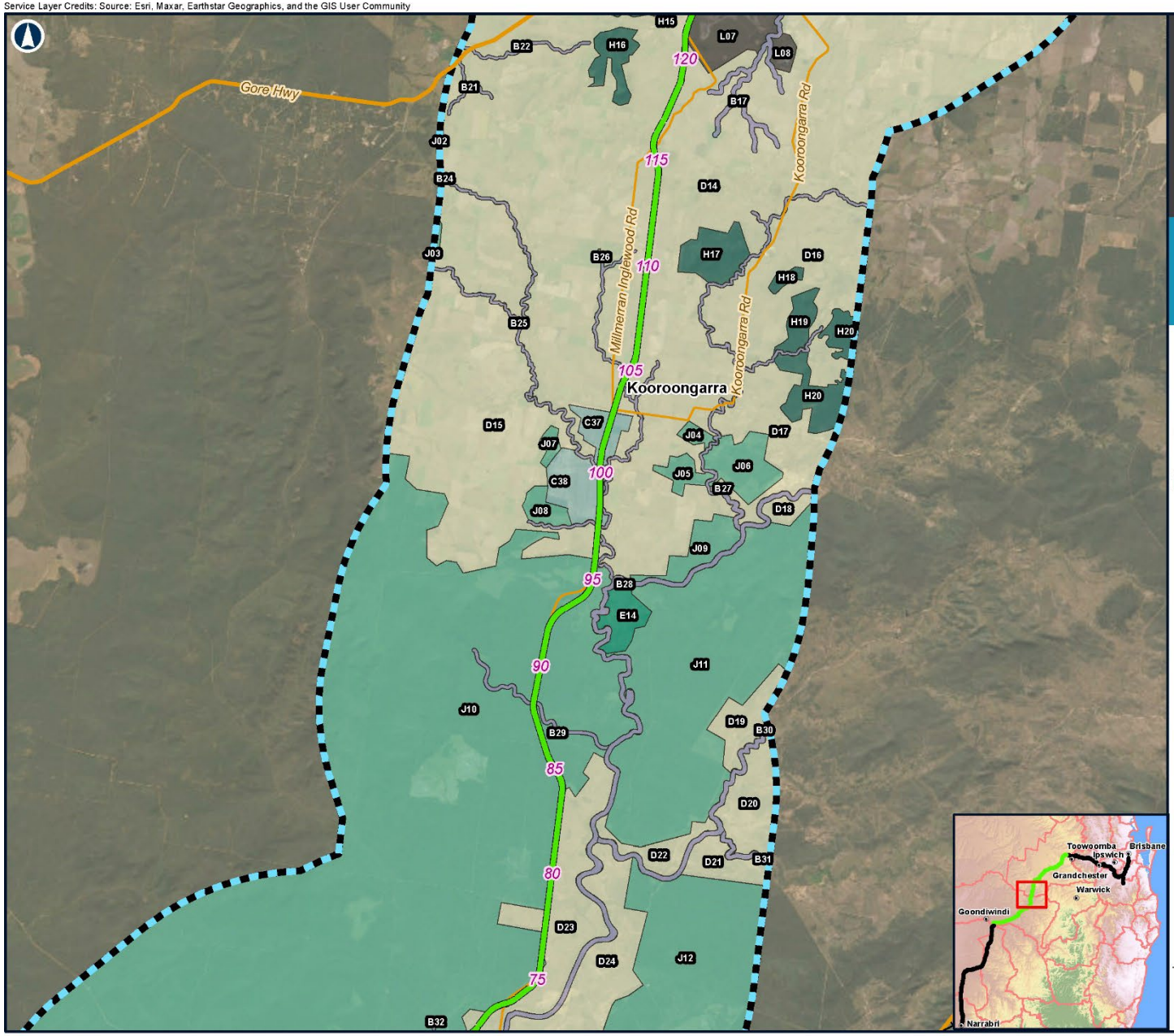

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BORDER TO GOWRIE

Figure 10-4c: Landscape character assessment

LEGEND

- 5 Chainage (km)
- Localities
- Border to Gowrie alignment
- Existing rail (operational)
- Major roads
- Minor roads
- LVIA impact assessment area (10 km from Project alignment)
- LCT A: Vegetated Watercourses - Rivers
- LCT B: Vegetated Watercourses - Creeks and Channels
- LCT C: Irrigated Croplands
- LCT D: Dry Croplands and Pastures
- LCT E: Vegetated Grazing
- LCT F: Rural Settlement
- LCT G: Rural Living
- LCT H: Forested Uplands
- LCT I: Settled Hills
- LCT J: Forested Hills and Plains
- LCT K: Salinity Scald
- LCT L: Transitional Landscapes

0 6 12 km

Coordinate System: GDA 1994 MGA Zone 56

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Author: FFJV GIS Scale: 1:250,000

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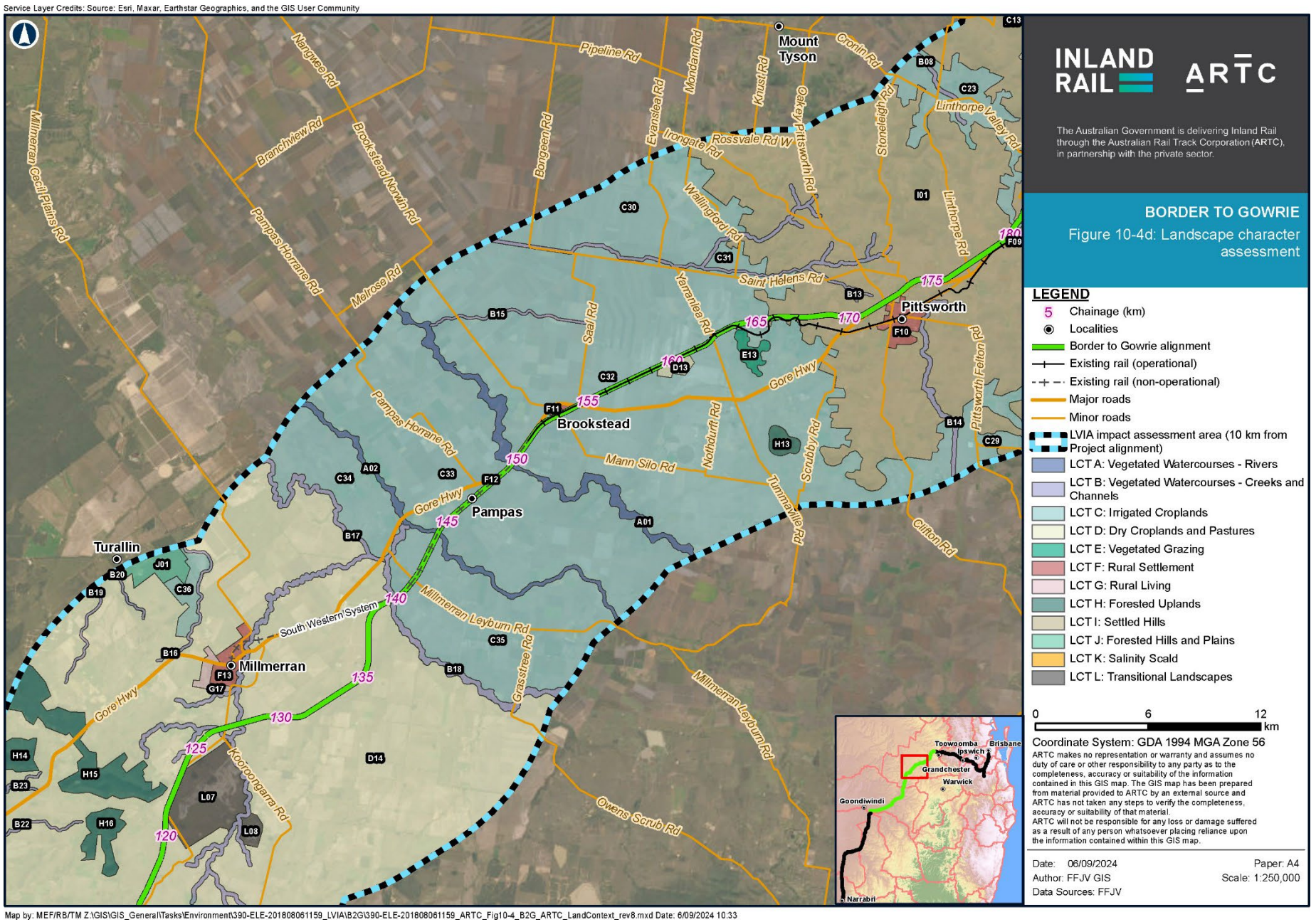
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Mount Tyson
Pittsworth
Brookstead
Pampas
Millmerran
Turallin
Pipeline Rd
Nangwee Rd
Millmeran Cecil Plains Rd
Branchview Rd
Brookstead Nomwin Rd
Pampas Horrane Rd
Melrose Rd
Bongeen Rd
Evanslea Rd
Mondam Rd
Knust Rd
Cronin Rd
Oakey Pittsworth Rd
Stoneleigh Rd
Linthorpe Valley Rd
Linthorpe Rd
Irongate Rd
Rossvale Rd W
Wallingford Rd
Saint Helens Rd
Yarranlea Rd
Saal Rd
Gore Hwy
Mann Silo Rd
Nothdurft Rd
Scrubby Rd
Tummaville Rd
Pittsworth Felton Rd
Clifton Rd
Millmerran Leyburn Rd
Grasstree Rd
South Western System
Koorroongarra Rd
Owens Scrub Rd
180
175
170
165
160
155
150
145
140
135
130
125
120
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BORDER TO GOWRIE
Figure 10-4d: Landscape character assessment
LEGEND
Chainage (km)
Localities
Border to Gowrie alignment
Existing rail (operational)
Existing rail (non-operational)
Major roads
Minor roads
LVIA impact assessment area (10 km from Project alignment)
LCT A: Vegetated Watercourses - Rivers
LCT B: Vegetated Watercourses - Creeks and Channels
LCT C: Irrigated Croplands
LCT D: Dry Croplands and Pastures
LCT E: Vegetated Grazing
LCT F: Rural Settlement
LCT G: Rural Living
LCT H: Forested Uplands
LCT I: Settled Hills
LCT J: Forested Hills and Plains
LCT K: Salinity Scald
LCT L: Transitional Landscapes
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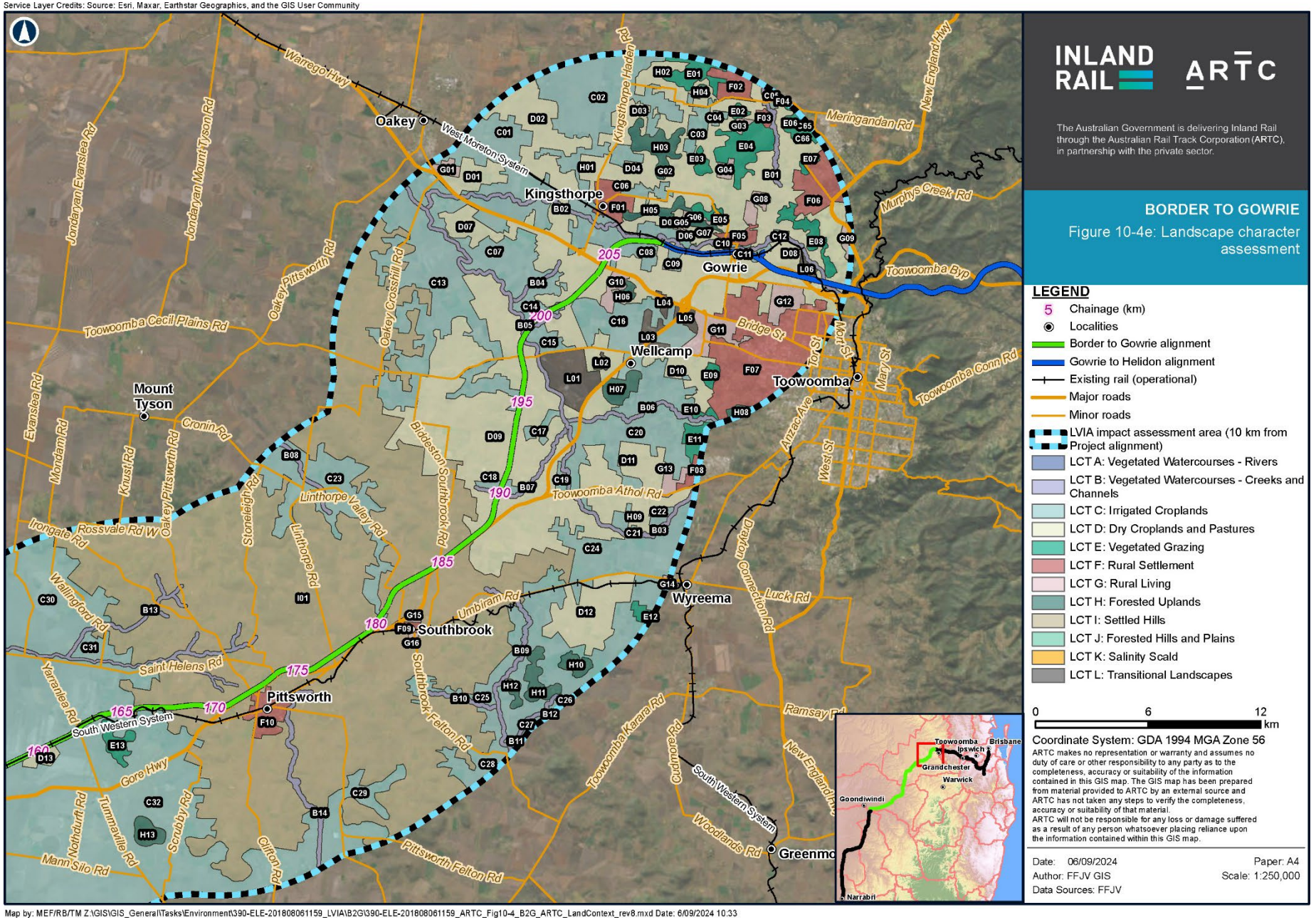
Toowoomba
Brisbane
Ipswich
Grandchester
Warwick
Goondiwindi
Narrabri
Map by: MEF/RB/TM Z:\GIS\GIS_General\Tasks\Environment\390-ELE-201808061159_LVIA\B2G\390-ELE-201808061159_ARTC_Fig10-4_B2G_ARTC_LandContext_rev8.mxd Date: 6/09/2024 10:33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BORDER TO GOWRIE
Figure 10-4e: Landscape character assessment
LEGEND
5 Chainage (km)
Localities
Border to Gowrie alignment
Gowrie to Helidon alignment
Existing rail (operational)
Major roads
Minor roads
LVIA impact assessment area (10 km from Project alignment)
LCT A: Vegetated Watercourses - Rivers
LCT B: Vegetated Watercourses - Creeks and Channels
LCT C: Irrigated Croplands
LCT D: Dry Croplands and Pastures
LCT E: Vegetated Grazing
LCT F: Rural Settlement
LCT G: Rural Living
LCT H: Forested Uplands
LCT I: Settled Hills
LCT J: Forested Hills and Plains
LCT K: Salinity Scald
LCT L: Transitional Landscapes
0 6 12 km
Coordinate System: GDA 1994 MGA Zone 56
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Data Sources: FFJV
Oakey
Kingsthorpe
Gowrie
Wellcamp
Toowoomba
Mount Tyson
Wyreema
Southbrook
Pittsworth
Greenmount
Warrego Hwy
West Moreton System
Meringandan Rd
New England Hwy
Murphys Creek Rd
Toowoomba Byp
Toowoomba Cecil Plains Rd
Oakey Pittsworth Rd
Oakey Crosshill Rd
Bridge St
Toowoomba Conn Rd
Anzac Ave
West St
Toowoomba Athol Rd
Linthorpe Valley Rd
Linthorpe Rd
Biddeston Southbrook Rd
Umbiram Rd
Luck Rd
Ramsay Rd
Saint Helens Rd
Southbrook Felton Rd
Toowoomba Karara Rd
Gore Hwy
South Western System
Woodlands Rd
Pittsworth Felton Rd
Mann Silo Rd
Rossvale Rd W
Irongate Rd
Wallingford Rd
Yarranlea Rd
Cronin Rd
Evanslea Rd
Mondam Rd
Knust Rd
Stoneleigh Rd
Jondaryan Evanslea Rd
Jondaryan Mount Tyson Rd
Kingsthorpe Haden Rd
Tor St
Margaret St
Mary St
Taylor Connection Rd
Clopton Rd
Nothdurft Rd
Tummaville Rd
Scrubby Rd
Clifton Rd
205
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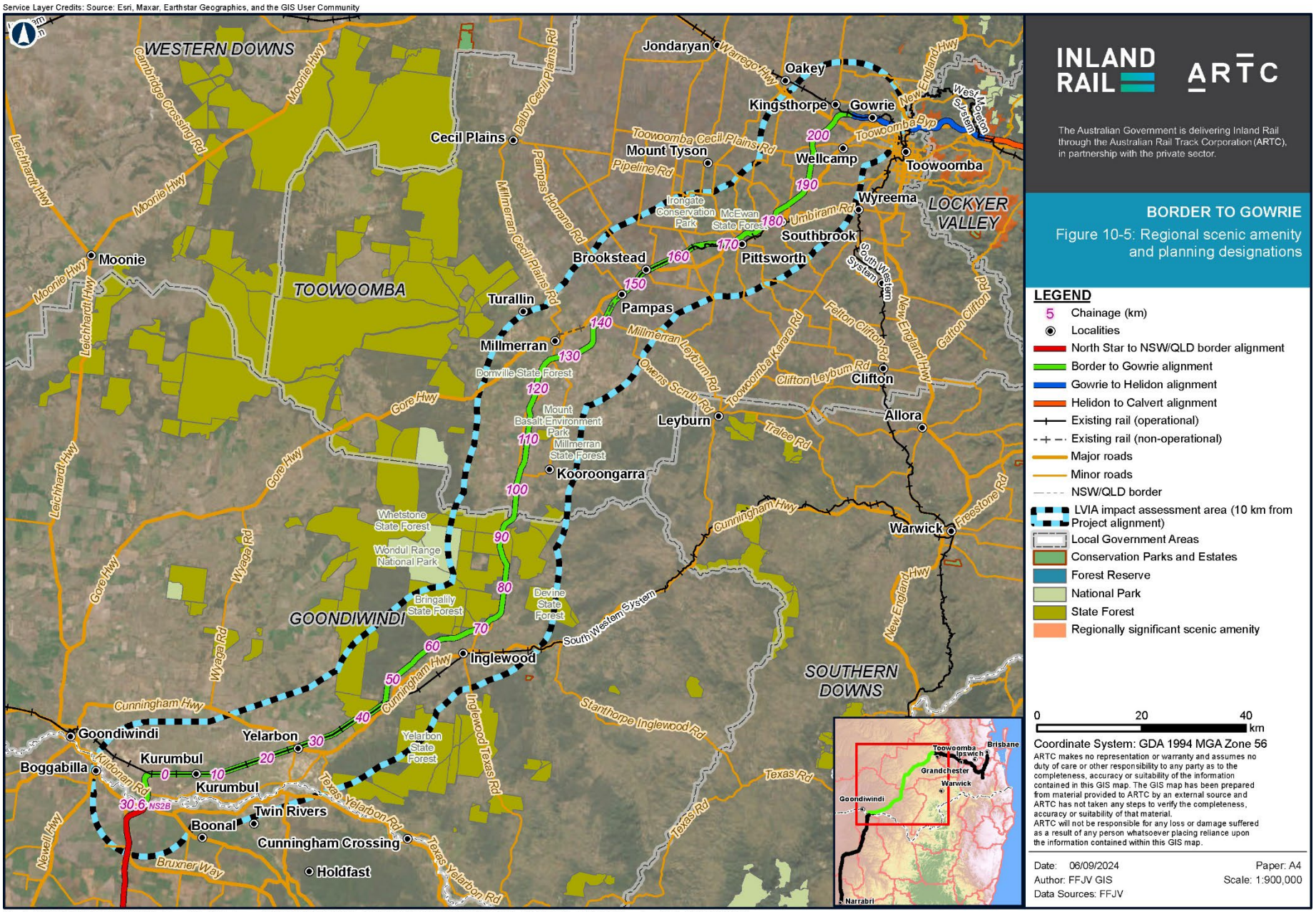
Toowoomba
Ipswich
Brisbane
Grandchester
Warwick
Goondiwindi
Narrabri
Map by: MEF/RB/TM Z:\GIS\GIS_General\Tasks\Environment\390-ELE-201808061159_LVIA\B2G\390-ELE-201808061159_ARTC_Fig10-4_B2G_ARTC_LandContext_rev8.mxd Date: 6/09/2024 10:33



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BORDER TO GOWRIE

Figure 10-5: Regional scenic amenity and planning designations

LEGEND

- 5 Chainage (km)
- Localities
- North Star to NSW/QLD border alignment
- Border to Gowrie alignment
- Gowrie to Helidon alignment
- Helidon to Calvert alignment
- Existing rail (operational)
- Existing rail (non-operational)
- Major roads
- Minor roads
- NSW/QLD border
- LVIA impact assessment area (10 km from Project alignment)
- Local Government Areas
- Conservation Parks and Estates
- Forest Reserve
- National Park
- State Forest
- Regionally significant scenic amenity

0 20 40 km

Coordinate System: GDA 1994 MGA Zone 56

Date: 06/09/2024 Paper: A4
Author: FFJV GIS Scale: 1:900,000
Data Sources: FFJV

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TABLE 10-4 LANDSCAPE CHARACTER TYPES AND AREAS

Landscape character type	Associated landscape character areas
LCT A: Vegetated Watercourses—Rivers	This LCT is located in both the western and central parts of the impact assessment area, associated with the Dumaresq River, Macintyre River and Condamine River. There are four LCAs of this type in the impact assessment area.
LCT B: Vegetated Watercourses—Creeks and Channels	This LCT is located throughout the impact assessment area, associated with the many small tributaries of the Condamine River (near Pampas) and Macintyre River (along the NSW/QLD border). There are 38 LCAs of this type in the impact assessment area.
LCT C: Irrigated Croplands	This LCT is located within the alluvial valleys and fertile floodplains of the Macintyre and Weir Rivers, Macintyre Brook and Condamine River catchments. There are 64 LCAs of this type in the impact assessment area.
LCT D: Dry Croplands and Pastures	This LCT extends across a considerable part of the impact assessment area and is largely defined by extensively cleared, often undulating, open rural lots used for agriculture and livestock production. In the western extent of the impact assessment area, the landscape is typically flatter and prone to flooding. There are 44 LCAs of this type in the impact assessment area.
LCT E: Vegetated Grazing	This LCT occurs in isolated patches, particularly near Toowoomba, and comprises grazing areas set within vegetated landscapes. While LCT E: Vegetated Grazing falls within the impact assessment area, it is not affected by the Project and has not been assessed.
LCT F: Rural Settlement	Seventeen rural settlements are located within the impact assessment area. They include the city of Toowoomba; the towns of Kingsthorpe, Meringandan, Gowrie Junction, Highfields, Westbrook, Southbrook, Pittsworth, Brookstead, Millmerran, Inglewood and Yelarbon; the Indigenous settlement Boggabilla; and the small rural settlement of Pampas. There are 17 LCAs of this type in the impact assessment area.
LCT G: Rural Living	This LCT is typically located in elevated parts of the impact assessment area, near major transport infrastructure with access to towns and services and is characterised by large-lot rural residential development and is typically somewhat vegetated. There are 17 LCAs of this type in the impact assessment area.
LCT H: Forested Uplands	This LCT is typically associated with elevated, undulating areas within the impact assessment area, including parts of the Great Dividing Range, West Ridge and South Ridge. There are 20 LCAs of this type in the impact assessment area.
LCT I: Settled Hills	This LCT is associated with the elevated, undulating areas and basaltic uplands of the Darling Downs, surrounding Pittsworth. There is one landscape character area of this type—the Pittsworth Hills (LCA I1).
LCT J: Forested Hills and Plains	This LCT is typically associated with the densely vegetated, lower-lying and gently undulating areas of the impact assessment area, typically west of Millmerran. This landscape type includes Wondul Range National Park, while other areas are predominately designated as State forests, which typically have very limited recreational opportunity. There are 14 LCAs of this type.
LCT K: Salinity Scald	This LCT is associated with the dryland salinity scald surrounding Yelarbon, in the western extent of the impact assessment area. There is one landscape character area of this type—the Yelarbon Salinity Scald (LCA K1).
LCT L: Transitional Landscapes	This LCT comprises disturbed and developing landscapes, such as around Commodore Mine near Millmerran, that are not valued for their existing landscape character or quality. While LCT L: Transitional Landscapes falls within the impact assessment area, it is not affected by the Project and has not been assessed.

10.4.3 Visual assessment

Representative viewpoints were selected to provide a representative assessment of the potential landscape and visual impacts of the Project on a range of visual audiences and landscape settings, at a range of distances from the alignment, within the impact assessment area, including, but not limited to, the views experienced by the following:

- Local residents and workers in towns and rural settlements (including Yelarbon, Inglewood, Millmerran, Pampas, Brookstead, Pittsworth, Southbrook, Athol, Gowrie Mountain and Kingsthorpe)
- Local residents and workers on rural and acreage lots within the impact assessment area
- Travellers on main and local roads
- Tourists on roads including users of scenic drives and visitors staying in tourist accommodation within the impact assessment area
- Tourists on the Westlander train
- Recreational users of the landscape, particularly those using walking trails within national parks (Wondul Range National Park), State forests (such as Whetstone State Forest) and other nature reserves
- Traditional Owners, including those accessing culturally significant landscapes (such as Rainbow Reserve).

The selection of representative viewpoints has been updated for the revised draft EIS to reflect community feedback on the draft EIS. The selected viewpoints are summarised in Table 10-5 and shown in Figure 10-6. These are discussed further in Appendix K: Landscape and Visual Impact Assessment.

TABLE 10-5 VIEWPOINT SELECTION

Viewpoint name	Anticipated approximate distance to Project alignment	Key visual receptors
Viewpoint 1: Rainbow Reserve near Kildonan Road, Kurumbul	Project alignment is approximately 300 m to the east of this viewpoint	Represents typical and accessible views of residents of local rural lots, visitors including Traditional Owners and campers at Rainbow Reserve and those travelling along Kildonan Road
Viewpoint 2: Cunningham Highway near Yelarbon towards proposed Yelarbon non-resident workforce accommodation facility	Proposed Yelarbon non-resident workforce accommodation facility is located approximately 750 m to the north of this viewpoint, while proposed road realignment works are approximately 340 m northwest of this viewpoint	Represents typical and accessible views of those travelling along the Cunningham Highway towards Goondiwindi
Viewpoint 3: Yelarbon Rest Area	Project alignment is approximately 50 m to the north of this viewpoint	Represents typical and accessible views of residents and of visitors, workers and tourists in Yelarbon, as well as those travelling along the Cunningham Highway
Viewpoint 4: Yelarbon silo artwork viewing area	Project alignment is approximately 80 m to the north of this viewpoint	Represents typical and accessible views of residents and of visitors, workers and tourists in Yelarbon, as well as those travelling along the Cunningham Highway
Viewpoint 5: Cunningham Highway Near Whetstone Rest Area	Project alignment is approximately 1 km to the northwest of this viewpoint	Represents typical and accessible views of those travelling along the Cunningham Highway as well as those stopping at the rest area
Viewpoint 6: Millmerran–Inglewood Road towards Millmerran–Inglewood Road active level crossing	Project alignment is approximately 70 m to the northwest of this viewpoint	Represents typical and accessible views of those travelling along Millmerran–Inglewood Road
Viewpoint 7: Millmerran-Inglewood Road towards proposed non-resident workforce accommodation facility	Proposed Inglewood non-resident workforce accommodation facility is located approximately 740 m to the west of this viewpoint, while this viewpoint is located in close proximity to the proposed access road	Represents typical and accessible views of those travelling north along Millmerran-Inglewood Road towards Millmerran
Viewpoint 8: Millmerran–Inglewood Road near Nicol Creek Road	Project alignment is approximately 1 km to the east of this viewpoint	Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along Millmerran–Inglewood Road
Viewpoint 9: Millmerran-Inglewood Road towards Millmerran-Inglewood Road Rail Bridge #2	Project alignment is approximately 240 m to the west of this viewpoint	Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along Millmerran-Inglewood Road
Viewpoint 10: Mount Basalt Reserve, looking towards Millmerran	Project alignment is approximately 5.5 km to the west of this viewpoint	Represents typical and accessible views of those visiting Mount Basalt Reserve and walking on the Mount Basalt Circuit—a walking track with lookouts and elevated views
Viewpoint 11: Blackwell Road looking towards Millmerran–Inglewood Road	Project alignment is approximately 400 m to the west of this viewpoint	Represents typical and accessible views of nearby isolated rural residents, as well as visitors, workers and tourists travelling along Blackwell Road

Viewpoint name	Anticipated approximate distance to Project alignment	Key visual receptors
Viewpoint 12: Commodore Peak picnic area looking towards Millmerran Power Station	Project alignment is approximately 390 m to the southeast of this viewpoint	Represents typical and accessible views of those visiting Commodore Peak picnic area
Viewpoint 13: Millmerran-Inglewood Road towards Millmerran-Inglewood Road Rail Bridge #3	Project alignment is approximately 90 m to the south of this viewpoint	Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling south along Millmerran-Inglewood Road towards Inglewood
Viewpoint 14: Nardoo Street edge of Millmerran	Project alignment is approximately 3.1 km to the southeast of this viewpoint	Represents typical and accessible views of residents of Millmerran
Viewpoint 15: Turallin Road towards the proposed Turallin facility	The proposed Turallin facility is located approximately 200 m to the southwest of this viewpoint, while the proposed access road is located approximately 110 m to the northwest of this viewpoint	Represents typical and accessible views of those travelling along Turallin Road
Viewpoint 16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain	Project alignment is approximately 170 m to the southeast of this viewpoint	Represents typical and accessible views of those travelling along Millmerran-Leyburn Road, which is part of several local tourist drives (including Condamine River Flats Drive and Historic Owen's Scrub Drive), and also provides access to Yarramalong Weir and the associated camping area
Viewpoint 17: Gore Highway towards Condamine River crossing and floodplain	Project alignment is approximately 1.2 km to the southeast of this viewpoint	Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along the Gore Highway.
Viewpoint 18: Gore Highway near service station, Pampas	Project alignment is approximately 80 m to the southeast of this viewpoint	Represents typical and accessible views of nearby residents of Pampas and of visitors, workers and tourists travelling along the Gore Highway
Viewpoint 19: Gore Highway towards Condamine River (north branch) crossing	Project alignment is approximately 70 m to the southeast of this viewpoint	Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along the Gore Highway
Viewpoint 20: Near Brookstead State School	Project alignment is approximately 90 m to the southeast of this viewpoint	Represents typical and accessible views of school patrons, residents of Brookstead and of visitors, workers and tourists travelling along Ware Street and using nearby facilities (i.e. playground, amenities and barbecue/picnic facilities) at the historic railway station
Viewpoint 21: Glen Devon Road looking south from elevated private residential lots	Project alignment is approximately 210 m to the south of this viewpoint	Represents typical and accessible views of nearby elevated and isolated rural residential lots
Viewpoint 22: Pittsworth–Felton Road near Pittsworth Motor Inn	Project alignment is approximately 200 m to the northwest of this viewpoint	Represents typical and accessible views of nearby residents of Pittsworth, guest of Pittsworth Motor Inn and of visitors, workers and tourists travelling along Pittsworth–Felton Road
Viewpoint 23: Stanley Street near local park, Pittsworth	Project alignment is approximately 380 m to the northwest of this viewpoint	Represents accessible views typically obtained by residents on the northern edge of Pittsworth, visitors to the park and of those utilising the nearby playing fields accessed via Short Street

Viewpoint name	Anticipated approximate distance to Project alignment	Key visual receptors
Viewpoint 24: Pittsworth and District Assembly of God, Pittsworth	Project alignment is approximately 190 m to the northwest of this viewpoint	Represents accessible views typically obtained by those visiting the Pittsworth and District Assembly of God, nearby residents of the northern edge of Pittsworth and of visitors, workers and tourists travelling along Short Street. It is also representative of travellers on the A39 Gore Highway
Viewpoint 25: Gore Highway near Southbrook	Project alignment is approximately 1.5 km northwest of this viewpoint	Represents typical and accessible views of nearby isolated rural residents, elevated residential lots of Southbrook and of visitors, workers and tourists travelling along the Gore Highway
Viewpoint 26: View from Athol School Road	Project alignment is approximately 230 m to the west of this viewpoint	Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along Athol School Road
Viewpoint 27: Toowoomba–Cecil Plains Road, near private lot 'Burton'	Project alignment is approximately 200 m to the northeast of this viewpoint	Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along Toowoomba–Cecil Plains Road
Viewpoint 28: Linora Drive, Gowrie Mountain	Project alignment is approximately 1.2 km to the northwest of this viewpoint	Represents typical and accessible views of nearby elevated residential lots of Gowrie Mountain
Viewpoint 29a: Mount Kingsthorpe summit scenic lookout Viewpoint 29b: Southern Cross Drive, Kingsthorpe	Project alignment is approximately 1.5 km, and 3 km to the south of these viewpoints	Represents typical and accessible views of those visiting Mount Kingsthorpe Bushland Park and walking on the Mount Kingsthorpe Walk—a walking track to the summit, which provides expansive elevated views Also representative of typical and accessible views of nearby elevated residential areas of Kingsthorpe

10.5 Potential impacts

This section includes a summary of the potential landscape and visual amenity impacts that are associated with the Project, prior to mitigation. Further details are included in Appendix K: Landscape and Visual Impact Assessment.

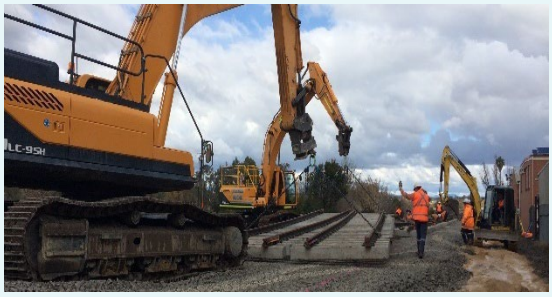
10.5.1 Construction works stage potential impacts

The construction works stage of the Project will involve various activities, each with the potential to result in impacts to landscape and visual amenity values. These potential impacts are summarised in Table 10-6.

TABLE 10-6 POTENTIAL LANDSCAPE AND VISUAL IMPACTS DURING CONSTRUCTION WORKS STAGE

Construction works activities and infrastructure	Indicative imagery
Demolition of existing infrastructure The demolition and removal of existing redundant rail infrastructure would convey construction traffic to and within the construction areas, resulting in short-term impacts on landscape and visual values.	 Source: Lat27

Construction works activities and infrastructure	Indicative imagery
Vegetation clearing and associated earthworks Much of the landscape is already cleared for agricultural purposes. Where required, large-scale machinery will be used to assist in vegetation clearance or trimming activities. This will generate traffic on surrounding roads. Temporary stockpiles of cleared vegetation may also be present. Topsoil, subsoil, rock and other unsuitable materials will be removed, where necessary, to create stable and level areas for infrastructure to be constructed. This will result in the temporary presence of exposed areas of land.	 Source: ARTC
Road and railway construction The construction of new railway tracks, haul roads and access roads within the Project would convey construction traffic to and within the construction areas, resulting in short-term impacts on landscape and visual values.	 Source: Lat27
Bridge construction Bridges, culverts and viaducts will be constructed over creeks, rivers, floodplains and existing road corridors. The construction of new infrastructure would introduce construction traffic to and within the construction areas, resulting in short-term impacts on landscape and visual values.	 Source: ARTC
Creation of stockpiles (existing material from site) Stockpiles of materials cleared from site will be present in the laydown areas in the construction footprint, where they will be stored prior to use, re-use or disposal. This includes ballast from the existing rail corridor, rail tracks, and soil from cut-and-fill sites. Stockpile protocols are further detailed in the Appendix AB: Earthworks Strategy and Draft Soil Management Plan.	 Source: Lat27
Creation of stockpiles (material delivered to site) Stockpiles of materials delivered to site will be present in the laydown areas and beside the existing rail corridor, where they will be stored prior to use. This includes clean ballast, soil stockpiles and rail materials, including tracks and sleepers. Stockpile protocols are further detailed in the Appendix AB: Earthworks Strategy and Draft Soil Management Plan.	 Source: ARTC

Construction works activities and infrastructure	Indicative imagery
Presence and movement of construction equipment Large-scale construction equipment and machinery, such as cranes, excavators, trucks, water trucks, scrapers, graders, heavy bulldozers, generators and dump trucks, will be required for construction activities.	 Source: ARTC
Non-resident workforce accommodation facilities and workers Presence of construction workers wearing high-visibility personal protective equipment. The construction workforce is expected to peak at around 900 full-time equivalents around week 80 of construction. Two non-resident workforce accommodation facilities are proposed near Yelarbon and Inglewood. At a minimum, each non-resident workforce accommodation facility will have capacity to accommodate a minimum of 300 beds. Each facility will be self-contained and will include accommodation units with kitchen, dining, ablution and laundry facilities. These areas include lighting. Further detail regarding these facilities, including their site locations is provided in Chapter 5: Project Description. A third non-resident workforce accommodation facility will be required in the Millmerran area. The location for this site has not been included in the revised draft EIS. The site selection and due diligence associated with locating a Millmerran based non-resident workforce accommodation facility will be undertaken during detailed design and subject to further review and approval. Following construction, the non-resident workforce accommodation facilities will be progressively decommissioned so that reinstatement and revegetation activities can commence as soon as possible.	 Example of a non-resident workforce accommodation layout. Dalby, Queensland
Construction traffic movement There will be increased traffic movement on existing State-controlled and local government roads. This will include a variety of light and heavy vehicle types.	 Source: Lat27
Temporary construction lighting Site preparation activities undertaken to provide access to the rail corridor are commonly conducted during daylight hours; however, some activities may be undertaken outside of standard daytime hours. Night lighting will be required at the non-resident workforce accommodation facilities, the Turallin facility, site offices and fuel storage areas. Night lighting may also be required at bridge laydown areas. The primary light source will be from large-scale temporary security lighting.	 Source: FFJV
Embankments and mounding Many embankments will be created to establish the proposed rail corridor. This will be evident in areas where there is a change in levels with the existing ground (e.g. major cuts). In addition, abutments in support of culverts and bridges will be required adjacent to creeks and existing road corridors.	 Source: Lat27

Construction works activities and infrastructure	Indicative imagery
Shipping containers and storage sheds Shipping containers will be delivered to construction sites via crane trucks and then stored in laydown areas. The containers commonly contain construction equipment.	 Source: FFJV
Site offices, Whetstone MDC, Turallin facility and associated car parking areas The Project will require several temporary buildings, including site offices and workshops and car parking areas. Nominated site office locations are as follows: ▸ LDN025.9: Yelarbon-Kurumbul Road—Secondary site office ▸ LDN054.2: Cremascos Road—Secondary site office ▸ LDN074.0: Millmerran-Inglewood Road—Secondary site office ▸ LDN116.5: Millmerran-Inglewood Road—Main site office ▸ LDN161.0: Pittsworth-Tummaville Road—Main site office ▸ LDN175.5 Linthorpe Road Bridge-Linthorpe Road—Secondary site office ▸ LDN188.2: Athol School Road—Main site office ▸ LDN192.3: Off Berghofer Road—Secondary site office ▸ LDN206.3: Leesons Road—Main site office. The land on which the MDC is proposed is described as Lot 2 on MH784. Refer to Appendix AE: Whetstone Material Distribution Centre: Supporting Technical Information for further details, including the LVIA completed for the site which forms Appendix B to Appendix AE: Whetstone Material Distribution Centre: Supporting Technical Information. In addition, a 20 ha site facility is proposed near Turallin, to be utilised for a laydown area, a training facility, or native plant nursery and traditional land management training facility. These sites will introduce additional traffic, staff and machinery to the impact assessment area. The new, temporary built forms may be seen as uncharacteristic elements in a predominantly rural landscape.	 Source: FFJV
Construction of drainage infrastructure, including concrete piping Temporary and permanent drainage infrastructure will be present, including in areas in proximity to existing road corridors.	 Source: FFJV
Signage A large number of signs will be displayed around construction sites, especially where existing road corridors are in proximity to the proposed rail corridor. Signage will include speed signs, stop signs, and safety signs, and construction signage such as truck access signage.	 Source: FFJV

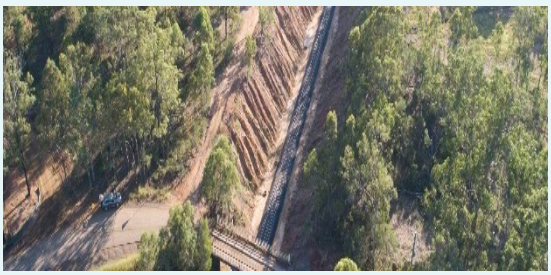
10.5.2 Operations stage potential impacts

Table 10-7 describes potential impacts, prior to the application of mitigation measures, during the operations stage of the Project.

