

APPENDIX

AA

Traffic Impact Assessment

Part 1 of 4

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

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Glossary

Abbreviation	Definition
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
ALCAM	Australian Level Crossing Assessment Model
AG	Anti-gazettal
ARTC	Australian Rail Track Corporation
AUL	Auxiliary Left Turn
AUL(s)	Auxiliary Left Turn (short)
BAL	Basic left turn
BAR	Basic right turn
BSC	Balonne Shire Council
CEMP	Construction Environmental Management Plan
Ch	Chainage (in kilometres)
CHL	Channelised Left Turn
CHR	Channelised Right Turn
CHR(s)	Channelised Right Turn (short)
CTC	Centralised Train Control
DTMR	Department of Transport and Main Roads (Queensland)
E	East
EB	Eastbound
EIS	Environmental Impact Statement
FFJV	Future Freight Joint Venture
FSI	Fatal/serious injury
G	Gazettal
GRC	Goondiwindi Regional Council
GTIA	Guidelines to Traffic Impact Assessment
hr	hour
HV	Heavy vehicle
km	kilometre
LGA	Local Government Area
LGR	Local Government Roads
LOS	Level of Service
LT	Intersection left turn movement
LV	Light vehicle
m	metre
MPSC	Moree Plains Shire Council (New South Wales)
N	North
NB	Northbound
NE	North-east
NHVR	National Heavy Vehicle Regulator
NS2B	North Star to NSW/Queensland Border Project

Abbreviation	Definition
NSW	New South Wales
NW	North-west
OSOM	Oversize, overmass vehicles
ONRSR	Office of the National Rail Safety Regulator
PIA	Pavement Impact Assessment
PCE	Passenger car equivalent
PCNP	Queensland Principal Cycle Network Plans
The Project	NSW/Qld Border to Gowrie section of the Inland Rail Program
QLCSS	Queensland Level Crossing Safety Strategy
Qld	Queensland
QPS	Queensland Police Service
QR	Queensland Rail
RAV	Restricted access vehicles
RMAR	Rail maintenance access roads
RSNL	Rail Safety National Law
RT	Intersection right turn movement
RUMP	Road Use Management Plan
S	South
SAR	standard axle repetitions
SAR4	Standard Axle Repetition with a load damage exponent of 4
SB	Southbound
SCR	New South Wales State roads and Queensland State-controlled roads
SE	South east
SIDRA	Signalised & Un-signalised Intersection Design and Research Aid
SFAIRP	So Far As Is Reasonably Practicable
SW	South-west
T	Intersection through movement
TAL	Tonne Axle Load
TCPs	Traffic Control Plans
TEU	Twenty foot equivalent unit
TfNSW	Transport for New South Wales (formerly Roads and Maritime Services)
TIA	Traffic Impact Assessment
TMSs	Traffic Management Strategies
TP&C Act	<i>Transport Planning and Coordination Act 1994</i>
TRC	Toowoomba Regional Council
UT	Intersection U-turn movement
W	West
WB	Westbound
WCLT	Wide centre line treatment

1 Introduction

1.1 Background

1.1.1 Project overview

The Australian Rail Track Corporation (ARTC) proposes to construct and operate the New South Wales/Queensland (NSW/QLD) Border to Gowrie Project (the Project), a 217.48 kilometres (km) section of the Inland Rail Program connecting metropolitan Melbourne to Brisbane. It comprises approximately 149.48 km of new track, within new rail corridor (greenfield) and approximately 68.00 km of upgraded track within existing rail corridor (brownfield), currently used by Queensland Rail (QR) South Western Line and Millmerran Branch Line.

The Project is in South East Queensland (SEQ), starting at the NSW/Queensland border, approximately 18 km to the south east of Goondiwindi near Kurumbul. From this location, the alignment heads in a northerly direction for approximately 7 km before joining the QR South Western Line to the east of Kildonan, within the existing rail corridor. The Project continues within the South Western Line rail corridor for 46.8 km through Yelarbon and towards Inglewood before turning off and becoming a greenfield alignment near Whetstone. The Project will upgrade this section to a dual gauge track and construct a temporary Material Distribution Centre (MDC) to support the construction activities across the Queensland Inland Rail Projects. The alignment skirts the hills to the west of Inglewood and then follows a new corridor alongside Millmerran-Inglewood Road before joining the existing Millmerran Branch Line rail corridor between Millmerran and Yandilla.

The Millmerran Branch Line is regarded as being operational, however, it is disused south of Brookstead due to track damage sustained in the 2011 floods. The Project will upgrade 21.2 km of track within the Millmerran Branch Line to a dual gauge track. Within the Millmerran Branch rail corridor, the Project crosses the Condamine River floodplain, continuing via Pampas and Brookstead before deviating from the Millmerran Branch Line at Yarranlea.

The rail corridor is mainly greenfield from this point and runs along the northern side of the Gore Highway, passing on the northern side of Pittsworth. The alignment then follows a north-easterly direction passing through the north-western side of Southbrook. From here, the alignment follows a more northerly direction as it passes through Athol and to the west of the Toowoomba Wellcamp Airport, through the Wellcamp Industrial Precinct. The alignment passes to the west of Gowrie Mountain and crosses the Warrego Highway before connecting to the Gowrie to Helidon section of the Inland Rail between Leeson Road and Draper Road, on the south eastern outskirts of Kingsthorpe. It crosses the two Local Government Areas (LGA) of Goondiwindi and Toowoomba.

The Project is one of the missing links within the Inland Rail Program. As part of the broader Inland Rail Program, the Project provides a more direct route between Melbourne and Brisbane in comparison with the existing inland and coastal road and rail networks and meets the Federal Government's objective of providing a long-term rail solution for competitive freight movement. Further details on the justification of the Project are provided in Environmental Impact Statement (EIS) Chapter 2: Project Rationale.

1.1.2 Relevant legislation, policy, and guidelines

Table 1.1 identifies the relevant policies, standards and guidelines that apply to the assessment of traffic and transport for the Project. Legislation that applies to the Project is discussed in EIS Chapter 3: Legislation and Project Approvals Process.

Although the Project is solely located in Queensland, construction traffic is generated in NSW as well as Queensland. For this reason, NSW legislation has also been included in Table 1.1.

Table 1.1 Summary of legislation, policies, and guidelines

Legislation, policy/standard, or guideline	Relevance to the Project
Legislation	
<i>Transport Planning and Coordination Act 1994</i> (Qld) (TP&C Act)	The objectives of the TP&C Act are to improve the economic, trade and regional development performance of Queensland and the quality of life of Queenslanders by achieving overall transport effectiveness and efficiency through strategic planning and management of transport resources. This Act is relevant to the planning and coordination of the Project.
<i>Transport Infrastructure Act 1994</i> (Qld)	The overall objective of the <i>Transport Infrastructure Act 1994</i> is to provide a regime that allows for and encourages effective integrated planning and efficient management of a system of transport infrastructure. This is consistent with the objectives of the TP&C Act. Any crossings of existing rail lines or works within existing rail corridor will trigger s255-<i>Interfering with railway</i> and will require the approval of the railway manager. Any works within State-controlled roads (SCR) or access to SCR (during construction) will trigger the following approvals and requirements under the TI Act: ■ Section 33 – Approval to interfere with or carry out works on a SCR ■ Section 50 – Approval for ancillary works and encroachments on a SCR ■ Section 62 – Management of access between individual properties and SCR ■ Section 66 – Road access works within SCR. Post-EIS and the issuing of the Coordinator-General's evaluation report, approvals under the TI Act will be obtained for the Project as required.
<i>Transport Coordination Plan 2017-2027</i> (Qld) (DTMR 2017)	The Transport Coordination Plan provides a framework for the coordinated planning and management of transport in Queensland over the next decade and a high-level response to the State Government's objectives and policies for the transport system. The plan is consistent with – and seeks to provide a transport-specific response to – the Queensland Government's overall strategic planning for Queensland, including the government's objectives for the community and the State Infrastructure Plan. The overall objective is to encourage effective integrated planning and efficient management of transport infrastructure.
<i>Land Act 1994</i> (Qld) (Land Act)	The Land Act prescribes the framework for the allocation of non-freehold land tenure and its subsequent management. Under Chapter 4, Part 4 of the Land Act, permits are required for the occupation of unallocated State land, a reserve or a road. A permit to occupy will also be required for any underground infrastructure that is proposed beneath land governed by State held tenure. Chapter 3, Part 2, Division 2 of the Land Act contains the provisions relating to the temporary or permanent closure of a road, including SCR and Local Government Roads (LGR) and declared stock routes.
<i>Rail Safety National Law (Qld) Act 2017</i> (RSNL Act)	The purpose of the RSNL Act is to provide for safe railway operations in Australia. One objective of the RSNL Act is to establish the Office of the National Rail Safety Regulator (ONRSR) as the rail safety regulator in Queensland. The RSNL Act was created following an agreement of the Council of Australian Governments to deliver a consistent approach to rail safety policy and regulations (and to remove the inconsistencies) between the previous State and territory rail safety regimes. The RSNL Act governs the safe operation of the rail system in Queensland. The ongoing operation of the Project will need to comply with all areas of the RSNL Act, covering rail industry work practices and protocols for safe working in rail corridors and associated accreditation, signalling and control, the ongoing management of structures and civil works, interfaces with public roads and highways and other activities impacting on rail safety.
<i>Local Government Act 2009</i> (Qld) (Local Government Act)	The Local Government Act sets out the responsibilities of local government authorities with regard to the construction, improvement, control and management of traffic on local roads (excluding SCR). A local government authority may temporarily or permanently close a local road to traffic in accordance with the Local Government Act. An adjoining landowner must apply under the Land Act to close a local road temporarily or permanently.
<i>Stock Route Management Act 2002</i> (Qld)	The Queensland stock route network is a network of stock routes and reserves for travelling stock in the State. The <i>Stock Route Management Act 2002</i> (Queensland) provides for managing the stock route network, recognising that the network has multiple uses with the primary purpose being for travelling stock (refer Section 98 (2) (a)). All stock routes are classified as roads under the Land Act.

Legislation, policy/standard, or guideline	Relevance to the Project
<i>Transport Administration Act 1988</i> (NSW)	The objectives of the <i>Transport Administration Act 1988</i> (NSW) relate to administering the transport services provided to the people of NSW and include: ■ Providing an efficient and accountable framework for the governance of the delivery of transport services ■ Promoting the integration of the transport system ■ Enabling effective planning and delivery of transport infrastructure and services ■ Facilitating the mobilisation and prioritisation of key resources across the transport sector ■ Coordinating the activities of those engaged in the delivery of transport services ■ Maintaining independent regulatory arrangements for securing the safety of transport services. This Act is relevant to the movement of construction materials on NSW roads within the Project.
<i>Heavy Vehicle (Mass, Dimension and Loading) National Regulation</i> (Queensland Government, 2013)	The Heavy Vehicle (Mass, Dimension and Loading) National Regulation is a law of Queensland under the Heavy Vehicle National Law (Qld). If required and necessary for the Project, all restricted access vehicles (RAV) and oversize overmass (OSOM) vehicles required to transport special equipment will apply for the necessary permits from the Department of Transport and Main Roads (DTMR) and other relevant authorities and should comply with this law.
<i>Road Transport Act of 2013</i> (NSW)	The elements of the <i>Road Transport Act of 2013</i> (NSW) relevant to the Project are to govern the application of traffic control devices, electrical equipment or other facilities on roads or road shoulders, footpaths, structures under or over the Project and control of vehicles (other than vehicles used on the railway itself) and animals along construction routes within NSW.
Plans and strategies	
<i>South East Queensland Regional Plan</i> (Qld Government, 2017)	The purpose of the SEQ Regional Plan, 2017 (also known as Shaping SEQ) is to manage regional growth and change in the most sustainable way to protect and enhance quality of life in the region. It is the Queensland Government's plan to guide the future of the SEQ region and prepared in collaboration with the region's 12 local governments ensuring the land use and infrastructure planning are integrated in SEQ and maximising the use of existing infrastructure and planning for smarter solutions for new infrastructure. The Project is consistent with the outcomes sought through the SEQ Regional Plan by reinforcing SEQ as the apex of Australia's strategic freight network and further strengthen the Toowoomba Regional Economic Hub as a significant inland port.
<i>State Planning Policy 2017</i>	The State Planning Policy is a key component of the Queensland land use planning system which articulates the Queensland Government's 17 State interests in land use planning and development across the following five key themes: ■ Liveable communities and housing ■ Economic growth ■ Environment and heritage ■ Safety and resilience to hazards ■ Infrastructure. The State Planning Policy is a statutory instrument and requires that State interests be integrated into local government planning schemes. Some State interests in the State Planning Policy include assessment benchmarks that apply to certain types of development where a local government planning scheme does not appropriately integrate the relevant State interest. State interests relevant to the Project include: ■ Infrastructure integration - The Project supports this State interest through the expansion of existing infrastructure associated with the introduction of a heavy freight rail between Melbourne and Brisbane. The Project will also improve efficiencies and performance of rail infrastructure through the Toowoomba Range and interoperability between the ARTC and QR networks. The Project also is open access so passenger services can utilise the rail corridor, while the design does not preclude a fast rail passenger service within the Gowrie to Grandchester future State transport corridor at a future date (e.g. the design avoids proposed passenger stations).

Legislation, policy/standard, or guideline	Relevance to the Project
	- Transport infrastructure - The Project supports this State interest by utilising the existing West Moreton System rail corridor and the Gowrie to Grandchester future State transport corridor where possible. Furthermore, the Project has considered and assessed potential impacts to surrounding transport networks and land uses. - Strategic airports and aviation facilities – The Project will not create incompatible intrusions or compromise the safety or function of the strategic airports in the region, including Toowoomba Wellcamp Airport, Toowoomba City Aerodrome and Royal Australian Air Force Amberley. There is also the potential for the better linkage between Inland Rail and the airports in the future.
<i>Queensland Walking Strategy 2019-2029</i>	The <i>Queensland Walking Strategy</i> coordinates and integrates the state's approach to walking so communities can be made better for people of all ages and abilities. The strategy suite includes several documents aimed at integrating walking as part of a single integrated transport system for all Queenslanders. The Project, both through construction and operation, will ensure appropriate measures are implemented to mitigate the impacts to pedestrians through impacted areas.
<i>Queensland Cycling Strategy 2017-2027</i>	The <i>Queensland Cycling Strategy 2017-2027</i> sets the strategic direction for cycling in Queensland over the next 10 years, detailing the priorities and action areas. The Project, both through construction and operation, will ensure appropriate measures are implemented to mitigate the impacts to cyclists through impacted areas.
<i>Cycling Infrastructure Policy (DTMR, 2017)</i>	The <i>Cycling Infrastructure Policy</i> aims to deliver the Queensland Government's vision for more cycling, more often and DTMR vision of a single integrated transport system accessible to everyone. This policy ensures that facilities are planned, designed and constructed to be fit for purpose, as a part of project delivery.
<i>Road Planning and Design Manual (DTMR, 2021)</i>	The <i>Road Planning and Design Manual</i> is DTMR's reference document for the planning and design of roads. It refers designers to the relevant Austroads publications for technical requirements and outlines where DTMR practice supplements or differs from the Austroads guides. Preliminary road designs undertaken as a part of the Project will be designed in accordance with the <i>Road Planning and Design Manual</i> where in Queensland.
<i>Darling Downs Regional Transport Plan (DTMR, 2013)</i>	The <i>Darling Downs Regional Transport Plan</i> serves the purpose of outlining regional transport initiatives, priorities, and actions aimed at developing a transport system that supports the community, economy, and environment in the region. This plan plays an essential role in shaping local strategies and policy choices, addressing transport system objectives, problems, and priorities at a regional level, while aligning with broader community goals. The B2G section alignment, traverses multiple LGAs within the Darling Downs region. The implementation of the Project presents opportunities for enhancing freight movement efficiency and alleviating congestion in passenger traffic across the network, as the Plan emphasizes that the region's current freight network primarily relies on major roads. Overall, the Inland Project aligns with the broader transport objectives listed in the <i>Darling Downs Regional Transport Plan</i>, including Objective 1.1, which focuses on providing safe, efficient, and reliable freight movement to industrial areas, intermodal facilities, and export gateways, as well as Objective 1.2, which emphasizes the importance of creating a competitive freight system capable of maximizing efficiency gains. Objective 3.1 also underscores the need to minimize crash opportunities in the region through the implementation of infrastructure that ensures customer safety and security. Lastly, Objective 4.1, to design, construct, operate and maintain the transport system that can be resilient to disruptions and support environmental sustainability.
<i>Toowoomba City Centre Master Plan: Master Plan Report (TRC, 2010)</i>	The <i>Toowoomba 'City Centre Master Plan'</i> aims to guide land use planning and transport, as well as identify key projects that will support the overall strategy outlined in the Plan. It provides recommendations on how planning schemes can be developed in order to achieve the aims of the master plan and also consists of an implementation plan which comprises of a series of action plans which support the overall Master Plan vision in the short, medium and long term. The Project passes through the local government area LGA governed by Toowoomba Regional Council (TRC). In accordance with Schedule 6, Part 5, Section 26(2) of the <i>Planning Regulation 2017</i>, provisions of this local government planning schemes do not apply to the Project. Notwithstanding this, the zoning intent for these areas as determined by the planning schemes have been taken into consideration when determining impacts of the Project on future land uses in the area.

Legislation, policy/ standard, or guideline	Relevance to the Project
<i>Toowoomba Region Sustainable Transport Strategy</i> (TRC, 2014)	The purpose of the <i>Toowoomba Region 'Strategy'</i> is to guide transport policy, integrated land use and transport planning, and future transport investment decisions to ensure sustainable economic growth of the region. The Strategy aims to set out the TRC's policy directions and actions around transport elements such as land use integration, public transport, active transport, freight and air travel and sets out key plans and projects to implement this policy direction. As the Project passes through the LGA of TRC, the Project will aim to adopt the actions/policies outlined in the strategy to improve land use integration, public transport, active transport, freight and air travel where necessary.
<i>Toowoomba Local Government Infrastructure Plan</i> (TRC, 2017a)	The <i>Toowoomba Local Government Infrastructure Plan (LGIP)</i> identifies trunk infrastructure plans for five networks, including transport. The purpose of the <i>LGIP</i> is to integrate infrastructure planning with the land use planning identified in <i>Toowoomba Regional Planning Scheme 2012</i> and ensure that trunk infrastructure is planned and provided in an efficient and orderly manner. The <i>LGIP</i> provides a summary of the existing and projected demand for the transport network within the Toowoomba LGA. These projections have been a point of reference when validating the data inputs to the traffic modelling for the Project.
<i>Goondiwindi Local Government Infrastructure Plan</i> (GRC, 2018)	The <i>Goondiwindi LGIP</i> identifies trunk infrastructure plans for five networks, including transport. The purpose of the <i>LGIP</i> is to integrate infrastructure planning with the land use planning identified in <i>Goondiwindi Region Planning Scheme 2018</i> and ensure that trunk infrastructure is planned and provided in an efficient and orderly manner. The <i>LGIP</i> provides a summary of the existing and projected demand for the transport network within the Goondiwindi LGA. These projections have been a point of reference when validating the data inputs to the traffic modelling for the Project.
Guidelines	
<i>Office of National Rail Safety Regulator Guideline: Major Projects</i> (ONRSR, 2016a)	The <i>ONRSR</i> is a regulatory agency that has been established under the <i>Rail Safety National Law (RSNL)</i> to administer a national system of rail safety regulation. All major railway projects will result in a requirement to either vary or obtain accreditation under the RSNL. This guideline describes the minimum processes to be followed, from the onset of a major project, in order to support accreditation applications. The ONRSR has developed this guideline to: ■ Provide guidance to duty holders about their duties and related obligations under the RSNL ■ Explain the ONRSR's minimum expectations when reviewing the processes and associated evidence used to demonstrate that safe outcomes are being planned and, ultimately, have been achieved by major projects. In relation to the delivery of major projects, the following are areas of particular interest to all parties: ■ Demonstration that the concept design minimises macro risk ■ Identification of the accredited party/parties ■ Demonstration of effective management and control: to ensure the safe management of change across all entities involved with the major project ■ Assuring safe outcomes: to gain confidence that safety risk is managed, 'so far as is reasonably practicable', in a manner appropriate to the complexity of the Project. As a major project, Inland Rail and this Project is expected to be compliant with the requirements of the RSNL. Adherence to the requirements of this guideline facilitates that compliance.
<i>ONRSR Guideline: Meaning of duty to ensure safety so far as is reasonably practicable - SFAIRP</i> (ONRSR, 2016b)	Sections 52, 53 and 54 of the RSNL provide that rail transport operators and associated industry participants (contractors, manufacturers, designers and suppliers) – referred to collectively as duty holders – have an obligation to ensure the safety of railway operations. These statutory duties do not require safety at any cost. Under section 46 of the RSNL, duty holders are required: ■ To eliminate risks to safety 'so far as is reasonably practicable' ■ If it is not reasonably practicable to eliminate risks to safety, to minimise those risks 'so far as is reasonably practicable'. The document provides guidance on the interpretation and application of the term 'so far as is reasonably practicable' (SFAIRP) in considering the standard that a duty holder is expected to meet under the RSNL and National Regulations.

Legislation, policy/standard, or guideline	Relevance to the Project
	In this context and under the RSNL (s47), reasonably practicable means that which is, or was at a particular time, reasonably able to be done to ensure safety, taking into account and weighing up all relevant matters including: ■ The likelihood of the hazard or the risk concerned occurring ■ The degree of harm that might result from the hazard or the risk ■ What the person concerned knows, or ought reasonably to know, about the hazard or risk and ways of eliminating or minimising the risk ■ The availability and suitability of ways to eliminate or minimise the risk ■ After assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk. The revised reference design for the Project, including locations of intersection with the existing transport network, has been developed to comply with requirements of the RSNL and the principles of SFAIRP.
<i>ONRSR Policy: Level Crossings</i> (ONRSR, 2019)	This policy sets out ONRSR's approach and broader expectations for improving the safety of railway operations with regard to existing level crossings and the early design of future road and rail intersections. The policy sets out the expectations that ONRSR has for the rail industry, road managers and governments to reduce the safety risk of level crossings. The design decision making process for road-rail intersections along the Project alignment has been conducted in reference to this policy.
<i>Queensland Level Crossing Safety Strategy 2012-2021</i> (DTMR, 2012)	The <i>Queensland Level Crossing Safety Strategy (QLCSS)</i> complements the National Railway Level Crossing Safety Strategy 2017-2020, which was released by the Australian Transport Council in 2009 to promote national consistency in addressing this important issue. The strategy focuses on all users of level crossings, including train crew and passengers, road vehicle drivers, riders, passengers and pedestrians. The strategy excludes private (occupational) crossings and crossings that are part of the cane rail network. These crossings, including any which may be accessible to the public, are a workplace health and safety matter and are managed under separate arrangements. For the purpose of the assessment, the <i>QLCSS</i> has been used, with its associated key performance indicators, in order to ensure that mitigation measures determined for all public road-rail interface locations (level crossings) through the analysis process focus on safety, risk and operational efficiency.
<i>Guideline to Traffic Impact Assessment, December 2018</i> (GTIA) (DTMR, 2018a)	The GTIA has been used as the basis for the traffic and transport assessment, as it relates to roads and intersections affected by the construction and operation of the Project. GTIA provides information about the processes involved to assess road impacts triggered by a proposed development. The GTIA provides a basis for the assessment of road impacts and has been adopted for the preliminary assessment on traffic and pavement impacts by the Project. Although the Guidelines only apply to the SCR, local governments may choose to adopt or use this as a reference. In general, the DTMR will consider a development's road impacts to be 'insignificant' if the development generates an increase in traffic on SCR of less than 5 per cent over existing levels, either measured in terms of annual average daily traffic (AADT) or standard axle repetitions (SAR). Inputs to the GTIA process typically include the existing traffic levels, the Project construction timeframe and that of other projects, volume of construction materials, haul vehicles and their capacities and therefore the number of new or additional Project-related trips likely to use the network. The use of the assessment process recommended in the GTIA will provide the Project with clarification on likely traffic impacts on nominated haulage routes, intersections and other affected roads. It is noted that an updated version of the GTIA was released in December 2018, after the Terms of Reference (ToR) for the Project were released. This assessment has been undertaken consistent with the updated 2018 GTIA that supersedes the ToR. As the Project follows the co-ordinated EIS process, the TIA may need to be updated when Project contractors are appointed and if the final traffic generation changes. This is consistent with the GTIA.
<i>Guideline to Traffic Impact Assessment Practice Note: Pavement Impact Assessment December 2018</i> (DTMR, 2018b)	This technical note provides further guidance beyond the GTIA for industry on how to prepare a Pavement Impact Assessment (PIA) using the new marginal cost methodology and the concept of SAR. This Practice Note should be read in conjunction with Chapter 13 of the GTIA. The Project has prepared the PIA consistent with the methodology outlined in this note.

Legislation, policy/ standard, or guideline	Relevance to the Project
<i>Manual of Uniform Traffic Control Devices Part 7: Railway Crossings</i> (DTMR, 2019b)	The use of signs, markings and other devices at railway level crossings, based on uniform standards and practices, is essential in the interests of safety for both rail traffic and road users. This Part of the <i>Manual of Uniform Traffic Control Devices</i> sets out the various controls used at railway, cane railway and combined railway/cane railway level crossings and describes the devices and assemblies, their use and their location to achieve these controls.
<i>Guide to Development in a Transport Environment: Rail</i> (DTMR, 2015a)	The <i>Guide to Development in a Transport Environment: Rail</i> (the guide) provides important information for the planning, design or delivery of development in the vicinity of railways in Queensland. It is intended for use as a technical reference document. The guide provides specific technical guidance to assist development proponents to achieve compliance with the performance outcomes and acceptable outcomes in the Queensland State Development Assessment Provisions in relation to managing the impacts of development on railway safety, structural integrity and operation. The guide also provides useful information in relation to the operational constraints and requirements when undertaking construction work within the railway environment.
<i>Road Safety Policy</i> (DTMR, 2022)	The <i>Road Safety Policy</i> aims to implement Safe System principles, processes and practices that will deliver reductions in the number of fatal and serious injury crashes on Queensland roads. This will contribute to moving towards the Queensland government's vision of zero road deaths and serious injuries and achieving the objective of building safe, caring and connected communities. The traffic impact assessment (TIA) considers permanent mitigations consistent with the Road Safety Policy.
<i>Austroads Guide to Traffic Management Part 12: Traffic Impact Assessments</i> (Austroads, 2016)	This Guide helps traffic and transport practitioners identify and manage the impacts on the road arising from land use developments. The impacts being considered are those directly affecting road users of all classes, from large freight vehicles and buses to cyclists and pedestrians. Transport which runs on separate alignments or are grade separated such as elevated bus rapid transit, metro rail or rail projects are not directly considered.
<i>Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis</i> (Austroads, 2017)	In the context of the <i>Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis</i> outlines the importance of traffic data and its analysis for the purpose of traffic management and traffic control within a network. It serves to ensure some degree of consistency in conducting traffic studies and surveys. It provides guidance on the different types of traffic studies and surveys that can be undertaken, their use and application and methods for traffic data collection and analysis. Traffic surveys undertaken for the Project were undertaken consistent with this Guide.
<i>Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections</i> (Austroads 2017b)	The <i>Austroads Guide to Road Design (AGRD) Part 4A: Unsignalised and Signalised Intersections</i> provides information regarding intersections, both signalised and unsignalised. Guidance is provided on intersection sight distances, as well as left and right turn treatments, including the incorporation of auxiliary lanes at intersections and the use and size of traffic islands. This is to ensure the proposed intersection improvements as a part of the Project are designed in accordance with the requirements.
<i>Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management.</i> (Austroads 2019a)	The guide is concerned with traffic management at all types of intersections where road users must join or cross another stream of traffic. It focuses on traffic management issues and treatments related to intersections, interchanges and crossings. Guidance on turning treatment warrants for the Project was adopted in determining the appropriate turn treatments at intersections.
<i>Austroads Guide to Traffic Management Part 4: Network Management Strategies.</i> (Austroads 2020)	This guide provides guidance on how to manage the road corridor network at the strategic level based on good practice, with the Guide recommending any practices differing from the Guide be based on sound engineering judgement and approved by the relevant road agency. Guidance is provided on the movement and place considerations for network types based on the user group (e.g. rural networks, bicycle networks, heavy vehicle (HV) networks and others) which has been incorporated into the Project where relevant.
<i>DTMR Cost-benefit Analysis manual, Part 4: Technical guide</i> (DTMR 2011)	The manual is a practical reference tool for DTMR staff and consultants evaluating the economic merits of transport and road projects. The manual provides theoretical road capacities which DTMR uses to support the project evaluation process. These road capacities are provided for various road types and terrains. The manual is used to provide guidance on the assessment approach for mid-block capacity assessments and was used as a reference in conjunction with the above-mentioned documents.

Legislation, policy/standard, or guideline	Relevance to the Project
<i>Australian Level Crossing Assessment Model (ALCAM)</i> (ALCAM 2016)	ALCAM is an assessment tool used to identify key potential risks at level crossings and to assist in the prioritisation of crossings for upgrades. The risk model is used to support a decision-making process regarding both road and pedestrian level crossings and to help determine traffic cost-effective treatments. This was used as the basis of the assessment ARTC undertook to determine road-rail interface treatments for the Project.
<i>Street Design Manual: Walkable Neighbourhoods</i> (Institute of Public Works Engineering Australasia Queensland, 2020)	The <i>Street Design Manual: Walkable Neighbourhoods (the Manual)</i> is a contemporary guide for the design and development of Queensland's residential neighbourhoods. These design guidelines are considered where roads and streets are designed in residential neighbourhoods as a part of the Project.
<i>Cycling Aspects of Austroads Guides</i> (Austroads, 2017c)	This guideline contains information that relates to the planning, design and traffic management of cycling facilities. The guideline provides: ■ An overview of planning and traffic management considerations and cross-references to other Austroads Guides and texts for further detailed information ■ A summary of design guidance and criteria relating to on-road and off-road bicycle facilities together with a high level of cross-referencing to the relevant Austroads Guides for further information ■ Information and cross-references on the provision for cyclists at structures, traffic control devices, construction and maintenance considerations and end-of-trip facilities.

1.2 Scope and study area

1.2.1 Report purpose

The TIA focuses on the Project's impact on the existing road and rail transport infrastructure and includes the following tasks:

- Provide an overview of existing transport network conditions and operations, including land use, surrounding road network, intersections, road safety, site access, public transport, active transport, pavement, and other transport infrastructure
- Description of the Revised draft EIS Project
- Provide a summary of construction tasks, routes and resulting traffic generated by the Project
- Conduct impact assessments associated with safety, access configurations, intersection turn warrants and delay, road link capacity, pavement, level crossing, cumulative impacts and other impacts associated with public and active transport and assets
- Describe potential impacts and measures to be undertaken to mitigate the identified impacts
- Provide a summary of potential traffic impact risks identified along the Project alignment
- Recommend future works during detailed design.

1.2.2 Report scope

The TIA has been updated in accordance with the additional information request from the Office of the Coordinator General (OCG) to form part of the revised draft EIS. The TIA partly addresses the Project specific transport matters outlined in the final Terms of Reference (ToR), with the relevant terms outlined in Table 1.2. This report assesses the traffic and transport impacts of the construction and operation of the Project on the surrounding transport infrastructure based on the Projects' current reference design. The report also summarises the potential road impacts from the movement of materials, workforce and equipment during construction and operation of the Project on the surrounding road network. The assessments were undertaken for public NSW and Queensland SCR and LGR.

The transport of materials, workforce and equipment during construction is expected to primarily utilise the existing road and rail transport networks. While some materials may be sourced internationally, the expected impact of the Project on the throughput of ports and airports is not considered to be significant during either construction or operation but has been considered in the report (Table 5.1).

A construction methodology has been developed to demonstrate the feasibility of delivering the Project. The TIA has assessed the construction transport task associated with this preliminary construction methodology. This methodology has assumed potential suppliers for all key materials required for the Project, which has established the spatial parameters for the TIA. Generally, suppliers local to the Project within Queensland have been assumed.

The construction routes assumed as a part of this assessment are routes which the construction contractor may use to transport materials from the assumed suppliers to the assumed nominated Project laydown areas. However, the determination of the final construction and HV routes may change subject to:

- Consultation and agreement between the construction contractor and the DTMR
- Consultation and agreement between the construction contractor and the relevant LGA
- Consultation and agreement between the construction contractor and QR
- Consultation and agreement between the construction contractor and another relevant key stakeholder or approval authority.

If needed, the TIA may require updating during the Detailed Design stage of the Project. This is consistent with Section 7.5 of DTMR's GTIA which states that the TIA "*may be finalised when project contractors are appointed, and final traffic generation is clearer.*" Until such time as DTMR have completed their final review of information provided by the construction contractor and provided confirmation on acceptance of such, the information provided should only be treated as 'for information only' and should not be solely relied upon.

1.2.3 Traffic impact assessment study area

The study area defined for the TIA consists of:

- The extent of the proposed rail corridor for the Project, including public roads intersecting the rail corridor (road-rail interface locations)
- Public roads impacted by the Project alignment, including changes to the local road network
- The road network anticipated to be used for the transport of workforce, materials and equipment during the Construction Works and Operations stages of the Project.

The TIA study area is the focus area for assessing impacts and determining appropriate mitigation measures for the Project. A break down of each specific impact assessment area by assessment type is detailed in Table 5.2.

The TIA does not include the consideration of impacts to private roads or private level crossings. Any impacts to private roads and private level crossings are addressed directly with the impacted landowners as part of the Project's wider consultation process. The use of any private roads during construction would require a specific agreement between the Contractor and the private road owner. Further discussions regarding land use and social considerations can be found in EIS Chapter 8: Land Use and Tenure and EIS Chapter 17: Social.

1.2.3.1 Project rail corridor

The Project commences at the NSW/Queensland border, the median point of the Macintyre River, approximately 18 km southeast of Goondiwindi. The Project runs northeast via Yelarbon, Inglewood, Millmerran, Pampas, Brookstead, Pittsworth, Southbrook and the Toowoomba Wellcamp Airport to Chainage (Ch) 206.9 km at Gowrie Junction, northwest of Toowoomba in Queensland. The Project's rail corridor and alignment is illustrated in Figure 1.1.

Further information on the alignment selection process for the Project can be found in EIS Chapter 2: Project Rationale and EIS Chapter 5: Project Description.

The proposed road-rail interface locations that form part of the TIA study area are indicated in Figure 1.2, including the local active transport routes and recreational trails. These road-rail interface locations consist of public formed roads only. The road-rail interface locations are described in more detail within Section 2.3.

1.2.3.2 Primary construction transport routes

Primary construction transport routes refer to SCR and LGR roads used by vehicles during the construction of the Project rail alignment. These routes are assumed, feasible routes which the construction contractor may use in the transportation for movement of:

- Construction materials, plant, equipment, and workforce
- Materials which would otherwise have used existing rail facilities which will be temporarily closed during the Project construction.

The proposed primary construction transport routes incorporated in the TIA study area are provided in Figure 1.3, with specific material transport routes provided in Appendix U to Appendix AE. Ultimately, the determination of the final construction routes will be subject to the EIS approval conditions and consultation and agreement between DTMR, the relevant LGA, the construction contractor and, where relevant, QR.

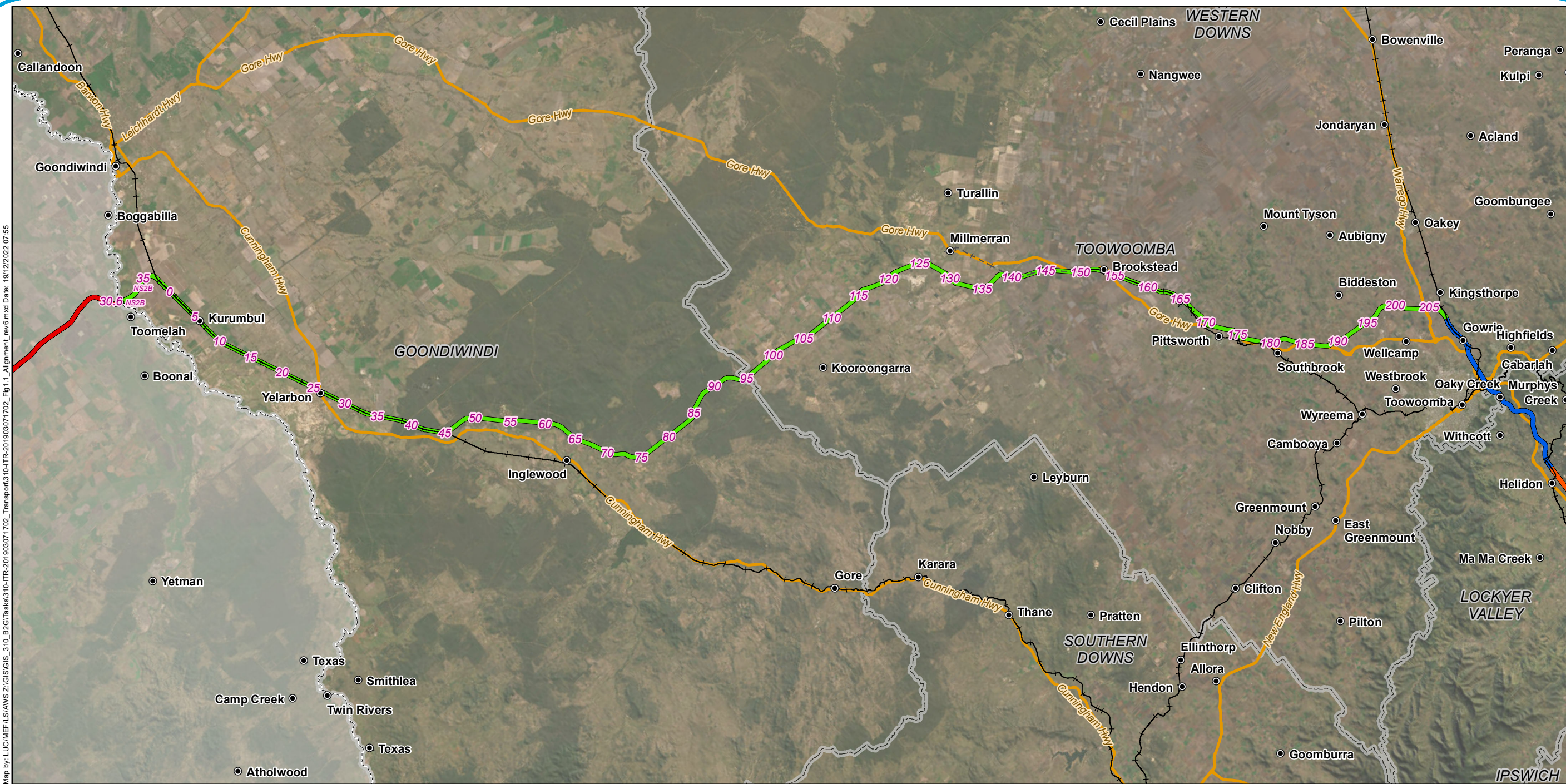
The assumed construction transport routes generally follow the shortest distance arterial road network most suitable to be used for the transport of each material type. Where possible, routes avoid populated areas such as town centres. All routes passing through or originating in Toowoomba have been formed using Toowoomba Bypass (formerly known as Toowoomba Second Range Crossing) predetermined haulage routes as a guide. The National Heavy Vehicle Regulator (NHVR) journey planner was also used to identify roads suitable for HVs.

Although other roads might also be used for the transport of construction materials, equipment and workforce, these roads would not be the primary construction routes and would have significantly less construction traffic volumes. Regardless the use of these routes will be agreed with the asset owner prior to use.

It is currently assumed that rail will be supplied by a single source and will be distributed via the existing QR rail network to ARTC's Whetstone Material Distribution Centre, from where it will be distributed along the corridor in the construction of the Project. The TIA has assumed that rail will be welded into long welded rail and delivered to the point of use via material train. Even though no rail is proposed to be transported via the public road network, a contingency allowance of 10 per cent has been assumed to assess the impacts of these vehicle types on the road network.

The primary construction routes for the Project, presented in Figure 1.3, have been further assessed in the following sections of the report, including any required road alterations and construction activities proposed as part of these works. Where there are haul routes proposed through land that is not an existing public road, further consultation and investigation will be required with stakeholders to ensure use of the proposed road or laydown area are mitigated adequately.

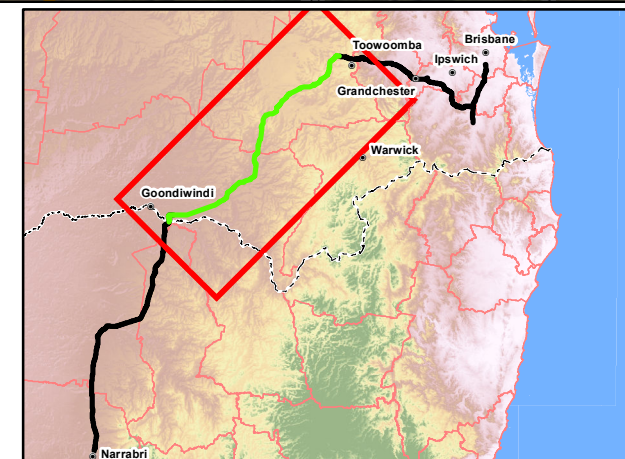
The Project's primary construction routes are described in more detail in Section 4.2. The proposed construction route map for all road-based construction transportation materials is also provided in Appendix U to Appendix AE.



Map by: LUC/MEF/LS/AWS Z:\GIS\GIS_310_B2\GIS\Task310-ITR-201903071702_Transport310-ITR-201903071702_Fig1.1_Alignment_rev6.mxd Date: 19/12/2022 07:55

Legend

- Localities
- 5 Chainage (km)
- 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
- NSW/QLD border
- Local Government Areas



A3 scale: 1:600,000
0 5 10 15 20 25 km



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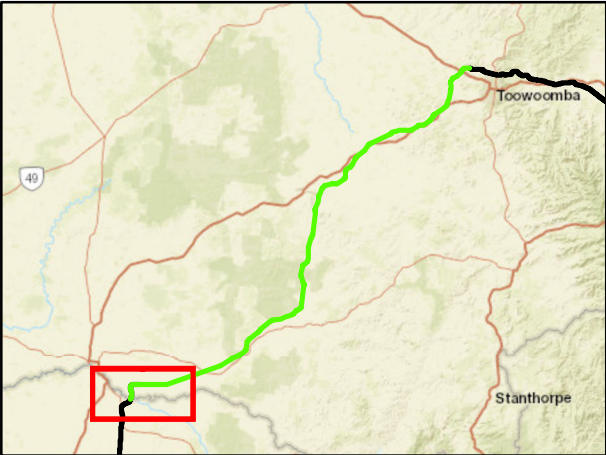
Issue date: 19/12/2022 Version: 6
Coordinate System: GDA 1994 MGA Zone 56

Border to Gowrie
Figure 1.1: Project rail alignment



Legend

- 5 Chainage (km)
- Localities
- Active level crossing
- Passive level crossing
- ✗ No crossing provided
- North Star to NSW/QLD border alignment
- Border to Gowrie alignment
- Existing rail (operational)
- NSW/QLD border



A3 scale: 1:100,000



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Coordinate System: GDA 1994 MGA Zone 56

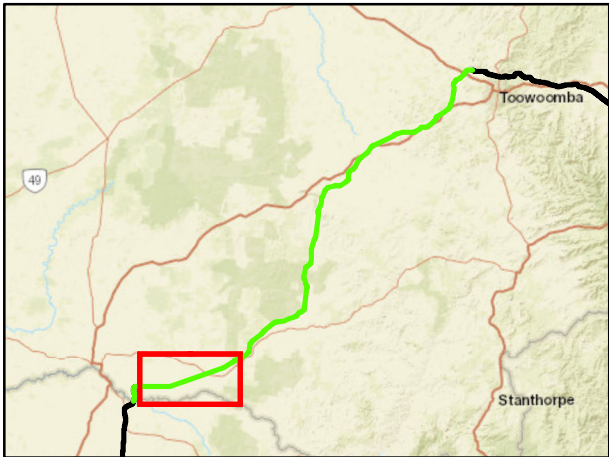
Border to Gowrie

Figure 1.2a: Project road/rail interface locations



Legend

- | | |
|------------------------------|---|
| 5 Chainage (km) | Border to Gowrie alignment |
| Localities | Recreational trails and local active transport routes |
| Grade Separation - Road over | Existing rail (operational) |
| Active level crossing | NSW/QLD border |
| Passive level crossing | Major roads |
| No crossing provided | |



A3 scale: 1:100,000
0 1 2 3 4 5km

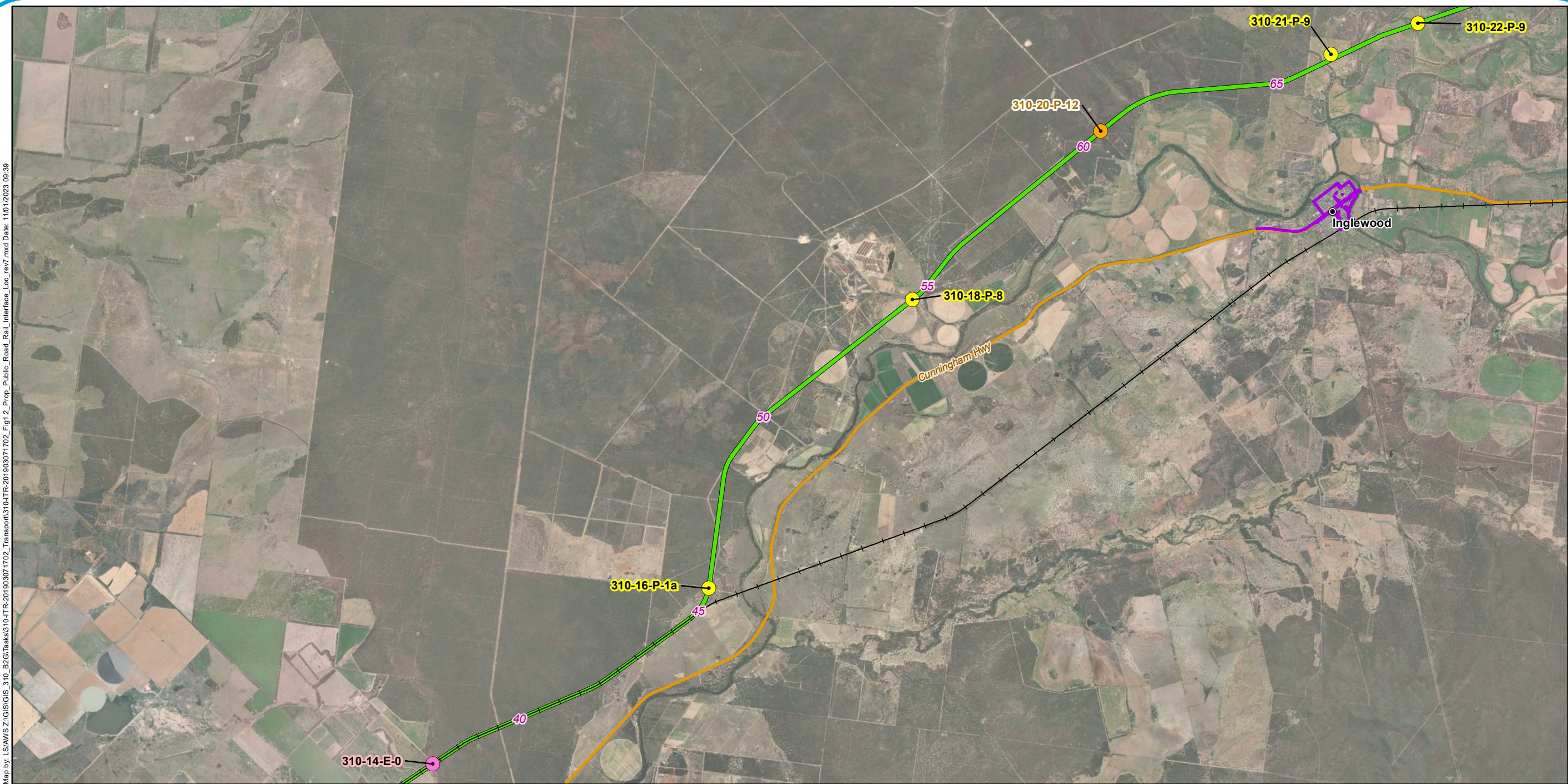


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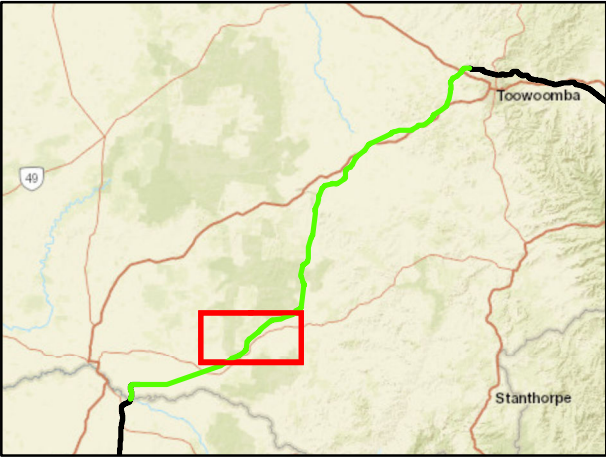
Border to Gowrie

Figure 1.2b: Project road/rail interface locations



Legend

- | | |
|--------------------------------|---|
| 5 Chainage (km) | Border to Gowrie alignment |
| ● Localities | Recreational trails and local active transport routes |
| ● Grade Separation - Rail over | Existing rail (operational) |
| ● Active level crossing | Major roads |
| ● Passive level crossing | |
| ⊗ No crossing provided | |



A3 scale: 1:100,000



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Coordinate System: GDA 1994 MGA Zone 56

Border to Gowrie

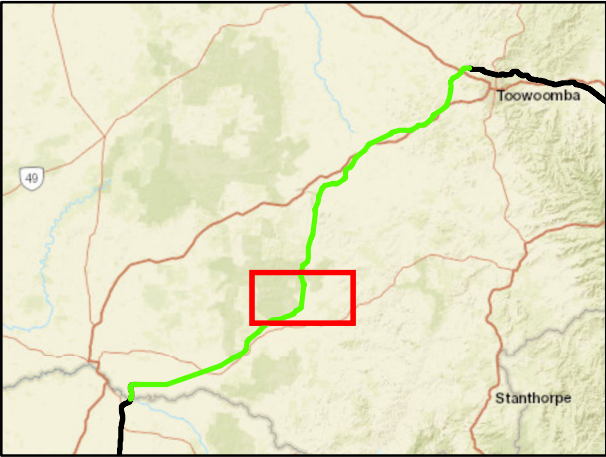
Figure 1.2c: Project road/rail interface locations

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Legend

- | | |
|------------------------------|-----------------------------|
| 5 Chainage (km) | Border to Gowrie alignment |
| Grade Separation - Rail over | Existing rail (operational) |
| Active level crossing | Major roads |
| Passive level crossing | |
| No crossing provided | |



A3 scale: 1:100,000
0 1 2 3 4 5km



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Coordinate System: GDA 1994 MGA Zone 56

Border to Gowrie

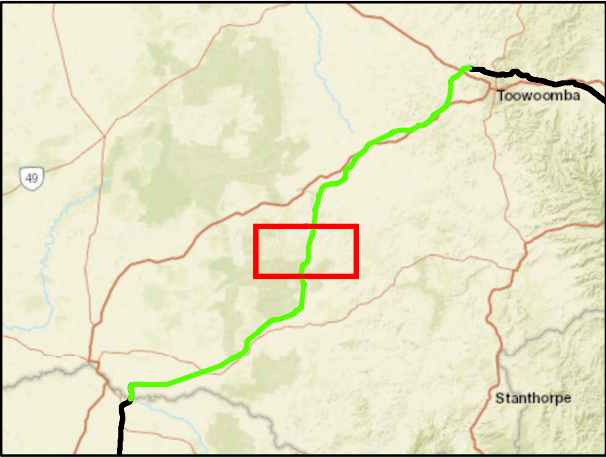
Figure 1.2d: Project road/rail interface locations

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Legend

- 5 Chainage (km)
- Localities
- Active level crossing
- Passive level crossing
- Border to Gowrie alignment



A3 scale: 1:100,000
0 1 2 3 4 5km



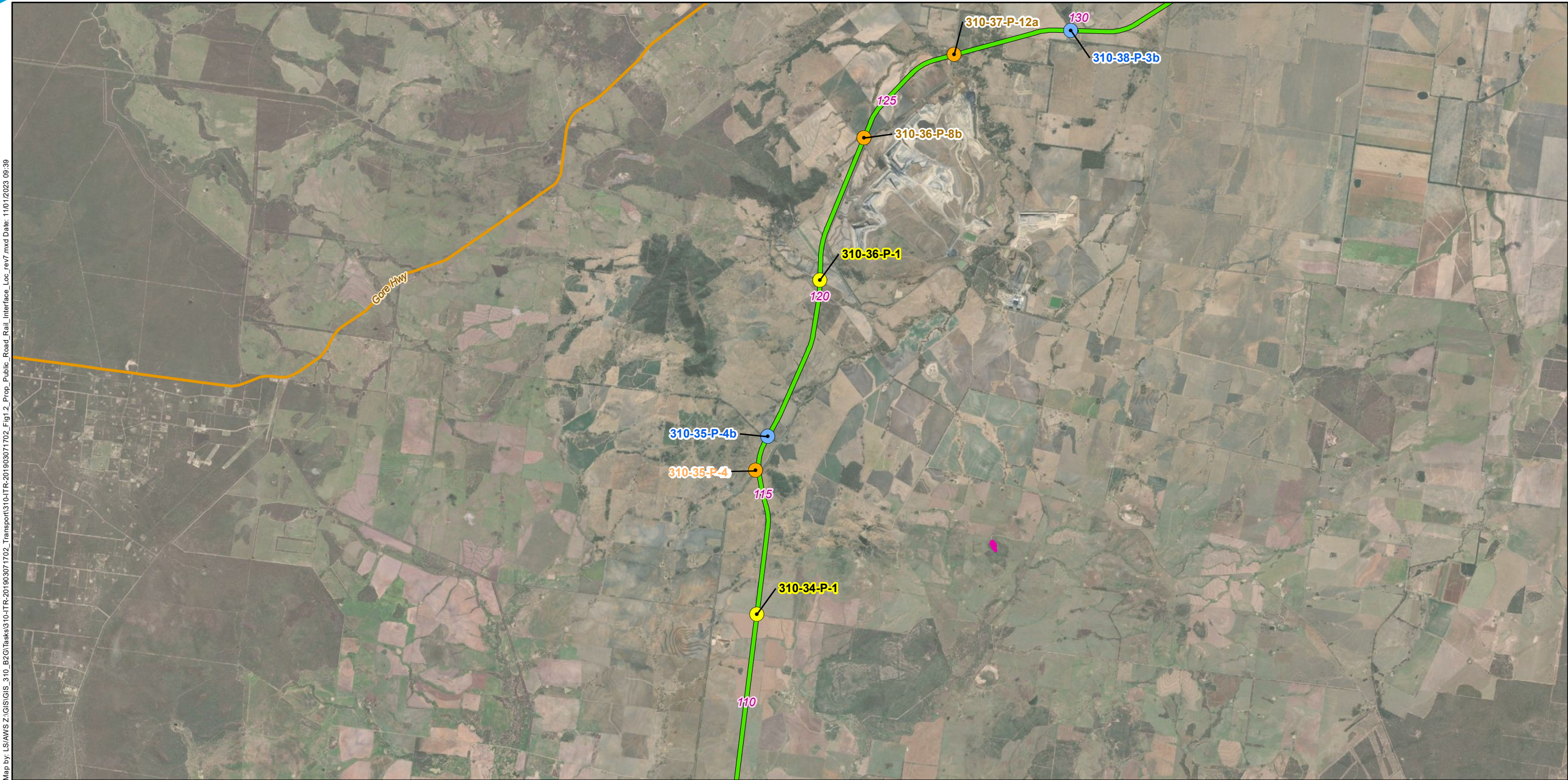
Future Freight
Integrating Community, Environment and Engineering

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Border to Gowrie

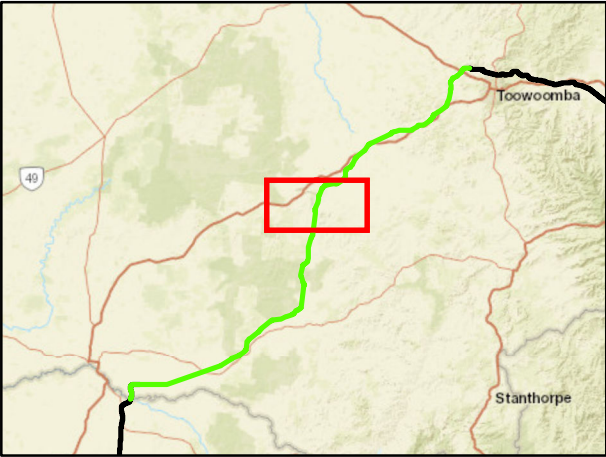
Figure 1.2e: Project road/rail interface locations

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Legend

- | | |
|------------------------------|----------------------------|
| 5 Chainage (km) | Border to Gowrie alignment |
| Grade Separation - Rail over | Bushland trails |
| Grade Separation - Road over | Major roads |
| Active level crossing | |
| No crossing provided | |



A3 scale: 1:100,000



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Issue date: 11/01/2023 Version: 7
Coordinate System: GDA 1994 MGA Zone 56

Border to Gowrie

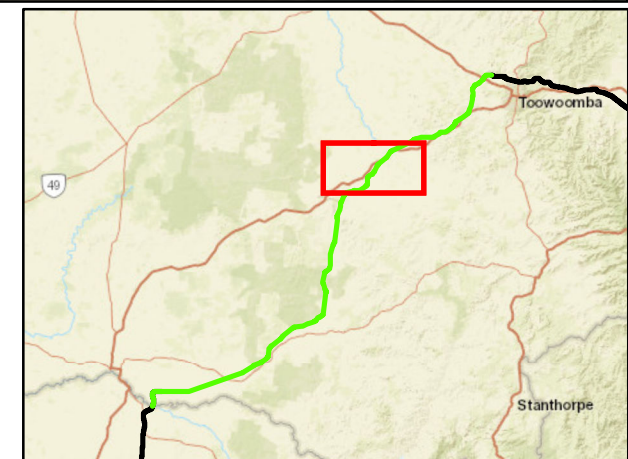
Figure 1.2f: Project road/rail interface locations

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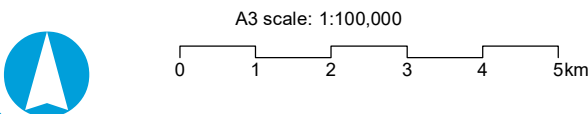