TABLE 10-7 POTENTIAL LANDSCAPE AND VISUAL IMPACTS DURING OPERATIONS STAGE

Operations activities and infrastructure	Indicative imagery
Lighting infrastructure Permanent lighting infrastructure will be limited to standard road lighting required for the Cunningham Highway Road Bridge near Yelarbon and the Gore Highway near Brookstead. There will also be standard flashing lights located at all of the active level crossings (Section 10.3.3.3 for locations).	 Source: ARTC
Freight trains Trains may at times be visible in the landscape from existing roads and residential lots. Current operational modelling projects an average of 14 train movements per day during the initial years of operation. This is likely to increase to an average of 20 trains per day after 15 years, and up to 25 per day during peak operational periods. These will be double stacked and up to 1.8 km long and 6.5 m high. The wait time for a 1.8 km train to pass at a speed of between 80 km and 115 kilometres per hour (km/h) (maximum speed) will be up to 199 seconds at active level crossings. The trains will have headlights.	 Source: ARTC  Source: ARTC
Road and rail bridges Bridges are an obvious visible feature for viewers and are typically landmarks for motorists. The bridges are proposed as single-track, Super-T girder type structures. The Project has five road-over-rail bridges as follows: ▸ Cunningham Highway Bridge: 104 m ▸ Heckendorf Road Bridge: 59 m ▸ Owens Scrub Road Bridge: 72 m ▸ Gore Highway Bridge: 108 m ▸ Linthorpe Road Bridge: 66 m The Project has fourteen rail-over-road bridges as follows: ▸ Bybera Road Rail Bridge: 75 m ▸ Millmerran-Inglewood Road Rail Bridge #2: 75 m ▸ Commodore Peak Road Bridge: 75 m ▸ Millmerran-Inglewood Road Rail Bridge #3: 167 m ▸ Yarranlea Road Rail Bridge: 69 m ▸ Roche Road Rail Bridge: 121 m ▸ Oakey-Pittsworth Road Rail Bridge: 69 m ▸ Lochaber Road Rail Bridge: 75 m ▸ Biddenston-Southbrook Road Rail Bridge: 144 m ▸ Athol School Road Rail Bridge: 75 m ▸ Toowoomba-Cecil Plains Road Rail Bridge: 92 m ▸ Brimblecombe Road Rail Bridge: 75 m ▸ Warrego Highway Rail Bridge: 132 m ▸ Chamberlain Road Rail Bridge: 299 m	Road-over-rail bridge  Source: Lat27 *(Visualisation)* Rail-over-road bridge  Source: Lat27 *(Visualisation)*

Operations activities and infrastructure	Indicative imagery
River and creek bridges Rail-over-watercourse bridges are typically lower, with their height determined by flood levels, except where they also pass over adjacent roads. They are also obvious built landmarks for viewers where visible from roads and residential areas. The Project has 15 rail-over-watercourse bridges, as follows: ▸ Macintyre Brook Rail Bridge 1: 207 m ▸ Macintyre Brook Rail Bridge 2: 207 m ▸ Pariagara Creek Rail Bridge: 345 m ▸ Cattle Creek Rail Bridge: 138 m ▸ Native Dog Creek Rail Bridge: 184 m ▸ Bringalily Creek 1 Rail Bridge: 299 m ▸ Bringalily Creek 3 Rail Bridge: 621 m ▸ Nicol Creek Rail Bridge: 92 m ▸ Back Creek Rail Bridge: 230 m ▸ Grasstree Creek Rail Bridge: 1,330 m ▸ Condamine River South Branch Rail Bridge: 658 m ▸ Condamine River Main Branch Rail Bridge: 2,577 m ▸ Condamine River North Branch Rail Bridge: 1,568 m ▸ Westbrook Creek Rail Bridge: 230 m ▸ Dry Creek Rail Bridge: 184 m	Rail-over-watercourse bridge  Source: Lat27 *(Visualisation)*
Level crossings Crossings occur where the rail alignment intersects a road. Infrastructure includes rail tracks, crossing protection measures (as required) and signage. The Project's revised reference design includes six new and existing passive level crossings of public roads and 22 new and existing active level crossings (including the active level pedestrian crossing at Yelarbon) (with lights and barriers) of public roads.	 Source: ARTC
Railway tracks Railway tracks will be present along the alignment and may be sighted from adjacent roads and residents' lots in locations where the rail corridor is not screened by vegetation or topographic features.	 Source: ARTC
Culverts Culverts, including multiple barrel culverts, are required where road and rail corridors traverse watercourses, drainage lines and land subject to periodic inundation.	 Source: ARTC

Operations activities and infrastructure	Indicative imagery
Track formation The railway track will be laid on layers of ballast and sub-ballast above prepared subgrade formation. In places the rail will be elevated on embankments.	 Source: Lat27
Cuttings Cuts will be created through areas of elevated landform, for example in the undulating areas surrounding Pittsworth, to accommodate the proposed rail infrastructure.	 Source: ARTC
Fencing Fencing will be provided for the majority of the rail corridor, and its primary purpose is to limit access to the railway. Fencing will act to protect adjoining lands from trespass and to prevent stock on such adjoining land from gaining access to the railway. As the Project comprises substantial greenfield works in rural agricultural and grazing areas, standard rural fencing will typically be provided according to ARTC guidelines, with specific considerations discussed with local landowners during the detailed design stage. Where superior fencing is required (e.g. where tracks are in close proximity to roads and/or communities, or where trespass is anticipated to occur) a 1.8 m chain link boundary fence may be provided. Fencing will not be provided across flood-prone areas due to the risk of debris being caught in the fencing during flood events. Instead, guideposts will be used to demarcate the extent of the rail corridor across the floodplain. Opportunities to provide fauna exclusion fencing have been identified as part of the revised reference design. This fencing would guide animals towards a fauna crossing structure or passage, while reducing their potential to be struck by vehicles or trains. The appropriateness of fauna fencing opportunities will be investigated further during the detailed design stage of the Project.	 Source: FFJV  Source: FFJV
Noise barriers The potential need for noise barriers has been identified, and conceptual designs for these barriers developed for the operational noise modelling assessments (see Appendix W: Noise and Vibration Assessment—Railway Operations). During the detailed design phase, the implementation of noise barriers, along with other feasible mitigation options, will be considered to reduce noise levels and related impacts on sensitive land uses. Visualisations of the concept noise barriers at Yelarbon, Brookstead and Pittsworth have been included in this assessment. Additionally, more conceptual noise barriers have been evaluated as possible operational noise mitigation options (see Appendix W: Noise and Vibration Assessment—Railway Operations). These locations will undergo further detailed design development and community consultation, including visual assessments to evaluate the feasibility and practicality of these as mitigation measures.	 Source: Lat27 (Visualisation) *Note: Location and dimensions of any potential noise barriers will be subject to confirmation through the detailed design process and further community consultation.*

10.5.3 Landscape character impact assessment

Twelve LCTs have been identified within the impact assessment area. These are identified in Figure 10-4 and summarised in Table 10-4. Ten of these LCTs are directly intersected by the Project, as follows:

- LCT A: Vegetated watercourses—rivers
- LCT B: Vegetated watercourses—creeks and channels
- LCT C: Irrigated croplands
- LCT D: Dry croplands and pastures
- LCT F: Rural settlement
- LCT G: Rural living
- LCT H: Forested uplands
- LCT I: Settled hills
- LCT J: Forested hills and plains
- LCT K: Salinity scald.

Two other LCTs provided below are present in the wider impact assessment area but as they are not intersected by the Project any impacts would be indirect and are not assessed in detail:

- LCT E: Vegetated grazing
- LCT L: Transitional landscapes.

The LCTs and associated LCAs are described in Table 10-8 to Table 10-17. These tables also assess the likely sensitivities for each identified LCT in relation to the Project, and provide a preliminary indication of the likely magnitude of change and consequent significance of that effect on landscape amenity.

Potential construction impacts on landscape character are temporary and relate to things such as removal of vegetation, which persist into the operations stage. Therefore, the assessment presented below is a combined assessment of impacts during both construction works and operations stages; reflecting elements removed or disturbed during construction as well as the introduction of structures that affect the perception and character of the landscape over the longer term.

10.5.3.1 Landscape Character Type A

TABLE 10-8 LANDSCAPE IMPACT ASSESSMENT OF LCT A: VEGETATED WATERCOURSES—RIVERS

Type A: Vegetated watercourses—rivers

Landscape baseline assessment

Location and boundaries

This LCT is located in both the western and central parts of the impact assessment area, associated with the Dumaresq River, Macintyre River and Condamine River.

There are four LCAs of this type in the impact assessment area, including:

- Condamine River (North Branch) vegetated watercourse (LCA A1)
- Condamine River vegetated watercourse (LCA A2)
- Macintyre River vegetated watercourse (LCA A3)
- Dumaresq River vegetated watercourse (LCA A4).

Typical character images:

Macintyre River at old Little Bondi Road Bridge

Dumaresq River at Lees Reserve

Keetah Road Bridge over the Dumaresq River

Condamine River near Pampas

Condamine River at Yarramalong Weir Reserve

Condamine River at Yarramalong Weir Reserve

Heading	Description
Key characteristics	▸ The majority of the Macintyre and Condamine river systems exist on a gently undulating landscape ▸ Both river channels have slight slopes, so water movement is usually quite slow ▸ Macintyre and Condamine rivers convey large amounts of water in flood ▸ Vegetation clearance, construction of weirs and dams, and extraction of water for irrigation have greatly altered the hydrology of these river systems ▸ Typically, well-vegetated riverbanks with mature forest red gums (Eucalyptus tereticornis) and paperbark (Melaleuca spp.) fringing woodland creating a visually interesting natural character ▸ This LCT is not the subject of any landscape planning designations but likely to be valued locally for scenic amenity.
Precedent modifications and infrastructure elements	▸ Natural landscape with few built infrastructure elements ▸ Occasional irrigation pump stations located along the river systems ▸ Public and private water storage for irrigation and town water supply ▸ Existing rail and road bridge crossings across the river allowing views of the river.

Heading	Description
Landscape character sensitivity assessment	▸ High degree of perceived naturalness, with localised waterway modifications and crossings (such as bridges) and facilities to support informal recreation (such as small car parks) ▸ Significant areas of fringing vegetation on the riverbanks, and floodplains contain views to and from the waterways, reducing visual sensitivity ▸ Parts of the Macintyre River near Toomelah (in NSW), as well as Rainbow Reserve and lagoon (in Queensland) are listed as cultural heritage sites ▸ Parts of this landscape type may be valued for local recreation, including fishing and informal picnicking ▸ The Condamine River, and other instances of water within the landscape was identified as having very high scenic amenity value in the *Toowoomba Region Scenic Amenity Study* (Lat27, 2021b) ▸ The overall sensitivity is considered to be, at greatest, **moderate**. This recognises the relative intactness and high quality of the landscape and its value for the local Aboriginal community; however, it is noted that there are no formal landscape designations.
Impact assessment	
Magnitude of change assessment	▸ The Project crosses both the Macintyre and Condamine rivers ▸ The alignment crosses the Macintyre River (LCA A3) near Boggabilla ▸ The alignment crosses the Condamine River (LCA A1 and LCA A2) through a large alluvial floodplain near Pampas ▸ New bridge and railway infrastructure will result in highly localised removal of vegetation and the intrusion of built infrastructure within what is currently a relatively un-developed landscape ▸ The Project will cross the Macintyre River, approximately 2.5 km south of Rainbow Reserve ▸ The Macintyre River is relatively inaccessible in this location, as the crossing is situated on private land ▸ This location and the Macintyre River crossing will not be visible from Rainbow Reserve and Kildonan Road due to vegetation ▸ The Project will cross the Condamine River approximately 4 km southwest of Pampas ▸ Distant views to this location and the river crossing will be visible from the Gore Highway and Millmerran–Leyburn Road ▸ The proposed alignment will cross the Condamine River (North Branch), approximately 1.7 km northeast of Pampas ▸ Close views towards the proposed river crossing will be possible from the Gore Highway, approximately 20 m to the west of the alignment ▸ The proposed crossing will replace an existing rail bridge in this location ▸ Due to the transient nature of views from the highway and State-controlled roads, the primary impact of any changes in character would be on private landowners adjacent to the alignment and river crossings ▸ The overall magnitude of change is predicted to be **moderate**. There will be no fundamental change to the character of this LCT; however, localised areas will be affected by removal of vegetation and introduction of bridges.
Potential effect	The effect of the Project on LCT A: Vegetated watercourses—Rivers is **moderate** during the construction works and operations stages.

10.5.3.2 Landscape Character Type B

TABLE 10-9 LANDSCAPE IMPACT ASSESSMENT OF LCT B: VEGETATED WATERCOURSES—CREEKS AND CHANNELS

Type B: Vegetated watercourses—creeks and channels

Landscape baseline assessment

Location and boundaries

This LCT is located throughout the impact assessment area, associated with the many small tributaries of the Condamine River (near Pampas) and Macintyre River (along the NSW/QLD border).

There are 38 LCAs of this type in the impact assessment area, including:

- Meringandan Creek Vegetated Watercourse (LCA B1)
- Gowrie Creek Vegetated Watercourse (LCA B2)
- Westbrook Creek Vegetated Watercourse (LCA B3)
- Upper Westbrook Creek Vegetated Watercourse (LCA B4)
- Dry Creek Vegetated Watercourse (LCA B5)
- Spring Creek Vegetated Watercourse (LCA B6)
- Upper Westbrook Creek upper tributary (UT) Vegetated Watercourse (LCA B7)
- Linthorpe Creek Vegetated Watercourse (LCA B8)
- Umbriam Creek Vegetated Watercourse (LCA B9)
- Umbriam Creek UT1 Vegetated Watercourse (LCA B10)
- Hodgson Creek Vegetated Watercourse (LCA B11)
- Emu Creek Vegetated Watercourse (LCA B12)
- Upper 14 Mile Creek Vegetated Watercourse (LCA B13)
- Perrier Gully Vegetated Watercourse (LCA B14)
- 14 Mile Creek Vegetated Watercourse (LCA B15)
- Back Creek Vegetated Watercourse (LCA B16)
- Leonard (Back Creek) Vegetated Watercourse (LCA B17)
- Grass Tree Creek Vegetated Watercourse (LCA B18)
- Pine Creek Vegetated Watercourse (LCA B19)
- Pine Creek UT1 Vegetated Watercourse (LCA B20)
- Bora Creek Vegetated Watercourse (LCA B21)
- Bora Creek UT1 Vegetated Watercourse (LCA B22)
- Bora Creek UT2 Vegetated Watercourse (LCA B23)
- Bringalily Creek Vegetated Watercourse (LCA B24)
- Boola Creek Vegetated Watercourse (LCA B25)
- Nicol Creek Vegetated Watercourse (LCA B26)
- Mingimarny Creek Vegetated Watercourse (LCA B27)
- Canning Creek Vegetated Watercourse (LCA B28)
- Cattle Creek Vegetated Watercourse (LCA B29)
- Mosquito Creek Vegetated Watercourse (LCA B30)
- Bodumba Creek Vegetated Watercourse (LCA B31)
- Pariagara Creek Vegetated Watercourse (LCA B32)
- Macintyre Brook Vegetated Watercourse (LCA B33)
- Catfish Creek Vegetated Watercourse (LCA B34)
- Wondalli Creek Vegetated Watercourse (LCA B35)
- Kippenbung Creek Vegetated Watercourse (LCA B36)
- Brigalow Creek Vegetated Watercourse (LCA B37)
- Forest Creek Vegetated Watercourse (LCA B38).

Type B: Vegetated watercourses—creeks and channels

Typical character images:

Macintyre Brook near Bybera Road

Grasstree Creek near Hall Road

Pariagara Creek within Bringalily State Forest

Watercourse near Yelarbon

Gowrie Creek near Leesons Road

Typical road bridge over watercourse

Heading	Description
Key characteristics	▸ Includes creeks and low-lying channels that form part of Macintyre and Weir rivers, Macintyre Brook, Dumaresq River and Condamine River catchments, conveying large amounts of floodwaters away from the main river channels when in flood ▸ Remnant areas of flood-dependent forest/woodlands and wetlands ▸ Natural landscape with few built infrastructure elements.
Precedent modifications and infrastructure elements	▸ Relatively natural landscape with minimal infrastructure, comprising road and existing rail bridges over the main creek channels within the impact assessment area ▸ Fringing vegetation has generally been retained and creates a buffer between adjacent land uses ▸ Telecommunication infrastructure including telegraph poles typically follows the road alignment.
Landscape character sensitivity assessment	▸ Moderate degree of perceived naturalness, with some instances of evidence of human uses and modifications to the waterways ▸ Significant areas of fringing vegetation in some locations contain views to and from creek lines, reducing the sensitivity. Vegetation is sparser in low-lying agricultural areas ▸ Parts of creeks and other instances of water within the landscape that occur throughout the Toowoomba Region were identified as having very high scenic amenity value in the *Toowoomba Region Scenic Amenity Study* (Lat27, 2021b) ▸ The overall sensitivity is considered to be **low**. This recognises that there are no formal landscape designations associated with this LCT and the landscape does not appear to be used by the local community for recreation. Additionally, parts of the LCT are already affected by the presence of road and rail infrastructure (albeit some of which is disused) so it has capacity to accommodate further change.
Impact assessment	
Magnitude of change assessment	▸ The Project follows the existing South Western Line rail corridor between Kildonan and Whetstone and Yandilla and Yarranlea ▸ Between Whetstone and Yandilla and Yarranlea to Kingsthorpe, the Project alignment is on greenfield land ▸ Where it deviates from the existing South Western Line rail corridor, it traverses a variety of landscapes and land uses, including the densely vegetated and undulating landscapes of the Whetstone and Bringalily State forests, rural landscapes, intensive agricultural areas and the urban areas fringing existing townships ▸ There are anticipated to be direct impacts on LCA B2, LCA B5, LCA B7, LCA B8, LCA B17, LCA B18, LCA B8, LCA B17, LCA B25, LCA B26, LCA B28, LCA B29 and LCA B32. These comprise the introduction of new rail infrastructure into the rural and urban setting, including around 14 creek crossings, where the alignment crosses Macintyre Brook, Pariagara Creek, Cattle Creek, Native Dog Creek, Bringalily Creek, Nicol Creek, Back Creek, Grasstree Creek, Westbrook Creek and Dry Creek ▸ New bridge and railway infrastructure, as well as associated drainage infrastructure (e.g. culverts) will result in localised removal of vegetation ▸ Typically, these works would introduce new infrastructure into what is a relatively intact rural and natural setting ▸ Changes to the landscape character associated with creek and floodplain infrastructure will be evident from Yarranbrook Feedlot and Cremascos Road, Millmerran–Inglewood Road, Hall Road, Millmerran–Leyburn Road, the Gore Highway, Toowoomba–Cecil Plains Road and Brimblecombe Road ▸ The overall magnitude of change is predicted to be **moderate**.
Potential effect	The effect of the Project on LCT B: Vegetated watercourses—creeks and channels is **low** during the construction works and operations stages.

10.5.3.3 Landscape Character Type C

TABLE 10-10 LANDSCAPE IMPACT ASSESSMENT OF LCT C: IRRIGATED CROPLANDS

Type C: Irrigated croplands

Landscape baseline assessment

Location and boundaries

This LCT is located within the alluvial valleys and fertile floodplains of the Macintyre and Weir Rivers, Macintyre Brook and Condamine River catchments.

There are 64 LCAs of this type in the impact assessment area, including:

- Oakey North Irrigated Croplands (LCA C1)
- Yalungur Irrigated Croplands (LCA C2)
- Lilydale West Irrigated Croplands (LCA C3)
- Lilydale East Irrigated Croplands (LCA C4)
- Meringandan Irrigated Croplands (LCA C5)
- Glencoe Irrigated Croplands (LCA C6)
- Oakey South Irrigated Croplands (LCA C7)
- Kingsthorpe Irrigated Croplands (LCA C8)
- Charlton Irrigated Croplands (LCA C9)
- Gowrie Junction Irrigated Croplands (LCA C10)
- Morris Road Irrigated Croplands (LCA C11)
- Birnam Irrigated Croplands (LCA C12)
- Westbrook Creek Irrigated Croplands (LCA C13)
- Brimblecombe Road Irrigated Croplands (LCA C14)
- Wellcamp Airport Irrigated Croplands (LCA C15)
- Westbrook Irrigated Croplands (LCA C16)
- Wellcamp Airport South Irrigated Croplands (LCA C17)
- Athol Irrigated Croplands (LCA C18)
- Half Mile Gully Irrigated Croplands (LCA C19)
- Wellcamp Irrigated Croplands (LCA C20)
- Bunkers Hill West Irrigated Croplands (LCA C21)
- Bunkers Hill East Irrigated Croplands (LCA C22)
- Linthorpe Creek Irrigated Croplands (LCA C23)
- Wyreema Irrigated Croplands (LCA C24)
- Jimna Springs Irrigated Croplands (LCA C25)
- Hodgson Creek Irrigated Croplands (LCA C26)
- Emu Creek Irrigated Croplands (LCA C27)
- Umbriam Creek Irrigated Croplands (LCA C28)
- Perrier Gully Irrigated Croplands (LCA C29)
- Mount Taylor Irrigated Croplands (LCA C30)
- 14 Mile Creek Irrigated Croplands (LCA C31)
- Brookstead Irrigated Croplands (LCA C32)
- Pampas Irrigated Croplands (LCA C33)
- Lemon Tree Irrigated Croplands (LCA C34)
- Grass Tree Creek Irrigated Croplands (LCA C35)
- Back Creek Irrigated Croplands (LCA C36)
- Bringalily Creek North Irrigated Croplands (LCA C37)
- Bringalily Creek South Irrigated Croplands (LCA C38)
- Bybera Road North Irrigated Croplands (LCA C39)
- Inglewood Airport Irrigated Croplands (LCA C40)
- Coolmunda Irrigated Croplands (LCA C41)
- Bybera Road South Irrigated Croplands (LCA C42)
- Inglewood Irrigated Croplands (LCA C43)
- Tobacco Road Irrigated Croplands (LCA C44)
- Yarranbrook West Irrigated Croplands (LCA C45)
- Yarranbrook East Irrigated Croplands (LCA C46)
- Whetstone Irrigated Croplands (LCA C47)
- Wondalli Creek North Irrigated Croplands (LCA C48)
- Macintyre Brook North Irrigated Croplands (LCA C49)
- Macintyre Brook South Irrigated Croplands (LCA C50)
- Wondalli Creek South Irrigated Croplands (LCA C51)
- Brigalow Creek Irrigated Croplands (LCA C52)
- Kurumbul Irrigated Croplands (LCA C53)
- Bengalla Reserve Irrigated Croplands (LCA C54)
- Kippenbung Creek Irrigated Croplands (LCA C55)
- Dumaresq River Irrigated Croplands (LCA C56)
- Gibinbell Irrigated Croplands (LCA C57)
- Woodleigh Irrigated Croplands (LCA C58)
- Glenhurst Irrigated Croplands (LCA C59)
- Texas–Yelarbon Road Irrigated Croplands (LCA C60)
- Boggabilla Irrigated Croplands (LCA C61)
- Melon Ridge Irrigated Croplands (LCA C62)
- Humptybung West Irrigated Croplands (LCA C63)
- Humptybung East Irrigated Croplands (LCA C64)

Typical character images:

Irrigation infrastructure near Gowrie

Irrigated croplands near Gowrie

Irrigation infrastructure near Inglewood

Highly fertile vertosol soils and dam infrastructure near Pampas

Vegetation associated with the Condamine River near Pampas

Existing rural infrastructure near Yandilla

Heading	Description
Key characteristics	▸ Extensively developed agricultural areas ▸ Irrigation channels occur in flatter areas ▸ Typically located in areas with highly fertile vertosol soils ▸ The vertosols are typically cracking clay soils with high nutrients, capable of supporting agriculture ▸ Extensive large and relatively flat open fields of irrigated cropland ▸ Landscape substantially cleared of vegetation, except at the periphery, along waterways (LCT A and LCT B) on the skyline and local roads ▸ In addition to irrigated production, current land use activities include grazing and dryland farming with localised recreation.
Precedent modifications and infrastructure elements	▸ Modifications have been made to the floodplain to improve land used for grazing, dryland cropping and irrigated cropping to enhance agricultural productivity ▸ Channels are present across the landscape that have been constructed to manage and store irrigation and domestic water. These channels are particularly evident near Kurumbul, the Condamine River floodplain and low-lying areas surrounding Gowrie Creek. ▸ Leslie Dam (near Warwick, outside of the impact assessment area) is the main water storage for the Upper Condamine Water Supply Scheme, providing water to irrigators along the North Branch of the Condamine River. Other bulk water assets within the impact assessment area include Yarramalong Weir and Lemon Tree Weir. ▸ Coolmunda Dam is situated on Macintyre Brook, approximately 13.4 km east of Inglewood and is the main storage facility for the Macintyre Brook Water Supply Scheme, providing recreational opportunities and supplying water for irrigation, potable water supply and industrial use. Other bulk water assets include Whetstone Weir, Ben Dor Weir and Greenup Weir. ▸ Farm infrastructure is also present throughout the landscape.
Landscape character sensitivity assessment	▸ The irrigated croplands LCT is predominantly visually open, with a sparsely settled rural character and no large-scale infrastructure elements. It has long distant views and strong skylines. ▸ Vegetation within low-lying areas is extensively cleared and very sparse, with denser vegetation along waterways ▸ Due to the extensively modified character and local value of the landscape in terms of amenity, the overall inherent sensitivity is considered to be **low**.

Heading	Description
Impact assessment	
Magnitude of change assessment	▸ The primary impact will be on private land where new rail infrastructure is being introduced ▸ Typically, the alignment follows the existing rail corridor when passing through this landscape character type, apart from land surrounding Westbrook Creek, where there is no existing rail infrastructure ▸ Other impacts are associated with locations where non-resident workforce accommodation facilities, the Turallin facility or laydown areas are proposed, noting that these impacts are temporal and associated with the construction of the Project ▸ There would be direct impacts on LCA C8: Kingsthorpe, LCA C14: Brimblecombe Road, LCA C18: Athol, LCA C32: Brookstead, LCA C33: Pampas, LCA C35: Grass Tree Creek, LCA C37: Bringalily Creek North, LCA C38: Bringalily Creek South, LCA C48: Wondalli Creek North, LCA C51: Wondalli Creek South Irrigated Croplands and LCA C53: Kurumbul ▸ The impact on private land and irrigated cropping areas will be most evident between Pittsworth and Gowrie Junction (LCA C8, LCA C14 and LCA C18), where the alignment deviates from the existing railway corridor and within LCA C51 where a potential location for a non-resident workforce accommodation facility has been identified on the outskirts of Yelarbon ▸ New earthwork infrastructure within this landscape will generally be consistent with the current landscape character; however, the Project will also introduce large embankments (up to 24.5 m), viaduct and bridge structures and temporary infrastructure associated with the construction of the Project such as site offices, accommodation buildings and other ancillary infrastructure associated with laydown areas and the proposed non-resident workforce accommodation facility into the landscape ▸ The overall magnitude of change is predicted to be **low**.
Potential effect	The effect of the Project on LCT C: Irrigated Croplands is **negligible** during the construction works and operations stages.

10.5.3.4 Landscape Character Type D

TABLE 10-11 LANDSCAPE IMPACT ASSESSMENT OF LCT D: DRY CROPLANDS AND PASTURES

Type D: Dry croplands and pastures

Landscape baseline assessment

Location and boundaries

This LCT extends across a considerable part of the impact assessment area and is largely defined by extensively cleared, often undulating, open rural lots used for agriculture and livestock production. In the western extent of the impact assessment area, the landscape is typically flatter and prone to flooding.

There are 44 LCAs of this type in the impact assessment area, including:

- Oakey Dry Croplands and Pastures (LCA D1)
- Kings Siding Dry Croplands and Pastures (LCA D2)
- Gowrie Little Plain Dry Croplands and Pastures (LCA D3)
- Glencoe Dry Croplands and Pastures (LCA D4)
- Mount Kingsthorpe Dry Croplands and Pastures (LCA D5)
- Gowrie Junction Dry Croplands and Pastures (LCA D6)
- Gowrie Mountain Dry Croplands and Pastures (LCA D7)
- Charlton Dry Croplands and Pastures (LCA D8)
- Biddeston Dry Croplands and Pastures (LCA D9)
- Wellcamp Dry Croplands and Pastures (LCA D10)
- Westbrook Dry Croplands and Pastures (LCA D11)
- Wyreema Dry Croplands and Pastures (LCA D12)
- Longhurst Road Dry Croplands and Pastures (LCA D13)
- Millmerran Dry Croplands and Pastures (LCA D14)
- Bringalily West Dry Croplands and Pastures (LCA D15)
- Kooroongarra Dry Croplands and Pastures (LCA D16)
- Bringalily East Dry Croplands and Pastures (LCA D17)
- Canning Creek Northern Dry Croplands and Pastures (LCA D18)
- Mosquito Creek North Dry Croplands and Pastures (LCA D19)
- Bodumba Creek Dry Croplands and Pastures (LCA D20)
- Devine Dry Croplands and Pastures (LCA D21)
- Mosquito Creek South Dry Croplands and Pastures (LCA D22)
- Canning Creek West Dry Croplands and Pastures (LCA D23)
- Canning Creek East Dry Croplands and Pastures (LCA D24)
- Bybera Road Dry Croplands and Pastures (LCA D25)
- Yelarbon Dry Croplands and Pastures (LCA D26)
- Yarranbrook Dry Croplands and Pastures (LCA D27)
- Whetstone East Dry Croplands and Pastures (LCA D28)
- Catfish Creek Dry Croplands and Pastures (LCA D29)
- Macintyre Brook Dry Croplands and Pastures (LCA D30)
- Whetstone West Dry Croplands and Pastures (LCA D31)
- Wondalli Creek North Dry Croplands and Pastures (LCA D32)
- Wondalli Creek South Dry Croplands and Pastures (LCA D33)
- Yelarbon Dry Croplands and Pastures (LCA D34)
- Kurumbul Dry Croplands and Pastures (LCA D35)
- Kippenbung Creek Dry Croplands and Pastures (LCA D36)
- Dumaresq River North Dry Croplands and Pastures (LCA D37)
- Yelarbon Salt Pan Dry Croplands and Pastures (LCA D38)
- Glenhurst Dry Croplands and Pastures (LCA D39)
- Goondiwindi Dry Croplands and Pastures (LCA D40)
- Macintyre River Dry Croplands and Pastures (LCA D41)
- Boggabilla Dry Croplands and Pastures (LCA D42)
- Toomelah Dry Croplands and Pastures (LCA D43)
- Dumaresq River South Dry Croplands and Pastures (LCA D44).

Typical character images:

Grazing land near Bringalily

Grazing land near Yelarbon

Grazing land near Kurumbul

Grazing land near Millmerran

Grazing land near Millmerran

Grazing land near Millmerran

Heading	Description
Key characteristics	▸ The landscape is typically found on the undulating, poorer foothills of the impact assessment area surrounding the low-lying alluvial floodplains (LCT C—Irrigated croplands) ▸ Soils typically comprise sodosols, dermosols and vertosols supporting a range of rural land uses ▸ Land use is predominately farmland, characterised by dryland cropping and pastoral lots for livestock production (including some occurrences of intensive animal industry piggeries, feedlots and poultry operations), with isolated instances of irrigated agriculture in parts, particularly near Bringalily and Millmerran ▸ The sodosols have a gravelly, sandy character, often exposed in areas and vulnerable to tunnel and gully erosion and are principally used for livestock ▸ Dermosols are associated with previous volcanic activity and are found in higher rainfall coastal regions. These soils are used for intensive crop production ▸ The vertosols are typically cracking clay soils with high nutrients capable of supporting agriculture ▸ Vegetation comprises native roadside shelter belts and sporadic riparian vegetation associated with creek lines, as well as views to isolated vegetated hills and peaks associated with LCT H—forested uplands and LCT J—forested hills and plains ▸ Transport corridors are typically straight in character, reflecting the flat topography with subtle curves associated with topographic variation that connect the key settlements and rural lots. State-controlled roads are sealed but other roads are typically unsealed gravel ▸ Open and exposed character with long distant views and strong skylines, except where views are contained by roadside or creek-side vegetation ▸ Sparsely settled landscape, with scattered homesteads and cottages, and small rural villages, such as Kurumbul and Athol. Farmsteads are typically located on gently elevated areas in the eastern extent of the impact assessment area (west of Bringalily State Forest) ▸ Harmonious but fairly typical rural character, which is valued by local communities and visitors.
Precedent modifications and infrastructure elements	▸ Highly modified for agricultural practices, including clearing and levelling of land for cultivation of arable farmland and pastures for grazing ▸ Construction of roads, railways and bridges ▸ Telecommunication infrastructure including telegraph poles.

Heading	Description
Landscape character sensitivity assessment	▸ The dry croplands and pastures LCT is predominantly visually open, with a sparsely settled rural character and little large-scale infrastructure. It has long distant views and strong skylines ▸ Roadside shelter belts and sporadic riparian vegetation associated with creek lines and flood channels provide some screening ▸ Very small, isolated areas within this LCT associated with the isolated mesas and hills of Mt Kingsthorpe and Gowrie Mountain are considered to have high scenic amenity values, and are acknowledged in the Toowoomba Regional Council *Scenic Amenity Study* (Conics, 2009) ▸ Additional elevated and forested parts of the LCT associated with the isolated mesas and hills are also identified as having high scenic amenity value within the *Toowoomba Region Scenic Amenity Study* (Lat27, 2021b) ▸ Overall, due to the simple character and local value of the landscape, which is not protected in any planning scheme, the overall inherent sensitivity is considered to be **low**.
Impact assessment	
Magnitude of change assessment	▸ The primary impact will be on private land where new rail infrastructure is being introduced ▸ Parts of the following LCAs would be directly affected: LCA D7: Gowrie Mountain, D9: Biddeston, D14: Millmerran, D15: Bringalily West, D23: Canning Creek West, D25: Bybera Road, D27: Yarranbrook, D28: Whetstone, D34: Yelarbon and D41: Macintyre River ▸ Impacts on private land, including agricultural and pastoral areas will be evident in the vicinity of Gowrie Mountain, Biddeston, Millmerran, Bringalily, Bybera Road, Caning Creek, Yarranbrook, Whetstone and Kurumbul (near the Macintyre River) (LCA D7, D9, D14, D15, D23, D25, D27, D28 and D41), where the Project deviates from the existing railway corridor ▸ Other impacts are associated with locations where non-resident workforce accommodation facilities (LCA D23 and D34), the Turallin facility (LCA D14) or laydown areas are proposed, noting that these impacts are temporal and associated with the construction of the Project ▸ The Project will be introducing new infrastructure into what is a relatively intact rural environment ▸ Impacts within this LCT will be due to localised vegetation removal, major earthworks (e.g. cuts and embankments), proposed road and creek bridges and temporary infrastructure associated with the construction of the Project such as site offices, accommodation buildings and other ancillary infrastructure associated with the Turallin facility, laydown areas and the proposed non-resident workforce accommodation facilities into the landscape ▸ Overall, therefore, the impact on this LCT is **high**.
Potential effect	The effect of the Project on LCT D: Dry croplands and pastures is **moderate** during the construction works and operations stages.

10.5.3.5 Landscape Character Type E

LCT E: Vegetated grazing falls within the impact assessment area but is not affected by the Project (the Project does not traverse any areas of this LCT) so is not assessed. There are outlying patches of this type throughout the area, particularly in the north near Toowoomba.

10.5.3.6 Landscape Character Type F

TABLE 10-12 LANDSCAPE IMPACT ASSESSMENT OF LCT F: RURAL SETTLEMENT

Type F: Rural settlement

Landscape baseline assessment

Location and boundaries

Seventeen rural settlements are located within the impact assessment area. They include the city of Toowoomba, the towns of Kingsthorpe, Meringandan, Gowrie Junction, Highfields, Westbrook, Southbrook, Pittsworth, Brookstead, Millmerran, Inglewood, Yelarbon, the Indigenous settlement Boggabilla, and the small rural settlement of Pampas.

Accordingly, there are 17 LCAs of this type in the impact assessment area, including:

- Kingsthorpe (LCA F1)
- Meringandan West (LCA F2)
- Meringandan (LCA F3)
- Meringandan South (LCA F4)
- Gowrie Junction (LCA F5)
- Highfields (LCA F6)
- Toowoomba (LCA F7)
- Westbrook (LCA F8)
- Southbrook (LCA F9)
- Pittsworth (LCA F10)
- Brookstead (LCA F11)
- Pampas (LCA F12)
- Millmerran (LCA F13)
- Inglewood (LCA F14)
- Yelarbon (LCA F15)
- Boggabilla (LCA F16)
- Toomelah Indigenous Settlement (LCA F17).

Typical character images:

Millmerran

Yelarbon

Yelarbon

Pittsworth

Yelarbon

Yelarbon

Heading	Description
Key characteristics	▸ Comprises the settled area, including small rural towns, villages and communities as well as the regional city of Toowoomba ▸ Within rural towns, buildings are typically single storey and of varying age and condition. While Toowoomba's urban centre is denser, it still has a low-scale built form and several heritage-listed buildings. ▸ Toowoomba and the larger settlements of Kingsthorpe, Meringandan, Gowrie Junction, Highfields, Westbrook, Southbrook, Pittsworth, Brookstead, Millmerran, Inglewood, Boggabilla and Toomelah have social infrastructure including parks, public schools and sport facilities ▸ The alignment follows the existing QR South Western Line rail corridor between Kildonan and Whetstone, before deviating away from the existing corridor to the north and following the approximate alignment of Millmerran–Inglewood Road, passing to the south of Millmerran and re-joining the existing rail corridor and the Millmerran Branch Line. The Project alignment then follows the existing rail corridor before deviating again to pass to the north of Pittsworth and Southbrook before heading north and tying into the West Moreton railway system near Gowrie Junction.

Heading	Description
	▸ Kingsthorpe (LCA F1) is a town situated approximately 20 km northwest of Toowoomba. A short distance from the town centre is Mount Kingsthorpe, the summit of which, at 610 m AHD, provides elevated panoramic views of the town and surrounding landscape. It is located around 1 km of the alignment. ▸ Meringandan West (LCA F2) is a locality situated to the west of Meringandan township, around 10 km from the Project alignment ▸ Meringandan (LCA F3) is a small country town located near Highfields, approximately 19 km north-northwest of Toowoomba and 10 km from the Project alignment ▸ Meringandan South (LCA F4) is a locality situated to the south of Meringandan township, around 8 km from the Project alignment ▸ Gowrie Junction (LCA F5) is a town and locality situated approximately 10 km northwest of Toowoomba, around 1.5 km from the Project alignment ▸ Highfields (LCA F6) is a town and locality situated approximately 13 km to the north of Toowoomba and over 7 km from the Project alignment that serves as a satellite suburb of the city of Toowoomba ▸ Toowoomba (LCA F7) is the largest settlement in the impact assessment area and is a regional city servicing the Darling Downs region, situated on an escarpment on the western side of the Great Dividing Range, approximately 700 m above sea level and 130 km west of Brisbane. The closest suburb (Cotswold Hills) is over 7 km from the Project alignment ▸ Westbrook (LCA F8) is a town and locality situated approximately 10.6 km southwest of Toowoomba and nearly 10 km from the Project alignment ▸ Southbrook (LCA F9) is a town approximately 8.5 km northwest of Pittsworth and 1 km from the alignment (with outlying rural lots at even closer distances). The Gore Highway passes through the north of the town. ▸ Pittsworth (LCA F10) is a town and locality approximately 41 km southwest of Toowoomba, and a service centre for the surrounding agricultural areas. It is situated on the undulating uplands of the Darling Downs. The Project alignment passes along the northern edge of the town. ▸ Brookstead (LCA F11) is a town and locality situated on the Gore Highway, approximately 18.7 km southwest of Pittsworth. The Project alignment passes along the southern edge of the town. ▸ Pampas (LCA F12) is a small rural settlement situated on the Gore Highway approximately 5.3 km southwest of Brookstead. The Project alignment passes through the town. ▸ Millmerran (LCA F13) is a town situated on the Gore Highway, approximately 75.6 km southwest of Toowoomba and around 2 km at its closest point to the Project alignment ▸ Inglewood (LCA F14) is the second largest town in the Goondiwindi region, situated midway between Warwick and Goondiwindi on the Cunningham Highway. It is around 2.5 km from the Project alignment. ▸ Yelarbon (LCA F15) is a small town situated on the Cunningham Highway, between Goondiwindi and Inglewood, located immediately south of the Project alignment ▸ Boggabilla (LCA F16) is a small town in NSW, located southeast of Goondiwindi and around 9 km west of the Project alignment ▸ Toomelah Indigenous Settlement (LCA F17) is situated near the confluence of the Macintyre and Dumaresq rivers, around 2 km from the Project alignment
Precedent modifications and infrastructure elements	▸ Highly modified for urban land uses, including clearing of vegetation and levelling of land for construction ▸ Presence of roads, railways and bridges ▸ Telecommunication infrastructure, including telegraph poles
Landscape character sensitivity assessment	▸ The rural settlements landscape type has a settled rural character. Smaller rural communities such as Pampas are very sparsely settled ▸ Buildings, street trees and vegetation are of local value ▸ The sensitivity of these settlements is considered to be **moderate**. While not valued on account of visual amenity values within local government planning schemes, these settlements have a distinctive character with some elements of interest (such as heritage buildings and silos) and are also likely to be valued by the people that reside in or visit them.

Heading	Description
Impact assessment	
Magnitude of change assessment	▸ The Project alignment passes directly through or along the edges of the following towns, so therefore only directly affects the character of these areas: Brookstead (LCA F11), Pampas (LCA F12), and Yelarbon (LCA F15). In these settlements, the Project alignment is situated along or close to existing railway infrastructure. ▸ The Project also influences the setting of Pittsworth (LCA F10) and Southbrook (LCA F9) through introducing large-scale infrastructure (embankments and bridges into the rural setting of the town) ▸ While Boggabilla and Toomelah are within the impact assessment area, the North Star to NSW/QLD Border section of the Inland Rail is closer and would have a potentially greater influence than this Project so are not considered further here ▸ Similarly, Gowrie Junction, Highfields and Toowoomba are impacted to a greater extent by the Gowrie to Helidon Section of the Inland Rail so are not considered further here ▸ Meringandan West, Meringandan and Meringandan South (LCA F2, F3 and F4) are situated approximately 8 to 10 km northeast of the Project alignment and are not anticipated to be affected ▸ Inglewood is approximately 3.4 km south of the proposed alignment, while Millmerran is approximately 3 km northwest. It is considered unlikely that the setting of these towns would be affected due to the presence of riparian vegetation along Macintyre Brook and Leonard (Back Creek) Creek, which limits inter-visibility. ▸ Residents of Southbrook will not be impacted, due to screening topography and vegetation ▸ Other towns of this LCT will not experience direct impacts, although indirect impacts on character may arise on towns close to the Project alignment due to the possibility of views towards the alignment (e.g. elevated areas of Kingsthorpe (LCA F1) ▸ The impact of the Project on views from relevant settlements is discussed separately in Section 10.5.4 ▸ Overall, the impact on this LCT is considered to be up to **high**. There would be limited loss of features of value, although in places such as Kingsthorpe, Pampas, Southbrook and Yelarbon the introduction of large embankments and bridge structures are distinct new elements that will change the perception of rural settlement character.
Potential effect	The effect of the Project on LCT F: Rural settlement is **high** during the construction works and operations stages.

10.5.3.7 Landscape Character Type G

TABLE 10-13 LANDSCAPE IMPACT ASSESSMENT OF LCT G: RURAL LIVING

Type G: Rural living

Landscape baseline assessment

Location and boundaries

This LCT is typically located in elevated parts of the impact assessment area, near major transport infrastructure with access to towns and services, and is characterised by large lot rural residential development, and is typically somewhat vegetated.

There are 17 LCAs of this type in the impact assessment area, including:

- Oakey (LCA G1)
- Westview Rural Living (LCA G2)
- Meringandan West Rural Living (LCA G3)
- Glencoe Rural Living (LCA G4)
- Redlands Drive Rural Living (LCA G5)
- Hilltop Drive Rural Living (LCA G6)
- Gowrie Junction Rural Living (LCA G7)
- Highfield Ridge Rural Living (LCA G8)
- Blue Mountain Heights Rural Living (LCA G9)
- Gowrie Mountain Rural Living (LCA G10)
- Torrington Rural Living (LCA G11)
- Cranley Rural Living (LCA G12)
- Westbrook Rural Living (LCA G13)
- Wyreema Rural Living (LCA G14)
- Southbrook North Rural Living (LCA G15)
- Southbrook South Rural Living (LCA G16)
- Millmerran Rural Living (LCA G17).

Typical character images:		
		
Gowrie Mountain	Kingsthorpe	Gowrie Mountain

Heading	Description
Key characteristics	▸ Private residential dwellings on large lots, typically on elevated and undulating topography, with low-scale built form and limited local services ▸ Typically, single storey buildings of varying age and condition ▸ Some rural residential areas are densely vegetated, while others are quite open ▸ Mixture of native and garden vegetation/street trees ▸ Generally, an enclosed landscape, with the exception of elevated lots, vegetation has been cleared (consequently views towards the Project alignment can be achieved, particularly evident near Kingsthorpe and Gowrie Junction as discussed in Section 10.5.4 ▸ Highly visible landscape type throughout the impact assessment area.
Precedent modifications and infrastructure elements	▸ Highly modified for urban land uses, including clearing of vegetation and levelling of land for construction ▸ Presence of roads, railways and bridges ▸ Telecommunication infrastructure including telegraph poles.
Landscape character sensitivity assessment	▸ The rural living landscape type is predominantly visually closed, with a sparsely settled rural character ▸ Typically, services are limited and in keeping with the rural setting ▸ Street trees and vegetation provide some screening effect ▸ The sensitivity of these rural residential areas is considered to be **moderate**. These areas have a distinctive character but are valued at the local level, principally by residents.
Impact assessment	
Magnitude of change assessment	▸ There are no direct impacts on the rural living landscape type; however, due to proximity the Project is considered likely to have an effect on the setting on LCA G10: Gowrie Mountain and LCA G15: Southbrook North ▸ Impacts within this LCT relate to localised vegetation removal, major earthworks (e.g. cuts and embankments) and proposed road and creek bridges, close to the settled landscape ▸ It is considered that the impact of the Project will be most evident for Gowrie Mountain (LCA G10), which will be affected by the proposed embankment located to the north and west of the settled area (at its closest point around 600 m away) and which includes a new Warrego Highway Rail Bridge, which collectively will decrease the inherently rural setting of the area and sense of tranquillity ▸ The rural residential areas to the north of Southbrook (LCA G15) will also be affected by the proximity of the proposed alignment and embankments but the LCT is only anticipated to be affected along the northern periphery of the area ▸ The rural residential areas of LCA G1, G2, G3, G4, G13, G14, G16 and G17 are at a significant distance from the alignment so there would be no meaningful direct or indirect impacts on landscape character: Oakey (10 km), Westview (10 km), Meringandan West (10 km), Glencoe (5 km), Westbrook (6 km), and Wyreema (10 km) ▸ Due to the distance of residents of Redlands Drive, Gowrie Junction, Highfield Ridge, Blue Mountain Heights, Torrington and Cranley, (LCA G6, G7, G8, G9, G11 and G12) from the Project, the impact of the Project on these rural residential areas are not considered in this assessment as they lie closer to the Gowrie to Helidon project ▸ Rural residential lots of Millmerran will not be impacted, due to their distance from the alignment and screening riparian vegetation along Leonard (Back Creek) Creek ▸ The impact of the Project on views from relevant settlements is discussed separately in Section 10.5.4 ▸ Overall, there are no direct impacts, but the indirect impacts of the Project on this LCT are considered to be **moderate**.
Potential effect	The effect of the Project on LCT G: Rural living is **moderate** during the construction works and operations stages.

10.5.3.8 Landscape Character Type H

TABLE 10-14 LANDSCAPE IMPACT ASSESSMENT OF LCT H: FORESTED UPLANDS

Type H: Forested uplands

Landscape baseline assessment

Location and boundaries

This LCT is typically associated with elevated, undulating areas within the impact assessment area, including parts of the Great Dividing Range, West Ridge and South Ridge.

There are 20 LCAs of this type in the impact assessment area, including:

- Sugar Loaf Mountain forested uplands (LCA H1)
- McGregor Mountain forested uplands (LCA H2)
- Storey Mountain forested uplands (LCA H3)
- Meringandan West forested uplands (LCA H4)
- Mount Kingsthorpe forested uplands (LCA H5)
- Gowrie Mountain forested uplands (LCA H6)
- Wellcamp forested uplands (LCA H7)
- Glenvale Mountain forested uplands (LCA H8)
- Bunkers Hill forested uplands (LCA H9)
- Umbriam forested uplands (LCA H10)
- Hodgson Creek forested uplands (LCA H11)
- Umbriam Creek forested uplands (LCA H12)
- Scrubby Mountain forested uplands (LCA H13)
- Captains Mountain forested uplands (LCA H14)
- Commodore Peak forested uplands (LCA H15)
- Commodore Peak South forested uplands (LCA H16)
- Pine Hill forested uplands (LCA H17)
- Kooroongarra North forested uplands (LCA H18)
- Kooroongarra forested uplands (LCA H19)
- Kooroongarra South forested uplands (LCA H20).

Typical character images:

Looking towards Mount Kingsthorpe

Forested hill near Gowrie

View along Mount Kingsthorpe trail

Forested ridgeline within rural setting

State forest signage

View across forested and rural landscape

Heading	Description
Key characteristics	▸ Elevated and undulating topography, typically above 100 m AHD ▸ Areas of very steep slopes ▸ Distinctive landform including mountain peaks and prominent ridgelines, such as those of the Great Dividing Range ▸ Incised dry creek valleys where waterways drain the elevated area ▸ Typically, eucalyptus woodland or forest but microclimatic variation includes areas of other vegetation including fragment rainforest ▸ Generally, an enclosed landscape with limited public access and limited views ▸ Highly visible landscape type throughout the impact assessment area ▸ Most elevated areas of this type, including peaks of the Great Dividing Range, are considered to have high scenic amenity and are included on the SEQ Regional Significant Scenic Amenity overlay.

Heading	Description
Precedent modifications and infrastructure elements	▸ Due to the undulating steep terrain, much of the vegetation is remnant due to the inaccessibility to clear the areas ▸ Natural landscape with very limited settlement and little large-scale infrastructure elements ▸ Mount Kingsthorpe scenic lookout is located within this character type ▸ The existing West Moreton System rail line transects the Great Dividing Range at the most north eastern extent of the impact assessment area ▸ Some telecommunications towers and powerlines in elevated locations ▸ Some instances of mining and quarrying, typically, these operations are screened by dense native vegetation.
Landscape character sensitivity assessment	▸ This landscape character type has little capacity to accommodate development as this would require vegetation clearance, which would be visually intrusive in this elevated and undulating landscape ▸ Key areas of this landscape are also protected for their scenic qualities and are of State significance (e.g. peaks of the Great Dividing Range) or are identified in the Toowoomba Regional Council *Scenic Amenity Study* (Conics, 2019) and *Toowoomba Region Scenic Amenity Study* (Lat27, 2021b) as having high value (including the area around Storey Mountain, Mount Kingsthorpe, Gowrie Mountain, Captains Mountain and Commodore Peak) ▸ Therefore, the landscape sensitivity of this landscape type is considered to be up to **high**.
Impact assessment	
Magnitude of change assessment	▸ The alignment does not directly transect any of the LCAs, however LCA H5: Mount Kingsthorpe is impacted due to its proximity to the Project alignment (approximately 1.4 km) and the presence of Mount Kingsthorpe summit scenic lookout ▸ Elsewhere, this landscape type is not within proximity to the Project alignment, or views are contained by dense vegetation, therefore the impacts on other parts of this landscape type would be indirect ▸ There is **no impact** on this character type. Views from Mount Kingsthorpe summit scenic lookout are considered elsewhere (Section 10.5.5).
Potential effect	The effect of the Project on LCT H: Forested uplands is **no impact** during the construction works and operations stages.

10.5.3.9 Landscape Character Type I

TABLE 10-15 LANDSCAPE IMPACT ASSESSMENT OF LCT I: SETTLED HILLS

Type I: Settled hills

Landscape baseline assessment

Location and boundaries

This LCT is associated with the elevated, undulating areas and basaltic uplands of the Darling Downs, surrounding Pittsworth.

There is one landscape character area of this type—the Pittsworth Hills (LCA I1).

Typical character images:

Existing railway track near Murlaggan

Undulating and settled hills

Forested and cleared rural areas

Heading	Description
Key characteristics	▸ Elevated and gently undulating topography, typically between 450 m and 680 m AHD and associated with the basalt uplands of the Darling Downs ▸ Distinctive from the surrounding floodplains of the Condamine River and Gowrie Creek ▸ Incised dry creek valleys where waterways drain the elevated area ▸ Typically, grassy open eucalyptus woodland or forest ▸ Generally, an enclosed landscape with limited views due to undulating topography.
Precedent modifications and infrastructure elements	▸ Due to the undulating terrain, patches of remnant vegetation remain due to the inaccessibility to clear the areas ▸ Somewhat natural landscape with very limited settlement (some rural residential lots) and little large-scale infrastructure elements ▸ The existing Millmerran Branch Line transects the basalt uplands, passing through Pittsworth ▸ Some telecommunications towers and powerlines in elevated locations.
Landscape character sensitivity assessment	▸ This landscape character type has some capacity to accommodate development, as views would be visually contained by the undulating landscape; however, there are a moderate number of rural residential residents with a specific interest in views within this character area in proximity to the Project alignment ▸ Views towards the alignment within this landscape character type will be possible from the Gore Highway. A moderate number of receptors travel along the Gore Highway (annual average daily traffic (AADT) around 1,538 per day, of which up to 43.74 per cent are heavy vehicles) and would experience changes to the view; however, it is noted that these viewers are passing at speed and would only experience transient views. ▸ Views towards this landscape character area are also possible for residents on the northern side of Pittsworth overlooking the Gore Highway and for elevated rural residents to the north of Southbrook ▸ Therefore, the landscape sensitivity of this landscape type is considered to be up to **moderate**.
Impact assessment	
Magnitude of change assessment	▸ The alignment directly transects LCA I1: Pittsworth hills ▸ Within LCA I1, the alignment passes through privately owned land, deviating from the existing railway corridor. The key impact within this area will be due to extensive earthworks and clearing of vegetation to enable the construction of the railway corridor, embankments and new road infrastructure. ▸ The impact will fundamentally change the character of the landscape from natural and rural landscape to one dominated by infrastructure. Views to the Project alignment will be contained by the undulating topography, therefore impacts will be most apparent for nearby rural residential residents and residents to the north of the towns of Pittsworth and Southbrook. ▸ This represents an overall **high** magnitude of change.
Potential effect	The effect of the Project on LCT I: Settled hills is **high** during the construction works and operations stages.

10.5.3.10 Landscape Character Type J

TABLE 10-16 LANDSCAPE IMPACT ASSESSMENT OF LCT J: FORESTED HILLS AND PLAINS

Type J: Forested hills and plains

Landscape baseline assessment

Location and boundaries

This LCT is typically associated with the densely vegetated, lower-lying and gently undulating areas of the impact assessment area, typically west of Millmerran. This LCT includes Wondul Range National Park, while other areas are predominately designated as State forests, which typically have very limited recreational opportunity.

There are 14 character areas of this type, including:

- Turallin (LCA J1)
- Millmerran Downs (LCA J2)
- Wondul Creek State Forest (LCA J3)
- Kooroongarra Road (LCA J4)
- Mingimarny Creek West (LCA J5)
- Mingimarny Creek East (LCA J6)
- Bringalily Creek North (LCA J7)
- Bringalily Creek South (LCA J8)
- Canning Creek (LCA J9)
- Bringalily State Forest West (LCA J10)
- Bringalily State Forest East (LCA J11)
- Devine State Forest (LCA J12)
- Yelarbon State Forest North (LCA J13)
- Yelarbon State Forest South (LCA J14).

Typical character images:

Existing sealed road through State forest

Existing gate to access State forest

Unsealed road within State forest

Wondul Range National Park

Existing access within State forest

State forest adjacent road corridor

Heading	Description
Key characteristics	▸ Undulating to low hilly country on deeply weathered sandstones, typically between 250 m and 450 m AHD ▸ Incised dry, typically sandy creek valleys where waterways drain elevated areas ▸ Vegetation is typically dominated by narrow-leaved ironbark (*Eucalyptus crebra*) on hillsides, cypress pine (*Callitris glaucophylla*) and bulloak (*Allocasuarina luehmannii*) on solodic soils in gently undulating parts and poplar box (*E. populnea*) on lower slopes and flats. There are also minor areas of brigalow (*Acacia harpophylla*) and belah (*Casuarina cristata*). ▸ Generally, an enclosed landscape with limited public access and limited views ▸ Comprises a high level of naturalness and remoteness and is a highly visible landscape type throughout the western extent of the impact assessment area, between Yelarbon and Bringalily.
Precedent modifications and infrastructure elements	▸ Natural landscape with very limited settlement and little large-scale infrastructure elements ▸ Limited recreational facilities within national park and State forest areas, typically used for wildlife watching and bushwalking ▸ The existing South Western Line transects the western most extent of Whetstone State Forest, near Whetstone ▸ Some telecommunications towers and powerlines in elevated locations ▸ Some instances of clearing for grazing, agriculture and forestry, as well as minor mining operations (borrow pits). Typically, these operations are screened by dense native vegetation.

Heading	Description
Landscape character sensitivity assessment	▸ This landscape character type has some capacity to accommodate development, due to its heavily vegetated nature and enclosed views ▸ Development would however require vegetation clearance, which would be visually intrusive in this densely vegetated and gently undulating landscape ▸ This landscape offers a refuge from clearing and increasing mining pressures and is, therefore, a locally and regionally valued landscape ▸ Therefore, the landscape sensitivity of this landscape type is considered to be up to **moderate**.
Impact assessment	
Magnitude of change assessment	▸ The Project alignment transects LCA J10: Bringalily State Forest West, which includes parts of Bringalily State Forest and Whetstone State Forest to the west of Millmerran–Inglewood Road and the Cunningham Highway ▸ The key impact within this area will be due to extensive clearing due to proposed earth works to facilitate the construction of the railway corridor, embankments and new road infrastructure ▸ Elsewhere, this LCT is not within proximity to the Project alignment, therefore, the impacts on this landscape type would be indirect ▸ The impact will be localised and will not fundamentally change the character of the landscape as there is existing rail infrastructure within Whetstone State Forest and the surrounding area and, for the most part, the corridor skirts the edges of the forest. This results in an overall **low** magnitude of change.
Potential effect	The effect of the Project on LCT J: Forested hills and plains is **low** during the construction works and operations stages.

10.5.3.11 Landscape Character Type K

TABLE 10-17 LANDSCAPE IMPACT ASSESSMENT OF LCT K: SALINITY SCALD

Type K: Salinity scald

Landscape baseline assessment

Location and boundaries

This LCT is associated with the dryland salinity scald surrounding Yelarbon, in the western extent of the impact assessment area.

There is one landscape character area of this type—the Yelarbon Salinity Scald (LCA K1).

Typical character images:

Salinity scald near Yelarbon

Salinity scald near Yelarbon

Salinity scald near Yelarbon

Salinity scald near Yelarbon

Salinity scald near Yelarbon

Salinity scald near Yelarbon

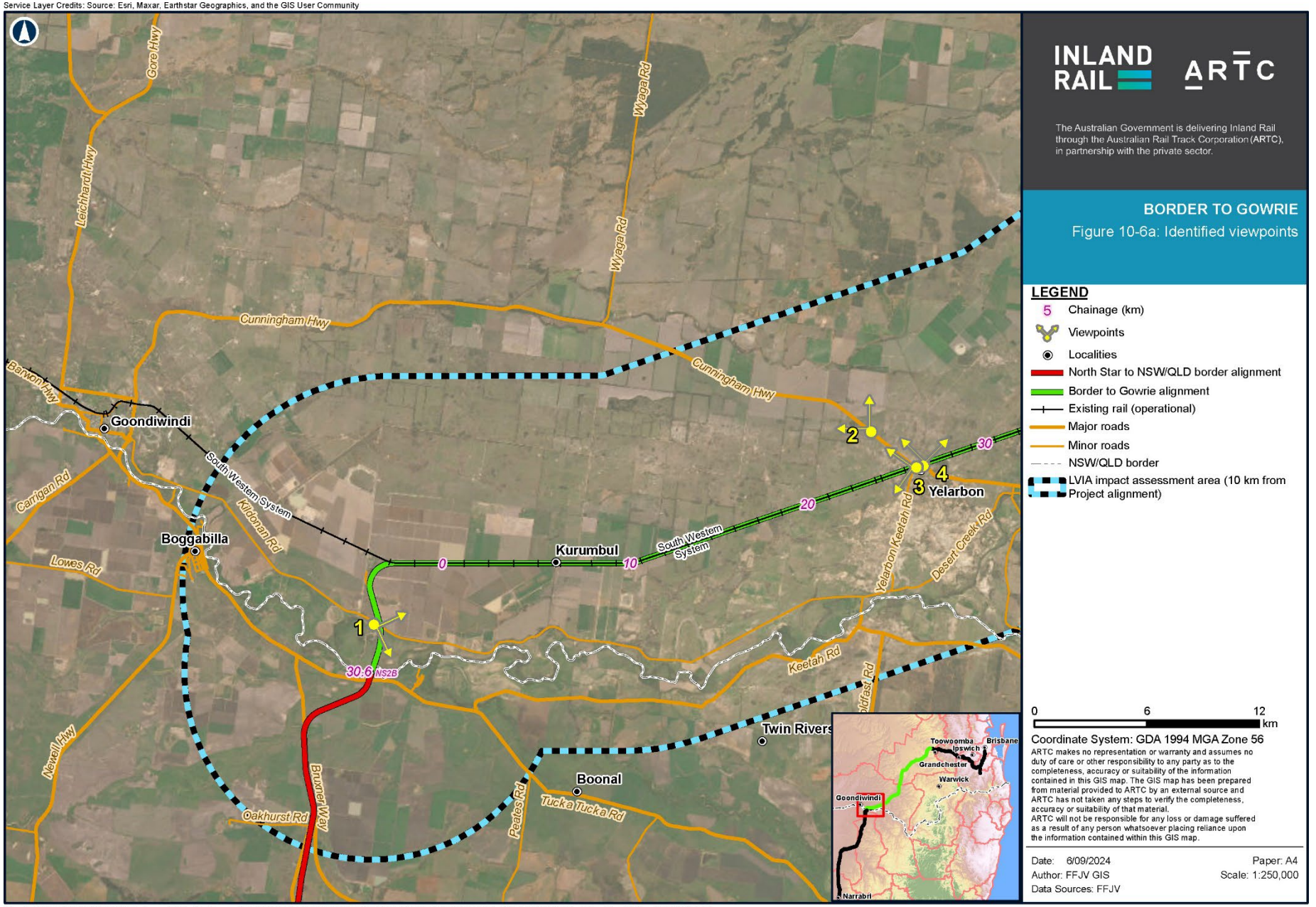
Heading	Description
Key characteristics	▸ Low-lying and flat landscape, typically above 100 m AHD ▸ Multiple streams, such as Desert Creek, drain the area ▸ Distinctive landscape, easily identified from the surrounding areas due to the characteristic white tone of soils, caused by the severe erosion of topsoil and salt encrustation ▸ Salt-tolerant vegetation, including grasses such as Spinifex grass, are well established between patches of bare ground ▸ Generally, an open landscape with limited public access and limited views.
Precedent modifications and infrastructure elements	▸ Dryland salinity in this region is caused by a major fault beneath the scald, that has allowed saline groundwater to leak upwards ▸ Erosion of the geologically caused saline scald has been aggravated by overgrazing ▸ The existing South Western Line transects the northern extent of the scald near Yelarbon, while Yelarbon–Keetah Road transects the scald in a north–south direction ▸ Very limited development.
Landscape character sensitivity assessment	▸ This LCT is typically inaccessible to the public ▸ Therefore, the landscape sensitivity of this landscape type is considered to be up to **low**.
Impact assessment	
Magnitude of change assessment	▸ The alignment directly transects LCA K1: Yelarbon salinity scald ▸ The alignment follows the existing rail corridor and the key impact within this area will be the realignment of the Cunningham Highway and construction of the Cunningham Highway road bridge, due to selective vegetation clearing and earthworks required to facilitate the construction of the railway corridor, embankments and new road infrastructure ▸ The impact will be clearly evident but restricted to a small area near Yelarbon, and will therefore not fundamentally change the character of the landscape. This represents an overall **low** magnitude of change.
Potential effect	The effect of the Project on LCT K: Salinity scald is **negligible** during the construction works and operations stages.

10.5.3.12 Landscape Character Type L

LCT L: Transitional landscapes fall within the impact assessment area but is not affected by the Project, so is not assessed. These landscapes comprise disturbed and developing landscapes, such as around Commodore Mine near Millmerran, that are not valued for their existing landscape character or quality.

10.5.4 Visual impact assessment

The identified viewpoints are shown on Figure 10-6 and the assessment of each is described in Table 10-18 to Table 10-46.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INLAND RAIL
ARTC
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BORDER TO GOWRIE
Figure 10-6a: Identified viewpoints
LEGEND
5 Chainage (km)
Viewpoints
Localities
North Star to NSW/QLD border alignment
Border to Gowrie alignment
Existing rail (operational)
Major roads
Minor roads
NSW/QLD border
LVIA impact assessment area (10 km from Project alignment)
Goondiwindi
Boggabilla
Kurumbul
Yelarbon
Twin Rivers
Boonal
Gore Hwy
Leichhardt Hwy
Wyaga Rd
Cunningham Hwy
Barwon Hwy
Carrigan Rd
South Western System
Kindonan Rd
Lowes Rd
Yelarbon Keetah Rd
Desert Creek Rd
Keetah Rd
Newell Hwy
Bruxner Way
Oakhurst Rd
Peates Rd
Tucka Tucka Rd
30:6 NS2B
0
10
20
30
1
2
3
4
Toowoomba
Brisbane
Ipswich
Grandchester
Warwick
Goondiwindi
Narrabri
0 6 12 km
Coordinate System: GDA 1994 MGA Zone 56
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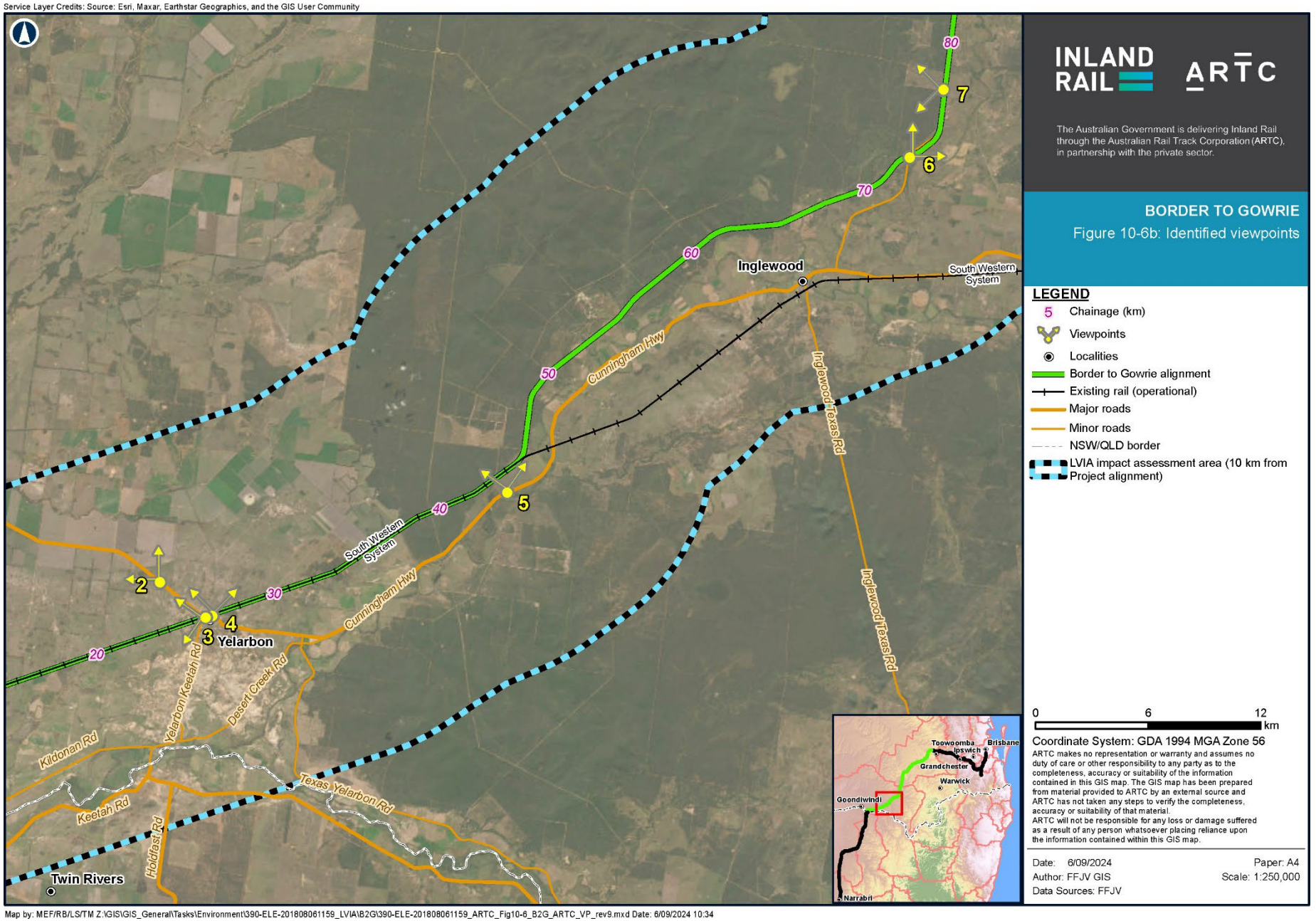
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BORDER TO GOWRIE
Figure 10-6b: Identified viewpoints
LEGEND
5 Chainage (km)
Viewpoints
Localities
Border to Gowrie alignment
Existing rail (operational)
Major roads
Minor roads
NSW/QLD border
LVIA impact assessment area (10 km from Project alignment)
Inglewood
Yelarbon
Twin Rivers
Cunningham Hwy
South Western System
Inglewood Texas Rd
Yelarbon Keetah Rd
Desert Creek Rd
Kildonan Rd
Keetah Rd
Holdfast Rd
Texas Yelarbon Rd
Toowoomba
Ipswich
Brisbane
Grandchester
Warwick
Goondiwindi
Narrabri
0 6 12 km
Coordinate System: GDA 1994 MGA Zone 56
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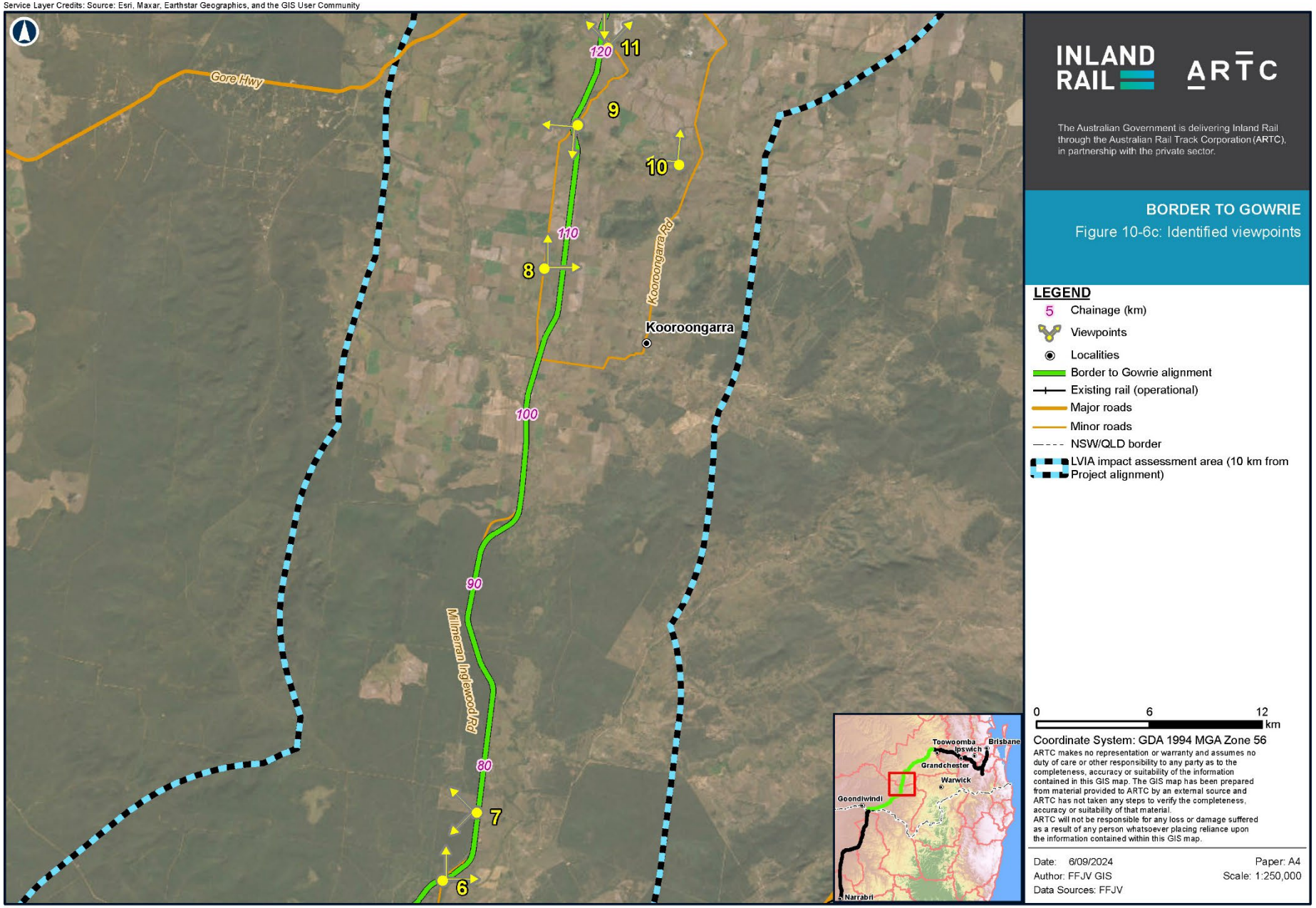
Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Gore Hwy
Kooroongarra Rd
Kooroongarra
Millmerran Inglewood Rd
120
11
9
10
110
8
100
90
80
7
6
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BORDER TO GOWRIE
Figure 10-6c: Identified viewpoints
LEGEND
5 Chainage (km)
Viewpoints
Localities
Border to Gowrie alignment
Existing rail (operational)
Major roads
Minor roads
NSW/QLD border
LVIA impact assessment area (10 km from Project alignment)
Toowoomba
Ipswich
Brisbane
Grandchester
Warwick
Goondiwindi
Narrabri
0
6
12
km
Coordinate System: GDA 1994 MGA Zone 56
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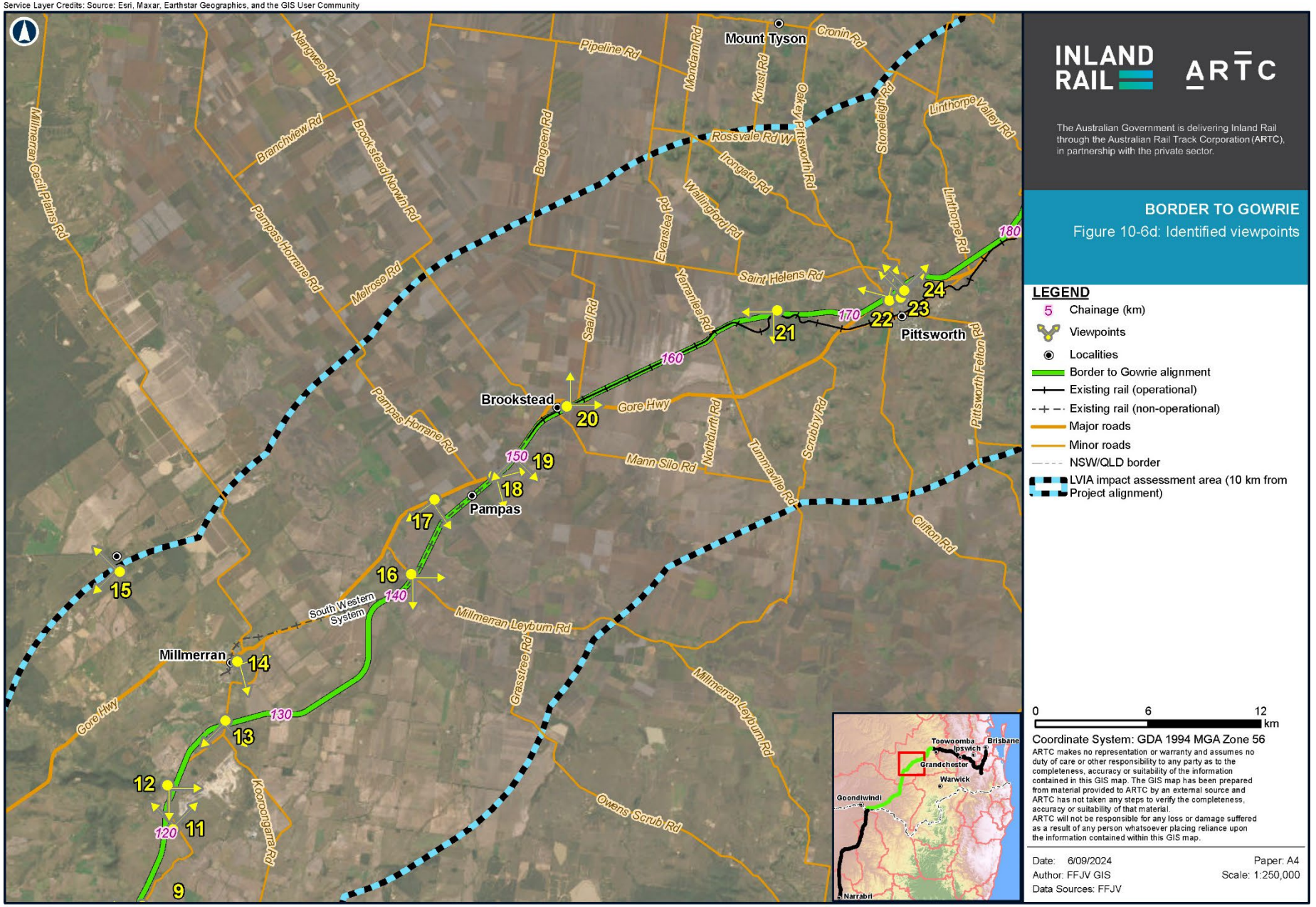
Service Layer Credits: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Mount Tyson
Pittsworth
Brookstead
Pampas
Millmerran
Cronin Rd
Pipeline Rd
Mondam Rd
Knust Rd
Oakey Pittsworth Rd
Stonelegh Rd
Linthorpe Valley Rd
Linthorpe Rd
Rossvale Rd W
Irongate Rd
Wallingford Rd
Evanslea Rd
Saint Helens Rd
Yarranlea Rd
Saall Rd
Pittsworth Felton Rd
Nangwee Rd
Millmeran Cecil Plains Rd
Branchview Rd
Brookstead Nomwin Rd
Bongeen Rd
Pampas Horrane Rd
Melrose Rd
Gore Hwy
Northdurif Rd
Tummavile Rd
Scrubby Rd
Mann Silo Rd
Clifton Rd
South Western System
Millmerran Leyburn Rd
Grassree Rd
Kooroongarra Rd
Owens Scrub Rd
180
170
160
150
140
130
120
5
9
11
12
13
14
15
16
17
18
19
20
21
22
23
24
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BORDER TO GOWRIE
Figure 10-6d: Identified viewpoints
LEGEND
Chainage (km)
Viewpoints
Localities
Border to Gowrie alignment
Existing rail (operational)
Existing rail (non-operational)
Major roads
Minor roads
NSW/QLD border
LVIA impact assessment area (10 km from Project alignment)
0
6
12
km
Coordinate System: GDA 1994 MGA Zone 56
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Toowoomba
Brisbane
Ipswich
Grandchester
Warwick
Goondiwindi
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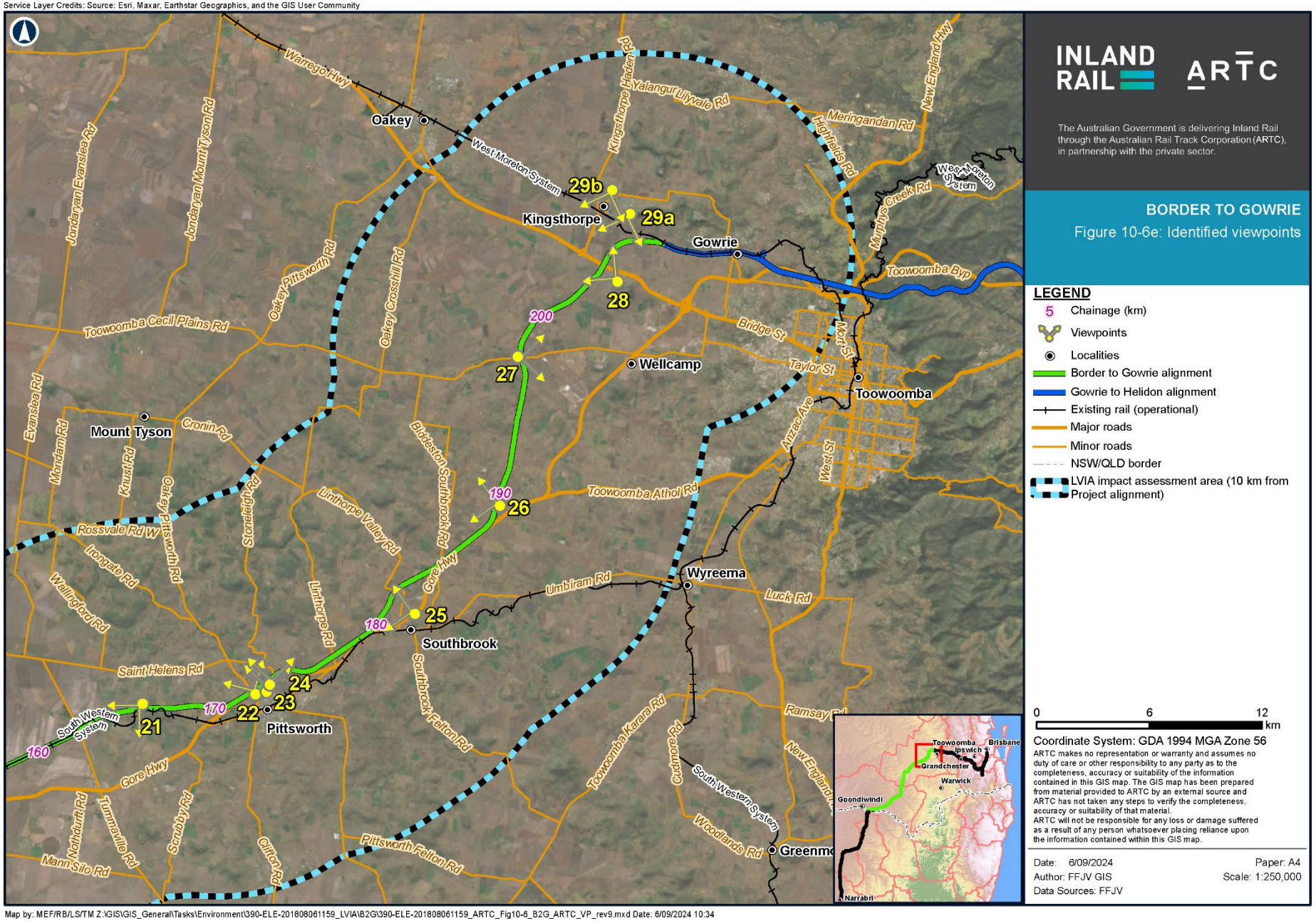
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ARTC
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BORDER TO GOWRIE
Figure 10-6e: Identified viewpoints
LEGEND
5 Chainage (km)
Viewpoints
Localities
Border to Gowrie alignment
Gowrie to Helidon alignment
Existing rail (operational)
Major roads
Minor roads
NSW/QLD border
LVIA impact assessment area (10 km from Project alignment)
Oakey
Kingsthorpe
Gowrie
Wellcamp
Toowoomba
Mount Tyson
Wyreema
Southbrook
Pittsworth
Greenmount
29b
29a
28
27
26
25
24
23
22
21
200
190
180
170
160
0 6 12 km
Coordinate System: GDA 1994 MGA Zone 56
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10.5.4.1 Viewpoint 1