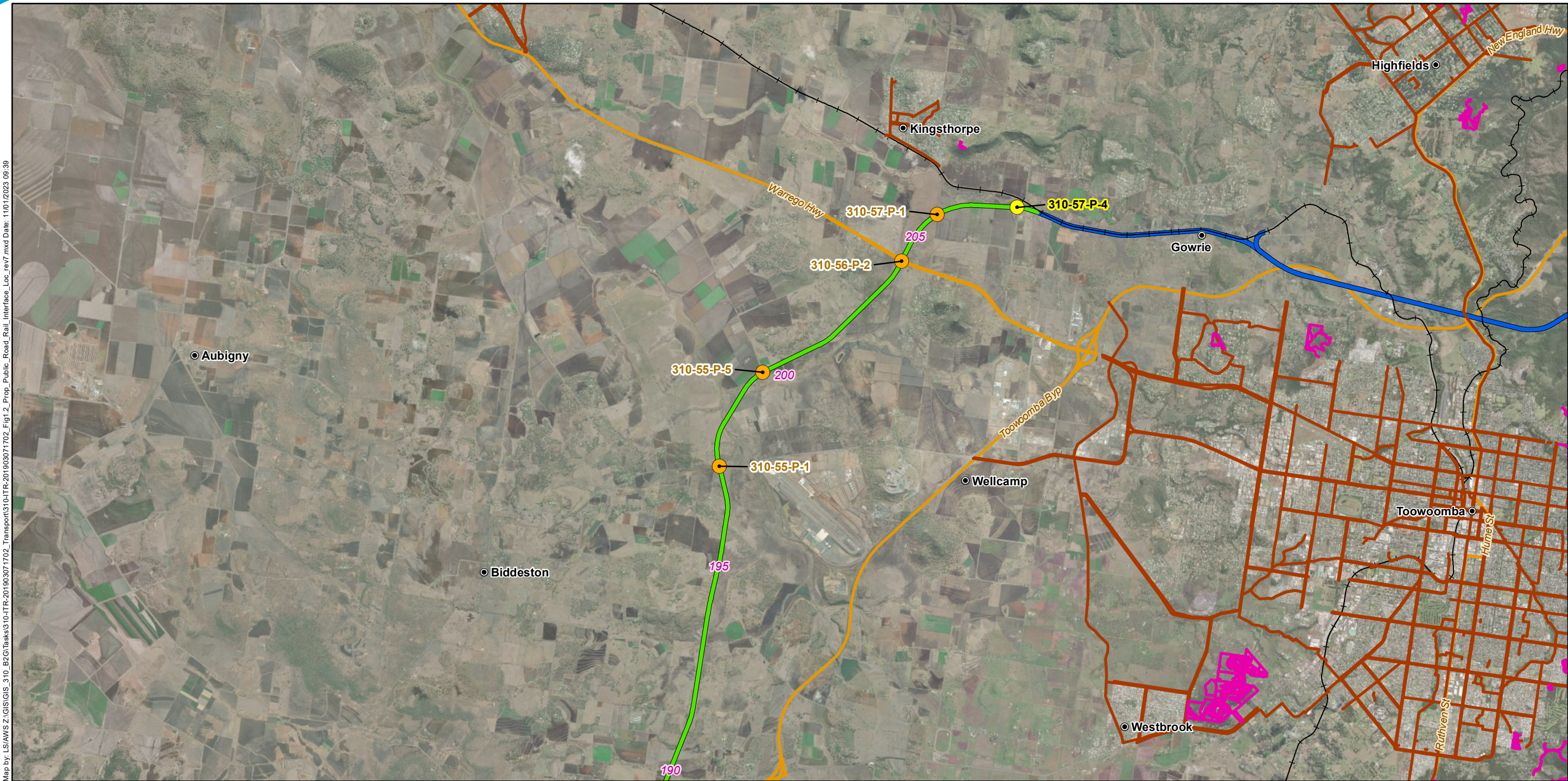
Legend

- | | |
|------------------------------|---------------------------------|
| 5 Chainage (km) | Border to Gowrie alignment |
| Localities | Existing rail (operational) |
| Grade Separation - Rail over | Existing rail (non-operational) |
| Grade Separation - Road over | Major roads |
| Active level crossing | |
| No crossing provided | |



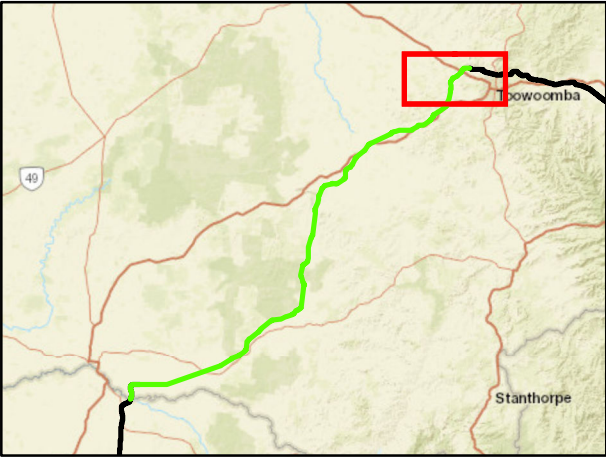
A3 scale: 1:100,000
0 1 2 3 4 5km





Legend

- | | |
|------------------------------|-----------------------------|
| 5 Chainage (km) | Border to Gowrie alignment |
| Localities | Gowrie to Helidon alignment |
| Grade Separation - Rail over | Bushland trails |
| Active level crossing | Local cycle network |
| | Existing rail (operational) |
| | Major roads |



A3 scale: 1:100,000

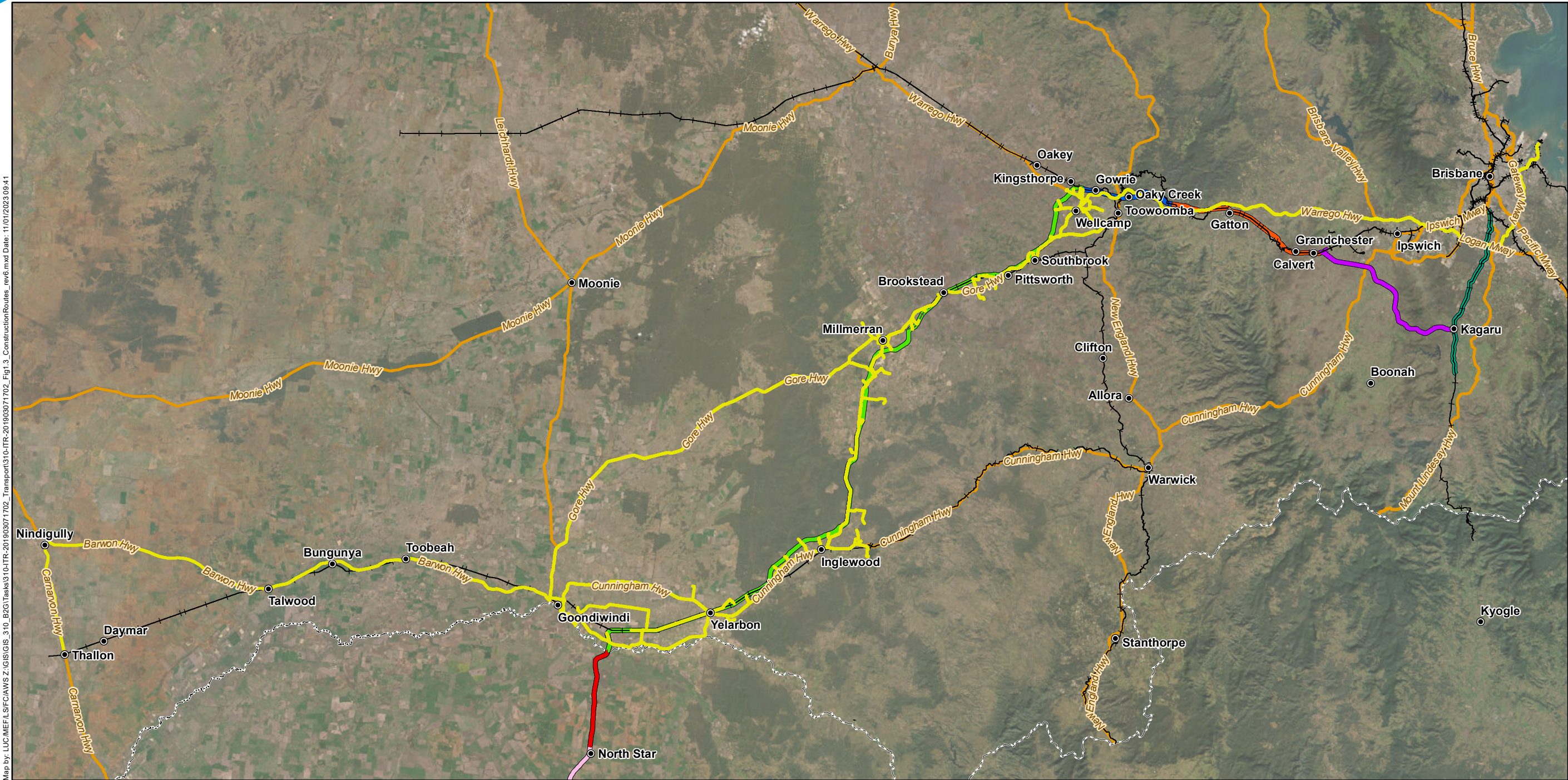


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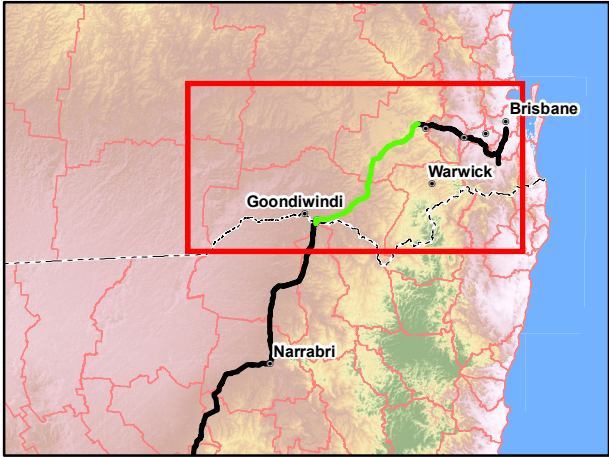
Border to Gowrie

Figure 1.2i: Project road/rail interface locations



Map by: LUC/MEF/LSFC/AWS Z:\GIS\GIS_310_B2G\Tasks\310-ITR-201903071702_Transport\310-ITR-201903071702_Fig1.3_ConstructionRoutes_rev6.mxd Date: 11/01/2023 09:41

- Legend**
- Localities
 - 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
 - Existing rail (operational)
 - Existing rail (non-operational)
 - Construction routes
 - Major roads
 - NSW/QLD border



A3 scale: 1:1,200,000
0 9 18 27 36 45 km

1.2.3.3 Operational transport routes

The Project transport task during the Operations stage of the Project is expected to be limited to rail maintenance workforce movements and the delivery of maintenance plant and materials. It is anticipated that operational traffic will consist of low vehicle movements to/from depots and transportation of maintenance plant and material within the rail corridor. Therefore, it is expected to be irregular and insignificant.

The existing road network will be used by maintenance crews to travel to the rail corridor. Once in the rail corridor, the rail maintenance access road (RMAR) incorporated into the design of the Project will be used in preference to the existing road network for project maintenance activities.

Further transport impacts may be realised with the introduction of potential intermodal freight facilities or industrial developments facilitated by Inland Rail. However, with the exclusion of ARTC's Whetstone Material Distribution Centre, such developments are not a component of the Project and are therefore not included in the scope of this TIA. Further, the development application for such land uses will require the preparation of a separate site-specific TIA where the impacts will be considered.

Similarly, this TIA does not consider changes to the network operations resulting from modal shift, such as the improvement to highway operations resulting from the shift of freight movements from road to rail. Further discussion regarding this can be found in EIS Chapter 2: Project Rationale.

1.2.4 Terms of reference requirements

The TIA has been prepared to support the EIS, specifically EIS Chapter 20: Traffic, Transport and Access.

In doing so, this report addresses Sections 11.107 to 11.116 of the *Terms of reference for and environmental impact statement: Inland Rail – Border to Gowrie project (November 2018)* and additional information requirements as issued by the office of the Coordinator General. A compliance check of this report against each of the relevant components of the terms of reference (ToR) is presented in Table 1.2.

Table 1.2 Compliance against relevant sections of the terms of reference

Traffic, transport, and access terms of reference requirements		Report section
Existing Environment		
11.107	Describe and map the existing and planned transport infrastructure and corridors. Provide data on existing road, active transport and rail traffic in the Project area.	Section 2.3, Section 2.3.3, Section 2.13, Section 2.16 and Section 2.20. Figure 1.1 and Figure 2.1
11.108	Describe how the Project complies with the <i>Queensland Level Crossing Safety Strategy 2012-2021</i> (refer Appendix 1) on new road-rail interfaces and the impacts on existing public road-rail interfaces.	Section 1.1.2, Section 3.6 and Section 5.9.5 and Appendix BT
Impact Assessment		
11.109	Assess the impacts of the Project on individual road-rail crossings and any cumulative impacts on the wider transport network.	Section 5.8, Section 5.9 and Section 5.11.
11.110	Assess the construction impacts of the Project on public railway level crossings through the <i>ALCAM</i> and assess the wider construction impacts on the road and active transport network.	Section 3.6, Section 5.8, Section 5.9, Section 5.10.7 and Appendix BT.
11.111	The EIS should include a clear summary of the total transport task for the Project, including workforce, haulage routes, inputs and outputs during the Construction Works and Operations stages.	Section 4.1
11.112	Present the transport assessment in separate sections for each project-affected mode (road, active transport and rail) as appropriate for each stage of the Project.	Section 4.1.1, Section 4.1.2 and Section 5.
11.113	Provide sufficient information to allow an independent assessment of how existing and proposed transport infrastructure will be affected by project transport at the local and regional level (for example, LGR and state-controlled roads (SCR)). Discussion should also refer to emergency service access.	Section 4, Section 5.2, Section 5.6, Section 5.7 and Section 5.10

Traffic, transport, and access terms of reference requirements		Report section
11.114	Include details of the adopted assessment methodology for impacts on roads within the road impact assessment report in accordance with the DTMR <i>Guide to Traffic Impact Assessment</i> and the Department of Environment and Science EIS information guideline – Transport (refer to Appendix 1).	Section 5
Mitigation Measures		
11.115	Measures to mitigate impacts on railway level crossings should be in accordance with the <i>Queensland Level Crossing Safety Strategy 2012-2021</i> .	Section 5.2.3.3, Section 5.2.3.4, Section 5.8 and Section 5.9.
11.116	Discuss and recommend how identified impacts will be mitigated. Mitigation strategies are to be prepared in close consultation with relevant transport authorities (including relevant local governments).	Section 5.2.2, Section 5.3.5, Section 5.4.6, Section 5.5.6, Section 5.6.3, Section 5.6.4, Section 5.8.4, Section 5.9.4, Section 5.9.5, Section 5.10, Section 5.11.2, and Section 5.12.

The TIA has been prepared in accordance with the ToR and the GTIA (2018). For assessable components that are located in NSW, the use of the GTIA has been agreed with and accepted by Transport for New South Wales (TfNSW) (formerly Roads and Maritime Services), as the applicable guideline. The methodology followed within this TIA is generally consistent with the methodology outlined in the GTIA and consists of:

- Desktop studies to establish the baseline conditions for the transport infrastructure within the TIA study area
- Determining the traffic generation related to the construction and operation of the Project
- Identifying the potential impacts on the transport infrastructure and users
- Developing measures to avoid, manage and mitigate impacts
- Undertaking a risk assessment of potential traffic impacts
- Undertaking a cumulative assessment of other committed projects of significance.

A detailed pavement impact assessment has been undertaken, with calculation of contributions provided to DTMR separate to this TIA document under the assumption that:

- Construction volumes and routes are subject to change
- Roads may be reconstructed in place of pavement contributions.

Updates may be required to this TIA when a construction contractor is appointed, and the final traffic generation is clearer. This will be subject to approval conditions by the OCG.

1.3 Pre-lodgement meeting notes

1.3.1 Stakeholder consultation

Detailed consultation has been undertaken with key traffic and transport stakeholders throughout the revised reference design and impact assessment process, including TRC, Goondiwindi Regional Council (GRC), DTMR, QR, Queensland Department of Education, as well as with local schools (including Brookstead, Yelarbon and Southbrook Central State schools), emergency services, local road users, GrainCorp and the wider community. Additional request for further information meetings and correspondence have been used to consult with affected public road controlling authorities on the following issues:

- To gain an understanding of the existing transportation assets
- To outline the proposed TIA process

- To outline the adopted manuals and procedures
- To inform the road controlling authorities of the impacted assets
- To outline the adopted assumptions (such as traffic growth rates and assumed base volumes)
- To outline the proposed mitigation measures.

As a result of engagement and the consultation process conducted in parallel with exhibition of the draft EIS, additional traffic and transport investigations and assessments were undertaken to better inform the revised reference design and development of the revised draft EIS, including:

- DTMR
 - Additional road traffic surveys were undertaken to ensure accuracy of the data used and to validate the TIA
 - Additional road traffic surveys and studies were undertaken to validate recommended rail crossing treatments
 - Technical design requirements to inform revised concept design for road-rail interfaces
 - Future road planning requirements, such as future road widenings planned by DTMR for a section of the Gore Highway
 - Agreement of TIA assessment methodologies.
- TRC
 - Upgrade of all proposed level crossings in the TRC region from passive level crossings to active level crossings
 - Changes to the local road network in Pampas and Brookstead
 - Additional road traffic surveys were undertaken.
- GRC
 - Commitment to design road—rail interfaces to future proof road network in the region with the majority of GRC's public level crossing designed to allow stacking distances for 42 metre (m) road trains
 - Upgrade of the proposed control for Kildonan Road is flashing lights and boom barriers. This is the highest form of control in the Australian Level Crossing Standard.
- QR
 - Mitigation measures proposed in the revised draft EIS has been amended to address safety controls at existing level crossings and stakeholder engagement on traffic management plans during construction.
- Department of Education, Brookstead State School, Yelarbon State School and Southbrook Central State School
 - Commitment to consult with the Yelarbon and Brookstead communities in the development of more detailed traffic management measures during the Detailed Design stage surrounding the need for permanent road realignments at Brookstead and Yelarbon.

The following stakeholders will continue to be engaged throughout detailed design to ensure their concerns and specific requirements are considered:

- DTMR, TRC and GRC to discuss the road and rail network, construction traffic management and expectations with regards to temporary and permanent road network impacts and changes
- Department of Education, Brookstead State School, Yelarbon State School and Southbrook Central State School to discuss noise, vibration, HV movement, accessibility and temporary and permanent changes to bus routes

- Toowoomba Regional Access and Disability Advisory Committee to guide engagement with vulnerable road users, including people who are differently abled or with disabilities, to manage and mitigate, where possible, the potential impacts of the Project. ARTC will continue to attend the Inglewood Community Action Network and Goondiwindi interagency meetings each month, building the relationship between Care Goondiwindi and ARTC to better provide solutions for vulnerable road users as detailed design progresses.
- Active transport users and representative groups, including the Queensland Regional Active and Public Transport Advisory Committee and the Toowoomba Regional Bicycle Users Group ensure ongoing consideration of active transport corridors and active transport users, including cyclists and walkers, are informed at each stage regarding changes to access and roads
- ARTC will continue to consult with landowners during future stages of the Project to ensure they are fully informed of the design and the proposed mitigation measures specific to their respective properties
- Third party operators, including GrainCorp, will continue to be consulted to ensure existing operational connectivity is maintained and improved, if possible, as it integrates with Inland Rail. Specifically, this involves providing turnout connections at the appropriate locations to enable a functioning siding consistent with the operations of the business. Consultation is critical to ensure that provided connectivity to regional freight traffic and the Project is working with existing and proposed intermodal terminals to unlock maximum long-term value for the community and ARTC. ARTC has a dedicated resource who works with stakeholders to grow new freight-on-rail business, including in regional areas. This involves building and maintaining relationships with potential customers, rail freight owners, terminal owners and industry stakeholders. Stakeholders along existing rail networks are engaged as possible users of Inland Rail where the existing regional network seamlessly integrates into the Inland Rail alignment.

The stakeholders consulted by ARTC in the development of the revised reference design are listed in EIS Appendix E: Consultation Report. For full summary of the Project's Proponent Commitments, refer EIS Appendix AC: Proponent Commitments.

1.3.1.1 Department of Transport and Main Roads working group

Since November 2018, ARTC has held regular working group meetings with DTMR. Key technical issues discussed in the working group have informed the EIS and reference design relevant to the TIA include:

- TIA methodology
- Road-rail interface locations and designs
- Traffic and transport management
- Maintaining access to properties and changes to road network.

Further information on these discussions, including engagement details are provided in EIS Appendix E: Consultation Report. These meetings will be ongoing for the duration of the Project.

1.3.1.2 Road-rail interface consultation

ARTC delivered a comprehensive communication and engagement program to engage with key stakeholders, landowners and the community regarding the development of the proposed public road-rail interface solutions for the Project.

Infrastructure owners and operators have been consulted on design requirements to ensure the safe and operational efficiency of their infrastructure and advised on potential maintenance and financial impacts as a result of the Project, including:

- Requests to accommodate the movement of large trucks and farming machinery, including future proofing for larger vehicles that what the road network provides for currently
- Concerns about maintaining access to properties and changed connection points to roads

- Requests to improve existing safety issues at road intersections impacted by the Project
- Sharing information about the types and volumes of road movements
- Intersection locations and preferred turning lane treatments
- Intersection locations and preferred turning lane treatments
- Minimising disruption to business operations
- Changed alignments to roads, including geometry and network connectivity.

In addition to road managers, engagement also included face-to-face meetings with directly affected and nearby landholders as well as community information sessions and Community Consultative Committee meetings. Through these consultation efforts, stakeholders clearly outlined concerns about some of the proposed road and rail interface design, informing changes to road alignments and crossing treatments in the following locations:

- McDougalls Crossing Road, Whetstone
- Bybera Road, Inglewood
- Heckendorf Road, Clontarf
- Commodore Peak Road and Scragg Road, Millmerran
- Owens Scrub Road, Millmerran
- Lindenmayer Road, Millmerran
- Gilgai Lane, Pampas
- Fysh Road, Pampas
- Harris Road, Pampas
- Elsdon Road, Brookstead
- Mann Silo Road, Brookstead
- Linthorpe Valley Road, Southbrook
- Athol School Road and Purcell Road, Southbrook.

Road-rail interface locations are identified in Section 3.6. ARTC will continue to consult with landowners during future stages of the Project to ensure they are fully informed of the design process and the proposed mitigation measures specific to their respective properties.

Some key examples of community engagement outcomes for road-rail interfaces are summarised below:

Brookstead

ARTC hosted a community information session on 20 September 2022 to discuss proposed changes to the Brookstead Road network design which was developed in conjunction with DTMR and TRC. The outcome of this engagement was not to progress with the closure of Madeleine Street East intersection with the Gore Highway, as this was viewed as a main access road into Brookstead.

Pampas

ARTC hosted a community information session on 13 September 2022 to discuss proposed changes to the Pampas road network design to address road safety and technical constraints. Additional consultation also included four one-on-one meetings with stakeholders who could not attend the session. A detailed brochure was produced and distributed to the Pampas community, which resulted in phone calls and email enquiries from stakeholders. Reference design outcomes included changes to Fysh Road, Harris Road and the Gore Highway intersection, which involved road realignments and more optimal location of the proposed level crossing.

Athol

Following extensive engagement with the local community and road managers on February to April 2022 regarding road-rail interfaces in Athol, ARTC now propose to update the design of Purcell Road and Athol School Road. Consultation with impacted landowners, government agencies, local councils, community members and industry and economic development groups have led to road network changes which will increase road user safety while minimising impacts to properties and access.

This engagement resulted in the following design updates:

- A rail-over-road grade separation at Athol School Road, rather than a closure as previously proposed in the draft EIS
- Closing Purcell Road at the rail interface, rather than a passive level crossing, increasing safety for the community
- A new road and intersection connecting Purcell Road and Athol School Road
- Directing motorists to the Athol School Road/Gore Highway intersection which provides a safer intersection than Purcell Road/Gore Highway
- Providing a more direct route to and from Toowoomba via Athol School Road compared to the reference design proposed in the draft EIS
- A solution that seeks to minimize property severance and impacts to dwellings.

1.3.1.3 Emergency access

Maintaining access and minimising wait times at crossings for emergency services is a key concern for the community. As such, ARTC has engaged broadly to better understand the risks, revised reference design and ensure any impact to safety or emergency services is minimised. Engagement through local council representatives, community information sessions and Community Consultative Committee meetings has allowed community members and local road users to share information about how they currently use the existing road network and where they experience safety concerns. This engagement also informed the changes to the road-rail interface designs, as detailed in Section 1.3.1.2.

Agency engagement included meetings with Queensland Fire and Emergency Services (QFES), Queensland Police Service (QPS), and local police stations along the alignment. One-on-one engagement was conducted with the Regional Director of Policing and an ARTC representative attends the District Disaster Management Group and presents project updates regularly to increase dialogue about the impact of the alignment on emergency services. Engagement with GRC raised an issue in the Bybera Road section of the Project. As such, ARTC has updated the proposed treatment of this intersection to a grade separation, with rail crossing over road, to remove any time impact or access related issues for emergency services. Engagement with emergency services and local councils is ongoing and will continue to inform Project detailed design and mitigation measures.

Further consultation will be required through the following stages of the Project with all relevant stakeholders.

1.3.1.4 Public consultation

Road controlling authorities, local councils, impacted stakeholders and the community have had the opportunity to comment on the draft EIS through the public consultation and submission process which ran between 23 January 2021 and 4 May 2021. ARTC engaged with stakeholders and community members to support the public consultation process and encourage formal submissions regarding the draft EIS.

Responses were formulated for all submissions and, where relevant, updates were made to the revised draft EIS document, including within this TIA document, following review of these submissions. The submissions and formulated responses can be found in EIS Appendix A1: Response to draft EIS Submissions.

A key outcome of the discussions with the OCG was the preparation of four technical memos for OCG approval prior to their use for investigation and analysis for TIA for the revised draft EIS, including:

- Base Traffic Data
- Road Safety
- Cumulative Impact Assessment
- Pavement Impact Assessment.

The methodology technical notes were prepared to align with relevant TIA related processes within DTMR's GTIA and PIA and assumptions were outlined where required. These methodology notes are provided in Appendix BP, Appendix BQ, Appendix BR and Appendix BS.

1.3.1.5 Further consultation

Consultation with key stakeholders and road controlling authorities will be ongoing to ensure Project delivery minimises the impacts on the local road networks, along with resolving matters such as legislative requirements, interface agreements, approvals, traffic management plans and mitigation measures.

Technical meetings between ARTC and QR at program level regarding potential interfaces between the Inland Project and the existing QR network will continue through the following stages of the Project. This includes spacing between tracks, relocation of existing infrastructure, signalling, interoperability between the networks and track possessions. The discussions will also inform construction activities (e.g. track possessions or delivery of material by rail) to minimise disruptions to the supply chain.

ARTC have consulted all public utility providers with known assets intersected by the Project, including in relation to the protection of assets from construction traffic (e.g. APA Group regarding the temporary and permanent protection of the Roma Brisbane Gas Pipeline). Further consultation will also be warranted along the proposed construction routes to identify potential access restrictions.

EIS Appendix E: Consultation Report summarises discussions of the construction routes with Balonne Shire Council (BSC), Goondiwindi Shire Council, Moree Plains Shire Council (MPSC) or TfNSW until the construction contractor is appointed and the construction routes confirmed. This will also provide these road controlling authorities with a realistic volume of traffic associated with this Project and other related Inland Rail Projects.

Further consultation will be required, including but not be limited to, all public transport operators particularly TransLink (Queensland), relevant councils and TfNSW and all relevant utility operators.

2 Existing conditions

The establishment of existing conditions has been informed by publicly available data and information provided by the road controlling authorities, being DTMR, TfNSW and local governments within the TIA study area.

The following information was requested from relevant (State and local government) transport authorities for use in the TIA:

- Public and school bus routes
- Local active transport infrastructure and plans
- Programmed road works and upgrades
- Future planned public transport network
- Approved and future development plans
- Road use management plans
- Standard axle loads and existing pavement conditions
- DTMR marginal cost contribution information
- Prevailing structural integrity issues (i.e. vulnerable structures)
- Structural capacity/life of structures.

The following information was obtained from online open data sources:

- Local government/State policies and strategies potentially influencing the TIA for the Project
- Road classification details, including typical cross sections
- Development applications
- Land use
- Existing and historical traffic data
- Designated freight and seasonal traffic routes
- Public bus routes
- Long distance bus services
- Stock routes and travelling stock reserves
- Strategic touring routes
- Principal cycle network plan
- Heavy vehicle routes and restrictions
- Emergency services
- Crash data.

Assumptions were made in instances where requested data was not available, and these have been documented in the TIA as appropriate.

A site visit was undertaken in December 2022 to key locations where additional information and ground-truthing was required. A copy of the site visit report is provided in Appendix BU.

The following section describes the approach for obtaining background and Project traffic volumes used in the impact assessment.

2.1 Land use and zoning

2.1.1 Rail alignment

Approximately one third of the Project alignment will involve upgrade, enhancement or construction of new rail track coincident with existing rail corridor. The balance of the Project is adjacent to existing road infrastructure or will be established on land that, by and large, has been subject to previous disturbance for agricultural purposes.

Land surrounding the Project is predominantly used for livestock grazing, combined with other agricultural uses including irrigated cropping. Other land uses include production forestry, other minimal use (consisting of areas of land that are largely unused, for example, residual native cover or land reserved for stock routes) and transport and communication.

The predominantly rural nature of these surrounding land uses indicates that the local road network would generally consist of low traffic volumes.

The Project traverses through, or near to the townships of Yelarbon, Inglewood, Millmerran, Pampas, Brookstead, Pittsworth, Southbrook, Athol, Gowrie Mountain and Kingsthorpe. Traffic volumes on the road network surrounding these towns are likely to be higher.

The existing land uses which occur along the Project alignment are shown in Figure 2.1. Further land use information is provided in EIS Chapter 8: Land Use and Tenure.

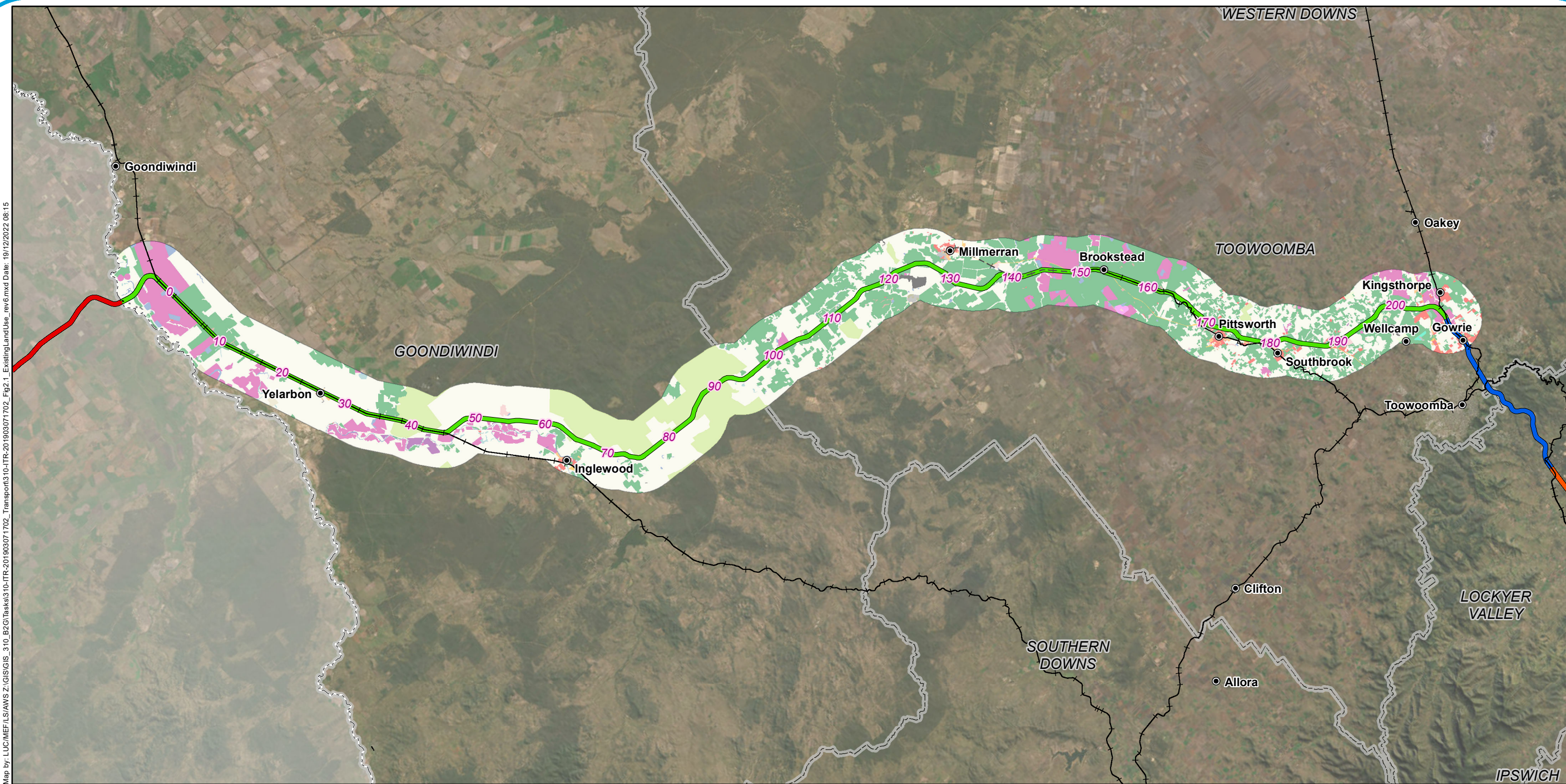
2.1.2 Construction routes

The construction routes will utilise existing roads between the Port of Brisbane and Thallon. Most construction routes connect material suppliers or non-resident workforce accommodation facilities to laydown areas along the rail alignment.

As mentioned in Section 2.1.1, the predominantly rural nature of the surrounding land uses indicates that the local road network generally consists of low traffic volumes, as shown in the traffic count data in Section 2.4.

The routes pass through or near the townships of Toowoomba, Wellcamp, Westbrook, Athol, Southbrook, Pittsworth, Brookstead, Pampas, Millmerran, Inglewood, Yelarbon, Kurumbul, Goondiwindi, Toobeah, Thallon. All construction routes have attempted to avoid townships where appropriate.

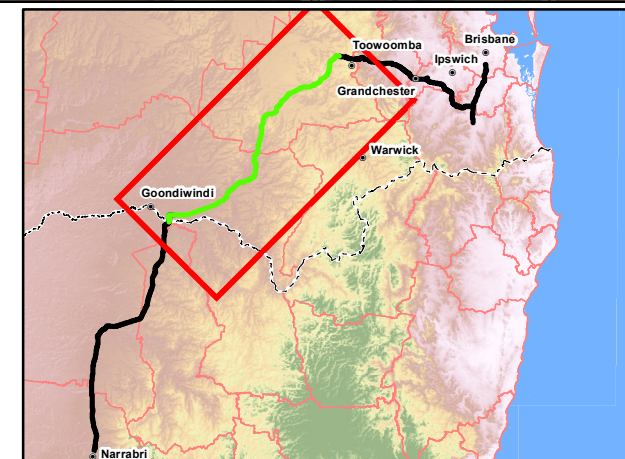
In addition to above townships, construction routes travel between the Port of Brisbane and Toowoomba via the Warrego Highway, Ipswich Motorway, Logan Motorway, Gateway Motorway and Port of Brisbane Motorway. These roads are built to withstand high traffic volumes and provide efficient and safe movement for vehicles travelling long distances.



Map by: LUC/MEF/LS/AWS Z:GIS/GIS_310_B2/GIS/Task310-ITR-201903071702_Transport310-ITR-201903071702_Fig2.1_ExistingLandUse_rev6.mxd Date: 19/12/2022 08:15

Legend

- | | | | |
|--|---------------------------|-------------------------------------|------------------------------|
| 5 Chainage (km) | Nature conservation | Land in transition | Utilities |
| • Chainage label points | Other minimal use | Grazing irrigated modified pastures | Transport and communication |
| ● Localities | Grazing native vegetation | Irrigated cropping | Mining |
| — North Star to NSW/QLD border alignment | Production native forests | Irrigated perennial horticulture | Waste treatment and disposal |
| — Border to Gowrie alignment | Plantation forests | Intensive animal production | Lake |
| — Gowrie to Helidon alignment | Grazing modified pastures | Manufacturing and industrial | Reservoir/dam |
| — Existing rail (operational) | Cropping | Residential and farm infrastructure | River |
| --- Existing rail (non-operational) | Perennial horticulture | Services | Marsh/wetland |
| --- NSW/QLD border | | | |
| Local Government Areas | | | |



A3 scale: 1:600,000
0 4.5 9 13.5 18 22.5 km



Future Freight
Integrating Community, Environment and Engineering

Issue date: 19/12/2022 Version: 6
Coordinate System: GDA 1994 MGA Zone 56

Border to Gowrie
Figure 2.1: Existing land use

2.2 Adjacent land use/approvals

Notable land uses traversed by or located within proximity to the Project include the Kildonan Key Resource Area, KRA 120, Whetstone State Forest, Bringalily State Forest, Commodore Mine, several intensive animal production operations including cattle feedlots, poultry farms and piggeries and, at the north-eastern end, the Toowoomba Wellcamp Airport and Toowoomba Enterprise Hub.

The existing land uses which occur along the Project alignment are shown in Figure 2.1. Further land use information is provided in EIS Chapter 8: Land Use and Tenure.

Construction schedules from other major developments will be considered as part of the cumulative impact assessment process. The cumulative impact evaluation is provided in Section 5.11. This will include adjacent Inland Rail sections as well as other committed major projects of significance.

2.3 Surrounding road network details

The TIA study area encompasses SCR and LGR that are proposed to be used as main transport routes for the Project. Figure 1.3 shows the proposed construction routes for all movements, Appendix U to Appendix AE provide the construction routes for the different construction movements (i.e. movement of water, workers, precast concrete, mass haul etc.).

The roads identified for use during construction of the Project are further described in the following sections, including details of the road links (Section 2.3.1) and intersections (Section 2.3.2). In addition, the proposed road-rail interface locations during operation of the Project are provided in Section 2.3.3.

The Operations stage is anticipated to include irregular maintenance and minor workforce movements which are envisaged to make use of the existing road system and RMAR. The vehicle movements during operation remain unknown due to their irregular nature, however, they are anticipated to be low and not warrant assessment. Further details on the operational workforce and maintenance are provided in Section 4.1.2. This section does not identify roads used for vehicle movements during the Operations stage of the Project.

2.3.1 Road links

For the purpose of the TIA, the road network utilised by construction traffic has been split into shorter road links, differentiated by construction traffic volumes and background traffic data collected. This has been undertaken to ensure accuracy of volumes on road links, taking into considerations where background traffic volumes change and where construction vehicles turn on and off a road. This method has led to the road network being split into 526 road links, which has been consolidated to 267 road sections, accounting for most road sections being used in both directions. Throughout the TIA, the 267 road sections are provided, with traffic movements in both directions detailed.

The road links proposed for use during the construction of the Project are summarised in Table 2.2. This table provides details regarding the road authority, road name, road section, road environment (rural/urban), speed limit, lane configurations, and road seal.

Construction routes are planned to utilise roads owned by the six road authorities across Queensland and NSW. These are outlined in Table 2.1.

Table 2.1 Road authorities

Level of government	Queensland	New South Wales
State	DTMR	TfNSW
Local Council	BSC, GRC, TRC	MPSC

Table 2.2 Surrounding road network details – road links

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
State-Controlled Roads: Department of Transport and Main Roads					
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	Rural	60	2-way 2-lane	Sealed
	Ch 0.8 km to Ch 2.0 km	Rural	100	2-way 2-lane	Sealed
	Ch 2.0 km to Ch 45.9 km	Rural	100	2-way 2-lane	Sealed
	Ch 45.9 km to Ch 88.0 km	Rural	100	2-way 2-lane	Sealed
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	Rural	100	2-way 2-lane	Sealed
	Ch 1.6 km to Ch 66.8 km	Rural	100	2-way 2-lane	Sealed
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	Rural	100	2-way 2-lane	Sealed
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	Urban	80	2-way 2-lane	Sealed
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	Rural	100	2-way 2-lane	Sealed
	Ch 96.2 km to Ch 97.5 km	Rural	100	2-way 2-lane	Sealed
	Ch 97.5 km to Ch 105.7 km	Rural	100	2-way 2-lane	Sealed
	Ch 105.7 km to Ch 107.4 km	Rural	80	2-way 2-lane	Sealed
	Ch 107.4 km to Ch 107.6 km	Urban	50	2-way 2-lane	Sealed
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	Urban	80	2-way 2-lane	Sealed
	Ch 2.0 km to Ch 3.9 km	Rural	100	2-way 2-lane	Sealed
	Ch 3.9 km to Ch 10.2 km	Rural	100	2-way 2-lane	Sealed
	Ch 10.2 km to Ch 13.9 km	Rural	100	2-way 2-lane	Sealed
	Ch 13.9 km to Ch 18.5 km	Rural	100	2-way 2-lane	Sealed
	Ch 18.5 km to Ch 27.1 km	Rural	100	2-way 2-lane	Sealed
	Ch 27.1 km to Ch 29.3 km	Rural	100	2-way 2-lane	Sealed
	Ch 29.3 km to Ch 34.7 km	Rural	100	2-way 2-lane	Sealed
	Ch 34.7 km to Ch 39.6 km	Rural	100	2-way 2-lane	Sealed
	Ch 39.6 km to Ch 40.3 km	Rural	100	2-way 2-lane	Sealed
	Ch 40.3 km to Ch 40.5 km	Rural	100	2-way 2-lane	Sealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
	Ch 40.5 km to Ch 43.9 km	Rural	100	2-way 2-lane	Sealed
	Ch 43.9 km to Ch 46.3 km	Rural	100	2-way 2-lane	Sealed
	Ch 46.3 km to Ch 88.0 km	Rural	80	2-way 2-lane	Sealed
	Ch 88.0 km to Ch 88.2 km	Rural	80	2-way 2-lane	Sealed
	Ch 88.2 km to Ch 90.0 km	Rural	80	2-way 2-lane	Sealed
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	Urban	100	2-way 6-lane	Sealed
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	Urban	100	2-way 6-lane	Sealed
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	Rural	110	2-way 2-lane	Sealed
	Ch 2.2 km to Ch 5.4 km	Rural	110	2-way 2-lane	Sealed
	Ch 5.4 km to Ch 6.7 km	Rural	110	2-way 2-lane	Sealed
	Ch 6.7 km to Ch 7.7 km	Rural	110	2-way 2-lane	Sealed
	Ch 7.7 km to Ch 11.2 km	Rural	110	2-way 2-lane	Sealed
	Ch 11.2 km to Ch 15.3 km	Rural	110	2-way 2-lane	Sealed
	Ch 15.3 km to Ch 17.5 km	Rural	110	2-way 2-lane	Sealed
	Ch 17.5 km to Ch 19.0 km	Rural	110	2-way 2-lane	Sealed
	Ch 19.0 km to Ch 20.3 km	Rural	110	2-way 2-lane	Sealed
	Ch 20.3 km to Ch 21.5 km	Rural	110	2-way 2-lane	Sealed
	Ch 21.5 km to Ch 23.2 km	Rural	110	2-way 2-lane	Sealed
	Ch 23.2 km to Ch 25.0 km	Rural	110	2-way 2-lane	Sealed
	Ch 25.0 km to Ch 30.1 km	Rural	110	2-way 2-lane	Sealed
	Ch 30.1 km to Ch 38.7 km	Rural	110	2-way 2-lane	Sealed
	Ch 38.7 km to Ch 41.1 km	Rural	110	2-way 2-lane	Sealed
	Ch 41.1 km to Ch 41.7 km	Rural	110	2-way 2-lane	Sealed
	Ch 41.7 km to Ch 43.2 km	Rural	110	2-way 2-lane	Sealed
	Ch 43.2 km to Ch 44.7 km	Rural	110	2-way 2-lane	Sealed
	Ch 44.7 km to Ch 47.6 km	Rural	110	2-way 2-lane	Sealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
	Ch 47.6 km to Ch 52.2 km	Rural	110	2-way 2-lane	Sealed
	Ch 52.2 km to Ch 53.3 km	Rural	110	2-way 2-lane	Sealed
	Ch 53.3 km to Ch 60.8 km	Rural	110	2-way 2-lane	Sealed
	Ch 60.8 km to Ch 63.0 km	Rural	110	2-way 2-lane	Sealed
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	Urban	110	2-way 2-lane	Sealed
	Ch 0.7 km to Ch 0.8 km	Urban	110	2-way 2-lane	Sealed
	Ch 0.8 km to Ch 1.4 km	Urban	110	2-way 2-lane	Sealed
	Ch 1.4 km to Ch 3.0 km	Rural	110	2-way 2-lane	Sealed
	Ch 3.0 km to Ch 13.0 km	Rural	110	2-way 2-lane	Sealed
	Ch 13.0 km to Ch 121.6 km	Rural	110	2-way 2-lane	Sealed
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	Urban	100	2-way 6-lane	Sealed
	Ch 3.7 km to Ch 6.4 km	Urban	100	2-way 6-lane	Sealed
	Ch 6.4 km to Ch 8.3 km	Urban	100	2-way 6-lane	Sealed
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	Rural	100	2-way 2-lane	Sealed
	Ch 220.1 km to Ch 222.4 km	Urban	100	2-way 2-lane	Sealed
	Ch 222.4 km to Ch 224.1 km	Urban	100	2-way 2-lane	Sealed
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	Urban	100	2-way 4-lane	Sealed
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	Rural	100	2-way 2-lane	Sealed
	Ch 2.5 km to Ch 3.5 km	Rural	100	2-way 2-lane	Sealed
	Ch 3.5 km to Ch 6.2 km	Rural	100	2-way 2-lane	Sealed
	Ch 6.2 km to Ch 9.0 km	Rural	100	2-way 2-lane	Sealed
	Ch 9.0 km to Ch 13.1 km	Rural	100	2-way 2-lane	Sealed
	Ch 13.1 km to Ch 14.0 km	Rural	100	2-way 2-lane	Sealed
	Ch 14.0 km to Ch 17.3 km	Rural	100	2-way 2-lane	Sealed
	Ch 17.3 km to Ch 18.1 km	Rural	100	2-way 2-lane	Sealed
	Ch 18.1 km to Ch 21.8 km	Rural	100	2-way 2-lane	Sealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
	Ch 21.8 km to Ch 28.0 km	Rural	100	2-way 2-lane	Sealed
	Ch 28.0 km to Ch 33.0 km	Rural	100	2-way 2-lane	Sealed
	Ch 33.0 km to Ch 35.6 km	Rural	100	2-way 2-lane	Sealed
	Ch 35.6 km to Ch 37.7 km	Rural	100	2-way 2-lane	Sealed
	Ch 37.7 km to Ch 39.8 km	Rural	100	2-way 2-lane	Sealed
	Ch 39.8 km to Ch 41.9 km	Rural	100	2-way 2-lane	Sealed
	Ch 41.9 km to Ch 45.9 km	Rural	100	2-way 2-lane	Sealed
	Ch 45.9 km to Ch 47.6 km	Rural	100	2-way 2-lane	Sealed
	Ch 47.6 km to Ch 53.3 km	Rural	100	2-way 2-lane	Sealed
	Ch 53.3 km to Ch 55.7 km	Rural	100	2-way 2-lane	Sealed
	Ch 55.7 km to Ch 56.6 km	Rural	100	2-way 2-lane	Sealed
	Ch 56.6 km to Ch 59.2 km	Rural	100	2-way 2-lane	Sealed
	Ch 59.2 km to Ch 61.0 km	Rural	100	2-way 2-lane	Sealed
	Ch 61.0 km to Ch 65.7 km	Rural	100	2-way 2-lane	Sealed
	Ch 65.7 km to Ch 68.7 km	Rural	100	2-way 2-lane	Sealed
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	Rural	100	2-way 2-lane	Sealed
	Ch 2.0 km to Ch 2.2 km	Rural	100	2-way 2-lane	Sealed
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	Urban	100	2-way 4-lane	Sealed
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	Urban	100	2-way 4-lane	Sealed
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	Rural	100	2-way 2-lane	Sealed
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	Rural	100	2-way 2-lane	Sealed
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	Urban	100	2-way 2-lane	Sealed
	Ch 6.0 km to Ch 6.4 km	Urban	100	2-way 2-lane	Sealed
	Ch 6.4 km to Ch 8.3 km	Urban	100	2-way 2-lane	Sealed
	Ch 8.3 km to Ch 9.2 km	Rural	100	2-way 2-lane	Sealed
	Ch 9.2 km to Ch 10.0 km	Rural	100	2-way 2-lane	Sealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
	Ch 10.0 km to Ch 10.1 km	Rural	100	2-way 2-lane	Sealed
	Ch 10.1 km to Ch 10.3 km	Rural	100	2-way 2-lane	Sealed
	Ch 10.3 km to Ch 12.1 km	Rural	100	2-way 2-lane	Sealed
	Ch 12.1 km to Ch 14.5 km	Rural	100	2-way 2-lane	Sealed
	Ch 14.5 km to Ch 16.3 km	Rural	100	2-way 2-lane	Sealed
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	Rural	80	2-way 4-lane	Sealed
	Ch 26.9 km to Ch 27.1 km	Rural	80	2-way 4-lane	Sealed
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	Rural	100	2-way 4-lane	Sealed
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	Rural	100	2-way 2-lane	Sealed
	Ch 0.6 km to Ch 3.2 km	Rural	100	2-way 2-lane	Sealed
	Ch 3.2 km to Ch 4.1 km	Rural	100	2-way 2-lane	Sealed
	Ch 4.1 km to Ch 13.0 km	Rural	100	2-way 2-lane	Sealed
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	Urban	100	1-way 1-lane	Sealed
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	Urban	100	1-way 1-lane	Sealed
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	Urban	100	1-way 1-lane	Sealed
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	Urban	100	1-way 1-lane	Sealed
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	Urban	100	1-way 1-lane	Sealed
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	Urban	100	1-way 1-lane	Sealed
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	Rural	100	2-way 4-lane	Sealed
	Ch 7.2 km to Ch 15.1 km	Rural	100	2-way 4-lane	Sealed
	Ch 15.1 km to Ch 18.9 km	Rural	100	2-way 4-lane	Sealed
	Ch 18.9 km to Ch 28.9 km	Rural	100	2-way 4-lane	Sealed
	Ch 28.9 km to Ch 36.6 km	Rural	100	2-way 4-lane	Sealed
	Ch 36.6 km to Ch 55.5 km	Rural	100	2-way 4-lane	Sealed
	Ch 55.5 km to Ch 75.4	Rural	100	2-way 4-lane	Sealed
	Ch 75.4 km to Ch 79.6 km	Rural	100	2-way 4-lane	Sealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	Rural	100	2-way 4-lane	Sealed
	Ch 0.4 km to Ch 1.5 km	Rural	100	2-way 4-lane	Sealed
	Ch 1.5 km to Ch 2.4 km	Rural	100	2-way 4-lane	Sealed
	Ch 2.4 km to Ch 4.5 km	Rural	100	2-way 4-lane	Sealed
	Ch 4.5 km to Ch 5.0 km	Rural	100	2-way 4-lane	Sealed
	Ch 5.0 km to Ch 5.3 km	Rural	100	2-way 4-lane	Sealed
	Ch 5.3 km to Ch 6.2 km	Rural	100	2-way 4-lane	Sealed
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	Rural	100	1-way 1-lane	Sealed
State-Controlled Road: Transport for New South Wales					
Newell Highway	River Road to Queensland/NSW Border	Rural	100	2-way 2-lane	Sealed
Local Government Road: Balonne Shire Council					
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	Rural	50	2-way 2-lane	Sealed
Local Government Road: Goondiwindi Regional Council					
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	Urban	50	2-way 2-lane	Sealed
Bybera Road	Cunningham Highway to B2G-LDN060.4	Rural	100	2-way 2-lane	Sealed
	B2G-LDN060.4 to Earthworks Area 2A	Rural	100	2-way 2-lane	Sealed
Cemetery Road	Access Track to Moorooobie Lane	Rural	50	2-way 2-lane	Unsealed
	Cunningham Highway to GrainCorp Goondiwindi	Rural	50	2-way 2-lane	Sealed
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	Rural	80	2-way 2-lane	Sealed
	Coolmunda Dam Access to Cunningham Highway	Rural	80	2-way 2-lane	Sealed
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	Rural	100	2-way 2-lane	Sealed
	B2G-LDN055.4 to B2G-LDN054.2	Rural	100	2-way 2-lane	Sealed
	Cunningham Highway to B2G-LDN052.8	Rural	100	2-way 2-lane	Sealed
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	Rural	100	2-way 2-lane	Unsealed
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	Urban	50	2-way 2-lane	Unsealed
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	Rural	100	2-way 2-lane	Unsealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
	NS2B-LDN033.2 to NS2B-LDN035.6	Rural	100	2-way 2-lane	Unsealed
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	Rural	100	2-way 2-lane	Sealed
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	Rural	100	2-way 2-lane	Unsealed
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	Rural	100	2-way 2-lane	Sealed
Hunt Street	Leichhardt Highway to Boodle Street	Urban	60	2-way 2-lane	Sealed
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	Rural	100	2-way 2-lane	Sealed
	NS2B-LDN031.0 to South Kurumbul Road	Rural	100	2-way 2-lane	Sealed
	South Kurumbul Road to Cunningham Highway	Rural	100	2-way 2-lane	Sealed
	Cunningham Highway to Eukabilla Road	Rural	100	2-way 2-lane	Sealed
McDougalls Road	B2G-LDN049.8 to McDougalls Road	Rural	100	2-way 2-lane	Unsealed
	McDougalls Road to Cunningham Highway	Rural	100	2-way 2-lane	Unsealed
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	Rural	100	2-way 2-lane	Unsealed
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	Rural	100	2-way 2-lane	Unsealed
	Mooroobie Lane to Wondalli Kurumbul Road	Rural	100	2-way 2-lane	Unsealed
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	Rural	100	2-way 2-lane	Unsealed
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	Rural	100	2-way 2-lane	Unsealed
Silo Street	Barwon Highway to GrainCorp Talwood	Rural	50	2-way 2-lane	Sealed
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	Rural	100	2-way 2-lane	Sealed
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	Rural	100	2-way 2-lane	Sealed
Springborg Road	Cunningham Highway to B2G-LDN037.6	Rural	100	2-way 2-lane	Unsealed
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	Rural	80	2-way 2-lane	Unsealed
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	Rural	100	2-way 2-lane	Unsealed
	B2G-LDN067.6 to Millmerran-Inglewood Road	Rural	100	2-way 2-lane	Unsealed
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	Urban	50	2-way 2-lane	Sealed
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	Rural	100	2-way 2-lane	Unsealed
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	Rural	100	2-way 2-lane	Unsealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	Rural	100	2-way 2-lane	Unsealed
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	Rural	100	2-way 2-lane	Unsealed
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	Rural	100	2-way 2-lane	Sealed
	B2G-LDN006.3 to Wondalli Kurumbul Road	Rural	100	2-way 2-lane	Sealed
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	Rural	100	2-way 2-lane	Unsealed
	Yelarbon Kurumbul Road to B2G-LDN020.3	Rural	100	2-way 2-lane	Unsealed
	B2G-LDN020.3 to B2G-LDN025.9	Rural	100	2-way 2-lane	Unsealed
	B2G-LDN025.9 to Cunningham Highway	Rural	100	2-way 2-lane	Sealed
Local Government Road: Moree Plains Shire Council					
Boggabilla Weir Access	River Road to Boggabilla Weir	Rural	50	2-way 2-lane	Unsealed
River Road	Newell Highway to Boggabilla Weir Access	Rural	50	2-way 2-lane	Sealed
Local Government Road: Toowoomba Regional Council					
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	Urban	60	2-way 2-lane	Sealed
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	Urban	60	2-way 2-lane	Sealed
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	Urban	60	2-way 2-lane	Sealed
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	Rural	100	2-way 2-lane	Sealed
	B2G-LDN188.2 to Gore Highway	Rural	100	2-way 2-lane	Sealed
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	Rural	100	2-way 2-lane	Sealed
Blackwell Road	Gore Highway to Millmerran Quarry	Rural	100	2-way 2-lane	Unsealed
	Millmerran Quarry to B2G-LDN120.2	Rural	100	2-way 2-lane	Unsealed
	B2G-LDN120.2 to Millmerran-Inglewood Road	Rural	100	2-way 2-lane	Unsealed
Bligh Street	Six Mile Road to Boral Concrete Millmerran	Rural	100	2-way 2-lane	Sealed
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	Rural	100	2-way 2-lane	Sealed
	Brimblecombe Road to WL 194467R	Rural	100	2-way 2-lane	Sealed
Bushy Lane	B2G-LDN183.0 to Gore Highway	Rural	100	2-way 2-lane	Unsealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	Urban	60	2-way 2-lane	Sealed
	Saleyards Road to Gore Highway	Urban	60	2-way 2-lane	Sealed
Chamberlain Road	Warrego Highway to B2G-LDN204.2	Rural	100	2-way 2-lane	Unsealed
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	Rural	100	2-way 2-lane	Sealed
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	Rural	100	2-way 2-lane	Unsealed
Dieckmann Road	B2G-LDN150.5 to Gore Highway	Rural	100	2-way 2-lane	Unsealed
Draper Road	Steger Road to B2G-FBW206.9	Rural	60	2-way 2-lane	Sealed
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	Rural	100	2-way 2-lane	Sealed
	Access Track to Greenwattle Street	Rural	100	2-way 2-lane	Sealed
Florence Street	Gore Highway to West Street	Urban	50	2-way 2-lane	Sealed
Forestry Road	Access Track to Millmerran-Inglewood Road	Rural	100	2-way 2-lane	Unsealed
	Millmerran-Inglewood Road to Earthworks Area 3B	Rural	100	2-way 2-lane	Unsealed
Fysh Road	B2G-LDN147.1 to Gore Highway	Rural	100	2-way 2-lane	Sealed
Gap Road	Gore Highway to Grevillea Street	Rural	70	2-way 2-lane	Sealed
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	Rural	100	2-way 2-lane	Sealed
Gilgai Lane	B2G-LDN144.6 to Gore Highway	Rural	100	2-way 2-lane	Unsealed
Grevillea Street	Boral Concrete Pittsworth to Gap Road	Urban	50	2-way 2-lane	Sealed
Hall Road	B2G-LDN139.0 to Gore Highway	Rural	100	2-way 2-lane	Unsealed
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	Rural	100	2-way 2-lane	Sealed
	B2G-LDN116.0 to Millmerran-Inglewood Road	Rural	100	2-way 2-lane	Sealed
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	Rural	40	2-way 2-lane	Sealed
Kahler Road	Murlaggan Road to B2G-LDN165.6	Rural	100	2-way 2-lane	Unsealed
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	Urban	60	2-way 2-lane	Sealed
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	Urban	60	2-way 2-lane	Sealed
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	Rural	100	2-way 2-lane	Sealed
	Millmerran-Inglewood Road to Commodore Mine	Rural	100	2-way 2-lane	Unsealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
Leesons Road	Warrego Highway to Steger Road	Rural	100	2-way 2-lane	Sealed
	Steger Road to B2G-LDN206.3	Rural	100	2-way 2-lane	Sealed
Linthorpe Road	Gore Highway to B2G-LDN175.5	Rural	100	2-way 2-lane	Sealed
Linthorpe Valley Road	Geitz Road to Gore Highway	Rural	100	2-way 2-lane	Sealed
Lochaber Road	Gore Highway to B2G-LDN172.0	Rural	100	2-way 2-lane	Sealed
	B2G-LDN172.0 to B2G-LDN172.6	Rural	100	2-way 2-lane	Sealed
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	Urban	60	2-way 2-lane	Sealed
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	Rural	100	2-way 2-lane	Sealed
	B2G-LDN112.1 to Millwood Road	Rural	100	2-way 2-lane	Sealed
	Millwood Road to Koorongarra Road	Rural	100	2-way 2-lane	Unsealed
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	Rural	100	2-way 2-lane	Sealed
Murlaggan Road	B2G-LDN164.3 to Kahler Road	Rural	100	2-way 2-lane	Unsealed
	Kahler Road to Gore Highway	Rural	100	2-way 2-lane	Unsealed
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	Rural	100	2-way 2-lane	Sealed
Omara Road	Toowoomba-Cecil Plains Road to Warrego Highway	Urban	100	2-way 2-lane	Sealed
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	Rural	100	2-way 2-lane	Sealed
	B2G-LDN128.2 to B2G-LDN130.0	Rural	100	2-way 2-lane	Sealed
	B2G-LDN130.0 to Millmerran-Inglewood Road	Rural	100	2-way 2-lane	Sealed
Paint Mine Road	Gore Highway to B2G-LDN173.5	Rural	100	2-way 2-lane	Unsealed
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	Rural	100	2-way 2-lane	Unsealed
Quarry Road Access	Tummalville Road to Quarry	Rural	50	2-way 2-lane	Unsealed
Saleyards Road	Campbell Street to Gore Highway	Urban	60	2-way 2-lane	Sealed
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	Rural	100	2-way 2-lane	Unsealed
Scragg Road	Commodore Peak Road to B2G-LDN123.6	Rural	100	2-way 2-lane	Unsealed
	B2G-LDN123.6 to B2G-LDN123.8	Rural	100	2-way 2-lane	Unsealed
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	Rural	100	2-way 2-lane	Sealed

Road name	Road section	Road environment	Speed limit (km/h)	Lane configuration	Seal
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	Rural	100	2-way 2-lane	Sealed
	New Hope Recycled Water Pipeline to Draper Road	Rural	100	2-way 2-lane	Sealed
	Draper Road to Leeson's Road	Rural	100	2-way 2-lane	Sealed
Tummaville Road	Access Track to Gore Highway	Rural	100	2-way 2-lane	Sealed
Turallin Road	Gore Highway to the Turallin Facility	Rural	100	2-way 2-lane	Sealed
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	Urban	100	2-way 2-lane	Sealed
	B2G-LDN153.1 to Gore Highway	Urban	100	2-way 2-lane	Sealed
	Gore Highway to B2G-LDN150.9	Urban	100	2-way 2-lane	Sealed
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	Rural	100	2-way 2-lane	Sealed
West Street	Gore Highway to Florence Street	Urban	50	2-way 2-lane	Sealed
	Florence Street to Six Mile Road	Urban	50	2-way 2-lane	Sealed
Yarranlea Road	Gore Highway to B2G-LDN161.0	Rural	100	2-way 2-lane	Sealed
	B2G-LDN161.0 to Desmonds Lane	Rural	100	2-way 2-lane	Sealed

2.3.2 Intersections

The construction routes traverse several intersections along the road network. For the purpose of this TIA, all intersections with turning movements (including right or left turns) have been assessed in the intersections assessment. Intersections with only through movements have been considered under the road link assessment in the first instance. If the road link capacity assessment shows a constraint, further assessment would be undertaken at the intersections along the link. A road link capacity constraint was considered as having the following three requirements:

- Five per cent threshold triggered
- Incremental change in Level of Service (LOS)
- LOS C (Section 5.5.1.1 for definition) or above.

The capacity/performance thresholds for assessment provided above have been developed with reference to *Austrroads Guide to Traffic Management Part 3: Traffic Studies and Analysis* (2017a), *GTIA* (2018) and *DTMR Guidelines for Assessment of Road Impacts of Development* (2017).

A total of 116 intersections have been assessed in this TIA. These intersections have been summarised in Table 2.3, including relevant intersection details, including name, road authority, intersection type, existing turn treatments and existing potential visibility constraints. All intersections are shown in Appendix A.

The existing turn treatments include the following:

- BAL: Basin Left Turn
- BAR: Basic Right Turn
- AUL: Auxiliary Left Turn
- AUL(s): Auxiliary Left Turn (short)
- CHR: Channelised Right Turn
- CHL: Channelised Left Turn
- CHR(s): Channelised Right Turn (short).

Intersections are in the six road authorities previously outlined in Table 2.1.

Table 2.3 Surrounding road network details – intersections

Intersection name	Joint authority	Type	Existing right turn treatment	Existing left turn treatment	Potential visibility constraints
State-Controlled Roads: Department of Transport and Main Roads					
Barwon Highway/Barwon Highway	-	4-way priority	CHR	CHL	-
Barwon Highway/Carnarvon Highway	-	3-way priority	BAR	CHL	Vegetation near intersection
Barwon Highway/Leichhardt Highway	-	3-way priority	CHR	AUL	Urban area
Barwon Highway/Silo Street	GRC	3-way priority	-	-	-
Barwon Highway/South Toobeah Road	GRC	4-way priority	BAR	BAL	-
Barwon Highway/Town Common Road	GRC	3-way priority	-	BAL	-
Carnarvon Highway/Noondoo Thallon Road	BSC	3-way priority	BAR	BAL	-
Cunningham Highway/Bybera Road	GRC	3-way priority	AUR	AUL	Vegetation near intersection
Cunningham Highway/Cemetery Road	GRC	3-way priority	CHR	BAL	Railway near intersection
Cunningham Highway/Coolmunda Dam Access	GRC	3-way priority	CHR	BAL	Horizontal curve
Cunningham Highway/Cremascos Road	GRC	3-way priority	CHR	AUL(S)	Horizontal curve, vegetation near intersection
Cunningham Highway/East Sawmill Road	GRC	3-way priority	BAR	BAL	Horizontal curve
Cunningham Highway/Elizabeth Street	GRC	4-way priority	CHR	BAL	Urban area
Cunningham Highway/Fosters Road	GRC	3-way priority	BAR	BAL	Horizontal curve, vegetation near intersection
Cunningham Highway/Inglewood Quarry Access Road	GRC	3-way priority	AUR	AUL	Horizontal curve, vegetation near intersection
Cunningham Highway/Kildonan Road	GRC	4-way roundabout	n/a	n/a	Large vegetation within roundabout
Cunningham Highway/Leichhardt Highway	-	3-way priority	CHR	CHL	Vegetation near intersection
Cunningham Highway/McDougalls Road	GRC	3-way priority	BAR	BAL	Vegetation near intersection
Cunningham Highway/Millmerran-Inglewood Road	GRC	3-way priority	CHR	CHL	Horizontal curve
Cunningham Highway/Springborg Road	GRC	3-way priority	BAR	BAL	Horizontal curve
Cunningham Highway/Texas-Yelarbon Road	GRC	3-way priority	CHR(s)	BAL	-
Cunningham Highway/Whetstone Access Road	GRC	3-way priority	BAR	BAL	Vegetation near intersection
Cunningham Highway/Woodcocks Road	GRC	3-way priority	BAR	BAL	-
Cunningham Highway/Yelarbon-Keetah Road	GRC	3-way priority	BAR	BAL	Level crossing near intersection

Intersection name	Joint authority	Type	Existing right turn treatment	Existing left turn treatment	Potential visibility constraints
Cunningham Highway/Yelarbon Kurumbul Road	GRC	4-way priority	BAR	BAL	-
Gore Highway/Fysh Road	TRC	3-way priority	-	BAL	-
Gore Highway/Alderley Street	TRC	4-way signalised	n/a	n/a	Urban area
Gore Highway/Athol School Road	TRC	3-way priority	CHR	CHL	Horizontal curve
Gore Highway/Biddeston Southbrook Road	TRC	3-way priority	-	-	Vertical curve
Gore Highway/Blackwell Road	TRC	3-way priority	BAR	BAL	Horizontal curve, large vegetation near intersection
Gore Highway/Bushy Lane	TRC	4-way priority	-	-	Horizontal curve
Gore Highway/Campbell Street	TRC	3-way priority	BAR	BAL	Urban area
Gore Highway/Dieckmann Road	TRC	3-way priority	-	-	-
Gore Highway/Florence Street	TRC	3-way priority	BAR	BAL	Urban area, vegetation near intersection
Gore Highway/Gilgai Lane	TRC	3-way priority	BAR	-	-
Gore Highway/Hall Road	TRC	4-way priority	BAR	CHL	Vegetation near intersection
Gore Highway/Linthorpe Road	TRC	3-way priority	BAR	BAL	-
Gore Highway/Linthorpe Valley Road	TRC	3-way priority	BAR	BAL	Vertical curve
Gore Highway/Lochaber Road	TRC	3-way priority	CHR	CHL	-
Gore Highway/Millmerran-Inglewood Road	-	3-way priority	BAR	CHL	Vegetation near intersection
Gore Highway/Millmerran-Leyburn Road	-	3-way priority	AUR	BAL	-
Gore Highway/Murlaggan Road	TRC	4-way priority	CHR	CHL	Urban area
Gore Highway/Oakey-Pittsworth Road	TRC	3-way priority	CHR	CHL	Vegetation near intersection
Gore Highway/Paint Mine Road	TRC	3-way priority	-	-	-
Gore Highway/Saleyards Road	TRC	3-way priority	BAR	BAL	-
Gore Highway/Scrubby Road	TRC	3-way priority	-	BAL	Horizontal curve
Gore Highway/Tummalville Road/Yarranlea Road	TRC	4-way priority	BAR	BAL	-
Gore Highway/Turallin Road	TRC	3-way priority	BAR	-	Horizontal curve
Gore Highway/Ware Street (N)	TRC	4-way priority	AUR	BAL	-
Gore Highway/Ware Street (S)	TRC	3-way priority	CHR	BAL	-

Intersection name	Joint authority	Type	Existing right turn treatment	Existing left turn treatment	Potential visibility constraints
Gore Highway/West Street	TRC	3-way priority	CHR	BAL	Urban area, horizontal curve
Leichhardt Highway/Hunt Street	GRC	3-way priority	CHR	AUL	Urban area
Millmerran-Inglewood Road/Blackwell Road	TRC	3-way priority	BAR	BAL	Horizontal curve
Millmerran-Inglewood Road/Campbell Street	TRC	3-way priority	CHR	AUR	Horizontal curve
Millmerran-Inglewood Road/Commodore Peak Road	TRC	3-way priority	BAR	BAL	Horizontal curve
Millmerran-Inglewood Road/Forestry Road	TRC	3-way priority	-	-	Vegetation near intersection
Millmerran-Inglewood Road/Grays Road	GRC	3-way priority	-	BAL	Vegetation near intersection
Millmerran-Inglewood Road/Heckendorf Road	TRC	3-way priority	BAR	BAL	Vertical curve
Millmerran-Inglewood Road/Kooroongarra Road	TRC	4-way priority	BAR	BAL	Horizontal curve
Millmerran-Inglewood Road/Millwood Road	TRC	4-way priority	BAR	BAL	Vegetation near intersection
Millmerran-Inglewood Road/Moffatt Reserve Road	TRC	3-way priority	BAR	AUL	Vegetation near intersection
Millmerran-Inglewood Road/Owens Scrub Road	TRC	3-way priority	BAR	BAL	Horizontal curve
Millmerran-Inglewood Road/Paton Road	TRC	3-way priority	-	BAL	Vegetation near intersection
Millmerran-Inglewood Road/Thornton Road	GRC	3-way priority	BAR	BAL	Horizontal curve, vegetation near intersection
Millmerran-Inglewood Road/Wongavale Yugalbar Road	GRC	3-way priority	-	-	Vegetation near intersection
Texas-Yelarbon Road/Access Track	GRC	3-way priority	-	-	-
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road	TRC	3-way priority	BAR	BAL	-
Toowoomba-Cecil Plains Road/Brimblecombe Road	TRC	3-way priority	BAR	BAL	-
Toowoomba-Cecil Plains Road/Charlton Connection Road	-	4-way roundabout	n/a	n/a	Urban area
Toowoomba-Cecil Plains Road/McDougall Street	TRC	4-way signalised	n/a	n/a	Urban area
Toowoomba-Cecil Plains Road/Omara Road	TRC	3-way priority	CHR	-	Horizontal curve, vegetation near intersection
Toowoomba-Cecil Plains Road/Toowoomba Bypass NB Ramps	-	4-way signalised	n/a	n/a	-
Toowoomba-Cecil Plains Road/Toowoomba Bypass SB Ramps	-	4-way signalised	n/a	n/a	-
Toowoomba-Cecil Plains Road/Access Track	TRC	3-way priority	-	-	Horizontal curve
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road	TRC	4-way priority	BAR	BAL	Horizontal curve

Intersection name	Joint authority	Type	Existing right turn treatment	Existing left turn treatment	Potential visibility constraints
Warrego Highway/Chamberlain Road	TRC	2-way priority	-	Not permitted	-
Warrego Highway/Leesons Road	TRC	3-way priority	CHR	BAL	-
Warrego Highway/Omara Road/Steger Road	TRC	4-way signalised	n/a	n/a	Urban area
Warrego Highway/Toowoomba Bypass NB Ramps	TRC	4-way signalised	n/a	n/a	Horizontal curve
Warrego Highway/Toowoomba Bypass SB Ramps	TRC	4-way signalised	n/a	n/a	Horizontal curve
Warrego Highway/Toowoomba Bypass	TRC	4-way roundabout	n/a	n/a	Vertical curve
State-Controlled Road: Transport for New South Wales					
Newell Highway/River Road	-	3-way priority	BAR	BAL	Horizontal curve
Local Government Road: Goondiwindi Regional Council					
Cemetery Road/Access Track	-	3-way priority	-	-	
Coolmunda Dam Access/Coolmunda Dam Access	-	3-way priority	-	-	Vegetation near intersection
Hunt Street/Boodle Street	-	3-way priority	-	-	Vegetation near intersection
Kildonan Road/Eukabilla Road	-	3-way priority	BAR	BAL	-
Kildonan Road/South Kurumbul Road	-	3-way priority	BAR	BAL	Horizontal curve
McDougalls Road/Access Track	-	3-way priority	-	-	Horizontal curve, vegetation near intersection
Mooroobie Lane/Cemetery Road	-	3-way priority	BAR	-	Railway near intersection
Mooroobie Lane/Mooroobie Lane	-	3-way priority	BAR	BAL	Vegetation near intersection, horizontal curve
Mosquito Creek Road/Grays Road	-	3-way priority	-	-	Horizontal curve, vegetation near intersection
Suttons Road/Access Track	-	3-way priority	-	-	-
Wondalli Kurumbul Road/Mooroobie Lane	-	4-way priority	BAR	BAL	
Yelarbon Kurumbul Road/Queen Street South	-	3-way priority	-	-	Railway near intersection
Yelarbon Kurumbul Road/South Kurumbul Road	-	3-way priority	-	-	Railway near intersection
Yelarbon Kurumbul Road/Wondalli Kurumbul Road	-	3-way priority	BAR	BAL	Railway and vegetation near intersection
Cemetery Road/Access Track	-	3-way priority	-	-	Vegetation near intersection
Local Government Road: Moree Plains Shire Council					
River Road/River Road	-	3-way priority	-	-	Vegetation near intersection

Intersection name	Joint authority	Type	Existing right turn treatment	Existing left turn treatment	Potential visibility constraints
Local Government Road: Toowoomba Regional Council					
Campbell Street/Saleyards Road	-	3-way priority	BAR	BAL	Horizontal curve
Commodore Peak Road/Scragg Road	-	3-way priority	-	-	Horizontal curve
Drayton Wellcamp Road/Boundary Street South	-	4-way priority	CHR	AUL	Vegetation near intersection
Forestry Road/Access Track	-	3-way priority	-	-	Dense vegetation near intersection
Gap Road/Grevillea Street	-	3-way priority	-	-	Horizontal curve, railway near intersection, urban area
Greenwattle Street/Alderley Street	-	3-way priority	-	-	Urban area
Kingsthorpe Haden Road/Kingsthorpe Overpass	-	4-way signalised	CHR	BAL	Urban area, railway near intersection
Kooroongarra Road/Millwood Road	-	4-way priority	BAR	BAL	Vegetation near intersection
Leesons Road/Steger Road	-	3-way priority	-	-	-
Linthorpe Valley Road/Geitz Road	-	3-way priority	-	-	Horizontal curve
Millwood Road/Millwood Road	-	3-way priority	BAR	BAL	Horizontal curve, vegetation near intersection
Murlaggan Road/Kahler Road	-	4-way priority	-	-	Vegetation near intersection
Six Mile Road/Bligh Street	-	3-way priority	-	-	Horizontal curve, vegetation near intersection
Steger Road/Draper Road	-	3-way priority	-	BAL	-
Tummalville Road/Quarry Road Access	-	3-way priority	-	BAL	Vertical curve
Wellcamp Westbrook Road/Drayton Wellcamp Road	-	3-way priority	-	BAL	Urban area
West Street/Florence Street	-	4-way priority	BAR	BAL	Urban area
Yarranlea Road/Desmonds Lane	-	4-way priority	BAR	BAL	Horizontal curve, railway near intersection

2.3.3 Road-rail interfaces with the Project

The proposed rail alignment is anticipated to intersect the SCR and LGR network at several locations. These public road-rail interfaces are detailed in Table 2.4. Table 2.4 includes details regarding the road intersected by the rail alignment, whether there is an existing level crossing and if so which crossing type, and at what chainage of the rail alignment the road-rail interface is present. The road-rail interface locations are shown in Figure 1.2.

The project alignment traverses through only two local government regions through Queensland. Road-rail interfaces are proposed within the jurisdiction of three road authorities, namely DTMR, GRC and TRC.

Table 2.4 Proposed road-rail interfaces with the Project

Project interface ID	Road name	Status	Revised reference design interface chainage (km)
State-Controlled Roads: Department of Transport and Main Roads			
310-11-E-0	Cunningham Highway (Wondalli Street)	Existing	25.6
310-24-P-2	Millmerran-Inglewood Road	Proposed	73.1
310-35-P-4	Millmerran-Inglewood Road	Proposed	115.5
310-37-P-12a	Millmerran-Inglewood Road	Proposed	127.0
310-40-E-2	Millmerran-Leyburn Road	Existing	141.4
310-44-E-2	Gore Highway	Existing	154.4
310-48-P-8	Oakey-Pittsworth Road	Proposed	172.2
310-55-P-1	Toowoomba-Cecil Plains Road	Proposed	197.4
310-56-P-2	Warrego Highway	Proposed	204.3
Local Government: Goondiwindi Regional Council			
270-12-P-1	Kildonan Road	Proposed	33.1 (NS2B)*
310-4-E-2	South Kurumbul Road	Existing	6.1
310-7-E-1	Unnamed Road	Existing	15.1
310-10-P-1	Unnamed Road (Stock Route)	Proposed	25.4
310-12-E-1	Suttons Road	Existing	30.3
310-14-E-0	Springborg Road	Existing	37.7
310-16-P-1a	Whetstone Access Road	Proposed	45.6
310-18-P-8	Cremascos Road	Proposed	54.5
310-20-P-12	Bybera Road	Proposed	60.5
310-21-P-9	Lovells Crossing Road	Proposed	65.8
310-22-P-9	Thornton Road	Proposed	68.7
310-25-P-3	Grays Road	Proposed	78.4
310-26-P-2	Wongavale Yugilbar Road	Proposed	80.9
310-27-P-3	Unnamed Road (Stock Route – minor and unused)	Proposed	84.2
310-28-P-3	Unnamed Road	Proposed	91.8
Local Government: Toowoomba Regional Council			
310-30-P-2	Kooroongarra Anderson Road (Stock Route)	Proposed	96.1
310-31-P-7	Kooroongarra Road	Proposed	103.0
310-32-P-4	Paton Road	Proposed	105.8
310-33-P-1	Nicol Creek Road	Proposed	107.9
310-34-P-1	Millwood Road	Proposed	112.1

Project interface ID	Road name	Status	Revised reference design interface chainage (km)
310-35-P-4b	Heckendorf Road	Proposed	116.4
310-36-P-1	Blackwell Road	Proposed	120.4
310-36-P-8b	Commodore Peak Road/Scragg Road	Proposed	123.9
310-38-P-3b	Owens Scrub Road	Proposed	129.9
310-41-E-6	Gilgai Lane	Existing	145.8
310-42-E-0a	Harris Road	Existing	148.2
310-43-E-3	Elsden Road	Existing	151.2
310-43-P-8a	Mann Silo Access Road	Proposed	153.4
310-45-E-1	Longhurst Road	Existing	159.2
310-46-E-1	Yarranlea Road	Existing	162.5
310-46-P-3	Roche Road	Proposed	164.6
310-48-P-1	Tip Road	Proposed	170.4
310-49-P-2	Lochaber Road	Proposed	173.7
310-49-P-11	Linthorpe Road	Proposed	177.2
310-50-P-11	Linthorpe Valley Road	Proposed	182.2
310-51-P-11z	Biddeston Southbrook Road	Proposed	184.9
310-53-P-1a	Athol School Road	Proposed	189.3
310-55-P-5	Brimblecombe Road	Proposed	200.0
310-57-P-1	Chamberlain Road	Proposed	205.7
310-57-P-4	Leesons Road	Proposed	207.7

Table note:

*NS2B = North Star to NSW/Queensland Border

2.4 Traffic volumes

2.4.1 Road links

As previously described in Section 2.3.1, the road network utilised by construction traffic has been split into 526 road links with unique traffic volumes, consolidated into 267 road sections accounting for most road sections being used in both directions. These road links indicate sections of roads with consistent traffic volumes, taking into account where background traffic volumes change and where construction traffic turn on and off the road.

The existing traffic volumes for all road links has been determined based on available data of background traffic volumes, growth rates, seasonal variation factors and peak hour factors. The methodology to determine the existing traffic volumes and future traffic volumes is explained in the following sections. This methodology is consistent with the method provided to the OCG as requested as a part of the additional information request process (technical memo provided in Appendix BP).

ARTC acknowledges that DTMR has previously provided growth rates for State-controlled roads affected by the Inland Rail alignment and permanent works. These growth rates have been utilised by ARTC in the design of permanent road works and road-rail interface assessments.

In contrast, the TIA encompasses construction routes that extend beyond the immediate alignment area and are not covered by the growth rates supplied by DTMR. To ensure consistency across the TIA assessment, historical annual average daily traffic and traffic count data has been used to calculate growth rates, consistent with standard traffic engineering practice and DTMR's GTIA which states that background traffic growth rates are most commonly derived from extrapolations of past data. Additionally, to comply with GTIA expectations, seasonal variation factors have been applied to traffic count data where necessary. Furthermore, negative growth rates observed on the road network have been adjusted to 0 per cent to adopt a conservative approach, such as on the Millmerran-Inglewood Road.

The growth rates provided by DTMR exceed those calculated within the TIA using the historical method. As a result, the current approach yields lower baseline traffic volumes for the affected roads. ARTC believes that this approach provides a more conservative impact assessment, as the construction traffic would currently create a higher differential percentage between the baseline traffic.

2.4.1.1 Background traffic data

Background traffic data is summarised in Table 2.6, providing a summary of average daily traffic (ADT) and HV percentage by direction in the year indicated. For DTMR roads, the data is provided in the Gazettal direction (G) (i.e. the direction of the declared road from start point to end point) or Anti-gazettal direction (AG). For all other roads, data is provided as northbound (NB), southbound (SB), westbound (WB) or eastbound (EB) as per the orientation of the road.

The table also provides details relating to the source of the background traffic data. Background traffic volumes for links were obtained from a variety of sources, including road controlling authorities, intersection counts and link counts. Table 2.5 provides a summary of the data sources used for the purpose of the TIA.

Traffic data base year varies from 2006 – 2022 due to different sources. It is noted that DTMR data was primarily sourced from 2019 count summaries to avoid under-estimation of traffic volumes due to COVID-19.

Table 2.5 Road links traffic data sources

Source ID	Traffic data source
A	DTMR detailed segment and weekly reports
B	TfNSW opensource Traffic Viewer
C	Goondiwindi Regional Council
D	Toowoomba Regional Council
E	Road link tube or video count traffic surveys These link counts were undertaken over a number of years through different iterations of the TIA. The different link count instances are summarised below: - March 2022 – Research and Analytics - October 2020 – Austraffic - August/September 2018 – Austraffic. These link counts were 7 or 14 day 24-hour counts. In some cases, several days of data were required to be disregarded due to unusual traffic patterns. This was primarily caused by road closures during flooding periods in early 2022.
F	Intersection video count traffic surveys These intersection counts were undertaken over a number of years through different iterations of the TIA. The different intersection count instances are summarised below: - May 2022 – Matrix - March 2022 – Matrix, and Research and Analytics - March 2021 – Austraffic. These intersection counts were 7-day 24-hour counts. In some cases, several days of data were required to be disregarded due to unusual traffic patterns. This was primarily caused by road closures during flooding periods in early 2022.

Source ID	Traffic data source
G	Assumed In some instances where traffic data was not available from road controlling authorities or traffic surveys conducted, an assumed traffic volumes was adopted based on similar road segments with the intention of providing a conservative volume for the 5% comparison.
H	Difference between adjacent DTMR road segments In addition, traffic volumes and HV % for privately operated roads (e.g. Toowoomba Bypass, Logan Motorway) were determined by the difference between adjacent DTMR road segments. For example: - Logan Motorway determined as difference in volumes from Ipswich Motorway before and after the Logan Motorway separation - Toowoomba Bypass determined as difference in volumes between Warrego Highway and Toowoomba Connection Road

During detailed design, once the construction routes are finalised with a construction contractor, it is recommended that traffic counts be obtained for updating the traffic analysis where recent data (i.e. previous 5 years) is not available to accurately determine impacts of final Project alignment, construction programme, methodology, routes and vehicle volumes.

It is noted that COVID-19 has had many impacts to the road network and traffic volumes. It remains unclear how travel will return in a post-COVID-19 world, however, sensitivity testing may be undertaken in the Detailed Design stage to account for differences in local growth due to COVID-19, as deemed necessary by stakeholders.

Table 2.6 Background traffic volumes and heavy vehicle percentage

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
State-Controlled Roads: Department of Transport and Main Roads								
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	A	55427	2019	988	25%	905	20%
	Ch 0.8 km to Ch 2.0 km	A	55427	2019	988	25%	905	20%
	Ch 2.0 km to Ch 45.9 km	A	50010	2019	333	26%	332	26%
	Ch 45.9 km to Ch 88.0 km	A	50010	2019	333	26%	332	26%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	A	50329	2019	121	23%	120	28%
	Ch 1.6 km to Ch 66.8 km	A	50329	2019	121	23%	120	28%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	A	51406	2019	99	33%	92	33%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	A	32074	2018	2134	29%	2407	28%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	A	50005	2019	791	43%	844	47%
	Ch 96.2 km to Ch 97.5 km	A	50005	2019	791	43%	844	47%
	Ch 97.5 km to Ch 105.7 km	A	50005	2019	791	43%	844	47%
	Ch 105.7 km to Ch 107.4 km	A	50005	2019	791	43%	844	47%
	Ch 107.4 km to Ch 107.6 km	A	51840	2019	1073	61%	1105	43%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	A	50023	2019	656	49%	702	48%
	Ch 2.0 km to Ch 3.9 km	A	50023	2019	656	49%	702	48%
	Ch 3.9 km to Ch 10.2 km	A	50023	2019	656	49%	702	48%
	Ch 10.2 km to Ch 13.9 km	A	50023	2019	656	49%	702	48%
	Ch 13.9 km to Ch 18.5 km	A	50023	2019	656	49%	702	48%
	Ch 18.5 km to Ch 27.1 km	A	50023	2019	656	49%	702	48%
	Ch 27.1 km to Ch 29.3 km	A	50023	2019	656	49%	702	48%
	Ch 29.3 km to Ch 34.7 km	A	50023	2019	656	49%	702	48%
	Ch 34.7 km to Ch 39.6 km	A	50023	2019	656	49%	702	48%
	Ch 39.6 km to Ch 40.3 km	A	50023	2019	656	49%	702	48%
	Ch 40.3 km to Ch 40.5 km	A	50023	2019	656	49%	702	48%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
	Ch 40.5 km to Ch 43.9 km	A	50023	2019	656	49%	702	48%
	Ch 43.9 km to Ch 46.3 km	A	50023	2019	656	49%	702	48%
	Ch 46.3 km to Ch 88.0 km	A	50023	2019	656	49%	702	48%
	Ch 88.0 km to Ch 88.2 km	A	50574	2019	1662	51%	1941	45%
	Ch 88.2 km to Ch 90.0 km	A	50574	2019	1662	51%	1941	45%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	H	TU 5	2019	47734	16%	48127	21%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	H	TU 4	2019	15981	5%	15384	2%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	A	30042	2019	2744	22%	2716	22%
	Ch 2.2 km to Ch 5.4 km	A	30042	2019	2744	22%	2716	22%
	Ch 5.4 km to Ch 6.7 km	A	30042	2019	2744	22%	2716	22%
	Ch 6.7 km to Ch 7.7 km	A	30042	2019	2744	22%	2716	22%
	Ch 7.7 km to Ch 11.2 km	A	30042	2019	2744	22%	2716	22%
	Ch 11.2 km to Ch 15.3 km	A	30042	2019	2744	22%	2716	22%
	Ch 15.3 km to Ch 17.5 km	A	30042	2019	2744	22%	2716	22%
	Ch 17.5 km to Ch 19.0 km	A	30042	2019	2744	22%	2716	22%
	Ch 19.0 km to Ch 20.3 km	A	30042	2019	2744	22%	2716	22%
	Ch 20.3 km to Ch 21.5 km	A	30024	2019	1468	30%	1479	28%
	Ch 21.5 km to Ch 23.2 km	A	30024	2019	1468	30%	1479	28%
	Ch 23.2 km to Ch 25.0 km	A	30024	2019	1468	30%	1479	28%
	Ch 25.0 km to Ch 30.1 km	A	30024	2019	1468	30%	1479	28%
	Ch 30.1 km to Ch 38.7 km	A	30024	2019	1468	30%	1479	28%
	Ch 38.7 km to Ch 41.1 km	A	30024	2019	1468	30%	1479	28%
	Ch 41.1 km to Ch 41.7 km	A	30024	2019	1468	30%	1479	28%
	Ch 41.7 km to Ch 43.2 km	A	30024	2019	1468	30%	1479	28%
	Ch 43.2 km to Ch 44.7 km	A	30024	2019	1468	30%	1479	28%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
	Ch 44.7 km to Ch 47.6 km	A	30024	2019	1468	30%	1479	28%
	Ch 47.6 km to Ch 52.2 km	A	30024	2019	1468	30%	1479	28%
	Ch 52.2 km to Ch 53.3 km	A	30024	2019	1468	30%	1479	28%
	Ch 53.3 km to Ch 60.8 km	A	30024	2019	1468	30%	1479	28%
	Ch 60.8 km to Ch 63.0 km	A	30024	2019	1468	30%	1479	28%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	A	30027	2019	881	38%	901	39%
	Ch 0.7 km to Ch 0.8 km	A	30027	2019	881	38%	901	39%
	Ch 0.8 km to Ch 1.4 km	A	30027	2019	881	38%	901	39%
	Ch 1.4 km to Ch 3.0 km	A	30027	2019	881	38%	901	39%
	Ch 3.0 km to Ch 13.0 km	A	30027	2019	881	38%	901	39%
	Ch 13.0 km to Ch 121.6 km	A	30027	2019	881	38%	901	39%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	A	140035	2019	55729	11%	56166	9%
	Ch 3.7 km to Ch 6.4 km	A	140027	2019	47583	11%	48768	9%
	Ch 6.4 km to Ch 8.3 km	A	136081	2018	52457	11%	50420	9%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	A	50019	2019	1111	38%	1105	36%
	Ch 220.1 km to Ch 222.4 km	A	50019	2019	1111	38%	1105	36%
	Ch 222.4 km to Ch 224.1 km	A	50019	2019	1111	38%	1105	36%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	H	TU 3	2019	15981	5%	15384	2%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	A	32644	2019	315	27%	305	37%
	Ch 2.5 km to Ch 3.5 km	A	32644	2019	315	27%	305	37%
	Ch 3.5 km to Ch 6.2 km	A	32562	2019	347	26%	341	26%
	Ch 6.2 km to Ch 9.0 km	A	32562	2019	347	26%	341	26%
	Ch 9.0 km to Ch 13.1 km	A	32562	2019	347	26%	341	26%
	Ch 13.1 km to Ch 14.0 km	A	32562	2019	347	26%	341	26%
	Ch 14.0 km to Ch 17.3 km	A	32562	2019	347	26%	341	26%
	Ch 17.3 km to Ch 18.1 km	A	32562	2019	347	26%	341	26%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
	Ch 18.1 km to Ch 21.8 km	A	32562	2019	347	26%	341	26%
	Ch 21.8 km to Ch 28.0 km	A	32562	2019	347	26%	341	26%
	Ch 28.0 km to Ch 33.0 km	A	32562	2019	347	26%	341	26%
	Ch 33.0 km to Ch 35.6 km	A	32562	2019	347	26%	341	26%
	Ch 35.6 km to Ch 37.7 km	A	32562	2019	347	26%	341	26%
	Ch 37.7 km to Ch 39.8 km	A	32562	2019	347	26%	341	26%
	Ch 39.8 km to Ch 41.9 km	A	50024	2019	169	35%	167	31%
	Ch 41.9 km to Ch 45.9 km	A	50024	2019	169	35%	167	31%
	Ch 45.9 km to Ch 47.6 km	A	50024	2019	169	35%	167	31%
	Ch 47.6 km to Ch 53.3 km	A	50024	2019	169	35%	167	31%
	Ch 53.3 km to Ch 55.7 km	A	50024	2019	169	35%	167	31%
	Ch 55.7 km to Ch 56.6 km	A	50024	2019	169	35%	167	31%
	Ch 56.6 km to Ch 59.2 km	A	50024	2019	169	35%	167	31%
	Ch 59.2 km to Ch 61.0 km	A	50024	2019	169	35%	167	31%
	Ch 61.0 km to Ch 65.7 km	A	50024	2019	169	35%	167	31%
	Ch 65.7 km to Ch 68.7 km	A	50024	2019	169	35%	167	31%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	A	32032	2018	94	20%	95	26%
	Ch 2.0 km to Ch 2.2 km	A	32032	2018	94	20%	95	26%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	A	136238	2016	5141	42%	5719	42%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	A	136238	2016	5141	42%	5719	42%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	A	51254	2019	90	23%	91	24%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	A	38584	2019	1836	11%	1889	13%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	A	32014	2018	2972	32%	2569	31%
	Ch 6.0 km to Ch 6.4 km	A	38585	2019	1684	14%	1693	25%
	Ch 6.4 km to Ch 8.3 km	A	38585	2019	1684	14%	1693	25%
	Ch 8.3 km to Ch 9.2 km	A	38585	2019	1684	14%	1693	25%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
	Ch 9.2 km to Ch 10.0 km	A	32664	2019	1702	15%	1698	19%
	Ch 10.0 km to Ch 10.1 km	A	32664	2019	1702	15%	1698	19%
	Ch 10.1 km to Ch 10.3 km	A	32664	2019	1702	15%	1698	19%
	Ch 10.3 km to Ch 12.1 km	A	32664	2019	1702	15%	1698	19%
	Ch 12.1 km to Ch 14.5 km	A	32664	2019	1702	15%	1698	19%
	Ch 14.5 km to Ch 16.3 km	A	32062	2018	1041	20%	1083	18%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	A	38586	2019	5844	19%	5579	15%
	Ch 26.9 km to Ch 27.1 km	A	38586	2019	5844	19%	5579	15%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	H	TU 2	2019	1978	49%	1113	72%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	H	TU 1	2019	1978	49%	1113	72%
	Ch 0.6 km to Ch 3.2 km	H	TU 1	2019	1978	49%	1113	72%
	Ch 3.2 km to Ch 4.1 km	H	TU 1	2019	1978	49%	1113	72%
	Ch 4.1 km to Ch 13.0 km	H	TU 1	2019	1978	49%	1113	72%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	F	IC141 – Off-ramp	2022	-	-	542	19%
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	F	IC143 – On-ramp	2022	583	19%	-	-
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	F	IC144 – Off-ramp	2022	512	20%	-	-
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	F	IC76 – On-ramp	2022	-	-	497	19%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	F	IC76 – Off-ramp	2022	-	-	399	29%
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	F	IC144 – On-ramp	2022	429	30%	-	-
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	A	135546	2018	28724	13%	29592	12%
	Ch 7.2 km to Ch 15.1 km	A	135546	2018	28724	13%	29592	12%
	Ch 15.1 km to Ch 18.9 km	A	135964	2019	16026	19%	15355	15%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
	Ch 18.9 km to Ch 28.9 km	A	10021	2019	14658	19%	14835	16%
	Ch 28.9 km to Ch 36.6 km	A	160004	2020	10701	25%	10482	29%
	Ch 36.6 km to Ch 55.5 km	A	30066	2019	11844	19%	11735	21%
	Ch 55.5 km to Ch 75.4	A	30066	2019	11844	19%	11735	21%
	Ch 75.4 km to Ch 79.6 km	A	30070	2019	11338	19%	10327	19%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	A	38587	2019	6842	19%	6690	18%
	Ch 0.4 km to Ch 1.5 km	A	38587	2019	6842	19%	6690	18%
	Ch 1.5 km to Ch 2.4 km	A	38587	2019	6842	19%	6690	18%
	Ch 2.4 km to Ch 4.5 km	A	30025	2019	6520	20%	6754	19%
	Ch 4.5 km to Ch 5.0 km	A	30025	2019	6520	20%	6754	19%
	Ch 5.0 km to Ch 5.3 km	A	30025	2019	6520	20%	6754	19%
	Ch 5.3 km to Ch 6.2 km	A	30025	2019	6520	20%	6754	19%
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	F	IC 86	2022	97	19%	1905	7%
State-Controlled Roads: Transport for New South Wales								
Newell Highway	River Road to Queensland/NSW Border	B		2017	2048	32%	2003	33%
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	A	55459	2019	38	34%	33	24%
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	G		2022	10	20%	10	20%
Bybera Road	Cunningham Highway to B2G-LDN060.4	F	IC 4	2022	36	8%	36	7%
	B2G-LDN060.4 to Earthworks Area 2A	F	IC 4	2022	36	8%	36	7%
Cemetery Road	Access Track to Moorroobie Lane	C		2007	65	15%	65	15%
	Cunningham Highway to GrainCorp Goondiwindi	C		2007	65	15%	65	15%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	C		2015	34	25%	34	25%
	Coolmunda Dam Access to Cunningham Highway	C		2015	34	25%	34	25%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	F		2018	51	34%	51	34%
	B2G-LDN055.4 to B2G-LDN054.2	F		2018	51	34%	51	34%
	Cunningham Highway to B2G-LDN052.8	F		2018	51	34%	51	34%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	F	IC 7	2022	20	10%	22	13%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	E	TC 1	2022	19	15%	19	22%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	C		2021	10	26%	10	26%
	NS2B-LDN033.2 to NS2B-LDN035.6	C		2021	10	26%	10	26%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	F	IC 9	2022	14	6%	13	6%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	G		2021	7	43%	7	43%
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	F		2018	10	5%	11	11%
Hunt Street	Leichhardt Highway to Boodle Street	G		2022	10	20%	10	20%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	F	IC 12	2022	746	10%	700	10%
	NS2B-LDN031.0 to South Kurumbul Road	F	IC 12	2022	746	10%	700	10%
	South Kurumbul Road to Cunningham Highway	F	IC 12	2022	746	10%	700	10%
	Cunningham Highway to Eukabilla Road	F	IC 12	2022	746	10%	700	10%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	F	IC 108	2022	4	20%	4	25%
	McDougalls Road to Cunningham Highway	F	IC 108	2022	4	20%	4	25%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	C		2009	11	17%	11	17%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	C		2009	11	17%	11	17%
	Mooroobie Lane to Wondalli Kurumbul Road	C		2009	11	17%	11	17%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	C		2010	9	13%	9	13%
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	G		2021	2	25%	2	25%
Silo Street	Barwon Highway to GrainCorp Talwood	C		2013	60	28%	60	22%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	F		2018	25	39%	25	37%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	C		2006	44	32%	43	26%
Springborg Road	Cunningham highway to B2G-LDN037.6	F		2018	4	25%	4	12%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	F		2018	4	59%	5	74%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	F	IC 65	2022	8	5%	8	5%
	B2G-LDN067.6 to Millmerran-Inglewood Road	F	IC 65	2022	8	5%	8	5%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	C		2006	174	29%	174	29%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	F		2018	10	16%	10	39%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	E	VC 6	2022	12	11%	11	7%
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	G		2020	8	20%	8	20%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	G		2022	10	20%	10	20%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	F	IC 21	2022	26	15%	28	14%
	B2G-LDN006.3 to Wondalli Kurumbul Road	F	IC 21	2022	26	15%	28	14%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	F	IC 21	2022	26	15%	28	14%
	Yelarbon Kurumbul Road to B2G-LDN020.3	F	IC 21	2022	26	15%	28	14%
	B2G-LDN020.3 to B2G-LDN025.9	F	IC 21	2022	26	15%	28	14%
	B2G-LDN025.9 to Cunningham Highway	F	IC 21	2022	26	15%	28	14%
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	B		2022	10	20%	10	20%
River Road	Newell Highway to Boggabilla Weir Access	B		2022	10	20%	10	20%
Local Government Roads: Toowoomba Regional Council								
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	D		2014	3117	11%	3117	11%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	D		2014	3117	11%	3117	11%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	E	TC 9	2022	5608	17%	6244	29%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	F	IC 23	2022	124	14%	117	11%
	B2G-LDN188.2 to Gore Highway	F	IC 23	2022	124	14%	117	11%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	F	IC e	2022	85	8%	89	10%
Blackwell Road	Gore Highway to Millmerran Quarry	F	IC 25	2022	18	2%	20	3%
	Millmerran Quarry to B2G-LDN120.2	F	IC 25	2022	18	2%	20	3%
	B2G-LDN120.2 to Millmerran-Inglewood Road	F	IC 54	2022	5	8%	5	4%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	D		2017	14	16%	14	16%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	F		2020	50	34%	52	20%
	Brimblecombe Road to WL 194467R	F		2020	50	34%	52	20%
Bushy Lane	B2G-LDN183.0 to Gore Highway	F	IC d	2022	50	4%	44	5%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	F	IC 55	2022	470	16%	469	15%
	Saleyards Road to Gore Highway	F	IC 27	2022	889	9%	860	10%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	G		2022	10	20%	10	20%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	F	IC 56	2022	15	7%	16	10%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	E	VC 10	2022	8	3%	7	3%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	G		2022	10	20%	10	20%
Draper Road	Steger Road to B2G-FBW206.9	E	TC 2	2022	23	9%	24	9%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	D		2015	1081	15%	1081	15%
	Access Track to Greenwattle Street	D		2015	1081	15%	1081	15%
Florence Street	Gore Highway to West Street	D		2017	161	4%	161	4%
Forestry Road	Access Track to Millmerran-Inglewood Road	E	VC 8	2022	1	0%	1	0%
	Millmerran-Inglewood Road to Earthworks Area 3B	E	VC 8	2022	1	0%	1	0%
Fysh Road	B2G-LDN147.1 to Gore Highway	F		2020	36	17%	35	23%
Gap Road	Gore Highway to Grevillea Street	F	IC 39	2022	605	11%	644	12%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	F		2020	21	10%	20	18%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	F		2020	13	24%	13	44%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	G		2015	208	0.27	208	0.27
Hall Road	B2G-LDN139.0 to Gore Highway	F		2020	1	50%	2	60%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	F	IC 59	2022	22	27%	24	21%
	B2G-LDN116.0 to Millmerran-Inglewood Road	F	IC 59	2022	22	27%	24	21%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	G		2022	10	20%	10	20%
Kahler Road	Murlaggan Road to B2G-LDN165.6	F		2020	6	3%	6	3%
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	F	IC 86	2022	1901	7%	136	15%
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	F	IC 86	2022	97	19%	1905	7%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	F	IC 129	2022	36	24%	38	23%
	Millmerran-Inglewood Road to Commodore Mine	F	IC 60	2022	1	25%	3	7%
Leesons Road	Warrego Highway to Steger Road	F	IC 81	2022	37	12%	40	10%
	Steger Road to B2G-LDN206.3	F	IC 81	2022	37	12%	40	10%
Linthorpe Road	Gore Highway to B2G-LDN175.5	F	IC 35	2022	10	14%	19	13%
Linthorpe Valley Road	Geitz Road to Gore Highway	F		2020	46	24%	43	29%
Lochaber Road	Gore Highway to B2G-LDN172.0	F	IC g	2022	171	6%	174	7%
	B2G-LDN172.0 to B2G-LDN172.6	F	IC g	2022	171	6%	174	7%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	D		2015	3026	20%	3026	20%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	F	IC 61	2022	18	24%	19	15%
	B2G-LDN112.1 to Millwood Road	F	IC 61	2022	18	24%	19	15%
	Millwood Road to Kooroongarra Road	F	IC 131	2022	3	6%	1	0%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	D		2017	115	30%	115	30%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	F	IC 39	2022	201	7%	200	6%
	Kahler Road to Gore Highway	F	IC 39	2022	201	7%	200	6%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	F	IC i	2022	679	19%	690	18%
Omara Road	Toowoomba-Cecil Plains Road to Warrego Highway	F	IC 83	2022	2373	18%	2326	14%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	F	IC 63	2022	234	12%	233	14%
	B2G-LDN128.2 to B2G-LDN130.0	F	IC 63	2022	234	12%	233	14%
	B2G-LDN130.0 to Millmerran-Inglewood Road	F	IC 63	2022	234	12%	233	14%
Paint Mine Road	Gore Highway to B2G-LDN173.5	F		2020	22	17%	22	8%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	F		2018	10	75%	11	72%
Quarry Road Access	Tummalville Road to Quarry	F	IC 136	2022	2	38%	2	38%
Saleyards Road	Campbell Street to Gore Highway	D		2015	123	30%	123	30%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	F	IC 60	2022	3	0%	2	0%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	G		2022	10	20%	10	20%
	B2G-LDN123.6 to B2G-LDN123.8	G		2022	10	20%	10	20%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	F	IC 43	2022	140	38%	140	40%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	F	IC 83	2022	962	18%	581	27%
	New Hope Recycled Water Pipeline to Draper Road	F	IC 83	2022	962	18%	581	27%
	Draper Road to Leeson's Road	F	IC 83	2022	962	18%	581	27%
Tummalville Road	Access Track to Gore Highway	F	IC 45	2022	91	21%	95	21%
Turallin Road	Gore Highway to the Turallin Facility	F	IC 46	2022	114	13%	165	19%
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	F		2021	121	22%	119	21%
	B2G-LDN153.1 to Gore Highway	F		2021	121	22%	119	21%
	Gore Highway to B2G-LDN150.9	F		2021	57	23%	53	21%

Road name	Road section	Data source	Site ID	Traffic volume base year	G/NB/EB		AG/SB/WB	
					ADT	HV%	ADT	HV%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	D		2017	461	24%	461	24%
West Street	Gore Highway to Florence Street	D		2017	50	46%	50	46%
	Florence Street to Six Mile Road	D		2017	14	16%	14	16%
Yarranlea Road	Gore Highway to B2G-LDN161.0	F	IC 45	2022	58	29%	50	22%
	B2G-LDN161.0 to Desmonds Lane	F	IC 45	2022	58	29%	50	22%

2.4.1.2 Traffic growth rate and peak hour factor

The traffic growth rate and peak hour factor for all road links are provided in Table 2.8. These factors were both determined based on the closest DTMR AADT site to the road link.

The growth rates for assessment have been determined based on the following order of hierarchy:

1. 10-year growth rate
2. 5-year growth rate
3. 1 year growth rate
4. 3 per cent p.a. (PIA practice note (DTMR, 2018b) states 'in the absence of site-specific data, an annual growth rate of 3 per cent p.a. should be adopted')

Both the AADT and HV growth rates were determined in response to requests from DTMR and OCG for specific HV growth rates to be imputed and be adopted for the pavement impact assessment to capture local conditions and HV data. The growth rate was adopted from the closest DTMR AADT sites for all road links as many LGR had no historical counts to determine growth in the area. In the absence of available historical count data or forecast models, it was determined that the nearest DTMR AADT site could be adopted as a representative of growth in the area for the purpose of the revised reference design, however, further consideration may be required in detailed design to adopt growth rates based on local government preferences.

Similar to growth rate, the peak hour factor was also adopted from the nearest DTMR AADT site, using the DTMR hourly summary data available through the Queensland Government Open Data Portal. This approach was adopted as many intersection and link counts had very low traffic volumes. It was therefore determined using the intersection counts to determine peak hour factors would be inappropriate due to significant fluctuation between days of the week. An analysis was undertaken of the intersection and link counts with higher traffic volumes across the study area and the peak hour factor was compared with that of the closest DTMR AADT site. A summary of this analysis is provided in Table 2.7. The analysis found that the closest DTMR AADT site could reasonably be used to represent the daily variation in the area.

Assumptions on future traffic growth and peak hour factors will need to be further discussed and agreed with DTMR and other relevant stakeholders at the Detailed Design stage once construction routes have been finalised.

Table 2.8 provides details on which DTMR AADT site was used for each road link and its corresponding AADT growth rate, HV growth rate and peak hour factor for the AM and PM peaks in both directions.

Table 2.7 Local roads peak hour factor comparison

Road name	Traffic counts daily volumes		Traffic counts peak hour factors		Closest DTMR AADT Site	Closest DTMR AADT site peak hour factor		Peak hour factor difference	
	AM Peak	PM Peak	AM Peak	PM Peak		AM Peak	PM Peak	AM Peak	PM Peak
Bybera Road	36	36	7%	6%	50024	8%	8%	1%	2%
East Sawmill	22	20	6%	7%	50023	7%	7%	1%	1%
Inglewood Quarry Access	60	44	8%	6%	50005	8%	8%	-1%	1%
Kildonan Road	700	746	8%	9%	51858	9%	10%	1%	0%
Athol School Road	117	124	9%	7%	30042	7%	8%	-2%	1%
Linthorpe Road	163	158	9%	8%	30042	7%	8%	-2%	0%
Murlaggan Road (East)	644	605	4%	10%	30024	7%	8%	3%	-2%
Murlaggan Road (West)	201	200	3%	11%	30024	7%	8%	4%	-3%
Campbell Street	419	433	7%	9%	32644	8%	8%	1%	-1%
Heckendorf Road	22	24	5%	10%	32562	8%	10%	3%	-1%
Leesons Road	40	37	5%	10%	30025	7%	8%	2%	-1%
Kooroongarra Road	38	36	13%	10%	32562	8%	10%	-5%	-1%

Table 2.8 Background traffic growth rate and peak hour factor

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
State-Controlled Roads: Department of Transport and Main Roads								
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	50010	0.0%	1.9%	7.6%	7.7%	7.4%	7.8%
	Ch 0.8 km to Ch 2.0 km	50010	0.0%	1.9%	7.6%	7.7%	7.4%	7.8%
	Ch 2.0 km to Ch 45.9 km	50010	0.0%	0.4%	9.1%	8.1%	8.1%	7.9%
	Ch 45.9 km to Ch 88.0 km	50010	0.0%	0.4%	9.1%	8.1%	8.1%	7.9%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	50010	0.0%	0.0%	9.7%	9.1%	8.5%	8.9%
	Ch 1.6 km to Ch 66.8 km	50329	0.0%	0.0%	9.7%	9.1%	8.5%	8.9%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	50329	0.0%	0.0%	11.8%	10.4%	8.9%	10.2%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	30025	3.4%	4.0%	9.0%	6.4%	7.6%	8.8%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	50024	1.0%	2.2%	7.4%	7.7%	7.8%	7.5%
	Ch 96.2 km to Ch 97.5 km	50024	1.0%	2.2%	7.4%	7.7%	7.8%	7.5%
	Ch 97.5 km to Ch 105.7 km	50024	1.0%	2.2%	7.4%	7.7%	7.8%	7.5%
	Ch 105.7 km to Ch 107.4 km	50024	1.0%	2.2%	7.4%	7.7%	7.8%	7.5%
	Ch 107.4 km to Ch 107.6 km	50024	1.3%	5.7%	7.7%	7.3%	7.8%	8.4%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 2.0 km to Ch 3.9 km	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 3.9 km to Ch 10.2 km	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 10.2 km to Ch 13.9 km	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 13.9 km to Ch 18.5 km	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 18.5 km to Ch 27.1 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 27.1 km to Ch 29.3 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 29.3 km to Ch 34.7 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 34.7 km to Ch 39.6 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	Ch 39.6 km to Ch 40.3 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 40.3 km to Ch 40.5 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 40.5 km to Ch 43.9 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 43.9 km to Ch 46.3 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 46.3 km to Ch 88.0 km	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Ch 88.0 km to Ch 88.2 km	50027	0.3%	3.3%	6.9%	7.1%	7.3%	7.7%
	Ch 88.2 km to Ch 90.0 km	50027	0.3%	3.3%	6.9%	7.1%	7.3%	7.7%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	30025	5.2%	16.1%	8.1%	8.1%	8.2%	8.2%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	30025	4.1%	0.0%	7.6%	7.3%	8.7%	9.2%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 2.2 km to Ch 5.4 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 5.4 km to Ch 6.7 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 6.7 km to Ch 7.7 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 7.7 km to Ch 11.2 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 11.2 km to Ch 15.3 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 15.3 km to Ch 17.5 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 17.5 km to Ch 19.0 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 19.0 km to Ch 20.3 km	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	Ch 20.3 km to Ch 21.5 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 21.5 km to Ch 23.2 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 23.2 km to Ch 25.0 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 25.0 km to Ch 30.1 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 30.1 km to Ch 38.7 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 38.7 km to Ch 41.1 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	Ch 41.1 km to Ch 41.7 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 41.7 km to Ch 43.2 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 43.2 km to Ch 44.7 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 44.7 km to Ch 47.6 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 47.6 km to Ch 52.2 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 52.2 km to Ch 53.3 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 53.3 km to Ch 60.8 km	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Ch 60.8 km to Ch 63.0 km	50024	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
	Ch 0.7 km to Ch 0.8 km	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
	Ch 0.8 km to Ch 1.4 km	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
	Ch 1.4 km to Ch 3.0 km	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
	Ch 3.0 km to Ch 13.0 km	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
	Ch 13.0 km to Ch 121.6 km	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	30025	0.0%	0.0%	7.0%	6.0%	6.7%	8.7%
	Ch 3.7 km to Ch 6.4 km	30025	2.6%	3.0%	6.6%	7.2%	8.3%	7.1%
	Ch 6.4 km to Ch 8.3 km	30025	5.0%	3.0%	6.6%	6.6%	8.4%	7.4%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	50024	0.0%	1.2%	7.2%	7.0%	7.7%	7.4%
	Ch 220.1 km to Ch 222.4 km	50027	0.0%	1.2%	7.2%	7.0%	7.7%	7.4%
	Ch 222.4 km to Ch 224.1 km	50027	0.0%	1.2%	7.2%	7.0%	7.7%	7.4%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	30025	4.1%	0.0%	7.6%	7.3%	8.7%	9.2%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	50024	4.2%	7.8%	7.1%	7.2%	9.7%	8.8%
	Ch 2.5 km to Ch 3.5 km	50024	4.2%	7.8%	7.1%	7.2%	9.7%	8.8%
	Ch 3.5 km to Ch 6.2 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 6.2 km to Ch 9.0 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%

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					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	Ch 9.0 km to Ch 13.1 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 13.1 km to Ch 14.0 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 14.0 km to Ch 17.3 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 17.3 km to Ch 18.1 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 18.1 km to Ch 21.8 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 21.8 km to Ch 28.0 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 28.0 km to Ch 33.0 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 33.0 km to Ch 35.6 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 35.6 km to Ch 37.7 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 37.7 km to Ch 39.8 km	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Ch 39.8 km to Ch 41.9 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 41.9 km to Ch 45.9 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 45.9 km to Ch 47.6 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 47.6 km to Ch 53.3 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 53.3 km to Ch 55.7 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 55.7 km to Ch 56.6 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 56.6 km to Ch 59.2 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 59.2 km to Ch 61.0 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 61.0 km to Ch 65.7 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	Ch 65.7 km to Ch 68.7 km	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	30025	6.1%	6.3%	8.2%	8.3%	10.0%	8.0%
	Ch 2.0 km to Ch 2.2 km	30025	6.1%	6.3%	8.2%	8.3%	10.0%	8.0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	30025	3.0%	3.0%	7.3%	6.1%	8.0%	8.9%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	30025	3.0%	3.0%	7.3%	6.1%	8.0%	8.9%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	50027	3.4%	3.8%	7.7%	8.7%	7.7%	7.7%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	30025	0.0%	0.0%	6.4%	8.9%	8.4%	7.3%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	30025	0.7%	0.1%	6.8%	8.4%	7.3%	7.3%
	Ch 6.0 km to Ch 6.4 km	30025	0.0%	0.0%	6.8%	7.0%	7.9%	9.8%
	Ch 6.4 km to Ch 8.3 km	30025	0.0%	0.0%	6.8%	7.0%	7.9%	9.8%
	Ch 8.3 km to Ch 9.2 km	30025	0.0%	0.0%	6.8%	7.0%	7.9%	9.8%
	Ch 9.2 km to Ch 10.0 km	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
	Ch 10.0 km to Ch 10.1 km	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
	Ch 10.1 km to Ch 10.3 km	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
	Ch 10.3 km to Ch 12.1 km	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
	Ch 12.1 km to Ch 14.5 km	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
	Ch 14.5 km to Ch 16.3 km	30025	2.4%	6.2%	6.9%	6.5%	12.3%	10.4%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	30025	3.0%	3.0%	6.6%	8.1%	8.0%	8.2%
	Ch 26.9 km to Ch 27.1 km	30025	3.0%	3.0%	6.6%	8.1%	8.0%	8.2%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
	Ch 0.6 km to Ch 3.2 km	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
	Ch 3.2 km to Ch 4.1 km	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
	Ch 4.1 km to Ch 13.0 km	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	30025	3.8%	4.1%	5.8%	8.0%	9.3%	6.6%
	Ch 7.2 km to Ch 15.1 km	30025	3.8%	4.1%	5.8%	8.0%	9.3%	6.6%
	Ch 15.1 km to Ch 18.9 km	30025	2.1%	2.9%	6.2%	7.1%	8.7%	7.1%
	Ch 18.9 km to Ch 28.9 km	30025	2.0%	0.0%	5.9%	7.0%	8.6%	7.0%
	Ch 28.9 km to Ch 36.6 km	30025	0.0%	23.5%	7.4%	7.4%	7.0%	8.1%
	Ch 36.6 km to Ch 55.5 km	30025	2.7%	3.3%	7.3%	7.1%	7.0%	8.4%
	Ch 55.5 km to Ch 75.4 km	30025	2.7%	3.3%	7.3%	7.1%	7.0%	8.4%
	Ch 75.4 km to Ch 79.6 km	30025	1.4%	2.2%	7.4%	6.7%	7.2%	8.0%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	30025	10.9%	3.5%	6.8%	8.0%	7.9%	8.1%
	Ch 0.4 km to Ch 1.5 km	30025	10.9%	3.5%	6.8%	8.0%	7.9%	8.1%
	Ch 1.5 km to Ch 2.4 km	30025	10.9%	3.5%	6.8%	8.0%	7.9%	8.1%
	Ch 2.4 km to Ch 4.5 km	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
	Ch 4.5 km to Ch 5.0 km	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
	Ch 5.0 km to Ch 5.3 km	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
	Ch 5.3 km to Ch 6.2 km	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
State-Controlled Roads: Transport for New South Wales								
Newell Highway	River Road to Queensland/NSW Border	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	50329	0.9%	0.0%	13.0%	12.5%	10.3%	11.5%
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	50027	0.0%	0.0%	7.2%	7.1%	7.5%	7.4%
Bybera Road	Cunningham Highway to B2G-LDN060.4	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	B2G-LDN060.4 to Earthworks Area 2A	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
Cemetery Road	Access Track to Moorobie Lane	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	Cunningham Highway to GrainCorp Goondiwindi	50027	0.3%	3.3%	6.9%	7.1%	7.3%	7.7%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	50024	1.0%	2.2%	7.4%	7.7%	7.8%	7.5%
	Coolmunda Dam Access to Cunningham Highway	50024	1.0%	2.2%	7.4%	7.7%	7.8%	7.5%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	B2G-LDN055.4 to B2G-LDN054.2	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	Cunningham Highway to B2G-LDN052.8	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	50024	1.3%	5.7%	7.7%	7.3%	7.8%	8.4%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	NS2B-LDN033.2 to NS2B-LDN035.6	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	50024	1.0%	2.2%	7.4%	7.7%	7.8%	7.5%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
Hunt Street	Leichhardt Highway to Boodle Street	50027	0.0%	0.0%	7.2%	7.1%	7.5%	7.4%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	NS2B-LDN031.0 to South Kurumbul Road	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	South Kurumbul Road to Cunningham Highway	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	Cunningham Highway to Eukabilla Road	50027	0.8%	0.9%	7.3%	7.9%	7.3%	7.6%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	McDougalls Road to Cunningham Highway	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
Moorroobie Lane	Cemetery Road to Borrow Site #2 (Moorroobie Lane)	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	Borrow Site #2 (Moorroobie Lane) to Moorroobie Lane	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	Moorroobie Lane to Wondalli Kurumbul Road	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
Silo Street	Barwon Highway to GrainCorp Talwood	50010	0.0%	0.0%	9.7%	9.1%	8.5%	8.9%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	50010	0.0%	0.4%	9.1%	8.1%	8.1%	7.9%
Springborg Road	Cunningham highway to B2G-LDN037.6	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%

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					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
	B2G-LDN067.6 to Millmerran-Inglewood Road	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	50010	0.1%	0.0%	7.4%	8.4%	8.3%	8.0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	50024	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorooobie Lane	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
Wongavale Yugilbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	50024	3.1%	5.4%	7.9%	8.5%	8.1%	8.3%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	B2G-LDN006.3 to Wondalli Kurumbul Road	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	Yelarbon Kurumbul Road to B2G-LDN020.3	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
	B2G-LDN020.3 to B2G-LDN025.9	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
	B2G-LDN025.9 to Cunningham Highway	50027	0.8%	3.5%	7.1%	6.8%	7.1%	7.5%
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%
River Road	Newell Highway to Boggabilla Weir Access	50027	3.3%	14.5%	9.3%	9.6%	8.2%	9.4%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Local Government Roads: Toowoomba Regional Council								
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	30025	0.3%	1.8%	6.3%	10.2%	10.4%	6.8%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	30025	0.3%	1.8%	6.3%	10.2%	10.4%	6.8%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	B2G-LDN188.2 to Gore Highway	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
Blackwell Road	Gore Highway to Millmerran Quarry	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
	Millmerran Quarry to B2G-LDN120.2	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
	B2G-LDN120.2 to Millmerran-Inglewood Road	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	30025	2.4%	6.2%	6.9%	6.5%	12.3%	10.4%
	Brimblecombe Road to WL 194467R	30025	3.3%	6.2%	6.9%	6.5%	12.3%	10.4%
Bushy Lane	B2G-LDN183.0 to Gore Highway	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	50024	4.2%	7.8%	7.1%	7.2%	9.7%	8.8%
	Saleyards Road to Gore Highway	50024	4.2%	7.8%	7.1%	7.2%	9.7%	8.8%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Draper Road	Steger Road to B2G-FBW206.9	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
	Access Track to Greenwattle Street	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
Florence Street	Gore Highway to West Street	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
Forestry Road	Access Track to Millmerran-Inglewood Road	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Millmerran-Inglewood Road to Earthworks Area 3B	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Fysh Road	B2G-LDN147.1 to Gore Highway	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Gap Road	Gore Highway to Grevillea Street	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Hall Road	B2G-LDN139.0 to Gore Highway	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	B2G-LDN116.0 to Millmerran-Inglewood Road	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
Kahler Road	Murlaggan Road to B2G-LDN165.6	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	Millmerran-Inglewood Road to Commodore Mine	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Leesons Road	Warrego Highway to Steger Road	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
	Steger Road to B2G-LDN206.3	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
Linthorpe Road	Gore Highway to B2G-LDN175.5	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
Linthorpe Valley Road	Geitz Road to Gore Highway	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
Lochaber Road	Gore Highway to B2G-LDN172.0	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
	B2G-LDN172.0 to B2G-LDN172.6	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	30025	0.7%	0.1%	6.8%	8.4%	7.3%	7.3%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	B2G-LDN112.1 to Millwood Road	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	Millwood Road to Kooroongarra Road	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Kahler Road to Gore Highway	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	30025	0.1%	4.3%	8.8%	6.9%	7.7%	11.4%
Omara Road	Toowoomba-Cecil Plains Road to Warrego Highway	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	50024	4.2%	7.8%	7.1%	7.2%	9.7%	8.8%
	B2G-LDN128.2 to B2G-LDN130.0	50024	4.2%	7.8%	7.1%	7.2%	9.7%	8.8%
	B2G-LDN130.0 to Millmerran-Inglewood Road	50024	4.2%	7.8%	7.1%	7.2%	9.7%	8.8%
Paint Mine Road	Gore Highway to B2G-LDN173.5	30025	3.5%	5.2%	6.5%	8.0%	7.6%	7.5%

Road name	Road section	Adopted DTMR Site ID	AADT growth rate (% p.a.)	HV growth rate (% p.a.)	Peak hour factor			
					G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Quarry Road Access	Tummalville Road to Quarry	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Saleyards Road	Campbell Street to Gore Highway	50024	4.2%	7.8%	7.1%	7.2%	9.7%	8.8%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
	B2G-LDN123.6 to B2G-LDN123.8	50024	0.0%	3.8%	8.1%	9.6%	6.9%	9.6%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
	New Hope Recycled Water Pipeline to Draper Road	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
	Draper Road to Leasons Road	30025	1.2%	5.4%	6.3%	7.8%	8.0%	8.4%
Tummalville Road	Access Track to Gore Highway	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Turallin Road	Gore Highway to the Turallin Facility	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	B2G-LDN153.1 to Gore Highway	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	Gore Highway to B2G-LDN150.9	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	30025	5.8%	6.4%	7.3%	6.9%	7.8%	10.5%
West Street	Gore Highway to Florence Street	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
	Florence Street to Six Mile Road	50024	0.6%	1.5%	7.9%	7.5%	7.6%	7.8%
Yarranlea Road	Gore Highway to B2G-LDN161.0	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%
	B2G-LDN161.0 to Desmonds Lane	30025	3.2%	2.0%	7.0%	7.5%	7.5%	8.2%

2.4.1.3 Seasonal variation rate

Based on the dominant agricultural land uses of the TIA study area, traffic volumes on the road network are likely to increase during periods of harvest. Harvest periods for broadacre crops in Southern Queensland are shown in Table 2.9.