TABLE 10-18 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 1

VP1: Rainbow Reserve near Kildonan Road, Kurumbul

Visual baseline assessment	
 **Existing view from Viewpoint 1**	
Heading	**Description**
Location and description	▸ GPS Location: 28°38’35.52” S 150°27’15.948” E ▸ Elevation: 220 m ▸ Easterly view from the edge of Rainbow Lagoon, within Rainbow Reserve which is a site of potential cultural value, of importance to Traditional Owners, located off Kildonan Road ▸ Proposed rail alignment is approximately 300 m to the east of this viewpoint ▸ Realignment of Eukabilla Road is situated approximately 180 m to the north east of this viewpoint ▸ The Macintyre River and proposed Macintyre River Rail Bridge crossing is situated approximately 2.5 km to the south of this viewpoint ▸ Represents typical and accessible views of visitors and campers staying at Rainbow Reserve ▸ Easterly views from this point provide open views towards the proposed alignment and landscapes typical of LCT A: Vegetated Watercourses—Rivers ▸ Views are contained due to riparian vegetation.
Key visual sensitivities	▸ Moderate sensitivity of receptors, including people camping at or visiting Rainbow Reserve ▸ Rainbow Reserve is situated adjacent to the Border Rivers local tourist drive, which follows Kildonan Road ▸ Rainbow Reserve and lagoon are listed as cultural heritage sites and are known to be of value to the local Aboriginal community, particularly the Bigambul, as the native title holders ▸ The lack of existing infrastructure, high scenic value of the reserve and the Indigenous significance of this site increase the overall sensitivity of this view ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the type and number of viewers (e.g. visitors to the reserve, which accommodates overnight camping).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ Areas proposed as construction laydown areas within this vicinity are partially screened from this location due to existing vegetation ▸ Rainbow Reserve is a popular camping spot and recreational reserve; therefore, construction works could have a significant impact on visitors to the area ▸ The proposed location of a laydown area approximately 410 m to the southeast of this viewpoint has the potential to cause a temporary reduction in visual amenity from this viewpoint; however, it is anticipated that views to this laydown area are anticipated to be predominately screened by existing vegetation ▸ Construction of proposed embankments, rail and bridge infrastructure, access roads, vegetation clearing, realignment of Eukabilla Road and provision of an active level crossing will cause significant disturbance within the landscape ▸ At this distance, construction works and laydown areas will be noticeable; however, they will be largely screened by existing vegetation and topography. While noticeable, it will not fundamentally change the visual character of the landscape. ▸ This represents a **low** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP1 during construction works is considered to be **low**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the alignment is approximately 300 m to the east of this viewpoint. The proposed Project alignment, active level crossing and realignment of Eukabilla Road will be mostly screened by existing vegetation.
	▸ The magnitude of change on this receptor is anticipated to be noticeable, due to the following factors:
	  ▸ noticeable change due to proposed earthworks and the provision of new rail infrastructure, including the Macintyre Floodplain 2 Bridge within what is currently a landscape with high scenic value
	  ▸ the height of the Project alignment is approximately 0.5 m above the existing level of Kildonan Road and embankments reach heights of approximately 2.4 m above the existing level in the vicinity of this viewpoint
	  ▸ fencing is to be provided for the extent of the rail corridor (except for the Condamine River floodplain), typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed and will be in keeping with the existing rural character.
	  ▸ at this distance, while the Project alignment and proposed access road alongside it will be evident, the Project will not change the fundamental visual character of the landscape, as it will be predominately screened by existing vegetation. The Project alignment will blend into the existing view to a considerable extent. Therefore, the magnitude of change is considered to be low.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will have a noticeable impact on people within the reserve. These views will be experienced by, at worst, a moderate number of people with an interest in their surroundings and prolonged viewing opportunities (as camping is permitted within the reserve). ▸ Trains will be evident to travellers on Kildonan Road, part of the *Border Rivers Tourist Drive*, but only experienced occasionally due to the low number and transient nature of travellers on this road ▸ The magnitude of change is considered to be, at most, **moderate**.
Potential effect (operations)	The effect of the Project on VP1 during operations is considered to be **moderate**.

10.5.4.2 Viewpoint 2

TABLE 10-19 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 2

VP2: Cunningham Highway near Yelarbon towards proposed Yelarbon non-resident workforce accommodation facility

Visual baseline assessment	
 **Existing view from Viewpoint 2**	
Heading	**Description**
Location and description	▸ GPS Location: 28°33'19.134" S 150°43'38.82" E ▸ Elevation: 249.8 m ▸ North westerly view in the direction of Goondiwindi from the Cunningham Highway, towards the proposed Yelarbon non-resident workforce accommodation facility site ▸ Proposed rail infrastructure is not evident within this view ▸ Proposed Yelarbon non-resident workforce accommodation facility is located approximately 750 m to the north of this viewpoint, while proposed road realignment works are approximately 340 m northwest of this viewpoint ▸ Represents typical and accessible views of those travelling along the Cunningham Highway towards Goondiwindi ▸ North westerly views from this viewpoint provide close views towards the proposed non-resident workforce accommodation facility and landscapes typical of LCT D: Dry croplands and pastures (D34: Yelarbon).
Key visual sensitivities	▸ Receptors include isolated rural residents, workers and travellers experiencing transient views at speed along the Cunningham Highway (AADT around 1,538 per day, of which up to 43.74 per cent are heavy vehicles) would experience changes to the view ▸ This viewpoint is not located on or near any tourist drives ▸ The presence of existing road infrastructure somewhat reduces the overall sensitivity of this view ▸ Overall, this viewpoint is considered to have a **low** sensitivity to the change proposed, due to the low number of nearby isolated rural receptors, and the relatively low interest of a moderate number of travellers passing at some speed along the Cunningham Highway, who are the primary visual audience in this location.
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction facility	
Magnitude of change assessment	▸ The construction of the non-resident workforce accommodation facilities will include the provision of a sewage treatment plant, amenities building, dining room, accommodation units with associated communal areas and other associated service infrastructure. A nominal 20 ha area has been allocated to accommodate the non-resident workforce accommodation facility; however, it is not anticipated that the whole area would be required to be cleared. ▸ Due to the proximity of this viewpoint to the proposed non-resident workforce accommodation facilities, it is anticipated that views towards the construction of the site will be clearly evident from this location, however, these views will typically be transient views experienced by drivers passing along the Cunningham Highway and will be partially screened by foreground vegetation ▸ Vegetation clearing for the construction of the proposed non-resident workforce accommodation facility will remove some existing vegetation, however, due to the generally cleared nature of the rural landscape within the site's footprint, it is not anticipated that this will noticeably increase the visibility of the alignment from the Cunningham Highway and surrounding isolated rural residential lots ▸ At this distance, the construction of a non-resident workforce accommodation facilities will be clearly perceptible; however, construction activities will be partly screened by existing vegetation ▸ The impact of these is temporary which represents a considerable change and **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP2 during construction works is considered to be **low**.
Operation	
Magnitude of change assessment—permanent infrastructure	▸ The non-resident workforce accommodation facilities is approximately 750 m to the north of this viewpoint and will be partially screened by existing vegetation ▸ The magnitude of change on this receptor is anticipated to be no impact, as the non-resident workforce accommodation facilities will be decommissioned and rehabilitated ▸ At this distance, it is anticipated that over time, evidence of the construction camp non-resident workforce accommodation facility would be negligible. In addition, views to the site from this location will be partially obscured by existing vegetation, and other opportunities for more open views towards the site are available along the Cunningham Highway at a further distance. Therefore, the magnitude of change is considered to be **no impact.**
Magnitude of change assessment—train	▸ As rail infrastructure is not evident from this location, the magnitude of change is **no impact.**
Potential effect (operations)	As the Yelarbon non-resident workforce accommodation facility would be decommissioned and rehabilitated, it is considered that the effect of the Project on VP2 during operations would be **no impact**.

10.5.4.3 Viewpoint 3

TABLE 10-20 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 3

VP3: Yelarbon rest area

Visual baseline assessment

Existing view from Viewpoint 3

Heading	Description
Location and description	▸ GPS Location: 28°34'21.767" S 150°45'6.636" E ▸ Elevation: 240 m ▸ Westerly view in the direction of Goondiwindi from the Cunningham Highway, where it passes through Yelarbon ▸ Proposed Project alignment is approximately 50 m to the north of this viewpoint, while proposed road realignment works begin approximately 30 m west of this viewpoint ▸ Proposed Yelarbon non-resident workforce accommodation facility is located approximately 3.5 km to the northwest of this viewpoint ▸ Represents typical and accessible views of residents and of visitors, workers and tourists in Yelarbon, as well as those travelling along the Cunningham Highway ▸ Location is adjacent to the Yelarbon Rest Area and represents views from the Cunningham Highway (and main street) of Yelarbon and is intended to represent more generally the views from the rest of the town towards the alignment ▸ Westerly views from this point provide close views towards the proposed alignment, Cunningham Highway Bridge, non-resident workforce accommodation facility and laydown area, including landscapes typical of LCT F: Rural Settlement (F15: Yelarbon), LCT K: Salinity Scald (K1) and LCT D: Dry Croplands and Pastures (D34: Yelarbon).
Key visual sensitivities	▸ Receptors include a relatively high number of nearby residents, workers and travellers driving along the Cunningham Highway and visitors to Yelarbon using rest stop facilities ▸ Yelarbon is located on the Border Rivers local tourist drive ▸ A moderate number of receptors travel along the Cunningham Highway (AADT around 1,538 per day, of which up to 43.74 per cent are heavy vehicles) and would experience changes to the view; however, it is noted that these viewers are typically passing at speed and would only experience transient views ▸ This viewpoint is considered to have a **moderate** sensitivity overall to the change proposed, due to the Yelarbon town centre location with a medium number of receptors, most of whom would have an interest in views from this location (e.g. nearby residents, commercial operators and people using the rest stop); albeit that this is not a particularly scenic viewpoint, which already includes existing railway infrastructure and is not specifically visited for its scenic amenity value.

Visual evaluation

Photomontage view from Viewpoint 3

Photomontage view from Viewpoint 3—noise wall option

Note: Visualisation of noise wall shown is indicative only, showing a schematic option for the instalment of noise barriers in this location. Design of noise barriers is subject to development at the detailed design stage.

Construction works

Magnitude of change assessment	▸ The provision of two major multi-use construction laydown areas (including satellite offices, fuel storage, storage of rail, bridge and road construction materials) and construction of the Project alignment, the Cunningham Highway Road Bridge, pedestrian level crossing and the realignment of the Cunningham Highway, Yelarbon–Kurumbul Road, Yelarbon–Keetah Road and Kera Street will result in extensive disturbance, creating a considerable temporary change in the visual character of this viewpoint ▸ The proposed Yelarbon non-resident workforce accommodation facility is approximately 3.5 km northwest of this viewpoint, with access off the Cunningham Highway, and will include the provision a sewage treatment plant, amenities building, dining room, accommodation units with associated communal areas and other associated service infrastructure ▸ Due to the distance from this viewpoint and the presence of screening vegetation, it is not anticipated that views towards the proposed Yelarbon non-resident workforce accommodation facility will be evident from this location, however transient views will be possible for drivers passing along the Cunningham Highway ▸ Vegetation clearing for the construction of the proposed alignment, bridge structures and laydown areas will remove some existing vegetation that provides some visual screening of the existing rail corridor, increasing the visibility of the alignment from the Cunningham Highway and surrounding residential lots ▸ Earthworks associated with the proposed alignment will require the movement of large volumes of material ▸ While construction works will be clearly evident from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP3 during construction works is considered to be **moderate**.

Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 50 m to the north of this viewpoint, while the proposed Cunningham Highway Road Bridge is approximately 460 m to the west
	▸ The skyline is already affected by the presence of powerlines, power poles and existing rail infrastructure
	▸ The magnitude of change on this receptor is anticipated to be dominant due to the following factors:
	  ▸ dominant change due to the provision of a new single-track dual-gauge railway to the north of the existing rail line
	  ▸ existing residential lots within Yelarbon, particularly those on Kera Street, will have direct, close views to the proposed new road bridge and realigned local roads
	  ▸ existing active level crossing will be removed and replaced by the realignment of the Cunningham Highway, including the provision of large embankments and the Cunningham Highway Bridge (7.1 m minimum clearance over rail) in the centre of the view
	  ▸ vegetation clearing for the construction of the proposed alignment, bridge structures and laydown area will increase the visibility of the alignment from the Cunningham Highway and surrounding residential lots
	▸ Fencing is to be provided for the extent of the rail corridor. Fencing is to extend between the corridor and private land adjoining the railway and will be a standard chain link boundary fence.
	▸ At this distance, the alignment, embankments and the Cunningham Highway Road Bridge will be highly evident and will have a dominant impact on this viewpoint as it will be introducing new road infrastructure within close proximity to residential lots on the western side of Yelarbon. This represents a **high** magnitude of change.
	▸ Options for noise attenuation are currently being explored, including the provision of a noise barrier within the vicinity of this location at the boundary of the existing rail corridor between the western extent of the town and to the east
	▸ It is noted that if noise barriers were installed in this location (regardless of the extent), the magnitude of change would further increase; however, it would still remain **high** (as it is the highest magnitude of change possible).

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the proximity of the Project alignment to nearby residential and commercial lots of Yelarbon, particularly those on Taloom Street and Kera Street. Close views to the Project alignment will be possible for travellers passing over the new Cunningham Highway Road Bridge. While anticipated to be experienced by numerous motorists, these views are of a transient nature, and the key visual receptors will be nearby residents. It is noted that the existing rail line currently facilitates freight train movements, albeit single stacked. Therefore, the magnitude of change is considered to be **low.**
Potential effect (operations)	The effect of the Project on VP3 during operation is considered to be **high.** It is noted that if noise barriers are installed in this location, the effect of the Project during the operations stage would remain **high.**

10.5.4.4 Viewpoint 4

TABLE 10-21 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 4

VP4: Yelarbon silo artwork viewing area

Visual baseline assessment

Existing view from Viewpoint 4

Heading	Description
Location and description	▸ GPS Location: 28°34'19.11" S 150°45'20.424" E ▸ Elevation: 242 m ▸ Northerly view towards the GrainCorp silos, with the silo artwork viewing area and the Cunningham Highway visible in the foreground ▸ Proposed Project alignment is approximately 80 m to the north of this viewpoint, while proposed road realignment works for East Sawmill Road are approximately 180 m to the east of this location (not visible within this view) ▸ Proposed Yelarbon non-resident workforce accommodation facility is located approximately 3.7 km to the northwest of this viewpoint ▸ Represents typical and accessible views of residents and of visitors, workers and tourists in Yelarbon, as well as those travelling along the Cunningham Highway ▸ Location is within the GrainCorp silo artwork viewing area and is also considered representative of views from the Cunningham Highway and the eastern part of the town towards the Project alignment ▸ Northerly views from this point provide close views towards the proposed alignment and realignment of East Sawmill Road, including landscapes typical of LCT F: Rural Settlement (F15: Yelarbon), LCT K: Salinity Scald (K1) and LCT D: Dry Croplands and Pastures (D34: Yelarbon).
Key visual sensitivities	▸ Receptors, including a relatively low number of nearby residents on the eastern side of Yelarbon, workers and travellers driving along the Cunningham Highway and visitors to Yelarbon GrainCorp silo artwork viewing area ▸ Yelarbon and the silo artwork viewing area are located on the *Border Rivers* local tourist drive ▸ A moderate number of receptors travel along the Cunningham Highway (AADT around 1,538 per day, of which up to 43.74 per cent are heavy vehicles) and would experience changes to the view; however, it is noted that these viewers are typically passing at speed and would only experience transient views ▸ This viewpoint is considered to have a **moderate** sensitivity overall to the change proposed, as the GrainCorp silos artwork viewing area is a destination for visitors to Yelarbon. It is situated close to the Yelarbon town centre and is considered to have a medium number of receptors, most of whom would have an interest in views from this location (e.g. nearby residents and people visiting the silo viewing area). It is, however, noted that views from this location are already impacted by the presence of the Cunningham Highway in the foreground and existing railway infrastructure.

Visual evaluation

Photomontage view from Viewpoint 4

Photomontage view from Viewpoint 4—noise wall option (no train) with clear noise barriers to show option to retain views to silo artwork from viewing area

Photomontage view from Viewpoint 4—noise wall option (train passing) with clear noise barriers to show option to retain views to silo artwork from viewing area

Note: Visualisation of noise wall shown is indicative only, showing a schematic option for the instalment of noise barriers in this location. Design of noise barriers including confirmation of length and materials is subject to development at the detailed design stage. It is possible that noise barriers will not need to extend in front of the silos as Yelarbon but this option has been visualised as a indicative solution should this be required.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The construction of the alignment and realignment of the nearby East Sawmill Road will result in a noticeable temporary change in the landscape character of this viewpoint and other potential views from this location ▸ No laydown areas are located in the immediate vicinity of this viewpoint ▸ The proposed Yelarbon non-resident workforce accommodation facility is approximately 3.7 km northwest of this viewpoint, with access off the Cunningham Highway, and will include the provision a sewage treatment plant, amenities building, dining room, accommodation units with associated communal areas and other associated service infrastructure

Heading	Description
	▸ Due to the distance of this viewpoint from the proposed Yelarbon non-resident workforce accommodation camp, it is not anticipated that views towards it will be evident from this location ▸ Due to the limited amount of existing vegetation in this location, vegetation clearing for the construction of the proposed alignment is considered to have negligible impact ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ The presence of plant constructing the Project alignment and embankments will temporarily change the visual character this viewpoint ▸ While construction works will be clearly evident from this vantage point the impact of these is temporary which represents a noticeable change and **low** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP4 during construction works is considered to be **low**.
Operation	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 80 m to the north of this viewpoint, while the proposed realignment of East Sawmill Road is approximately 180 m to the east
	▸ The skyline is already affected by the presence of powerlines, power poles, telecommunications infrastructure and the existing rail infrastructure and the GrainCorp silos, which are part of the GrainCorp 'Australian Silo Art Trail'
	▸ The magnitude of change on this receptor is anticipated to be considerable, therefore moderate, due to the following factors:
	  ▸ provision of a new single track dual-gauge railway to the north of the existing rail line, on low embankments up to around +0.7 m high
	  ▸ existing residential lots within Yelarbon, particularly those on Bengalla Street and Taloom Street (Cunningham Highway) will have direct, close views to the proposed rail alignment (on low embankments up to approximately +0.7 m) and realigned East Sawmill Road
	  ▸ due to the sparse nature of existing vegetation, vegetation clearance will have minimal impact on the screening of the alignment
	  ▸ fencing will be provided for the majority of the rail corridor to protect adjoining lands from trespass and to prevent livestock from gaining access to the railway. Fencing is to extend between the corridor and private lots or lot adjoining the railway and will be a standard chain link boundary fence.

	▸ At this distance, the alignment, low embankments and the realignment of East Sawmill Road will be clearly evident, and represent a considerable change to the view, although will largely accord with the existing character of the landscape. This represents a **moderate** magnitude of change. ▸ Options for noise attenuation are currently being explored. In order to represent the potential 'worst case' scenario with regards to visual impacts, potential impacts between the western extent of the town and to the existing silos evident within this view (as per the revised reference design) have been assessed. ▸ It is noted that if noise barriers were installed in this location, the magnitude of change would increase and be **high**.
Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the proximity of the Project alignment to the silo artwork viewing area and nearby residential and lots of Yelarbon, particularly those on Bengalla Street and Taloom Street. Close views to the Project alignment will be possible for travellers passing along the Cunningham Highway. While anticipated to be experienced by numerous motorists, these views are of transient nature, and the key visual receptors will be nearby residents and visitors to the silo artwork viewing area. It is noted that the existing rail corridor currently facilitates freight train movements, albeit single stacked; therefore, the magnitude of change is considered to be **low.**
Potential effect (operations)	The effect of the Project on VP4 during operations is considered to be **moderate**. It is noted that if noise barriers are installed in this location, the effect of the Project during operations would be **high**.

10.5.4.5 Viewpoint 5

TABLE 10-22 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 5

VP5: Cunningham Highway near Whetstone rest area

Visual baseline assessment	
 **Existing view from Viewpoint 5**	
Heading	**Description**
Location and description	▸ GPS Location: 28°30'55.451" S 150°55'2.214" E ▸ Elevation: 260 m ▸ Northerly view towards Whetstone State Forest from the Cunningham Highway near Whetstone rest area ▸ Proposed Project alignment is approximately 1 km to the northwest of this viewpoint ▸ Represents typical and accessible views of those travelling along the Cunningham Highway, as well as those stopping at the rest area ▸ Northerly views from this point provide open views towards the existing railway line, the proposed alignment, as well as landscapes typical of LCT D: Dry croplands and pastures (D28: Whetstone East) and LCT J: Forested hills and plains (J10: Bringalily West).
Key visual sensitivities	▸ Receptors include isolated rural residents, workers and travellers experiencing transient views at speed along the Cunningham Highway (AADT around 1,538 per day, of which up to 43.74 per cent are heavy vehicles) as well as drivers using rest stop facilities ▸ This viewpoint is not located on or near any tourist drives ▸ The presence of existing infrastructure (railway line) reduces the overall sensitivity of this view ▸ Overall, this viewpoint is considered to have a **low** sensitivity to the change proposed, due to the low number of isolated rural lots near this viewpoint, and the relatively low interest of travellers passing at some speed along the Cunningham Highway, who are the primary visual audience in this location.
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.
Construction works	
Magnitude of change assessment	▸ Proposed location for the Whetstone MDC. For more detail see Appendix AE: Whetstone Material Distribution Centre: Supporting Technical Information (Appendix B: Landscape and Visual Impact Assessment) ▸ Due to the distance from the highway, the construction of the Project within the existing rail corridor and the presence of construction plant will create a barely perceptible change in this viewpoint ▸ No laydown areas are proposed in the immediate vicinity of this viewpoint ▸ Due to the open nature of grazing land the alignment passes through in this location, vegetation clearing for the construction of the Project alignment is considered to have **negligible** impact on screening vegetation ▸ This temporary impact represents a **negligible** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP5 during construction works is considered to be **negligible**.

Heading	Description
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 1 km to the northwest of this viewpoint. The skyline is already affected by the presence of existing rail infrastructure.
	▸ The magnitude of change on this receptor is anticipated to be barely perceptible, therefore **negligible**, due to the following factors:
	  ▸ provision of new rail infrastructure within the existing rail corridor in shallow cut and on low embankment up to around 2.8 m high
	  ▸ provision of an active level crossing to Whetstone Access Road, noting that views from this viewpoint towards the active level crossing will be distant and typically be screened by existing vegetation
	  ▸ fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. A combination of standard rural chain wire fencing and wild dog check fence is proposed throughout this section, consistent with existing provisions.
	▸ At this distance, the alignment will be barely perceptible and will blend into the existing rural view to some extent. This represents a **negligible** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be noticeable due to the slightly elevated situation of the railway track. Distant views to the alignment will be possible for travellers along the Cunningham Highway and those stopping at the Whetstone rest area. While anticipated to be experienced by numerous motorists, these views are of a transient nature. It is noted that the existing rail corridor currently facilitates freight train movements, albeit single stacked; therefore, the magnitude of change is considered to be **low**.
Potential effect (operations)	The effect of the Project on VP5 during operations is considered to be **negligible**.

10.5.4.6 Viewpoint 6

TABLE 10-23 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 6

VP6: Millmerran–Inglewood Road towards Millmerran–Inglewood Road active level crossing

Visual baseline assessment	
	
Existing view from Viewpoint 6	
Heading	**Description**
Location and description	▸ GPS Location: 28°21'26.267" S 151°8'20.957" E ▸ Elevation: 300 m ▸ North easterly view towards Millmerran–Inglewood Road and proposed active level crossing ▸ Proposed rail alignment is approximately 70 m to the northwest of this viewpoint ▸ Proposed Inglewood non-resident workforce accommodation facility is located approximately 3.8 km to the northeast of this viewpoint ▸ Represents typical and accessible views of those travelling north along Millmerran–Inglewood Road towards Millmerran ▸ North easterly views from this point provide open views towards the Project alignment and active level crossing ▸ Views encompass LCT J: Forested hills and plains (J10: Bringalily West) ▸ Views are contained due to dense vegetation.
Key visual sensitivities	▸ Receptors include workers and travellers experiencing transient views at speed along Millmerran–Inglewood Road (AADT around 303 per day, of which up to 32.27 per cent are heavy vehicles) and visitors of Bringalily State Forest ▸ This viewpoint is located on the Rural Getaway regional tourist drive ▸ The lack of existing infrastructure and natural setting increases the overall sensitivity of this view ▸ This viewpoint is considered to have a **low** sensitivity overall to the change proposed, due to the relatively low interest of viewers (i.e. very low numbers of travellers passing at some speed along Millmerran–Inglewood Road and isolated rural residential receptors).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment, minor roadworks to Millmerran-Inglewood Road, associated earthworks and provision of the Millmerran-Inglewood Road active level crossing will introduce considerable construction works into the view ▸ The proposed location of a laydown area (including site offices and fuel storage) approximately 400 m to the northeast of this viewpoint and an additional bridge construction laydown area located to the immediate west of this viewpoint location would cause a temporary reduction in visual amenity from this viewpoint.

Heading	Description
	▸ The proposed Inglewood non-resident workforce accommodation facility is located approximately 3.8 km northeast of this viewpoint on cleared rural land adjacent to Bringalilly State Forest, with access off Millmerran-Inglewood Road. The Inglewood non-resident workforce accommodation facility will include the provision a sewage treatment plant, amenities building, dining room, accommodation units with associated communal areas and other associated service infrastructure. ▸ Due to the distance from this viewpoint and the presence of screening vegetation, it is not anticipated that views towards the proposed Inglewood non-resident workforce accommodation facility will be evident from this location; however, transient views will be possible for drivers passing along Millmerran-Inglewood Road ▸ Due to the forested nature of this viewpoint, the most evident construction impact will be the clearance of vegetation for the construction of the Project alignment, provision of proposed laydown areas, earthworks to facilitate the construction of the rail alignment including cuts and embankments and roadworks associated with the active level crossing ▸ The presence of plant constructing the alignment, cuts, embankments and road and rail infrastructure will temporarily change the character of the landscape, creating a considerable change in the landscape character of this viewpoint ▸ While construction work and plant will be clearly evident from this vantage point, the impact of these is temporary which represents a considerable change and **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP6 during construction works is considered to be **low**.
Operations	

Magnitude of change assessment—permanent Infrastructure	▸ The nearest section of the alignment is approximately 70 m to the northwest of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be clearly evident, due to the following factors:
	  ▸ introduction of new rail infrastructure, including the Millmerran-Inglewood road–rail active level crossing within what is currently a densely vegetated road reserve, adjacent to Bringalily State Forest
	  ▸ Rail infrastructure is within a cut to the west of Millmerran-Inglewood Road, with depths of up to approximately -4.8 m, and on low embankment to the east of Millmerran-Inglewood Road, with heights of up to approximately 6.8 m, noting that adjacent to Millmerran-Inglewood Road cut and embankment depths and heights are less
	  ▸ Due to the dense nature of existing vegetation and localised clearing associated with the construction of the Project, existing retained vegetation will screen views of the active level crossing and rail infrastructure until close range views are afforded and will provide screening of the active level crossing from all nearby isolated rural lots
	  ▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed in this location and will be in keeping with the existing rural character.
	▸ At this distance, the alignment and Millmerran-Inglewood Road active level crossing and alignment will be clear; however, this type of infrastructure is considered to accord with the character of the road. This represents a **moderate** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be clear due to the proximity of the railway track to Millmerran-Inglewood Road. Close views to the alignment and Millmerran-Inglewood Road active level crossing will be possible for travellers along Millmerran-Inglewood Road. These views are experienced by a low number of motorists and are of a transient nature; therefore, the magnitude of change is considered to be **low.**
Potential effect (operations)	The effect of the Project on VP64 during operations is considered to be **low**.

10.5.4.7 Viewpoint 7

TABLE 10-24 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 7

VP7: Millmerran-Inglewood Road towards proposed Inglewood non-resident workforce accommodation facility

Visual baseline assessment	
	
Existing view from Viewpoint 7	
Heading	**Description**
Location and description	▸ GPS Location: 28°19'29.622" S 151°9'29.304" E ▸ Elevation: 313.6 m ▸ Westerly view from Millmerran-Inglewood Road towards the proposed Inglewood non-resident workforce accommodation facility site ▸ Proposed rail infrastructure is not evident within this view ▸ Proposed Inglewood non-resident workforce accommodation facility site is located approximately 740 m to the west of this viewpoint, while this viewpoint is located in close proximity to the proposed access road ▸ Represents typical and accessible views of those travelling north along Millmerran-Inglewood Road towards Millmerran ▸ Westerly views from this viewpoint provide close open views towards the proposed Inglewood non-resident workforce accommodation facility and landscapes typical of LCT D: Dry croplands and pastures (D23: Canning Creek West) and LCT J: Forested hills and plains (J10: Bringalily West).
Key visual sensitivities	▸ Receptors include isolated rural residents, workers and travellers experiencing transient views at speed along Millmerran-Inglewood Road (AADT around 303 per day, of which up to 32.27 per cent are heavy vehicles) and visitors of Bringalily State Forest ▸ This viewpoint is located on the Rural Getaway regional tourist drive ▸ The lack of existing infrastructure and natural setting increases the overall sensitivity of this view ▸ This viewpoint is considered to have a **low** sensitivity overall to the change proposed, due to the relatively low interest of viewers (i.e. very low numbers of travellers passing at some speed along Millmerran-Inglewood Road and isolated rural residential receptors).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The construction of the Inglewood non-resident workforce accommodation facility will include the provision of a sewage treatment plant, amenities building, dining room, accommodation units with associated communal areas and other associated service infrastructure. A nominal 20 ha area has been allocated to accommodate the Inglewood non-resident workforce accommodation facility; however, it is not anticipated that the whole area would be required to be cleared. ▸ Due to the proximity of this viewpoint to the proposed Inglewood non-resident workforce accommodation facility, it is anticipated that views towards the construction of the site will be clearly evident from this location; however, these views will typically be transient views experienced by drivers passing along Millmerran-Inglewood Road ▸ Vegetation clearing for the construction of the proposed Inglewood non-resident workforce accommodation facility will remove some existing vegetation; however, due to the generally cleared nature of the rural landscape within the site's footprint, it is not anticipated that this will noticeably increase the visibility of the alignment from Millmerran-Inglewood Road and surrounding isolated rural residential lots ▸ At this distance, the construction of the Inglewood non-resident workforce accommodation facility will be clearly perceptible; however, construction activities will be partly screened by existing vegetation ▸ The impact of these is temporary which represents a considerable change and **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP7 during construction works is considered to be **low**.
Operation	
Magnitude of change assessment—permanent Infrastructure	▸ The Inglewood non-resident workforce accommodation facility is approximately 740 m to the west of this viewpoint ▸ The magnitude of change on this receptor is anticipated to be no impact, as the Inglewood non-resident workforce accommodation facility site will be decommissioned and rehabilitated ▸ At this distance, it is anticipated that over time, evidence of the Inglewood non-resident workforce accommodation facility would be negligible. In addition, views to the site from this location will be partially obscured by existing vegetation, and other opportunities for more open views towards the site are available along the Cunningham Highway at a further distance. Therefore, the magnitude of change is considered to be **no impact.**
Magnitude of change assessment—train	▸ As rail infrastructure is not evident from this location, the magnitude of change is **no impact**; however, it is noted that the Project alignment is located behind the viewer, and views to passing trains would be possible when looking in the other direction.
Potential effect (operations)	As the Inglewood non-resident workforce accommodation facility would be decommissioned and rehabilitated, it is considered that the effect of the Project on VP7 during operations would be **no impact**.