Table 2.9 Harvest periods for broadacre crops

Broadacre crops	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Barley												
Chickpea												
Cotton												
Maize												
Millets												
Mungbean												
Navy Beans												
Peanuts												
Sorghum												
Soybeans												
Sunflower												
Wheat												

Source: *Agriculture in Southern Queensland*, Southern Queensland Agriculture Industry Development Group (2018)

During harvest, HV usage on the local and State roads in the impact assessment increases as trucks transport grain, and tractors and harvesters move between properties. Farming machinery is generally much larger and slower than other vehicles using the roads and may result in localised delays. The impact of seasonal variation has been considered as part of the analysis through a seasonal variation factor.

The seasonal variation factors for the study area were determined based on DTMR AADT sites which had year-long traffic data. There were five DTMR AADT sites within the Project study area which fit this criterion. Areas of influence were chosen not simply by proximity but rather by the extents in which the DTMR sites provide the volume for. These sites and areas of influence are shown in Figure 2.2, with Site 30025 applied to the geographical area shaded green, Site 50024 applied to the geographical area shaded orange, Site 50027 applied to the geographical area shaded blue, Site 50010 applied to the geographical area shaded purple and Site 50329 applied to the geographical area shaded yellow.

The seasonal variation factor was calculated by finding the factor required to multiply the ADT for each month to the peak month ADT for the site. This has been used to factor base traffic counts from a given month up to the peak month of the year. DTMR weekly data was used from the Queensland Government Open Data Portal and the middle day of the week was used to determine which month to include the week in.

Table 2.10 provides a summary of the seasonal variation factor determined for each site over the twelve months of the year. The results indicate the section west of Goondiwindi have the highest traffic volumes during April, coinciding with the peak harvest periods for most broadacre crops, including Cotton, Maize, Millets, Mungbean, Navy beans, Peanuts, Sorghum, Soybeans, Sunflowers. In contrast, the sites between Goondiwindi and Millmerran have the highest traffic volumes during November/December, coinciding with the peak harvest periods of Barley, Chickpea, Maize, Mungbean and Wheat. East of Millmerran appears to have its peak harvest period in September, with relatively steady volumes throughout the year except over the summer holidays where there is a drop in volumes.

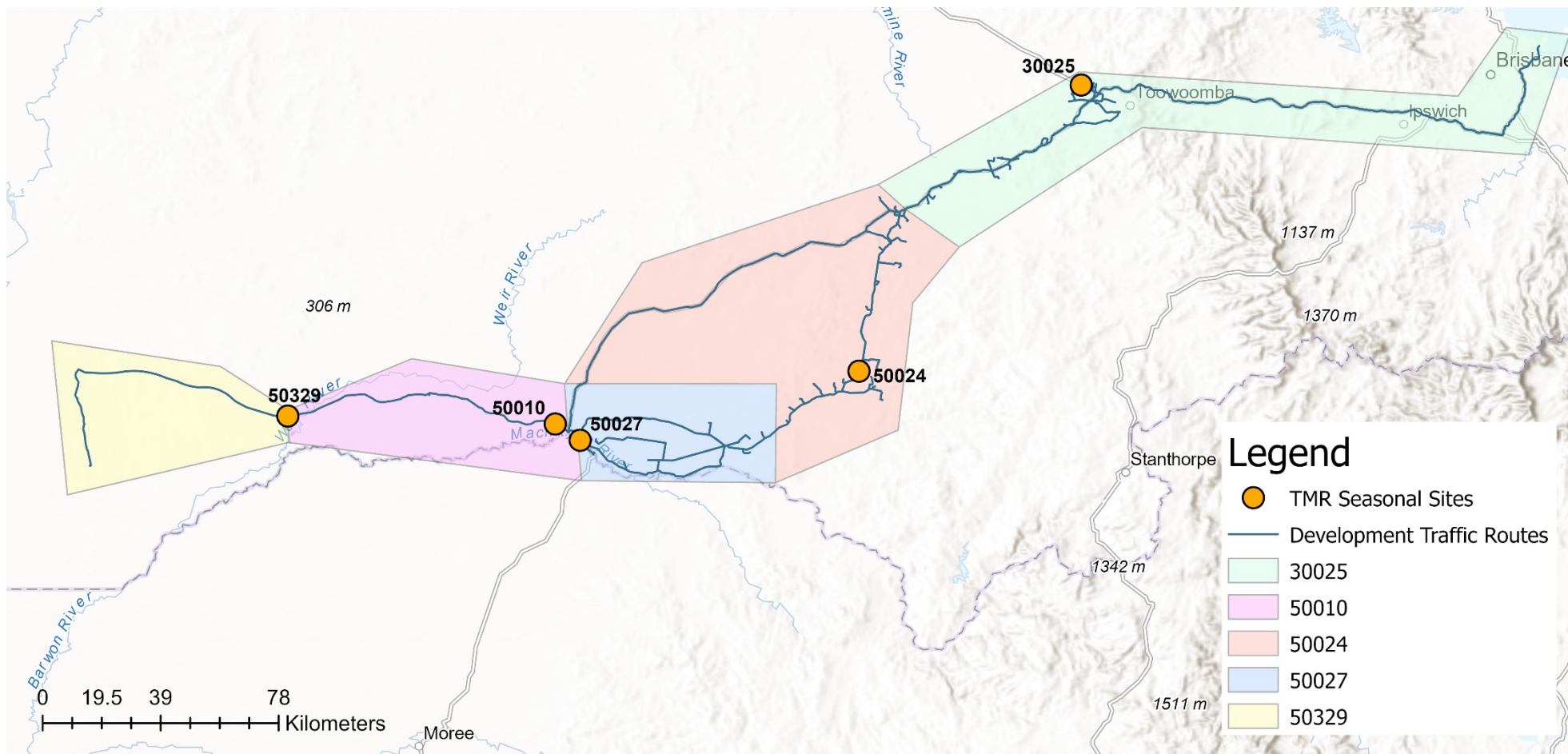


Figure 2.2 Seasonal variation sites related road network and geographical area where count sites were applied

Table 2.10 **Seasonal variation factor per site per month**

DTMR AADT Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Peak impact month
50027	1.14	1.19	1.16	1.00	1.06	1.09	1.01	1.07	1.05	1.05	1.08	1.00	December
50024	1.13	1.19	1.15	1.05	1.10	1.05	1.07	1.13	1.08	1.05	1.00	1.26	November
30025	1.16	1.04	1.06	1.08	1.02	1.06	1.03	1.02	1.00	1.05	1.01	1.13	September
50010	1.23	1.15	1.11	1.00	1.07	1.11	1.10	1.11	1.15	1.19	1.27	1.43	April
50329	1.33	1.31	1.22	1.00	1.08	1.09	1.04	1.09	1.11	1.26	1.31	1.47	April

Table 2.11 provides a summary of the adopted DTMR AADT site for the purpose of seasonal variation, the background traffic volume base month where applicable and the corresponding seasonal variation factor applied to the background volumes in order to determine peak volumes throughout the year. Where background traffic data is related to a specific month, this has been assumed as considering seasonal variation and therefore the factor of 1 has been applied.

Table 2.11 Road link seasonal variation factor

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
State-Controlled Roads: Department of Transport and Main Roads				
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	50010	March	1.11
	Ch 0.8 km to Ch 2.0 km	50010	March	1.11
	Ch 2.0 km to Ch 45.9 km	50010		1.00
	Ch 45.9 km to Ch 88.0 km	50010		1.00
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	50010		1.00
	Ch 1.6 km to Ch 66.8 km	50329		1.00
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	50329		1.00
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	30025		1.00
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	50024		1.00
	Ch 96.2 km to Ch 97.5 km	50024		1.00
	Ch 97.5 km to Ch 105.7 km	50024		1.00
	Ch 105.7 km to Ch 107.4 km	50024		1.00
	Ch 107.4 km to Ch 107.6 km	50024		1.00
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	50024		1.00
	Ch 2.0 km to Ch 3.9 km	50024		1.00
	Ch 3.9 km to Ch 10.2 km	50024		1.00
	Ch 10.2 km to Ch 13.9 km	50024		1.00
	Ch 13.9 km to Ch 18.5 km	50024		1.00
	Ch 18.5 km to Ch 27.1 km	50027		1.00
	Ch 27.1 km to Ch 29.3 km	50027		1.00
	Ch 29.3 km to Ch 34.7 km	50027		1.00
	Ch 34.7 km to Ch 39.6 km	50027		1.00
	Ch 39.6 km to Ch 40.3 km	50027		1.00
	Ch 40.3 km to Ch 40.5 km	50027		1.00
	Ch 40.5 km to Ch 43.9 km	50027		1.00
	Ch 43.9 km to Ch 46.3 km	50027		1.00
	Ch 46.3 km to Ch 88.0 km	50027		1.00
	Ch 88.0 km to Ch 88.2 km	50027		1.00
	Ch 88.2 km to Ch 90.0 km	50027		1.00
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	30025		1.00
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	30025		1.00
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	30025		1.00
	Ch 2.2 km to Ch 5.4 km	30025		1.00

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
	Ch 5.4 km to Ch 6.7 km	30025		1.00
	Ch 6.7 km to Ch 7.7 km	30025		1.00
	Ch 7.7 km to Ch 11.2 km	30025		1.00
	Ch 11.2 km to Ch 15.3 km	30025		1.00
	Ch 15.3 km to Ch 17.5 km	30025		1.00
	Ch 17.5 km to Ch 19.0 km	30025		1.00
	Ch 19.0 km to Ch 20.3 km	30025		1.00
	Ch 20.3 km to Ch 21.5 km	30025		1.00
	Ch 21.5 km to Ch 23.2 km	30025		1.00
	Ch 23.2 km to Ch 25.0 km	30025		1.00
	Ch 25.0 km to Ch 30.1 km	30025		1.00
	Ch 30.1 km to Ch 38.7 km	30025		1.00
	Ch 38.7 km to Ch 41.1 km	30025		1.00
	Ch 41.1 km to Ch 41.7 km	30025		1.00
	Ch 41.7 km to Ch 43.2 km	30025		1.00
	Ch 43.2 km to Ch 44.7 km	30025		1.00
	Ch 44.7 km to Ch 47.6 km	30025		1.00
	Ch 47.6 km to Ch 52.2 km	30025		1.00
	Ch 52.2 km to Ch 53.3 km	30025		1.00
	Ch 53.3 km to Ch 60.8 km	30025		1.00
	Ch 60.8 km to Ch 63.0 km	50024		1.00
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	50024	March	1.15
	Ch 0.7 km to Ch 0.8 km	50024	March	1.15
	Ch 0.8 km to Ch 1.4 km	50024	March	1.15
	Ch 1.4 km to Ch 3.0 km	50024	March	1.15
	Ch 3.0 km to Ch 13.0 km	50024	March	1.15
	Ch 13.0 km to Ch 121.6 km	50024	March	1.15
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	30025		1.00
	Ch 3.7 km to Ch 6.4 km	30025		1.00
	Ch 6.4 km to Ch 8.3 km	30025		1.00
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	50024	March	1.15
	Ch 220.1 km to Ch 222.4 km	50027	March	1.16
	Ch 222.4 km to Ch 224.1 km	50027	March	1.16
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	30025		1.00
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	50024	March	1.15
	Ch 2.5 km to Ch 3.5 km	50024	March	1.15
	Ch 3.5 km to Ch 6.2 km	50024	March	1.15
	Ch 6.2 km to Ch 9.0 km	50024	March	1.15
	Ch 9.0 km to Ch 13.1 km	50024	March	1.15
	Ch 13.1 km to Ch 14.0 km	50024	March	1.15
	Ch 14.0 km to Ch 17.3 km	50024	March	1.15

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
	Ch 17.3 km to Ch 18.1 km	50024	March	1.15
	Ch 18.1 km to Ch 21.8 km	50024	March	1.15
	Ch 21.8 km to Ch 28.0 km	50024	March	1.15
	Ch 28.0 km to Ch 33.0 km	50024	March	1.15
	Ch 33.0 km to Ch 35.6 km	50024	March	1.15
	Ch 35.6 km to Ch 37.7 km	50024	March	1.15
	Ch 37.7 km to Ch 39.8 km	50024	March	1.15
	Ch 39.8 km to Ch 41.9 km	50024		1.00
	Ch 41.9 km to Ch 45.9 km	50024		1.00
	Ch 45.9 km to Ch 47.6 km	50024		1.00
	Ch 47.6 km to Ch 53.3 km	50024		1.00
	Ch 53.3 km to Ch 55.7 km	50024		1.00
	Ch 55.7 km to Ch 56.6 km	50024		1.00
	Ch 56.6 km to Ch 59.2 km	50024		1.00
	Ch 59.2 km to Ch 61.0 km	50024		1.00
	Ch 61.0 km to Ch 65.7 km	50024		1.00
	Ch 65.7 km to Ch 68.7 km	50024		1.00
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	30025		1.00
	Ch 2.0 km to Ch 2.2 km	30025		1.00
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	30025		1.00
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	30025		1.00
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	50027	February	1.19
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	30025		1.00
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	30025		1.00
	Ch 6.0 km to Ch 6.4 km	30025		1.00
	Ch 6.4 km to Ch 8.3 km	30025		1.00
	Ch 8.3 km to Ch 9.2 km	30025		1.00
	Ch 9.2 km to Ch 10.0 km	30025		1.00
	Ch 10.0 km to Ch 10.1 km	30025		1.00
	Ch 10.1 km to Ch 10.3 km	30025		1.00
	Ch 10.3 km to Ch 12.1 km	30025		1.00
	Ch 12.1 km to Ch 14.5 km	30025		1.00
	Ch 14.5 km to Ch 16.3 km	30025		1.00
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	30025		1.00
	Ch 26.9 km to Ch 27.1 km	30025		1.00
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	30025		1.00
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	30025		1.00
	Ch 0.6 km to Ch 3.2 km	30025		1.00
	Ch 3.2 km to Ch 4.1 km	30025		1.00

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
	Ch 4.1 km to Ch 13.0 km	30025		1.00
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	30025	March	1.06
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	30025	March	1.06
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	30025	March	1.06
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	30025	March	1.06
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	30025	March	1.06
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	30025	March	1.06
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	30025		1.00
	Ch 7.2 km to Ch 15.1 km	30025		1.00
	Ch 15.1 km to Ch 18.9 km	30025		1.00
	Ch 18.9 km to Ch 28.9 km	30025		1.00
	Ch 28.9 km to Ch 36.6 km	30025		1.00
	Ch 36.6 km to Ch 55.5 km	30025		1.00
	Ch 55.5 to Ch 75.4	30025		1.00
	Ch 75.4 km to Ch 79.6 km	30025		1.00
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	30025		1.00
	Ch 0.4 km to Ch 1.5 km	30025		1.00
	Ch 1.5 km to Ch 2.4 km	30025		1.00
	Ch 2.4 km to Ch 4.5 km	30025		1.00
	Ch 4.5 km to Ch 5.0 km	30025		1.00
	Ch 5.0 km to Ch 5.3 km	30025		1.00
	Ch 5.3 km to Ch 6.2 km	30025		1.00
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	30025	March	1.00
State-Controlled Roads: Transport for New South Wales				
Newell Highway	River Road to Queensland/NSW Border	50027		1.00
Local Government Roads: Balonne Shire Council				
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	50329		1.00
Local Government Roads: Goondiwindi Regional Council				
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	50027		1.00
Bybera Road	Cunningham Highway to B2G-LDN060.4	50024	March	1.15
	B2G-LDN060.4 to Earthworks Area 2A	50024	March	1.15
Cemetery Road	Access Track to Moorobie Lane	50027		1.00
	Cunningham Highway to GrainCorp Goondiwindi	50027		1.00

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	50024		1.00
	Coolmunda Dam Access to Cunningham Highway	50024		1.00
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	50024	August	1.13
	B2G-LDN055.4 to B2G-LDN054.2	50024	August	1.13
	Cunningham Highway to B2G-LDN052.8	50024	August	1.13
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	50027	March	1.16
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	50024	March	1.15
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	50027	January	1.00
	NS2B-LDN033.2 to NS2B-LDN035.6	50027	January	1.00
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	50024	March	1.15
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	50027	January	1.00
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	50024	September	1.08
Hunt Street	Leichhardt Highway to Boodle Street	50027		1.00
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	50027	March	1.16
	NS2B-LDN031.0 to South Kurumbul Road	50027	March	1.16
	South Kurumbul Road to Cunningham Highway	50027	March	1.16
	Cunningham Highway to Eukabilla Road	50027	March	1.16
McDougalls Road	B2G-LDN049.8 to McDougalls Road	50024	March	1.15
	McDougalls Road to Cunningham Highway	50024	March	1.15
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	50027		1.00
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	50027		1.00
	Mooroobie Lane to Wondalli Kurumbul Road	50027		1.00
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	50024		1.00
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	50027	January	1.00
Silo Street	Barwon Highway to GrainCorp Talwood	50010	July	1.00
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	50027	August	1.07

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	50010	January	1.00
Springborg Road	Cunningham highway to B2G-LDN037.6	50027	August	1.07
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	50027	August	1.07
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	50024	March	1.15
	B2G-LDN067.6 to Millmerran-Inglewood Road	50024	March	1.15
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	50010		1.00
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	50024	August	1.13
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	50027	March	1.16
Wongavale Yugilbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	50024	October	1.05
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	50027		1.00
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	50027	March	1.16
	B2G-LDN006.3 to Wondalli Kurumbul Road	50027	March	1.16
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	50027	March	1.16
	Yelarbon Kurumbul Road to B2G-LDN020.3	50027	March	1.16
	B2G-LDN020.3 to B2G-LDN025.9	50027	March	1.16
	B2G-LDN025.9 to Cunningham Highway	50027	March	1.16
Local Government Roads: Moree Plains Shire Council				
Boggabilla Weir Access	River Road to Boggabilla Weir	50027		1.00
River Road	Newell Highway to Boggabilla Weir Access	50027		1.00
Local Government Roads: Toowoomba Regional Council				
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	30025	November	1.01
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	30025	November	1.01
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	30025	March	1.06
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	30025	March	1.06
	B2G-LDN188.2 to Gore Highway	30025	March	1.06
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	30025	March	1.06
Blackwell Road	Gore Highway to Millmerran Quarry	50024	March	1.15
	Millmerran Quarry to B2G-LDN120.2	50024	March	1.15

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
	B2G-LDN120.2 to Millmerran-Inglewood Road	50024	March	1.15
Bligh Street	Six Mile Road to Boral Concrete Millmerran	50024	November	1.00
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	30025	October	1.05
	Brimblecombe Road to WL 194467R	30025	October	1.05
Bushy Lane	B2G-LDN183.0 to Gore Highway	30025	March	1.06
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	50024	March	1.15
	Saleyards Road to Gore Highway	50024	March	1.15
Chamberlain Road	Warrego Highway to B2G-LDN204.2	30025		1.00
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	50024	March	1.15
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	30025	March	1.06
Dieckmann Road	B2G-LDN150.5 to Gore Highway	30025		1.00
Draper Road	Steger Road to B2G-FBW206.9	30025	March	1.06
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	30025	March	1.06
	Access Track to Greenwattle Street	30025	March	1.06
Florence Street	Gore Highway to West Street	50024	November	1.00
Forestry Road	Access Track to Millmerran-Inglewood Road	50024	March	1.15
	Millmerran-Inglewood Road to Earthworks Area 3B	50024	March	1.15
Fysh Road	B2G-LDN147.1 to Gore Highway	30025	October	1.05
Gap Road	Gore Highway to Grevillea Street	30025	March	1.06
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	30025	October	1.05
Gilgai Lane	B2G-LDN144.6 to Gore Highway	30025	October	1.05
Grevillea Street	Boral Concrete Pittsworth to Gap Road	30025	September	1.00
Hall Road	B2G-LDN139.0 to Gore Highway	30025	October	1.05
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	50024	March	1.15
	B2G-LDN116.0 to Millmerran-Inglewood Road	50024	March	1.15
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	30025		1.00
Kahler Road	Murlaggan Road to B2G-LDN165.6	30025	October	1.05
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	30025	March	1.06
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	30025	March	1.00

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	50024	March	1.15
	Millmerran-Inglewood Road to Commodore Mine	50024	March	1.15
Leesons Road	Warrego Highway to Steger Road	30025	March	1.06
	Steger Road to B2G-LDN206.3	30025	March	1.06
Linthorpe Road	Gore Highway to B2G-LDN175.5	30025	March	1.06
Linthorpe Valley Road	Geitz Road to Gore Highway	30025	October	1.05
Lochaber Road	Gore Highway to B2G-LDN172.0	30025	March	1.06
	B2G-LDN172.0 to B2G-LDN172.6	30025	March	1.06
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	30025		1.00
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	50024	March	1.15
	B2G-LDN112.1 to Millwood Road	50024	March	1.15
	Millwood Road to Kooroongarra Road	50024	March	1.15
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	50024		1.00
Murlaggan Road	B2G-LDN164.3 to Kahler Road	30025	March	1.06
	Kahler Road to Gore Highway	30025	March	1.06
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	30025	March	1.06
Omara Road	Toowoomba-Cecil Plains Road to Warrego Highway	30025	March	1.06
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	50024	March	1.15
	B2G-LDN128.2 to B2G-LDN130.0	50024	March	1.15
	B2G-LDN130.0 to Millmerran-Inglewood Road	50024	March	1.15
Paint Mine Road	Gore Highway to B2G-LDN173.5	30025	October	1.05
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	50024	August	1.13
Quarry Road Access	Tumnaville Road to Quarry	30025	March	1.06
Saleyards Road	Campbell Street to Gore Highway	50024	August	1.13
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	50024	March	1.15
Scragg Road	Commodore Peak Road to B2G-LDN123.6	50024		1.00
	B2G-LDN123.6 to B2G-LDN123.8	50024		1.00
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	30025	March	1.06
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	30025	March	1.06
	New Hope Recycled Water Pipeline to Draper Road	30025	March	1.06
	Draper Road to Leesons Road	30025	March	1.06
Tumnaville Road	Access Track to Gore Highway	30025	March	1.06

Road name	Road section	Adopted DTMR Site ID	Traffic volume base month	Seasonal variation factor
Turallin Road	Gore Highway to the Turallin Facility	50024	March	1.15
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	30025	March	1.06
	B2G-LDN153.1 to Gore Highway	30025	March	1.06
	Gore Highway to B2G-LDN150.9	30025	March	1.06
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	30025	September	1.00
West Street	Gore Highway to Florence Street	50024	November	1.00
	Florence Street to Six Mile Road	50024	November	1.00
Yarranlea Road	Gore Highway to B2G-LDN161.0	30025	March	1.06
	B2G-LDN161.0 to Desmonds Lane	30025	March	1.06

During detailed design and once construction routes are finalised, it is recommended consultation with impacted landowners and farmers be undertaken to mitigate impacts to any farming operations within the study area. Seasonality is also to be considered further in the development of the Traffic Management Plan discussed in Section 5.12.3.

2.4.1.4 Existing traffic volumes

Existing traffic volumes have been determined for 2022 based on the background traffic data (Section 2.4.1.1), traffic growth rate (Section 2.4.1.2) and seasonal variation factor (Section 2.4.1.3). The 2022 and future traffic volumes have been determined by a compound traffic growth estimation which can be equated as:

$$AADTx = AADTy (1 + GR)^{(x-y)}$$

Where:

- AADTy = AADT in the background year
- AADTx = AADT in year x
- GR = growth rate
- y = background year
- x = year of calculation

Following growth of the background traffic volume to the year of interest, the seasonal variation is multiplied to the volume.

Existing (2022) traffic volumes and HV% are shown in Table 2.12 alongside a summary of background traffic, growth rate and seasonal variation rate applied.

In addition to daily traffic volumes determined for 2022, the peak hour volumes have also been determined for all road links based on the peak hour factor included in Section 2.4.1.2. The peak hour volumes in both directions in the AM and PM peak periods are provided in Table 2.13.

Table 2.12 Existing road link traffic volume and heavy vehicle percentage

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/ WB	G/NB/EB	AG/SB/ WB
State-Controlled Roads: Department of Transport and Main Roads										
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	2019	988	905	0%	1.11	1097	1005	25%	20%
	Ch 0.8 km to Ch 2.0 km	2019	988	905	0%	1.11	1097	1005	25%	20%
	Ch 2.0 km to Ch 45.9 km	2019	333	332	0%	1.00	333	332	26%	26%
	Ch 45.9 km to Ch 88.0 km	2019	333	332	0%	1.00	333	332	26%	26%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	2019	121	120	0%	1.00	121	120	23%	28%
	Ch 1.6 km to Ch 66.8 km	2019	121	120	0%	1.00	121	120	23%	28%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	2019	99	92	0%	1.00	99	92	33%	33%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	2018	2134	2407	3%	1.00	2437	2749	29%	28%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	2019	791	844	1%	1.00	816	870	43%	47%
	Ch 96.2 km to Ch 97.5 km	2019	791	844	1%	1.00	816	870	43%	47%
	Ch 97.5 km to Ch 105.7 km	2019	791	844	1%	1.00	816	870	43%	47%
	Ch 105.7 km to Ch 107.4 km	2019	791	844	1%	1.00	816	870	43%	47%
	Ch 107.4 km to Ch 107.6 km	2019	1073	1105	1%	1.00	1115	1148	61%	43%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 2.0 km to Ch 3.9 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 3.9 km to Ch 10.2 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 10.2 km to Ch 13.9 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 13.9 km to Ch 18.5 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 18.5 km to Ch 27.1 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 27.1 km to Ch 29.3 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 29.3 km to Ch 34.7 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 34.7 km to Ch 39.6 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 39.6 km to Ch 40.3 km	2019	656	702	1%	1.00	671	718	49%	48%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
	Ch 40.3 km to Ch 40.5 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 40.5 km to Ch 43.9 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 43.9 km to Ch 46.3 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 46.3 km to Ch 88.0 km	2019	656	702	1%	1.00	671	718	49%	48%
	Ch 88.0 km to Ch 88.2 km	2019	1662	1941	0%	1.00	1676	1957	51%	45%
	Ch 88.2 km to Ch 90.0 km	2019	1662	1941	0%	1.00	1676	1957	51%	45%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	2019	47734	48127	5%	1.00	55521	55978	16%	21%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	2019	15981	15384	4%	1.00	18006	17333	5%	2%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 2.2 km to Ch 5.4 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 5.4 km to Ch 6.7 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 6.7 km to Ch 7.7 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 7.7 km to Ch 11.2 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 11.2 km to Ch 15.3 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 15.3 km to Ch 17.5 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 17.5 km to Ch 19.0 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 19.0 km to Ch 20.3 km	2019	2744	2716	4%	1.00	3044	3013	22%	22%
	Ch 20.3 km to Ch 21.5 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 21.5 km to Ch 23.2 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 23.2 km to Ch 25.0 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 25.0 km to Ch 30.1 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 30.1 km to Ch 38.7 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 38.7 km to Ch 41.1 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 41.1 km to Ch 41.7 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 41.7 km to Ch 43.2 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
	Ch 43.2 km to Ch 44.7 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 44.7 km to Ch 47.6 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 47.6 km to Ch 52.2 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 52.2 km to Ch 53.3 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 53.3 km to Ch 60.8 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
	Ch 60.8 km to Ch 63.0 km	2019	1468	1479	3%	1.00	1612	1624	30%	28%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	2019	881	901	1%	1.15	1033	1056	38%	39%
	Ch 0.7 km to Ch 0.8 km	2019	881	901	1%	1.15	1033	1056	38%	39%
	Ch 0.8 km to Ch 1.4 km	2019	881	901	1%	1.15	1033	1056	38%	39%
	Ch 1.4 km to Ch 3.0 km	2019	881	901	1%	1.15	1033	1056	38%	39%
	Ch 3.0 km to Ch 13.0 km	2019	881	901	1%	1.15	1033	1056	38%	39%
	Ch 13.0 km to Ch 121.6 km	2019	881	901	1%	1.15	1033	1056	38%	39%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	2019	55729	56166	0%	1.00	55729	56166	11%	9%
	Ch 3.7 km to Ch 6.4 km	2019	47583	48768	3%	1.00	51365	52644	11%	9%
	Ch 6.4 km to Ch 8.3 km	2018	52457	50420	5%	1.00	63734	61259	11%	9%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	2019	1111	1105	0%	1.15	1280	1273	38%	36%
	Ch 220.1 km to Ch 222.4 km	2019	1111	1105	0%	1.16	1289	1282	38%	36%
	Ch 222.4 km to Ch 224.1 km	2019	1111	1105	0%	1.16	1289	1282	38%	36%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	2019	15981	15384	4%	1.00	18006	17333	5%	2%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	2019	315	305	4%	1.15	410	397	27%	37%
	Ch 2.5 km to Ch 3.5 km	2019	315	305	4%	1.15	410	397	27%	37%
	Ch 3.5 km to Ch 6.2 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 6.2 km to Ch 9.0 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 9.0 km to Ch 13.1 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 13.1 km to Ch 14.0 km	2019	347	341	0%	1.15	400	393	26%	26%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
	Ch 14.0 km to Ch 17.3 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 17.3 km to Ch 18.1 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 18.1 km to Ch 21.8 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 21.8 km to Ch 28.0 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 28.0 km to Ch 33.0 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 33.0 km to Ch 35.6 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 35.6 km to Ch 37.7 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 37.7 km to Ch 39.8 km	2019	347	341	0%	1.15	400	393	26%	26%
	Ch 39.8 km to Ch 41.9 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 41.9 km to Ch 45.9 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 45.9 km to Ch 47.6 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 47.6 km to Ch 53.3 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 53.3 km to Ch 55.7 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 55.7 km to Ch 56.6 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 56.6 km to Ch 59.2 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 59.2 km to Ch 61.0 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 61.0 km to Ch 65.7 km	2019	169	167	3%	1.00	185	183	35%	31%
	Ch 65.7 km to Ch 68.7 km	2019	169	167	3%	1.00	185	183	35%	31%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	2018	94	95	6%	1.00	119	120	20%	26%
	Ch 2.0 km to Ch 2.2 km	2018	94	95	6%	1.00	119	120	20%	26%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	2019	38	33	1%	1.00	39	34	34%	24%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	2016	5141	5719	3%	1.00	6139	6829	42%	42%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	2016	5141	5719	3%	1.00	6139	6829	42%	42%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	2019	90	91	3%	1.19	119	120	23%	24%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	2018	2972	2569	1%	1.00	3051	2637	32%	31%
	Ch 6.0 km to Ch 6.4 km	2019	1684	1693	0%	1.00	1684	1693	14%	25%
	Ch 6.4 km to Ch 8.3 km	2019	1684	1693	0%	1.00	1684	1693	14%	25%
	Ch 8.3 km to Ch 9.2 km	2019	1684	1693	0%	1.00	1684	1693	14%	25%
	Ch 9.2 km to Ch 10.0 km	2019	1702	1698	6%	1.00	2018	2014	15%	19%
	Ch 10.0 km to Ch 10.1 km	2019	1702	1698	6%	1.00	2018	2014	15%	19%
	Ch 10.1 km to Ch 10.3 km	2019	1702	1698	6%	1.00	2018	2014	15%	19%
	Ch 10.3 km to Ch 12.1 km	2019	1702	1698	6%	1.00	2018	2014	15%	19%
	Ch 12.1 km to Ch 14.5 km	2019	1702	1698	6%	1.00	2018	2014	15%	19%
	Ch 14.5 km to Ch 16.3 km	2018	1041	1083	2%	1.00	1145	1191	20%	18%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	2019	5844	5579	3%	1.00	6386	6096	19%	15%
	Ch 26.9 km to Ch 27.1 km	2019	5844	5579	3%	1.00	6386	6096	19%	15%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	2019	1978	1113	1%	1.00	2065	1162	49%	72%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	2019	1978	1113	1%	1.00	2065	1162	49%	72%
	Ch 0.6 km to Ch 3.2 km	2019	1978	1113	1%	1.00	2065	1162	49%	72%
	Ch 3.2 km to Ch 4.1 km	2019	-	1113	1%	1.00	-	1162	-	72%
	Ch 4.1 km to Ch 13.0 km	2019	1978	-	1%	1.00	2065	-	49%	-
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	2022	-	542	1%	1.00	-	575	-	19%
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	2022	583	-	1%	1.00	619	-	19%	-
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	2022	512	-	1%	1.00	543	-	20%	-
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	2022	-	497	1%	1.00	-	528	-	19%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	2022	-	399	1%	1.00	-	424	-	29%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	2022	429	-	1%	1.00	455	-	30%	-
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	2018	28724	29592	4%	1.00	33319	34326	13%	12%
	Ch 7.2 km to Ch 15.1 km	2018	28724	29592	4%	1.00	33319	34326	13%	12%
	Ch 15.1 km to Ch 18.9 km	2019	16026	15355	2%	1.00	17075	16360	19%	15%
	Ch 18.9 km to Ch 28.9 km	2019	14658	14835	2%	1.00	15562	15750	19%	16%
	Ch 28.9 km to Ch 36.6 km	2020	10701	10482	0%	1.00	10701	10482	25%	29%
	Ch 36.6 km to Ch 55.5 km	2019	11844	11735	3%	1.00	12826	12708	19%	21%
	Ch 55.5 to Ch 75.4	2019	11844	11735	3%	1.00	12826	12708	19%	21%
	Ch 75.4 km to Ch 79.6 km	2019	11338	10327	1%	1.00	11838	10782	19%	19%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	2019	6842	6690	11%	1.00	9332	9125	19%	18%
	Ch 0.4 km to Ch 1.5 km	2019	6842	6690	11%	1.00	9332	9125	19%	18%
	Ch 1.5 km to Ch 2.4 km	2019	6842	6690	11%	1.00	9332	9125	19%	18%
	Ch 2.4 km to Ch 4.5 km	2019	6520	6754	1%	1.00	6755	6998	20%	19%
	Ch 4.5 km to Ch 5.0 km	2019	6520	6754	1%	1.00	6755	6998	20%	19%
	Ch 5.0 km to Ch 5.3 km	2019	6520	6754	1%	1.00	6755	6998	20%	19%
	Ch 5.3 km to Ch 6.2 km	2019	6520	6754	1%	1.00	6755	6998	20%	19%
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	2022	97	-	1%	1.00	97	-	19%	-
State-Controlled Roads: Transport for New South Wales										
Newell Highway	River Road to Queensland/NSW Border	2017	2048	2003	3%	1.00	2403	2082	32%	33%
Local Government Roads: Balonne Shire Council										
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	2019	38	33	1%	1.00	39	34	34%	24%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Local Government Roads: Goondiwindi Regional Council										
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	2022	10	10	0%	1.00	10	10	20%	20%
Bybera Road	Cunningham Highway to B2G-LDN060.4	2022	36	36	1%	1.15	42	42	8%	7%
	B2G-LDN060.4 to Earthworks Area 2A	2022	36	36	1%	1.15	42	42	8%	7%
Cemetery Road	Access Track to Moorroobie Lane	2007	65	65	3%	1.00	105	105	15%	15%
	Cunningham Highway to GrainCorp Goondiwindi	2007	65	65	0%	1.00	68	68	15%	15%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	2015	34	34	1%	1.00	37	37	25%	25%
	Coolmunda Dam Access to Cunningham Highway	2015	34	34	1%	1.00	37	37	25%	25%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	2018	51	51	1%	1.13	59	59	34%	34%
	B2G-LDN055.4 to B2G-LDN054.2	2018	51	51	1%	1.13	59	59	34%	34%
	Cunningham Highway to B2G-LDN052.8	2018	51	51	1%	1.13	59	59	34%	34%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	2022	20	22	1%	1.16	23	26	10%	13%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	2022	19	19	1%	1.15	22	22	15%	22%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	2021	10	10	3%	1.00	10	10	26%	26%
	NS2B-LDN033.2 to NS2B-LDN035.6	2021	10	10	3%	1.00	10	10	26%	26%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	2022	14	13	1%	1.15	16	15	6%	6%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	2021	7	7	3%	1.00	7	7	43%	43%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	2018	10	11	3%	1.08	12	13	5%	11%
Hunt Street	Leichhardt Highway to Boodle Street	2022	10	10	0%	1.00	10	10	20%	20%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	2022	746	700	3%	1.16	865	812	10%	10%
	NS2B-LDN031.0 to South Kurumbul Road	2022	746	700	3%	1.16	865	812	10%	10%
	South Kurumbul Road to Cunningham Highway	2022	746	28	3%	1.16	865	32	10%	14%
	Cunningham Highway to Eukabilla Road	2022	746	700	1%	1.16	865	812	10%	10%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	2022	4	4	1%	1.15	5	5	20%	25%
	McDougalls Road to Cunningham Highway	2022	4	4	1%	1.15	5	5	20%	25%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	2010	9	9	3%	1.00	13	13	13%	13%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	2021	2	2	3%	1.00	2	2	25%	25%
	Mooroobie Lane to Wondalli Kurumbul Road	2013	60	60	0%	1.00	60	60	28%	22%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	2018	25	25	3%	1.07	30	30	39%	37%
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	2006	44	43	0%	1.00	44	43	32%	26%
Silo Street	Barwon Highway to GrainCorp Talwood	2018	4	4	1%	1.07	4	4	25%	12%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	2018	4	5	1%	1.07	4	6	59%	74%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	2022	8	8	3%	1.15	9	9	5%	5%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Springborg Road	Cunningham highway to B2G-LDN037.6	2022	8	8	3%	1.15	9	9	5%	5%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	2006	174	174	0%	1.00	177	177	29%	29%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	2018	10	10	1%	1.13	12	12	16%	39%
	B2G-LDN067.6 to Millmerran-Inglewood Road	2022	12	11	3%	1.16	14	13	11%	7%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	2020	8	8	3%	1.05	9	9	20%	20%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	2022	10	10	1%	1.00	10	10	20%	20%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	2022	26	28	3%	1.16	30	32	15%	14%
Wongavale Yugilbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	2022	26	28	3%	1.16	30	32	15%	14%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	2022	26	28	3%	1.16	30	32	15%	14%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	2022	26	28	3%	1.16	30	32	15%	14%
	B2G-LDN006.3 to Wondalli Kurumbul Road	2022	26	28	1%	1.16	30	32	15%	14%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	2022	26	28	1%	1.16	30	32	15%	14%
	Yelarbon Kurumbul Road to B2G-LDN020.3	2022	10	10	0%	1.00	10	10	20%	20%
	B2G-LDN020.3 to B2G-LDN025.9	2022	36	36	1%	1.15	42	42	8%	7%
	B2G-LDN025.9 to Cunningham Highway	2022	36	36	1%	1.15	42	42	8%	7%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/ WB	G/NB/EB	AG/SB/ WB
Local Government Roads: Moree Plains Shire Council										
Boggabilla Weir Access	River Road to Boggabilla Weir	2022	10	10	3%	1.00	10	10	20%	20%
River Road	Newell Highway to Boggabilla Weir Access	2022	10	10	3%	1.00	10	10	20%	20%
Local Government Roads: Toowoomba Regional Council										
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	2014	3117	3117	6%	1.01	4942	4942	11%	11%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	2014	3117	3117	0%	1.01	3225	3225	11%	11%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	2022	5608	6244	0%	1.06	5952	6627	17%	29%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	2022	124	117	4%	1.06	132	124	14%	11%
	B2G-LDN188.2 to Gore Highway	2022	124	117	4%	1.06	132	124	14%	11%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	2022	85	89	4%	1.06	90	94	8%	10%
Blackwell Road	Gore Highway to Millmerran Quarry	2022	18	20	1%	1.15	21	23	2%	3%
	Millmerran Quarry to B2G-LDN120.2	2022	18	20	1%	1.15	21	23	2%	3%
	B2G-LDN120.2 to Millmerran-Inglewood Road	2022	5	5	0%	1.15	6	6	8%	4%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	2017	14	14	1%	1.00	14	14	16%	16%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	2020	50	52	2%	1.05	55	57	34%	20%
	Brimblecombe Road to WL 194467R	2020	50	52	3%	1.05	56	57	34%	20%
Bushy Lane	B2G-LDN183.0 to Gore Highway	2022	50	44	4%	1.06	53	47	4%	5%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	2022	470	469	4%	1.15	541	540	16%	15%
	Saleyards Road to Gore Highway	2022	889	860	4%	1.15	1024	991	9%	10%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Chamberlain Road	Warrego Highway to B2G-LDN204.2	2022	10	10	1%	1.00	10	10	20%	20%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	2022	15	16	0%	1.15	17	18	7%	10%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	2022	8	7	3%	1.06	8	7	3%	3%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	2022	10	10	3%	1.00	10	10	20%	20%
Draper Road	Steger Road to B2G-FBW206.9	2022	23	24	1%	1.06	24	25	9%	9%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	2015	1081	1081	6%	1.06	1708	1708	15%	15%
	Access Track to Greenwattle Street	2015	1081	1081	6%	1.06	1708	1708	15%	15%
Florence Street	Gore Highway to West Street	2017	161	161	1%	1.00	166	166	4%	4%
Forestry Road	Access Track to Millmerran-Inglewood Road	2022	1	1	0%	1.15	1	1	0%	0%
	Millmerran-Inglewood Road to Earthworks Area 3B	2022	1	1	0%	1.15	1	1	0%	0%
Fysh Road	B2G-LDN147.1 to Gore Highway	2020	36	35	3%	1.05	40	39	17%	23%
Gap Road	Gore Highway to Grevillea Street	2022	605	644	3%	1.06	642	683	11%	12%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	2020	21	20	4%	1.05	24	22	10%	18%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	2020	13	13	3%	1.05	14	14	24%	44%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	2015	208	208	3%	1.00	258	258	27%	27%
Hall Road	B2G-LDN139.0 to Gore Highway	2020	1	2	3%	1.05	1	2	50%	60%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	2022	22	24	0%	1.15	25	27	27%	21%
	B2G-LDN116.0 to Millmerran-Inglewood Road	2022	22	24	0%	1.15	25	27	27%	21%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	2022	10	10	6%	1.00	10	10	20%	20%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Kahler Road	Murlaggan Road to B2G-LDN165.6	2020	6	6	3%	1.05	7	7	3%	3%
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	2022	1901	-	1%	1.06	2017	-	7%	-
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	2022	-	1905	1%	1.00	-	1905	-	7%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	2022	36	38	0%	1.15	42	44	24%	24%
	Millmerran-Inglewood Road to Commodore Mine	2022	1	3	0%	1.15	1	3	25%	7%
Leesons Road	Warrego Highway to Steger Road	2022	37	40	1%	1.06	39	42	12%	10%
	Steger Road to B2G-LDN206.3	2022	37	40	1%	1.06	39	42		10%
Linthorpe Road	Gore Highway to B2G-LDN175.5	2022	10	19	4%	1.06	11	20	12%	13%
Linthorpe Valley Road	Geitz Road to Gore Highway	2020	46	43	4%	1.05	52	48	14%	29%
Lochaber Road	Gore Highway to B2G-LDN172.0	2022	171	174	4%	1.06	181	184	24%	7%
	B2G-LDN172.0 to B2G-LDN172.6	2022	171	174	4%	1.06	181	184	6%	7%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	2015	3026	3026	1%	1.00	3168	3168	6%	20%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	2022	18	19	0%	1.15	21	21	20%	15%
	B2G-LDN112.1 to Millwood Road	2022	18	19	0%	1.15	21	21	24%	15%
	Millwood Road to Kooroongarra Road	2022	3	1	0%	1.15	4	1	24%	0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	2017	115	115	0%	1.00	115	115	6%	30%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	2009	11	11	3%	1.00	17	17	30%	17%
	Kahler Road to Gore Highway	2009	11	11	3%	1.00	17	17	17%	17%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	2009	11	11	3%	1.00	17	17	17%	17%
Omara Road	Toowoomba-Cecil Plains Road to Warrego Highway	2022	201	200	3%	1.06	213	212	17%	6%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	2022	201	200	3%	1.06	213	212	7%	6%
	B2G-LDN128.2 to B2G-LDN130.0	2022	679	690	0%	1.06	721	732	7%	18%
	B2G-LDN130.0 to Millmerran-Inglewood Road	2022	2373	2326	6%	1.06	2519	2468	20%	14%
Paint Mine Road	Gore Highway to B2G-LDN173.5	2022	234	233	4%	1.15	270	268	18%	14%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	2022	234	233	4%	1.15	270	268	12%	14%
Quarry Road Access	Tummalville Road to Quarry	2022	234	233	4%	1.15	270	268	12%	14%
Saleyards Road	Campbell Street to Gore Highway	2020	22	22	4%	1.05	25	25	12%	8%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	2018	10	11	0%	1.13	11	12	17%	72%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	2022	2	2	3%	1.06	2	2	75%	38%
	B2G-LDN123.6 to B2G-LDN123.8	2015	123	123	4%	1.13	184	144	38%	30%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	2022	3	2	0%	1.15	3	3	30%	0%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	2022	10	10	0%	1.00	10	10	0%	20%
	New Hope Recycled Water Pipeline to Draper Road	2022	10	10	0%	1.00	10	10	20%	20%
	Draper Road to Leeson's Road	2022	140	140	3%	1.06	148	149	20%	40%
Tummalville Road	Access Track to Gore Highway	2022	962	581	1%	1.06	1021	616	38%	27%
Turallin Road	Gore Highway to the Turallin Facility	2022	962	581	1%	1.06	1021	616	18%	27%

Road name	Road section	Traffic volume base year	Background ADT		Growth rate (% p.a.)	Seasonal variation factor	Existing year ADT		HV%	
			G/NB/EB	AG/SB/WB			G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	2022	962	581	1%	1.06	1021	616	18%	27%
	B2G-LDN153.1 to Gore Highway	2022	91	95	3%	1.06	97	101	18%	21%
	Gore Highway to B2G-LDN150.9	2022	114	165	1%	1.15	131	189	21%	19%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	2021	121	119	3%	1.06	132	130	13%	21%
West Street	Gore Highway to Florence Street	2021	121	119	3%	1.06	132	130	22%	21%
	Florence Street to Six Mile Road	2021	57	53	3%	1.06	62	58	22%	21%
Yarranlea Road	Gore Highway to B2G-LDN161.0	2017	461	461	6%	1.00	613	613	23%	24%
	B2G-LDN161.0 to Desmonds Lane	2017	50	50	1%	1.00	52	52	24%	46%

Table 2.13 Existing road link peak hour volumes

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
State-Controlled Roads: Department of Transport and Main Roads											
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	1097	1005	7.60%	7.40%	7.70%	7.80%	83	77	81	78
	Ch 0.8 km to Ch 2.0 km	1097	1005	7.60%	7.40%	7.70%	7.80%	83	77	81	78
	Ch 2.0 km to Ch 45.9 km	333	332	9.10%	8.10%	8.10%	7.90%	30	27	27	26
	Ch 45.9 km to Ch 88.0 km	333	332	9.10%	8.10%	8.10%	7.90%	30	27	27	26
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	121	120	9.70%	8.50%	9.10%	8.90%	12	11	10	11
	Ch 1.6 km to Ch 66.8 km	121	120	9.70%	8.50%	9.10%	8.90%	12	11	10	11
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	99	92	11.80%	8.90%	10.40%	10.20%	12	10	9	9
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	2437	2749	9.00%	7.60%	6.40%	8.80%	219	176	185	242
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	816	870	7.40%	7.80%	7.70%	7.50%	60	67	64	65
	Ch 96.2 km to Ch 97.5 km	816	870	7.40%	7.80%	7.70%	7.50%	60	67	64	65
	Ch 97.5 km to Ch 105.7 km	816	870	7.40%	7.80%	7.70%	7.50%	60	67	64	65
	Ch 105.7 km to Ch 107.4 km	816	870	7.40%	7.80%	7.70%	7.50%	60	67	64	65
	Ch 107.4 km to Ch 107.6 km	1115	1148	7.70%	7.80%	7.30%	8.40%	86	84	87	96
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 2.0 km to Ch 3.9 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 3.9 km to Ch 10.2 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 10.2 km to Ch 13.9 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 13.9 km to Ch 18.5 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 18.5 km to Ch 27.1 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 27.1 km to Ch 29.3 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 29.3 km to Ch 34.7 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	Ch 34.7 km to Ch 39.6 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 39.6 km to Ch 40.3 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 40.3 km to Ch 40.5 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 40.5 km to Ch 43.9 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 43.9 km to Ch 46.3 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 46.3 km to Ch 88.0 km	671	718	7.10%	7.10%	6.80%	7.50%	48	49	48	54
	Ch 88.0 km to Ch 88.2 km	1676	1957	6.90%	7.30%	7.10%	7.70%	116	139	122	151
	Ch 88.2 km to Ch 90.0 km	1676	1957	6.90%	7.30%	7.10%	7.70%	116	139	122	151
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	55521	55978	8.10%	8.20%	8.10%	8.20%	4497	4534	4553	4590
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	18006	17333	7.55%	8.70%	7.30%	9.20%	1359	1265	1567	1595
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 2.2 km to Ch 5.4 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 5.4 km to Ch 6.7 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 6.7 km to Ch 7.7 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 7.7 km to Ch 11.2 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 11.2 km to Ch 15.3 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 15.3 km to Ch 17.5 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 17.5 km to Ch 19.0 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 19.0 km to Ch 20.3 km	3044	3013	6.50%	7.60%	8.00%	7.50%	198	241	231	226
	Ch 20.3 km to Ch 21.5 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 21.5 km to Ch 23.2 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 23.2 km to Ch 25.0 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 25.0 km to Ch 30.1 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	Ch 30.1 km to Ch 38.7 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 38.7 km to Ch 41.1 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 41.1 km to Ch 41.7 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 41.7 km to Ch 43.2 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 43.2 km to Ch 44.7 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 44.7 km to Ch 47.6 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 47.6 km to Ch 52.2 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 52.2 km to Ch 53.3 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 53.3 km to Ch 60.8 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
	Ch 60.8 km to Ch 63.0 km	1612	1624	7.00%	7.50%	7.50%	8.20%	113	122	121	133
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	1033	1056	7.90%	7.60%	7.50%	7.80%	82	79	78	82
	Ch 0.7 km to Ch 0.8 km	1033	1056	7.90%	7.60%	7.50%	7.80%	82	79	78	82
	Ch 0.8 km to Ch 1.4 km	1033	1056	7.90%	7.60%	7.50%	7.80%	82	79	78	82
	Ch 1.4 km to Ch 3.0 km	1033	1056	7.90%	7.60%	7.50%	7.80%	82	79	78	82
	Ch 3.0 km to Ch 13.0 km	1033	1056	7.90%	7.60%	7.50%	7.80%	82	79	78	82
	Ch 13.0 km to Ch 121.6 km	1033	1056	7.90%	7.60%	7.50%	7.80%	82	79	78	82
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	55729	56166	7.00%	6.70%	6.00%	8.70%	3901	3370	3734	4886
	Ch 3.7 km to Ch 6.4 km	51365	52644	6.60%	8.30%	7.20%	7.10%	3390	3790	4263	3738
	Ch 6.4 km to Ch 8.3 km	63734	61259	6.60%	8.40%	6.60%	7.40%	4206	4043	5354	4533
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	1280	1273	7.20%	7.70%	7.00%	7.40%	92	89	99	94
	Ch 220.1 km to Ch 222.4 km	1289	1282	7.20%	7.70%	7.00%	7.40%	93	90	99	95
	Ch 222.4 km to Ch 224.1 km	1289	1282	7.20%	7.70%	7.00%	7.40%	93	90	99	95
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	18006	17333	7.55%	8.70%	7.30%	9.20%	1359	1265	1567	1595

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	410	397	7.10%	9.70%	7.20%	8.80%	29	29	40	35
	Ch 2.5 km to Ch 3.5 km	410	397	7.10%	9.70%	7.20%	8.80%	29	29	40	35
	Ch 3.5 km to Ch 6.2 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 6.2 km to Ch 9.0 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 9.0 km to Ch 13.1 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 13.1 km to Ch 14.0 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 14.0 km to Ch 17.3 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 17.3 km to Ch 18.1 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 18.1 km to Ch 21.8 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 21.8 km to Ch 28.0 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 28.0 km to Ch 33.0 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 33.0 km to Ch 35.6 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 35.6 km to Ch 37.7 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 37.7 km to Ch 39.8 km	400	393	8.10%	6.90%	9.60%	9.60%	32	38	28	38
	Ch 39.8 km to Ch 41.9 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 41.9 km to Ch 45.9 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 45.9 km to Ch 47.6 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 47.6 km to Ch 53.3 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 53.3 km to Ch 55.7 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 55.7 km to Ch 56.6 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 56.6 km to Ch 59.2 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 59.2 km to Ch 61.0 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 61.0 km to Ch 65.7 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15
	Ch 65.7 km to Ch 68.7 km	185	183	7.90%	8.10%	8.50%	8.30%	15	16	15	15