10.5.4.8 Viewpoint 8

TABLE 10-25 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 8

VP8: Millmerran–Inglewood Road near Nicol Creek Road

Visual baseline assessment	
	
Existing view from Viewpoint 8	
Heading	**Description**
Location and description	▸ GPS Location: 28°3'50.663" S 151°11'57.906" E ▸ Elevation: 400 m ▸ North easterly view towards Millmerran State Forest from Millmerran–Inglewood Road ▸ Proposed Project alignment is located approximately 1 km to the east of this viewpoint ▸ Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along Millmerran–Inglewood Road ▸ North easterly views from this point provide open views towards the proposed Project alignment within LCT D: Dry croplands and pastures (D14: Millmerran).
Key visual sensitivities	▸ Receptors include isolated rural residents, workers and travellers experiencing transient views at speed along Millmerran–Inglewood Road (AADT around 1,020 per day, of which up to 24.92 per cent are heavy vehicles) ▸ This viewpoint is located on the Rural Getaway regional tourist drive and the local Millmerran Tourist Drive ▸ This view comprises a strong character due to the views to Millmerran State Forest, Pine Hill, Mount Domville and Mt Basalt Reserve beyond and rural character in the foreground ▸ Overall, this viewpoint is considered to have a **low** sensitivity to the change proposed, due to the relatively low interest of viewers (i.e. very low numbers of nearby rural residents and travellers passing at some speed along Millmerran–Inglewood Road).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.
Construction works	
Magnitude of change assessment	▸ Significant construction areas are proposed within this viewpoint ▸ Vegetation clearing to facilitate development will be minimal due to the open nature of the rural landscape ▸ Construction of proposed embankments, cuts, rail infrastructure, realignment of Nicol Creek Road and an active level crossing will cause disturbance within the landscape ▸ While construction works will be evident from this vantage point the impact of these is temporary, which represents a noticeable and therefore **low** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP8 during construction works is considered to be **negligible.**

Heading	Description
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the alignment is located approximately 1 km to the east of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be considerable, due to the following factors:
	  ▸ widespread change in the view due to the introduction of new rail infrastructure into the rural landscape, with embankments reaching heights up to around 7.2 m above the existing surface level, and the deepest cut being approximately -5.2 m below existing surveyed level
	  ▸ realignment of Nicol Creek Road, including provision of an active level crossing
	  ▸ due to the sparse nature of existing vegetation, vegetation clearance will have minimal impact on the screening of the alignment
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed in this location, which will be in keeping with the existing rural character.
	▸ At this distance, the Project alignment and associated infrastructure will be clear, and represent a considerable change to the view, although will largely accord with the existing character of the landscape. This represents a **moderate** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be clearly evident from this vantage point ▸ Trains will be evident to nearby isolated rural residents and travellers on Millmerran–Inglewood Road and Nicol Creek Road. Driver views will be experienced intermittently due to the moderate number and transient nature of travellers on these roads. Therefore, the magnitude of impact is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP8 during operations is considered to be **low**.

10.5.4.9 Viewpoint 9

TABLE 10-26 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 9

VP9: Millmerran–Inglewood Road towards Millmerran–Inglewood Road rail bridge #2

Visual baseline assessment	
	
Existing view from Viewpoint 9	
Heading	**Description**
Location and description	▸ GPS Location: 27°59'43.434" S 151°13'6.773" E ▸ Elevation: 460 m ▸ South westerly view towards the proposed Project alignment and Millmerran-Inglewood Road Rail Bridge #2 ▸ Proposed Project alignment is approximately 240 m to the west of this viewpoint while the Millmerran-Inglewood Road Rail Bridge #2 is located approximately 640 m southwest of this location ▸ Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling north along Millmerran–Inglewood Road towards Millmerran ▸ South westerly views from this point provide contained views towards the proposed alignment, including landscapes typical of LCT D: Dry croplands and pastures (D14: Millmerran) ▸ Views are contained due to dense roadside vegetation.
Key visual sensitivities	▸ Low sensitivity of receptors, including isolated rural residents, workers and travellers experiencing transient views at speed along Millmerran–Inglewood Road (AADT around 1,020 per day, of which up to 24.92 per cent are heavy vehicles) ▸ This viewpoint is located on the Rural Getaway regional tourist drive and the local Millmerran Tourist Drive ▸ Overall, this viewpoint is considered to have a **low** sensitivity to the change proposed, due to the relatively low interest of viewers (i.e. very low numbers of nearby rural residents and travellers passing at some speed along Millmerran–Inglewood Road).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ Considerable construction areas within proximity to nearby isolated rural residential lots are proposed to the west that would be visible from this viewpoint, including a bridge construction laydown area visible within this view and a major laydown area (including site offices and fuel storage) approximately 90 m to the north of this viewpoint ▸ Construction of proposed embankments, cuts, Millmerran–Inglewood Road Rail Bridge #2 and the provision of the Heckendorf Road road-over-rail bridge grade separated crossing (part of the local tourist route Rolling Hills and Scenic Lookouts Drive) will cause temporary disturbance within the landscape ▸ Earthworks associated with the proposed Project alignment will require large volumes of material and vegetation to be removed ▸ At this distance, construction works and laydown areas will be highly evident and change the visual character of the landscape, albeit temporarily. This is considered to be a **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP9 during construction works is considered to be **low**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the alignment is approximately 240 m to the west of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be dominant, therefore **high**, due to the following factors:
	  ▸ dominant change due to proposed earthworks and the provision of significant new rail infrastructure, including the Millmerran–Inglewood Road Rail Bridge #2 (rail-over-road), Heckendorf Road road-over-rail bridge and the resurfacing and regrading of Millmerran–Inglewood Road
	  ▸ height of proposed embankments varies, with the maximum proposed height approximately 11 m above surveyed surface level at the northern end of the bridge structure
	  ▸ the deepest cut in this area will be approximately -11.6 m below surveyed surface level
	  ▸ due to the dense nature of existing roadside vegetation, vegetation removal will greatly enhance the visibility of the alignment from Millmerran–Inglewood Road
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed in this location and will be in keeping with the existing rural character.
	▸ At this distance, the alignment and associated infrastructure will be clearly evident, and represent a dominant change to the visual character of the landscape, introducing new, dominant visual elements into the landscape, considered to be up to **high** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be clear from this vantage point ▸ Trains will be evident to nearby isolated rural residents and travellers on Millmerran–Inglewood Road and Heckendorf Road. Driver views will be experienced intermittently due to the moderate number and transient nature of travellers on these roads; therefore, the magnitude of impact is considered to be **moderate**.
Potential effect (operations)	The effect of the Project on VP9 during operations is considered to be, at most, **moderate**.

10.5.4.10 Viewpoint 10

TABLE 10-27 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 10

VP10: Mount Basalt Reserve, looking towards Millmerran

Visual baseline assessment

Existing view from Viewpoint 10

Header	Description
Location and description	▸ GPS Location: 28°0'54.569" S 151°16'23.297" E ▸ Elevation: 530 m ▸ North westerly view towards Commodore Peak, Commodore Mine, Millmerran Power Station and Millmerran ▸ Proposed Project alignment is approximately 5.5 km to the west of this viewpoint ▸ Represents typical and accessible views of those visiting Mount Basalt Reserve (a destination on the local Rolling Hills and Scenic Lookouts Drive) and walking on the Mount Basalt Circuit, a walking track with lookouts and elevated views ▸ North westerly views from this point provide views towards the proposed Project alignment, as well as landscapes typical of LCT D: Dry croplands and pastures (D14: Millmerran) and distant views towards landscapes typical of LCT H: Forested uplands (H15: Commodore Peak and H16: Commodore Peak South) and LCT L: Transitional landscapes (L:7 Commodore Mine and L8: Millmerran Power Station).
Key visual sensitivities	▸ Low number of visitors undertaking the Mount Basalt Circuit hiking track, due to its classification as a Class 4–rough track and its remote location; however, these visitors have a very high level of interest in this environment and views obtained from the summit and trail ▸ Mount Basalt Reserve is a destination on the local Rolling Hills, Scenic Lookouts Drive and Millmerran Tourist Drive ▸ Representative of views obtained from the picnic facilities at the Mount Basalt Reserve car park ▸ Although this view comprises a strong rural character, the presence of the existing rural infrastructure and distant views of Commodore Mine (an open-cut coal mine) and Millmerran Power Station detract from the rural and natural qualities, and sense of remoteness ▸ This viewpoint is considered to have a **moderate** sensitivity overall to the change proposed, due to the low number but **high** sensitivity of viewers (e.g. hikers) who are walking specifically to obtain panoramic views from the elevated points within Mount Basalt Reserve—a unique geological and environmental area (identified as an area with high scenic amenity value in the Toowoomba Regional Council *Scenic Amenity Study* (Conics, 2009)).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Header	Description
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment and associated earthworks will introduce new rail infrastructure into the existing rural landscape, creating a noticeable change in the landscape character of this viewpoint ▸ Due to the distance from the Project alignment, the most evident construction impact will be the clearance of vegetation for the construction of the Project ▸ This represents a **low** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP10 during construction works is considered to be **low**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 5.5 km to the west of this viewpoint. The skyline is already affected by the presence of transmission towers, the Commodore Mine and the Millmerran Power Station.
	▸ The magnitude of change on this receptor is anticipated to be barely perceptible due to the following factors:
	  ▸ the provision of new rail infrastructure, which will, at this distance, become another element in the rural landscape
	  ▸ vegetation clearing during bulk earthworks and for the construction of the proposed alignment will have limited impact due to how sparse vegetation is at this location
	  ▸ at this distance, the alignment will be barely perceptible and will not change the fundamental visual character of the landscape, as it will blend into the existing rural landscape to a considerable extent
	▸ This represents a **negligible** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will only be experienced occasionally due to the low number of people undertaking the Mount Basalt Circuit hiking track. Therefore, the magnitude of impact is considered to be **low**.
Potential effect (operations)	The effect of the Project on VP10 during operations is considered to be **low**.

10.5.4.11 Viewpoint 11

TABLE 10-28 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 11

VP11: Blackwell Road looking towards Millmerran–Inglewood Road

Visual baseline assessment

Existing view from Viewpoint 11

Heading	Description
Location and description	▸ GPS Location: 27°57'30.204" S 151°14'8.213" E ▸ Elevation: 450 m ▸ Northerly view towards Commodore Peak and Millmerran–Inglewood Road ▸ Proposed Project alignment is approximately 400 m to the west of this viewpoint ▸ Represents typical and accessible views of nearby isolated rural residents, as well as visitors, workers and tourists travelling along Blackwell Road ▸ Northerly views from this point provide close views towards the proposed Project alignment, as well as landscapes typical of LCT D: Dry croplands and pastures (D14: Millmerran) and distant views towards landscapes typical of LCT H: Forested uplands (H15: Commodore Peak and H16: Commodore Peak South).
Key visual sensitivities	▸ Receptors, including isolated rural residents, workers and travellers experiencing transient views along Blackwell Road ▸ Also representative of views from Millmerran–Inglewood Road (AADT around 1,041 per day, of which up to 14.5 per cent are heavy vehicles) ▸ This viewpoint is not located on any tourist drives ▸ The presence of existing infrastructure (transmission towers) reduces the overall sensitivity of this view ▸ Overall, this viewpoint is considered to have a **low** sensitivity to the change proposed, due to the relatively low interest of viewers (i.e. very low numbers of nearby rural residents and travellers passing at some speed along Blackwell Road and Millmerran–Inglewood Road).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.
Construction works	

Heading	Description
Magnitude of change assessment	▸ The proposed Project alignment and associated earthworks will introduce considerable construction works into the view. This change will be exacerbated by the relatively open and flat nature of the landscape in this location. ▸ The proposed location of a large multi-use laydown area to the immediate north of this viewpoint would cause a reduction in visual amenity from this viewpoint ▸ The key impacts will relate to the presence of construction plant and disturbance due to the construction of the Project alignment and associated cuts and embankments ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ Due to the sparse nature of vegetation within the rural landscape, clearing for the construction of the proposed Project alignment and laydown areas will not greatly reduce the density of screening vegetation, however, or impact the visibility of the Project alignment from Blackwell Road and surrounding isolated rural lots ▸ While construction works will be clearly evident from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP11 during construction works is considered to have a **low** impact.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 400 m to the west of this viewpoint. The skyline is already affected by the presence of transmission towers
	▸ The magnitude of change on this receptor is anticipated to be considerable due to the following factors:
	  ▸ introduction of significant new rail infrastructure on low embankment (up to approximately 1.9 m high in the vicinity of this viewpoint)
	  ▸ provision of an active level crossing on Blackwell Road
	  ▸ vegetation clearing for the construction of the proposed alignment will have marginal impact on the density of screening vegetation due to the open rural character of this location
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed in this location and will be in keeping with the existing rural character.
	▸ At this distance, the Project alignment, embankments and active level crossing will be clearly perceptible and will have a considerable impact on the character of the landscape as it will be introducing new rail infrastructure into the existing rural setting. This represents a **moderate** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be experienced by a small number of isolated rural residents and by those travelling on Blackwell Road and Millmerran–Inglewood Road. While experienced by a moderate number of motorists, these views are of a transient nature; therefore, the magnitude of change is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP11 during operations is considered to be **low**.

10.5.4.12 Viewpoint 12

TABLE 10-29 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 12

VP12: Commodore Peak picnic area looking towards Millmerran Power Station

Visual baseline assessment	
	
Existing view from Viewpoint 12	
Heading	**Description**
Location and description	▸ GPS Location: 27°56'13.763" S 151°13'59.183" E ▸ Elevation: 500 m ▸ South easterly view towards Millmerran–Inglewood Road and Commodore Mine ▸ Proposed Project alignment is approximately 390 m to the southeast of this viewpoint ▸ Represents typical and accessible views of those visiting Commodore Peak picnic area, a destination on the local Rolling Hills and Scenic Lookouts Drive ▸ Views towards the proposed Project alignment from LCT D: Dry croplands and pastures (D14: Millmerran), including views towards landscapes typical of LCT L: Transitional landscapes (L7: Commodore Mine and L8: Millmerran Power Station).
Key visual sensitivities	▸ Moderate number of visitors to Commodore Peak picnic area who have a high level of interest in views obtained from the picnic area, which is a destination on the local Rolling Hills and Scenic Lookouts Drive and the Millmerran Tourist Drive ▸ Also representative of views obtained from nearby isolated rural residential lots ▸ Although this view comprises a strong rural character; the presence of the existing rural infrastructure and views towards Commodore Mine and Millmerran Power Station detract from the rural and natural qualities and sense of remoteness ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the medium number but high sensitivity of viewers (e.g. those using Commodore Peak picnic facilities).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment and associated earthworks will introduce considerable construction works into the view and require the resumption of a nearby rural residential lot ▸ No laydown areas are located in the immediate vicinity of this viewpoint ▸ The key impacts will relate to the presence of construction plant and disturbance due to the construction of the Project alignment, and associated cuts and embankments ▸ Earthworks associated with the proposed alignment will require the movement of large volumes of material ▸ Minor vegetation clearing to facilitate development is anticipated to be negligible, due to the open nature of the rural landscape in this location ▸ While construction works will be clear from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.

Heading	Description
Potential effect (construction works)	The effect of the Project on VP12 during construction works is considered to have **moderate** impact.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 390 m to the southeast of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be noticeable due to the following factors:
	  ▸ widespread change due to the introduction of significant new rail infrastructure and the realignment of Rifle Range Road and Scraggs Road (not evident within this view but used to access the lookout)
	  ▸ views towards Millmerran–Inglewood Road are partially obscured due to foreground vegetation and topography
	  ▸ open, close views to the Project alignment from Commodore Peak picnic area will be possible; however, as the alignment is at a lower elevation and in cut within the view (depths up to approximately -12.8 m) it is anticipated that the Project alignment will blend somewhat into the existing rural landscape
	  ▸ vegetation clearing for the construction of the proposed Project alignment will have marginal impact on the density of screening vegetation due to the open rural character of this location
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway, including Commodore Mine. Standard rural chain wire fencing is proposed along both boundaries in this location and will be in keeping with the existing rural character.
	▸ At this distance, the new rail infrastructure will be noticeable, while views to the alignment will be limited due to its lower elevation. This represents a low magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be limited and partially screened due to the lower design level of the railway track and screening foreground vegetation; therefore, the magnitude of impact is considered to be **low**
Potential effect (operations)	The effect of the Project on VP12 during operations is considered to be **low**.

10.5.4.13 Viewpoint 13

TABLE 10-30 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 13

VP13: Millmerran–Inglewood Road towards Millmerran–Inglewood Road rail bridge #3

Visual baseline assessment	
	
Existing view from Viewpoint 13	
Heading	**Description**
Location and description	▸ GPS Location: 27°54’24.233” S 151°15’53.718” E ▸ Elevation: 410 m ▸ Southerly view towards Millmerran–Inglewood Road and Millmerran–Inglewood Road rail bridge #3 ▸ Proposed Project alignment and Millmerran–Inglewood Road rail bridge #3 is approximately 210 m to the south of this viewpoint, while roadworks associated with Millmerran-Inglewood Road are approximately 90 m to the south of this location ▸ Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling south along Millmerran-Inglewood Road towards Inglewood ▸ Southerly views from this point provide views towards the proposed Project alignment, including landscapes typical of LCT B: Vegetated watercourses—creeks (B17: Leonard (Back Creek)) and LCT D: Dry croplands and pastures (D14 Millmerran).
Key visual sensitivities	▸ Low sensitivity of receptors, including isolated rural residents, workers and travellers experiencing transient views at speed along Millmerran–Inglewood Road (AADT around 1,020 per day, of which up to 25 per cent are heavy vehicles) ▸ This viewpoint is located on the Rural Getaway regional tourist drive and local Rolling Hills and Scenic Lookouts Drive, Brigalow Belt Power Station Drive and Millmerran Tourist Drive ▸ Overall, this viewpoint is considered to have a **low** sensitivity to the change proposed, due to the relatively low interest of viewers (i.e. very low numbers of nearby rural residents and travellers passing at some speed along Millmerran–Inglewood Road).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ Considerable construction areas, including a laydown area are proposed within proximity to this viewpoint, to the southern side of the tributary of Back Creek; these would be visible from this viewpoint and nearby isolated rural residential lots ▸ Substantial vegetation clearing for the construction of the proposed Project alignment and Millmerran–Inglewood Road rail bridge #3 will reduce the density of screening vegetation, increasing the visibility of the Project alignment from Millmerran–Inglewood Road and surrounding isolated rural residential lots ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ The presence of plant constructing the Project alignment, Millmerran–Inglewood Road rail bridge #3 and embankments will temporarily change the character of the landscape, creating a considerable change in the landscape character of this viewpoint ▸ While construction works will be clearly evident from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change ▸ The presence of plant constructing the Project alignment, Millmerran–Inglewood Road rail bridge #3 and embankments will temporarily change the character of the landscape, creating a considerable change in the landscape character of this viewpoint ▸ While construction works will be clear from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.
Potential effect (construction works)	The significance of the effect of the Project on VP13 during construction works is considered to be **low**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 210 m to the south of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be considerable, therefore **moderate**, due to the following factors:
	  ▸ dominant change due to proposed earthworks and the provision of significant new rail infrastructure, including the Millmerran–Inglewood Road rail bridge #3 (rail-over-road)
	  ▸ height of proposed embankments varies, with the maximum proposed height being approximately 10.9 m above surveyed surface level at the western end of the bridge structure
	  ▸ selective clearing of roadside and riparian vegetation will enhance the visibility of the alignment from Millmerran–Inglewood Road and nearby isolated rural residential lots
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural fencing is proposed and will be in keeping with the existing rural character.
	▸ At this distance, the alignment and Millmerran–Inglewood Road Rail Bridge #3 will be clear, as it will be introducing new rail infrastructure into the existing rural setting. This represents a **high** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be clearly evident from this vantage point ▸ Trains will be evident to nearby isolated rural residents and to a moderate number of travellers on the Millmerran–Inglewood Road. Views obtained by drivers would be transient as cars are moving at speed along this road; therefore, the magnitude of impact is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP13 during operations is considered to be **moderate**.

10.5.4.14 Viewpoint 14

TABLE 10-31 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 14

VP14: Nardoo Street edge of Millmerran

Visual baseline assessment	
 **Existing view from Viewpoint 14**	
Header	**Description**
Location and description	▸ GPS Location: 27°52'42.036" S 151°16'18.162" E ▸ Elevation: 400 m ▸ South easterly view towards Back Creek, showing lots of Nardoo Street in the foreground ▸ Proposed Project alignment is approximately 3.1 km to the southeast of this viewpoint ▸ Represents typical and accessible views of residents of Millmerran ▸ South easterly views from this viewpoint provide views towards the proposed Project alignment and Back Creek, including landscapes typical of F: Rural settlement (F13: Millmerran) and LCT B: Vegetated watercourses—creeks and channels (B17: Leonard (Back Creek)).
Key visual sensitivities	▸ Receptors include residents of Millmerran, particularly lots on Nardoo Street and Margaret Street ▸ This view is also representative of views from Millmerran Golf Course, approximately 670 m to the south of this viewpoint ▸ This viewpoint is located close to the Open Plains Country Dive local tourist route ▸ The presence of residential lots and existing infrastructure (power poles and powerlines) reduces the overall sensitivity of this view ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the relatively low number of nearby residential viewers with a specific interest in this view and the proximity of this viewpoint to the Project alignment.
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Header	Description
Construction works	
Magnitude of change assessment	▸ Due to the distance of this viewpoint from the Project alignment and screening vegetation along Back Creek, construction works (including several laydown areas located in the vicinity of Owens Scrub Road) are anticipated to be barely perceptible ▸ The proposed Turallin facility is located approximately 7.9 km northwest of this viewpoint and will not be evident from this location or the settlement of Millmerran ▸ It is also acknowledged that a non-resident workforce accommodation facility is proposed in the vicinity of Millmerran; however, as the location of this site is not known it has not been considered further in this assessment ▸ This represents a **negligible** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP14 during construction works is considered to have **low** impact.
Operations	
Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 3.1 km to the southeast of this viewpoint ▸ The magnitude of change on this receptor is anticipated to be negligible, due to the following factors: ▸ the distance of the viewpoint from the Project alignment and screening of the Project alignment by existing riparian vegetation along Back Creek ▸ This represents a **negligible** magnitude of change.
Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be typically screened by riparian vegetation along Back Creek; therefore, the magnitude of impact is considered to be **negligible**.
Potential effect (operations)	The effect of the Project on VP14 during operations is considered to be **low**.

10.5.4.15 Viewpoint 15

TABLE 10-32 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 15

VP15: Turallin Road towards the proposed Turallin facility

Visual baseline assessment

Existing view from Viewpoint 15

Heading	Description
Location and description	▸ GPS Location: 27°50'2.832" S 151°12'32.448" E ▸ Elevation: 405 m ▸ Westerly view towards the proposed Turallin facility ▸ Proposed rail infrastructure is not evident within this view ▸ The proposed Turallin facility is located approximately 200 m to the southwest of this viewpoint, while the proposed access road is located approximately 110 m to the northwest of this viewpoint ▸ Represents typical and accessible views of those travelling along Turallin Road ▸ Westerly views from this viewpoint provide close open views towards the proposed facility and landscapes typical of LCT D: Dry croplands and pastures (D14: Millmerran).
Key visual sensitivities	▸ Receptors include isolated rural residents, workers and travellers experiencing transient views at speed along Turallin Road ▸ This viewpoint is not located on or near any tourist drives ▸ This viewpoint it is considered to have a **low** sensitivity overall to the change proposed, due to the relatively low number of nearby rural residential viewers with a specific interest in this view and the low number of travellers on Turallin Road with a transient interest in views from this location.
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The construction of the Turallin facility to accommodate a range of potential uses, including a native plants nursery; traditional land management training facility; training and material testing facility; and general construction laydown and storage. A nominal 20 ha area has been allocated to accommodate the facility; however, it is not anticipated that the whole area would be required to be cleared ▸ Due to the proximity of this viewpoint to the proposed facility, it is anticipated that views towards the construction of the site will be clear from this location; however, these views will typically be transient views experienced by drivers passing along Turallin Road ▸ Vegetation clearing for the construction of the proposed Turallin facility will remove some existing vegetation, including existing mature vegetation adjacent Turallin Road; however, due to the generally cleared nature of the rural landscape within the site's footprint, it is not anticipated that this will noticeably increase the visibility of the alignment from Turallin Road and surrounding isolated rural residential lots ▸ At this distance, the construction of the facility will be clearly perceptible; however, construction activities will be partly screened by existing vegetation ▸ The impact is temporary, which represents a considerable change and **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP15 during construction works is considered to have **low** impact.
Operations	
Magnitude of change assessment—permanent infrastructure	▸ The Turallin facility is approximately 200 m to the southwest of this viewpoint ▸ The magnitude of change on this receptor is anticipated to be dominant due to the following factors: ▸ dominant change due to proposed earthworks and the provision of the facility and access road within what is currently a largely undeveloped rural landscape ▸ It is noted that the facility will be decommissioned and rehabilitated; therefore, it is anticipated that the magnitude of change will be **no impact**.
Magnitude of change assessment—train	▸ As rail infrastructure is not evident from this location, the magnitude of change is **no impact**.
Potential effect (operations)	The effect of the Project on VP15 during operations is considered to be **no impact**.

10.5.4.16 Viewpoint 16

TABLE 10-33 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 16

VP16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain

Visual baseline assessment

Existing view from Viewpoint 16

Heading	Description
Location and description	▸ GPS Location: 27°50'14.982" S 151°21'59.676" E ▸ Elevation: 390.2 m ▸ South easterly view towards the existing non-operational South Western System railway ▸ Proposed Project alignment is approximately 170 m to the southeast of this viewpoint ▸ Represents typical and accessible views of those travelling along Millmerran-Leyburn Road which is part of several local tourist drives including Condamine River Flats Drive and Historic Owen's Scrub Drive, and also provides access to Yarramalong Weir and the associated camping area ▸ South easterly views from this viewpoint provide views towards the proposed alignment and landscapes typical of LCT B: Vegetated watercourses—creeks and channels (B18: Grass Tree Creek) and LCT C: Irrigated croplands (C35: Grass Tree Creek).
Key visual sensitivities	▸ Receptors include isolated rural residents, workers and travellers experiencing transient views at speed along Millmerran-Leyburn Road (AADT around 174 per day, of which up to 23.97 per cent are heavy vehicles) ▸ This viewpoint is located on the Condamine River Flats Drive and Historic Owen's Scrub Drive local tourist routes and provides access to Yarramalong Weir ▸ The presence of existing infrastructure (including the existing (non-operational) railway, silos, power poles and powerlines) reduces the overall sensitivity of this view ▸ Overall, this viewpoint it is considered to have a **low** sensitivity overall to the change proposed, due to the low number of isolated rural lots near this viewpoint and the low number of travellers passing at some speed along Millmerran-Leyburn Road. While it is acknowledged that some travellers may have an elevated interest in their surroundings if following scenic routes, it is noted that these viewers would only experience transient views.

Visual evaluation

Photomontage view from Viewpoint 16

Heading	Description
Construction works	
Magnitude of change assessment	▸ The construction of the proposed Project alignment and associated infrastructure will introduce considerable construction works into the view. This change will be exacerbated by the open flat landscape and lack of screening vegetation in this location. ▸ While vegetation clearing to facilitate development will be minimal due to the open nature of the rural landscape, existing trees within the road reserve and construction footprint will be removed ▸ The proposed location of a large laydown area for the storage of precast concrete immediately to the north of this viewpoint would cause a temporary reduction in visual amenity from this viewpoint ▸ While construction works will be clear from this vantage point, the impact of these is temporary, which represents a considerable change and **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP16 during construction works is considered to have **low** impact.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 170 m to the southeast of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be considerable, due to the following factors:
	  ▸ provision of new rail infrastructure within the existing rail corridor, on low embankment up to around 3.1 m high
	  ▸ high visibility towards the proposed alignment from Millmerran-Leyburn Road due to the lack of existing vegetation
	  ▸ provision of an active level crossing to Millmerran-Leyburn Road
	  ▸ fencing is not anticipated to be provided within the Condamine River floodplain (guide posts only will be provided); however, there will be fencing associated with bridge structures
	▸ At this distance, the Project alignment and Millmerran-Leyburn Road active level crossing will be clear; however, will not change the visual character of the landscape, as it will be replacing existing rail infrastructure within what is highly modified agricultural setting. This represents a **moderate** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be experienced by a small number of rural residents and by those travelling on Millmerran-Leyburn Road. While experienced by a small number of motorists, these views are of a transient nature; therefore, the magnitude of change is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP16 during operations is considered to be **low**.

10.5.4.17 Viewpoint 17

TABLE 10-34 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 17

VP17: Gore Highway towards Condamine River crossing and floodplain

Visual baseline assessment

Existing view from Viewpoint 17

Heading	Description
Location and description	▸ GPS Location: 27°48'6.336" S 151°22'46.547" E ▸ Elevation: 370 m ▸ Southerly views towards the Condamine River and private rural lots ▸ Proposed Project alignment is approximately 1.2 km to the southeast of this viewpoint ▸ Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along the Gore Highway ▸ Southerly views from this point provide open views towards landscapes typical of LCT C: Irrigated croplands (C33: Pampas) and distant views to LCT A: Vegetated watercourses—rivers (A2: Condamine River).
Key visual sensitivities	▸ Receptors include isolated rural residents, workers and travellers experiencing distant transient views at speed along the Gore Highway (AADT around 2,666 per day, of which up to 30.16 per cent are heavy vehicles) ▸ This viewpoint is located on the local Open Plains Country Drive and Condamine River Flats Drive ▸ Overall, this viewpoint is considered to have a **low** sensitivity to the change proposed, due to the low number of nearby isolated rural receptors and the relatively low interest of a moderate number of travellers passing at some speed along the Gore Highway, who are the primary visual audience in this location. While it is acknowledged that some travellers may have an elevated interest in their surroundings if following scenic routes, it is noted that these viewers would only experience transient views.

Visual evaluation

Photomontage view from Viewpoint 17

Heading	Description
Construction works	
Magnitude of change assessment	▸ The construction of the proposed Project alignment and Condamine River Main Branch Rail Bridge, and associated infrastructure, will introduce considerable construction works into the view. This change will be exacerbated by the open flat landscape and lack of screening vegetation. ▸ The proposed location of two laydown areas for bridge construction approximately 1 km to the east and 1.3 km to the south of this viewpoint would cause a temporary reduction in visual amenity from this viewpoint; however, visibility towards these laydowns is considered to be limited due to the distance of these sites from this location and the presence of screening vegetation and infrastructure associated with the homestead, evident in the left hand side of the view ▸ Due to the distance from the Project alignment and temporary nature of construction work, the impact represents a noticeable and therefore **low** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP17 during construction works is considered to have **negligible** impact.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 1.2 km to the southeast of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be a noticeable change due to the following factors:
	  ▸ the provision of new rail infrastructure on bridge structure (Condamine River Main Branch Rail Bridge) within the existing rail corridor
	  ▸ high visibility towards the proposed Project alignment from the Gore Highway due to the lack of existing vegetation
	  ▸ it is not considered that isolated vegetation removal for the construction of the Condamine River crossing will have a noticeable impact on the density of screening vegetation, as views towards the river crossing are partially screened by an existing dam on private lot
	▸ Fencing is not anticipated to be provided within the Condamine River floodplain (guideposts only will be provided); however, there will be fencing associated with the bridge structure
	▸ At this distance, the Project alignment and new Condamine River main branch rail bridge (with a maximum height of approximately 8.4 m above existing ground level where it crosses Gilgai Lane) will be noticeable; and will somewhat change the visual character of the landscape, as it will be replacing existing rail infrastructure on embankment with new rail infrastructure on large bridge structure. As this is within what is a highly modified agricultural setting, this is considered to represent a **moderate** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be experienced by a small number of rural residents and by those travelling on the Gore Highway. While experienced by a moderate number of motorists, these views are of a transient nature; therefore, the magnitude of change is considered to be **moderate**.
Potential effect (operations)	The effect of the Project on VP17 during operations is considered to be **low**.

10.5.4.18 Viewpoint 18

TABLE 10-35 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 18

VP18: Gore Highway near service station, Pampas

Visual baseline assessment	
 **Existing view from Viewpoint 18**	
Heading	**Description**
Location and description	▸ GPS Location: 27°47'25.625" S 151°24'42.882" E ▸ Elevation: 380 m ▸ North easterly view towards lots of Pampas and distant views to the Condamine River (north branch) ▸ Proposed Project alignment is approximately 80 m to the southeast of this viewpoint ▸ Represents typical and accessible views of nearby residents of Pampas and of visitors, workers and tourists travelling along the Gore Highway ▸ North easterly view from this point provides open views towards the proposed alignment, as well as landscapes typical of LCT C: Irrigated croplands (C33: Pampas) and distant views to LCT A: Vegetated watercourses—rivers (A1: Condamine River (North Branch).
Key visual sensitivities	▸ Receptors include low number of Pampas residents who are located in very close proximity to the Project alignment, workers and travellers experiencing transient views at speed along the Gore Highway (AADT around 2,666 per day, of which up to 30.16 per cent are heavy vehicles) ▸ This viewpoint is located on the local Open Plains Country Drive and Condamine River Flats Drive ▸ The presence of existing infrastructure (power poles, powerlines, and the existing Millmerran Branch Line (disused) reduces the overall sensitivity of this view ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the relatively low number of nearby residential viewers with a specific interest in this view, the proximity of this viewpoint to the alignment and the relatively low interest of a moderate number of travellers passing at some speed along the Gore Highway (which includes some travellers following scenic routes).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment and associated earthworks will introduce considerable construction works into the view. This change will be exacerbated by the relatively open and flat nature of the landscape in this location, lack of screening vegetation and the high visibility and proximity of construction works to the Gore Highway and nearby residential lots of Pampas. ▸ The proposed location of a laydown immediately southeast of this viewpoint would cause a reduction in visual amenity from this viewpoint; however, this would be temporary ▸ The key impacts will relate to the presence of construction plant and disturbance due to the construction of the proposed Project alignment, realignment of Elsden Road, Fysh Road and the construction of a proposed active level crossing ▸ While construction works will be clear from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP18 during construction works is considered to have a **moderate** impact.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 80 m to the southeast of this viewpoint. The skyline is already affected by the presence of powerlines, power poles and existing rail infrastructure
	▸ The magnitude of change on this receptor is anticipated to be noticeable change due to the following factors:
	  ▸ the provision of new rail infrastructure within the existing rail corridor, realignment of Elsden Road and Fysh Road and provision of a new active level crossing
	  ▸ infrastructure is on low embankment, typically around 0.7 m in the vicinity of this viewpoint and up to around 2.1 m high (in the vicinity of the Condamine River North Branch Rail Bridge), so will blend with the existing rural view to some extent. It is noted that there is existing rail infrastructure in this view, and that rail infrastructure is part of the existing visual character of the wider area.
	  ▸ due to the open nature of agricultural land the alignment passes through in this location, vegetation clearing for the construction of the proposed alignment is considered to have negligible impact on screening vegetation
	▸ Fencing is not anticipated to be provided within the Condamine River floodplain; however, a standard chain link boundary fence will be provided through Pampas to enhance safety
	▸ At this close distance, the alignment, provision of an active level crossing and realignment of Elsden Road and Fysh Road will be noticeable; however, will not change the visual character of the landscape, as it will be replacing and formalising road infrastructure within the existing road reserves and replacing existing rail infrastructure within the existing railway corridor, within a highly modified agricultural setting. This represents a **low** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the open views of the railway track from this viewpoint. Close views to the alignment will be possible for nearby residents of Pampas. While experienced by close residential lots and by a moderate number of motorists travelling on the Gore Highway, these views are of a transient nature. It is noted that the existing rail line is not in use; therefore, the magnitude of change is considered to be **moderate**.
Potential effect (operations)	The effect of the Project on VP18 during operations is considered to be **moderate**.

10.5.4.19 Viewpoint 19

TABLE 10-36 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 19

VP19: Gore Highway towards Condamine River (north branch) crossing

Visual baseline assessment	
	
Existing view from Viewpoint 19	
Heading	**Description**
Location and description	▸ GPS Location: 27°46'49.236" S 151°25'25.577" E ▸ Elevation: 380 m ▸ Southerly view towards the Condamine River North Branch Rail Bridge and distant views towards Pampas ▸ Proposed Project alignment is approximately 70 m to the southeast of this viewpoint ▸ Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along the Gore Highway ▸ Southerly views from this point provide open views towards the existing rail line and proposed alignment, as well as landscapes typical of LCT C: Irrigated croplands (C33: Pampas) and close views towards LCT A: Vegetated watercourses—rivers (A1: Condamine River (North Branch)).
Key visual sensitivities	▸ Receptors include isolated rural residents, workers and travellers experiencing transient views at speed along the Gore Highway (AADT around 2,666 per day, of which up to 30.16 per cent are heavy vehicles) ▸ This viewpoint is located on the local Open Plains Country Drive ▸ Overall, this viewpoint is considered to have a **low** sensitivity to the change proposed, due to the relatively low interest of viewers (i.e. small numbers of nearby rural residents and travellers passing at some speed along the Gore Highway).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The provision of a laydown area, and construction of the proposed Project alignment, the Condamine River north branch rail bridge and associated infrastructure, will create a considerable change in the landscape character of this viewpoint ▸ This change will be exacerbated by the relatively open and flat nature of the landscape in this location, sparse nature of vegetation (restricted to the river channel), and the high visibility and proximity of construction works to the Gore Highway ▸ Selective vegetation clearing will reduce the density of riparian vegetation, increasing the visibility of the alignment from the Gore Highway ▸ The proposed location of a laydown area immediately southeast of this viewpoint would cause a reduction in visual amenity from this viewpoint; however, this would be temporary ▸ The presence of plant constructing the Project alignment and Condamine River north branch rail bridge will temporarily change the character of the landscape, creating a considerable change in the landscape character of this viewpoint ▸ While construction works will be clear from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP19 during construction works is considered to be **low**.
Operation	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 70 m to the southeast of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be noticeable, due to the following factors:
	  ▸ there is already a road and rail bridge present over the Condamine River (north branch) in this location
	  ▸ the skyline is already affected by the presence of power poles and powerlines
	  ▸ noticeable change due to the provision of new rail infrastructure on bridge structure (approximately 2 m above the existing ground level) within the existing rail corridor
	  ▸ high visibility towards, and proximity to, the proposed Project alignment from the Gore Highway
	  ▸ localised vegetation removal for the construction of the Condamine River crossing will have a noticeable impact on the density of screening vegetation
	▸ Fencing will not be constructed within the Condamine River floodplain—only guideposts will be provided
	▸ At this distance, the alignment and new Condamine River north branch rail bridge (typically approximately 2 m above the existing rail line) will be clearly evident; however, will not change the visual character of the landscape, as it will be replacing existing rail infrastructure within what is a highly modified agricultural setting. This represents a **low** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the open views of the railway track from this viewpoint. Close views to the Project alignment will be possible for those travelling on the Gore Highway. While experienced by a moderate number of motorists, these views are of a transient nature; therefore, the magnitude of change is considered to be **moderate**.
Potential effect (operations)	The effect of the Project on VP19 during operations is considered to be **low**.

10.5.4.20 Viewpoint 20

TABLE 10-37 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 20

VP20: Near Brookstead State School

Visual baseline assessment

Existing view from Viewpoint 20

Heading	Description
Location and description	▸ GPS Location: 27°45'27.563" S 151°27'7.205" E ▸ Elevation: 390 m ▸ North easterly view towards the Gore Highway from Ware Street, near Brookstead State School ▸ Proposed Project alignment is approximately 90 m to the southeast of this viewpoint ▸ Represents typical and accessible views of school patrons, residents of Brookstead, and of visitors, workers and tourists travelling along Ware Street and using nearby facilities (playground, amenities and barbecue/picnic facilities) at the historic railway station ▸ North-easterly views from this point provide open views towards the existing rail line and proposed alignment from LCT F: Rural settlement (F11: Brookstead) across LCT C: Irrigated croplands (C32: Brookstead).
Key visual sensitivities	▸ Moderate sensitivity of receptors, including a relatively low number of residents of Brookstead with residential lots situated in very close proximity to the alignment and the Gore Highway Road Bridge ▸ This viewpoint is located on the local Open Plains Country Drive ▸ The presence of existing infrastructure (existing railway tracks and railway sidings) reduces the overall sensitivity of this view ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the relatively low number of nearby residential viewers with a specific interest in this view and the proximity of this viewpoint to the Project alignment.

Visual evaluation

Photomontage view from Viewpoint 20

Photomontage view from Viewpoint 20–indicative—noise wall option

Photomontage view from Viewpoint 20–indicative mitigation and noise wall option

Note: Visualisation of noise wall shown is indicative only, showing a schematic option for the instalment of noise barriers and vegetative screening in this location. Design of noise barriers and the provision of planting is subject to development at the detailed design stage, and liaison with landowners and managers.

Visual evaluation

Aerial visualisation looking southwest towards Brookstead from vicinity of Viewpoint 20—indicative image only (showing revised reference design)

Heading	Description
Construction works	
Magnitude of change assessment	▸ The construction of the proposed Project alignment will be within greenfield land, approximately 50 m to the southeast of the existing rail corridor and 90 m to the southeast of this viewpoint will create a noticeable change in the landscape character of this viewpoint ▸ No laydown areas are located in the immediate vicinity of this viewpoint ▸ Existing vegetation along Ware Street provides some screening of views from nearby residential lots and the school towards the proposed Project alignment; however, vegetation within the construction footprint will be removed to facilitate the construction of the new rail alignment and provision of the new rail corridor ▸ Vegetation clearance and earthworks to construct embankments, the Gore Highway Road Bridge, the alignment, and to facilitate the reconfiguration of local roads, will cause a reduction in visual amenity, particularly considering nearby views obtained from the Gore Highway ▸ The presence of construction plant constructing the alignment and Gore Highway Road Bridge will temporarily change the character of the landscape, creating a noticeable change in the landscape character of this viewpoint ▸ This represents a **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP20 during construction works is considered to be **moderate**.

Heading	Description
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 90 m to the southeast of this viewpoint. The view is already affected by the presence of existing rail infrastructure
	▸ The magnitude of change on this receptor is anticipated to be dominant due to the following factors:
	  ▸ considerable change due to the provision of a new single-track dual-gauge railway to the south of the existing rail line, Gore Highway Road Bridge, and the realignment of Saal Road and Ware Street. The rail line will be largely at grade and on low embankment (up to 1.4 m above existing grade) so will be similar in appearance to the existing rail line
	  ▸ vegetation clearing for the construction of the proposed Project alignment will increase the visibility of the alignment from lots situated on Ware Street.
	▸ Fencing will extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed where the corridor adjoins agricultural land that will be in keeping with the existing rural character. Within the Brookstead settlement area (including in this view) standard chain link boundary fence will be provided
	▸ At this distance, the Project alignment and associated infrastructure will be clear, and represent a considerable change to the view (primarily due to the removal of existing vegetation), although will largely accord with the existing character of the landscape; therefore, it is considered to be up to **high** magnitude of change
	▸ Options for noise attenuation include the potential for the provision of noise barriers within the vicinity of this location to the north of the proposed railway centreline, adjacent Ware Street.
	▸ It is noted that if noise barriers were installed in this location, the magnitude of change would further increase but remain **high** (as it is the highest magnitude of change possible).

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the proximity of the railway track to this viewpoint. Close views to the Project alignment will be possible for nearby residents of Brookstead and from Brookstead State School. While experienced by close residential lots, these views are of a transient nature. It is noted that while the existing Millmerran Branch Line currently facilitates freight train movements (single stacked), the line to the south of Brookstead is disused, while the existing GrainCorp Silo Facility, siding and Millmerran Branch Line to the north of Brookstead are currently operational. Therefore, the magnitude of change is considered to be **low.**
Potential effect (operations)	The effect of the Project on VP20 during operations is considered to be **high**. It is noted that if noise barriers are installed in this location, the effect of the Project during operation would remain **high**.

10.5.4.21 Viewpoint 21

TABLE 10-38 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 21

VP21: Glen Devon Road looking south from elevated private residential lots

Visual baseline assessment

Existing view from Viewpoint 21

Heading	Description
Location and description	▸ GPS Location: 27°42'45.551" S 151°33'57.708" E ▸ Elevation: 490 m ▸ South westerly view towards Murlaggan Road and the existing railway line ▸ Proposed Project alignment is approximately 210 m to the south of this viewpoint ▸ Represents typical and accessible views of nearby elevated and isolated rural residential lots ▸ South westerly views from this point provide open views towards the existing rail line, proposed alignment, and views of LCT I: Settled hills (I1: Pittsworth Hills).
Key visual sensitivities	▸ Low sensitivity of receptors, particularly very low number of nearby rural residents who are, however, located in very close proximity to the Project alignment ▸ There are no tourist drives located close to this viewpoint ▸ The presence of existing infrastructure (existing railway tracks) reduces the overall sensitivity of this view ▸ This viewpoint is considered to have a **low** overall sensitivity to the change proposed, due to the very low number of nearby rural residential viewers with a specific interest in this view and the proximity of this viewpoint to the Project alignment.
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment and associated earthworks will introduce considerable construction works into the view. This change will be exacerbated by the proximity of the isolated rural residences to the works in this location ▸ The key impacts will relate to the presence of construction plant and disturbance due to the construction of the Project alignment, associated cuts and embankments and the realignment of Murlaggan Road and new tie into the existing Millmerran Branch Line ▸ The construction of the proposed Project alignment will require the resumption and removal of a nearby lot (close to, but not visible in, this viewpoint) ▸ The proposed location of a large laydown area approximately 430 m to the southwest of this viewpoint would cause a temporary reduction in visual amenity ▸ During construction, demolition of the existing railway is likely to occur. The fate of the existing Millmerran Branch Line south of Chainage (Ch) 167.80 km will be determined by QR. ▸ Earthworks associated with the proposed Project alignment will require large volumes of material and isolated pockets of vegetation to be removed ▸ While construction works will be clear, and occupy a large proportion of the view from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP21 during construction works is considered to be **low**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 210 m to the south of this viewpoint. The view is already affected by the presence of existing rail infrastructure.
	▸ The magnitude of change on this receptor is anticipated to be considerable due to the following factors:
	  ▸ considerable change due to the provision of a new single-track dual-gauge railway primarily to the north of the existing rail line realignment of Murlaggan Road and new tie into the existing Millmerran Branch Line
	  ▸ the rail line will be largely in cut, at depths up to approximately -21 m below the existing surface level; however, distant views to large embankments and the Roche Road rail-over-road bridge may be possible from nearby rural residential lots
	  ▸ vegetation clearing for the construction of the proposed Project alignment, cuts, embankments and road infrastructure will be noticeable. Removal of this vegetation will open views towards the embankment and the Roche Road rail-over-road bridge.
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed and will be in keeping with the existing rural character.
	▸ At this distance, the proposed Project alignment, realignment of Murlaggan Road and new tie-in to the existing Millmerran Branch Line will be clearly evident; however, will not change the fundamental visual character of the landscape, as the additional rail and road infrastructure will blend somewhat into the existing rural setting. It is anticipated that close views to the Project alignment and cuts will be possible from nearby rural residential lots, while distant views towards the alignment, embankments and Roche Road rail bridge may be possible. This represents a **moderate** magnitude of change.

Magnitude of change assessment—train	▸ The existing rail line is currently in use. Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be partially screened due to the lower elevation of the railway track in the proximity of this viewpoint. It is anticipated that close views towards the Project alignment in cut will be possible from nearby isolated rural residential lots, while distant views towards embankments and the Roche Road Rail Bridge may also be possible. Therefore, overall, the magnitude of change is considered to be **low.**
Potential effect (operations)	The effect of the Project on VP21 during operations is considered to be **low**.

10.5.4.22 Viewpoint 22

TABLE 10-39 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 22

VP22: Pittsworth–Felton Road near Pittsworth Motor Inn

Visual baseline assessment

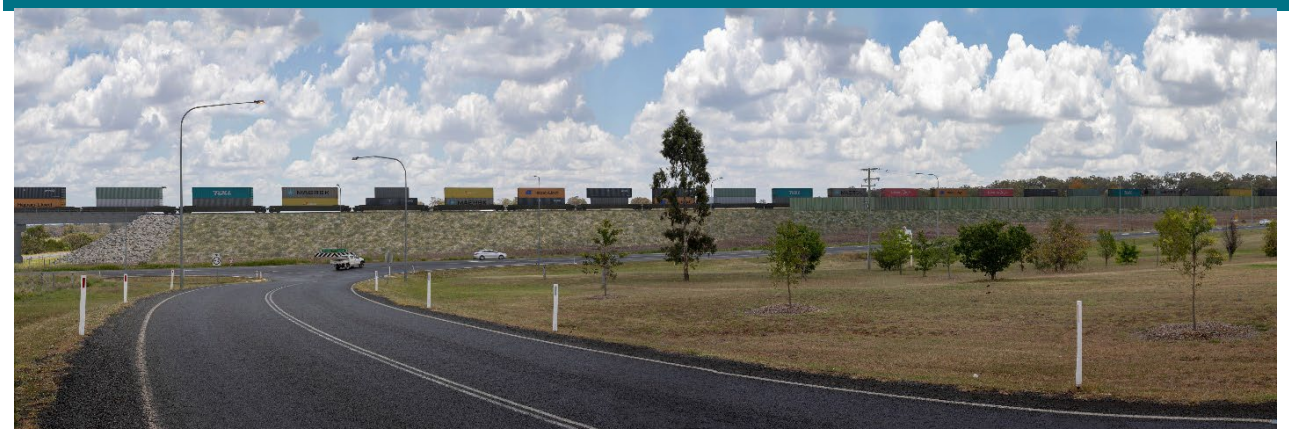
Existing view from Viewpoint 22

Heading	Description
Location and description	▸ GPS Location: 27°42'30.6" S 151°37'36.299" E ▸ Elevation: 510 m ▸ Northerly view from Pittsworth–Felton Road near Pittsworth Motor Inn towards the Gore Highway and elevated lots situated on Dallman Road ▸ Proposed Project alignment is approximately 200 m to the northwest of this viewpoint ▸ Represents accessible views typically obtained by residents on the northern edge of Pittsworth, guest of Pittsworth Motor Inn and of visitors, workers and tourists travelling along Pittsworth–Felton Road. It is also representative of travellers on the A39 Gore Highway ▸ Northerly views from this point provide open views from LCT F: Rural settlement (F10:Pittsworth) across of LCT I: Settled hills (I1: Pittsworth Hills) towards proposed alignment.
Key visual sensitivities	▸ Moderate sensitivity of receptors, particularly residents of Pittsworth who are located in very close proximity to the Project alignment ▸ This viewpoint is located close to the local Open Plains Country Drive tourist route ▸ The presence of existing infrastructure (i.e. power poles, powerlines and streetlights) reduces the overall sensitivity of this view ▸ This viewpoint it is considered to have a **moderate** sensitivity, overall, to the change proposed, due to the proximity of nearby residential viewers with a specific interest in this view, including those staying at Pittsworth Motor Inn.

Visual evaluation

Photomontage view from Viewpoint 22

Visual evaluation



Photomontage view from Viewpoint 22—showing noise wall option

Photomontage view from Viewpoint 22—Indicative mitigation and noise wall option

Note: Visualisation of noise wall and mitigation measures shown are indicative only showing a schematic option for the instalment of noise barriers in this location. Design of noise barriers is subject to development at the detailed design stage.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The construction of the proposed Project alignment, Oakey–Pittsworth Road rail-over-road bridge and realignment of Quibet/Dallman Road will create a considerable change in the landscape character and views obtained from this viewpoint ▸ A small laydown area will be evident within this view ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ The lack of existing mature vegetation provides open views from nearby residential lots and the Pittsworth Motor Inn to the proposed Project alignment ▸ The presence of plant constructing the Project alignment, roads, cuts, embankments and Oakey–Pittsworth Road rail bridge and will temporarily change the character of the landscape, creating a considerable change in the landscape character of this viewpoint ▸ While construction works will be clear from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP22 during construction works is considered to be **moderate**.

Heading	Description
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 200 m to the northwest of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be dominant due to the following factors:
	  ▸ the provision of a new single-track dual-gauge railway on private land on a large embankment and the provision of a rail-over-road bridge over Oakey–Pittsworth Road
	  ▸ proposed earthworks include large embankments and cuts. The height of proposed embankments varies, with the maximum proposed height being approximately 13.9 m above natural ground, and the deepest cut (to the right hand side of the view) being approximately -6 m below existing surveyed level.
	  ▸ due to the sparse nature of existing vegetation, vegetation clearance will have minimal impact on the screening of the alignment
	  ▸ provision of a new rail-over-road bridge over Oakey–Pittsworth Road will introduce new infrastructure into the view
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed and will be in keeping with the existing rural character.
	▸ At this distance, the Project alignment, realignment of Quibet/Dallman Road and new rail-over-road bridge will be clear and will have a considerable impact on the character of the landscape, as it will be introducing new rail infrastructure into the current view. This represents a **high** magnitude of change.
	▸ Options for noise attenuation include the potential for the provision of noise barriers within the vicinity of this location to the south of the proposed railway centreline adjacent the Gore Highway lots.
	▸ It is noted that if noise barriers were installed in this location, the magnitude of change would further increase, however remain **high** (as it is the highest magnitude of change possible).

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the open, elevated views of the railway track from this viewpoint. Close views to the Project alignment will be possible for nearby residents of Pittsworth and residents on Dallman Road and Quibet Road. While experienced by close residential lots, these views are of a transient nature. Due to the lack of existing rail infrastructure, the magnitude of change is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP22 during operations is considered to be **high**. It is noted that if noise barriers are installed in this location, the effect of the Project during operation would remain **high**.

10.5.4.23 Viewpoint 23

TABLE 10-40 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 23

VP23: Stanley Street near local park, Pittsworth

Visual baseline assessment

Existing view from Viewpoint 23

Heading	Description
Location and description	▸ GPS Location: 27°42'26.32"S 151°37'58.56"E ▸ Elevation: 525 m ▸ Northerly view from the small park on Stanley Street on the northern outskirts of Pittsworth, towards the Gore Highway and elevated lots situated on Dallman Road ▸ Proposed Project alignment is approximately 380 m to the northwest of this viewpoint ▸ Represents accessible views typically obtained by residents on the northern edge of Pittsworth, visitors to the park and of those utilising the nearby playing fields accessed via Short Street ▸ Northerly views from this point provide open views from LCT F: Rural settlement (F10: Pittsworth) across of LCT I: Settled hills (I1: Pittsworth Hills) towards proposed alignment.
Key visual sensitivities	▸ Moderate sensitivity of receptors, particularly residents of Pittsworth who are located in very close proximity to the Project alignment ▸ The presence of existing infrastructure (the Gore Highway and flood lights located at the playing fields) reduces the overall sensitivity of this view ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the proximity of nearby residential viewers and recreational users with a specific interest in this view.

Visual evaluation

Visual evaluation
Photomontage view from Viewpoint 23

Photomontage view from Viewpoint 23—indicative noise wall option

Photomontage view from Viewpoint 23—indicative mitigation and noise wall option

Note: Visualisation of noise wall and mitigation measures shown are indicative only, showing a schematic option for the instalment of noise barriers in this location. Design of noise barriers subject to development at the detailed design stage.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The construction of the proposed Project alignment will create a noticeable change in the landscape character and views obtained from this viewpoint ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ The lack of existing mature vegetation provides open views from nearby residential lots, the park and playing fields towards the proposed alignment ▸ The presence of plant constructing the Project alignment, which is in cut in this location, will temporarily change the character of the landscape, creating a noticeable change in the landscape character of this viewpoint ▸ While construction works will be noticeable from this vantage point the impact of these is temporary, which represents a considerable change and low magnitude of change.
Potential effect (construction works)	The effect of the Project on VP23 during construction works is considered to be **low**.

Heading	Description
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 200 m to the northwest of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be noticeable change due to the following factors:
	  ▸ considerable change due to the provision of a new single-track dual-gauge railway on private land in cut to the north of the Gore Highway
	  ▸ proposed earthworks include large cuts, with the deepest cut being approximately -6 m below existing surveyed level. Large embankments also occur to the right of this view, with heights up to 15 m
	  ▸ due to the sparse nature of existing vegetation, vegetation clearance will have minimal impact on the screening of the alignment
	  ▸ fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed and will be in keeping with the existing rural character
	▸ At this distance, the alignment will be noticeable, as it will be introducing new rail infrastructure into the current view; however, it is anticipated to blend somewhat into the existing view as it is located in cut. This represents a **low** magnitude of change.
	▸ Options for noise attenuation include the potential for the provision of noise barriers within the vicinity of this location to the south of the proposed railway centreline adjacent the Gore Highway lots
	▸ It is noted that if noise barriers were installed in this location, the magnitude of change would increase to **moderate**.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the open views of the railway track from this viewpoint. Close views to the Project alignment will be possible for nearby residents of Pittsworth and residents on Dallman Road and Quibet Road. While experienced by close residential lots, these views are of transient nature. Due to the lack of existing rail infrastructure, the magnitude of change is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP23 during operations is considered to be **moderate**. It is noted that if noise barriers are installed in this location, the effect of the Project during operations would remain **moderate**.

10.5.4.24 Viewpoint 24

TABLE 10-41 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 24

VP24: Pittsworth and District Assembly of God, Pittsworth

Visual baseline assessment

Existing view from Viewpoint 24

Heading	Description
Location and description	▸ GPS Location: 27°42'14.08"S 151°38'5.17"E ▸ Elevation: 535.3 m ▸ North easterly view from the Pittsworth and District Assembly of God in Pittsworth towards the Gore Highway ▸ Proposed Project alignment is approximately 190 m to the northwest of this viewpoint ▸ Represents accessible views typically obtained by those visiting the Pittsworth and District Assembly of God, nearby residents of the northern edge of Pittsworth and of visitors, workers and tourists travelling along Short Street. It is also representative of travellers on the A39 Gore Highway ▸ Northerly views from this point provide open views from LCT F: Rural settlement (F10: Pittsworth) across of LCT I: Settled hills (I1: Pittsworth Hills) towards the proposed Project alignment.
Key visual sensitivities	▸ Moderate sensitivity of receptors, particularly visitors to the Pittsworth and District Assembly of God and residents on the outskirts of Pittsworth who are in close proximity to the alignment ▸ This viewpoint is not located on any tourist routes ▸ The presence of existing infrastructure (Gore Highway) somewhat reduces the overall sensitivity of this view ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the proximity of nearby residential viewers with a specific interest in this view and moderate number of visitors to the Pittsworth and District Assembly of God.

Visual evaluation

Photomontage view from Viewpoint 24

Photomontage view from Viewpoint 24—indicative mitigation

Heading	Description
Construction works	
Magnitude of change assessment	▸ The provision of two construction laydown areas and construction of the proposed Project alignment, Lochaber Road rail-over-road bridge and realignment of Lochaber Road will create a considerable change in the landscape character and views obtained from this viewpoint ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ The general lack of existing mature vegetation provides open views from the church lot and nearby residential lots to the proposed Project alignment ▸ While construction works will be clear from this vantage point, the impact of these is temporary, which represents a considerable change and **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP24 during construction works is considered to be **moderate**.

Heading	Description
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 190 m to the northwest of this viewpoint
	▸ The magnitude of change on this receptor is anticipated to be dominant due to the following factors:
	  ▸ dominant change due to the provision of a new single-track dual-gauge railway on private land within cut and on embankment and the provision of a rail-over-road bridge over Lochaber Road
	  ▸ proposed earthworks include large embankments and cuts. The height of proposed embankments varies, with the maximum proposed height being approximately 13.5 m above natural ground (to the west of the Lochaber Road Rail Bridge), and the deepest cut being approximately -6 m below existing surveyed level (to the left hand side of the view).
	  ▸ due to the sparse nature of existing vegetation, vegetation clearance will have minimal impact on the screening of the alignment
	  ▸ provision of a new rail-over-road bridge over Lochaber Road will introduce new infrastructure into the view
	  ▸ fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed and will be in keeping with the existing rural character.
	▸ At this distance, the Project alignment, realignment of Lochaber Road and new rail-over-road bridge will be clear and will have a considerable impact on the character of the landscape as it will be introducing new rail infrastructure into the current view, which will reduce the extent of views available towards the backdrop of vegetated hills associated with McEwan State Forest. This represents a **high** magnitude of change.
	▸ Options for noise attenuation include the potential for the provision of noise barriers within the vicinity of this location (to the left hand side of this view—refer Viewpoint 22 and 23 for further information)
	▸ It is noted that if noise barriers were installed near this location, the magnitude of change would further increase but remain **high** (as it is the highest magnitude of change possible).

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the open, elevated views of the railway track from this viewpoint. Close views to the alignment will be possible for nearby residents of Pittsworth and nearby rural residents. While experienced by close residential lots these views are of transient nature. Due to the lack of existing rail infrastructure, the magnitude of change is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP24 during operations is considered to be **high**. It is noted that if noise barriers are installed in this location, the effect of the Project during operations would remain **high**.

10.5.4.25 Viewpoint 25

TABLE 10-42 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 25

VP25: Gore Highway near Southbrook

Visual baseline assessment	
	
Existing view from Viewpoint 25	
Heading	**Description**
Location and description	▸ GPS Location: 27°40’14.352” S 151°42’47.502” E ▸ Elevation: 540 m ▸ South westerly view towards Southbrook ▸ Proposed Project alignment is approximately 1.5 km northwest of this viewpoint ▸ Represents typical and accessible views of nearby isolated rural residents, elevated residential lots of Southbrook and of visitors, workers and tourists travelling along the Gore Highway ▸ South westerly views from this point provide open views from the Gore Highway near Southbrook towards the Project, encompassing landscapes of LCT I: Settled hills (I1: Pittsworth Hills).
Key visual sensitivities	▸ Moderate numbers of isolated rural residential lots and a high number of receptors travel along the Gore Highway (AADT around 4,503 per day, of which up to 19.45 per cent are heavy vehicles) and would experience changes to the view; however, it is noted that these viewers are passing at speed and would only experience transient views ▸ This viewpoint is located along the local Open Plains Country Drive ▸ Also representative of close views possible from isolated rural residential lots and residential lots on the outskirts of Southbrook ▸ The presence of existing infrastructure (e.g. power poles, powerlines) reduces the overall sensitivity of this view ▸ Overall, this viewpoint it is considered to have a **moderate** sensitivity to the change proposed, due to the relatively low number of nearby residential viewers with a specific interest in this view and the large number of travellers passing at some speed along the Gore Highway with a transient view and lack of specific interest in the views.
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment and associated earthworks will introduce considerable construction works into the view ▸ Substantial vegetation clearing for the construction of the proposed alignment will reduce the density of screening vegetation, increasing the visibility of the alignment from the Gore Highway and surrounding rural lots ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ The presence of plant constructing the alignment, cuts and embankments will temporarily change the character of the landscape, creating a considerable change in the landscape character of this viewpoint ▸ While construction works will be clear from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP25 during construction works is considered to be **moderate**.
Operations	

Magnitude of change assessment—permanent Infrastructure	▸ The nearest section of the Project alignment is approximately 1.5 km northwest of this viewpoint. The skyline is already affected by the presence of powerlines
	▸ The magnitude of change on this receptor is anticipated to be dominant due to the following factors:
	  ▸ widespread change in the view due to the introduction of new rail infrastructure into the rural landscape, with embankments reaching heights up to around 14.8 m above the existing surface level, and the deepest cut being approximately -24.7 m below existing surveyed level
	  ▸ vegetation clearing for the construction of the proposed Project alignment will reduce the density of screening vegetation and open views to areas of extensive cut and embankment from surrounding elevated rural residential lots and the Gore Highway
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed and will be in keeping with the existing rural character.
	▸ At this distance, the proposed Project alignment will be highly evident and will change the fundamental visual character of the landscape, as it will be introducing new rail infrastructure into what is a relatively intact natural/rural residential setting. It is noted that close views to the alignment, major cut and embankments will be possible from nearby rural residential lots. This represents a **high** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident from the Gore Highway due to the elevated design level of the railway track. Close views to the alignment will be possible for nearby rural residents and for elevated residents on the northern outskirts of Southbrook. While experienced by close residential lots and a large number of motorists travelling on the Gore Highway, these views are of a transient nature and will be only occasional. Therefore, the magnitude of change is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP25 during operations is considered to be **high**.

10.5.4.26 Viewpoint 26

TABLE 10-43 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 26

VP26: View from Athol School Road

Visual baseline assessment	
	
Existing view from Viewpoint 26	
Heading	**Description**
Location and description	▸ GPS Location: 27°37'8.808" S 151°45'34.991" E ▸ Elevation: 520 m ▸ Westerly view towards rural residential lots of Athol ▸ Proposed Project alignment is approximately 230 m to the west of this viewpoint ▸ Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along Athol School Road ▸ Westerly views from this point provide open views of LCT D: Dry croplands and pastures (D9: Biddeston), and distant views towards LCT I: Settled hills (I1: Pittsworth Hills).
Key visual sensitivities	▸ Moderate sensitivity of receptors, particularly rural residential lots of Athol, which are located in very close proximity to the Project alignment ▸ This viewpoint is not located on any local tourist drives ▸ The presence of existing infrastructure (power poles, powerlines) reduces the overall sensitivity of this view ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the relatively low number of nearby residential viewers with a specific interest in this view and the proximity of this viewpoint to the Project alignment.
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment, associated earthworks, construction of the Athol School Road rail-over-road bridge and realignment of Purcell Road will introduce considerable construction works into the view ▸ The proposed location of a major laydown area (including site offices and fuel storage) immediately north of this viewpoint would cause a temporary reduction in visual amenity from this viewpoint ▸ The lack of existing vegetation provides open views from nearby residential lots to the proposed Project alignment ▸ Earthworks associated with the proposed alignment will require the movement of large volumes of material ▸ The presence of plant constructing the alignment, cuts, embankments and realigned Purcell Road will temporarily change the character of the landscape, creating a considerable change in the landscape character of this viewpoint ▸ While construction work and plant will be clear from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change.

Heading	Description
Potential effect (construction works)	The effect of the Project on VP26 during construction works is considered to be **moderate**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ This viewpoint is on the edge of the Project footprint, approximately 230 m to the west of the proposed Project alignment and approximately 400 m west of the realignment of Purcell Road. The skyline is already affected by the presence of powerlines.
	▸ The magnitude of change on this receptor is anticipated to be dominant due to the following factors:
	  ▸ widespread change in the view due to the introduction of new road and rail infrastructure including the Athol School Road rail-over-road bridge into the rural landscape
	  ▸ proposed embankments will be up to around 16.5 m above the existing surface level (to the right of this view) and up to approximately 10.7 m in the vicinity of Athol School Road
	  ▸ realignment of Purcell Road to connect with Athol School Road on the western side of the proposed alignment. No crossing will be provided on the existing Purcell Road
	  ▸ due to the sparse nature of existing vegetation within the rail corridor, the effect of vegetation clearing for the construction of the proposed alignment is considered to be **negligible**
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed and will be in keeping with the existing rural character.
	▸ At this distance, the proposed Project alignment and realignment of Purcell Road will be highly evident and will change the fundamental visual character of the landscape, as it will be introducing new road and rail infrastructure into what is a relatively intact rural residential setting. It is noted that close views to the Project alignment, bridge structure, cuts and embankments will be possible from nearby rural residential lots. This represents a **high** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the open views of the railway track from this viewpoint. Close views to the alignment will be possible for nearby rural residents of Athol. While experienced by close residential lots and a small number of motorists travelling along Athol School Road, these views are of a transient nature. Therefore, the magnitude of change is considered to be **moderate.**
Potential effect (operations)	The effect of the Project on VP26 during operations is considered to be **high**.

10.5.4.27 Viewpoint 27

TABLE 10-44 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 27

VP27: Toowoomba–Cecil Plains Road, near private lot 'Burton'

Visual baseline assessment	
	
Existing view from Viewpoint 27	
Heading	**Description**
Location and description	▸ GPS Location: 27°32'51.809" S 151°46'12.761" E ▸ Elevation: 430 m ▸ Easterly view towards Toowoomba Wellcamp Airport, Gowrie Mountain and the undulating foothills of the outskirts of Toowoomba ▸ Proposed Project alignment is approximately 200 m to the northeast of this viewpoint ▸ Represents typical and accessible views of nearby isolated rural residents and of visitors, workers and tourists travelling along Toowoomba–Cecil Plains Road ▸ Easterly views from this point provide open views from LCT D: Dry croplands and pastures (D9: Biddeston), towards LCT B: Vegetated watercourses—creeks and channels (B3: Westbrook Creek), LCT C: Irrigated croplands (C14: Brimblecombe Road and C15: Wellcamp Airport), LCT L: Transitional landscapes (L1: Wellcamp Airport and L2: Boral Quarry), and distant views towards LCT H: Forested uplands (H5: Mount Kingsthorpe, H6: Gowrie Mountain, H7: Wellcamp and H8: Bunkers Hill).
Key visual sensitivities	▸ Relatively low number of isolated rural residential lots and a moderate number of receptors travelling along Toowoomba–Cecil Plains Road (AADT around 1,944 per day, of which up to 17.35 per cent are heavy vehicles) are likely to experience changes to this view; however, it is noted that these viewers are passing at speed and would only experience transient views ▸ This viewpoint is not located on any local tourist drives ▸ The presence of existing infrastructure (power poles, powerlines and Wellcamp Airport) reduces the overall sensitivity of this view ▸ This viewpoint it is considered to have a **low** sensitivity overall to the change proposed, due to the relatively low number of nearby residential viewers with a specific interest in this view and the moderate number of travellers passing at some speed along Toowoomba–Cecil Plains Road with a transient view and lack of specific interest in the views.
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.

Heading	Description
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment and associated earthworks will introduce considerable construction works into the view ▸ The proposed location of a laydown area approximately 150 m to the southeast of this viewpoint would cause a temporary reduction in visual amenity from this viewpoint ▸ The lack of existing vegetation provides open views from nearby residential lots to the proposed alignment ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ The presence of plant constructing the alignment, Toowoomba–Cecil Plains Road Rail Bridge and embankments will temporarily change the character of the landscape, creating a considerable change in the landscape character of this viewpoint ▸ While construction work and plant will be clear from this vantage point, the impact of these is temporary, which represents a considerable and therefore **moderate** magnitude of change
Potential effect (construction works)	The effect of the Project on VP27 during construction works is considered to be **low**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 200 m to the northeast of this viewpoint. The skyline is already affected by the presence of powerlines.
	▸ The magnitude of change on this receptor is anticipated to be dominant due to the following factors:
	  ▸ widespread change in the view due to the introduction of new rail infrastructure into the rural landscape, including the Toowoomba–Cecil Plains Road Rail Bridge (rail-over-road) and embankments up to around 13.2 m above the existing surface level
	  ▸ due to the sparse nature of existing vegetation within the rail corridor, the effect of vegetation clearing for the construction of the proposed alignment is considered to be negligible
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway Standard rural chain wire fencing is proposed and will be in keeping with the existing rural character.

	▸ At this distance, the proposed Project alignment and Toowoomba–Cecil Plains Road Rail Bridge will be highly evident and will change the fundamental visual character of the landscape, as it will be introducing new rail infrastructure into what is a relatively intact natural/rural residential setting. It is noted that close views to the Project alignment and embankments will be possible from nearby rural residential lots. This represents a **high** magnitude of change.
Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be highly evident due to the open views of the railway track, embankments and Toowoomba–Cecil Plains Road Rail Bridge from this viewpoint. Close views to the Project alignment will be possible for nearby rural residents of Athol. While experienced by close residential lots and a medium number of motorists travelling along Toowoomba–Cecil Plains Road, these views are of a transient nature. Therefore, the magnitude of change is considered to be moderate.
Potential effect (operations)	The effect of the Project on VP27 during operations is considered to be **moderate**.

10.5.4.28 Viewpoint 28

TABLE 10-45 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 28

VP28: Linora Drive, Gowrie Mountain

Visual baseline assessment

Existing view from Viewpoint 28

Heading	Description
Location and description	▸ GPS Location: 27°30'45.299" S 151°49'26.555" E ▸ Elevation: 550 m ▸ North westerly view towards lots of Gowrie Mountain and the Warrego Highway ▸ Proposed Project alignment is approximately 1 km to the northwest of this viewpoint ▸ Represents typical and accessible views of nearby elevated residential lots of Gowrie Mountain ▸ North westerly views from this point provide elevated views from LCT F: Rural settlement (F10: Calvert) across LCT D: Dry croplands and pastures towards the existing rail line and proposed alignment, and distant views to LCT H: Forested uplands (H10: Little Liverpool Range).
Key visual sensitivities	▸ Moderate sensitivity of receptors, particularly relatively low number of residents of Gowrie Mountain who have elevated views over the Project alignment ▸ The presence of existing infrastructure (Warrego Highway) reduces the overall sensitivity of this view ▸ This viewpoint is located close to the national Warrego Way tourist drive ▸ This viewpoint it is considered to have a **moderate** sensitivity overall to the change proposed, due to the relatively low number of nearby residential viewers with a specific interest in this view and expansive, elevated views obtained from residential lots of Gowrie Mountain.

Visual evaluation

Photomontage view from Viewpoint 21: Linora Drive, Gowrie Mountain (75° field of view).

Heading	Description
Construction works	
Magnitude of change assessment	▸ The proposed Project alignment and associated earthworks will introduce considerable construction works into the view. This change will be exacerbated by the proximity of elevated residences of Gowrie Mountain to the works in this location ▸ The proposed location of a laydown area near the Warrego Highway for the construction of the Warrego Highway rail bridge would cause a reduction in visual amenity from this viewpoint; however, this would be temporary ▸ Earthworks associated with the proposed Project alignment will require large volumes of material to be removed and brought in ▸ The key impacts will relate to the presence of construction plant and disturbance due to the construction of the Project alignment, rail bridge, cuts and embankments ▸ Due to the distance of this viewpoint from the Project alignment, construction works will be noticeable, while the impact of these is temporary which represents a noticeable and therefore **low** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP28 during construction works is considered to be **low**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the Project alignment is approximately 1 km to the northwest of this viewpoint. The view is already affected by the presence of powerlines, power poles and the Warrego Highway
	▸ The magnitude of change on this receptor is anticipated to be considerable, therefore **moderate**, due to the following factors:
	  ▸ considerable change due to the introduction of new rail infrastructure into the rural landscape, including the Warrego Highway Rail Bridge (rail-over-road)
	  ▸ the rail line will be in largely in cut and on embankment, with heights varying from approximately -7 m below to +12.4 m above the existing surface level
	  ▸ due to the sparse nature of existing vegetation within the rail corridor, the effect of vegetation clearing for the construction of the proposed Project alignment is considered to be negligible
	▸ While the Project alignment will be fenced with standard rural chain wire fencing, it is unlikely to be clearly discernible at this distance
	▸ At this distance, the Project alignment will be visible and considerably change the visual character of the landscape, as it will be introducing new rail infrastructure into what is currently a relatively intact rural setting. This represents a **moderate** magnitude of change.

Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will be clear due to the open and elevated views of the railway track from this viewpoint. Elevated views to the Project alignment will be possible for nearby residents of Gowrie Mountain and isolated rural lots situated on Gowrie Mountain School Road. While experienced by a medium number of nearby residential lots these views are of transient nature. Therefore, the magnitude of change is considered to be **low.**
Potential effect (operations)	The effect of the Project on VP28 during operations is considered to be **moderate**.

10.5.4.29 Viewpoint 29

TABLE 10-46 LIKELY VISUAL EFFECT OF THE PROJECT ON VIEWPOINT 29

VP29: Mount Kingsthorpe Summit scenic lookout

Visual baseline assessment

Existing view from Viewpoint 29A

Existing view from Viewpoint 29B

Heading	Description
Location and description	▸ GPS Location: 27°28’47.495” S 151°49’53.129” E ▸ Elevation: 600 m ▸ Southerly view from the summit of Mount Kingsthorpe towards Gowrie Creek, the existing rail line and distant views towards lots of Gowrie Mountain ▸ Proposed Project alignment is approximately 1.4 km south of this viewpoint ▸ Represents typical and accessible views of those visiting Mount Kingsthorpe Bushland Park and walking on the Mount Kingsthorpe Walk, a walking track to the summit, which provides expansive elevated views ▸ Also representative of typical and accessible views of nearby elevated residential areas of Kingsthorpe (1.2 km to 3 km to the north of the Project alignment) ▸ Westerly views from this point provide open views from LCT H: Forested uplands (H5: Mount Kingsthorpe) across LCT C: Irrigated croplands (C2: Yalungur and C8: Kingsthorpe) towards the existing rail line and proposed Project alignment, and distant views to LCTH: Forested uplands (H6: Gowrie Mountain), LCT D: Dry croplands and pastures (D8: Charlton) and LCT G: Rural living (G10: Gowrie Mountain).

Heading	Description
Key visual sensitivities	▸ Moderate number of visitors to Mount Kingsthorpe Bushland Park undertaking the Mount Kingsthorpe Walk, due to its classification as a Class 4—rough trail; however, these visitors have a very high level of interest in this environment and views obtained from the summit and trail ▸ This viewpoint is not located on any tourist drives ▸ Although this view comprises a strong forested and rural character, the presence of the existing rural infrastructure (i.e. power poles, powerlines and existing rail infrastructure) and views of residential lots detract from the rural and natural qualities and sense of remoteness ▸ This viewpoint it is considered to have a **high** sensitivity overall to the change proposed, due to the moderate number, but very high sensitivity of viewers (e.g. hikers) who are walking specifically to obtain panoramic views from the summit of Mount Kingsthorpe (identified as an area with high scenic amenity value in the Toowoomba Regional Council *Scenic Amenity Study* (Conics, 2009)).
Visual evaluation	
	Note that no visualisation has been provided for this viewpoint, as discussed in Section 10.3.3.2.
Construction works	
Magnitude of change assessment	▸ The construction of the proposed Project alignment and associated earthworks will introduce new rail infrastructure into the existing rural landscape, creating a noticeable change in the landscape character of this viewpoint ▸ The lack of existing vegetation provides open views from the summit of Mount Kingsthorpe and from nearby residential lots to the proposed Project alignment ▸ Earthworks associated with the proposed Project alignment will require the movement of large volumes of material ▸ The presence of construction plant constructing the Project alignment will temporarily change the character of the landscape, creating a noticeable change in the landscape character of this viewpoint ▸ This represents a **low** magnitude of change.
Potential effect (construction works)	The effect of the Project on VP29 during construction works is considered to be **moderate**.
Operations	

Magnitude of change assessment—permanent infrastructure	▸ The nearest section of the proposed Project alignment is approximately 1.4 km south of this viewpoint. The skyline is already affected by the presence of powerlines, power poles and the existing rail line
	▸ The magnitude of change on this receptor is anticipated to be considerable, therefore **moderate**, due to the following factors:
	  ▸ considerable change due to the provision of a new single-track dual-gauge railway on embankment to the south of the existing rail line with associated localised culverts. The rail line will be largely on embankment, with heights up to 17.9 m above the existing surface level. A new rail-over-road bridge will be constructed on Chamberlain Road
	  ▸ distant views will be possible to the proposed Warrego Highway Rail Bridge (rail-over-road)
	  ▸ due to the sparse nature of existing vegetation within the rail corridor, the effect of vegetation clearing for the construction of the proposed alignment is considered to be **negligible**
	▸ Fencing is to be provided for the extent of the rail corridor, typically located on the corridor boundary. Fencing is to extend between the corridor and private land adjoining the railway. Standard rural chain wire fencing is proposed that will be in keeping with the existing rural character; however, it is likely that this will only just be discernible at this distance.
	▸ At this distance, the alignment will be visible and will represent a considerable change the visual character of the landscape as it will be introducing new rail and road infrastructure into the existing rural setting. This represents a **moderate** magnitude of change.