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	119	120	8.20%	10.00%	8.30%	8.00%	10	10	12	10
	Ch 2.0 km to Ch 2.2 km	119	120	8.20%	10.00%	8.30%	8.00%	10	10	12	10
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	6139	6829	7.30%	8.00%	6.10%	8.90%	448	417	491	608
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	6139	6829	7.30%	8.00%	6.10%	8.90%	448	417	491	608
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	119	120	7.70%	7.70%	8.70%	7.70%	9	10	9	9
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	1836	1889	6.40%	8.40%	8.90%	7.30%	118	168	154	138
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	3051	2637	6.80%	7.30%	8.40%	7.30%	207	222	223	193
	Ch 6.0 km to Ch 6.4 km	1684	1693	6.80%	7.90%	7.00%	9.80%	115	119	133	166
	Ch 6.4 km to Ch 8.3 km	1684	1693	6.80%	7.90%	7.00%	9.80%	115	119	133	166
	Ch 8.3 km to Ch 9.2 km	1684	1693	6.80%	7.90%	7.00%	9.80%	115	119	133	166
	Ch 9.2 km to Ch 10.0 km	2018	2014	7.30%	7.80%	6.90%	10.50%	147	139	157	211
	Ch 10.0 km to Ch 10.1 km	2018	2014	7.30%	7.80%	6.90%	10.50%	147	139	157	211
	Ch 10.1 km to Ch 10.3 km	2018	2014	7.30%	7.80%	6.90%	10.50%	147	139	157	211
	Ch 10.3 km to Ch 12.1 km	2018	2014	7.30%	7.80%	6.90%	10.50%	147	139	157	211
	Ch 12.1 km to Ch 14.5 km	2018	2014	7.30%	7.80%	6.90%	10.50%	147	139	157	211
	Ch 14.5 km to Ch 16.3 km	1145	1191	6.90%	12.30%	6.50%	10.40%	79	77	141	124
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	6386	6096	6.60%	8.00%	8.10%	8.20%	421	494	511	500
	Ch 26.9 km to Ch 27.1 km	6386	6096	6.60%	8.00%	8.10%	8.20%	421	494	511	500
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	2065	1162	7.40%	7.20%	6.70%	8.00%	153	78	149	93
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	2065	1162	7.40%	7.20%	6.70%	8.00%	153	78	149	93
	Ch 0.6 km to Ch 3.2 km	2065	1162	7.40%	7.20%	6.70%	8.00%	153	78	149	93
	Ch 3.2 km to Ch 4.1 km	2065	1162	7.40%	7.20%	6.70%	8.00%	153	78	149	93

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	Ch 4.1 km to Ch 13.0 km	2065	1162	7.40%	7.20%	6.70%	8.00%	153	78	149	93
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	-	575	7.40%	7.20%	6.70%	8.00%	-	39	-	46
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	619	-	7.40%	7.20%	6.70%	8.00%	46	-	45	-
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	543	-	7.40%	7.20%	6.70%	8.00%	40	-	39	-
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	-	528	7.40%	7.20%	6.70%	8.00%	-	35	-	42
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	-	424	7.40%	7.20%	6.70%	8.00%	-	28	-	34
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	455	-	7.40%	7.20%	6.70%	8.00%	34	-	33	-
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	33319	34326	5.80%	9.30%	8.00%	6.60%	1933	2746	3099	2266
	Ch 7.2 km to Ch 15.1 km	33319	34326	5.80%	9.30%	8.00%	6.60%	1933	2746	3099	2266
	Ch 15.1 km to Ch 18.9 km	17075	16360	6.20%	8.70%	7.10%	7.10%	1059	1162	1485	1162
	Ch 18.9 km to Ch 28.9 km	15562	15750	5.90%	8.60%	7.00%	7.00%	918	1103	1338	1103
	Ch 28.9 km to Ch 36.6 km	10701	10482	7.40%	7.00%	7.40%	8.10%	792	776	749	849
	Ch 36.6 km to Ch 55.5 km	12826	12708	7.30%	7.00%	7.10%	8.40%	936	902	898	1067
	Ch 55.5 to Ch 75.4	12826	12708	7.30%	7.00%	7.10%	8.40%	936	902	898	1067
	Ch 75.4 km to Ch 79.6 km	11838	10782	7.40%	7.20%	6.70%	8.00%	876	722	852	863
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	9332	9125	6.80%	7.90%	8.00%	8.10%	635	730	737	739
	Ch 0.4 km to Ch 1.5 km	9332	9125	6.80%	7.90%	8.00%	8.10%	635	730	737	739

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		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	Ch 1.5 km to Ch 2.4 km	9332	9125	6.80%	7.90%	8.00%	8.10%	635	730	737	739
	Ch 2.4 km to Ch 4.5 km	6755	6998	6.30%	8.00%	7.80%	8.40%	426	546	540	588
	Ch 4.5 km to Ch 5.0 km	6755	6998	6.30%	8.00%	7.80%	8.40%	426	546	540	588
	Ch 5.0 km to Ch 5.3 km	6755	6998	6.30%	8.00%	7.80%	8.40%	426	546	540	588
	Ch 5.3 km to Ch 6.2 km	6755	6998	6.30%	8.00%	7.80%	8.40%	426	546	540	588
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	97	1905	6.30%	8.00%	7.80%	8.40%	6	149	8	160
State-Controlled Roads: Transport for New South Wales											
Newell Highway	River Road to Queensland/NSW Border	2403	2350	9.30%	8.20%	9.60%	9.40%	224	226	197	221
Local Government Roads: Balonne Shire Council											
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	39	34	13.00%	10.30%	12.50%	11.50%	5	4	4	4
Local Government Roads: Goondiwindi Regional Council											
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	10	10	7.20%	7.50%	7.10%	7.40%	1	1	1	1
Bybera Road	Cunningham Highway to B2G-LDN060.4	42	42	7.10%	7.10%	6.80%	7.50%	3	3	3	3
	B2G-LDN060.4 to Earthworks Area 2A	42	42	7.10%	7.10%	6.80%	7.50%	3	3	3	3
Cemetery Road	Access Track to Moorobie Lane	105	105	9.30%	8.20%	9.60%	9.40%	10	10	9	10
	Cunningham Highway to GrainCorp Goondiwindi	68	68	6.90%	7.30%	7.10%	7.70%	5	5	5	5
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	37	37	7.40%	7.80%	7.70%	7.50%	3	3	3	3
	Coolmunda Dam Access to Cunningham Highway	37	37	7.40%	7.80%	7.70%	7.50%	3	3	3	3

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		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	59	59	7.10%	7.10%	6.80%	7.50%	4	4	4	4
	B2G-LDN055.4 to B2G-LDN054.2	59	59	7.10%	7.10%	6.80%	7.50%	4	4	4	4
	Cunningham Highway to B2G-LDN052.8	59	59	7.10%	7.10%	6.80%	7.50%	4	4	4	4
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	23	26	7.10%	7.10%	6.80%	7.50%	2	2	2	2
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	22	22	7.70%	7.80%	7.30%	8.40%	2	2	2	2
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	10	10	9.30%	8.20%	9.60%	9.40%	1	1	1	1
	NS2B-LDN033.2 to NS2B-LDN035.6	10	10	9.30%	8.20%	9.60%	9.40%	1	1	1	1
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	16	15	7.40%	7.80%	7.70%	7.50%	1	1	1	1
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	7	7	9.30%	8.20%	9.60%	9.40%	1	1	1	1
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	12	13	7.90%	8.10%	8.50%	8.30%	1	1	1	1
Hunt Street	Leichhardt Highway to Boodle Street	10	10	7.20%	7.50%	7.10%	7.40%	1	1	1	1
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	865	812	9.30%	8.20%	9.60%	9.40%	80	78	71	76
	NS2B-LDN031.0 to South Kurumbul Road	865	812	9.30%	8.20%	9.60%	9.40%	80	78	71	76
	South Kurumbul Road to Cunningham Highway	865	812	9.30%	8.20%	9.60%	9.40%	80	78	71	76
	Cunningham Highway to Eukabilla Road	865	812	7.30%	7.30%	7.90%	7.60%	63	64	63	62

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		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
McDougalls Road	B2G-LDN049.8 to McDougalls Road	5	5	7.10%	7.10%	6.80%	7.50%	0	0	0	0
	McDougalls Road to Cunningham Highway	5	5	7.10%	7.10%	6.80%	7.50%	0	0	0	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	17	17	9.30%	8.20%	9.60%	9.40%	2	2	1	2
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	17	17	9.30%	8.20%	9.60%	9.40%	2	2	1	2
	Mooroobie Lane to Wondalli Kurumbul Road	17	17	9.30%	8.20%	9.60%	9.40%	2	2	1	2
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	13	13	7.90%	8.10%	8.50%	8.30%	1	1	1	1
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	2	2	9.30%	8.20%	9.60%	9.40%	0	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	60	60	9.70%	8.50%	9.10%	8.90%	6	5	5	5
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	30	30	9.30%	8.20%	9.60%	9.40%	3	3	2	3
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	44	43	9.10%	8.10%	8.10%	7.90%	4	3	4	3
Springborg Road	Cunningham highway to B2G-LDN037.6	4	4	7.10%	7.10%	6.80%	7.50%	0	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	4	6	7.10%	7.10%	6.80%	7.50%	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	9	9	7.90%	8.10%	8.50%	8.30%	1	1	1	1
	B2G-LDN067.6 to Millmerran-Inglewood Road	9	9	7.90%	8.10%	8.50%	8.30%	1	1	1	1
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	177	177	7.40%	8.30%	8.40%	8.00%	13	15	15	14

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Whetstone Access	B2G-LDN044.5 to Cunningham Highway	12	12	7.10%	7.10%	6.80%	7.50%	1	1	1	1
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	14	13	9.30%	8.20%	9.60%	9.40%	1	1	1	1
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	9	9	7.90%	8.10%	8.50%	8.30%	1	1	1	1
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	10	10	7.10%	7.10%	6.80%	7.50%	1	1	1	1
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	30	32	9.30%	8.20%	9.60%	9.40%	3	3	2	3
	B2G-LDN006.3 to Wondalli Kurumbul Road	30	32	9.30%	8.20%	9.60%	9.40%	3	3	2	3
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	30	32	9.30%	8.20%	9.60%	9.40%	3	3	2	3
	Yelarbon Kurumbul Road to B2G-LDN020.3	30	32	9.30%	8.20%	9.60%	9.40%	3	3	2	3
	B2G-LDN020.3 to B2G-LDN025.9	30	32	7.10%	7.10%	6.80%	7.50%	2	2	2	2
	B2G-LDN025.9 to Cunningham Highway	30	32	7.10%	7.10%	6.80%	7.50%	2	2	2	2
Local Government Roads: Moree Plains Shire Council											
Boggabilla Weir Access	River Road to Boggabilla Weir	10	10	9.30%	8.20%	9.60%	9.40%	1	1	1	1
River Road	Newell Highway to Boggabilla Weir Access	10	10	9.30%	8.20%	9.60%	9.40%	1	1	1	1
Local Government Roads: Toowoomba Regional Council											
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	4942	4942	7.30%	7.80%	6.90%	10.50%	361	341	386	519

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	Toowoomba Workforce Origin B to Toowoomba-Athol Road	3225	3225	6.30%	10.40%	10.20%	6.80%	203	329	335	219
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	5952	6627	6.30%	10.40%	10.20%	6.80%	375	676	619	451
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	132	124	6.50%	7.60%	8.00%	7.50%	9	10	10	9
	B2G-LDN188.2 to Gore Highway	132	124	6.50%	7.60%	8.00%	7.50%	9	10	10	9
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	90	94	6.50%	7.60%	8.00%	7.50%	6	8	7	7
Blackwell Road	Gore Highway to Millmerran Quarry	21	23	7.90%	7.60%	7.50%	7.80%	2	2	2	2
	Millmerran Quarry to B2G-LDN120.2	21	23	7.90%	7.60%	7.50%	7.80%	2	2	2	2
	B2G-LDN120.2 to Millmerran-Inglewood Road	6	6	8.10%	6.90%	9.60%	9.60%	0	1	0	1
Bligh Street	Six Mile Road to Boral Concrete Millmerran	14	14	7.90%	7.60%	7.50%	7.80%	1	1	1	1
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	55	57	6.90%	12.30%	6.50%	10.40%	4	4	7	6
	Brimblecombe Road to WL 194467R	56	58	6.90%	12.30%	6.50%	10.40%	4	4	7	6
Bushy Lane	B2G-LDN183.0 to Gore Highway	53	47	6.50%	7.60%	8.00%	7.50%	3	4	4	4
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	541	540	7.10%	9.70%	7.20%	8.80%	38	39	53	47
	Saleyards Road to Gore Highway	1024	991	7.10%	9.70%	7.20%	8.80%	73	71	99	87

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Chamberlain Road	Warrego Highway to B2G-LDN204.2	10	10	6.30%	8.00%	7.80%	8.40%	1	1	1	1
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	17	18	8.10%	6.90%	9.60%	9.60%	1	2	1	2
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	8	7	7.00%	7.50%	7.50%	8.20%	1	1	1	1
Dieckmann Road	B2G-LDN150.5 to Gore Highway	10	10	7.00%	7.50%	7.50%	8.20%	1	1	1	1
Draper Road	Steger Road to B2G-FBW206.9	24	25	6.30%	8.00%	7.80%	8.40%	2	2	2	2
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	1708	1708	7.30%	7.80%	6.90%	10.50%	125	118	133	179
	Access Track to Greenwattle Street	1708	1708	7.30%	7.80%	6.90%	10.50%	125	118	133	179
Florence Street	Gore Highway to West Street	166	166	7.90%	7.60%	7.50%	7.80%	13	12	13	13
Forestry Road	Access Track to Millmerran-Inglewood Road	1	1	8.10%	6.90%	9.60%	9.60%	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	1	1	8.10%	6.90%	9.60%	9.60%	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	40	39	7.00%	7.50%	7.50%	8.20%	3	3	3	3
Gap Road	Gore Highway to Grevillea Street	642	683	7.00%	7.50%	7.50%	8.20%	45	51	48	56
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	24	22	6.50%	7.60%	8.00%	7.50%	2	2	2	2
Gilgai Lane	B2G-LDN144.6 to Gore Highway	14	14	7.00%	7.50%	7.50%	8.20%	1	1	1	1
Grevillea Street	Boral Concrete Pittsworth to Gap Road	258	258	7.00%	7.50%	7.50%	8.20%	18	19	19	21

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
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Hall Road	B2G-LDN139.0 to Gore Highway	1	2	7.00%	7.50%	7.50%	8.20%	0	0	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	25	27	8.10%	6.90%	9.60%	9.60%	2	3	2	3
	B2G-LDN116.0 to Millmerran-Inglewood Road	25	27	8.10%	6.90%	9.60%	9.60%	2	3	2	3
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	10	10	7.30%	7.80%	6.90%	10.50%	1	1	1	1
Kahler Road	Murlaggan Road to B2G-LDN165.6	7	7	7.00%	7.50%	7.50%	8.20%	0	1	1	1
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	2017	145	6.30%	8.00%	7.80%	8.40%	127	11	161	12
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	97	1905	6.30%	8.00%	7.80%	8.40%	6	149	8	160
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	42	44	8.10%	6.90%	9.60%	9.60%	3	4	3	4
	Millmerran-Inglewood Road to Commodore Mine	1	3	8.10%	6.90%	9.60%	9.60%	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	39	42	6.30%	8.00%	7.80%	8.40%	2	3	3	4
	Steger Road to B2G-LDN206.3	39	42	6.30%	8.00%	7.80%	8.40%	2	3	3	4
Linthorpe Road	Gore Highway to B2G-LDN175.5	11	20	6.50%	7.60%	8.00%	7.50%	1	2	1	2
Linthorpe Valley Road	Geitz Road to Gore Highway	52	48	6.50%	7.60%	8.00%	7.50%	3	4	4	4
Lochaber Road	Gore Highway to B2G-LDN172.0	181	184	6.50%	7.60%	8.00%	7.50%	12	15	14	14

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
	B2G-LDN172.0 to B2G-LDN172.6	181	184	6.50%	7.60%	8.00%	7.50%	12	15	14	14
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	3168	3168	6.80%	7.30%	8.40%	7.30%	215	266	231	231
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	21	21	8.10%	6.90%	9.60%	9.60%	2	2	1	2
	B2G-LDN112.1 to Millwood Road	21	21	8.10%	6.90%	9.60%	9.60%	2	2	1	2
	Millwood Road to Kooroongarra Road	4	1	8.10%	6.90%	9.60%	9.60%	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	115	115	8.10%	6.90%	9.60%	9.60%	9	11	8	11
Murlaggan Road	B2G-LDN164.3 to Kahler Road	213	212	7.00%	7.50%	7.50%	8.20%	15	16	16	17
	Kahler Road to Gore Highway	213	212	7.00%	7.50%	7.50%	8.20%	15	16	16	17
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	721	732	8.80%	7.70%	6.90%	11.40%	63	51	56	83
Omara Road	Toowoomba-Cecil Plains Road to Warrego Highway	2519	2468	7.30%	7.80%	6.90%	10.50%	184	170	196	259
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	270	268	7.10%	9.70%	7.20%	8.80%	19	19	26	24
	B2G-LDN128.2 to B2G-LDN130.0	270	268	7.10%	9.70%	7.20%	8.80%	19	19	26	24
	B2G-LDN130.0 to Millmerran-Inglewood Road	270	268	7.10%	9.70%	7.20%	8.80%	19	19	26	24
Paint Mine Road	Gore Highway to B2G-LDN173.5	25	25	6.50%	7.60%	8.00%	7.50%	2	2	2	2
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	11	12	8.10%	6.90%	9.60%	9.60%	1	1	1	1

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Quarry Road Access	Tummalville Road to Quarry	2	2	7.00%	7.50%	7.50%	8.20%	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	184	184	7.10%	9.70%	7.20%	8.80%	13	13	18	16
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	3	3	8.10%	6.90%	9.60%	9.60%	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	10	10	8.10%	6.90%	9.60%	9.60%	1	1	1	1
	B2G-LDN123.6 to B2G-LDN123.8	10	10	8.10%	6.90%	9.60%	9.60%	1	1	1	1
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	148	149	7.00%	7.50%	7.50%	8.20%	10	11	11	12
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	1021	616	6.30%	8.00%	7.80%	8.40%	64	48	82	52
	New Hope Recycled Water Pipeline to Draper Road	1021	616	6.30%	8.00%	7.80%	8.40%	64	48	82	52
	Draper Road to Leeson's Road	1021	616	6.30%	8.00%	7.80%	8.40%	64	48	82	52
Tummalville Road	Access Track to Gore Highway	97	101	7.00%	7.50%	7.50%	8.20%	7	8	7	8
Turallin Road	Gore Highway to the Turallin Facility	131	189	7.90%	7.60%	7.50%	7.80%	10	14	10	15
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	132	130	7.00%	7.50%	7.50%	8.20%	9	10	10	11
	B2G-LDN153.1 to Gore Highway	132	130	7.00%	7.50%	7.50%	8.20%	9	10	10	11
	Gore Highway to B2G-LDN150.9	62	58	7.00%	7.50%	7.50%	8.20%	4	4	5	5

Road name	Road section	Existing year (2022) ADT		Peak hour factor				Existing year (2022) peak hour volume			
		G/NB/EB	AG/SB/WB	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak	G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	613	613	7.30%	7.80%	6.90%	10.50%	45	42	48	64
West Street	Gore Highway to Florence Street	52	52	7.90%	7.60%	7.50%	7.80%	4	4	4	4
	Florence Street to Six Mile Road	14	14	7.90%	7.60%	7.50%	7.80%	1	1	1	1
Yarranlea Road	Gore Highway to B2G- LDN161.0	62	53	7.00%	7.50%	7.50%	8.20%	4	4	5	4
	B2G-LDN161.0 to Desmonds Lane	62	53	7.00%	7.50%	7.50%	8.20%	4	4	5	4

2.4.2 Intersections

As part of the traffic data collection task, traffic volumes have been collected along the Project construction routes over the recent years including:

- SCR census-based traffic volumes
- Local Government databases
- Traffic signal data (from DTMR STREAMS software)
- Link-based traffic volumes tube counts conducted in:
 - September 2019
 - September/October 2020
 - March 2021
 - March 2022
- Intersection turning counts conducted in:
 - March 2021, around Brookstead
 - March 2022, for the wider network
 - May 2022, for diversion locations.

In instances where traffic data was not available from road controlling authorities or traffic surveys conducted, conservative turning volume assumptions have been adopted using the available road link volumes, as outlined in the technical memo provided in Appendix BP. Therefore, for the intersections where base traffic turning volumes were not available, the intersection assessment will be first undertaken by comparing two 'Base Traffic Scenarios' and then the 'worst case' scenario is considered for delay impacts.

Base Traffic Scenario 1 assumes that:

- 100 per cent of vehicle flow into the minor leg is from the left turn on the major road
- 100 per cent of vehicle flow out of the minor leg turns right from the minor road.

This scenario is expected to test a potential 'worst case' impact scenario for increased delays to:

- Right turning movements seeking gaps in the opposing traffic
- Traffic queued behind the right turning vehicles on the major road
- Traffic queued behind the right turning vehicles on the minor road.

The above scenario applies to 3-way and 4-way intersections, as outlined in Figure 2.3 and Figure 2.4.

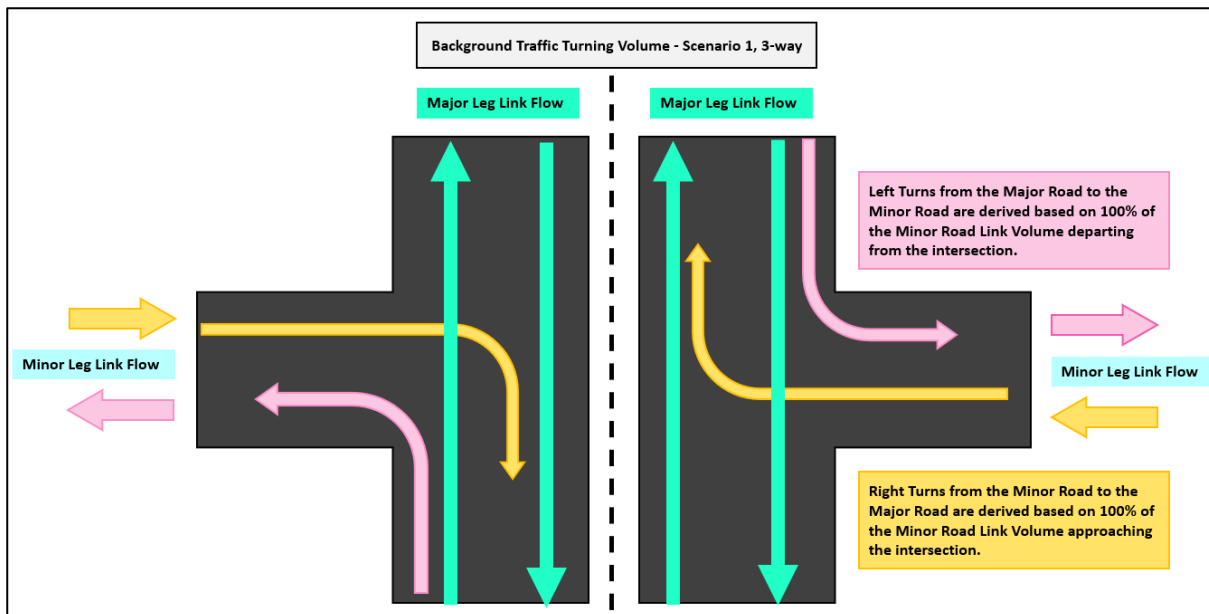


Figure 2.3 Background Traffic Scenario 1 – 3-way intersection

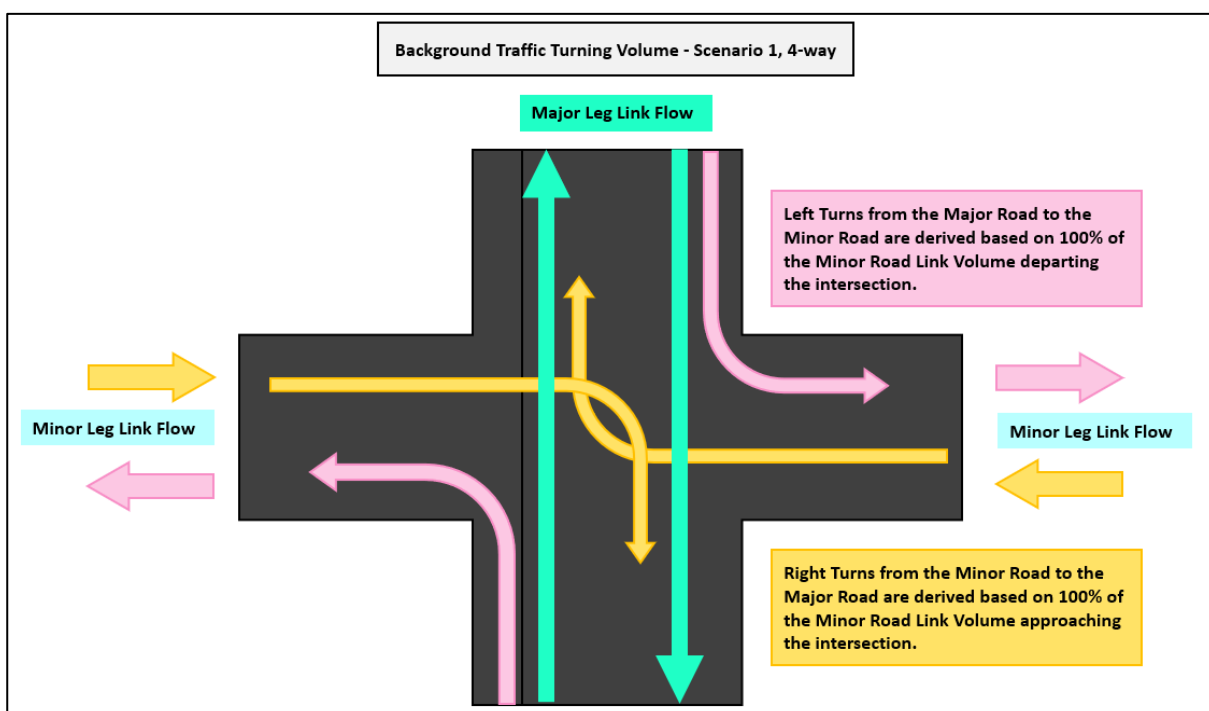


Figure 2.4 Background Traffic Scenario 1 – 4-way intersection

Base Traffic Scenario 2 assumes that:

- 100 per cent of vehicle flow into the minor leg is from the right turn on the major road
- 100 per cent of vehicle flow out of the minor leg turns left from the minor road.

This scenario is expected to test a potential 'worst case' impact scenario for increased delays to:

- Right turning movements seeking gaps in the opposing traffic
- Traffic queued behind the right turning vehicles on the major road
- Traffic queued behind the right turning vehicles on the minor road.

The above scenario applies to 3-way and 4-way intersections, as outlined in Figure 2.5 and Figure 2.6.

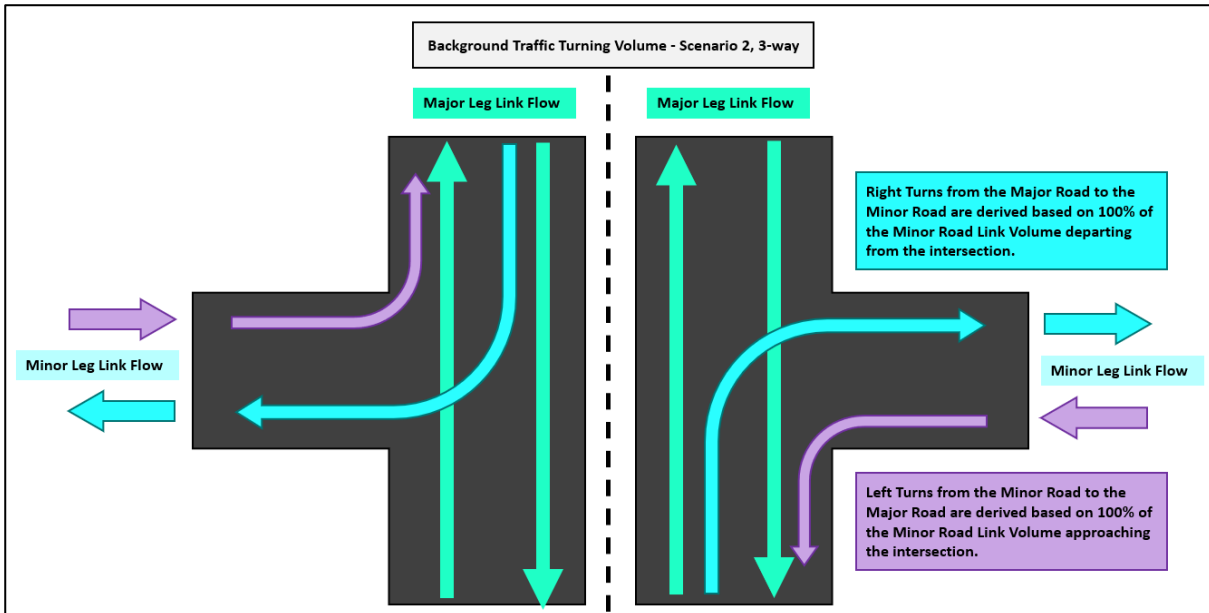


Figure 2.5 Background Traffic Scenario 2 – 3-way intersection

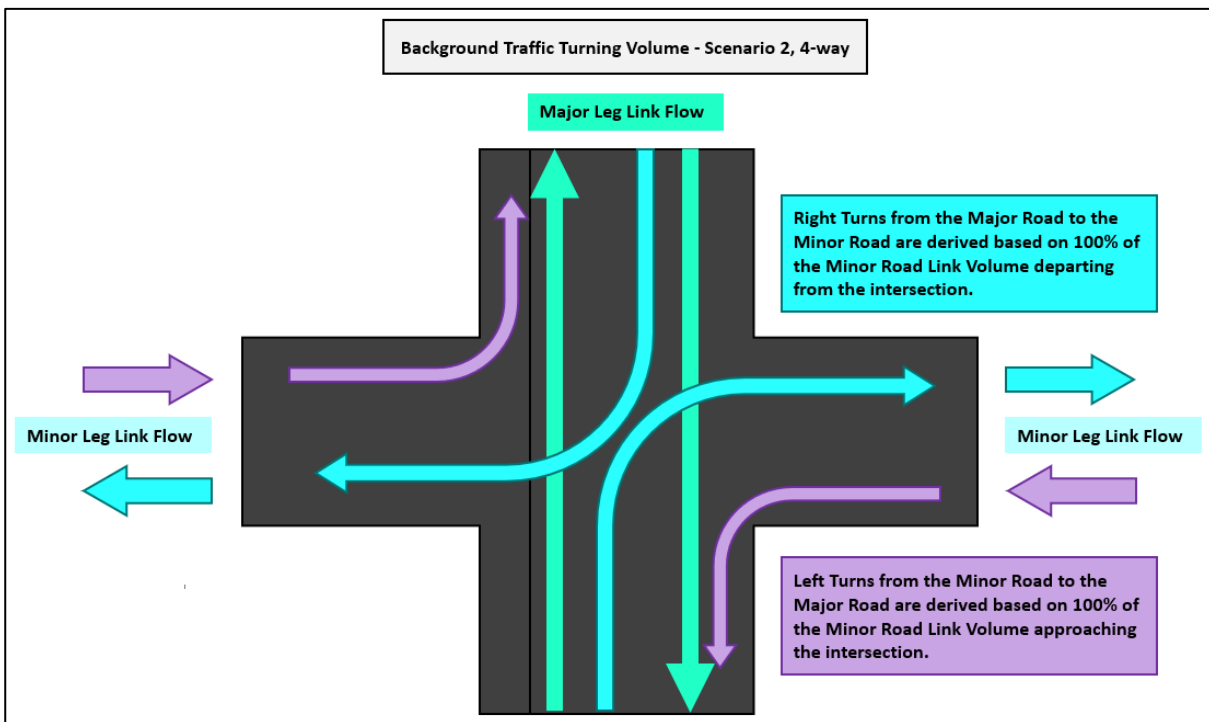


Figure 2.6 Background Traffic Scenario 2 – 4-way intersection

This methodology has been developed to provide a conservative analysis that addresses all requirements of the GTIA (DTMR, 2018a) to the extent practicable based on available information. It is noted that traffic surveys for intersection analysis although 'preferred by DTMR' are not considered to be mandatory under the GTIA. This approach is also consistent with DTMR's comments the technical memo (Appendix BP) for the TIA to present a 'worst case' scenario that conservatively accounts for unknown variables.

Table 2.15 outlines the existing year (2022) peak hour volumes for all intersections. It also provides an overview of the source for each intersection volumes, based on the source ID provided in Table 2.14.

Table 2.14 Intersection traffic data sources

Source ID	Traffic data source
W	STREAMS data Intersection STREAMS detection data provided by DTMR on 12 October 2022. Data was derived into appropriate intersection turning volumes.
Y	Scenario 1 and Scenario 2 Methodology Determined from link volumes-based methodology outlined above to provide conservative turn volume assumptions designed to provide worst case impacts to vehicles.
Z	Intersection video count traffic surveys These intersection counts were undertaken over a number of years through different iterations of the TIA. The different intersection count instances are summarised below: - May 2022 – Matrix - March 2022 – Matrix, and Research and Analytics - March 2021 – Austraffic. These intersection counts were 7-day 24-hour counts. In some cases, several days of data were required to be disregarded due to unusual traffic patterns. This was primarily caused by road closures during flooding periods in early 2022.

Table 2.15 Intersection traffic volumes

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
State-Controlled Roads: Department of Transport and Main Roads							
Barwon Highway/ Barwon Highway	Y	Southeast – Lagoon Street	LT	1	0	1	0
			T	1	0	1	0
			RT	63	21	61	20
		Northeast – Barwon Highway	LT	63	21	61	20
			T	1	0	1	0
			RT	62	16	62	16
		Northwest – Barwon Highway	LT	63	27	61	26
			T	1	0	1	0
			RT	63	21	61	20
		Southwest – Brennans Road	LT	62	16	62	16
			T	1	0	1	0
			RT	1	0	1	0
Barwon Highway/ Carnarvon Highway	Y	South – Carnarvon Highway	T	8	4	6	3
			RT	8	3	8	3
		East – Barwon Highway	LT	9	3	8	2
			RT	1	0	1	0
		North – Carnarvon Highway	LT	1	0	1	0
			T	6	3	6	3
Barwon Highway/ Leichhardt Highway	Y	South – West Street	T	62	16	62	16
			RT	1	0	1	0
		East – Boundary Road	LT	1	0	1	0
			RT	57	32	61	34
		North – Leichhardt Highway	LT	58	35	62	38
			T	63	21	61	20

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Barwon Highway/ Silo Street	Y	South – Silo Road	LT	1	0	1	0
			RT	4	1	4	1
		East – Barwon Highway	LT	4	2	4	1
			T	9	3	8	2
		West – Barwon Highway	T	8	3	8	3
			RT	1	0	1	0
Barwon Highway/ South Toobeah Road	Y	South – South Toobeah Road	LT	3	1	2	1
			T	1	0	1	0
			RT	1	0	1	0
		East – Barwon Highway	LT	1	0	1	0
			T	23	8	20	7
			RT	3	1	3	1
		North – Minnel Road	LT	3	1	3	1
			T	1	0	1	0
			RT	1	0	1	0
		West – Barwon Highway	LT	1	0	1	0
			T	20	12	19	12
			RT	3	1	2	1
Barwon Highway/ Town Common Road	Y	Southeast – Barwon Highway	LT	1	0	1	0
			T	62	16	62	16
		Northwest – Barwon Highway	T	63	21	61	20
			RT	11	4	10	4
		Southwest – Town Common Road	LT	9	4	10	4
			RT	1	0	1	0
Carnarvon Highway/ Noondoo Thallon Road	Y	South – Carnarvon Highway	LT	8	4	6	3
			T	3	2	3	1
		North – Carnarvon Highway	T	3	1	3	1
			RT	1	0	1	0
		West – Noondoo Thallon Road	LT	1	0	1	0
			RT	6	3	6	3
Cunningham Highway/ Bybera Road	Z	East – Cunningham Highway	T	35	12	24	13
			RT	2	0	1	0
		North – Bybera Road	LT	2	0	3	0
			RT	1	0	1	0
		West – Cunningham Highway	LT	1	0	1	0
			T	40	17	37	20
Cunningham Highway/ Cemetery Road	Y	South – Cunningham Highway	T	77	62	83	68
			RT	1	0	1	0
		East – Cemetery Road	LT	1	0	1	0
			RT	4	1	4	1

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Cunningham Highway/ Coolmunda Dam Access	Y	North – Cunningham Highway	LT	4	1	4	1
			T	57	59	60	62
		South – Coolmunda Dam Access	LT	1	0	1	0
			RT	2	1	2	1
		East – Cunningham Highway	LT	2	1	2	1
			T	34	26	36	27
Cunningham Highway/ Cremascos Road	Y	West – Cunningham Highway	T	36	31	35	31
			RT	1	0	1	0
		East – Cunningham Highway	T	24	24	24	24
			RT	1	0	1	0
		North – Cremascos Road	LT	1	0	1	0
			RT	3	1	3	1
Cunningham Highway/ East Sawmill Road	Z	West – Cunningham Highway	LT	3	1	3	2
			T	25	23	25	23
		North – East Sawmill Road	LT	1	0	1	0
			RT	3	1	3	1
		Southeast – Cunningham Highway	LT	1	0	1	0
			T	35	19	35	21
Cunningham Highway/ Elizabeth Street	Y	Northwest – Cunningham Highway	T	34	18	26	20
			RT	1	0	1	0
			LT	1	0	1	0
		Southwest – Cunningham Highway	RT	1	0	1	0
			T	48	36	55	41
			LT	1	0	1	0
		Northeast – Cunningham Highway	LT	1	0	1	0
			T	33	53	34	53
			RT	1	0	1	0
		Southeast – Elizabeth Street	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
Cunningham Highway/ Fosters Road	Z	Northwest – Elizabeth Street	LT	1	0	1	0
			T	1	0	1	0
		Northeast – Cunningham Highway	LT	1	0	1	0
			T	35	17	33	18
		Southwest – Cunningham Highway	LT	1	0	1	0
			T	35	17	33	18
		North – Fosters Road	LT	1	0	1	0
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Cunningham Highway/ Inglewood Quarry Access Road	Z	East – Cunningham Highway	T	29	13	31	15
			RT	0	2	0	2
		North – Inglewood Quarry Access Road	LT	0	2	0	1
			RT	0	2	0	2
		West – Cunningham Highway	LT	1	1	0	1
Cunningham Highway/ Kildonan Road	Z	South – Newell Highway	T	35	16	33	17
			LT	29	1	34	3
			T	48	42	39	54
		East – Kildonan Road	RT	2	1	3	1
			LT	2	1	2	1
			T	35	2	46	3
		North – Cunningham Highway	RT	13	1	11	5
			LT	12	2	16	4
			T	52	38	43	45
		West – Goondiwindi Connection Road	RT	50	4	64	5
			LT	62	4	79	2
			T	37	3	38	3
Cunningham Highway/ Leichhardt Highway	Y	South – Cunningham Highway	RT	21	1	26	4
			T	57	32	61	34
		North – Cunningham Highway	T	77	62	83	68
			RT	57	59	60	62
		West – Leichhardt Highway	LT	1	0	1	0
			RT	58	35	62	38
Cunningham Highway/ McDougalls Road	Y	Northeast – Cunningham Highway	LT	24	24	24	24
			RT	1	0	1	0
		Northwest – McDougalls Road	LT	1	0	1	0
			RT	1	0	1	0
		Southwest – Cunningham Highway	LT	1	0	1	0
			T	25	23	28	26
Cunningham Highway/ Millmerran-Inglewood Road	Z	East – Cunningham Highway	T	32	12	29	20
			RT	1	1	1	1
		North – Millmerran-Inglewood Road	LT	3	0	2	1
			RT	11	4	13	2
		West – Cunningham Highway	LT	15	7	21	4
			T	34	16	31	21
Cunningham Highway/ Springborg Road	Y	Northeast – Cunningham Highway	T	24	24	24	24
			RT	1	0	1	0
		Northwest – Springborg Road	LT	1	0	1	0
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Cunningham Highway/ Texas-Yelarbon Road	Y	Southwest – Cunningham Highway	LT	1	0	1	0
			T	25	23	28	26
		South – Texas-Yelarbon Road	LT	1	0	1	0
			RT	7	2	7	2
		East – Cunningham Highway	LT	8	3	7	2
			T	24	24	24	24
Cunningham Highway/ Whetstone Access Road	Y	West – Cunningham Highway	T	25	23	28	26
			RT	1	0	1	0
		Northeast – Cunningham Highway	T	24	24	24	24
			RT	1	0	1	0
		Northwest – Whetstone Access Road	LT	1	0	1	0
			RT	1	0	1	0
Cunningham Highway/ Woodcocks Road	Y	Southwest – Cunningham Highway	LT	1	0	1	0
			T	25	23	28	26
		East – Cunningham Highway	T	25	25	24	24
			RT	1	4	1	0
		North – Woodcocks Road	LT	1	4	1	0
			RT	1	0	1	0
Cunningham Highway/ Yelarbon	Z	West – Cunningham Highway	LT	1	0	1	0
			T	40	28	28	26
		East – Cunningham Highway	T	8	2	7	2
			RT	33	17	29	19
		North – Cunningham Highway	LT	32	18	28	21
			RT	1	0	1	0
Cunningham Highway/ Yelarbon Kurumbul Road	Z	West – Wondalli Street	LT	2	0	1	0
			T	3	1	3	0
		Southeast – Cunningham Highway	LT	2	0	1	0
			T	31	16	28	17
		Northeast – Merton Road	RT	1	0	1	1
			LT	2	1	2	0
		Northwest – Cunningham Highway	T	1	0	1	0
			RT	1	1	1	0
		Southwest – Yelarbon Kurumbul Road	LT	1	0	1	0
			T	29	16	25	19
		South – Fysh Road	RT	1	0	1	0
			LT	1	0	1	0
Gore Highway/Fysh Road	Z	South – Fysh Road	LT	2	0	3	0
			RT	1	2	3	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
		East – Gore Highway	LT	2	1	2	1
			T	64	30	68	23
		West – Gore Highway	T	73	30	89	39
			RT	3	1	5	0
Gore Highway/ Alderley Street	W	South – Gore Highway	LT	136	19	95	14
			T	384	55	256	38
			RT	150	21	150	23
		East – Alderley Street	LT	83	11	99	12
			T	41	5	25	3
			RT	116	15	67	8
		North – Gore Highway	LT	130	16	183	23
			T	239	30	465	58
			RT	118	15	116	14
		West – Alderley Street	LT	126	16	97	12
			T	49	6	57	7
			RT	90	11	145	18
Gore Highway/ Athol School Road	Z	East – Gore Highway	T	190	42	240	42
			RT	6	2	9	0
		North – Athol School Road	LT	11	3	5	1
			RT	1	0	1	0
		West – Gore Highway	LT	1	0	1	0
			T	268	40	229	51
Gore Highway/ Biddeston Southbrook Road	Z	South – Gore Highway	LT	4	1	5	0
			T	250	30	202	35
		North – Gore Highway	T	164	36	238	24
			RT	1	0	3	0
		West – Biddeston Southbrook Road	LT	3	0	1	0
			RT	6	0	6	0
Gore Highway/ Blackwell Road	Z	South – Gore Highway	T	70	28	50	33
			RT	1	0	1	0
		East – Blackwell Road	LT	1	0	1	0
			RT	1	0	2	0
		North – Gore Highway	LT	1	0	1	0
			T	56	26	65	25
Gore Highway/ Bushy Lane	Z	South – Gore Highway	LT	1	0	1	0
			T	201	29	192	34
			RT	1	0	1	0
		East – Bushy Lane	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
		North – Gore Highway	LT	1	0	1	0
			T	155	34	198	24
			RT	2	0	6	0
		West – Bushy Lane	LT	10	0	5	0
			T	1	0	1	0
			RT	1	0	1	0
Gore Highway/ Campbell Street	Z	Northeast – Gore Highway	T	40	5	16	2
			RT	45	16	19	7
		West – Gore Highway	LT	81	10	30	8
			RT	12	1	6	1
		Southwest – Campbell Street	LT	12	1	5	0
			T	47	3	13	1
Gore Highway/ Dieckmann Road	Y	Northeast – Gore Highway	T	79	34	84	36
			RT	1	0	1	0
		Northwest – Dieckmann Road	LT	1	0	1	0
			RT	1	0	1	0
		Southwest – Gore Highway	LT	1	0	1	0
			T	88	34	96	37
Gore Highway/ Florence Street	Y	East – Gore Highway	T	50	31	49	30
			RT	13	0	12	0
		Northeast – Florence Street	LT	12	0	12	0
			RT	1	0	1	0
		West – Gore Highway	LT	1	0	1	0
			T	49	31	51	32
Gore Highway/ Gilgai Lane	Y	South – Gilgai Lane	LT	1	0	1	0
			RT	1	0	1	1
		East – Gore Highway	LT	1	0	1	1
			T	79	34	84	36
		West – Gore Highway	T	88	34	96	37
			RT	1	0	1	0
Gore Highway/ Hall Road	Y	East – Hall Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		Northeast – Gore Highway	LT	1	0	1	0
			T	79	34	84	36
			RT	1	0	1	0
		West – Pfeffer Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
		Southwest – Gore Highway	LT	1	0	1	0
			T	88	34	96	37
			RT	1	0	1	0
Gore Highway/ Linthorpe Road	Z	East – Gore Highway	T	239	48	215	41
			RT	2	1	3	0
		North – Linthorpe Road	LT	5	0	2	0
			RT	12	2	7	1
		West – Gore Highway	LT	7	1	12	1
			T	216	41	254	58
Gore Highway/ Linthorpe Valley Road	Y	Northeast – Gore Highway	T	155	43	181	50
			RT	3	1	3	1
		North – Linthorpe Valley Road	LT	3	1	3	1
			RT	1	0	1	0
		Southwest – Gore Highway	LT	1	0	1	0
			T	187	54	175	51
Gore Highway/ Lochaber Road	Z	East – Gore Highway	T	88	31	101	22
			RT	2	1	6	1
		North – Lochaber Road	LT	12	1	4	0
			RT	14	2	10	0
		West – Gore Highway	LT	6	1	13	0
			T	105	28	129	32
Gore Highway/ Millmerran-Inglewood Road	Z	Southeast – Millmerran-Inglewood Road	LT	1	0	1	0
			RT	6	5	20	6
		Northeast – Gore Highway	LT	6	6	14	7
			T	49	21	71	25
		Southwest – Gore Highway	T	46	20	67	26
			RT	1	0	1	0
Gore Highway/ Millmerran-Leyburn Road	Z	South – Gore Highway	T	50	20	86	31
			RT	2	0	6	1
		East – Millmerran-Leyburn Road	LT	3	1	3	0
			RT	1	1	3	0
		North – Gore Highway	LT	1	0	3	0
			T	45	20	58	28
Gore Highway/ Murlaggan Road	Z	Southeast – Gap Road	LT	21	1	40	2
			T	3	0	4	1
			RT	2	2	1	1
		Northeast – Gore Highway	LT	1	1	1	1
			T	50	38	69	35
			RT	2	0	2	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
		Northwest – Murlaggan Road	LT	2	0	14	0
			T	4	0	19	1
			RT	1	0	1	1
		Southwest – Gore Highway	LT	1	0	1	0
			T	63	39	104	47
			RT	17	3	46	5
Gore Highway/ Oakey-Pittsworth Road	Z	East – Gore Highway	T	55	27	55	20
			RT	33	3	55	1
		North – Oakey Pittsworth Road	LT	57	3	41	3
			RT	4	7	2	5
		West – Gore Highway	LT	2	5	7	4
			T	69	22	108	30
Gore Highway/ Paint Mine Road	Z	East – Gore Highway	T	85	34	110	23
			RT	1	0	1	0
		North – Paint Mine Road	LT	2	0	1	0
			RT	1	0	2	0
		West – Gore Highway	LT	1	0	1	0
			T	130	27	137	34
Gore Highway/ Saleyards Road	Y	South – Saleyards Road	LT	9	4	13	5
			RT	1	0	1	0
		East – Gore Highway	LT	1	0	1	0
			T	50	31	49	30
		West – Gore Highway	T	49	31	51	32
			RT	8	3	8	3
Gore Highway/ Scrubby Road	Z	Southeast – Scrubby Road	LT	1	0	1	0
			RT	4	3	4	5
		Northeast – Gore Highway	LT	3	3	5	4
			T	68	38	109	35
		Southwest – Gore Highway	T	79	39	145	49
			RT	0	1	1	0
Gore Highway/ Tummalville Road/ Yarranlea Road	Z	South – Tummalville Road	LT	2	1	1	0
			T	1	0	1	0
			RT	6	1	4	0
		East – Gore Highway	LT	6	2	2	0
			T	74	30	70	25
			RT	3	1	2	0
		North – Yarranlea Road	LT	3	0	3	0
			T	1	0	1	0
			RT	1	0	1	1

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
		West – Gore Highway	LT	1	1	1	1
			T	70	28	95	32
			RT	1	1	2	0
Gore Highway/ Turallin Road	Z	East – Gore Highway	T	26	10	40	16
			RT	2	1	3	1
		North – Turallin Road	LT	3	2	12	2
			RT	1	0	2	0
		West – Gore Highway	LT	1	0	1	0
			T	30	9	43	15
Gore Highway/ Ware Street (N)	Y	South – Ware Street	LT	1	0	1	0
			T	1	0	1	0
			RT	8	2	8	2
		East – Gore Highway	LT	7	2	8	2
			T	88	34	96	37
			RT	1	0	1	0
		North – Saal Road	LT	1	0	1	0
			T	1	0	1	0
			RT	7	2	8	2
		West – Gore Highway	LT	8	2	8	2
			T	79	34	84	36
			RT	1	0	1	0
Gore Highway/ Ware Street (S)	Y	South – Gore Highway	T	88	34	96	37
			RT	1	0	1	0
		East – Ware Street	LT	1	0	1	0
			RT	3	1	4	1
		North – Gore Highway	LT	3	1	4	1
			T	79	34	84	36
Gore Highway/ West Street	Y	East – Gore Highway	T	50	31	49	30
			RT	2	2	2	2
		North – West Street	LT	2	2	2	2
			RT	1	0	1	0
		West – Gore Highway	LT	1	0	1	0
			T	49	31	51	32
Leichhardt Highway/ Hunt Street	Y	South – Hunt Street	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		East – Leichhardt Highway	LT	1	0	1	0
			T	57	32	61	34
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
		North – Access Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		West – Leichhardt Highway	LT	1	0	1	0
			T	58	35	62	38
			RT	1	0	1	0
Millmerran-Inglewood Road/ Blackwell Road	Z	Northeast – Millmerran-Inglewood Road	T	11	8	22	7
			RT	1	0	1	0
		Northwest – Blackwell Road	LT	1	0	1	0
			RT	1	0	1	0
		Southwest – Millmerran-Inglewood Road	LT	1	0	1	0
			T	18	10	20	5
Millmerran-Inglewood Road/ Campbell Street	Z	Northeast – Millmerran-Inglewood Road	T	4	6	9	6
			RT	13	4	15	4
		Northwest – Campbell Street	LT	1	16	1	26
			RT	14	5	16	3
		Southwest – Millmerran-Inglewood Road	LT	15	4	25	2
			T	9	9	15	5
Millmerran-Inglewood Road/ Commodore Peak Road	Z	South – Millmerran-Inglewood Road	LT	1	0	1	0
			T	14	8	39	6
		North – Millmerran-Inglewood Road	T	36	8	25	9
			RT	1	0	1	0
		West – Commodore Peak Road	LT	1	0	1	0
			RT	1	0	1	0
Millmerran-Inglewood Road/ Forestry Road	Y	South – Millmerran-Inglewood Road	LT	1	0	1	0
			T	28	10	28	10
		North – Millmerran-Inglewood Road	T	24	8	20	7
			RT	1	0	1	0
		West – Forestry Road	LT	1	0	1	0
			RT	1	0	1	0
Millmerran-Inglewood Road/ Grays Road	Y	South – Millmerran-Inglewood Road	T	11	5	10	5
			RT	1	0	1	0
		East – Grays Road	LT	1	0	1	0
			RT	1	0	1	0
		North – Millmerran-Inglewood Road	LT	1	0	1	0
			T	10	5	10	5
Millmerran-Inglewood Road/ Heckendorf Road	Z	Northeast – Millmerran-Inglewood Road	T	10	8	21	7
			RT	1	0	3	0
		Northwest – Heckendorf Road	LT	1	0	1	0
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Millmerran-Inglewood Road/ Kooroongarra Road	Z	Southwest – Millmerran-Inglewood Road	LT	1	0	1	0
			T	17	9	17	5
		South – Millmerran-Inglewood Road	LT	1	0	1	0
			T	14	8	38	7
			RT	1	0	1	0
		East – Kooroongarra Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		North – Millmerran-Inglewood Road	LT	1	0	1	0
			T	36	9	23	9
			RT	1	0	1	0
		West – Schwarten Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
Millmerran-Inglewood Road/ Millwood Road	Z	South – Millmerran-Inglewood Road	LT	1	0	1	0
			T	8	4	15	6
			RT	1	0	1	0
		East – Millwood Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		North – Millmerran-Inglewood Road	LT	1	0	1	1
			T	6	2	17	6
			RT	1	0	1	0
		West – Millwood Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
Millmerran-Inglewood Road/ Moffatt Reserve Road	Y	Southeast – Millmerran-Inglewood Road	T	28	10	28	10
			RT	7	3	6	2
		Northeast – Moffatt Reserve Road	LT	8	3	8	3
			RT	1	0	1	0
		Northwest – Millmerran-Inglewood Road	LT	1	0	1	0
			T	24	8	20	7
Millmerran-Inglewood Road/ Owens Scrub Road	Z	South – Owens Scrub Road	LT	7	0	23	1
			RT	2	0	16	0
		East – Millmerran-Inglewood Road	LT	6	1	7	0
			T	16	9	11	6
		West – Millmerran-Inglewood Road	T	10	5	16	4
			RT	8	4	16	1

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Millmerran-Inglewood Road/ Paton Road	Y	South – Millmerran-Inglewood Road	T	28	10	28	10
			RT	1	0	1	0
		East – Paton Road	LT	1	0	1	0
			RT	0	1	0	1
		North – Millmerran-Inglewood Road	LT	0	1	0	1
			T	24	8	20	7
Millmerran-Inglewood Road/ Thornton Road	Z	Northeast – Millmerran-Inglewood Road	T	6	2	12	5
			RT	1	0	1	0
		West – Thornton Road	LT	1	0	1	0
			RT	1	0	1	0
		Southwest – Millmerran-Inglewood Road	LT	1	0	1	0
			T	7	4	19	5
Millmerran-Inglewood Road/ Wongavale Yugalbar Road	Y	South – Millmerran-Inglewood Road	LT	1	0	1	0
			T	11	5	10	5
			RT	1	0	1	0
		East – Wongavale Yugalbar Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		North – Millmerran-Inglewood Road	LT	1	0	1	0
			T	10	5	10	5
			RT	1	0	1	0
		West – Robert Wicks Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
Texas-Yelarbon Road/ Access Track	Y	South – Texas-Yelarbon Road	T	7	2	7	2
			RT	1	0	1	0
		East – Unnamed Road	LT	1	0	1	0
			RT	1	0	1	0
		North – Texas-Yelarbon Road	LT	1	0	1	0
			T	8	3	7	2
Toowoomba-Cecil Plains Road/ Airport Quarry Wellcamp Access Road	Z	South – Airport Quarry Wellcamp Access Road	LT	1	0	1	0
			RT	2	9	1	3
		East – Toowoomba-Cecil Plains Road	LT	2	11	0	3
			T	184	17	88	6
		West – Toowoomba-Cecil Plains Road	T	134	13	114	12
			RT	1	0	1	0
Toowoomba-Cecil Plains Road/ Brimblecombe Road	Y	East – Toowoomba-Cecil Plains Road	T	125	22	134	24
			RT	3	1	4	2
		North – Brimblecombe Road	LT	3	1	5	1
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Toowoomba-Cecil Plains Road/ Charlton Connection Road	Y	West – Toowoomba-Cecil Plains Road	LT	1	0	1	0
			T	113	26	172	40
		South – Toowoomba-Cecil Plains Road	LT	140	68	151	72
			T	128	48	175	67
			RT	1	0	1	0
		East – Carrington Road	LT	1	0	1	0
			T	1	0	1	0
			RT	140	68	151	72
		North – Troys Road	LT	154	68	133	59
			T	155	64	131	54
			RT	1	0	1	0
		West – Heinemann Road	LT	1	0	1	0
			T	1	0	1	0
			RT	154	68	133	59
Toowoomba-Cecil Plains Road/ McDougall Street	W	South – McDougalls Road	LT	95	24	107	27
			T	135	34	100	25
			RT	95	24	76	19
		East – Toowoomba-Cecil Plains Road (Taylor Street)	LT	70	34	51	24
			T	445	213	473	226
			RT	58	28	51	24
		North – McDougalls Road	LT	115	29	60	35
			T	137	34	87	38
			RT	72	18	83	21
		West – Toowoomba-Cecil Plains Road (Taylor Street)	LT	40	18	45	20
			T	320	141	352	156
			RT	105	46	111	49
Toowoomba-Cecil Plains Road/ Omara Road	Y	East – Toowoomba-Cecil Plains Road	T	125	22	134	24
			RT	1	0	1	0
		North – Omara Road	LT	1	0	1	0
			RT	166	27	178	29
		West – Toowoomba-Cecil Plains Road	LT	151	33	162	35
			T	113	26	172	40
Toowoomba-Cecil Plains Road/ Toowoomba Bypass NB Ramps	Z	South – Toowoomba Bypass NB Ramps	LT	2	1	1	1
			T	1	0	1	0
			RT	34	6	13	7
		East – Toowoomba-Cecil Plains Road	T	173	23	127	22
			RT	6	2	3	1
		West – Toowoomba-Cecil Plains Road	LT	26	8	43	8
			T	96	17	149	18

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Toowoomba-Cecil Plains Road/ Toowoomba Bypass SB Ramps	Z	East – Toowoomba-Cecil Plains Road	LT	20	10	25	6
			T	141	19	106	17
		North – Toowoomba Bypass SB Ramp	LT	7	1	4	4
			T	1	0	1	0
			RT	38	6	23	6
		West – Toowoomba-Cecil Plains Road	T	127	23	160	25
			RT	4	0	1	0
Toowoomba-Cecil Plains Road/ Access Track	Y	South – Unnamed Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		East – Toowoomba-Cecil Plains Road	LT	1	0	1	0
			T	63	16	113	28
			RT	1	0	1	0
		North – Unnamed Road	LT	1	0	1	0
			T	63	16	113	28
			RT	1	0	1	0
		West – Toowoomba-Cecil Plains Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
Toowoomba-Cecil Plains Road/ Wellcamp Westbrook Road	Y	South – Wellcamp Westbrook Road	LT	1	0	1	0
			T	1	0	1	0
			RT	34	11	36	11
		East – Toowoomba-Cecil Plains Road	LT	32	10	49	15
			T	98	16	114	19
			RT	1	0	1	0
		North – Wellcamp Westbrook Road	LT	1	0	1	0
			T	1	0	1	0
			RT	32	10	49	15
		West – Toowoomba-Cecil Plains Road	LT	34	11	36	11
			T	89	30	124	42
			RT	1	0	1	0
Warrego Highway/ Chamberlain Road	Y	North – Chamberlain Road	LT	1	0	1	0
		West – Warrego Highway	LT	1	0	1	0
			T	440	106	474	114
Warrego Highway/ Leesons Road	Z	East – Warrego Highway	T	432	90	599	61
			RT	1	0	1	1
		North – Leesons Road	LT	3	0	3	1
		West – Warrego Highway	LT	1	0	2	0
			T	640	65	604	84