Heading	Description
Magnitude of change assessment—train	▸ Movement of double-stacked freight trains up to 1.8 km long with a height of 6.5 m will only be experienced occasionally from the summit of Mount Kingsthorpe. Views to the alignment will be possible for nearby elevated residents of Kingsthorpe. While experienced by a relatively large number of residential lots these views are of transient nature. It is noted that the existing rail line currently facilitates passenger, coal and freight train movements, albeit single stacked. Therefore, the magnitude of change is considered to be **low.**
Potential effect (operations)	The effect of the Project on VP29 during operations is considered to be **high**.

10.5.5 Qualitative lighting impacts

This section considers the potential qualitative impacts of Project lighting during both construction and operation. An obtrusive lighting impact assessment has been prepared as supplementary material to this LVIA and is provided in Appendix K: Landscape and Visual Impact Assessment. A summary is provided in Section 10.5.6.

10.5.5.1 Viewpoint 1

TABLE 10-47 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 1

VP1: Rainbow Reserve near Kildonan Road, Kurumbul

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will be very few receptors in this location at night—limited to those camping at Rainbow Reserve.
Magnitude of change assessment (construction works)	▸ This viewpoint is situated near a large bridge construction laydown area; however, views towards the laydown area are filtered due to riparian vegetation. ▸ During construction it is anticipated that the proposed laydown area would be lit with security lighting. ▸ The current light levels are assumed to be 'dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would be up to 'predominantly dark', representing a barely perceptible and therefore **negligible** magnitude of change.
Potential effect (construction works)	▸ **Low**.
Magnitude of change assessment (operations)	▸ The new active crossing proposed would be controlled by automatic warning systems including flashing lights and would be visible to people travelling along Kildonan Road as well as visiting and camping at Rainbow Reserve. ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location; however, it is not anticipated that transient train lighting would be clearly visible due to existing vegetation that will provide some screening effect. ▸ The current light levels are assumed to be 'dark' and it is assumed that, due to temporal impacts associated with an active level crossing and transient impacts associated with train headlights, the levels would remain 'dark', representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Low**.

10.5.5.2 Viewpoint 2

TABLE 10-48 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 2

VP2: Cunningham Highway near Yelarbon towards proposed non-resident workforce accommodation facility

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will be very few receptors in this location at night—limited to travellers passing along the Cunningham Highway, whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ This section of the Cunningham Highway is not lit with permanent street lighting but existing traffic on the highway introduces transient light.
Magnitude of change assessment (construction works)	▸ This viewpoint is situated near the proposed Yelarbon non-resident workforce accommodation facility. ▸ During construction it is anticipated that the Yelarbon non-resident workforce accommodation facility within this view would be lit with security lighting. However, it is anticipated that existing vegetation within may provide some limited screening effect to potential light sources. ▸ The current light levels are assumed to be 'dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding to control light spill) it is anticipated that levels would be up to 'predominantly lit' representing a noticeable **low** magnitude of change.
Potential effect (construction works)	▸ **Negligible**.
Magnitude of change assessment (operations)	▸ If the Yelarbon non-resident workforce accommodation facility is decommissioned, there would be **no impact**.
Potential effect (operations)	▸ **No impact** if the non-resident workforce accommodation facility is decommissioned and rehabilitated.

10.5.5.3 Viewpoint 3

TABLE 10-49 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 3

VP3: Yelarbon rest area

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting, including nearby residents of Yelarbon and travellers passing along the Cunningham Highway at night, whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ The Cunningham Highway as it passes through Yelarbon (Taloom Street) is lit with permanent street lighting and one isolated street light is provided at the current active level crossing where the Cunningham Highway crosses the existing rail line. ▸ In addition, existing traffic on the highway and passing freight trains utilising the existing rail corridor introduces transient light. ▸ Within Yelarbon, street lights are currently provided along Taloom Street.
Magnitude of change assessment (construction works)	▸ This location is adjacent to two major laydown areas and a non-resident workforce accommodation facility is situated approximately 3.5 km to the northwest. ▸ During construction it is anticipated the Yelarbon non-resident workforce accommodation facility and laydown areas would be lit with security lighting. ▸ Therefore, the current light levels are assumed to be 'predominantly lit'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would remain up to 'predominantly lit' representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Low.**

Lighting assessment	
Magnitude of change assessment (operations)	▸ Permanent standard road lighting will be required for the Cunningham Highway road bridge. ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'predominately lit' and it is assumed that, with the implementation of light spill controls (e.g. downward angling of luminaries, shielding to control light spill), the levels would remain 'predominately lit' representing a **negligible** magnitude of change. ▸ In addition, should noise barriers be provided in this location, it is anticipated that transient lighting impacts associated with the train headlights would be less apparent.
Potential effect (operations)	▸ **Low**.

10.5.5.4 Viewpoint 4

TABLE 10-50 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 4

VP4: Yelarbon silo artwork viewing area

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting—including nearby residents of Yelarbon and travellers passing along the Cunningham Highway at night, whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ The Cunningham Highway as it passes through Yelarbon is lit with permanent street lighting, while existing traffic on the highway and passing freight trains utilising the existing rail corridor introduces transient light.
Magnitude of change assessment (construction works)	▸ This location is not located immediately adjacent to any proposed laydown areas; however, there are two major laydown areas located approximately 510 m and 630 m to the northwest. In addition, the Yelarbon non-resident workforce accommodation facility is situated approximately 3.7 km to the northwest. ▸ During construction it is anticipated that the proposed Yelarbon non-resident workforce accommodation facility and laydown areas would be lit with security lighting ▸ The current light levels are assumed to be 'predominantly lit' and it is assumed that and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain 'predominantly lit' representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Low**.
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'predominately lit', and it is assumed that due to the transient nature of impacts associated with train headlights, the levels would remain 'predominately lit' representing a **negligible** magnitude of change ▸ In addition, should noise barriers be provided in this location, it is anticipated that transient lighting impacts associated with the train headlights would be less apparent (where opaque barriers are installed).
Potential effect (operations)	▸ **Low**.

10.5.5.5 Viewpoint 5

TABLE 10-51 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 5

VP5: Cunningham Highway near Whetstone rest area

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. Travellers passing along the Cunningham Highway at night whose interest in the transient views obtained at night is expected to be very low, even compared to daytime interest. ▸ This section of the Cunningham Highway is not lit with permanent street lighting; however, existing traffic on the highway introduces transient light.
Magnitude of change assessment (construction works)	▸ Proposed location for the Whetstone MDC ▸ During construction, it is anticipated that the Whetstone MDC site would be lit with security lighting. For more detail see Appendix AE: Whetstone Material Distribution Centre: Supporting Technical Information. ▸ The current light levels are assumed to be 'dark' and it is assumed that the levels would remain 'dark', representing a noticeable **negligible** magnitude of change.
Potential effect (construction works)	▸ **Negligible.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark', and it is assumed that due to the transient nature of impacts associated with train headlights and distance of sensitive receptors from the Project alignment in this location, the levels would remain 'dark' representing a barely perceptible **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.6 Viewpoint 6

TABLE 10-52 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 6

VP6: Millmerran–Inglewood Road towards Millmerran–Inglewood Road rail bridge #1 level crossing

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. Travellers passing along the Millmerran–Inglewood Road at night, whose interest in the transient views obtained at night is expected to be very low, even compared to daytime interest. ▸ This section of Millmerran-Inglewood Road is not lit with permanent street lighting but existing traffic on the road introduces transient light.
Magnitude of change assessment (construction works)	▸ During construction it is anticipated that the laydown areas proposed in the vicinity of this viewpoint would be lit with security lighting; however, it is anticipated that existing vegetation within the construction footprint may provide some screening effect to potential light sources ▸ The current light levels are assumed to be 'dark' and it is assumed that the levels would remain 'dark' representing a barely perceptible **negligible** magnitude of change.
Potential effect (construction works)	▸ **Negligible.**

Lighting assessment	
Magnitude of change assessment (operations)	▸ The active crossing proposed would be controlled by automatic warning systems, including flashing lights, and would be visible to people travelling along Millmerran–Inglewood Road ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark' and it is assumed that due to the transient nature of impacts associated with train headlights and lights associated with the active level crossing and distance of sensitive receptors from the Project alignment in this location, the levels would remain 'dark' representing a barely perceptible **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.7 Viewpoint 7

TABLE 10-53 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 7

VP7: Millmerran-Inglewood Road towards proposed non-resident workforce accommodation facilities

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. Travellers passing along the Millmerran-Inglewood Road at night, whose interest in the transient views obtained at night is expected to be very low, even compared to daytime interest. ▸ This section of Millmerran-Inglewood Road is not lit with permanent street lighting but existing traffic on the road introduces transient light.
Magnitude of change assessment (construction works)	▸ During construction it is anticipated that the Inglewood non-resident workforce accommodation facility within this view would be lit with security lighting. However, it is anticipated that existing vegetation within may provide some limited screening effect to potential light sources. ▸ The current light levels are assumed to be 'dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding to control light spill) it is anticipated that levels would be up to 'predominantly lit' representing a noticeable l**ow** magnitude of change.
Potential effect (construction works)	▸ **Negligible**
Magnitude of change assessment (operations)	▸ If the Inglewood non-resident workforce accommodation facility is decommissioned, there would be **no impact**.
Potential effect (operations)	▸ **No impact** if the Inglewood non-resident workforce accommodation facility is decommissioned and rehabilitated.

10.5.5.8 Viewpoint 8

TABLE 10-54 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 8

VP8: Millmerran-Inglewood Road near Nicol Creek Road

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting—including isolated rural residents and travellers passing along Millmerran-Inglewood Road at night, whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ This section of Millmerran-Inglewood Road is not lit with permanent street lighting but existing traffic on the road introduces transient light.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint.

Lighting assessment	
Potential effect (construction works)	▸ **No impact.**
Magnitude of change assessment (operations)	▸ The new active crossing proposed would be controlled by automatic warning systems including flashing lights and would be visible to people travelling along Millmerran-Inglewood Road and Nicol Creek Road as well as isolated local rural residents in this area, the closed of which is approximately 440 m northeast of the proposed active crossing location. ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ Due to the transient nature of impacts associated with train headlights and distance of sensitive receptors from the Project alignment in this location, it is assumed that the levels would remain 'dark' representing a barely perceptible **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.9 Viewpoint 9

TABLE 10-55 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 9

VP9: Millmerran–Inglewood Road towards Millmerran–Inglewood Road rail bridge #2

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting, including isolated rural residents and travellers passing along Millmerran–Inglewood Road at night, whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ This section of Millmerran-Inglewood Road is not lit with permanent street lighting but existing traffic on the road introduces transient light.
Magnitude of change assessment (construction works)	▸ This location is near a major laydown area, including main site offices and fuel storage ▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'dark' and it is assumed that the levels would be up to 'predominately lit' representing a noticeable **low** magnitude of change.
Potential effect (construction works)	▸ **Negligible.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ Due to the transient nature of impacts associated with train headlights and distance of sensitive receptors from the Project alignment in this location, it is assumed that the levels would remain 'dark' representing a barely perceptible **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.10 Viewpoint 10

TABLE 10-56 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 10

VP10: Mount Basalt Reserve, looking towards Millmerran

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low**, as it is anticipated there will be a lower number of visitors to Mount Basalt Reserve at night, whose interest in views obtained at night is expected to be lower compared to daytime interest ▸ This viewpoint is situated approximately 7.6 km from the Commodore Mine and 5.9 km from the Millmerran Power Station, both of which provide sources of permanent and temporary night-time lighting, associated with plant, machinery and site lighting.
Magnitude of change assessment (construction **works**)	▸ During construction it is anticipated that the major construction laydown area proposed approximately 5.6 km from this location would be lit with security lighting ▸ The current light levels are assumed to be 'dark'. Due to the distance of this viewpoint from proposed light sources, with the implementation of light spill controls (e.g. downward angling of luminaries, shielding to control light spill) it is anticipated that levels would remain 'predominantly dark' representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Negligible.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ Due to the transient nature of impacts associated with train headlights and distance of sensitive receptors from the Project alignment in this location, it is assumed that the levels would remain 'dark' representing a barely perceptible **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible**.

10.5.5.11 Viewpoint 11

TABLE 10-57 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 11

VP11: Blackwell Road looking towards Millmerran–Inglewood Road

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will be local residents and travellers on Blackwell Road in this location at night whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ This section of Blackwell Road is not lit with permanent street lighting but existing traffic on the road and nearby Millmerran-Inglewood Road introduces transient light ▸ It is noted that this viewpoint is located in close proximity to the Commodore Mine (approximately 800 m away) and Millmerran Power Station (approximately 4 km away), both of which provide sources of permanent and temporary night-time lighting, associated with plant, machinery and site lighting.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint, therefore, **no impact**.
Potential effect (construction works)	▸ **No impact.**

Lighting assessment	
Magnitude of change assessment (operations)	▸ The new active crossing proposed would be controlled by automatic warning systems, including flashing lights, and would be visible to people travelling along Blackwell Road and isolated local rural residents in this area (more than 1 km away) ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ The current light levels are assumed to be 'dark' and it is assumed that, due to temporal impacts associated with an active level crossing and transient impacts associated with train headlights, the levels would remain 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.12 Viewpoint 12

TABLE 10-58 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 12

VP12: Commodore Peak picnic area looking towards Millmerran Power Station

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Low**, as it is anticipated there will be a lower number of visitors to Commodore Peak picnic area at night, whose interest in views obtained at night is expected to be lower compared to daytime interest ▸ It is noted that this viewpoint is located in close proximity to and overlooks the Commodore Mine (approximately 800 m away) and Millmerran Power Station (approximately 5 km away), both of which provide sources of permanent and temporary night-time lighting, associated with plant, machinery and site lighting.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint, therefore, **no impact**.
Potential effect (construction works)	▸ **No impact**.
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location (noting that in the vicinity of this viewpoint the train will be in cut). ▸ The current light levels are assumed to be 'dark' and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain up to 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.13 Viewpoint 13

TABLE 10-59 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 13

VP13: Millmerran-Inglewood Road towards Millmerran-Inglewood Road rail bridge #3

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. Travellers passing along the Cunningham Highway at night, whose interest in the transient views obtained at night is expected to be very low, even compared to daytime interest. ▸ This section of Millmerran-Inglewood Road is not lit with permanent street lighting but existing traffic on the road introduces transient light ▸ It is noted that this viewpoint is located in close proximity to the Commodore Mine (approximately 750 m away) and Millmerran Power Station (approximately 6 km away), both of which provide sources of permanent and temporary night-time lighting, associated with plant, machinery and site lighting.
Magnitude of change assessment (construction works)	▸ This location is near a bridge construction laydown area ▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'dark' and it is assumed that the levels would be up to 'predominately lit' representing a noticeable **low** magnitude of change.
Potential effect (construction works)	▸ **Negligible.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark', and it is assumed that due to the transient nature of impacts associated with train headlights and distance of sensitive receptors from the Project alignment in this location, the levels would remain up to 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.14 Viewpoint 14

TABLE 10-60 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 14

VP14: Nardoo Street edge of Millmerran

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting—including nearby residents of Millmerran. ▸ Nardoo Street is lit with permanent street lighting and existing traffic on the street introduces transient light.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint, therefore, **no impact**.
Potential effect (construction works)	▸ **No impact.**

Lighting assessment	
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ While there would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location, due to the distance of this viewpoint from the proposed Project alignment and presence of screening vegetation, it is considered that lights associated with train headlights are unlikely to be experienced from this location. ▸ The current light levels are assumed to be 'predominately lit' and it is assumed that due to the transient nature of impacts associated with train headlights and the distance of this viewpoint from the light sources, the levels would remain 'predominately lit' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Low**.

10.5.5.15 Viewpoint 15

TABLE 10-61 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 15

VP15: Turallin Road towards the proposed Turallin facility

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. Noting that there will still be receptors in this location at night who will be interested in the view and presence of lighting—including nearby isolated rural residents and travellers passing along Turallin Road at night, whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ Turallin Road is not lit with permanent street lighting but existing traffic on the road introduces transient light.
Magnitude of change assessment (construction works)	▸ This viewpoint is situated near the proposed Turallin facility ▸ During construction it is anticipated that but the Turallin facility within this view would be lit with security lighting ▸ The current light levels are assumed to be 'dark' and it is assumed that with the implementation of light spill controls (e.g. downward angling of luminaries, shielding to control light spill) the levels would be up to 'predominantly lit' representing a noticeable **low** magnitude of change.
Potential effect (construction works)	▸ **Negligible.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint, as it is anticipated that the Turallin facility will be decommissioned ▸ No short-term impacts due to headlights of passing freight trains near this viewpoint due to distance from Project alignment ▸ As the facility will be decommissioned, there would be **no impact**.
Potential effect (operations)	▸ **No impact** as it is anticipated the Turallin facility will be decommissioned and rehabilitated.

10.5.5.16 Viewpoint 16

TABLE 10-62 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 16

VP16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting—including nearby isolated rural residents and travellers passing along Millmerran-Leyburn Road at night, whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ This section of Millmerran-Leyburn Road is not lit with permanent street lighting but existing traffic on the road introduces transient light.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint, therefore, **no impact**.
Potential effect (construction works)	▸ **No impact**.
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ The current light levels are assumed to be 'dark' and it is assumed that due to the transient nature of impacts associated with train headlights, with careful planning, the levels would remain up to 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible**.

10.5.5.17 Viewpoint 17

TABLE 10-63 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 17

VP17: Gore Highway towards Condamine River crossing and floodplain

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting, including isolated rural residents and travellers passing along the Gore Highway at night whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ This section of the Gore Highway is not lit with permanent road lighting but existing traffic on the highway introduces transient light.
Magnitude of change assessment (construction works)	▸ Distant views towards a construction laydown area ▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'predominantly dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would remain up to 'predominantly dark', representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Negligible.**

Lighting assessment	
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark' and it is assumed that due to the transient nature of impacts associated with train headlights and distance of sensitive receptors from the alignment in this location, with careful planning, the levels would remain up to 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.18 Viewpoint 18

TABLE 10-64 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 18

VP18: Gore Highway near service station, Pampas

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting, including nearby residents of Pampas and travellers passing along the Gore Highway at night whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ The Gore Highway as it passes through Pampas is not lit with permanent street lighting, with the exception of one isolated street light at the intersection of the Gore Highway and Fysh Road, while existing traffic on the highway introduces some transient light due to vehicle headlights.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint, therefore, **no impact**.
Potential effect (construction works)	▸ **No impact.**
Magnitude of change assessment (operations)	▸ The new active crossing proposed would be controlled by automatic warning systems including flashing lights and would be visible to local residents of Pampas in very close proximity to the crossing, as well as to people travelling along the Gore Highway and Elsden Road ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark' and it is assumed that due to the transient nature of impacts associated with train headlights and the active level crossing, that the levels would remain 'predominately dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Low.**

10.5.5.19 Viewpoint 19

TABLE 10-65 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 19

VP19: Gore Highway towards Condamine River (north branch) crossing

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will be few receptors in this location at night, including nearby isolated rural residents and travellers passing along the Gore Highway at night whose interest in the transient views obtained at night is expected to be low even compared to daytime interest. ▸ This section of the Gore Highway is not lit with permanent road lighting; however, existing traffic on the highway introduces transient light.

Lighting assessment	
Magnitude of change assessment (construction works)	▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would be at greatest 'predominantly lit' representing a noticeable **low** magnitude of change.
Potential effect (construction works)	▸ **Negligible**.
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ The current light levels are assumed to be 'predominantly dark' and it is assumed that and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain 'predominantly dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible**.

10.5.5.20 Viewpoint 20

TABLE 10-66 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 20

VP20: Near Brookstead State School

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will be few receptors in this specific location at night as the school will not be in use; however, there are several residential lots whose residents are likely to be concerned about night-time lighting. ▸ There is currently no permanent street lighting associated with the Gore Highway as it passes through Brookstead; however, there is some limited standard road lighting located along Ware Street, including outside the school ▸ In addition, existing traffic on the highway and local streets and passing freight trains utilising the existing rail corridor introduces transient light.
Magnitude of change assessment (construction works)	▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'predominately dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would remain 'predominantly dark' representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Low**.
Magnitude of change assessment (operations)	▸ Permanent standard road lighting will be required for the Gore Highway road bridge ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ The current light levels are assumed to be 'predominately dark' and it is assumed that, with careful planning, the levels would be up to 'predominately lit' representing a **low** magnitude of change ▸ In addition, should noise barriers be provided in this location, it is anticipated that transient lighting impacts associated with the train headlights would be less apparent.
Potential effect (operations)	▸ **Low**.

10.5.5.21 Viewpoint 21

TABLE 10-67 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 21

VP21: Glen Devon Road looking south from elevated private residential lots

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will be few receptors in this specific location at night; however, there are several residential lots whose residents are likely to be concerned about night-time lighting. ▸ In addition, existing traffic on the highway and local streets and passing freight trains utilising the existing rail corridor introduces transient light.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint, therefore, **no impact**.
Potential effect (construction works)	▸ **No impact.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark' and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible**.

10.5.5.22 Viewpoint 22

TABLE 10-68 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 22

VP22: Pittsworth-Felton Road near Pittsworth Motor Inn

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night, including those at the Pittsworth Motor Inn and nearby residential lots whose residents are likely to be concerned about night-time lighting. ▸ The Gore Highway as it passes through Pittsworth is lit with permanent street lighting, while existing traffic on the highway introduces transient light.
Magnitude of change assessment (construction works)	▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'predominately lit'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would remain up to 'predominately lit' representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Low.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ The current light levels are assumed to be 'predominately lit' and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain 'predominately lit' representing a **negligible** magnitude of change ▸ In addition, should noise barriers be provided in this location, it is anticipated that transient lighting impacts associated with the train headlights would be less apparent.
Potential effect (operations)	▸ **Low.**

10.5.5.23 Viewpoint 23

TABLE 10-69 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 23

VP23: Stanley Street near local park, Pittsworth

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night, including nearby residential lots whose residents are likely to be concerned about night-time lighting. ▸ This section of the Gore Highway as it passes through Pittsworth is not lit with permanent street lighting but existing traffic on the highway introduces transient light ▸ In addition, there are some street lights located within the nearby residential area and the nearby playing fields have standard floodlights installed.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint, therefore, **no impact**.
Potential effect (construction works)	▸ **No impact**.
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'predominately lit' and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain 'predominately lit' representing a **negligible** magnitude of change ▸ In addition, should noise barriers be provided in this location, it is anticipated that transient lighting impacts associated with the train headlights would be less apparent.
Potential effect (operations)	▸ **Low**.

10.5.5.24 Viewpoint 24

TABLE 10-70 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 24

VP24: Pittsworth and District Assembly of God, Pittsworth

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night, including those at the church and utilising nearby playing fields. ▸ This section of the Gore Highway as it passes through Pittsworth is not lit with permanent street lighting but existing traffic on the highway introduces transient light ▸ The nearby playing fields have standard floodlights installed.
Magnitude of change assessment (construction works)	▸ During construction it is anticipated that the laydown area proposed within this view would be lit with security lighting due to the presence of the bridge laydown area ▸ The current light levels are assumed to be 'dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would remain up to 'dark' representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Low**.

Lighting assessment	
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ The current light levels are assumed to be 'dark' and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels the levels would remain 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Low**.

10.5.5.25 Viewpoint 25

TABLE 10-71 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 25

VP25: Gore Highway near Southbrook

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting—including isolated rural residents and travellers passing along the Gore Highway at night, whose interest in the transient views obtained at night is expected to be low even compared to daytime interest ▸ This section of the Gore Highway is not lit with permanent street lighting but existing traffic on the highway introduces transient light.
Magnitude of change assessment (construction works)	▸ No temporary construction lighting near this viewpoint, therefore, **no impact**.
Potential effect (construction works)	▸ **No impact**.
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ The current light levels are assumed to be 'dark' and it is assumed that due to the transient nature of impacts associated with train headlights distance of sensitive receptors from the alignment in this location, the levels would remain 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Low**.

10.5.5.26 Viewpoint 26

TABLE 10-72 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 26

VP26: View from Athol School Road

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting, including nearby residents of Athol and travellers passing along Athol School Road at night whose interest in the transient views obtained at night is expected to be low even compared to daytime interest ▸ Athol School Road is not lit with permanent street lighting but existing traffic on the road introduces transient light.
Magnitude of change assessment (construction works)	▸ This location is near a major laydown area, including main site offices and fuel storage and several rural residential lots are within proximity to the proposed laydown area ▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'dark' and it is assumed that, with careful planning, the levels would be up to 'predominately lit' representing a **low** magnitude of change.
Potential effect (construction works)	▸ **Low.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location ▸ The current light levels are assumed to be 'dark' and it is assumed that due to the transient nature of impacts associated with train headlights, the levels would remain 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Low.**

10.5.5.27 Viewpoint 27

TABLE 10-73 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 27

VP27: Toowoomba–Cecil Plains Road, near private lot 'Burton'

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting, including nearby isolated rural residents and travellers passing along Toowoomba–Cecil Plains Road at night whose interest in the transient views obtained at night is expected to be low even compared to daytime interest ▸ This section of Toowoomba-Cecil Plains Road is not lit with permanent street lighting but existing traffic on the road introduces transient light ▸ In addition, the nearby Toowoomba Wellcamp Airport introduces both permanent and transient light associated with vehicular and plane movements.
Magnitude of change assessment (construction works)	▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would remain 'dark' representing a **negligible** magnitude of change.

Lighting assessment	
Potential effect (construction works)	▸ **Negligible.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark' and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain 'dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible.**

10.5.5.28 Viewpoint 28

TABLE 10-74 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 28

VP28: Linora Drive, Gowrie Mountain

Lighting assessment	
Visual evaluation	
Sensitivity assessment	▸ **Moderate** as described for daytime assessment. There will still be receptors in this location at night who will be interested in the view and presence of lighting, including nearby elevated residents of Gowrie Mountain. ▸ Parts of the Warrego Highway visible within this view are lit with permanent street lighting, and existing traffic on the highway and other local roads introduces transient light.
Magnitude of change assessment (construction works)	▸ Distant views to the existing Warrego Highway and a proposed laydown area (approximately 1 km) ▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would remain 'dark' representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Low**.
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark' and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Low**.

10.5.5.29 Viewpoint 29

TABLE 10-75 LIKELY VISUAL EFFECT OF THE PROJECT LIGHTING ON VIEWPOINT 29

VP29: Mount Kingsthorpe Summit scenic lookout

Lighting assessment

Visual evaluation	
Sensitivity assessment	▸ **Low**, as it is anticipated that there will be less people will be accessing Mount Kingsthorpe Reserve at night, whose interest in views obtained at night is expected to be lower compared to daytime interest ▸ Parts of the Warrego Highway visible within this view are lit with permanent street lighting, and existing traffic on the highway and other local roads introduces transient light.
Magnitude of change assessment (construction works)	▸ Distant views to the existing Warrego Highway and a proposed laydown area (approximately 3 km) ▸ During construction it is anticipated that the laydown area proposed would be lit with security lighting ▸ The current light levels are assumed to be 'dark'. With the implementation of light spill controls (e.g. downward angling of luminaries, shielding of light spill) it is anticipated that levels would remain 'dark' representing a **negligible** magnitude of change.
Potential effect (construction works)	▸ **Negligible.**
Magnitude of change assessment (operations)	▸ No permanent lighting near this viewpoint ▸ There would be short-term impacts due to the headlight on the passing freight train. It is anticipated that a train travelling at 80 km/hr would take approximately 1 minute 16 seconds to pass this location. ▸ The current light levels are assumed to be 'dark' and it is assumed that, due to the transient nature of impacts associated with train headlights, the levels would remain dark' representing a **negligible** magnitude of change.
Potential effect (operations)	▸ **Negligible**.

10.5.6 Quantitative lighting assessment summary

To support this LVIA, an obtrusive lighting assessment has been prepared (Appendix K: Landscape and Visual Impact Assessment (Appendix 3: Obtrusive Lighting Assessment)); however, as noted in Appendix 3: Obtrusive Lighting Assessment, there are no known references defining acceptable visual 'amenity' at night, and the study defines 'amenity' in this context to be the 'state of pleasantness of the night-time environment or a particular night-time view' and loss of amenity to mean 'change to the existing view or environment'.

In the absence of any other known information and technical light criteria, *AS/NZS 4282:2019 Control of obtrusive effects of outdoor lighting* (Standards Australia and Standards New Zealand, 2019a) has been used as a general guide, and the AS/NZS 4282:2019 criteria have been applied to this analysis of potential quantitative lighting impacts associated with the Project (although many aspects of the standard are not applicable or appropriate as noted in Appendix K: Landscape and Visual Impact Assessment).

In addition, it is also recognised that the human visual system perceives visual brightness relative to the state of adaptation to ambient conditions, and is influenced by many factors, including the relative health and wellbeing of that observer. For example, a young healthy observer may perceive a specific quantity of light (illuminance or luminance) to be excessive in a dark environment, yet that same observer may perceive the same quantity of light in a suburban area to be far more acceptable.

10.5.6.1 Summary of the quantitative lighting assessment findings

The assessment identified 151 lots as having the potential to be impacted by Project lighting, and 60 potential non-compliances with the AS/NZS 4282:2019 standard. Depending on the Project alignment relative to the lot and the environmental zone classification, some non-compliances apply to only one direction of train travel, while a smaller number of non-compliances apply to both directions of train travel. It is also acknowledged that while 60 technical non-compliances have been identified through this desktop assessment, (i.e. the assessed lot is closer than the recommended distance), it is noted that the varying presence of potential screening vegetation may result in some of the identified 'non-compliances' being compliant.

However, three of these locations have been identified as being directly in the path of the Project alignment and/or proposed associated road works which will require the acquisition of these properties.

Recommendations for mitigation of lighting impacts identified in the quantitative assessment have been incorporated into Section 10.6.

10.6 Mitigation measures

This section provides a discussion of the mitigation measures and controls that have been incorporated into the revised reference design, as appropriate and where possible (Section 10.6.1), as well as those mitigation measures that are proposed to be adopted for future stages of Project delivery (Section 10.6.2).

10.6.1 Mitigation through the reference design stage

Development of the reference design for the Project has progressed in parallel with the impact assessment process, and the reference design has been amended for the revised draft EIS, to reflect outcomes of ongoing engagement with the community and key stakeholders. Consequently, design solutions for avoiding, minimising or mitigating impacts have been incorporated into the revised reference design as appropriate and where possible.

Mitigation measures and controls that have been factored into the revised reference design, or otherwise implemented during the reference design stage for the Project, are as follows:

- The Project has, where possible, avoided impacts on nationally or regionally protected landscape areas, such as the Wondul Range National Park, and has minimised impacts on State forests, such as Whetstone State Forest, by following the edge of the protected area to the greatest extent possible
- The Project has been intentionally aligned along the eastern boundary of the Rainbow Reserve so as to minimise the extent of encroachment into this reserve
- The Project has avoided, where possible, direct impacts on areas noted as being of regional landscape significance, defined using the regional scenic amenity methodology (ShapingSEQ)
- The Project has been aligned to be co-located with existing rail and road infrastructure, where possible, minimising the need to develop land that has not previously been subject to disturbance for transport infrastructure purposes
- The Project has been positioned to reduce the number of crossings and extent of impact on watercourses
- The Project footprint as defined in the revised reference design has sought to revise vegetation clearing extents to the minimum area required to safely and efficiently construct, operate and maintain the works
- The Project has avoided significant settlements to the greatest extent possible to assist in minimising visual impacts (e.g. Inglewood, Millmerran, Pittsworth) except where the Project alignment is within or adjacent to existing rail corridor (i.e. through Yelarbon, Pampas and Brookstead)
- The revised reference design has adopted the Millmerran alternative alignment to minimise impacts in the vicinity of Millmerran.

10.6.2 Proposed mitigation measures

To manage and mitigate potential impacts associated with the Project, several mitigation measures have been proposed for implementation in future stages of Project delivery. These proposed mitigation measures have been identified to address Project-specific issues and opportunities.

Table 10-76 identifies the relevant Project stage, the aspect to be managed and the proposed mitigation measure. The mitigation measures presented in Table 10-76 have then been factored into the assessment of residual impact significance, as documented in Table 10-81.

Chapter 24: Draft Outline Environmental Management Plan provides further context and the framework for implementation of the proposed mitigation measures.

TABLE 10-76 PROPOSED MITIGATION MEASURES RELEVANT TO LANDSCAPE AND VISUAL AMENITY

Delivery stage	Aspect	Proposed mitigation measures
Detailed design	General	▸ A Rehabilitation and Landscaping Management Plan will be developed for the Project during detailed design, as a component of the Construction Environmental Management Plan. This Plan will be developed in consultation with local councils and affected communities, including Traditional Owners, and will be based on the Inland Rail Landscape and Rehabilitation Strategy, in addition to location and lot-specific reinstatement agreements. At a minimum, The plan will include and clearly identify: ▸ location-specific objectives for rehabilitation, reinstatement and/or stabilisation. Outside of the rail corridor, lot-specific and township-specific (e.g. Yelarbon, Pampas, Brookstead, Pittsworth) rehabilitation and landscaping requirements may apply and will be developed in collaboration with the relevant landowner, local council or DTMR. Where the rail corridor passes through landscapes of importance to Traditional Owners, consultation will be undertaken (including with the Bigambul Native Title Aboriginal Corporation) to develop mitigation to 'care for Country.' Within the rail corridor, maintaining operational safety and rail formation stability will be the driving factors ▸ timeframes, performance objectives and responsibilities for rehabilitation and/or reinstatement/stabilisation works (including biodiversity, vegetation establishment and erosion and sediment control outcomes to be achieved) ▸ where appropriate, how the objectives align with relevant recovery plans, threat abatement plans, conservation advice or policy guidance for target species in areas identified for rehabilitation ▸ actions and responsibilities to progressively rehabilitate, regenerate, and/or revegetate areas, while minimising the duration of exposure in disturbed areas ▸ rehabilitation requirements such as: – milling and removal of bitumen pavement – removal of any decommissioned culverts – tyning and ripping of base and sub-base material – application of soil ameliorants – topsoiling and/or compost blanket – stabilisation and rehabilitation (e.g. planting and or seeding). ▸ how the stabilisation and rehabilitation works palettes consider native flora species endemic to the Darling Downs and Toowoomba regions or other suitable species appropriate to the landscape context and nursery/seed stock sources ▸ consideration for maintenance or performance issues of rehabilitation, e.g. use of groundcover that does not grow and obscure signals or impact the longevity of rail infrastructure ▸ procedures, timeframes, measurable performance objectives and responsibilities for monitoring the success of rehabilitation and/or reinstatement/stabilisation areas ▸ corrective actions if the outcomes of rehabilitation and/or reinstatement/stabilisation are not achieved.
	Landscape and visual impacts due to vegetation removal	▸ Clearing of areas of visually significant vegetation are minimised through detailed design processes, where feasible, to the minimum extent required to safely construct, operate and maintain the Project. Locations with visually significant vegetation include: ▸ east of Rainbow Reserve (approximately Ch 32.0 km to Ch 34.6 km (NS2B)) ▸ Yelarbon–Kurumbul Road (approximately Ch 0 km to 15 km) ▸ in the vicinity of the township of Yelarbon (approximately Ch 25 km to 27 km) ▸ Whetstone State Forest and adjoining forested areas (approximately Ch 37.5 km to Ch 50 km) ▸ Bringalily State Forest and adjoining forested areas (approximately Ch 50 km to Ch 96 km) ▸ through Brookstead, particularly regarding the alignment of the proposed rail corridor adjacent to Ware Street and the impact on the removal of existing vegetation that provides a key visual buffer for nearby residents (approximately Ch 151 km to Ch 155 km)

Delivery stage	Aspect	Proposed mitigation measures
		▸ Areas associated with river and creek crossings, including Macintyre River, Macintyre Brook, Pariagara Creek, Cattle Creek, Native Dog Creek, Bringalily Creek, Nicol Creek, Back Creek, Grasstree Creek, Condamine River and Dry Creek, and their tributaries.
	Landscape and visual impacts on watercourses	▸ Develop the detailed design to minimise impacts to waterways, riparian vegetation and in-stream flora and habitats. Locations include Macintyre River, Macintyre Brook, Pariagara Creek, Cattle Creek, Native Dog Creek, Bringalily Creek, Nicol Creek, Back Creek, Grasstree Creek, Condamine River and Dry Creek, and their tributaries ▸ Continue to adhere to a crossing structure hierarchy, with bridges preferred to culverts ▸ Aim to avoid, then minimise, the extent of waterway diversions or realignments.
	Visual impact of rail infrastructure	▸ Infrastructure (such as structures, embankments/cuttings and bridges) will be designed with regard to landscape character and views as identified in the LVIA, seeking to: ▸ **legacy**: implement consistent treatments along the Project alignment to enhance the overall recognition and legacy of the Project and wider Inland Rail Program ▸ **bridges**: ensure that bridges are considerate of the local setting, connectivity requirements, crime prevention through environmental design (CPTED) and graffiti issues. In particular, assess urban design input to the following bridges (which have potential to be viewed by the greatest number of viewers) to enhance their visual amenity and potential to create a positive legacy at the following locations: – Cunningham Highway road-over-rail bridge (near Yelarbon) (approximately Ch 25.6 km to Ch 26 km) – Gore Highway road-over-rail bridge (near Brookstead) (approximately Ch 153.2 km) – Millmerran–Inglewood Road rail-over-road bridge (approximately Ch 73 km) – Millmerran–Inglewood Road rail-over-road bridge (approximately Ch 115.5 km) – Oakey–Pittsworth Road rail-over-road bridge (approximately Ch 171 km) – Linthorpe Road road-over-rail bridge (near Southbrook) (approximately Ch 175.8 km) – Toowoomba–Cecil Plains Road rail-over-road bridge (approximately Ch 196.2 km) – Warrego Highway rail-over-road bridge (near Gowrie Mountain) (approximately Ch 203 km) ▸ **embankments**: at locations where embankments are near roads and/or adjoin bridge structures, minimise the extent to which embankments restrict views or affect views from nearby residences, including through selection of sensitive stabilisation techniques, revegetation or, where appropriate, screen planting. Particular consideration is to be given to the treatment opportunities for the new embankment along the northern edge of Pittsworth, between Ch 170 km and Ch 173 km ▸ **cuttings**: assess opportunities to blend cut batters into their landscape setting (e.g. considering potential for revegetation, rock pitching), particularly with consideration to the cut near Athol (approximately Ch 189 km to Ch 190 km) ▸ **noise barriers**: where these are or may be required in the future, particularly in towns and urban areas, consultation with the local community will be undertaken during the detailed design stage to assess visual amenity and to ensure they are designed sympathetically to their surroundings and consider CPTED and graffiti issues. This will also include, where appropriate, consideration for the inclusion of landscaping, community artwork and urban design and/or transparent panelling. This strategy will be applied to any noise barriers identified as part of potential mitigation of noise impacts in the LVIA areas included in this assessment, including Yelarbon, Brookstead and Pittsworth as well as any other locations identified in the noise assessments (Chapter 16: Noise and Vibration).