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Warrego Highway/ Omara Road/ Steger Road	W	South – Omara Road	LT	125	18	105	10
			T	6	1	11	2
			RT	16	13	40	11
		East – Warrego Highway	LT	32	6	40	5
			T	8	2	12	3
			RT	31	7	29	4
		North – Steger Road	LT	10	5	15	4
			T	8	2	12	3
			RT	4	2	11	2
		West – Warrego Highway	LT	29	2	28	4
			T	6	1	11	2
			RT	121	13	160	17
Warrego Highway/ Toowoomba Bypass NB Ramps	Z	South – Toowoomba Bypass NB Ramps	LT	6	1	7	7
			T	1	0	1	0
			RT	23	1	34	3
		East – Warrego Highway	T	403	85	502	79
			RT	2	9	4	8
			UT	1	0	3	0
		West – Warrego Highway	LT	78	32	123	36
			T	496	61	489	55
Warrego Highway/ Toowoomba Bypass SB Ramps	Z	East – Warrego Highway	LT	40	2	24	2
			T	315	58	453	46
		North – Toowoomba Bypass SB Ramps	LT	6	8	4	9
			T	1	0	1	0
			RT	90	37	55	42
		West – Warrego Highway	T	515	59	516	55
			RT	4	3	6	3
Warrego Highway Off-ramp/ Kingsthorpe Overpass	Z	South – Gowrie Mountain School Road	T	9	1	11	2
			RT	1	0	1	0
			RT	1	0	1	0
		East – Gowrie Mountain School Road	LT	1	0	1	0
			RT	1	0	1	0
			RT	5	0	5	0
		Northeast – Warrego Highway On/Off Ramp	LT	1	0	1	0
			LT	1	0	1	0
			RT	139	10	150	10
		North – Kingsthorpe Overpass	LT	5	1	6	1
			LT	1	0	1	0
			T	10	2	10	2

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
State-Controlled Roads: Transport for New South Wales							
Newell Highway/ River Road	Y	South – Newell Highway	T	152	72	134	63
			RT	1	0	1	0
		East – River Road South	LT	1	0	1	0
			RT	1	0	1	0
		North – Newell Highway	LT	1	0	1	0
			T	151	74	148	73
Local Government Roads: Goondiwindi Regional Council							
Cemetery Road/ Access Track	Y	Southeast – Cemetery Road	T	1	0	1	0
			RT	1	0	1	0
		North – Unnamed Road	LT	1	0	1	0
			RT	9	2	8	1
		Northwest – Cemetery Road	LT	8	1	7	1
			T	1	0	1	0
Coolmunda Dam Access/ Coolmunda Dam Access	Y	South – Coolmunda Access	T	2	1	2	1
			RT	1	0	1	0
		East – Coolmunda Dam Access	LT	1	0	1	0
			RT	2	1	2	1
		North – Coolmunda Access	LT	2	1	2	1
			T	2	1	2	1
Hunt Street/ Boodle Street	Y	South – Boodle Street	LT	1	0	1	0
			RT	1	0	1	0
		East – Hunt Street	LT	1	0	1	0
			T	1	0	1	0
		West – Hunt Street	T	1	0	1	0
			RT	1	0	1	0
Kildonan Road/ Eukabilla Road	Y	Southeast – Kildonan Road	T	70	8	69	8
			RT	1	0	1	0
		Northeast – Eukabilla Road	LT	1	0	1	0
			RT	1	0	1	0
		Northwest – Kildonan Road	LT	1	0	1	0
			T	72	8	64	7
Kildonan Road/ South Kurumbul Road	Y	Northeast – Kildonan Road	T	70	8	69	8
			RT	2	1	2	1
		North – South Kurumbul Road	LT	2	1	2	1
			RT	1	0	1	0
		Southwest – Kildonan Road	LT	1	0	1	0
			T	72	8	64	7

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
McDougalls Road/ Access Track	Z	Southeast – McDougalls Road	LT	1	0	1	0
			T	1	0	1	0
		Northwest – Unnamed Road	T	1	0	1	0
			RT	1	0	1	0
		Southwest – McDougalls Road	LT	1	0	1	0
			RT	1	0	1	0
Moorroobie Lane/ Cemetery Road	Y	Northeast – Moorroobie Lane	T	1	0	1	0
			RT	1	0	1	0
		Northwest – Cemetery Road	LT	1	0	1	0
			RT	8	1	8	1
		Southwest – Moorroobie Lane	LT	9	2	7	1
			T	1	0	1	0
Moorroobie Lane/ Moorroobie Lane	Y	Northeast – Moorroobie Lane	T	1	0	1	0
			RT	1	0	1	0
		West – Moorroobie Lane	LT	1	0	1	0
			RT	1	0	1	0
		Southwest – Boggabilla Lane	LT	1	0	1	0
			T	1	0	1	0
Mosquito Creek Road/ Grays Road	Y	South – Mosquito Creek Road	LT	1	0	1	0
			T	1	0	1	0
		North – Mosquito Creek Road	T	1	0	1	0
			RT	1	0	1	0
		Southwest – Grays Road	LT	1	0	1	0
			RT	1	0	1	0
Suttons Road/ Access Track	Y	Southeast – Unnamed Road	LT	1	0	1	0
			RT	1	0	1	0
		Northeast – Suttons Road	LT	1	0	1	0
			T	1	0	1	0
		Southwest – Suttons Road	T	1	0	1	0
			RT	1	0	1	0
Wondalli Kurumbul Road/ Moorroobie Lane	Y	South – Wondalli Kurumbul Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		East – Danes Lane	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		North – Wondalli Kurumbul Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
		West – Moorobie Lane	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
Yelarbon Kurumbul Road/ Queen Street South	Y	East – Yelarbon Kurumbul Road	T	3	0	3	0
			RT	1	0	1	0
		Northeast – Queen Street South	LT	1	0	1	0
			RT	1	0	1	0
		West – Yelarbon Kurumbul Road	LT	1	0	1	0
			T	2	0	2	0
Yelarbon Kurumbul Road/ South Kurumbul Road	Y	East – Yelarbon Kurumbul Road	LT	1	0	1	0
			T	3	0	3	0
		West – Yelarbon Kurumbul Road	T	2	0	2	0
			RT	2	1	2	1
		Southwest – South Kurumbul Road	LT	2	1	2	1
			RT	1	0	1	0
Yelarbon Kurumbul Road/ Wondalli Kurumbul Road	Y	East – Yelarbon Kurumbul Road	T	3	0	3	0
			RT	1	0	1	0
		North – Wondalli Kurumbul Road	LT	1	0	1	0
			RT	1	0	1	0
		West – Yelarbon Kurumbul Road	LT	1	0	1	0
			T	2	0	2	0
Local Government Roads: Moree Plains Shire Council							
River Road/ River Road	Y	South – River Road	LT	1	0	1	0
			RT	1	0	1	0
		East – River Road	LT	1	0	1	0
			T	1	0	1	0
		West – Unnamed Road	T	1	0	1	0
			RT	1	0	1	0
Local Government Roads: Toowoomba Regional Council							
Campbell Street/ Saleyards Road	Y	South – Campbell Street	LT	1	0	1	0
			T	66	7	90	9
		North – Campbell Street	T	67	7	70	7
			RT	8	3	8	3
		West – Saleyards Road	LT	9	4	13	5
			RT	1	0	1	0
Commodore Peak Road/ Scragg Road	Y	East – Commodore Peak Road	T	2	0	2	0
			RT	1	0	1	0
		North – Scragg Road	LT	1	0	1	0
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Drayton Wellcamp Road/ Boundary Street South	Y	West – Commodore Peak Road	LT	1	0	1	0
			T	1	0	1	0
		South – Boundary Street South	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		East – Drayton Wellcamp Road	LT	1	0	1	0
			T	100	18	152	27
			RT	1	0	1	0
		North – Unnamed Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		West – Drayton Wellcamp Road	LT	1	0	1	0
			T	106	19	113	20
			RT	1	0	1	0
Forestry Road/ Access Track	Y	East – Forestry Road	T	1	0	1	0
			RT	1	0	1	0
		North – Unnamed Road	LT	1	0	1	0
			RT	1	0	1	0
		West – Forestry Road	LT	1	0	1	0
			T	1	0	1	0
Gap Road/ Grevillea Street	Y	South – Grevillea Road	LT	1	0	1	0
			RT	14	5	15	6
		East – Gap Road	LT	13	5	14	5
			T	45	6	49	7
		West – Gap Road	T	40	5	43	5
			RT	1	0	1	0
Greenwattle Street/ Alderley Street	Y	South – Greenwattle Street	T	106	19	113	20
			RT	1	0	1	0
		East – Alderley Street	LT	1	0	1	0
			RT	303	38	461	58
		North – Greenwattle Street	LT	321	40	343	43
			T	100	18	152	27
Kingsthorpe Haden Road/ Kingsthorpe Overpass	Z	South – Kingsthorpe Haden Road	LT	2	0	2	0
			T	5	0	5	1
		North – Kingsthorpe Haden Road	T	259	14	85	7
			RT	5	2	6	1
		West – Kingsthorpe Overpass	LT	51	9	235	12
			RT	15	1	5	1

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Kooroongarra Road/ Millwood Road	Z	South – Kooroongarra Road	LT	1	0	1	0
			T	3	2	2	2
			RT	1	0	1	0
		East – Stafford Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		North – Kooroongarra Road	LT	1	1	1	0
			T	2	1	2	1
			RT	1	0	1	0
		West – Millwood Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
Leesons Road/ Steger Road	Y	South – Leesons Road	T	2	0	3	0
			RT	35	13	38	14
		East – Steger Road	LT	53	12	67	15
			RT	1	0	1	0
		North – Leesons Road	LT	1	0	1	0
			T	3	0	3	0
Linthorpe Valley Road/ Geitz Road	Y	South – Luck Road	T	1	0	2	0
			RT	1	0	1	0
		East – Linthorpe Valley Road	LT	1	0	1	0
			RT	3	1	3	1
		North – Linthorpe Valley Road	LT	3	1	3	1
			T	1	0	1	0
Millwood Road/ Millwood Road	Z	South – Millwood Road	LT	1	0	1	0
			T	1	0	1	0
		North – Millmerran Road	T	1	0	1	0
			RT	1	0	1	0
		West – Millwood Road	LT	1	0	1	0
			RT	1	0	1	0
Murlaggan Road/ Kahler Road	Y	South – Kahler Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		East – Murlaggan Road	LT	1	0	1	0
			T	15	1	16	1
			RT	1	0	1	0
		North – Kahler Road	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
		West – Murlaggan Road	LT	1	0	1	0
			T	14	1	15	1
			RT	1	0	1	0
Six Mile Road/ Bligh Street	Y	Southeast – Six Mile Road	T	1	0	1	0
			RT	1	0	1	0
		Northeast – Bligh Street	LT	1	0	1	0
			RT	1	0	1	0
		Northwest – Six Mile Road	LT	1	0	1	0
			T	1	0	1	0
Steger Road/ Draper Road	Y	South – Steger Road	LT	1	0	1	0
			T	53	12	67	15
		North – Draper Road	T	35	13	38	14
			RT	53	13	67	15
		West – Steger Road	LT	35	12	38	14
			RT	1	0	1	0
Tummaville Road/ Quarry Road Access	Z	South – Tummaville Road	T	7	2	2	0
			RT	1	0	1	0
		East – Unnamed Road	LT	1	0	1	0
			RT	1	0	1	0
		North – Tummaville Road	LT	1	0	1	0
			T	4	1	5	1
Wellcamp Westbrook Road/ Drayton Wellcamp Road	Y	South – Wellcamp Westbrook Road	T	34	11	36	11
			RT	1	0	1	0
		East – Drayton Wellcamp Road	LT	1	0	1	0
			RT	100	18	152	27
		North – Wellcamp Westbrook Road	LT	106	19	113	20
			T	32	10	49	15
West Street/ Florence Street	Y	South – West Street	LT	12	0	12	0
			T	2	2	2	2
			RT	1	0	1	0
		Northeast – Florence Street	LT	1	0	1	0
			T	1	0	1	0
			RT	12	0	12	0
		Northwest – West Street	LT	13	0	12	0
			T	2	2	2	2
			RT	1	0	1	0
		Southwest – Florence Street	LT	1	0	1	0
			T	1	0	1	0
			RT	13	0	12	0

Intersection	Data source	Approach	Turn	Existing 2022 peak hour volumes			
				AM peak		PM peak	
				LV	HV	LV	HV
Yarranlea Road/ Desmonds Lane	Y	South – Yarranlea Road	LT	1	0	1	0
			T	3	1	3	1
			RT	1	0	1	0
		East – Desmonds Lane	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0
		North – Yarranlea Road	LT	1	0	1	0
			T	3	1	3	1
			RT	1	0	1	0
		West – Desmonds Lane	LT	1	0	1	0
			T	1	0	1	0
			RT	1	0	1	0

Table note:

LV = Light Vehicle

2.4.3 Road-rail interface

Table 2.17 provides a summary of the AM and PM peak hour volumes per direction for all the proposed public road-rail interfaces which are proposed as active or passive level crossings. Only active or passive level crossings have been summarised as these are the crossing types which are impacting the flow of traffic vehicles and require queueing and waiting for a train to pass. These road-rail interfaces are shown in Figure 1.2.

Table 2.16 provides a summary of the data sources used for the purpose of the TIA.

Table 2.16 Road-rail interface traffic data sources

Source ID	Traffic data source
L	Road links volumes from Section 2.4.1
M	Intersection surveys assessment undertaken March 2021 – Austraffic
N	Diversions assessment from Section 5.9.4
O	Conservatively assumed based on road surrounds and similar road types in the local vicinity

These volumes were included as part of the vehicle queueing and delay capacity assessments during the operational years of the proposed level crossings. These volumes are provided for the locations with traffic volumes that were assumed to exceed ten vehicles per day (at the 30 per cent design stage). Details of the analysis are provided in Section 5.8. It is evident from Table 2.17 that existing traffic volumes are typically low during both AM and PM peak hours for the majority of these sites.

Table 2.17 Existing traffic volumes at proposed road-rail interface locations

Road-rail interface ID	Road name	Road type	Source	Background year	Growth rate (% p.a.)	Peak hour volumes			
						G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
State Government: Department of Transport and Main Roads									
310-24-P-2	Millmerran-Inglewood Road	Rural – SCR	L	2022	3.1%	15	16	15	15
310-40-E-2	Millmerran-Leyburn Road	Rural – SCR	L	2022	6.1%	10	10	12	10
Local Government: Goondiwindi Regional Council									
270-12-P-1	Kildonan Road	Rural – Major connection Goondiwindi-Yelarbon	L	2022	3.3%	80	78	71	76
310-4-E-2	South Kurumbul Road	Rural	L	2022	3.3%	3	3	2	3
310-7-E-1	Unnamed Road	Rural Property Access	O	2022	0.0%	10	10	10	10
310-10-P-1	Unnamed Road (Stock Route)	Rural Property Access	O	2022	0.0%	10	10	10	10
310-12-E-1	Suttons Road	Rural	L	2022	0.8%	0	0	0	0
310-14-E-0	Springborg Road	Rural	L	2022	0.8%	0	0	0	0
310-16-P-1a	Whetstone Access Road	Rural	L	2022	0.8%	1	1	1	1
310-18-P-8	Cremascos Road	Rural	L	2022	0.8%	4	4	4	4
310-21-P-9	Lovells Crossing Road (Stock Route)	Rural	L	2022	1.3%	2	2	2	2
310-22-P-9	Thornton Road	Rural	L	2022	3.1%	1	1	1	1
310-25-P-3	Grays Road	Rural	L	2022	3.1%	1	1	1	1
310-26-P-2	Wongavale Yugalbar Road	Rural	L	2022	3.1%	1	1	1	1
310-28-P-3	Unnamed Road	Rural	O	2022	0.0%	10	10	10	10
Local Government: Toowoomba Regional Council									
310-30-P-2	Kooroongarra Anderson Road	Rural Property Access	O	2022	0.0%	10	10	10	10
310-31-P-7	Kooroongarra Road	Rural	O	2022	0.0%	10	10	10	10
310-32-P-4	Paton Road	Rural	L	2022	0.0%	1	1	1	1
310-33-P-1	Nicol Creek Road	Rural	O	2022	0.0%	10	10	10	10

Road-rail interface ID	Road name	Road type	Source	Background year	Growth rate (% p.a.)	Peak hour volumes			
						G/NB/EB AM Peak	AG/SB/WB AM Peak	G/NB/EB PM Peak	AG/SB/WB PM Peak
310-34-P-1	Millwood Road	Rural	L	2022	0.0%	2	2	1	2
310-36-P-1	Blackwell Road	Rural	L	2022	0.0%	0	1	0	1
310-42-E-0a	Harris Road	Small township	L	2022	3.2%	3	3	3	3
310-43-E-3	Elsden Road	Rural	O	2022	0.0%	10	10	10	10
310-43-P-8a	Mann Silo Road	Township outskirts	M	2021	0.0%	5	5	14	11
310-45-E-1	Longhurst Road	Rural	O	2022	0.0%	10	10	10	10
310-48-P-1	Tip Road	Rural	N	2028	3.2%	13	9	18	34
310-50-P-11	Linthorpe Valley Road	Rural	L	2022	3.5%	3	4	4	4
310-57-P-4	Leesons Road	Rural	L	2022	1.2%	2	3	3	4

2.5 Intersection and network performance

A significant increase in vehicles through an intersection as a result of the Project may increase traffic delays. Increases in delays potentially has an economic and social impact on the community through increased travel times, driver impatience (leading to possible crashes) and the associated economic cost of these delays to private and commercial/heavy vehicle trips according to the GTIA. The following input types are required as a basis to evaluate existing intersection performance:

- Existing intersection geometry and lane configuration data
- Existing traffic signal phasing and sequence data where required
- Vehicle movement data
- Peak hour traffic volume data.

2.5.1 Road network performance

The existing road network performance has been tested through calculation of the volume/capacity (v/c) ratio. This ratio allows a simple methodology to determine how close the road link is to be at full capacity. Table 2.18 provides a short summary of commonly accepted criteria for relating v/c ratio to network performance.

Table 2.18 Road network performance criteria

Volume/capacity ratio	Road network performance
0 < 0.5	Free-flowing traffic
0.5 ≤ < 0.8	Slowing of vehicles
0.8 ≤ < 1.0	Congestion building
≥ 1.0	Completely congested

The road capacity of each road link was determined using the *DTMR Cost Benefit Analysis Manual* which provides the following hourly capacity.

Table 2.19 Road network performance criteria

Road width description	Hourly capacity (PCE/h)
Unsealed natural surface or unsealed formed road	400
Narrow seal ≤ 4.5 m	1500
Narrow seal ≥ 4.5 m	2000
2 lane seal 5.3 m-5.8 m	2300
2 lane seal 5.9 m-6.4 m	2350
2 lane seal 6.5 m-7.0 m	2450
2 lane seal 7.1 m-7.6 m	2500
2 lane plus shoulder seal 7.7 m-8.2 m	2525
2 lane plus shoulder seal 8.3 m-9.0 m	2550
2 lane plus shoulder seal 9.1 m-9.4 m	2550
2 lane plus shoulder seal 9.5 m-10.0 m	2575
2 lane plus shoulder seal 10.1 m-11.6 m	2575
3 lane for overtaking	4000
4 lane undivided sealed	7120
6 lane undivided sealed	12000

Road width description	Hourly capacity (PCE/h)
4 lane divided sealed	8000
6 lane divided sealed	12000
4 lane divided sealed (limited access)	8000
6 lane divided sealed (limited access)	12000
8 lane divided sealed (limited access)	16000

Table note:

PCE/h = Passenger car equivalent per hour

Passenger car equivalents are determined based on the ADT and vertical alignment via factors for different design vehicles. These factors are provided in Table 2.20.

Table 2.20 Passenger car equivalent factors

Vehicle type	Flat (<4% grade)	4% to 6% grade
Cars (private)	1	1
Articulated	2.4	4.8

For the purpose of this TIA, all road links with v/c ratio <0.5 are assumed to be operating with sufficient capacity. Where this threshold is exceeded, further investigation will be required in the road links impact and mitigation section (Section 5.5).

Table 2.21 provides a summary of the existing road network performance.

Table 2.21 Existing conditions road network performance

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
State-Controlled Roads: Department of Transport and Main Roads					
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	110	0.04
	Ch 0.8 km to Ch 2.0 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	110	0.04
	Ch 2.0 km to Ch 45.9 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	41	0.02
	Ch 45.9 km to Ch 88.0 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	41	0.02
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	2 lane seal 6.5 m to 7.0 m	2450	16	0.01
	Ch 1.6 km to Ch 66.8 km	2 lane seal 6.5 m to 7.0 m	2450	16	0.01
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	17	0.01
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	520	0.20
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	106	0.04
	Ch 96.2 km to Ch 97.5 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	109	0.04
	Ch 97.5 km to Ch 105.7 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	106	0.04
	Ch 105.7 km to Ch 107.4 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	106	0.04
	Ch 107.4 km to Ch 107.6 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	154	0.06
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	81	0.03
	Ch 2.0 km to Ch 3.9 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	81	0.03
	Ch 3.9 km to Ch 10.2 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	82	0.03
	Ch 10.2 km to Ch 13.9 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	82	0.03
	Ch 13.9 km to Ch 18.5 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	82	0.03
	Ch 18.5 km to Ch 27.1 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	82	0.03
	Ch 27.1 km to Ch 29.3 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	81	0.03
	Ch 29.3 km to Ch 34.7 km	2 lane plus shoulder seal 10.1 m- 11.6 m	2575	81	0.03
	Ch 34.7 km to Ch 39.6 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	81	0.03
	Ch 39.6 km to Ch 40.3 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	81	0.03
	Ch 40.3 km to Ch 40.5 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	83	0.03

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
	Ch 40.5 km to Ch 43.9 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	82	0.03
	Ch 43.9 km to Ch 46.3 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	82	0.03
	Ch 46.3 km to Ch 88.0 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	82	0.03
	Ch 88.0 km to Ch 88.2 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	206	0.08
	Ch 88.2 km to Ch 90.0 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	205	0.08
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	6 lane divided sealed	12000	6662	0.56
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	6 lane divided sealed	12000	1846	0.15
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	336	0.13
	Ch 2.2 km to Ch 5.4 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	324	0.13
	Ch 5.4 km to Ch 6.7 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	324	0.13
	Ch 6.7 km to Ch 7.7 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	324	0.13
	Ch 7.7 km to Ch 11.2 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	324	0.13
	Ch 11.2 km to Ch 15.3 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	324	0.13
	Ch 15.3 km to Ch 17.5 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	324	0.13
	Ch 17.5 km to Ch 19.0 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	324	0.13
	Ch 19.0 km to Ch 20.3 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	324	0.13
	Ch 20.3 km to Ch 21.5 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	181	0.07
	Ch 21.5 km to Ch 23.2 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	181	0.07
	Ch 23.2 km to Ch 25.0 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	181	0.07
	Ch 25.0 km to Ch 30.1 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	192	0.07
	Ch 30.1 km to Ch 38.7 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	181	0.07
	Ch 38.7 km to Ch 41.1 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	181	0.07
	Ch 41.1 km to Ch 41.7 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	181	0.07
	Ch 41.7 km to Ch 43.2 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	187	0.07
	Ch 43.2 km to Ch 44.7 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	187	0.07
	Ch 44.7 km to Ch 47.6 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	187	0.07

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
	Ch 47.6 km to Ch 52.2 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	187	0.07
	Ch 52.2 km to Ch 53.3 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	187	0.07
	Ch 53.3 km to Ch 60.8 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	187	0.07
	Ch 60.8 km to Ch 63.0 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	199	0.08
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	129	0.05
	Ch 0.7 km to Ch 0.8 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	129	0.05
	Ch 0.8 km to Ch 1.4 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	129	0.05
	Ch 1.4 km to Ch 3.0 km	2 lane plus shoulder seal 9.1 m to 9.4 m	2550	129	0.05
	Ch 3.0 km to Ch 13.0 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	129	0.05
	Ch 13.0 km to Ch 121.6 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	128	0.05
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	6 lane divided sealed	12000	4461	0.37
	Ch 3.7 km to Ch 6.4 km	6 lane divided sealed	12000	5262	0.44
	Ch 6.4 km to Ch 8.3 km	6 lane divided sealed	12000	7084	0.59
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	150	0.06
	Ch 220.1 km to Ch 222.4 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	151	0.06
	Ch 222.4 km to Ch 224.1 km	2 lane plus shoulder seal 9.1 m to 9.4 m	2550	151	0.06
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	4 lane divided sealed	8000	1846	0.23
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	2 lane plus shoulder seal 9.1 m to 9.4 m	2550	65	0.03
	Ch 2.5 km to Ch 3.5 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	65	0.03
	Ch 3.5 km to Ch 6.2 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	44	0.02
	Ch 6.2 km to Ch 9.0 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	44	0.02
	Ch 9.0 km to Ch 13.1 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	44	0.02
	Ch 13.1 km to Ch 14.0 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	44	0.02
	Ch 14.0 km to Ch 17.3 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	44	0.02
	Ch 17.3 km to Ch 18.1 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	44	0.02
	Ch 18.1 km to Ch 21.8 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	44	0.02

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
	Ch 21.8 km to Ch 28.0 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	44	0.02
	Ch 28.0 km to Ch 33.0 km	2 lane seal 7.1 m to 7.6 m	2500	44	0.02
	Ch 33.0 km to Ch 35.6 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	44	0.02
	Ch 35.6 km to Ch 37.7 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	44	0.02
	Ch 37.7 km to Ch 39.8 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	44	0.02
	Ch 39.8 km to Ch 41.9 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	24	0.01
	Ch 41.9 km to Ch 45.9 km	2 lane plus shoulder seal 7.7 m- 8.2 m	2525	24	0.01
	Ch 45.9 km to Ch 47.6 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	24	0.01
	Ch 47.6 km to Ch 53.3 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	24	0.01
	Ch 53.3 km to Ch 55.7 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	24	0.01
	Ch 55.7 km to Ch 56.6 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	26	0.01
	Ch 56.6 km to Ch 59.2 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	24	0.01
	Ch 59.2 km to Ch 61.0 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	24	0.01
	Ch 61.0 km to Ch 65.7 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	24	0.01
	Ch 65.7 km to Ch 68.7 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	23	0.01
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	Narrow seal $\geq$ 4.5 m	2000	20	0.01
	Ch 2.0 km to Ch 2.2 km	Narrow seal $\geq$ 4.5 m	2000	20	0.01
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	2 lane plus shoulder seal 10.1 m -11.6 m	2575	854	0.33
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	854	0.33
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	2 lane seal 6.5 m to 7.0 m	2450	13	0.01
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	180	0.07
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	328	0.13
	Ch 6.0 km to Ch 6.4 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	170	0.07
	Ch 6.4 km to Ch 8.3 km	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	170	0.07
	Ch 8.3 km to Ch 9.2 km	2 lane seal 6.5 m to 7.0 m	2450	170	0.07
	Ch 9.2 km to Ch 10.0 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	231	0.09

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
	Ch 10.0 km to Ch 10.1 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	231	0.09
	Ch 10.1 km to Ch 10.3 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	231	0.09
	Ch 10.3 km to Ch 12.1 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	231	0.09
	Ch 12.1 km to Ch 14.5 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	231	0.09
	Ch 14.5 km to Ch 16.3 km	2 lane plus shoulder seal 7.7 m to 8.2 m	2525	192	0.08
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	713	0.28
	Ch 26.9 km to Ch 27.1 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	713	0.28
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	4 lane divided sealed	8000	506	0.06
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	506	0.20
	Ch 0.6 km to Ch 3.2 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	287	0.11
	Ch 3.2 km to Ch 4.1 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	287	0.11
	Ch 4.1 km to Ch 13.0 km	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	287	0.11
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	Narrow seal <= 4.5 m	1500	175	0.12
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	Narrow seal <= 4.5 m	1500	287	0.19
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	Narrow seal <= 4.5 m	1500	287	0.19
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	Narrow seal <= 4.5 m	1500	175	0.12
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	Narrow seal <= 4.5 m	1500	175	0.12
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	Narrow seal <= 4.5 m	1500	287	0.19
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	4 lane divided sealed	8000	4066	0.51
	Ch 7.2 km to Ch 15.1 km	4 lane divided sealed	8000	4066	0.51
	Ch 15.1 km to Ch 18.9 km	4 lane divided sealed	8000	1962	0.25
	Ch 18.9 km to Ch 28.9 km	4 lane divided sealed	8000	1766	0.22
	Ch 28.9 km to Ch 36.6 km	4 lane divided sealed	8000	1091	0.14

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
	Ch 36.6 km to Ch 55.5 km	4 lane divided sealed	8000	1292	0.16
	Ch 55.5 km to Ch 75.4 km	4 lane divided sealed	8000	1292	0.16
	Ch 75.4 km to Ch 79.6 km	4 lane divided sealed	8000	1158	0.14
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	4 lane divided sealed	8000	1400	0.17
	Ch 0.4 km to Ch 1.5 km	4 lane divided sealed	8000	1262	0.16
	Ch 1.5 km to Ch 2.4 km	4 lane divided sealed	8000	1262	0.16
	Ch 2.4 km to Ch 4.5 km	4 lane divided sealed	8000	713	0.09
	Ch 4.5 km to Ch 5.0 km	4 lane divided sealed	8000	713	0.09
	Ch 5.0 km to Ch 5.3 km	4 lane divided sealed	8000	713	0.09
	Ch 5.3 km to Ch 6.2 km	4 lane divided sealed	8000	713	0.09
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	Narrow seal <= 4.5 m	1500	9	0.01
State-Controlled Roads: Transport for New South Wales					
Newell Highway	River Road to Queensland/NSW Border	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	350	0.14
Local Government Roads: Balonne Shire Council					
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	Narrow seal >= 4.5 m	2000	7	0.00
Local Government Roads: Goondiwindi Regional Council					
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	Narrow seal >= 4.5 m	2000	1	0.00
Bybera Road	Cunningham Highway to B2G-LDN060.4	Narrow seal <= 4.5 m	1500	4	0.00
	B2G-LDN060.4 to Earthworks Area 2A	Narrow seal >= 4.5 m	2000	4	0.00
Cemetery Road	Access Track to Moorooobie Lane	Unsealed formed road	400	13	0.03
	Cunningham Highway to GrainCorp Goondiwindi	Narrow seal >= 4.5 m	2000	6	0.00
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	Narrow seal <= 4.5 m	1500	4	0.00
	Coolmunda Dam Access to Cunningham Highway	Narrow seal >= 4.5 m	2000	4	0.00
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	Narrow seal >= 4.5 m	2000	6	0.00
	B2G-LDN055.4 to B2G-LDN054.2	Narrow seal >= 4.5 m	2000	7	0.00

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
	Cunningham Highway to B2G-LDN052.8	Narrow seal ≥ 4.5 m	2000	7	0.00
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	Unsealed formed road	400	2	0.00
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	Unsealed formed road	400	2	0.01
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	Unsealed formed road	400	2	0.00
	NS2B-LDN033.2 to NS2B-LDN035.6	Unsealed formed road	400	2	0.00
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	Narrow seal ≥ 4.5 m	2000	1	0.00
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	Unsealed formed road	400	1	0.00
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	Narrow seal ≥ 4.5 m	2000	1	0.00
Hunt Street	Leichhardt Highway to Boodle Street	Narrow seal ≥ 4.5 m	2000	1	0.00
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	Narrow seal ≥ 4.5 m	2000	108	0.05
	NS2B-LDN031.0 to South Kurumbul Road	Narrow seal ≥ 4.5 m	2000	101	0.05
	South Kurumbul Road to Cunningham Highway	Narrow seal ≥ 4.5 m	2000	101	0.05
	Cunningham Highway to Eukabilla Road	Narrow seal ≥ 4.5 m	2000	73	0.04
McDougalls Road	B2G-LDN049.8 to McDougalls Road	Unsealed formed road	400	0	0.00
	McDougalls Road to Cunningham Highway	Unsealed formed road	400	0	0.00
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	Unsealed formed road	400	2	0.01
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	Unsealed formed road	400	2	0.01
	Mooroobie Lane to Wondalli Kurumbul Road	Unsealed formed road	400	2	0.01
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	Unsealed formed road	400	1	0.00
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	Unsealed formed road	400	0	0.00
Silo Street	Barwon Highway to GrainCorp Talwood	Narrow seal ≤ 4.5 m	1500	8	0.01
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	Narrow seal ≤ 4.5 m	1500	5	0.00
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	Narrow seal ≥ 4.5 m	2000	5	0.00
Springborg Road	Cunningham highway to B2G-LDN037.6	Unsealed formed road	400	0	0.00

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	Unsealed formed road	400	1	0.00
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	Unsealed formed road	400	1	0.00
	B2G-LDN067.6 to Millmerran-Inglewood Road	Unsealed formed road	400	1	0.00
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	Narrow seal ≥ 4.5 m	2000	21	0.01
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	Unsealed formed road	400	1	0.00
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	Unsealed formed road	400	2	0.00
Wongavale Yugilbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	Unsealed formed road	400	1	0.00
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	Unsealed formed road	400	1	0.00
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	Narrow seal ≤ 4.5 m	1500	4	0.00
	B2G-LDN006.3 to Wondalli Kurumbul Road	Narrow seal ≤ 4.5 m	1500	4	0.00
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	Unsealed formed road	400	4	0.01
	Yelarbon Kurumbul Road to B2G-LDN020.3	Unsealed formed road	400	4	0.01
	B2G-LDN020.3 to B2G-LDN025.9	Unsealed formed road	400	3	0.01
	B2G-LDN025.9 to Cunningham Highway	Narrow seal ≤ 4.5 m	1500	3	0.00
Local Government Roads: Moree Plains Shire Council					
Boggabilla Weir Access	River Road to Boggabilla Weir	Unsealed formed road	400	1	0.00
River Road	Newell Highway to Boggabilla Weir Access	Narrow seal ≥ 4.5 m	2000	1	0.00
Local Government Roads: Toowoomba Regional Council					
Linthorpe Valley Road	Geitz Road to Gore Highway	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	499	0.19
Lochaber Road	Gore Highway to B2G-LDN172.0	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	390	0.15
	B2G-LDN172.0 to B2G-LDN172.6	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	1182	0.46
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	Narrow seal ≤ 4.5 m	1500	13	0.01
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	Narrow seal ≤ 4.5 m	1500	13	0.01
	B2G-LDN112.1 to Millwood Road	Narrow seal ≤ 4.5 m	1500	9	0.01
	Millwood Road to Kooroongarra Road	Unsealed formed road	400	2	0.00

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	Unsealed formed road	400	2	0.00
Murlaggan Road	B2G-LDN164.3 to Kahler Road	Unsealed formed road	400	1	0.00
	Kahler Road to Gore Highway	Narrow seal ≥ 4.5 m	2000	1	0.00
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	Narrow seal ≥ 4.5 m	2000	10	0.01
Omara Road	Toowoomba-Cecil Plains Road to Warrego Highway	Narrow seal ≥ 4.5 m	2000	10	0.01
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	Unsealed formed road	400	5	0.01
	B2G-LDN128.2 to B2G-LDN130.0	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	71	0.03
	B2G-LDN130.0 to Millmerran-Inglewood Road	2 lane seal 6.5 m to 7.0 m	2450	133	0.05
Paint Mine Road	Gore Highway to B2G-LDN173.5	Unsealed formed road	400	1	0.00
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	Narrow seal ≤ 4.5 m	1500	2	0.00
Quarry Road Access	Tummalville Road to Quarry	Narrow seal ≥ 4.5 m	2000	61	0.03
Saleyards Road	Campbell Street to Gore Highway	Unsealed formed road	400	1	0.00
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	Unsealed formed road	400	1	0.00
Scragg Road	Commodore Peak Road to B2G-LDN123.6	Unsealed formed road	400	1	0.00
	B2G-LDN123.6 to B2G-LDN123.8	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	2	0.00
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	2 lane seal 7.1 m to 7.6 m	2500	214	0.09
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	2 lane plus shoulder seal 8.3 m to 9.0 m	2550	234	0.09
	New Hope Recycled Water Pipeline to Draper Road	Narrow seal ≥ 4.5 m	2000	14	0.01
	Draper Road to Leeson's Road	Unsealed formed road	400	0	0.00
Tummalville Road	Access Track to Gore Highway	Unsealed formed road	400	0	0.00
Turallin Road	Gore Highway to the Turallin Facility	Narrow seal ≥ 4.5 m	2000	4	0.00
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	2 lane plus shoulder seal 9.5 m to 10.0 m	2575	63	0.02
	B2G-LDN153.1 to Gore Highway	Narrow seal ≤ 4.5 m	1500	3	0.00
	Gore Highway to B2G-LDN150.9	Unsealed formed road	400	2	0.00

Road name	Road section (km)	Classification	Capacity allowance (PCE/h)	Existing traffic (PCE/h)	V/C ratio
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	2 lane plus shoulder seal 10.1 m to 11.6 m	2575	33	0.01
West Street	Gore Highway to Florence Street	Unsealed formed road	400	0	0.00
	Florence Street to Six Mile Road	Narrow seal ≥ 4.5 m	2000	3	0.00
Yarranlea Road	Gore Highway to B2G-LDN161.0	Narrow seal ≥ 4.5 m	2000	3	0.00
	B2G-LDN161.0 to Desmonds Lane	Narrow seal ≥ 4.5 m	2000	1	0.00

2.5.2 Intersection performance

Intersection performance has been assessed for all identified intersections within the TIA study area to assess existing operation of each intersection. The delay-based analysis criteria adopted for the purposes of the TIA are adopted from *Austroads Guide to Traffic Management Part 3: Transport Study and Analysis Methods* and are provided in Table 2.22. The table indicates the LOS per intersection control type associated with a respective delay per vehicle measured in seconds.

Table 2.22 Level of Service definitions based on vehicle delay in seconds

Level of Service	Control delay (d) per vehicle in seconds (sec)		
	Signals	Roundabout	Sign control
A	$d \leq 10$	$d \leq 10$	$d \leq 10$
B	$10 \leq d \leq 20$	$10 \leq d \leq 20$	$10 \leq d \leq 15$
C	$20 \leq d \leq 35$	$20 \leq d \leq 35$	$15 \leq d \leq 25$
D	$35 \leq d \leq 55$	$35 \leq d \leq 50$	$25 \leq d \leq 35$
E	$55 \leq d \leq 80$	$50 \leq d \leq 70$	$35 \leq d \leq 50$
F	$d < 80$	$d < 70$	$d < 50$

Source: *Austroads Guide to Traffic Management Part 3: Transport Study and Analysis Methods*

In the absence of traffic count data at intersections, an assessment has been undertaken to highlight intersections which are more likely to experience impacts resulting from the addition of construction traffic flows consistent with the warrants outlined in *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings* (2019a). This assessment is provided in Section 5.4.

Table 2.23 SIDRA intersection results summary – existing operation (2022)

Intersection name	Peak period	Intersection		Worst movement			
		DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)
State-Controlled Roads: Department of Transport and Main Roads							
Barwon Highway/ Barwon Highway	AM	0.172	6	NE-RT	10	A	5
	PM	0.169	6	NE-RT	9	A	5
Barwon Highway/ Carnarvon Highway	AM	0.015	5	E-LT	9	A	0
	PM	0.013	5	E-LT	8	A	0
Barwon Highway/ Leichhardt Highway	AM	0.135	4	E-RT	8	A	5
	PM	0.144	4	E-RT	8	A	5
Barwon Highway/ Silo Street	AM	0.011	3	E-LT	9	A	0
	PM	0.009	2	E-LT	8	A	0
Barwon Highway/ South Toobeah Road	AM	0.022	2	S-LT	9	A	0
	PM	0.019	2	S-LT	9	A	0
Barwon Highway/ Town Common Road	AM	0.061	1	NW-RT	9	A	1
	PM	0.059	1	NW-RT	9	A	1
Carnarvon Highway/ Noondoo Thallon Road	AM	0.011	4	S-LT	6	A	0
	PM	0.009	4	S-LT	6	A	0
Cunningham Highway/ Bybera Road	AM	0.035	0	N-RT	8	A	0
	PM	0.036	0	N-RT	8	A	0

Intersection name	Peak period	Intersection		Worst movement			
		DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)
Cunningham Highway/ Cemetery Road	AM	0.092	0	E-RT	8	A	0
	PM	0.100	0	E-RT	8	A	0
Cunningham Highway/ Coolmunda Dam Access	AM	0.045	1	S-RT	9	A	0
	PM	0.044	1	S-RT	9	A	0
Cunningham Highway/ Cremascos Road	AM	0.033	1	N-RT	12	B	0
	PM	0.033	1	N-RT	12	B	0
Cunningham Highway/ East Sawmill Road	AM	0.035	0	NW-LT	7	A	0
	PM	0.036	0	NW-LT	7	A	0
Cunningham Highway/ Elizabeth Street	AM	0.063	0	SE-RT	6	A	0
	PM	0.064	0	SE-RT	6	A	0
Cunningham Highway/ Fosters Road	AM	0.033	0	N-LT	9	A	0
	PM	0.033	0	N-LT	9	A	0
Cunningham Highway/ Inglewood Quarry Access Road	AM	0.031	1	E-RT	11	B	0
	PM	0.031	1	E-RT	11	B	0
Cunningham Highway/ Kildonan Road	AM	0.137	8	S-RT	16	B	6
	PM	0.158	8	S-RT	16	B	7
Cunningham Highway/ Leichhardt Highway	AM	0.176	4	W-RT	14	B	7
	PM	0.199	4	W-RT	15	B	7
Cunningham Highway/ McDougalls Road	AM	0.033	0	NW-LT	8	A	0
	PM	0.037	0	NW-LT	8	A	0
Cunningham Highway/ Millmerran-Inglewood Road	AM	0.031	2	N-RT	8	A	1
	PM	0.034	2	E-RT	8	A	0
Cunningham Highway/ Springborg Road	AM	0.033	0	NW-LT	8	A	0
	PM	0.037	0	NW-LT	8	A	0
Cunningham Highway/ Texas-Yelarbon Road	AM	0.040	2	S-RT	9	A	0
	PM	0.038	1	S-RT	9	A	0
Cunningham Highway/ Whetstone Access Road	AM	0.033	0	NW-LT	8	A	0
	PM	0.037	0	NW-LT	8	A	0
Cunningham Highway/ Woodcocks Road	AM	0.045	1	N-LT	10	B	0
	PM	0.037	0	N-LT	8	A	0
Cunningham Highway/ Yelarbon-Keetah Road	AM	0.041	3	E-RT	5	A	0
	PM	0.040	3	E-RT	5	A	0
Cunningham Highway/ Yelarbon Kurumbul Road	AM	0.031	1	NE-RT	10	A	0
	PM	0.031	1	NE-LT	8	A	0
Gore Highway/ Fysh Road	AM	0.066	0	W-RT	6	A	0
	PM	0.081	0	E-LT	6	A	0
Gore Highway/ Alderley Street	AM	0.708	24	W-LT	37	D	35
	PM	0.896	25	S-RT	48	D	54
Gore Highway/ Athol School Road	AM	0.171	1	E-UT	13	B	0
	PM	0.161	0	N-RT	13	B	0

Intersection name	Peak period	Intersection		Worst movement			
		DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)
Gore Highway/ Biddeston Southbrook Road	AM	0.157	0	W-RT	12	B	0
	PM	0.144	0	W-RT	12	B	0
Gore Highway/ Blackwell Road	AM	0.060	0	E-LT	10	A	0
	PM	0.055	0	E-LT	10	A	0
Gore Highway/ Bushy Lane	AM	0.129	0	E-RT	11	B	0
	PM	0.128	0	E-RT	11	B	0
Gore Highway/ Campbell Street	AM	0.062	4	NE-RT	7	A	1
	PM	0.028	4	NE-RT	6	A	0
Gore Highway/ Dieckmann Road	AM	0.074	0	NW-RT	8	A	0
	PM	0.081	0	NW-RT	8	A	0
Gore Highway/ Florence Street	AM	0.059	1	NE-LT	6	A	0
	PM	0.058	1	NE-LT	6	A	0
Gore Highway/ Gilgai Lane	AM	0.074	0	S-RT	8	A	0
	PM	0.081	0	S-RT	10	B	0
Gore Highway/ Hall Road	AM	0.075	0	E-RT	9	A	0
	PM	0.082	0	E-RT	9	A	0
Gore Highway/ Linthorpe Road	AM	0.166	1	N-RT	11	B	1
	PM	0.187	0	N-RT	11	B	0
Gore Highway/ Linthorpe Valley Road	AM	0.142	0	N-LT	11	B	0
	PM	0.139	0	N-LT	11	B	0
Gore Highway/ Lochaber Road	AM	0.078	1	W-RT	8	A	1
	PM	0.093	1	W-RT	8	A	0
Gore Highway/ Millmerran-Inglewood Road	AM	0.043	3	SE-RT	12	B	0
	PM	0.058	3	SE-RT	11	B	1
Gore Highway/ Millmerran-Leyburn Road	AM	0.041	1	E-RT	10	A	0
	PM	0.061	1	E-RT	9	A	0
Gore Highway/ Murlaggan Road	AM	0.058	2	SE-RT	16	C	1
	PM	0.067	4	SE-RT	21	C	1
Gore Highway/ Oakey-Pittsworth Road	AM	0.070	3	W-RT	9	A	2
	PM	0.081	2	W-RT	11	B	2
Gore Highway/ Paint Mine Road	AM	0.090	0	W-LT	8	A	0
	PM	0.100	0	W-LT	8	A	0
Gore Highway/ Saleyards Road	AM	0.059	1	S-LT	6	A	0
	PM	0.061	1	S-LT	6	A	1
Gore Highway/ Scrubby Road	AM	0.075	1	SW-RT	11	B	0
	PM	0.116	1	SE-RT	11	B	1
Gore Highway/ Tummaville Road/ Yarranlea Road	AM	0.068	1	S-RT	10	A	0
	PM	0.079	1	N-RT	12	B	0
Gore Highway/ Turallin Road	AM	0.024	1	N-LT	9	A	0
	PM	0.037	1	N-LT	8	A	0

Intersection name	Peak period	Intersection		Worst movement			
		DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)
Gore Highway/ Ware Street (N)	AM	0.076	1	S-RT	12	B	1
	PM	0.081	1	S-RT	12	B	1
Gore Highway/ Ware Street (S)	AM	0.072	0	E-RT	10	A	0
	PM	0.077	0	E-RT	10	A	0
Gore Highway/ West Street	AM	0.055	0	E-RT	7	A	0
	PM	0.054	0	E-RT	7	A	0
Leichhardt Highway/ Hunt Street	AM	0.059	0	S-RT	8	A	0
	PM	0.064	0	S-RT	8	A	0
Millmerran-Inglewood Road/ Blackwell Road	AM	0.018	1	NW-LT	8	A	0
	PM	0.018	1	NW-LT	8	A	0
Millmerran-Inglewood Road/ Campbell Street	AM	0.041	5	SW-LT	8	A	0
	PM	0.052	5	SW-LT	8	A	0
Millmerran-Inglewood Road/ Commodore Peak Road	AM	0.026	0	W-LT	8	A	0
	PM	0.026	0	W-LT	8	A	0
Millmerran-Inglewood Road/ Forestry Road	AM	0.023	0	W-LT	8	A	0
	PM	0.023	1	W-LT	8	A	0
Millmerran-Inglewood Road/ Grays Road	AM	0.010	1	E-LT	8	A	0
	PM	0.010	1	E-LT	8	A	0
Millmerran-Inglewood Road/ Heckendorf Road	AM	0.017	1	NW-LT	10	A	0
	PM	0.018	1	NW-LT	10	A	0
Millmerran-Inglewood Road/ Kooroongarra Road	AM	0.027	1	E-LT	8	A	0
	PM	0.026	1	W-LT	8	A	0
Millmerran-Inglewood Road/ Millwood Road	AM	0.009	3	E-LT	10	A	0
	PM	0.016	2	E-LT	10	A	0
Millmerran-Inglewood Road/ Moffatt Reserve Road	AM	0.030	2	NE-LT	9	A	0
	PM	0.028	2	NE-LT	9	A	0
Millmerran-Inglewood Road/ Owens Scrub Road	AM	0.020	4	E-LT	8	A	0
	PM	0.028	5	S-LT	8	A	1
Millmerran-Inglewood Road/ Paton Road	AM	0.023	1	E-RT	11	B	0
	PM	0.023	1	E-RT	11	B	0
Millmerran-Inglewood Road/ Thornton Road	AM	0.008	1	SW-LT	9	A	0
	PM	0.015	1	SW-LT	9	A	0
Millmerran-Inglewood Road/ Wongavale Yugalbar Road	AM	0.011	2	S-LT	8	A	0
	PM	0.010	2	S-LT	8	A	0
Texas-Yelarbon Road/ Access Track	AM	0.007	1	E-LT	6	A	0
	PM	0.006	1	E-LT	6	A	0
Toowoomba-Cecil Plains Road/ Airport Quarry Wellcamp Access Road	AM	0.109	1	S-RT	12	B	1
	PM	0.056	0	E-LT	10	B	0
Toowoomba-Cecil Plains Road/ Brimblecombe Road	AM	0.086	0	N-LT	9	A	0
	PM	0.123	0	E-RT	9	A	1

Intersection name	Peak period	Intersection		Worst movement			
		DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)
Toowoomba-Cecil Plains Road/ Charlton Connection Road	AM	0.462	9	E-RT	13	B	15
	PM	0.488	8	W-RT	13	B	14
Toowoomba-Cecil Plains Road/ McDougall Street	AM	0.735	29	S-RT	42	D	42
	PM	0.698	28	S-RT	44	D	34
Toowoomba-Cecil Plains Road/ Omara Road	AM	0.291	6	N-RT	12	B	11
	PM	0.361	6	N-RT	14	B	15
Toowoomba-Cecil Plains Road/ Toowoomba Bypass NB Ramps	AM	0.254	10	S-RT	24	C	6
	PM	0.183	8	S-RT	36	D	6
Toowoomba-Cecil Plains Road/ Toowoomba Bypass SB Ramps	AM	0.221	10	N-RT	30	C	8
	PM	0.172	9	N-RT	30	C	6
Toowoomba-Cecil Plains Road/ Access Track	AM	0.047	1	S-LT	8	A	0
	PM	0.083	0	S-RT	9	A	0
Toowoomba-Cecil Plains Road/ Wellcamp Westbrook Road	AM	0.100	4	S-RT	10	A	2
	PM	0.129	4	S-RT	11	B	2
Warrego Highway/ Chamberlain Road	AM	0.158	0	N-LT	9	A	0
	PM	0.170	0	N-LT	9	A	0
Warrego Highway/ Leeson's Road	AM	0.192	0	E-UT	15	B	0
	PM	0.191	0	E-UT	15	B	0
Warrego Highway/ Omara Road/ Steger Road	AM	0.416	17	S-RT	34	C	8
	PM	0.449	19	S-RT	34	C	12
Warrego Highway/ Toowoomba Bypass NB Ramps	AM	0.612	11	E-RT	26	C	3
	PM	0.595	10	E-RT	25	C	3
Warrego Highway/ Toowoomba Bypass SB Ramps	AM	0.386	22	N-RT	40	D	23
	PM	0.497	24	N-RT	40	D	19
Warrego Highway Off-ramp/ Kingsthorpe Overpass	AM	0.088	10	E-RT	12	B	0
	PM	0.094	10	E-RT	12	B	0
State-Controlled Roads: Transport for New South Wales							
Newell Highway/ River Road	AM	0.199	6	S-RT	9	A	6
	PM	0.192	6	S-RT	9	A	6
Local Government Roads: Goondiwindi Regional Council							
Cemetery Road/ Access Track	AM	0.010	8	NW-LT	9	A	0
	PM	0.008	8	NW-LT	9	A	0
Coolmunda Dam Access/ Coolmunda Dam Access	AM	0.004	3	E-RT	6	A	0
	PM	0.004	3	E-RT	6	A	0
Hunt Street/ Boodle Street	AM	0.001	4	S-LT	6	A	0
	PM	0.001	4	S-LT	6	A	0
Kildonan Road/ Eukabilla Road	AM	0.044	0	NW-LT	8	A	0
	PM	0.043	0	NW-LT	8	A	0

Intersection name	Peak period	Intersection		Worst movement			
		DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)
Kildonan Road/ South Kurumbul Road	AM	0.044	1	N-LT	10	B	0
	PM	0.043	1	N-LT	10	B	0
McDougalls Road/ Access Track	AM	0.002	6	SW-LT	8	A	0
	PM	0.002	6	SW-LT	8	A	0
Mooroobie Lane/ Cemetery Road	AM	0.008	7	SW-LT	8	A	0
	PM	0.008	7	SW-LT	8	A	0
Mooroobie Lane/ Mooroobie Lane	AM	0.001	7	SW-LT	10	A	0
	PM	0.001	7	SW-LT	10	A	0
Mosquito Creek Road/ Grays Road	AM	0.001	5	S-LT	9	A	0
	PM	0.001	5	S-LT	9	A	0
Suttons Road/ Access Track	AM	0.001	4	SE-LT	6	A	0
	PM	0.001	4	SE-LT	6	A	0
Wondalli Kurumbul Road/ Mooroobie Lane	AM	0.002	6	S-LT	8	A	0
	PM	0.002	6	S-LT	8	A	0
Yelarbon Kurumbul Road/ Queen Street South	AM	0.002	4	NE-LT	9	A	0
	PM	0.002	4	NE-LT	9	A	0
Yelarbon Kurumbul Road/ South Kurumbul Road	AM	0.003	6	SW-LT	11	B	0
	PM	0.003	6	SW-LT	11	B	0
Yelarbon Kurumbul Road/ Wondalli Kurumbul Road	AM	0.002	3	N-LT	8	A	0
	PM	0.002	3	N-LT	8	A	0
Local Government Roads: Moree Plains Shire Council							
River Road/ River Road	AM	0.002	4	S-LT	6	A	0
	PM	0.002	4	S-LT	6	A	0
Local Government Roads: Toowoomba Regional Council							
Campbell Street/ Saleyards Road	AM	0.049	1	W-LT	6	A	0
	PM	0.054	1	N-RT	6	A	1
Commodore Peak Road/ Scragg Road	AM	0.002	4	N-LT	8	A	0
	PM	0.002	4	N-LT	8	A	0
Drayton Wellcamp Road/ Boundary Street South	AM	0.070	0	S-RT	12	B	0
	PM	0.101	0	S-RT	13	B	0
Forestry Road/ Access Track	AM	0.001	4	E-RT	6	A	0
	PM	0.001	4	E-RT	6	A	0
Gap Road/ Grevillea Street	AM	0.038	2	E-LT	7	A	0
	PM	0.042	2	E-LT	7	A	0
Greenwattle Street/ Alderley Street	AM	0.514	6	E-RT	13	B	24
	PM	0.882	12	E-RT	25	D	97
Kingsthorpe Haden Road/ Kingsthorpe Overpass	AM	0.145	7	N-RT	8	A	0
	PM	0.161	6	N-RT	8	A	0
Koorongarra Road/ Millwood Road	AM	0.004	5	N-LT	9	A	0
	PM	0.004	4	S-LT	8	A	0

Intersection name	Peak period	Intersection		Worst movement			
		DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)
Leesons Road/ Steger Road	AM	0.044	8	E-LT	8	A	2
	PM	0.056	8	E-LT	8	A	2
Linthorpe Valley Road/ Geitz Road	AM	0.004	7	N-LT	9	A	0
	PM	0.004	6	N-LT	9	A	0
Millwood Road/ Millwood Road	AM	0.001	5	S-LT	8	A	0
	PM	0.001	5	S-LT	8	A	0
Murlaggan Road/ Kahler Road	AM	0.010	2	W-LT	8	A	0
	PM	0.010	2	W-LT	8	A	0
Six Mile Road/ Bligh Street	AM	0.001	5	NE-LT	8	A	0
	PM	0.001	5	NE-LT	8	A	0
Steger Road/ Draper Road	AM	0.072	4	W-LT	9	A	1
	PM	0.086	4	W-LT	9	A	1
Tummaville Road/ Quarry Road Access	AM	0.006	2	E-LT	8	A	0
	PM	0.004	3	E-LT	8	A	0
Wellcamp Westbrook Road/ Drayton Wellcamp Road	AM	0.116	6	E-RT	9	A	3
	PM	0.180	6	E-RT	9	A	5
West Street/ Florence Street	AM	0.013	5	S-LT	5	A	0
	PM	0.012	5	S-LT	5	A	0
Yarranlea Road/ Desmonds Lane	AM	0.003	4	S-LT	8	A	0
	PM	0.003	4	S-LT	8	A	0

2.6 Road safety issues

2.6.1 Road link crash summary

Crash data has been summarised in Table 2.25 for all roads used by construction routes, providing a breakdown of road length, vehicle volumes, crashes by severity, percentage of fatal/serious injury (FSI) crashes and crash rate as crashes per kilometre. The crash rate has been provided as number of crashes per kilometre travelled.

Table 2.24 provides a summary of the source and time period used for the crash summary.

Table 2.24 Crash data source and time period

State	Source	Time period
Queensland	Queensland Government Open Data Portal	01/07/2016 to 31/06/2021
NSW	TfNSW Centre for Road Safety	01/01/2017 to 31/12/2021

For this analysis, crash severity is defined consistent with DTMR guidance, as follows:

- Fatal crashes – one or more persons killed or died within 30 days
- Hospitalisation – A road traffic crash which resulted in the most severe casualty outcome being a person hospitalised

- Medical treatment – A road traffic crash which resulted in a person requiring medical treatment administered by a medical officer (e.g. a doctor), but not transported to hospital, from injuries sustained in a road traffic crash
- Minor injury crashes – A road traffic crash which resulted in a person with minor injuries sustained in a road traffic crash but not requiring medical treatment.

Serious crashes are those which result in fatalities or hospitalisations.

DTMR does not report non-injury (uncategorised) crashes as of 2010, therefore non-injury crashes have been removed from TfNSW dataset in this analysis.

It has been noted that the Toowoomba Bypass (previously known as Toowoomba Second Range Crossing) was opened in only September 2019 and therefore the road does not include data from the full 5-year period.

Appendix B provides an illustration of the crashes along the proposed construction routes over the 5-year period, while Appendix AO provides a detailed crash summary for each road link which has triggered the 5 per cent threshold.