Delivery stage	Aspect	Proposed mitigation measures
	Landscape design treatments	Investigate opportunities for landscape treatments during the detailed design stage with reference to the key landscape characteristics and elements including: ▸ **Rural and natural landscapes***:* The landscape design will respect and enhance the rural landscapes. This includes: ▸ providing earthworks and planting to screen the Project, wherever practicable and appropriate, to consider the local character and desirable views. This includes further opportunity for the design of targeted planting adjacent to major earthworks where possible, to the extent consistent with railway safety requirements and ARTC's *Engineering (Track & Civil) Code of Practice Section 17 Right of Way* (ARTC, 2013). For example, planting strips could be introduced adjacent to significant embankments to reduce visual impact and assist in integrating the landform into the existing landscape setting, and in the following locations: – selective planting adjacent to the Warrego Highway Bridge to screen the alignment and bridge abutments as viewed from Gowrie Mountain (approximately Ch 203.0 km) – adjacent to the Project alignment and adjacent to the bridge near Brookstead (approximately Ch 153.2 km) – adjacent to the Project alignment and adjacent to the bridge near Oakey-Pittsworth Road and Pittsworth (approximately Ch 169 km to Ch 176 km) ▸ **Ecologically sensitive areas***:* The landscape design will provide opportunities for ecological gain to benefit biodiversity. This includes: ▸ development and use of planting and seed mixes to maximise and connect native habitat types for ecological gain ▸ enhancement of landscape corridors and ecological links by, where possible, joining or re-joining fragmented areas of habitat (where identified in Appendix P: Fauna Connectivity Strategy). ▸ **Culturally sensitive landscapes**: The landscape design will provide opportunities to reflect Traditional Owner values. This includes: ▸ consultation with affected Traditional Owners (including with the Bigambul Native Title Aboriginal Corporation) to develop appropriate landscape design treatments (particularly through areas identified in Chapter 19: Cultural Heritage) such as in the vicinity of Rainbow Reserve ▸ **Townships***:* The landscape design will consider the local context. For example, the appearance and integration of new structures, fencing and noise barriers will be assessed for all Project components located in an urban area. ▸ Visual impact assessment will be updated during the detailed design stage to address design refinements.
	Impacts on the setting of heritage landscapes	▸ Consider opportunities to avoid impacts, where possible, to the setting of items of Indigenous, non-Indigenous or natural heritage significance, such as the old Brookstead Railway Station, Pampas Memorial Hall, Yelarbon Silos and the Yelarbon and District Soldiers Memorial Hall ▸ Assess the feasibility of implementing an interpretation strategy and wayfinding to assist in the interpretation of visual elements of heritage significance, such as old rail lines, bridges, buildings or other items of visual value
	Visual impacts of lighting	▸ Detailed design to incorporate lighting to the minimal level required to meet operational road and rail safety requirements for the Project ▸ Detailed design to assess and incorporate attenuation measures to minimise light spillage, such as selection of appropriate light fittings/shields and/or at-receptor treatments ▸ Limit the potential for vertical illuminance, by selecting luminaries that direct light downwards below the horizontal to avoid lateral glare ▸ Lighting impact assessment will be updated during the detailed design stage to address design refinements.
	Impacts to fauna	▸ Undertake a wildlife lighting assessment in accordance with the *National Light Pollution Guidelines for Wildlife* (Department of Climate Change, Energy, the Environment and Water (DCCEEW), 2023) with findings used to inform the preparation of a Wildlife Lighting Management Plan (Chapter 11: Flora and Fauna).

Delivery stage	Aspect	Proposed mitigation measures
Pre-construction activities and early works and construction works	Landscape and visual impacts due to vegetation removal	▸ Establish vegetation protection zones and Project clearing extents prior to the commencement of works, to avoid impacts on adjoining vegetation and habitats as far as practicable. In particular, seek to retain key mature trees and vegetation corridors within proposed non-resident workforce accommodation facilities, to provide amenity for residents and enable ease of rehabilitation
	Impacts to landscape and visual values	▸ Implement the Rehabilitation and Landscaping Management Plan to minimise disturbance to landscape and visual amenity values during the pre-construction activities and early works and construction stages ▸ Construction areas including stockpile areas, fuel storage areas and staff parking areas are to be located outside the tree protection zone as defined in *AS4970-2009: Protection of trees on development sites* (Standards Australia, 2009b) ▸ Minimise height of all stockpiles to the greatest extent possible, to reduce their visual impact ▸ Consider temporary treatments (such as hoardings and screens) to site compounds and non-resident workforce accommodation facilities to assist in reducing visual impacts of temporary infrastructure and sun glare within close proximity of sensitive receptors (particularly townships including Yelarbon, Brookstead, Pampas and Pittsworth, and road networks). These include opportunities to use features on temporary fencing/hoarding. This will include art-based treatments to assist with screening the works from the public and using information boards (or similar) to educate the public about the construction works.
	Visual impacts of lighting	▸ Where night works are required, light attenuation measures will be considered in discussion with potentially affected landowners ▸ Minimise light spill from the proposed non-resident workforce accommodation facilities at Yelarbon, Inglewood and Millmerran by orientating and/or shielding light sources so as not to impact on neighbouring sensitive receptors.
	Reinstatement and rehabilitation	▸ Implement the Rehabilitation and Landscaping Management Plan following the completion of works within each area of the Project footprint, until performance criteria are satisfactorily achieved ▸ Where temporary construction facilities are required, land will be returned to a stable condition that complies with the conditions of applicable landowner agreements and regulatory approvals (e.g. development approval and/or environmental authority).
Operations	Visual impacts of lighting	▸ In response to verified complaints about lighting on fixed infrastructure, consider opportunities for additional control measures.

10.7 Impact assessment summary

This section presents an assessment of the significance of landscape, visual and lighting impacts as a result of the Project. In each instance, the assessment establishes a) the initial significance of impact with the application of mitigation measures (specified in Section 10.6.1); and b) the residual significance of impact, with the application of mitigation measures nominated for implementation through future Project stages (specified in Section 10.6.2).

The significance assessment methodology that has been adopted is introduced in Chapter 4: Assessment Methodology and is discussed, in the context of this assessment, in Section 10.3.3.

10.7.1 Summary of landscape impacts

Twelve LCTs with associated LCAs were identified through the landscape assessment process. A summary of the overall likely landscape impact anticipated during both the construction and operation stages of the Project for each LCT is presented in Table 10-77, based on the methodology described in Section 10.3.

TABLE 10-77 SUMMARY LANDSCAPE ASSESSMENT (CONSTRUCTION AND OPERATION)

Landscape character type	Landscape sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Significance	Magnitude of change	Significance
LCT A: Vegetated watercourses— rivers	Moderate	Moderate	Moderate	Low	Low
LCT B: Vegetated watercourses—creeks and channels	Low	Moderate	Low	Moderate	Low
LCT C: Irrigated croplands	Low	Low	Negligible	Low	Negligible
LCT D: Dry croplands and pastures	Low	High	Moderate	High	Moderate
LCT E: Vegetated grazing	No Impact	No impact	No impact	No impact	No impact
LCT F: Rural settlement	Moderate	High	High	Moderate	Moderate
LCT G: Rural living	Moderate	Moderate	Moderate	Moderate	Moderate
LCT H: Forested uplands	High	No impact	No impact	No impact	No impact
LCT I: Settled hills	Moderate	High	High	High	High
LCT J: Forested hills and plains	Moderate	Low	Low	Low	Low
LCT K: Salinity scald	Low	Low	Negligible	Low	Negligible
LCT L: Transitional landscapes	No Impact	No impact	No impact	No impact	No impact

Table notes:
1. Application of mitigation measures specified in Section 10.6.1
2. Application of mitigation measures specified in Section 10.6.2

This shows that the Project is considered likely to result in impacts of up to **high** on landscape character and amenity of two LCTs during construction or operation prior to the application of mitigation: LCT I: Settled hills and LCT F: Rural settlement. Impacts on LCT I principally relate to the impacts associated with clearance of vegetation and the construction of extensive cuts and embankments through landscapes of high local scenic value. Impacts on LCT F relate to the introduction of large embankments and bridges within the vicinity of the settled areas (i.e. Yelarbon, Brookstead and Pittsworth).

10.7.2 Summary of visual impacts

Based on digital mapping (Visibility Analysis Mapping) and the field survey, 22 representative viewpoints were selected for detailed assessment. A summary of the baseline analysis and overall likely visual impact anticipated during the construction of the Project is summarised for each viewpoint in Table 10-78 based on the methodology described in Section 10.3.

The assessment concluded that the Project is considered likely to result in impacts of up to **moderate** during construction, on eight representative viewpoints, relating to impacts on Viewpoint 2: Yelarbon rest area; Viewpoint 9: Commodore Peak picnic area looking towards Millmerran Power Station; Viewpoint 13: Gore Highway near service station (Pampas); Viewpoint 15: Near Brookstead State School; Viewpoint 17: Pittsworth–Felton Road near Pittsworth Motor Inn; Viewpoint 18: Gore Highway near Southbrook; Viewpoint 19: View from Athol; and Viewpoint 22: Mount Kingsthorpe Summit scenic lookout.

TABLE 10-78 SUMMARY VISUAL ASSESSMENT (CONSTRUCTION)

Viewpoint name	Viewpoint sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Significance	Magnitude of change	Significance
Viewpoint 1: Rainbow Reserve near Kildonan Road, Kurumbul	Moderate	Low	Low	Low	Low
Viewpoint 2: Cunningham Highway near Yelarbon towards proposed Yelarbon non-resident workforce accommodation facility	Low	Moderate	Low	Moderate	Negligible
Viewpoint 3: Yelarbon Rest Area	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 4: Yelarbon silo artwork viewing area	Moderate	Low	Low	Low	Low
Viewpoint 5: Cunningham Highway near Whetstone Rest Area	Low	Negligible	Negligible	Negligible	Negligible
Viewpoint 6: Millmerran-Inglewood Road towards Millmerran–Inglewood Road level crossing	Low	Moderate	Low	Moderate	Low
Viewpoint 7: Millmerran-Inglewood Road towards proposed Inglewood non-resident workforce accommodation facility	Low	Moderate	Low	Moderate	Negligible
Viewpoint 8: Millmerran–Inglewood Road near Nicol Creek Road	Low	Low	Negligible	Low	Negligible
Viewpoint 9: Millmerran-Inglewood Road towards Millmerran-Inglewood Road rail bridge #2	Low	Moderate	Low	Moderate	Low
Viewpoint 10: Mount Basalt Reserve, looking towards Millmerran	Moderate	Low	Low	Low	Low
Viewpoint 11: Blackwell Road looking towards Millmerran–Inglewood Road	Low	Moderate	Low	Moderate	Low
Viewpoint 12: Commodore Peak picnic area looking towards Millmerran Power Station	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 13: Millmerran–Inglewood Road towards Millmerran-Inglewood Road rail bridge #3	Low	Moderate	Low	Moderate	Low
Viewpoint 14: Nardoo Street edge of Millmerran	Moderate	Negligible	Low	Negligible	Low
Viewpoint 15: Turallin Road towards the proposed Turallin facility	Low	Moderate	Low	Low	Negligible
Viewpoint 16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain	Low	Moderate	Low	Moderate	Low
Viewpoint 17: Gore Highway towards Condamine River crossing and floodplain	Low	Low	Negligible	Low	Negligible
Viewpoint 18: Gore Highway near service station, Pampas	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 19: Gore Highway towards Condamine River (north branch) crossing	Low	Moderate	Low	Moderate	Low
Viewpoint 20: Near Brookstead State School	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 21: Glen Devon Road looking south from elevated private residential lots	Low	Moderate	Low	Moderate	Low

Viewpoint name	Viewpoint sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Significance	Magnitude of change	Significance
Viewpoint 22: Pittsworth–Felton Road near Pittsworth Motor Inn	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 23: Stanley Street near local park, Pittsworth	Moderate	Low	Low	Low	Low
Viewpoint 24: Pittsworth and District Assembly of God, Pittsworth	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 25: Gore Highway near Southbrook	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 26: View from Athol School Road	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 27: Toowoomba–Cecil Plains Road near private lot 'Burton'	Low	Moderate	Low	Moderate	Low
Viewpoint 28: Linora Drive, Gowrie Mountain	Moderate	Low	Low	Low	Low
Viewpoint 29: Mount Kingsthorpe Summit scenic lookout	High	Low	Moderate	Low	Moderate

Table notes:
1. Application of mitigation measures specified in Section 10.6.1
2. Application of mitigation measures specified in Section 10.6.2

A summary of the overall likely visual impact on the same representative viewpoints during the operation of the Project is provided in Table 10-79. The assessment shows that the Project is considered likely to result in high impacts on six representative views, relating to impacts on Viewpoint 2: Yelarbon rest area; Viewpoint 15: Near Brookstead State School; Viewpoint 17: Pittsworth–Felton Road; Viewpoint 18: Gore Highway near Southbrook; Viewpoint 19: View from Athol; and Viewpoint 22: Mount Kingsthorpe Summit scenic lookout. These will be managed in accordance with the mitigation measures outlined in Section 10.6.

TABLE 10-79 SUMMARY VISUAL ASSESSMENT (OPERATION)

Viewpoint name	Viewpoint sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Significance	Magnitude of change	Significance
Viewpoint 1: Rainbow Reserve near Kildonan Road, Kurumbul	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 2: Cunningham Highway near Yelarbon towards proposed Yelarbon non-resident workforce accommodation facility	Low	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
Viewpoint 3: Yelarbon rest area	Moderate	High	High	High	High
		High (noise barriers)	High (noise barriers)	High (noise barriers)	High (noise barriers)
Viewpoint 4: Yelarbon silo artwork viewing area	Moderate	Moderate	Moderate	Moderate	Moderate
		High (noise barriers)	High (noise barriers)	High (noise barriers)	High (noise barriers)
Viewpoint 5: Cunningham	Low	Low	Negligible	Low	Negligible

Viewpoint name	Viewpoint sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Significance	Magnitude of change	Significance
Highway Near Whetstone rest area					
Viewpoint 6: Millmerran–Inglewood Road towards Millmerran–Inglewood Road level crossing	Low	Moderate	Low	Moderate	Low
Viewpoint 7: Millmerran-Inglewood Road towards proposed Inglewood non-resident workforce accommodation facility	Low	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
Viewpoint 8: Millmerran–Inglewood Road near Nicol Creek Road	Low	Moderate	Low	Moderate	Low
Viewpoint 9: Millmerran–Inglewood Road towards Millmerran–Inglewood Road Rail Bridge #2	Low	High	Moderate	High	Moderate
Viewpoint 10: Mount Basalt Reserve, looking towards Millmerran	Moderate	Low	Low	Low	Low
Viewpoint 11: Blackwell Road looking towards Millmerran–Inglewood Road	Low	Moderate	Low	Moderate	Low
Viewpoint 12: Commodore Peak picnic area looking towards Millmerran Power Station	Moderate	Low	Low	Low	Low
Viewpoint 13: Millmerran–Inglewood Road near lot	Low	High	Moderate	High	Moderate
Viewpoint 14: Nardoo Street edge of Millmerran	Moderate	Negligible	Low	Negligible	Low
Viewpoint 15: Turallin Road towards the proposed Turallin facility	Low	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
Viewpoint 16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain	Low	Moderate	Low	Moderate	Low

Viewpoint name	Viewpoint sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Significance	Magnitude of change	Significance
Viewpoint 17: Gore Highway towards Condamine River crossing and floodplain	Low	Moderate	Low	Moderate	Low
Viewpoint 18: Gore Highway near service station, Pampas	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 19: Gore Highway towards Condamine River (north branch) crossing	Low	Moderate	Low	Moderate	Low
Viewpoint 20: Near Brookstead State School	Moderate	High	High (noise barriers)	Moderate	Moderate (noise barriers)
Viewpoint 21: Glen Devon Road looking south from elevated private residential lots	Low	Moderate	Low	Moderate	Low
Viewpoint 22: Pittsworth–Felton Road near Pittsworth Motor Inn	Moderate	High	High	High	High
Viewpoint 23: Stanley Street near local park, Pittsworth	Moderate	Moderate	Moderate	Low	Low
		High (noise barriers)	High (noise barriers)	High (noise barriers)	Moderate (noise barriers)
Viewpoint 24: Pittsworth and District Assembly of God, Pittsworth	Moderate	High	High	High	High
Viewpoint 25: Gore Highway near Southbrook	Moderate	High	High	Moderate	Moderate
Viewpoint 26: View from Athol School Road	Moderate	High	High	High	High
Viewpoint 27: Toowoomba–Cecil Plains Road near private lot 'Burton'	Low	High	Moderate	High	Moderate
Viewpoint 28: Linora Drive, Gowrie Mountain	Moderate	Moderate	Moderate	Moderate	Moderate
Viewpoint 29: Mount Kingsthorpe Summit scenic lookout	High	Moderate	High	Moderate	High

Table notes:
1. Application of mitigation measures specified in Section 10.6.1
2. Application of mitigation measures specified in Section 10.6.2

10.7.3 Summary of lighting impacts

The qualitative desktop assessment concludes that the proposed alignment and associated infrastructure are unlikely to create any important impacts associated with obtrusive lighting into the external environment as a result of the likely construction activities or permanent Project lighting. As there is limited Project lighting proposed, many of the viewpoints are not anticipated to be affected by night lighting. Table 10-80 presents a summary of the baseline analysis and overall likely visual impact anticipated during the operations stage of the Project for each viewpoint. The most significant effect during construction is up to **moderate** (Viewpoint 19: View from Athol) and the most significant effect for operations is **negligible** (Viewpoint 8: Blackwell Road looking towards Millmerran–Inglewood Road and Viewpoint 4: Millmerran Inglewood Road towards level crossing).

TABLE 10-80 SUMMARY OF LIGHTING ASSESSMENT (CONSTRUCTION AND OPERATION)

Viewpoint name	Viewpoint sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Potential visual effect	Magnitude of change	Potential visual effect
Viewpoint 1: Rainbow Reserve near Kildonan Road, Kurumbul	Moderate	Negligible (construction and operation)	Low (construction and operation)	Low (construction and operation)	Low (construction and operation)
Viewpoint 2: Cunningham Highway near Yelarbon towards proposed Yelarbon non-resident workforce accommodation facility	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
		No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
Viewpoint 3: Yelarbon rest area	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)
Viewpoint 4: Yelarbon silo artwork viewing area	Moderate	Low (construction and operation)	Low (construction and operation)	Low (construction and operation)	Low (construction and operation)
Viewpoint 5: Cunningham Highway Near Whetstone rest area	Low	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)
Viewpoint 6: Millmerran–Inglewood Road towards Millmerran–Inglewood Road level crossing	Low	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)
Viewpoint 7: Millmerran-Inglewood Road towards proposed Inglewood non-resident workforce accommodation facility	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
		No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
Viewpoint 8: Millmerran–Inglewood Road near Nicol Creek Road	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
Viewpoint 9: Millmerran–Inglewood Road towards Millmerran–Inglewood Road rail bridge #2	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)

Viewpoint name	Viewpoint sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Potential visual effect	Magnitude of change	Potential visual effect
Viewpoint 10: Mount Basalt Reserve, looking towards Millmerran	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
Viewpoint 11: Blackwell Road looking towards Millmerran–Inglewood Road	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
Viewpoint 12: Commodore Peak picnic area looking towards Millmerran Power Station	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
Viewpoint 13: Millmerran–Inglewood Road towards Millmerran–Inglewood Road rail bridge #3	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
Viewpoint 14: Nardoo Street edge of Millmerran	Moderate	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Negligible (operation)	Low (operation)	Negligible (operation)	Low (operation)
Viewpoint 15: Turallin Road towards the proposed Turallin facility	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
		No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
Viewpoint 16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
Viewpoint 17: Gore Highway towards Condamine River crossing and floodplain	Low	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)
Viewpoint 18: Gore Highway near service station, Pampas	Moderate	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Low (operation)	Low (operation)	Low (operation)	Low (operation)
Viewpoint 19: Gore Highway towards Condamine River (north branch) crossing	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
Viewpoint 20: Near Brookstead State School	Moderate	Negligible (construction)	Low (construction)	Negligible (construction)	Low (construction)
		Low (operation)	Low (operation)	Negligible (operation)	Low (operation)

Viewpoint name	Viewpoint sensitivity	Initial significance[1]		Residual significance[2]	
		Magnitude of change	Potential visual effect	Magnitude of change	Potential visual effect
Viewpoint 21: Glen Devon Road looking south from elevated private residential lots	Low	No Impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
Viewpoint 22: Pittsworth-Felton Road near Pittsworth Motor Inn	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)
Viewpoint 23: Stanley Street near local park, Pittsworth	Moderate	No Impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Negligible (operation)	Low (operation)	Negligible (operation)	Low (operation)
Viewpoint 24: Pittsworth and District Assembly of God, Pittsworth	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)
Viewpoint 25: Gore Highway near Southbrook	Moderate	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
		Negligible (operation)	Low (operation)	Negligible (operation)	Low (operation)
Viewpoint 26: View from Athol School Road	Moderate	Low (construction)	Low (construction)	Moderate	Low (construction)
		Negligible (operation)	Low (operation)	Negligible (operation)	Low (operation)
Viewpoint 27: Toowoomba–Cecil Plains Road near private lot 'Burton'	Low	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)
Viewpoint 28: Linora Drive, Gowrie Mountain	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)
Viewpoint 29: Mount Kingsthorpe Summit scenic lookout	Low	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)

Table notes:
1. Application of mitigation measures specified in Section 10.6.1
2. Application of mitigation measures specified in Section 10.6.2

10.8 Residual impact

Potential impacts to landscape and visual values associated with the construction works and operations stages of the Project are outlined in Section 10.7.1, Section 10.7.2 and Section 10.7.3. These potential impacts have been subjected to an impact assessment as per the methodology introduced in Chapter 4: Assessment Methodology and described in Section 10.3.

The initial impact assessment is undertaken on the assumption that the design considerations (or initial mitigation measures) factored into the reference design stage (Section 10.6.1) have been implemented.

Additional mitigation and management measures (Table 10-76) were then applied to future stages of the Project to further reduce the level of potential impact and derive a residual significance of impact.

The initial and residual significance of potential impacts are presented in Table 10-81 to demonstrate the effectiveness of mitigation measures.

TABLE 10-81 INITIAL AND RESIDUAL IMPACT SIGNIFICANCE ASSESSMENT

Aspect	Stage	Landscape character type/viewpoint	Sensitivity	Initial significance[1]		Residual significance[2]	
				Magnitude	Significance	Magnitude	Significance
Landscape impacts	Construction and Operation	LCT A: Vegetated watercourses—rivers	Moderate	Moderate	Moderate	Low	Low
		LCT B: Vegetated watercourses—creeks and channels	Low	Moderate	Low	Moderate	Low
		LCT C: Irrigated croplands	Low	Low	Negligible	Low	Negligible
		LCT D: Dry croplands and pastures	Low	High	Moderate	High	Moderate
		LCT E: Vegetated grazing	No Impact	No impact	No impact	No impact	No impact
		LCT F: Rural settlement	Moderate	High	High	Moderate	Moderate
		LCT G: Rural living	Moderate	Moderate	Moderate	Moderate	Moderate
		LCT H: Forested uplands	High	No impact	No impact	No Impact	No impact
		LCT I: Settled hills	Moderate	High	High	High	High
		LCT J: Suburban living	Moderate	Low	Low	Low	Low
		LCT K: Salinity scald	Low	Low	Negligible	Low	Negligible
		LCT L: Transitional landscapes	No impact	No impact	No impact	No impact	No impact
Visual impacts	Construction	Viewpoint 1: Rainbow Reserve near Kildonan Road, Kurumbul	Moderate	Low	Low	Low	Low
		Viewpoint 2: Cunningham Highway near Yelarbon towards proposed Yelarbon non-resident workforce accommodation facility	Low	Moderate	Low	Low	Negligible
		Viewpoint 3: Yelarbon rest area	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 4: Yelarbon silo artwork viewing area	Moderate	Low	Low	Low	Low
		Viewpoint 5: Cunningham Highway Near Whetstone rest area	Low	Negligible	Negligible	Negligible	Negligible
		Viewpoint 6: Millmerran–Inglewood Road towards Millmerran–Inglewood Road level crossing	Low	Moderate	Low	Moderate	Low
		Viewpoint 7: Millmerran-Inglewood Road towards proposed Inglewood non-resident workforce accommodation facility	Low	Moderate	Low	Low	Negligible

Aspect	Stage	Landscape character type/viewpoint	Sensitivity	Initial significance[1]		Residual significance[2]	
				Magnitude	Significance	Magnitude	Significance
		Viewpoint 8: Millmerran–Inglewood Road near Nicol Creek Road	Low	Low	Negligible	Low	Negligible
		Viewpoint 9: Millmerran–Inglewood Road towards Millmerran–Inglewood Road Rail Bridge #2	Low	Moderate	Low	Moderate	Low
		Viewpoint 10: Mount Basalt Reserve, looking towards Millmerran	Moderate	Low	Low	Low	Low
		Viewpoint 11: Blackwell Road looking towards Millmerran–Inglewood Road	Low	Moderate	Low	Moderate	Low
		Viewpoint 12: Commodore Peak picnic area looking towards Millmerran Power Station	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 13: Millmerran-Inglewood Road towards Millmerran–Inglewood Road rail bridge #3	Low	Moderate	Low	Moderate	Low
		Viewpoint 14: Nardoo Street edge of Millmerran	Moderate	Negligible	Low	Negligible	Low
		Viewpoint 15: Turallin Road towards the proposed Turallin facility	Low	Moderate	Low	Low	Negligible
		Viewpoint 16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain	Low	Moderate	Low	Moderate	Low
		Viewpoint 17: Gore Highway towards Condamine River crossing and floodplain	Low	Low	Negligible	Low	Negligible
		Viewpoint 18: Gore Highway near service station, Pampas	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 19: Gore Highway towards Condamine River (north branch) crossing	Low	Moderate	Low	Moderate	Low
		Viewpoint 20: Near Brookstead State School	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 21: Glen Devon Road looking south from elevated private residential lots	Low	Moderate	Low	Moderate	Low
		Viewpoint 22: Pittsworth–Felton Road near Pittsworth Motor Inn	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 23: Stanley Street near local park, Pittsworth	Moderate	Low	Low	Moderate	Low

Aspect	Stage	Landscape character type/viewpoint	Sensitivity	Initial significance[1]		Residual significance[2]	
				Magnitude	Significance	Magnitude	Significance
		Viewpoint 24: Pittsworth and District Assembly of God	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 25: Gore Highway near Southbrook	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 26: View from Athol	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 27: Toowoomba–Cecil Plains Road near private lot 'Burton'	Low	Moderate	Low	Moderate	Low
		Viewpoint 28: Linora Drive, Gowrie Mountain	Moderate	Low	Low	Low	Low
		Viewpoint 29: Mount Kingsthorpe Summit scenic lookout	High	Low	Moderate	Low	Moderate
	Operation	Viewpoint 1: Rainbow Reserve near Kildonan Road, Kurumbul	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 2: Cunningham Highway near Yelarbon towards proposed Yelarbon non-resident workforce accommodation facility	Low	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
		Viewpoint 3: Yelarbon rest area	Moderate	High	High	High	High
				High (noise barriers)	High (noise barriers)	High (noise barriers)	High (noise barriers)
		Viewpoint 4: Yelarbon silo artwork viewing area	Moderate	Moderate	Moderate	Moderate	Moderate
				High (noise barriers)	High (noise barriers)	High (noise barriers)	High (noise barriers)
		Viewpoint 5: Cunningham Highway Near Whetstone rest area	Low	Low	Negligible	Low	Negligible
		Viewpoint 6: Millmerran–Inglewood Road towards Millmerran-Inglewood Road level crossing	Low	High	Moderate	High	Moderate
		Viewpoint 7: Millmerran-Inglewood Road towards proposed Inglewood non-resident workforce accommodation facility	Low	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No Impact (decommissioned)
		Viewpoint 8: Millmerran-Inglewood Road near Nicol Creek Road	Low	Moderate	Low	Moderate	Low

Aspect	Stage	Landscape character type/viewpoint	Sensitivity	Initial significance[1]		Residual significance[2]	
				Magnitude	Significance	Magnitude	Significance
		Viewpoint 9: Millmerran-Inglewood Road towards Millmerran-Inglewood Road Rail Bridge #2	Low	High	Moderate	High	Moderate
		Viewpoint 10: Mount Basalt Reserve, looking towards Millmerran	Moderate	Low	Low	Low	Low
		Viewpoint 11: Blackwell Road looking towards Millmerran–Inglewood Road	Low	Moderate	Low	Moderate	Low
		Viewpoint 12: Commodore Peak picnic area looking towards Millmerran Power Station	Moderate	Low	Low	Low	Low
		Viewpoint 13: Millmerran–Inglewood Road towards Millmerran–Inglewood Road rail bridge #3	Low	High	Moderate	High	Moderate
		Viewpoint 14: Nardoo Street edge of Millmerran	Moderate	Negligible	Low	Negligible	Low
		Viewpoint 15: Turallin Road towards the proposed Turallin facility	Low	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
		Viewpoint 16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain	Low	Moderate	Low	Moderate	Low
		Viewpoint 17: Gore Highway towards Condamine River crossing and floodplain	Low	Moderate	Low	Moderate	Low
		Viewpoint 18: Gore Highway near service station, Pampas	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 19: Gore Highway towards Condamine River (north branch) crossing	Low	Moderate	Low	Moderate	Low
		Viewpoint 20: Near Brookstead State School	Moderate	High	High	Moderate	Moderate
				High (noise barriers)	High (noise barriers)	High (noise barriers)	High (noise barriers)
		Viewpoint 21: Glen Devon Road looking south from elevated private residential lots	Low	Moderate	Low	Moderate	Low
		Viewpoint 22: Pittsworth-Felton Road near Pittsworth Motor Inn	Moderate	High	High	High	High
				High (noise barriers)	High (noise barriers)	High (noise barriers)	High (noise barriers)

Aspect	Stage	Landscape character type/viewpoint	Sensitivity	Initial significance[1]		Residual significance[2]	
				Magnitude	Significance	Magnitude	Significance
		Viewpoint 23: Stanley Street near local park, Pittsworth	Moderate	Moderate	Moderate	Low	Low
				High (noise barriers)	High (noise barriers)	Moderate (noise barriers)	Moderate (noise barriers)
		Viewpoint 24: Pittsworth and District Assembly of God, Pittsworth	Moderate	High	High	High	High
				High (noise barriers)	High (noise barriers)	High (noise barriers)	High (noise barriers)
		Viewpoint 25: Gore Highway near Southbrook	Moderate	High	High	Moderate	Moderate
		Viewpoint 26: View from Athol School Road	Moderate	High	High	High	High
		Viewpoint 27: Toowoomba–Cecil Plains Road near private lot 'Burton'	Low	High	Moderate	High	Moderate
		Viewpoint 28: Linora Drive, Gowrie Mountain	Moderate	Moderate	Moderate	Moderate	Moderate
		Viewpoint 29: Mount Kingsthorpe Summit Scenic Lookout	High	Moderate	High	Moderate	High
Lighting impacts	Construction/ Operation	Viewpoint 1: Rainbow Reserve near Kildonan Road, Kurumbul	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)
		Viewpoint 2: Cunningham Highway near Yelarbon towards proposed Yelarbon non-resident workforce accommodation facility	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
				No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
		Viewpoint 3: Yelarbon Rest Area	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)
		Viewpoint 4: Yelarbon silo artwork viewing area	Moderate	Low (construction and operation)	Low (construction and operation)	Low (construction and operation)	Low (construction and operation)
		Viewpoint 5: Cunningham Highway Near Whetstone rest area	Low	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)

Aspect	Stage	Landscape character type/viewpoint	Sensitivity	Initial significance[1]		Residual significance[2]	
				Magnitude	Significance	Magnitude	Significance
		Viewpoint 6: Millmerran-Inglewood Road towards Millmerran-Inglewood Road level crossing	Low	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)
		Viewpoint 7: Millmerran-Inglewood Road towards proposed Inglewood non-resident workforce accommodation facility	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
				No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
		Viewpoint 8: Blackwell Road looking towards Millmerran–Inglewood Road	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
		Viewpoint 9: Millmerran-Inglewood Road towards Millmerran-Inglewood Road rail bridge #2	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
				Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
		Viewpoint 10: Mount Basalt Reserve, looking towards Millmerran	Low	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)
		Viewpoint 11: Blackwell Road looking towards Millmerran-Inglewood Road	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
		Viewpoint 12: Commodore Peak picnic area looking towards Millmerran Power Station	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
		Viewpoint 13: Millmerran-Inglewood Road towards Millmerran-Inglewood Road rail bridge #3	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
				Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)

Aspect	Stage	Landscape character type/viewpoint	Sensitivity	Initial significance[1]		Residual significance[2]	
				Magnitude	Significance	Magnitude	Significance
		Viewpoint 14: Gore Highway towards Condamine River (north branch) crossing	Moderate	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Negligible (operation)	Low (operation)	Negligible (operation)	Low (operation)
		Viewpoint 15: Turallin Road towards the proposed Turallin facility	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
				No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)	No impact (decommissioned)
		Viewpoint 16: Millmerran-Leyburn Road towards Condamine River crossing and floodplain	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
		Viewpoint 17: Gore Highway towards Condamine River crossing and floodplain	Low	Negligible (construction)	Negligible (construction and operation)	Negligible (construction)	Negligible (construction and operation)
		Viewpoint 18: Gore Highway near service station, Pampas	Moderate	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Low (operation)	Low (operation)	Low (operation)	Low (operation)
		Viewpoint 19: Gore Highway towards Condamine River (north branch) crossing	Low	Low (construction)	Negligible (construction)	Low (construction)	Negligible (construction)
				Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
		Viewpoint 20: Near Brookstead State School	Moderate	Negligible (construction)	Low (construction)	Negligible (construction)	Low (construction)
				Low (operation)	Low (operation)	Low (operation)	Low (operation)
		Viewpoint 21: Glen Devon Road looking south from elevated private residential lots	Low	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Negligible (operation)	Negligible (operation)	Negligible (operation)	Negligible (operation)
		Viewpoint 22: Pittsworth-Felton Road near Pittsworth Motor Inn	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)

Aspect	Stage	Landscape character type/viewpoint	Sensitivity	Initial significance[1]		Residual significance[2]	
				Magnitude	Significance	Magnitude	Significance
		Viewpoint 23: Stanley Street near local park, Pittsworth	Moderate	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Negligible (operation)	Low (operation)	Negligible (operation)	Low (operation)
		Viewpoint 24: Pittsworth and District Assembly of God, Pittsworth	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)
		Viewpoint 25: Gore Highway near Southbrook	Moderate	No impact (construction)	No impact (construction)	No impact (construction)	No impact (construction)
				Negligible (operation)	Low (operation)	Negligible (operation)	Low (operation)
		Viewpoint 26: View from Athol School Road	Moderate	Low (construction)	Low (construction)	Low (construction)	Low (construction)
				Negligible (operation)	Low (operation)	Negligible (operation)	Low (operation)
		Viewpoint 27: Toowoomba-Cecil Plains Road, near private lot 'Burton'	Low	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)
		Viewpoint 28: Linora Drive, Gowrie Mountain	Moderate	Negligible (construction and operation)	Low (construction and operation)	Negligible (construction and operation)	Low (construction and operation)
		Viewpoint 29: Mount Kingsthorpe summit scenic lookout	Negligible	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)	Negligible (construction and operation)

Table notes:
1. Initial mitigation only
2. Assessment including additional mitigation measures

10.9 Conclusion

The key landscape and visual impacts of the Project relate to the introduction of rail infrastructure into relatively intact rural and natural settings, the removal of vegetation, along with the provision of new infrastructure elements, including embankments, deep cuts, viaducts and new road and rail bridges.

Twelve LCTs have been identified within the Project footprint. Two character areas were assessed from a visual amenity perspective as being highly sensitive to change:

- LCT I: Settled hills—which comprises landscapes of high local scenic value as identified in the Toowoomba Regional Council *Scenic Amenity Study* (Conics, 2009)
- LCT F: Rural settlement—which includes the landscapes around the settlements of Yelarbon, Brookstead and Pittsworth.

No significant impacts have been identified on landscapes of high scenic amenity identified through the regional scenic amenity methodology or in the Toowoomba Regional Council *Scenic Amenity Study* (Conics, 2009); however, the Project has the potential to impact upon landscapes identified as having high scenic amenity value in the *Toowoomba Region Scenic Amenity Study* (Lat27, 2021b). This includes potential direct landscape impacts on:

- Tree-lined watercourses, particularly the Condamine River (LCA A01 and A02) and other tributaries traversed by the alignment
- Elevated and timbered hills in the vicinity of Pittsworth (LCA I01).

The number of visual receptors varies greatly across the Project footprint. Localities with high numbers of receptors include the various population centres close to the alignment, at Kingsthorpe, Gowrie Mountain, Southbrook, Pittsworth, Brookstead, Pampas and Yelarbon, as well as numerous rural living areas. Additionally, views can be obtained from roads throughout the area, including the Cunningham Highway, Gore Highway, Warrego Highway and tourist drives (including parts of the Warrego Way and Adventure Way, Rural Getaway, Open Plains Country Drive and Border Rivers Tourist Drive routes).

Visual impacts are often contained by existing vegetation and landform. There are some elevated areas affording views over a wider area. These include three scenic lookouts at Mount Basalt Reserve, Commodore Peak Picnic Area and Mount Kingsthorpe summit. These lookouts are situated at varying distances to the proposed alignment.

Twenty-nine representative viewpoints have been assessed to represent impacts on these views. Of these, seven visual impacts of up to a high level of effect were identified for the Project prior to the application of mitigation. These comprise the impact:

- Of the Cunningham Highway road-bridge and the introduction of additional rail infrastructure
- Of the new road bridge and embankments north of Brookstead and additional rail infrastructure near Brookstead State School
- Of bridges and large embankments on the northern edge of Pittsworth near Pittsworth Motor Inn
- Of the large cuts and embankments close to rural residential lots near Southbrook
- Of large embankments and new rail and bridge infrastructure at Pittsworth and District Assembly of God, Pittsworth
- Of embankments and a proposed controlled level crossing in proximity to existing rural residential lots near Athol School Road
- On views obtained from the summit of Mount Kingsthorpe lookout.

An additional six representative viewpoints were identified that would be further adversely impacted should it be determined that noise barriers are required.

The revised reference design has incorporated a range of landscape mitigation measures. The assessment has identified a need for additional mitigation measures in Project delivery, including undertaking an updated visual impact assessment during the detailed design stage to address design refinements, undertaking a wildlife lighting assessment during the detailed design phase in accordance with DCCEEW's *National Light Pollution Guidelines for Wildlife*, consultation with key stakeholders, protection of existing vegetation, rehabilitation of disturbed vegetation and opportunities for urban design of key structures.