Table 2.25 Road link crash data summary

Road name	Length (km)	Background volume bi-directional (AADT) ¹	Peak construction volume bi-directional (ADT) ¹	Five-year crashes					FSI %	Crash rate (crashes/km)
				Total	Fatal	Hospitalisation	Medical treatment	Minor injury		
State-Controlled Roads: Department of Transport and Main Roads										
Barwon Highway (31A)	87.8	665 to 1893	56 to 65	1	0	1	0	0	100%	0.01
Barwon Highway (31B)	66.8	241	52 to 56	1	0	1	0	0	100%	0.01
Carnarvon Highway (24A)	33.0	191	52	2	0	1	0	1	50%	0.06
Charlton Connection Road (320)	1.6	4541	4	2	0	0	2	0	0%	1.25
Cunningham Highway (17C)	13.7	1635 to 2178	51 to 548	6	0	1	2	3	17%	0.44
Cunningham Highway (17D)	89.6	1358 to 3603	27 to 384	16	1	8	7	0	56%	0.18
Gateway Motorway (N239)	15.1	95861	117	215	2	64	125	24	31%	14.23
Gateway Motorway Extension (N332)	9.8	31365	117	39	1	14	22	2	38%	3.97
Gore Highway (28A)	63.0	2947 to 5460	231 to 1580	38	4	18	13	3	58%	0.60
Gore Highway (28B)	121.7	1782	91 to 363	29	3	19	6	1	76%	0.24
Ipswich Motorway (17A)	7.9	96351 to 111895	117	6	0	1	4	1	17%	0.76
Leichhardt Highway (26C)	19.0	2216	35 to 91	1	0	1	0	0	100%	0.05
Logan Motorway (210A)	14.5	31365	117	138	1	55	60	22	41%	9.50
Millmerran-Inglewood Road (337)	72.0	336 to 688	82 to 499	3	0	1	2	0	33%	0.04
Millmerran-Leyburn Road (335)	2.2	190	61 to 76	No Crashes					-	-
Port Drive (NA24)	5.2	10860	117	4	0	3	1	0	75%	0.77
Port of Brisbane Motorway (U27)	6.2	10860	117	7	0	4	3	0	57%	1.13
Texas-Yelarbon Road (2322)	1.3	181	40	No Crashes					-	-
Toowoomba-Athol Road (316)	14.9	3725	99	30	0	12	15	3	40%	2.01
Toowoomba-Cecil Plains Road (324)	14.3	2124 to 5541	13 to 279	26	0	15	10	1	58%	1.82
Toowoomba Connection Road (315)	0.7	11423	4 to 47	3	0	1	0	2	33%	4.02

Road name	Length (km)	Background volume bi-directional (AADT) ¹	Peak construction volume bi-directional (ADT) ¹	Five-year crashes					FSI %	Crash rate (crashes/km)
				Total	Fatal	Hospitalisation	Medical treatment	Minor injury		
Toowoomba Bypass (319A)	26.9	3091	117	No Crashes					-	-
Toowoomba Bypass (319B)	13.1	3091	117 to 483	No Crashes					-	-
Warrego Highway (18A)	80.1	21183 to 58316	117	11	0	9	2	0	82%	0.14
Warrego Highway (18B)	6.8	13274 to 13532	47 to 339	14	0	5	8	1	36%	2.07
State-Controlled Roads: Transport for New South Wales										
Newell Highway	4.69	4051	23	No Crashes					-	-
Local Government Roads: Balonne Shire Council										
Noondoo Thallon Road	0.39	71	52	1	0	1	0	0	100%	2.59
Local Government Roads: Goondiwindi Regional Council										
Boodle Street	0.31	20	1	No Crashes					-	-
Bybera Road	3.54	73	188 to 231	No Crashes					-	-
Cemetery Road	1.76	130	31 to 40	No Crashes					-	-
Coolmunda Dam Access	4.19	68	51	No Crashes					-	-
Cremascos Road	2.42	102	17 to 20	No Crashes					-	-
East Sawmill Road	3.49	42	325	No Crashes					-	-
Elizabeth Street	3.66	38	30	1	0	0.27	1	0	0%	0.27
Eukabilla Road	2.56	20	24 to 41	No Crashes					-	-
Fosters Road	5.20	27	497	No Crashes					-	-
Georges Lane	3.16	14	10	No Crashes					-	-
Grays Road	5.09	21	69	No Crashes					-	-
Hunt Street	0.50	20	1	No Crashes					-	-
Kildonan Road	54.21	1446	18 to 194	10	0	0.18	2	1	70%	0.18
McDougalls Road	2.12	8	32	No Crashes					-	-
Mooroobie Lane	20.72	22	40 to 81	No Crashes					-	-
Mosquito Creek Road	3.98	18	69	No Crashes					-	-

Road name	Length (km)	Background volume bi-directional (AADT) ¹	Peak construction volume bi-directional (ADT) ¹	Five-year crashes					FSI %	Crash rate (crashes/km)
				Total	Fatal	Hospitalisation	Medical treatment	Minor injury		
Queen Street South	0.14	5	29	No Crashes					-	-
Silo Street	0.18	120	4	No Crashes					-	-
South Kurumbul Road	3.49	50	17	No Crashes					-	-
South Toobeah Road	0.67	87	5	No Crashes					-	-
Springborg Road	2.25	8	24	No Crashes					-	-
Suttons Road	3.35	9	190	No Crashes					-	-
Thornton Road	1.73	15	19 to 329	No Crashes					-	-
Town Common Road	0.18	348	11	No Crashes					-	-
Whetstone Access	1.00	20	40	No Crashes					-	-
Wondalli Kurumbul Road	5.77	23	81	No Crashes					-	-
Wongavale Yugilbar Road	0.13	16	50	No Crashes					-	-
Woodcocks Road	3.89	20	40	No Crashes					-	-
Yelarbon Kurumbul Road	19.88	54	26 to 128	No Crashes					-	-
Local Government Roads: Moree Plains Shire Council										
Boggabilla Weir Access	2.65	20	23	No Crashes					-	-
River Road	4.08	20	23	No Crashes					-	-
Local Government Roads: Toowoomba Regional Council										
Alderley Street	0.99	11852	1 to 98	15	0	0	9	6	0%	15.20
Athol School Road	1.27	241	576 to 590	No Crashes					-	-
Biddeston Southbrook Road	0.25	174	146	1	0	1	0	0	100%	3.95
Blackwell Road	9.05	11 to 39	42 to 105	No Crashes					-	-
Bligh Street	0.61	28	12	No Crashes					-	-
Brimblecombe Road	2.56	102	39 to 56	No Crashes					-	-
Bushy Lane	0.15	94	35	No Crashes					-	-
Campbell Street	1.14	939 to 1750	116 to 132	1	0	1	0	0	100%	0.88

Road name	Length (km)	Background volume bi-directional (AADT) ¹	Peak construction volume bi-directional (ADT) ¹	Five-year crashes					FSI %	Crash rate (crashes/km)
				Total	Fatal	Hospitalisation	Medical treatment	Minor injury		
Chamberlain Road	1.11	20	11	1	0	1	0	0	100%	0.90
Commodore Peak Road	0.04	31	103	No Crashes					-	-
Desmonds Lane	2.89	15	12	No Crashes					-	-
Dieckmann Road	0.50	20	47 to 301	No Crashes					-	-
Draper Road	1.09	47	14	No Crashes					-	-
Drayton Wellcamp Road	7.69	2162	1 to 80	9	0	4	4	1	44%	1.17
Florence Street	0.21	322	1	No Crashes					-	-
Forestry Road	1.33	2	69	No Crashes					-	-
Fysh Road	0.03	71	44	No Crashes					-	-
Gap Road	2.07	1249	7	No Crashes					-	-
Geitz Road	2.11	41	28	No Crashes					-	-
Gilgai Lane	0.81	26	26	No Crashes					-	-
Grevillea Street	0.13	0	7	No Crashes					-	-
Hall Road	2.52	3	24	No Crashes					-	-
Heckendorf Road	1.57	45	292	No Crashes					-	-
Holcim Australia Toowoomba Access	0.11	20	79	2	0	1	0	1	50%	18.46
Kahler Road	0.34	12	11	No Crashes					-	-
Kingsthorpe Haden Overpass	0.56	2037	277	No Crashes					-	-
Kingsthorpe Haden Road	0.39	2002	277	1	0	1	0	0	100%	2.56
Kooroongarra Road	2.29	4 to 74	136 to 177	No Crashes					-	-
Leesons Road	2.57	77	148 to 154	2	0	0	2	0	0%	0.78
Linthorpe Road	0.38	29	453	No Crashes					-	-
Linthorpe Valley Road	2.72	89	28	No Crashes					-	-
Lochaber Road	0.33	344	9 to 14	No Crashes					-	-

Road name	Length (km)	Background volume bi-directional (AADT) ¹	Peak construction volume bi-directional (ADT) ¹	Five-year crashes					FSI %	Crash rate (crashes/km)
				Total	Fatal	Hospitalisation	Medical treatment	Minor injury		
McDougall Street	0.08	6052	15	No Crashes					-	-
Millwood Road	7.42	4 to 37	136 to 158	No Crashes					-	-
Moffatt Reserve Road	5.28	230	71	2	0	1	1	0	50%	0.38
Murlaggan Road	4.11	401	310 to 317	No Crashes					-	-
Oakey-Pittsworth Road	0.18	1369	13	1	0	1	0	0	100%	5.67
Omara Road	3.16	4699	87	1	0	0	1	0	0%	0.32
Owens Scrub Road	2.46	467	30 to 540	No Crashes					-	-
Paint Mine Road	0.06	44	12	1	0	0	1	0	0%	16.99
Paton Road	1.12	21	47	No Crashes					-	-
Quarry Road Access	1.75	3	164	No Crashes					-	-
Saleyards Road	2.44	246	27	No Crashes					-	-
Schwarten Road	0.48	5	9	No Crashes					-	-
Scragg Road	0.15	20	2 to 103	No Crashes					-	-
Scrubby Road	1.98	280	1550	No Crashes					-	-
Steger Road	2.31	1543	30 to 95	No Crashes					-	-
Tummaville Road	2.31	187	164	No Crashes					-	-
Turallin Road	5.53	278	233	1	0	1	0	0	100%	0.18
Ware Street	1.13	110 to 240	8 to 52	No Crashes					-	-
Wellcamp Westbrook Road	0.80	922	80	1	0	1	0	0	100%	1.25
West Street	1.70	28 to 101	11 to 12	No Crashes					-	-
Yarranlea Road	3.49	108	12 to 1429	1	0	0	1	0	0%	0.29

Table note:

1. Ranges in values presented where multiple AADT count sites occur along a section of road that is proposed to be used for construction traffic.

2.6.2 Road-rail interface crash summary

Crash data has been summarised in Table 2.26 for all proposed public road-rail interfaces. The crash summary has determined any crashes which have occurred within 200 m of the proposed public road-rail interface locations in order to determine whether existing risks are present. The source and time period used for the crash summary matches that of the road links and is summarised in Table 2.24. A figure showing the proposed road-rail interface, 200 m buffer and crashes by severity has been provided in Appendix C.

Table 2.26 Proposed road-rail interface crash summary

Interface ID	Road name	Existing QR crossing type	Recorded crashes (200 m buffer)	Crash severity
State Government: Department of Transport and Main Roads				
310-11-E-0	Cunningham Highway (Wondalli Street)	Grade separation – road-over-rail	No crashes	-
310-24-P-2	Millmerran-Inglewood Road	Active level crossing	No crashes	-
310-35-P-4	Millmerran-Inglewood Road	Grade separation – rail-over-road	No crashes	-
310-37-P-12a	Millmerran-Inglewood Road	Grade separation – rail-over-road	No crashes	-
310-40-E-2	Millmerran-Leyburn Road	Active level crossing	No crashes	-
310-44-E-2	Gore Highway	Grade separation – Road-over-rail	No crashes	-
310-48-P-8	Oakey-Pittsworth Road	Grade separation – Rail-over-road	2	Hospitalisation Minor injury
310-55-P-1	Toowoomba-Cecil Plains Road	Grade separation – rail-over-road	1	Hospitalisation
310-56-P-2	Warrego Highway	Grade separation – rail-over-road	1	Medical treatment
Local Government: Goondiwindi Regional Council				
270-12-P-1	Kildonan Road	Active level crossing	No crashes	-
310-4-E-2	South Kurumbul Road	Active level crossing	No crashes	-
310-7-E-1	Unnamed Road	Passive level crossing	No crashes	-
310-10-P-1	Unnamed Road (Stock Route – minor and unused)	Passive level crossing	No crashes	-
310-12-E-1	Suttons Road	Passive level crossing	No crashes	-
310-14-E-0	Springborg Road	Passive level crossing	No crashes	-
310-16-P-1a	Whetstone Access Road	Active level crossing	No crashes	-
310-18-P-8	Cremascos Road	Active level crossing	No crashes	-
310-20-P-12	Bybera Road	Grade separation – rail-over-road	No crashes	-
310-21-P-9	Lovells Crossing Road	Active level crossing	No crashes	-
310-22-P-9	Thornton Road	Active level crossing	No crashes	-
310-25-P-3	Grays Road	Passive level crossing	No crashes	-
310-26-P-2	Wongavale – Yugalbar Road	Passive level crossing	No crashes	-
310-27-P-3	Unnamed Road (Stock Route – minor and unused)	Grade Separation – rail-over-road	No crashes	-
310-28-P-3	Unnamed Road	Active level crossing	No crashes	-

Interface ID	Road name	Existing QR crossing type	Recorded crashes (200 m buffer)	Crash severity
Local Government: Toowoomba Regional Council				
310-30-P-2	Kooroongarra Anderson Road (Stock Route – minor and unused)	Passive level crossing	No crashes	-
310-31-P-7	Kooroongarra Road	Active level crossing	No crashes	-
310-32-P-4	Paton Road	Active level crossing	No crashes	-
310-33-P-1	Nicol Creek Road	Active level crossing	No crashes	-
310-34-P-1	Millwood Road	Active level crossing	No crashes	-
310-35-P-4b	Heckendorf Road	Grade separation – road-over-rail	No crashes	-
310-36-P-1	Blackwell Road	Active level crossing	No crashes	-
310-36-P-8b	Commodore Peak Road/ Scragg Road	Grade separation – rail-over-road	No crashes	-
310-38-P-3b	Owens Scrub Road	Grade separation – road-over-rail	No crashes	-
310-41-E-6	Gilgai Lane	Grade separation – rail-over-road	No crashes	-
310-42-E-0a	Harris Road	Active level crossing	No crashes	-
310-43-E-3	Elsden Road	Active level crossing	No crashes	-
310-43-P-8a	Mann Silo Access Road	Active level crossing	No crashes	-
310-45-E-1	Longhurst Road	Active level crossing	No crashes	-
310-46-E-1	Yarranlea Road	Grade separation – rail-over-road	No crashes	-
310-46-P-3	Roche Road	Grade separation – rail-over-road	No crashes	-
310-48-P-1	Tip Road	Active level crossing	No crashes	-
310-49-P-2	Lochaber Road	Grade separation – rail-over-road	No crashes	-
310-49-P-11	Linthorpe Road	Grade separation – road-over-rail	No crashes	-
310-50-P-11	Linthorpe Valley Road	Active level crossing	No crashes	-
310-51-P-11z	Biddeston Southbrook Road	Grade separation – rail-over-road	1	Medical treatment
310-53-P-1a	Athol School Road	Grade separation – rail-over-road	No crashes	-
310-55-P-5	Brimblecombe Road	Grade separation – rail-over-road	No crashes	-
310-57-P-1	Chamberlain Road	Grade separation – rail-over-road	No crashes	-
310-57-P-4	Leesons Road	Active level crossing	1	Medical treatment

The crash summary in Table 2.27 outlines the crash date, time and description for each of the road-rail interface locations.

Table 2.27 Detailed crash summary

Interface ID	Road name	Recorded crashes (200 m buffer)	Crash severity	Date and time	Crash description
State Government: Department of Transport and Main Roads					
310-48-P-8	Oakey-Pittsworth Road	2	Hospitalisation	Friday 2 pm February 2019	Multi-Vehicle – Intersection from adjacent approaches
			Minor injury	Thursday 9 am February 2020	Multi-Vehicle – Intersection from adjacent approaches
310-55-P-1	Toowoomba-Cecil Plains Road	1	Hospitalisation	Friday 6 pm April 2021	Single-Vehicle – Off-carriageway crash on straight
310-56-P-2	Warrego Highway	1	Medical treatment	Friday 6 pm June 2018	Multi-Vehicle – Vehicle leaving driveway
Local Government: Toowoomba Regional Council					
310-51-P-11z	Biddeston Southbrook Road	1	Medical treatment	Monday 2 pm June 2021	Multi-Vehicle – Intersection from adjacent approaches
310-57-P-4	Leesons Road	1	Medical treatment	Sunday 1 pm February 2021	Single-Vehicle – Out of control on curve

No fatalities were recorded at any of the proposed road-rail interface locations. Grade separated crossings are proposed at all of the above locations except for 310-57-P-4, where an active level crossing is proposed.

2.7 Site access

The Project construction will use laydown areas spread along the alignment. These will be used for delivery of specific materials required for construction in adjacent areas. Where laydown areas occur on the corner of an intersection, it is planned that the laydown will be accessed via the lower order road. For example, where a laydown area is on the corner of an intersection of a SCR and LGR, the access location will be built on the LGR to avoid the building of a new access to the SCR network. It is also noted that at this stage it is assumed that all laydown areas are accessed via a new access location, designed to the required standards during detailed design.

Table 2.28 Laydown areas and proposed access locations

Access location road name	Access location	Laydown area
State-Controlled Roads: Department of Transport and Main Roads		
Millmerran-Inglewood Road	4.3 km north of Thornton Road	B2G-LDN073.0
Millmerran-Inglewood Road	3.5 km south of Grays Road	B2G-LDN074.0
Millmerran-Inglewood Road	7.0 km north of Wongavale Yugalbar Road	B2G-LDN088.0
Millmerran-Inglewood Road	3.8 km south of Wondul Road	B2G-LDN091.8
Millmerran-Inglewood Road	1.9 km south of Wondul Road	B2G-LDN093.8
Millmerran-Inglewood Road	2.0 km north of Wondul Road	B2G-LDN098.0
Millmerran-Inglewood Road	2.3 km south of Kooroongarra Road	B2G-LDN100.6
Millmerran-Inglewood Road	800 m south of Heckendorf Road	B2G-LDN115.6
Millmerran-Leyburn Road	1.9 km south of Millmerran-Inglewood Road	B2G-LDN140.2
		B2G-LDN141.3
Gore Highway	1.0 km north of Fysh Road	B2G-LDN149.0
Gore Highway	700 m east of Tip Road	B2G-LDN169.6
Gore Highway	1.2 km east of Biddeston Southbrook Road	B2G-LDN185.0
Toowoomba-Cecil Plains Road	1.8 km east of Brimblecombe Road	B2G-LDN196.2

Access location road name	Access location	Laydown area
Toowoomba-Cecil Plains Road	1.8 km east of Brimblecombe Road	B2G-LDN197.0
Warrego Highway	800 m west of Chamberlain Road	B2G-LDN203.0
Local Government Roads: Goondiwindi Regional Council		
Kildonan Road	100 m west of Eukabilla Road	NS2B-LDN031.0
		NS2B-LDN032.5
Eukabilla Road	100 m north of Kildonan Road	NS2B-LDN033.2
Eukabilla Road	2.4 km north of Kildonan Road	NS2B-LDN035.6
Georges Lane	3 km west of South Kurumbul Road	B2G-LDN000.9
Yelarbon Kurumbul Road	300 m east of South Kurumbul Road	B2G-LDN006.3
Queen Street South	100 m north of Yelarbon Kurumbul Road	B2G-LDN016.0
Yelarbon Kurumbul Road	4.5 km east of Queen Street South	B2G-LDN020.3
Yelarbon Kurumbul Road	200 m of Cunningham Highway	B2G-LDN025.9
Suttons Road	3.4 km east of Cunningham Highway	B2G-LDN030.0
Springborg Road	2.2 km north of Cunningham Highway	B2G-LDN037.6
McDougalls Road	1.2 km north of Cunningham Highway	B2G-LDN049.8
Cremascos Road	1.5 km north of Cunningham Highway	B2G-LDN052.8
Cremascos Road	1.6 km north of Cunningham Highway	B2G-LDN054.2
Cremascos Road	2.1 km north of Cunningham Highway	B2G-LDN055.4
Bybera Road	3.3 km north of Cunningham Highway	B2G-LDN060.4
Lovells Crossing Road	3.1 km north of Cunningham Highway	B2G-LDN065.8
Thornton Road	1.1 km west of Millmerran-Inglewood Road	B2G-LDN067.6
Thornton Road	1.3 km west of Millmerran-Inglewood Road	B2G-LDN069.0
Wongavale Yugalbar Road	100 m east of Millmerran-Inglewood Road	B2G-LDN081.0
Local Government Roads: Toowoomba Regional Council		
Paton Road	1.1 km east of Millmerran-Inglewood Road	B2G-LDN104.5
Millwood Road	1.1 km east of Millmerran-Inglewood Road	B2G-LDN112.1
Heckendorf Road	200 m west of Millmerran-Inglewood Road	B2G-LDN116.0
Blackwell Road	1.4 km north of Millmerran-Inglewood Road	B2G-LDN120.2
Scragg Road	100 m north of Commodore Peak Road	B2G-LDN123.6
Scragg Road	150 m north of Commodore Peak Road	B2G-LDN123.8
Schwarten Road	500 m north of Millmerran-Inglewood Road	B2G-LDN126.9
Owens Scrub Road	1.9 km south of Millmerran-Inglewood Road	B2G-LDN128.2
		B2G-LDN129.5
Owens Scrub Road	2.0 km south of Millmerran-Inglewood Road	B2G-LDN130.0
		B2G-LDN130.4
		B2G-LDN130.6
Hall Road	2.3 km south of Millmerran-Inglewood Road	B2G-LDN138.5
		B2G-LDN139.0
Gilgai Lane	800 m south of Millmerran-Inglewood Road	B2G-LDN143.0
		B2G-LDN144.6
Fysh Road	30 m south of Gore Highway	B2G-LDN147.1
Dieckmann Road	400 m north of Gore Highway	B2G-LDN150.5

Access location road name	Access location	Laydown area
Ware Street (South)	30 m south of Gore Highway	B2G-LDN150.9
Ware Street (North)	80 m south of Gore Highway	B2G-LDN153.1
Yarranlea Road	3.3 km north of Gore Highway	B2G-LDN161.0
Roche Road	2.0 km east of Yarranlea Road	B2G-LDN163.3
Murlaggan Road	1.2 km west of Kahler Road	B2G-LDN164.3
Kahler Road	300 m north of Murlaggan Road	B2G-LDN165.6
Oakey-Pittsworth Road	200 m north of Gore Highway	B2G-LDN171.0
Lochaber Road	40 m north of Gore Highway	B2G-LDN172.0
Lochaber Road	300 m north of Gore Highway	B2G-LDN172.6
Paint Mine Road	60 m north of Gore Highway	B2G-LDN173.5
Linthorpe Road	400 m north of Gore Highway	B2G-LDN175.5
Geitz Road	550 m north of Gore Highway	B2G-LDN179.0
Bushy Lane	150 m west of Gore Highway	B2G-LDN183.0
Biddeston Southbrook Road	250 m west of Gore Highway	B2G-LDN183.8
Athol School Road	800 m west of Gore Highway	B2G-LDN188.2
Athol School Road	1.0 km west of Gore Highway	B2G-LDN192.3
Brimblecombe Road	2 km north of Toowoomba-Cecil Plains Road	B2G-LDN198.1
		B2G-LDN198.7
Chamberlain Road	1.1 km north of Warrego Highway	B2G-LDN204.2
Leesons Road	1.3 km north of Steger Road	B2G-LDN206.3
Draper Road	1.1 km north of Steger Road	B2G-FBW206.9

2.8 Public transport

Existing public transport routes within the study area have been identified using data sourced from TransLink in Queensland and TfNSW. No public transport routes were identified in the NSW study area. While there are two train lines in the study area (South Western Line and Millmerran Branch Line), neither of these are used for passenger rail services, therefore the assessment of public transport services has been restricted to bus services. Table 2.29 provides a summary of public bus routes within the TIA study area. The table summarises the route number, route, frequency, overlap with construction routes and intersection with road-rail interfaces. The identified public bus routes are shown in Appendix E.

It is acknowledged that additional transport routes may be run by private companies and may not be publicly available and have therefore not been captured within Table 2.29. Consultation with relevant LGA and public transport operators (including QR) should be undertaken following the finalisation of construction routes and prior to the Construction Works stage of the Project to ensure that all public transport routes that may be impacted by the Project have been accounted for. Additionally, it is recommended that public transport operators be involved in the mitigation discussions.

Table 2.29 Existing public bus routes within traffic impact assessment study area

Bus service	Route	Weekday frequency	Overlap with construction routes	Conflict with road-rail interface locations
Queensland				
529	Ipswich to Toogoolawah	2 inbound 3 outbound	Warrego Highway	-
534	Browns Plains – Orion Springfield Central	15 inbound 15 outbound	Logan Motorway	-

Bus service	Route	Weekday frequency	Overlap with construction routes	Conflict with road-rail interface locations
905	University of Southern Queensland – Toowoomba Plaza – City	11 inbound 11 outbound	Toowoomba-Athol Road	-
P142	Brisbane City – Browns Plains	5 inbound 7 outbound	Gateway Motorway	-
P546	Park Ridge – Brisbane City	9 inbound 8 outbound	Gateway Motorway	-

2.9 School bus routes

Existing school bus routes within the study have been identified using data sourced from TransLink, TRC and GRC in Queensland and TfNSW in NSW. No school bus routes were identified within the NSW study area; however, a variety of school bus routes have been identified through Queensland. School bus routes identified within the study area have been summarised in Table 2.30. The identified school bus routes are shown in Appendix F.

There may be additional school bus routes that are privately run and not publicly available and have therefore not been captured in Table 2.30. Further consultation with relevant council authorities and stakeholders should be undertaken following the finalisation of construction routes and prior to the Construction Works stage of the Project to ensure that all school bus routes that may be impacted by the Project have been accounted for.

The bus routes identified do not tend to have designated bus stops, other than the termini of the routes. Rather, either 'hail and ride' or pre-arranged pick-up locations are arranged for student pick-up/drop-off.

Potential impacts on school bus routes are discussed in Section 5.10.4.

Table 2.30 Existing school bus routes within traffic impact assessment study area

Services	Weekday frequency	Service type	Conflict with construction routes	Conflict with road-rail interface locations
Queensland				
P124 Southbrook to Southbrook Central State School	1/AM 1/PM	Loop service	Gore Highway	-
P451 Seven Mile to Inglewood State School	1/AM 1/PM	Standard service	Cunningham Highway	-
P462 Stanthorpe Road to Inglewood State School	1/AM 1/PM	Standard service	Cunningham Highway	-
P473 Yuraraba to Inglewood State School	1/AM 1/PM	Standard service	Cunningham Highway Millmerran-Inglewood Road Coolmunda Access Road	310-24-P-2
P510 Southbrook North to Southbrook Central State School	1/AM 1/PM	Standard service	Gore Highway Biddeston Southbrook Road Linthorpe Valley Road	310-50-P-11 310-51-P-11z (replacing 310-52-P-1)
P528 Minimi to St George State School	1/AM 1/PM	Standard service	Carnarvon Highway	-
P610 Nindigully to Thallon State School	1/AM 1/PM	Standard service	Carnarvon Highway	-

Services	Weekday frequency	Service type	Conflict with construction routes	Conflict with road-rail interface locations
P624 Service Wilga View to Pittsworth State School	1/AM 1/PM	Loop service	Gore Highway Linthorpe Road Lochaber Road	310-49-P-11a 310-49-P-2 (replacing 310-49-P-1)
P645 Gooray to Goondiwindi	1/AM 1/PM	Standard service	Barwon Highway	-
P674 Yagaburne to Goondiwindi State School	1/AM 1/PM	Standard service	Leichardt Highway Gore Highway Barwon Highway	-
P733 Goodar to Goondiwindi State School	1/AM 1/PM	Standard service	Barwon Highway	-
P772 Tummaville to Millmerran State School	1/AM 1/PM	Standard service	Gore Highway Millmerran-Leyburn Road Fysh Road	310-40-E-2 310-42-E-0a (replacing 310-42-E-1)
P787 Primary and Secondary to Millmerran State School	1/AM 1/PM	Standard service	Gore Highway Florence Street	-
P809 Kincora to Pittsworth State School	1/AM 1/PM	Loop service	Gore Highway Scrubby Road Gap Road	-
P819 Irongate to Pittsworth State School	1/AM 1/PM	Loop service	Gore Highway Lochaber Road	310-49-P-2 (replacing 310-49-P-1)
P957 Ivanhoe to Millmerran State School	1/AM 1/PM	Standard service	Gore Highway Millmerran – Inglewood Road Campbell Street Owens Scrub Road	310-38-P-3b (replacing 310-38-P-3a)
P1070 Lemon Tree to Millmerran State School	1/AM 1/PM	Loop service	Gore Highway West Street Saleyards Road Turallin Road	-
P1072 Billa to Goondiwindi State School	1/AM 1/PM	Standard service	Leichardt Highway Barwon Highway	-
P1082 Koarlo to Goondiwindi State School	1/AM 1/PM	Standard service	Kildonan Road South Kurumbul Road	270-12-P-1
P1165 Toobeah to Bungunya State School	1/AM 1/PM	Standard service	Barwon Highway South Toobeah Road	-
P1651 Mungindi to Talwood State School	1/AM 1/PM	Standard service	Barwon Highway Silo Street	-
P1883 Athol to Bunker's Hill State School	1/AM 1/PM	Loop service	Gore Highway Toowoomba-Athol Road Athol School Road	310-53-P-1a (new)
S108 Pittsworth State High School to Mount Tyson	1/AM 1/PM	Standard service	Gore Highway Oakey Pittsworth Road Lochaber Road	310-49-P-2 (replacing 310-49-P-1) 310-48-P-8

Services	Weekday frequency	Service type	Conflict with construction routes	Conflict with road-rail interface locations
S118 Pittsworth to Brookstead Area	1/AM 1/PM	Standard service	Gore Highway Ware Street Yarranlea Road Gap Road	310-44-E-2 310-46-E-1 (replacing 310-46-E-1a)
S178 Kingsthorpe Secondary to Harristown State High School	1/AM 1/PM	Loop service	Warrego Highway Toowoomba Connection Road Charlton Connection Road Toowoomba-Cecil Plains Road Warrego Highway Off-Ramp Kingsthorpe Haden Overpass Kingsthorpe Haden Road	310-56-P-2
S577 Kingsthorpe/Wellcamp to Harristown State High School	1/AM 1/PM	Standard service	Warrego Highway Kingsthorpe Haden Road Omara Road Wellcamp Westbrook Road Drayton Wellcamp Road Euston Road	310-56-P-2
S740 AM and PM Service Millmerran Years 11 and 12 to Pittsworth State High School	1/AM 1/PM	Standard service	Gore Highway Saleyards Road West Street Campbell Street Gap Road	310-44-E-2
S863 Millmerran Downs Year 11 and 12 to Pittsworth State High School	1/AM 1/PM	Standard service	Gore Highway	-
YEL5 Yelarbon to Goondiwindi State High School	1/AM 1/PM	Standard service	Cunningham Highway	
GLE11 Glenoak Road to Goondiwindi State High School, connecting with P451	1/AM 1/PM	Standard service	Cunningham Highway	

2.10 Long-distance coach services

Existing privately operated long-distance coach services that use roads within the TIA study area were identified using data sourced from Greyhound, Murrays and Crisps Coaches. Table 2.31 summarises these long-distance coach services and their conflicts with proposed construction routes and road-rail interface locations as well as the operator and frequency. The identified long distance coach services are shown in Appendix G.

Table 2.31 Existing long-distance coach services within traffic impact assessment study area

Services	Operator	Frequency	Conflict with construction routes	Conflict with road-rail interface locations
Queensland				
Brisbane to Toowoomba (via Gatton)	Greyhound	2/day	Ipswich Motorway Warrego Highway	-
Brisbane to Dalby (via Toowoomba)	Greyhound	2/day	Ipswich Motorway Warrego Highway Toowoomba Connection Road	310-56-P-2
Brisbane to Miles (via Toowoomba)	Greyhound	2/day	Ipswich Motorway Warrego Highway Toowoomba Connection Road	310-56-P-2
Brisbane to Chinchilla	Greyhound	2/day	Ipswich Motorway Warrego Highway Toowoomba Bypass	310-56-P-2
Brisbane to Charleville	Greyhound	2/day	Ipswich Motorway Warrego Highway Toowoomba Bypass	310-56-P-2
Brisbane to Mount Isa	Greyhound	1/day	Ipswich Motorway Warrego Highway Toowoomba Bypass	310-56-P-2
Toowoomba to Rockhampton	Greyhound	1/day	Toowoomba Connection Road Warrego Highway	310-56-P-2
Toowoomba to Moree (via Cunningham Highway)	Crisps Coaches	1/day	Cunningham Highway Newell Highway	310-11-E-1
Brisbane to St George (via Toowoomba) (via Moonie Highway)	Murrays	1/day	Ipswich Motorway Warrego Highway Toowoomba-Cecil Plains Road	310-55-P-1
Brisbane to St George (via Toowoomba) (via Gore Highway)	Murrays	1/day	Ipswich Motorway Warrego Highway Toowoomba-Athol Road Gore Highway Leichardt Highway Barwon Highway	310-44-E-2
Brisbane to Cunnamulla (via Toowoomba) (via Moonie Highway)	Murrays	1/day	Ipswich Motorway Warrego Highway Toowoomba-Cecil Plains Road	310-55-P-1
Brisbane to Lightning Ridge (via Gore Highway)	Murrays	1/day	Ipswich Motorway Warrego Highway Toowoomba-Cecil Plains Road Gore Highway Leichardt Highway Barwon Highway	310-44-E-2
Brisbane to Moree (via Cunningham Highway)	Crisps Coaches	1/day	Ipswich Motorway Cunningham Highway Newell Highway	310-11-E-1

2.11 Stock routes

The Queensland stock route network provides pastoralists with a means of moving stock around Queensland's main pastoral districts as an alternative to motorised transport. Stock routes comprise pathways for moving stock on roads, reserves, unallocated State land and pastoral leases and have no separate title or tenure information. The stock route network is administered under the *Stock Route Management Act 2002*, *Land Act 1994* and the *Transport Infrastructure Act 1994*. The State stock route network is primarily used by the pastoral industry as:

- An alternative to transporting stock by rail or road
- Pasture for emergency agistment
- Long-term grazing.

Table 2.32 identifies the locations where stock routes fall within the TIA study area. The identified stock routes are shown in Appendix H as well as EIS Chapter 8: Land Use and Tenure and EIS Appendix B2: Stock Routes.

Table 2.32 Stock routes within the traffic impact assessment study area

Stock route	Conflict with construction routes	Conflict with road-rail interface locations
Queensland		
ID: 005BALO Type: Road Status: Open Class: Primary	Carnarvon Highway Barwon Highway	-
ID: 006BALO Type: Road Status: Open Class: Primary	Carnarvon Highway	-
ID: 005GWND Type: Road Status: Open Class: Primary	Cunningham Highway Barwon Highway Kildonan Road Silo Street Eukabilla Road	270-12-P-1
ID: 081GWND Type: Road Status: Open Class: Secondary	Wondalli Kurumbul Road Yelarbon Kurumbul Road South Kurumbul Road Queen Street South Mooroobie Lane Kildonan Road	310-4-E-2
ID: 083GWND Type: Road Status: Open Class: Secondary	Mooroobie Lane	-
ID: 084GWND Type: Road Status: Open Class: Secondary	Barwon Highway South Toobeah Road	-
ID: 086GWND Type: Road Status: Open Class: Secondary	Cunningham Highway	-

Stock route	Conflict with construction routes	Conflict with road-rail interface locations
ID: 799GWND Type: Road Status: Open Class: Tertiary	Barwon Highway	-
ID: 806GWND Type: Road Status: Open Class: Tertiary	Gore Highway Leichhardt Highway	-
ID: 807GWND Type: Road Status: Open Class: Tertiary	Gore Highway	-
ID: 811GWND Type: Road Status: Open Class: Tertiary	Cunningham Highway Yelarbon Kurumbul Road Kildonan Road	-
ID: 813GWND Type: Road Status: Open Class: Tertiary	Cunningham Highway Lovells Crossing Road Elizabeth Street	310-21-P-9
ID: 820GWND Type: Road Status: Open Class: Tertiary	Millmerran-Inglewood Road Lovells Crossing Road Thornton Road Elizabeth Street Grays Road	310-27-P-3 310-24-P-2
ID: 830GWND Type: Road Status: Open Class: Tertiary	Texas-Yelarbon Road	-
ID: 820TOOW Type: Road Status: Open Class: Tertiary	Millmerran-Inglewood Road Forestry Road Millwood Road Moffatt Reserve Road Kooroongarra Road Schwarten Road Blackwell Road Six Mile Road West Street Paton Road Bligh Street Saleyards Road Campbell Street Heckendorf Road	310-35-P-4 310-37-P-12a
ID: 856TOOW Type: Road Status: Open Class: Tertiary	Forestry Road	310-30-P-2
ID: 869TOOW Type: Road Status: Open Class: Tertiary	Millwood Road Kooroongarra Road Moffatt Reserve Road	-

Stock route	Conflict with construction routes	Conflict with road-rail interface locations
ID: RAINBOW RESERVE Type: Reserve Status: Open Class: Primary	Eukabilla Road	-
ID: RESERVE Type: Reserve Status: Open Class: Primary	Cunningham Highway East Sawmill Road Suttons Road	-

2.12 State strategic touring routes

State strategic touring routes are routes of strategic importance to the driving tourism market in Queensland. They are the primary routes that tourists use to travel around Queensland, providing the main connections between tourist destinations and generally supporting high volumes of tourist traffic. State strategic touring routes are recognised nationally through the National Tourism Signage Reference Group and at a State level by DTMR and tourism agencies.

Strategic touring routes within the TIA study area are listed in Table 2.33. The strategic routing routes identified are shown in Appendix I.

Table 2.33 Strategic touring routes that are proposed to be used for construction traffic

Strategic touring route	Conflict with construction routes	Conflict with road-rail interface locations
Adventure Way	Ipswich Motorway, between Logan Motorway and Warrego Highway Warrego Highway, between Ipswich Motorway and Toowoomba Bypass Toowoomba Connection Road, between Toowoomba-Cecil Plains Road and Warrego Highway	310-56-P-2
Leichhardt Way	Cunningham highway, between Leichhardt Highway and Kildonan Road Leichhardt Highway, between Cunningham Highway Gore Highway Newell Highway, between Kildonan Road and River Road	-
Pacific Coast Way	Gateway Motorway, between Pacific Motorway and Port of Brisbane Motorway	-
Warrego Way	Ipswich Motorway, between Logan Motorway and Warrego Highway Warrego Highway, between Ipswich Motorway and Toowoomba Bypass Toowoomba Connection Road, between Toowoomba-Cecil Plains Road and Warrego Highway	310-56-P-2

2.13 Existing rail facilities

QR owns Queensland's regional freight network and operates both suburban and long-distance passenger services for the Queensland government. QR's regional freight network comprises seven different systems in the State. The South Western System runs over approximately 610 km and consists of a primary rail corridor from Toowoomba to Thallon via Warwick, with branch lines from:

- Warwick to Wallangarra
- Wyreemah to Millmerran.

The South Western System adjoins the West Moreton System at Toowoomba.

Within brownfield segments, the Project will require connection (turnout) onto and upgrade of QR South Western Line and Millmerran Branch Line. Upgrade works will include the removal of existing narrow-gauge track (rail and sleepers) and the construction of new formation and dual-gauge track within the existing rail corridor.

The Project utilises approximately 46.8 km of the existing rail corridor for the South Western Line and approximately 24.4 km of the existing rail corridor for the Millmerran Branch Line, both of which are components of the South Western System. Each of these lines are discussed in further detail below.

ARTC has engaged and will continue to engage with QR (as the rail manager for the above rail systems), regarding potential interfaces with the Project during construction and operation. This includes but is not limited to the proposed connections at the western and eastern extents of the Project, track spacing within the rail corridor, final configuration of the railway corridor, relocation and reinstatement of existing rail infrastructure and track possessions.

The South Western System, including South Western Line and Millmerran Branch Line is shown in Appendix J and Appendix K, respectively.

2.13.1 South Western Line

The Project interfaces with the Warwick to Goondiwindi section of the South Western Line, which is a single-track, narrow-gauge railway.

Queensland Rail have supplied ARTC with all train movements on the South Western Line and Millmerran Branch Line from January 2015 to May 2022. A representative year (2017) indicated a maximum of 50 monthly train movements (June 2017) and a minimum of five monthly train movements (September 2017).

Data provided by DTMR indicated that in 2017 an average of 25 trains per month ran up and down track between Yelarbon and Inglewood on the South Western Line, with a monthly maximum of 50 train movements in June 2017 (Table 2.34).

Table 2.34 South Western Line monthly train movements in 2017, between Yelarbon and Inglewood

Direction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
Inglewood to Whetstone													
Down	20	22	23	8	23	24	13	5	2	3	3	4	12.5
Up	21	22	23	9	25	25	12	3	3	3	3	4	12.8
Whetstone to Yelarbon													
Down	20	22	23	8	23	25	12	5	2	3	3	4	12.5
Up	21	22	23	9	25	25	11	3	3	3	3	4	12.7
Average (up + down)	41.0	44.0	46.0	17.0	48.0	49.5	24.0	8.0	5.0	6.0	6.0	8.0	25.2

Structural details and operating restrictions for this section of the South Western Line are summarised in Table 2.35. A map showing the Project interface with the South Western Line is provided in Appendix J.

Table 2.35 Structural details and operating restrictions for South Western Line (Warwick to Goondiwindi)

Component/Restriction	Details
Rail	A combination of continuous welded rail (47 kg/m), long welded rail (41 kg/m) and short welded rail (30 kg/m).
Sleepers	A combination of timber and steel sleepers. Steel sleepers are used at varying ratios of one steel in every two, three or four sleepers.

Component/Restriction	Details
Crossing loops	- Wheatvale - Thane - Karara - Gore - Cobba-da-mana - Inglewood - Whetstone - Yelarbon - Kurumbul - Carrington Cotton - Goondiwindi.
Maximum allowable axle load	The maximum allowable axle load is 15.75 Tonne Axle Load (TAL).
Maximum allowable speed	The maximum allowable speed is 80 km/h. Triple header block trains are restricted to a maximum speed of 60 km/h. A speed limit of 15 km/h applies over select bridges.
Maximum grade	The maximum grade (not compensated for horizontal alignment) that a westbound (up) train will encounter is 1 in 33 while for an eastbound (down) train the maximum grade is 1 in 44.

Table notes:

kg/m = kilograms per metre

km/h = kilometres per hour

2.13.2 Millmerran Branch Line

The Millmerran Branch Line is a single-track railway that extends from Wymeera to Millmerran. This line is currently non-operational south of Brookstead as a consequence of flood damage sustained in the 2010/11 flood events. The Project interfaces with the Millmerran Branch Line between Yandilla and Yarranlea.

Queensland Rail have supplied ARTC with all train movements on the South Western Line and Millmerran Branch Line from January 2015 to May 2022. A representative year (2017) indicated a maximum of 19 train movements (August 2017) and a minimum of zero train movements (six of the twelve months).

Data provided by DTMR indicated that in 2017, an average of three trains per month ran up and down track, between Brookstead and Wyreema on the Millmerran Branch Line, with a monthly maximum of 19 train movements in August 2017 (Table 2.36).

Table 2.36 Millmerran Branch Line monthly train movements in 2017, between Brookstead and Wyreema

Direction	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Avg
Brookstead to Pittsworth													
Down	0	0	0	3	2	0	0	9	0	0	3	0	4.3
Up	0	1	1	3	2	0	0	9	0	0	3	0	3.2
Pittsworth to Wyreema													
Down	0	0	0	3	2	0	0	9	0	0	4	0	4.5
Up	0	1	1	3	2	0	0	10	0	0	4	0	3.5
Average (up + down)	0.0	1.0	1.0	6.0	4.0	0.0	0.0	18.5	0.0	0.0	7.0	0.0	3.1

Structural details and operating restrictions for this section of the Millmerran Branch Line are summarised in Table 2.37. A map showing the Project interface with the Millmerran Branch Line is provided in Appendix K.

Table 2.37 Structural details and operating restrictions for the Millmerran Branch Line

Component/restriction	Details
Rail	Short, welded rail (30 kg/m)
Sleepers	Mainly timber sleepers with some steel
Crossing loops	■ Pittsworth ■ Brookstead ■ Millmerran
Maximum allowable axle load	The maximum allowable axle load is 15.75 TAL.
Maximum allowable speed	The maximum allowable speed is 50 km/h to Brookstead then 30 km/h to Millmerran (when operational).
Maximum grade	The maximum grade (not compensated for horizontal alignment) that a westbound (up) train will encounter is 1 in 50 while for an eastbound (down) train the maximum grade is 1 in 50.

2.13.3 Rail Sidings and crossing loops

A siding is a low-speed section of track distinct from the main running line. A siding that connects to the main line at both ends is known as a loop.

A crossing loop is a location on a railway where trains travelling in opposite directions can pass each other. A crossing loop is double-ended and connected to the main track at both ends. Crossing loops are also sometimes referred to as passing loops.

The Project will utilise sections of existing rail corridor that accommodate two operational QR crossing loops and three operational sidings. These loops and sidings are located as follows along the Project alignment:

- South Western Line
 - Kurumbul – siding and crossing loop, Ch 6.1 km to Ch 7.0 km
 - Yelarbon – siding and crossing loop, Ch 26.1 km to Ch 27.0 km
- Millmerran Branch Line
 - Brookstead – siding, Ch 153.1 km.

2.13.4 Road-rail interfaces

Existing road-rail interfaces have been identified within the TIA study area, along the proposed construction routes. These have been identified in Table 2.38 and are shown in Appendix L.

Table 2.38 Existing public level crossings in traffic impact assessment study area

Existing level crossing description	Conflict with construction routes	Overlap with road-rail interface locations
State Government: Department of Transport and Main Roads		
Active level crossing on Barwon Highway (east of Toobeah)	Barwon Highway	-
Active level crossing on Barwon Highway (Goondiwindi)	Barwon Highway	-
Active level crossing on Cunningham Highway (Goondiwindi)	Cunningham Highway	-
Active level crossing on Cunningham Highway (Yelarbon)	Cunningham Highway	310-11-E-1
Active level crossing on Cunningham Highway (Whetstone)	Cunningham Highway	-
Passive level crossing on Gore Highway (Millmerran)	Gore Highway	-
Active level crossing on Gore Highway (east of Millmerran)	Gore Highway	-
Active level crossing on Gore Highway (Brookstead)	Gore Highway	-

Existing level crossing description	Conflict with construction routes	Overlap with road-rail interface locations
Active level crossing on Gore Highway (Pittsworth)	Gore Highway	-
Local Government: Goondiwindi Regional Council		
Passive level crossing on South Kurumbul Road	South Kurumbul Road	310-4-E-2
Passive level crossing on Suttons Road (East of Yelarbon)	Suttons Road	310-12-E-1
Passive level crossing on Coolmunda Dam Access Road (Coolmunda)	Coolmunda Dam Access Road	-
Local Government: Toowoomba Regional Council		
Passive level crossing on Hall Road (East of Millmerran)	Hall Road	-
Passive level crossing on Roche Road (West of Pittsworth)	Roche Road	-
Passive level crossing on Murlaggan Road (West of Pittsworth)	Murlaggan Road	-
Passive level crossing on Kahler Road (West of Pittsworth)	Kahler Road	-

2.14 Existing strategic airports and aviation facilities

The Toowoomba Wellcamp Airport is located adjacent to the Project alignment at approximate Ch 193.0 km and is an airport servicing Toowoomba, promoting interstate, intrastate and international connection for the Darling Downs, Granite Belt, Surat Basin and Southern Downs regions. At its closest point, the Project alignment is approximately 1 km and the Project footprint is approximately 865 m to the west of the northern limit of the runway. The Project footprint does not encroach on land within the current airport precinct and no significant changes to the road network surrounding the airport are proposed with the Project alignment. A map of the Project relative to existing strategic airport facilities is shown in Appendix M.

2.15 Existing port facilities

The Port of Brisbane is proposed to receive the non-resident workforce accommodation facility cabins with construction routes linking the Port of Brisbane to the two non-resident workforce accommodation facilities during pre-construction works (EIS Chapter 5: Project Description for further detail on status of non-resident workforce accommodation facilities). In addition, routes are proposed for transporting crops from a variety of farms to the port via road during track closures. The existing Port of Brisbane twenty-foot equivalent unit (TEU) data reported an average of 118,988 TEU/month from October 2018 to October 2022, with an all-time high of 149,416 TEU in August 2022 and a record low of 87,880 in March 2020 (CEIC Data, 2022). A map of the Project relative to existing port facilities is shown in Appendix N.

2.16 Active transport

The active transport overlap with the TIA study area has been considered through information provided by TRC, GRC and publicly available data. A summary of layers provided is included in Table 2.39.

Table 2.39 Active transport data sources

Source	Data	Appendix
Toowoomba Regional Council	■ Pathways and Cycleways	Appendix P
GRC	■ PSA Local Cycle Network ■ Bushland Trails	Appendix P
Queensland Globe	■ Principal Cycle Network Plan	Appendix O

2.16.1 Cycling

On-road cycleways that use roads within the TIA study area were identified through a review of data sourced from the Queensland Principal Cycle Network Plans (PCNP). The PCNP is a guide for future cycleway planning and presents the core routes that are required to increase cycling amongst the population.

There are several PCNP routes within Queensland that are within the TIA study area. These conflict points are summarised in Table 2.40 and are shown in Appendix O.

Table 2.40 Principal Cycle Network Plan within traffic impact assessment study area

Conflicts with construction routes	Conflicts with road-rail interface locations
State-Controlled Roads: Department of Transport and Main Roads	
Charlton Connection Road, between Toowoomba Connection Road and Toowoomba-Cecil Plains Road	-
Gateway Motorway, between Logan Motorway and Compton Road	-
Gateway Motorway, between Logan Road and Port of Brisbane Motorway	-
Ipswich Motorway, between Logan Motorway and Warrego Highway	-
Logan Motorway, between Ipswich Motorway and Gateway Motorway	-
Toowoomba-Athol Road, between Harrow Street and Ferguson Road	-
Toowoomba Bypass, between Toowoomba-Cecil Plains Road and Mort Street	-
Toowoomba-Cecil Plains Road, between Hanrahan Road and McDougall Street	-
Toowoomba Connection Road, between Charlton Connection Road and Toowoomba Bypass	-
Warrego Highway, between Mount Crosby Road and Wulkuraka Connection Road	-
Warrego Highway, between Toowoomba Bypass and Kingsthorpe-Haden Road (Charlton/Gowrie Mountain)	310-56-P-2
Local Government: Toowoomba Regional Council	
Drayton-Wellcamp Road, between Deuble Road and Euston Road	-
Gap Road, between Grevillea Street and 250 m west of Wattle Street	-
Kingsthorpe Haden Road, between Warrego Highway and Kingsthorpe Overpass	-
McDougall Street, between Toowoomba-Cecil Plains Road and Hursley Road	-
Omara Road, between Toowoomba-Athol Road and Warrego Highway	-

In addition to the PCNP, TRC provided their local cycle network, which includes an overlap with construction routes on Alderley Street, between Gore Highway and the Boral/Wagner concrete facilities.

It is noted that the proposed rail alignment only interfaces with the cycle network in one location along the Warrego Highway west of Toowoomba. This location does not have existing cycle facilities and is noted as Priority D (lowest priority classification) in the PCNP.

2.16.2 Walking

A number of the proposed construction routes currently traverse through areas of moderate to high pedestrian activity through Toowoomba, Millmerran, Inglewood and Yelarbon. The roads in these areas already currently facilitate a high proportion of HV movements.

The pathway network for Goondiwindi Region has been provided by GRC for the purpose of the Project. This pathway network is adjacent to roads used by construction routes through Yelarbon and Inglewood, in the following locations:

- Gore Highway through Yelarbon, between Wyemo Street and Wondalli Street

- Gore Highway through Inglewood, between Macintyre Brook and Inglewood Multipurpose Health Service
- Elizabeth Street through Inglewood, between Gore Highway and Great Road Street.

Bushland trails data from TRC has been noted as not interfacing with the TIA study area.

It was noted that no existing pathway networks cross the proposed rail alignment.

Pedestrian paths are currently provided at some active and passive level crossing locations on the alignment, which have been considered in the design treatments proposed at these locations.

2.17 Parking

An initial assessment of workforce demand and safe commutable distances has identified a potential need for two non-resident workforce accommodation facilities in the vicinity of Yelarbon, Inglewood and one based in Millmerran. While parking at these facilities will be completely contained within the site, there are possibilities of workforce travelling to town outside of work hours for personal uses including shopping, medical or other activities. This may have an impact on local parking availability in the towns of Yelarbon, Inglewood and Millmerran, particularly nearby to restaurants, taverns and shopping. These facilities generally have parking availability either on their properties or along the local roads, which should be sufficient to accommodate off-duty workers accessing these locations.

2.18 Pavement

A preliminary desktop pavement impact assessment has been undertaken based on the existing background traffic data available for road links impacted by proposed construction traffic. The PIA is consistent with the updated 2018 GTIA that supersedes the ToR.

The PIA is based on standard axle repetitions for HVs using the road network and considers pavement type, background traffic and Project traffic loadings. SAR is a unit measurement which converts the wheel loads of traffic to an equivalent number of standard axle loads and is usually expressed in terms of the equivalent number of 80 kilo-Newtons (kN) single axle load.

Table 2.41 provides a summary of existing pavement impact along all road links, including the existing HV volumes and SAR4 (SAR with a load damage exponent of 4) calculated. As per GTIA, the SAR4/HV should be adopted as 2.9 on the Bruce Highway and 3.2 on all other roads. This has been adopted for the purposes of this assessment, with 3.2 adopted for all local roads.

Table 2.41 Existing heavy vehicle volumes and standard axle repetitions on road links

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
State-Controlled Roads: Department of Transport and Main Roads					
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	105,090	79,338	336,287	253,881
	Ch 0.8 km to Ch 2.0 km	105,090	79,338	336,287	253,881
	Ch 2.0 km to Ch 45.9 km	31,443	31,803	100,618	101,770
	Ch 45.9 km to Ch 88.0 km	31,443	31,803	100,618	101,770
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	10,220	12,409	32,703	39,707
	Ch 1.6 km to Ch 66.8 km	10,220	12,409	32,703	39,707
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	12,044	10,950	38,540	35,041
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	267,600	283,002	856,321	905,606
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	132,368	153,791	423,579	492,130
	Ch 96.2 km to Ch 97.5 km	132,368	153,791	423,579	492,130
	Ch 97.5 km to Ch 105.7 km	132,368	153,791	423,579	492,130
	Ch 105.7 km to Ch 107.4 km	132,368	153,791	423,579	492,130
	Ch 107.4 km to Ch 107.6 km	282,857	202,330	905,141	647,455
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	131,225	136,503	419,921	436,811
	Ch 2.0 km to Ch 3.9 km	131,225	136,503	419,921	436,811
	Ch 3.9 km to Ch 10.2 km	131,225	136,503	419,921	436,811
	Ch 10.2 km to Ch 13.9 km	131,225	136,503	419,921	436,811
	Ch 13.9 km to Ch 18.5 km	131,225	136,503	419,921	436,811
	Ch 18.5 km to Ch 27.1 km	131,225	136,503	419,921	436,811
	Ch 27.1 km to Ch 29.3 km	131,225	136,503	419,921	436,811
	Ch 29.3 km to Ch 34.7 km	131,225	136,503	419,921	436,811
	Ch 34.7 km to Ch 39.6 km	131,225	136,503	419,921	436,811
	Ch 39.6 km to Ch 40.3 km	131,225	136,503	419,921	436,811
	Ch 40.3 km to Ch 40.5 km	131,225	136,503	419,921	436,811

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
	Ch 40.5 km to Ch 43.9 km	131,225	136,503	419,921	436,811
	Ch 43.9 km to Ch 46.3 km	131,225	136,503	419,921	436,811
	Ch 46.3 km to Ch 88.0 km	131,225	136,503	419,921	436,811
	Ch 88.0 km to Ch 88.2 km	338,794	350,471	1,084,142	1,121,507
	Ch 88.2 km to Ch 90.0 km	338,794	350,471	1,084,142	1,121,507
Gateway Motorway (N239)	Ch 0.0 km to Ch 15 km	4,357,448	5,740,463	13,943,834	18,369,481
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10 km	270,201	106,772	864,644	341,669
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	253,034	258,654	809,709	827,693
	Ch 2.2 km to Ch 5.4 km	253,034	258,654	809,709	827,693
	Ch 5.4 km to Ch 6.7 km	253,034	258,654	809,709	827,693
	Ch 6.7 km to Ch 7.7 km	253,034	258,654	809,709	827,693
	Ch 7.7 km to Ch 11.2 km	253,034	258,654	809,709	827,693
	Ch 11.2 km to Ch 15.3 km	253,034	258,654	809,709	827,693
	Ch 15.3 km to Ch 17.5 km	253,034	258,654	809,709	827,693
	Ch 17.5 km to Ch 19.0 km	253,034	258,654	809,709	827,693
	Ch 19.0 km to Ch 20.3 km	253,034	258,654	809,709	827,693
	Ch 20.3 km to Ch 21.5 km	171,856	159,432	549,938	510,182
	Ch 21.5 km to Ch 23.2 km	171,856	159,432	549,938	510,182
	Ch 23.2 km to Ch 25.0 km	171,856	159,432	549,938	510,182
	Ch 25.0 km to Ch 30.1 km	171,856	159,432	549,938	510,182
	Ch 30.1 km to Ch 38.7 km	171,856	159,432	549,938	510,182
	Ch 38.7 km to Ch 41.1 km	171,856	159,432	549,938	510,182
	Ch 41.1 km to Ch 41.7 km	171,856	159,432	549,938	510,182
	Ch 41.7 km to Ch 43.2 km	171,856	159,432	549,938	510,182
	Ch 43.2 km to Ch 44.7 km	171,856	159,432	549,938	510,182
	Ch 44.7 km to Ch 47.6 km	171,856	159,432	549,938	510,182

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
	Ch 47.6 km to Ch 52.2 km	171,856	159,432	549,938	510,182
	Ch 52.2 km to Ch 53.3 km	171,856	159,432	549,938	510,182
	Ch 53.3 km to Ch 60.8 km	171,856	159,432	549,938	510,182
	Ch 60.8 km to Ch 63.0 km	171,856	159,432	549,938	510,182
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	147,905	153,167	473,297	490,133
	Ch 0.7 km to Ch 0.8 km	147,905	153,167	473,297	490,133
	Ch 0.8 km to Ch 1.4 km	147,905	153,167	473,297	490,133
	Ch 1.4 km to Ch 3.0 km	147,905	153,167	473,297	490,133
	Ch 3.0 km to Ch 13.0 km	147,905	153,167	473,297	490,133
	Ch 13.0 km to Ch 121.6 km	147,905	153,167	473,297	490,133
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	2,282,680	1,905,828	7,304,575	6,098,648
	Ch 3.7 km to Ch 6.4 km	2,129,743	1,808,243	6,815,178	5,786,377
	Ch 6.4 km to Ch 8.3 km	2,418,333	1,925,581	7,738,665	6,161,860
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	183,185	174,050	586,193	556,961
	Ch 220.1 km to Ch 222.4 km	184,462	175,263	590,279	560,843
	Ch 222.4 km to Ch 224.1 km	184,462	175,263	590,279	560,843
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	270,201	106,772	864,644	341,669
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	44,234	60,029	141,549	192,093
	Ch 2.5 km to Ch 3.5 km	44,234	60,029	141,549	192,093
	Ch 3.5 km to Ch 6.2 km	42,764	41,367	136,844	132,375
	Ch 6.2 km to Ch 9.0 km	42,764	41,367	136,844	132,375
	Ch 9.0 km to Ch 13.1 km	42,764	41,367	136,844	132,375
	Ch 13.1 km to Ch 14.0 km	42,764	41,367	136,844	132,375
	Ch 14.0 km to Ch 17.3 km	42,764	41,367	136,844	132,375
	Ch 17.3 km to Ch 18.1 km	42,764	41,367	136,844	132,375
	Ch 18.1 km to Ch 21.8 km	42,764	41,367	136,844	132,375

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
	Ch 21.8 km to Ch 28.0 km	42,764	41,367	136,844	132,375
	Ch 28.0 km to Ch 33.0 km	42,764	41,367	136,844	132,375
	Ch 33.0 km to Ch 35.6 km	42,764	41,367	136,844	132,375
	Ch 35.6 km to Ch 37.7 km	42,764	41,367	136,844	132,375
	Ch 37.7 km to Ch 39.8 km	42,764	41,367	136,844	132,375
	Ch 39.8 km to Ch 41.9 km	25,179	22,194	80,574	71,022
	Ch 41.9 km to Ch 45.9 km	25,179	22,194	80,574	71,022
	Ch 45.9 km to Ch 47.6 km	25,179	22,194	80,574	71,022
	Ch 47.6 km to Ch 53.3 km	25,179	22,194	80,574	71,022
	Ch 53.3 km to Ch 55.7 km	25,179	22,194	80,574	71,022
	Ch 55.7 km to Ch 56.6 km	25,179	22,194	80,574	71,022
	Ch 56.6 km to Ch 59.2 km	25,179	22,194	80,574	71,022
	Ch 59.2 km to Ch 61.0 km	25,179	22,194	80,574	71,022
	Ch 61.0 km to Ch 65.7 km	25,179	22,194	80,574	71,022
	Ch 65.7 km to Ch 68.7 km	25,179	22,194	80,574	71,022
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	8,850	11,524	28,319	36,876
	Ch 2.0 km to Ch 2.2 km	8,850	11,524	28,319	36,876
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	943,964	1,053,832	3,020,684	3,372,262
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	943,964	1,053,832	3,020,684	3,372,262
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	10,209	10,699	32,670	34,236
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	73,715	87,634	235,889	280,427
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	352,563	288,751	1,128,203	924,004
	Ch 6.0 km to Ch 6.4 km	87,958	155,104	281,465	496,333
	Ch 6.4 km to Ch 8.3 km	87,958	155,104	281,465	496,333
	Ch 8.3 km to Ch 9.2 km	87,958	155,104	281,465	496,333
	Ch 9.2 km to Ch 10.0 km	113,355	140,614	362,735	449,966

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
	Ch 10.0 km to Ch 10.1 km	113,355	140,614	362,735	449,966
	Ch 10.1 km to Ch 10.3 km	113,355	140,614	362,735	449,966
	Ch 10.3 km to Ch 12.1 km	113,355	140,614	362,735	449,966
	Ch 12.1 km to Ch 14.5 km	113,355	140,614	362,735	449,966
	Ch 14.5 km to Ch 16.3 km	95,970	92,258	307,103	295,226
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	438,666	342,674	1,403,732	1,096,558
	Ch 26.9 km to Ch 27.1 km	438,666	342,674	1,403,732	1,096,558
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	378,969	310,568	1,212,701	993,818
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	378,969	310,568	1,212,701	993,818
	Ch 0.6 km to Ch 3.2 km	378,969	310,568	1,212,701	993,818
	Ch 3.2 km to Ch 4.1 km	378,969	310,568	1,212,701	993,818
	Ch 4.1 km to Ch 13.0 km	378,969	310,568	1,212,701	993,818
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	N/a	310,568	N/a	993,818
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	378,969	N/a	1,212,701	N/a
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	378,969	N/a	1,212,701	N/a
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	N/a	310,568	N/a	993,818
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	N/a	310,568	N/a	993,818
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	378,969	N/a	1,212,701	N/a
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	1,628,169	1,474,667	5,210,141	4,718,934
	Ch 7.2 km to Ch 15.1 km	1,628,169	1,474,667	5,210,141	4,718,934
	Ch 15.1 km to Ch 18.9 km	1,213,045	924,064	3,881,745	2,957,004
	Ch 18.9 km to Ch 28.9 km	1,014,392	853,910	3,246,055	2,732,512
	Ch 28.9 km to Ch 36.6 km	1,502,177	1,673,807	4,806,965	5,356,183
	Ch 36.6 km to Ch 55.5 km	889,025	972,046	2,844,878	3,110,547
	Ch 55.5 km to Ch 75.4 km	889,025	972,046	2,844,878	3,110,547
	Ch 75.4 km to Ch 79.6 km	826,591	780,679	2,645,090	2,498,174

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	517,742	479,467	1,656,773	1,534,295
	Ch 0.4 km to Ch 1.5 km	517,742	479,467	1,656,773	1,534,295
	Ch 1.5 km to Ch 2.4 km	517,742	479,467	1,656,773	1,534,295
	Ch 2.4 km to Ch 4.5 km	545,740	561,571	1,746,367	1,797,026
	Ch 4.5 km to Ch 5.0 km	545,740	561,571	1,746,367	1,797,026
	Ch 5.0 km to Ch 5.3 km	545,740	561,571	1,746,367	1,797,026
	Ch 5.3 km to Ch 6.2 km	545,740	561,571	1,746,367	1,797,026
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	6,643	N/a	21,258	N/a
State-Controlled Roads: Transport for New South Wales					
Newell Highway	River Road to Queensland/NSW Border	469,951	251,860	1,503,844	805,952
Local Government Roads: Balonne Shire Council					
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	4,745	2,920	15,184	9,343
Local Government Roads: Goondiwindi Regional Council					
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	730	730	2,336	2,336
Bybera Road	Cunningham Highway to B2G-LDN060.4	1,093	1,093	3,498	3,498
	B2G-LDN060.4 to Earthworks Area 2A	1,093	1,093	3,498	3,498
Cemetery Road	Access Track to Moorroobie Lane	26,986	26,986	86,355	86,355
	Cunningham Highway to GrainCorp Goondiwindi	5,829	5,829	18,653	18,653
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	3,607	3,607	11,543	11,543
	Coolmunda Dam Access to Cunningham Highway	3,607	3,607	11,543	11,543
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	8,182	8,182	26,184	26,184
	B2G-LDN055.4 to B2G-LDN054.2	8,182	8,182	26,184	26,184
	Cunningham Highway to B2G-LDN052.8	8,182	8,182	26,184	26,184
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	847	1,185	2,709	3,793
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	1,174	1,781	3,757	5,700

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	1,102	1,102	3,526	3,526
	NS2B-LDN033.2 to NS2B-LDN035.6	1,102	1,102	3,526	3,526
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	336	336	1,076	1,076
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	1,243	1,243	3,979	3,979
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	243	588	777	1,881
Hunt Street	Leichhardt Highway to Boodle Street	730	730	2,336	2,336
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	33,104	29,548	105,933	94,554
	NS2B-LDN031.0 to South Kurumbul Road	33,104	29,548	105,933	94,554
	South Kurumbul Road to Cunningham Highway	33,104	1,609	105,933	5,148
	Cunningham Highway to Eukabilla Road	33,104	29,548	105,933	94,554
McDougalls Road	B2G-LDN049.8 to McDougalls Road	336	420	1,076	1,345
	McDougalls Road to Cunningham Highway	336	420	1,076	1,345
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	3,951	3,951	12,642	12,642
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	3,951	3,951	12,642	12,642
	Mooroobie Lane to Wondalli Kurumbul Road	3,951	3,951	12,642	12,642
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	798	798	2,554	2,554
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	245	245	783	783
Silo Street	Barwon Highway to GrainCorp Talwood	6,145	4,779	19,664	15,291
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	6,530	6,195	20,895	19,824
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	4,318	4,318	13,818	13,818
Springborg Road	Cunningham highway to B2G-LDN037.6	215	215	688	688
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	1,058	1,658	3,385	5,307
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	168	168	538	538
	B2G-LDN067.6 to Millmerran-Inglewood Road	168	168	538	538
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	18,418	18,418	58,937	58,937
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	755	1,840	2,416	5,889

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorroobie Lane	574	345	1,837	1,103
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	678	678	2,169	2,169
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	730	730	2,336	2,336
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	1,693	1,609	5,419	5,148
	B2G-LDN006.3 to Wondalli Kurumbul Road	1,693	1,609	5,419	5,148
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	1,693	1,609	5,419	5,148
	Yelarbon Kurumbul Road to B2G-LDN020.3	1,693	1,609	5,419	5,148
	B2G-LDN020.3 to B2G-LDN025.9	1,693	1,609	5,419	5,148
	B2G-LDN025.9 to Cunningham Highway	1,693	1,609	5,419	5,148
Local Government Roads: Moree Plains Shire Council					
Boggabilla Weir Access	River Road to Boggabilla Weir	730	730	2,336	2,336
River Road	Newell Highway to Boggabilla Weir Access	730	730	2,336	2,336
Local Government Roads: Toowoomba Regional Council					
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	208,337	208,337	666,677	666,677
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	146,289	146,289	468,126	468,126
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	371,490	701,461	1,188,768	2,244,676
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	6,508	5,191	20,826	16,611
	B2G-LDN188.2 to Gore Highway	6,508	5,191	20,826	16,611
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	2,518	3,390	8,058	10,847
Blackwell Road	Gore Highway to Millmerran Quarry	168	252	538	807
	Millmerran Quarry to B2G-LDN120.2	168	252	538	807
	B2G-LDN120.2 to Millmerran-Inglewood Road	168	84	538	269
Bligh Street	Six Mile Road to Boral Concrete Millmerran	883	883	2,825	2,825
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	7,324	4,481	23,438	14,339
	Brimblecombe Road to WL 194467R	7,324	4,481	23,438	14,339
Bushy Lane	B2G-LDN183.0 to Gore Highway	775	775	2,479	2,479

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	29,007	29,007	92,823	92,823
	Saleyards Road to Gore Highway	34,893	35,061	111,657	112,195
Chamberlain Road	Warrego Highway to B2G-LDN204.2	730	730	2,336	2,336
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	420	673	1,345	2,152
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	81	73	258	234
Dieckmann Road	B2G-LDN150.5 to Gore Highway	730	730	2,336	2,336
Draper Road	Steger Road to B2G-FBW206.9	757	790	2,423	2,529
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	96,798	96,798	309,753	309,753
	Access Track to Greenwattle Street	96,798	96,798	309,753	309,753
Florence Street	Gore Highway to West Street	2,421	2,421	7,746	7,746
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	2,436	3,204	7,796	10,254
Gap Road	Gore Highway to Grevillea Street	24,948	29,674	79,832	94,956
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	1,524	1,524	4,876	4,876
Gilgai Lane	B2G-LDN144.6 to Gore Highway	1,242	2,277	3,974	7,286
Grevillea Street	Boral Concrete Pittsworth to Gap Road	23,569	23,569	75,420	75,420
Hall Road	B2G-LDN139.0 to Gore Highway	199	478	637	1,529
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	2,438	2,102	7,803	6,726
	B2G-LDN116.0 to Millmerran-Inglewood Road	2,438	2,102	7,803	6,726
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	730	730	2,336	2,336
Kahler Road	Murlaggan Road to B2G-LDN165.6	72	72	229	229
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	48,191	0	154,210	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	45,479	0	145,533
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	3,615	3,784	11,569	12,107
	Millmerran-Inglewood Road to Commodore Mine	84	84	269	269

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Leesons Road	Warrego Highway to Steger Road	1,782	1,472	5,702	4,711
	Steger Road to B2G-LDN206.3	1,782	1,472	5,702	4,711
Linthorpe Road	Gore Highway to B2G-LDN175.5	542	930	1,735	2,975
Linthorpe Valley Road	Geitz Road to Gore Highway	4,673	5,278	14,954	16,891
Lochaber Road	Gore Highway to B2G-LDN172.0	3,874	4,455	12,396	14,256
	B2G-LDN172.0 to B2G-LDN172.6	3,874	4,455	12,396	14,256
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	222,464	222,464	711,884	711,884
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	1,850	1,177	5,919	3,767
	B2G-LDN112.1 to Millwood Road	1,850	1,177	5,919	3,767
	Millwood Road to Koorongarra Road	84	0	269	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	15,166	15,166	48,531	48,531
Murlaggan Road	B2G-LDN164.3 to Kahler Road	5,268	4,571	16,859	14,628
	Kahler Road to Gore Highway	5,268	4,571	16,859	14,628
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	52,103	49,004	166,731	156,813
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	163,399	125,900	522,877	402,880
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	12,191	13,957	39,013	44,663
	B2G-LDN128.2 to B2G-LDN130.0	12,191	13,957	39,013	44,663
	B2G-LDN130.0 to Millmerran-Inglewood Road	12,191	13,957	39,013	44,663
Paint Mine Road	Gore Highway to B2G-LDN173.5	1,583	745	5,066	2,384
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	3,575	3,775	11,440	12,080
Quarry Road Access	Tummalville Road to Quarry	232	232	744	744
Saleyards Road	Campbell Street to Gore Highway	25,629	16,874	82,014	53,996
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	730	730	2,336	2,336
	B2G-LDN123.6 to B2G-LDN123.8	730	730	2,336	2,336
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	21,616	21,616	69,171	69,171

Road name	Road section	Existing HV volumes		Existing SAR4s	
		G/NB/EB	AG/SB/WB	G/NB/EB	AG/SB/WB
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	66,630	60,974	213,217	195,118
	New Hope Recycled Water Pipeline to Draper Road	66,630	60,974	213,217	195,118
	Draper Road to Leasons Road	66,630	60,974	213,217	195,118
Tummaville Road	Access Track to Gore Highway	7,360	7,651	23,553	24,483
Turallin Road	Gore Highway to the Turallin Facility	6,201	13,453	19,843	43,048
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	10,555	10,081	33,776	32,258
	B2G-LDN153.1 to Gore Highway	10,555	10,081	33,776	32,258
	Gore Highway to B2G-LDN150.9	5,258	4,309	16,825	13,789
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	54,999	54,999	175,995	175,995
West Street	Gore Highway to Florence Street	9,092	9,092	29,094	29,094
	Florence Street to Six Mile Road	883	883	2,825	2,825
Yarranlea Road	Gore Highway to B2G-LDN161.0	6,489	4,261	20,764	13,636
	B2G-LDN161.0 to Desmonds Lane	6,489	4,261	20,764	13,636

2.19 Emergency services

Emergency services within the vicinity of the TIA study area have been identified and summarised in Table 2.42. This includes a summary of stations for the QPS, Queensland Ambulance Services (QAS) and QFES, including the address and contact details for each station based on publicly available information for the relevant service's website. The emergency service locations are provided in map form in Appendix Q.

Table 2.42 Emergency service locations

Emergency service	Township	Address	Contact details
Balonne Shire Council			
Police stations	Thallon	Pine Street, Thallon, 4497	(07) 4622 9725
Fire stations	St George	37 Henry Street, St George, 4487	(07) 4625 3070
Goondiwindi Regional Council			
Police stations	North Talwood	22 Main Street, North Talwood, 4496	(07) 4622 9720
	Goondiwindi	Herbert Street, Goondiwindi, 4390	(07) 4671 7777
	Yelarbon	Burrell Street and Wyemo Street, Yelarbon, 4388	(07) 4667 6828
	Inglewood	31 Albert Street, Inglewood, 4387	(07) 4667 6800
Ambulance stations	Goondiwindi	183 Marshall Street, Goondiwindi 4390	(07) 4698 5916
	Inglewood	32 Albert Street, Inglewood 4387	(07) 4698 5916
Fire stations	Goondiwindi	173 Marshall Street, Goondiwindi 4390	(07) 4676 6002
	Yelarbon	32 Taloom Street, Yelarbon 4388	(07) 4675 1220
	Inglewood	32 Albert Street, Inglewood 4387	(07) 4652 1265
Toowoomba Regional Council			
Police stations	Millmerran	26 Walpole Street, Millmerran, 4357	(07) 4671 7888
	Pittsworth	Yandilla Street, Pittsworth, 4356	(07) 4631 6929
	Drayton	35 Brisbane Street, Drayton, 4350	(07) 4631 6977
	Toowoomba	161 Hume Street, Toowoomba City, 4350	(07) 4631 6333
Ambulance stations	Millmerran	2 Gillespie Street, Millmerran 4357	(07) 4616 1521
	Pittsworth	37 Helens Street, Pittsworth 4356	(07) 4698 5916
	Toowoomba	168 Herries Street, Toowoomba City 4350	(07) 4616 1550
Fire stations	Millmerran	2 Attleigh Street, Millmerran 4357	(07) 4695 1141
	Pittsworth	5 Krinke Street, Pittsworth 4356	(07) 4693 2985
	South Toowoomba	201 Anzac Avenue, Toowoomba 4350	(07) 4698 5000
	Charlton	17 Steger Road Charlton, 4350	(07) 4592 5399
	Toowoomba	11 Kitchener Street, Toowoomba 4350	(07) 4698 5830

2.19.1 Goondiwindi Regional Council

Consultation was undertaken with GRC's Disaster Management and Operational Support Manager in July 2022 to understand the council's evacuation routes and centres/assembly points. Table 2.43 provides a summary of information provided by council regarding their evacuation centres.

Table 2.43 Goondiwindi Regional Council evacuation centres

Evacuation centre	Address	Notes
Goondiwindi Evacuation Centre	Goondiwindi Showgrounds, 323 Boundary Road, Goondiwindi	Advertised to the public as the primary evacuation centre site
Inglewood Assembly Point	Inglewood Landfill Facility, off Inglewood-Texas Road, Inglewood	This is a new site to that used in Nov-Dec flood event 2021. Communication campaigns will commence in the near future to educate the community of the new site/ location specifics.
Texas Evacuation Centre	Texas Sport Complex, off Middleton Street, Texas	Advertised to the public as the primary evacuation centre site

Council noted that due to the terrain and nature of the region most flooding is caused more by riverine flooding than flash flooding and as a result of this most centres can be completely isolated by road for periods during floods. Although the State road network is very important for access at all times, part of the Kildonan Road and the Yelarbon Kurumbul Road also provide an important access route to Goondiwindi at times during floods.

It was also noted that some people in rural areas do have arrangements to get access through adjoining properties during times of flooding but Council isn't aware of these particular arrangements.

Disaster response operations are managed by the GRC Local Disaster Management Group (LDMG), who coordinate multi-agency response for a declared disaster event. Council is the lead agency for flood events, however, for other hazards other State agencies are identified as the lead (e.g. QFES – bushfire, Queensland Health – pandemics). The LDMG comprises of representatives from QFES, QPS, Darling Downs Health, QAS, Sunwater, Department of Communities, Housing and Digital Economy and GRC.

2.19.2 Toowoomba Regional Council

Consultation was undertaken with TRC's Principal Disaster Management in early July 2022 to better understand the council's evacuation routes and centres.

Evacuation routes in Toowoomba Region are not simple to identify due to the variability of factors that impact on decision making when conducting an evacuation. In the planning stage, there are 32 potential evacuation centres identified across the region. The routes between an at risk community and a chosen centre changes depending on the hazard and impacts on the road network. For example, a majority of the region is subject to flash flooding with little to no warning, therefore if there's a need for evacuation, a centre would be chosen with the least amount of travel required or if there's no centre suitable in a close proximity to the evacuation area, a centre would be chosen based on a route that is less likely to be inundated (e.g. highways and arterial roads). Conversely, if the evacuation is recommended due to risk from a bushfire, the road network is less impacted, and more routes are safer to travel on. Another point to be considered is not only the evacuation route for the evacuees but also the route for the resources being sent to support the activation of the evacuation centres from the main urban centres (e.g. Toowoomba).

A review of the Project alignment has identified areas where the rail corridor may affect the ability to evacuate to the most likely safer destination. This is summarised in Table 2.44.

Table 2.44 Toowoomba Regional Council evacuation centres

Locality	Evacuation centres	Notes
Millmerran, Pampas and surrounding localities	Three potential centres based in the Millmerran township	Riverine flooding cuts the Gore Highway at Centenary Bridge (Condamine River) and surrounding lower-level roads, localities to the east of this would need to be directed to potential centres back towards Toowoomba.
Brookstead	One potential centre	Residents would not likely need to use Gore Highway to access potential evacuation centre.
Pittsworth	Two potential centres in township	Access is not impeded by Gore Highway traffic control, for evacuees from areas to the east and south. There may be difficulties for residents from the north.

Locality	Evacuation centres	Notes
Southbrook	Nil centres	Would need to evacuate to Pittsworth or Toowoomba. This could need further planning depending on traffic control in place or hazard type.
Wellcamp	Nil centres	Would need to evacuate to Toowoomba- ample work around to western side.
Gowrie Junction	One centre	Less likely to require evacuating further afield.
Gowrie Mountain	Nil centres	Impact to Warrego Highway might have impact on any evacuations from western localities into Toowoomba.

TRC has indicated that most of the potential issues could be circumnavigated with open, two-way communication. It would be beneficial to link ARTC into the LDMG and ensure that any notifications being distributed to the members before and during a disaster response are sent to the nominated representative. This would also provide the opportunity for sharing information from ARTC to the various emergency services who sit in the LDMG. It would be beneficial for both sides in the event, particularly for evacuations, to ensure timely and accurate intelligence for decision making (whether a smaller scale emergency such as a hazardous material incident or broader disaster such as a flood or bushfire) on where to send people, where to activate a centre if required and the recommended evacuation route for the evacuees to travel to be included in any Emergency Alert campaigns or other public information and warnings.

2.20 Transport infrastructure

2.20.1 Load restricted bridges/restricted waterway crossings

Table 2.45 lists identified potential construction traffic access restrictions. As this list is based on a desktop study it may not be exhaustive. This does not consider the culverts and bridges used on the SCR network as these are located along HV routes, with higher tolerances.

Table 2.45 Potential construction traffic restrictions

Name/location	Restriction	Comment
Goondiwindi Regional Council		
Mooroobie Lane	Creek crossing/potential floodway	Mooroobie Lane is used to access Cemetery Road Borrow Site and Mooroobie Lane Borrow Site
McDougalls Crossing	Creek crossing/potential load limited crossing structure	Crossing structure over Macintyre Brook potentially unsuitable for construction traffic
Cremascos Road	Creek crossing/potential load limited crossing structure	Crossing structure over Macintyre Brook potentially unsuitable for construction traffic
Bybera Road	Creek crossing/potential load limited crossing structure	Crossing structure over Macintyre Brook potentially unsuitable for construction traffic
Lovell's Crossing	Creek crossing/potential load limited crossing structure	Crossing structure over Macintyre Brook potentially unsuitable for construction traffic
Grays Road	Creek crossing/potential load limited crossing structure	Crossing structure over Canning Creek potentially unsuitable for construction traffic Grays Road is used to access Mosquito Road Borrow Site

2.20.2 Heavy vehicle routes and restrictions

Heavy vehicle route restrictions have been considered in the development of construction routes, in order to prioritise use of roads which are designed to a higher standard and are better suited to accommodate larger construction vehicles. This considered, often the first and last mile to material providers or laydown areas occur on local government roads with limited design for heavy or OSOM vehicles. Where use of roads deviates from defined routes allowing the design vehicle, consultation and agreement will be required with the road authority.

Table 2.47 provides a summary of HV routes and restrictions along the construction routes. Heavy vehicle route restrictions abbreviations are defined in Table 2.46. These HV routes are provided in Appendix R.

Table 2.46 Heavy vehicle routes and restrictions abbreviations

Heavy vehicle route restrictions	Description
B23	B-double vehicles up to 23 m
B25	B-double vehicles up to 25 m
RT1	Road train type 1
RT1	Road train type 2
HML	Higher mass limits vehicles
P2B	Performance-based standards scheme
1TMT	1 Tonne Tri-Axle Mass Transfer Allowance

Table 2.47 Heavy vehicle routes and restrictions along construction routes

Road name	Road section	Heavy vehicle routes and restrictions
State-Controlled Roads: Department of Transport and Main Roads		
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	1TMT, HML, RT1
	Ch 0.8 km to Ch 2.0 km	1TMT, HML, RT1
	Ch 2.0 km to Ch 45.9 km	RT1
	Ch 45.9 km to Ch 88.0 km	RT1
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	RT1
	Ch 1.6 km to Ch 66.8 km	RT1
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	1TMT, HML, RT1
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	1TMT, HML, RT1
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	RT1
	Ch 96.2 km to Ch 97.5 km	RT1
	Ch 97.5 km to Ch 105.7 km	RT1
	Ch 105.7 km to Ch 107.4 km	RT1
	Ch 107.4 km to Ch 107.6 km	RT1
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	RT1
	Ch 2.0 km to Ch 3.9 km	RT1
	Ch 3.9 km to Ch 10.2 km	RT1
	Ch 10.2 km to Ch 13.9 km	RT1
	Ch 13.9 km to Ch 18.5 km	RT1
	Ch 18.5 km to Ch 27.1 km	RT1
	Ch 27.1 km to Ch 29.3 km	RT1
	Ch 29.3 km to Ch 34.7 km	RT1

Road name	Road section	Heavy vehicle routes and restrictions
	Ch 34.7 km to Ch 39.6 km	RT1
	Ch 39.6 km to Ch 40.3 km	RT1
	Ch 40.3 km to Ch 40.5 km	RT1
	Ch 40.5 km to Ch 43.9 km	RT1
	Ch 43.9 km to Ch 46.3 km	RT1
	Ch 46.3 km to Ch 88.0 km	RT1
	Ch 88.0 km to Ch 88.2 km	RT1
	Ch 88.2 km to Ch 90.0 km	RT1
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	P2B, 1TMT, HML, B25
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	P2B, 1TMT, HML, B25
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	1TMT, HML, RT1
	Ch 2.2 km to Ch 5.4 km	1TMT, HML, RT1
	Ch 5.4 km to Ch 6.7 km	1TMT, HML, RT1
	Ch 6.7 km to Ch 7.7 km	1TMT, HML, RT1
	Ch 7.7 km to Ch 11.2 km	1TMT, HML, RT1
	Ch 11.2 km to Ch 15.3 km	1TMT, HML, RT1
	Ch 15.3 km to Ch 17.5 km	1TMT, HML, RT1
	Ch 17.5 km to Ch 19.0 km	1TMT, HML, RT1
	Ch 19.0 km to Ch 20.3 km	1TMT, HML, RT1
	Ch 20.3 km to Ch 21.5 km	1TMT, HML, RT1
	Ch 21.5 km to Ch 23.2 km	1TMT, HML, RT1
	Ch 23.2 km to Ch 25.0 km	1TMT, HML, RT1
	Ch 25.0 km to Ch 30.1 km	1TMT, HML, RT1
	Ch 30.1 km to Ch 38.7 km	1TMT, HML, RT1
	Ch 38.7 km to Ch 41.1 km	1TMT, HML, RT1
	Ch 41.1 km to Ch 41.7 km	1TMT, HML, RT1
	Ch 41.7 km to Ch 43.2 km	1TMT, HML, RT1
	Ch 43.2 km to Ch 44.7 km	1TMT, HML, RT1
	Ch 44.7 km to Ch 47.6 km	1TMT, HML, RT1
	Ch 47.6 km to Ch 52.2 km	1TMT, HML, RT1
	Ch 52.2 km to Ch 53.3 km	1TMT, HML, RT1
	Ch 53.3 km to Ch 60.8 km	1TMT, HML, RT1
	Ch 60.8 km to Ch 63.0 km	1TMT, HML, RT1
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	1TMT, HML, RT1
	Ch 0.7 km to Ch 0.8 km	1TMT, HML, RT1
	Ch 0.8 km to Ch 1.4 km	1TMT, HML, RT1
	Ch 1.4 km to Ch 3.0 km	1TMT, HML, RT1
	Ch 3.0 km to Ch 13.0 km	1TMT, HML, RT1
	Ch 13.0 km to Ch 121.6 km	1TMT, HML, RT1
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	P2B, 1TMT, HML, B25
	Ch 3.7 km to Ch 6.4 km	P2B, 1TMT, HML, B25

Road name	Road section	Heavy vehicle routes and restrictions
	Ch 6.4 km to Ch 8.3 km	P2B, 1TMT, HML, B25
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	1TMT, HML, RT1
	Ch 220.1 km to Ch 222.4 km	1TMT, HML, RT1
	Ch 222.4 km to Ch 224.1 km	1TMT, HML, RT1
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	P2B, 1TMT, HML, B25
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	1TMT, HML, RT1
	Ch 2.5 km to Ch 3.5 km	1TMT, HML, RT1
	Ch 3.5 km to Ch 6.2 km	1TMT, HML, RT1
	Ch 6.2 km to Ch 9.0 km	1TMT, HML, RT1
	Ch 9.0 km to Ch 13.1 km	1TMT, HML, RT1
	Ch 13.1 km to Ch 14.0 km	1TMT, HML, RT1
	Ch 14.0 km to Ch 17.3 km	1TMT, HML, RT1
	Ch 17.3 km to Ch 18.1 km	1TMT, HML, RT1
	Ch 18.1 km to Ch 21.8 km	RT1
	Ch 21.8 km to Ch 28.0 km	RT1
	Ch 28.0 km to Ch 33.0 km	RT1
	Ch 33.0 km to Ch 35.6 km	RT1
	Ch 35.6 km to Ch 37.7 km	RT1
	Ch 37.7 km to Ch 39.8 km	RT1
	Ch 39.8 km to Ch 41.9 km	RT1
	Ch 41.9 km to Ch 45.9 km	RT1
	Ch 45.9 km to Ch 47.6 km	RT1
	Ch 47.6 km to Ch 53.3 km	RT1
	Ch 53.3 km to Ch 55.7 km	RT1
	Ch 55.7 km to Ch 56.6 km	RT1
	Ch 56.6 km to Ch 59.2 km	RT1
	Ch 59.2 km to Ch 61.0 km	RT1
	Ch 61.0 km to Ch 65.7 km	RT1
	Ch 65.7 km to Ch 68.7 km	RT1
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	-
	Ch 2.0 km to Ch 2.2 km	-
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	P2B, 1TMT, HML, B25
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	P2B, 1TMT, HML, B25
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	-
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	1TMT, HML, RT1
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	1TMT, HML, RT1
	Ch 6.0 km to Ch 6.4 km	1TMT, HML, RT1
	Ch 6.4 km to Ch 8.3 km	1TMT, HML, RT1
	Ch 8.3 km to Ch 9.2 km	1TMT, HML, RT1
	Ch 9.2 km to Ch 10.0 km	1TMT, HML, RT1
	Ch 10.0 km to Ch 10.1 km	1TMT, HML, RT1

Road name	Road section	Heavy vehicle routes and restrictions
	Ch 10.1 km to Ch 10.3 km	1TMT, HML, RT1
	Ch 10.3 km to Ch 12.1 km	1TMT, HML, RT1
	Ch 12.1 km to Ch 14.5 km	RT1
	Ch 14.5 km to Ch 16.3 km	RT1
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	1TMT, HML, RT1
	Ch 26.9 km to Ch 27.1 km	1TMT, HML, RT1
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	1TMT, HML, RT1
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	1TMT, HML, RT1
	Ch 0.6 km to Ch 3.2 km	1TMT, HML, RT1
	Ch 3.2 km to Ch 4.1 km	1TMT, HML, RT1
	Ch 4.1 km to Ch 13.0 km	1TMT, HML, RT1
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	1TMT, HML, RT1
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	1TMT, HML, RT1
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	1TMT, HML, RT1
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	1TMT, HML, RT1
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	1TMT, HML, RT1
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	1TMT, HML, RT1
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	P2B, 1TMT, HML, B25
	Ch 7.2 km to Ch 15.1 km	P2B, 1TMT, HML, B25
	Ch 15.1 km to Ch 18.9 km	P2B, 1TMT, HML, B25
	Ch 18.9 km to Ch 28.9 km	P2B, 1TMT, HML, B25
	Ch 28.9 km to Ch 36.6 km	P2B, 1TMT, HML, B25
	Ch 36.6 km to Ch 55.5 km	P2B, 1TMT, HML, B25
	Ch 55.5 km to Ch 75.4 km	P2B, 1TMT, HML, RT1
	Ch 75.4 km to Ch 79.6 km	P2B, 1TMT, HML, RT1
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	1TMT, HML, RT1
	Ch 0.4 km to Ch 1.5 km	1TMT, HML, RT1
	Ch 1.5 km to Ch 2.4 km	1TMT, HML, RT1
	Ch 2.4 km to Ch 4.5 km	1TMT, HML, RT1
	Ch 4.5 km to Ch 5.0 km	1TMT, HML, RT1
	Ch 5.0 km to Ch 5.3 km	1TMT, HML, RT1
	Ch 5.3 km to Ch 6.2 km	1TMT, HML, RT1
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	1TMT, HML, RT1
State-Controlled Road: Transport for New South Wales		
Newell Highway	River Road to Queensland/NSW Border	1TMT, HML, RT1
Local Government Road: Balonne Shire Council		
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	RT1

Road name	Road section	Heavy vehicle routes and restrictions
Local Government Road: Goondiwindi Regional Council		
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	RT1
Bybera Road	Cunningham Highway to B2G-LDN060.4	-
	B2G-LDN060.4 to Earthworks Area 2A	-
Cemetery Road	Access Track to Moorroobie Lane	-
	Cunningham Highway to GrainCorp Goondiwindi	RT1
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	-
	Coolmunda Dam Access to Cunningham Highway	-
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	B25
	B2G-LDN055.4 to B2G-LDN054.2	B25
	Cunningham Highway to B2G-LDN052.8	B25
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	-
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	-
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	-
	NS2B-LDN033.2 to NS2B-LDN035.6	-
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	-
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	-
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	-
Hunt Street	Leichhardt Highway to Boodle Street	RT1
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	-
	NS2B-LDN031.0 to South Kurumbul Road	-
	South Kurumbul Road to Cunningham Highway	1TMT, HML, RT1
	Cunningham Highway to Eukabilla Road	1TMT, HML, RT1
McDougalls Road	B2G-LDN049.8 to McDougalls Road	-
	McDougalls Road to Cunningham Highway	-
Moorroobie Lane	Cemetery Road to Borrow Site #2 (Moorroobie Lane)	-
	Borrow Site #2 (Moorroobie Lane) to Moorroobie Lane	-
	Moorroobie Lane to Wondalli Kurumbul Road	-
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	-
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	-
Silo Street	Barwon Highway to GrainCorp Talwood	-
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	-
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	-
Springborg Road	Cunningham highway to B2G-LDN037.6	-
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	-
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	-
	B2G-LDN067.6 to Millmerran-Inglewood Road	-
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	1TMT, HML
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	-
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorroobie Lane	-

Road name	Road section	Heavy vehicle routes and restrictions
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	-
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	-
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	-
	B2G-LDN006.3 to Wondalli Kurumbul Road	-
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	-
	Yelarbon Kurumbul Road to B2G-LDN020.3	-
	B2G-LDN020.3 to B2G-LDN025.9	-
	B2G-LDN025.9 to Cunningham Highway	-
Local Government Road: Moree Plains Shire Council		
Boggabilla Weir Access	River Road to Boggabilla Weir	-
River Road	Newell Highway to Boggabilla Weir Access	-
Local Government Road: Toowoomba Regional Council		
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	RT1
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	RT1
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	RT1
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	-
	B2G-LDN188.2 to Gore Highway	-
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	-
Blackwell Road	Gore Highway to Millmerran Quarry	-
	Millmerran Quarry to B2G-LDN120.2	-
	B2G-LDN120.2 to Millmerran-Inglewood Road	-
Bligh Street	Six Mile Road to Boral Concrete Millmerran	-
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	-
	Brimblecombe Road to WL 194467R	-
Bushy Lane	B2G-LDN183.0 to Gore Highway	-
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	RT1
	Saleyards Road to Gore Highway	RT1
Chamberlain Road	Warrego Highway to B2G-LDN204.2	-
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	-
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	-
Dieckmann Road	B2G-LDN150.5 to Gore Highway	-
Draper Road	Steger Road to B2G-FBW206.9	RT1
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	RT1
	Access Track to Greenwattle Street	RT1
Florence Street	Gore Highway to West Street	-
Forestry Road	Access Track to Millmerran-Inglewood Road	-
	Millmerran-Inglewood Road to Earthworks Area 3B	-
Fysh Road	B2G-LDN147.1 to Gore Highway	-
Gap Road	Gore Highway to Grevillea Street	-

Road name	Road section	Heavy vehicle routes and restrictions
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	-
Gilgai Lane	B2G-LDN144.6 to Gore Highway	-
Grevillea Street	Boral Concrete Pittsworth to Gap Road	-
Hall Road	B2G-LDN139.0 to Gore Highway	-
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	-
	B2G-LDN116.0 to Millmerran-Inglewood Road	-
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	-
Kahler Road	Murlaggan Road to B2G-LDN165.6	-
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	-
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	1TMT, HML, B25
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	-
	Millmerran-Inglewood Road to Commodore Mine	-
Leesons Road	Warrego Highway to Steger Road	-
	Steger Road to B2G-LDN206.3	-
Linthorpe Road	Gore Highway to B2G-LDN175.5	-
Linthorpe Valley Road	Geitz Road to Gore Highway	-
Lochaber Road	Gore Highway to B2G-LDN172.0	RT1
	B2G-LDN172.0 to B2G-LDN172.6	RT1
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	-
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	-
	B2G-LDN112.1 to Millwood Road	-
	Millwood Road to Kooroongarra Road	-
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	-
Murlaggan Road	B2G-LDN164.3 to Kahler Road	-
	Kahler Road to Gore Highway	-
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	1TMT, HML, RT1
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	1TMT, HML, RT1
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	-
	B2G-LDN128.2 to B2G-LDN130.0	-
	B2G-LDN130.0 to Millmerran-Inglewood Road	-
Paint Mine Road	Gore Highway to B2G-LDN173.5	-
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	-
Quarry Road Access	Tummalville Road to Quarry	-
Saleyards Road	Campbell Street to Gore Highway	-
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	-
Scragg Road	Commodore Peak Road to B2G-LDN123.6	-
	B2G-LDN123.6 to B2G-LDN123.8	-
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	-

Road name	Road section	Heavy vehicle routes and restrictions
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	1TMT, HML, RT1
	New Hope Recycled Water Pipeline to Draper Road	1TMT, HML, RT1
	Draper Road to Leeson's Road	1TMT, HML, RT1
Tummaville Road	Access Track to Gore Highway	-
Turallin Road	Gore Highway to the Turallin Facility	-
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	-
	B2G-LDN153.1 to Gore Highway	-
	Gore Highway to B2G-LDN150.9	-
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	-
West Street	Gore Highway to Florence Street	-
	Florence Street to Six Mile Road	-
Yarranlea Road	Gore Highway to B2G-LDN161.0	B25
	B2G-LDN161.0 to Desmonds Lane	B25

3 Proposed development details

3.1 Basis of design

The key characteristics of the Inland Rail Program service offering are reliability, price, transit time and availability. To help achieve this service offering ARTC has developed a Basis of Design to provide consistent design requirements and parameters across the Inland Rail Program. The standardised design criteria provide guidance for consistent design, ensuring an asset is delivered that meets business and operational requirements.

The Basis of Design acts as a primary point of reference for the design of the Project; forming a baseline for design criteria and design standards. The Basis of Design consists of a series of performance specifications relating to Project design components. Performance specifications for Inland Rail and the Project are summarised in Table 3.1.

Table 3.1 Performance specifications for Inland Rail and the Project

Attribute	Specification
Reference train	
Intermodal	21 TAL, 115 kilometres per hour (km/h) maximum speed, 1,800 m length (initial) 2.7 horsepower per tonne (hp/tonne) power:weight ratio
Bulk freight	25 TAL (initial), 80 km/h maximum speed, length determined by customer requirements within maximum train length
Operational specification	
Freight train transit time (terminal to terminal)	Target is driven by a range of customer preferences. But, less than 24 hours from Melbourne to Brisbane for the intermodal reference train. Flexibility to provide for faster (higher power:weight ratio) and slower (lower power:weight ratio) services to meet market requirements
Gauge	Standard (1,435 mm) with dual standard/narrow (1,435 mm/1,067 mm) gauge in appropriate Queensland sections
Maximum freight operating speed	115 km/h at 21 TAL
Maximum axle loads (initial)	21 tonnes (t) at 115 km/h 23 t at 90 km/h 25 t at 80 km/h
Maximum train length ¹	1,800 m
Minimum design standards	
General alignment standards (non-mountainous terrain)	
Design speed	115 km/h
Maximum grade	1:100 target, 1:80 maximum (compensated) 1:200 maximum at arrival or departure points at loops
Curve radius	1,200 m target, 800 m minimum
Flood immunity	Track drainage must have the capacity for a 1% Annual Exceedance Probability (AEP) without overtopping the formation
Medium speed alignment standards (mountainous terrain)	
Design speed	80 km/h minimum
Maximum grade	1:100 target, 1:80 maximum (compensated) 1:200 maximum at arrival or departure points at loops
Curve radius	1,200 m target, 800 m minimum
Corridor width	30 m minimum

Attribute	Specification
Rail	Minimum 53 kilogram per metre (kg/m) on existing track; 60 kg/m on new or upgraded track
Concrete sleepers	Rated to 30 TAL
Sleeper spacing	667 mm spacing (1,500/km) - existing track 600 mm (1,666/km) - new corridors/track or re-sleepering existing track
Turnouts	Rated at track speed on the straight and 80 km/h entry/exit on the diverging track
Crossing loops (initial)	2,200 m to accommodate 1,800 m length trains - No level crossing across loops or within road vehicle sighting distance from loops
Design life	
Rail Maintenance Access Road	20 years
Road pavement (excluding wearing course)	20 years

Table note:

1. Maximum train length assessed within the revised draft EIS is 1,800 m. Train lengths longer than 1,800 m are not within EIS Chapter 5: Project Description.

The Project, during operations, will be controlled by ARTC using Centralised Train Control (CTC), which is a method of managing the risks associated with the movement of rail traffic. The CTC system is comprised of the Human Machine Interfaces at the centralised operational control centre and within the vehicles under their control, and the integrated systems that connect them together. The Human Machine Interface within the rail vehicle can be either via lineside signals, or the use of in cab signalling following the fitment of appropriate levels of the European Train Control System (ETCS).

The Project interfaces with QR's South Western System, on the South Western Line and Millmerran Branch Line, which operates under Direct Train Control (DTC), a verbal authority-based system similar to ARTC's Train Order Working (TOW). While mainline junctions will be controlled by ARTC under CTC, a CTC to DTC interface will be required at the QR interfaces. This signalling system interface and associated operational procedures are subject to ongoing discussions, development and definition between ARTC and QR now and during the Project's detailed design phase.

3.2 Development site plan

3.2.1 Rail alignment

The Inland Rail Program has been divided into sections to assist with staged delivery. The proposed works for the Project includes:

- 217.48 km of new single-track railway
- Both dual gauge railway (standard (1,435 mm) and narrow (1,067 mm) gauge)
- Five crossing loops at the following proposed locations:
 - Yelarbon—Ch 16.3 km to Ch 18.5 km
 - Inglewood—Ch 50.2 km to Ch 52.4 km
 - Kooroongarra—Ch 89.2 km to Ch 91.4 km
 - Yandilla—Ch 132.2 km to Ch 134.4 km
 - Broxburn—Ch 176.1 km to Ch 178.4 km
- Approximately 149.48 km of new rail corridor (greenfield) and use of approximately 68.0 km of existing rail corridor (brownfield)
- Tie-ins to the existing South Western Line and the Millmerran Branch Line, which are components of QR's South Western System.

Details on these metrics are provided in Table 3.2.

Table 3.2 Track and corridor metrics

Track and corridor aspects	Length (km)
Total length of mainline track	217.48
Total standard gauge track	7.00
Total dual gauge track	210.48
Total greenfield corridor length	149.48
Total brownfield corridor length	68.00
Total length of crossing loops (five)	11.00

3.2.2 Whetstone Material Distribution Centre

As part of the overall track construction delivery strategy for the Inland Rail Program, ARTC is proposing to construct a temporary MDC in Whetstone, Queensland, on land bounded by the South Western System Railway Line to the north and Cunningham Highway to the south as shown on Figure 3.1. The land on which the MDC is proposed is described as Lot 2 MH784.

The facility will include a narrow gauge turnout to support construction activities as well as to accept and redistribute material via the QR South Western line with a 15.75 TAL limit. Rail traffic volumes on this network are subject to grain seasonal volumes. One to three trains per week are expected during off season and up to five trains a day during peak season (November and December). The Project's construction activities comprise of delivery, stockpile, prepare, handle and distribute bulk track construction materials. Construction materials and equipment expected to be delivered to site include concrete sleepers, ballast, steel rail, precast concrete (for bridges and culverts), communications, signalling and turnout equipment and demountable site offices. The site's ability to receive and distribute material via rail will significantly reduce the need for road transportation. On-site activities will include welding and grinding of steel rail into long welded rail strings as well as plant storage and maintenance shows the location and extent of development and the proposed arrangement of land uses within the site. To enable activities and receipt of material and equipment, the facility will require earthworks and drainage works, internal rail track, site office and facilities, rolling stock provisioning and maintenance facilities, the provision of gantries for rail logistic management, ballast unloading facilities and rail welding facilities. Infrastructure will include State and local road intersection works, turning lanes and upgrades.

Noting design, construction and operability challenges, this proposal provides significant benefits to all parties by:

- Upgrading the formation, ballast, sleepers and rail for these sections
- Track and formation design facilitates 30 tonne axle loads
- Eliminates existing curves less than 1,200 m
- Improves vertical gradients to a maximum of 1:80
- Provides track immunity to top of formation across 1% AEP floodplains
- Turnout connection into existing QR network and upgrades to dual gauge track provides greater interoperability for rail customers in Queensland
- Removal of obsolete existing level crossings.

3.2.4 Rail bridges

The Project requires several new rail bridge and viaduct structures. Viaducts are a certain type of bridge that are made up of multiple spans that cross waterways, terrain, roads and rail lines. They contain spans in a series and all spans are approximately the same length. Bridges, within the context of this Project, are shorter structures with a simpler design that span waterways or roads and rail, but not terrain. Each of the waterway crossings for the Project are bridge structures and each have been designed to accommodate fauna crossings for terrestrial fauna.

These structures are summarised in the following tables, with new rail bridges in Table 3.4 and new road-over-rail bridges summarised in Table 3.5.

Table 3.4 Summary of rail bridges

Bridge name	Chainage start (km)	Chainage end (km)	Crossing type	Bridge length (m)
Macintyre River Viaduct ¹	30.6 (NS2B)	30.7 (NS2B)	Watercourse	100
	30.7 (NS2B)	31.1 (NS2B)	Watercourse	435
Macintyre Floodplain #1 Rail Bridge	31.4 (NS2B)	31.6 (NS2B)	Watercourse	140
Macintyre Floodplain #2 Rail Bridge	32.2 (NS2B)	32.8 (NS2B)	Watercourse and road	546
Macintyre Brook Rail Bridge 1	52.4	52.7	Watercourse	207
Macintyre Brook Rail Bridge 2	55.4	55.6	Watercourse	207
Bybera Road-rail Bridge	60.5	60.6	Road	75
Pariagara Creek Rail Bridge	67.2	67.5	Watercourse	345
Cattle Creek Rail Bridge	88.2	88.3	Watercourse	138
Native Dog Creek Rail Bridge	93.8	94.0	Watercourse	184
Bringalily Creek 1 Rail Bridge	97.4	97.7	Watercourse	299
Bringalily Creek 3 Rail Bridge	100.1	100.7	Watercourse	621
Nicol Creek Rail Bridge	104.3	104.4	Watercourse	92
Millmerran–Inglewood Road-rail Bridge #2	115.5	115.6	Road	75
Commodore Peak Road Bridge	123.9	124	Road	75
Millmerran–Inglewood Road-rail Bridge #3	126.9	127.1	Road	167
Back Creek Rail Bridge	127.9	128.1	Watercourse	230
Grasstree Creek Rail Bridge	139.0	140.6	Watercourse	1,330
Condamine River South Branch Rail Bridge	142.6	143.3	Watercourse	658
Condamine River Main Branch Rail Bridge (combined rail bridge)	143.9	146.4	Condamine River	2,577

Bridge name	Chainage start (km)	Chainage end (km)	Crossing type	Bridge length (m)
Condamine River North Branch Rail Bridge	149.1	150.6	Condamine River North Branch	1,568
Yarranlea Road-rail Bridge	162.5	162.6	Road	69
Roche Road-rail Bridge	164.5	164.6	Road	121
Oakey Pittsworth Road-rail Bridge	172.2	172.3	Road	69
Lochaber Road-rail Bridge	173.7	173.8	Road	75
Biddeston–Southbrook Road-rail Bridge	184.8	185.0	Road	144
Athol School Road-rail Bridge	189.3	189.4	Road	75
Toowoomba–Cecil Plains Road-rail Bridge	197.3	197.4	Road	92
Westbrook Creek Rail Bridge	198.4	198.6	Watercourse*	230
Dry Creek Rail Bridge	199.1	199.3	Watercourse	184
Brimblecombe Road-rail Bridge	199.9	200.0	Road	75
Warrego Highway Rail Bridge	204.3	204.4	Road	132
Chamberlain Road-rail Bridge	205.7	206.0	Road	299

Table notes:

The Project's rail alignment commences from Ch 30.6 km (NS2B). Macintyre Viaduct length connecting south of the border beyond Ch 30.6 km (NS2B) is not included in the Project's footprint.

* Watercourse: A river, creek or other stream in the form of an anabranch or a tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events (as per the Water Act 2000 (Qld))

Table 3.5 Summary of road-over-rail bridges

Bridge name	Chainage start (km)	Bridge length (m)
Cunningham Highway Bridge	25.6	104
Heckendorf Road Bridge	116.4	59
Owens Scrub Road Bridge	129.8	72
Gore Highway Bridge	154.4	108
Linthorpe Road Bridge	177.1	66

3.3 Construction details

The general construction activities for the Project will include:

- Site set out and pegging
- Clearing – utilising dozers, chainsaws, excavators, trucks and similar equipment
- Bulk earthworks – major cut to fill operations include the winning of suitable construction material from sections of cut along the railway alignment or from borrow areas external to the site
- Supply, delivery and installation of ballast and concrete sleepers
- Construction of drainage facilities – cut off drains, table drains and culvert structures
- Installation of rail track and other items of rail infrastructure using rail mounted equipment
- Construction and installation of concrete railway bridges and culverts
- Installation of railway signalling and communications equipment
- Construction of railway maintenance facilities
- Other miscellaneous activities to complete the works.

Construction of the Project will commence once the detailed design is complete, the necessary approvals have been obtained and land acquisition is sufficiently progressed. The indicative construction timetable for the Project is:

- Contract award to a Contractor in late-2021
- Commence construction activities in the third quarter of 2024, as summarised in Table 3.6, with some site early works (e.g. site preparation, surveys, initial laydown areas and establishment of non-resident workforce accommodation) commencing earlier – assumed to be February 2024 as a part of the TIA
- To support cumulative impact assessment for the revised draft EIS, anticipated timing of Construction for all Queensland Inland Rail Projects is summarised in Table 3.7
- Target completion of construction by the first quarter of 2028
- Commissioning stage from first quarter 2028.

Table 3.6 Breakdown of indicative construction activities

Year	2023				2024				2025				2026				2027				2028
Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1
Secondary approvals																					
Civil Earthworks and Drainage																					
Bridge																					
Track																					
Commissioning																					
Operations																					

Table 3.7 Anticipated timing of all Inland Rail Projects in Queensland

Project	Start date of construction		End date of construction	
	Month	Year	Month	Year
Calvert to Kagaru	March	2024	October	2028
Helidon to Calvert	April	2024	September	2028
Gowrie to Helidon	October	2024	September	2029
Border to Gowrie (the Project)	August	2024	March	2028
Kagaru to Acacia Ridge and Bromelton	March	2026	March	2028

The broad milestone dates for construction are indicative only and are subject to change during the Detailed Design and Construction Works stages as a result of:

- Weather conditions
- Changes to construction methods and materials
- Unexpected finds, such as contamination, threatened biodiversity species or cultural heritage values
- Community interest in the Project or issues that need to be addressed.

Variations to the construction sequences in relation to program optimisation, constructability, resource availability, local conditions (weather and industry) and adjacent Inland Rail Projects will be investigated during the Detailed Design stage of the Project. The schedule of environmental controls, including traffic management and noise controls, would be adjusted accordingly.

The Project is part of a larger Inland Rail Program of works. It is anticipated that 16,000 jobs will be required program-wide at the peak of construction. An average of 700 additional jobs per annum is anticipated over 50 years of operation.

Workforce on site for the Project is estimated to peak at 900 full-time equivalents (FTE) around week 80 of construction. The average number of FTE workforce on site across the full construction period is approximately 383 people.

Due to the large workforce required during the construction of the Project, the location of the alignment and lack of suitable established accommodation options, especially for the southern half of the Project, two non-resident workforce accommodation camps have been proposed, each with a capacity to accommodate a minimum of 300 beds (Section 4.1). An initial assessment of workforce demand and safe commutable distances has identified a potential need for non-resident workforce accommodation in the vicinity of Yelarbon, Inglewood and Millmerran.

Properties at Yelarbon and Inglewood have been identified as suitable for the establishment of non-resident workforce accommodation facilities, shown in Table 3.8.

Table 3.8 Locations for non-resident workforce accommodation facilities

Lot and plan	Address
Lot 30 MH721	Cunningham Highway, Yelarbon
Lot 5 MH75	Millmerran–Inglewood Road, Inglewood

The location for a Millmerran based non-resident workforce accommodation 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 will be undertaken by the Contractor during detailed design. The service life of the non-resident workforce accommodation sites is restricted to the duration of Construction for the Project, commencing early 2024 and commissioning early 2028.

The inclusion of a 20 hectare (ha) construction Facility at Turallin has been included in the temporary footprint to be utilised for a laydown area, a training facility, native plants nursery and traditional land management training facility (proposed land use subject to on-going negotiations between the Contractor and the landowners).

Temporary parking facilities for construction workers will be located within construction laydown areas, the rail corridor and within non-resident workforce accommodation facilities to ensure that community streets will not be impacted by parking (e.g. Turallin Road, Ellerslie Road and the Millmerran town centre). The provision of parking in each location will be sufficient to accommodate the number of vehicles associated with the maximum number of workers expected to use each area during peak occupancy.

Accommodation demands north of Millmerran could reasonably be serviced by established accommodation in Pittsworth and Toowoomba. Further details on construction activities and traffic and workforce generated traffic are provided in Section 4.

3.4 Operational details

Operations stage activities will include the use of the railway for freight purposes, operation and maintenance of safety systems, signalling and general track and infrastructure maintenance.

The hours of operation are anticipated to be on a 24 hour/7 day calendar.

The Project will involve operation of a single rail track with crossing loops, initially to accommodate double stacked freight trains 1,800 m long and 6.5 m high. Train speeds will vary according to axle loads and track geometry and range from 80 to 115 km/h.

It is estimated that once operational, the Project will involve an annual average of about 14 train services per day during initial years of operation. This is likely to increase to an average of 20 trains per day in 2040 and up to 25 per day during peak operational periods. Annual freight tonnages will increase in parallel, from approximately 14.2 million tonnes per year in 2029 to 21.8 million tonnes per year in 2040.

Standard ARTC maintenance activities will be undertaken during operations in accordance with task specific ARTC work method statements (available on the ARTC Extranet: <https://extranet.artc.com.au/>). Typically, these activities include:

- Minor maintenance works, such as:
 - Bridge inspections
 - Culvert cleanout
 - Sleeper replacement
 - Rail welding
 - Rail grinding
 - Ballast profile management
 - Track tamping
 - Clearing/slashing vegetation within the rail corridor. The rail corridor will be maintained free of woody vegetation.
- Major periodic maintenance, such as:
 - Ballast cleaning
 - Formation work
 - Reconditioning of track
 - Adjustment
 - Turnout replacement
 - Correction of track level and line
 - Maintenance of structures including waterproofing, jointing etc.

These activities will occur on a scheduled basis, in addition to being in response to unplanned requirements, e.g. maintenance following adverse weather events.

3.5 Laydown areas and proposed access

Seventy-eight laydown areas have been allocated within the construction footprint of the alignment. Establishing temporary laydown areas will involve clearing, grubbing, topsoil stripping, installing environmental controls, laying hardstand material and constructing parking areas, and access tracks. All temporary laydown areas are intended to be used for the Project during Construction.

Laydown areas are used for a variety of construction purposes, including site offices, material and equipment storage, and to facilitate bridge construction. At bridge locations there will be a dedicated laydown/work area that may include crane pads for the lifting of bridge members.

A full list of laydown areas and their planned uses (including a breakdown of the tonnage of rail ballast transported to the laydown sites) and the proposed access road is summarised in Table 3.9.

Table 3.9 Laydown areas and uses

Laydown ID	Location	Chainage (km)	Size (m ²)	Laydown uses							Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other	Comments	
NS2B-LDN031.0	Kildonan Road	31.0	33,000		✓					General construction laydown	
NS2B-LDN032.5	Kildonan Road	32.5	161,000		✓					Bridge laydown	
NS2B-LDN033.2	Kildonan Road	33.2	7,000			✓				General construction laydown	Access off Eukabilla Road
NS2B-LDN035.6	Eukabilla Road	35.6	88,000	✓		✓	✓	✓		Major construction laydown: Site offices Fuel storage (<20,000 L) Top ballast (9360t) Bottom ballast (18720 t)	
B2G-LDN000.9	Georges Lane (extension)	0.4	126,000	✓						General construction laydown Top ballast (3600t) Bottom ballast (7200 t)	2 km extension of Georges Lane required (B2G-TRK001.0). Dirt track already exists. Contractor to undertake regrading as needed to accommodate frequent construction traffic.
B2G-LDN006.3	Yelarbon-Kurumbul Road	6.2	10,000	✓		✓	✓			General construction laydown: Fuel (<10,000 L) Top ballast (7550 t) Bottom ballast (15100 t)	Access off Yelarbon-Kurumbul Road
B2G-LDN016.0	Yelarbon-Kurumbul Road	16.0	26,000	✓		✓				General construction laydown Top ballast (9200 t) Bottom ballast (18400 t)	Access off Queen Street South
B2G-LDN020.3	Yelarbon-Kurumbul Road	20.4	8,000	✓						General construction laydown Top ballast (4950 t) Bottom ballast (9900 t)	Access off Yelarbon-Kurumbul Road
B2G-LDN025.9	Yelarbon (south)	25.8	21,000	✓		✓	✓	✓		General construction laydown: Fuel storage (<10,000 L) Top ballast (4850 t) Bottom ballast (9700 t)	Access off Yelarbon-Kurumbul Road

Laydown ID	Location	Chainage (km)	Size (m ²)	Laydown uses							Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other	Comments	
B2G–LDN025.9	Yelarbon (north)	25.9	12,000	✓	✓	✓	✓	✓		General construction laydown: Site offices Bridge laydown for Cunningham Highway bridge	Access off Yelarbon-Kurumbul Road
B2G–LDN030.0	Suttons Road	30.0	11,000	✓		✓				General construction laydown Top ballast (5850 t) Bottom ballast (11700 t)	Access off Suttons Road. Contractor to undertake regrading as needed to accommodate frequent construction traffic.
B2G–LDN037.6	Springborg Road	37.6	12,000	✓		✓				General construction laydown Top ballast (7250 t) Bottom ballast (14500 t)	Access off Springborg Road. Contractor to undertake regrading as needed to accommodate frequent construction traffic.
B2G–LDN049.8	McDougalls Crossing Road	49.70	30,000	✓		✓				General construction laydown Top ballast (10150 t) Bottom ballast (20300 t)	Access off McDougalls Crossing Road (via B2K-TRK050). Contractor to undertake regrading as needed to accommodate frequent construction traffic. Macintyre Brook crossing is suitable for general construction traffic. Confirmation of suitability for specific task when determined.
B2G–LDN052.8	Cremascos Road	52.8	11,000		✓					Bridge construction laydown for UT1 Macintyre Brook bail bridge #1	Access off Cremascos Road (via B2G-TRK052.8 – which will be future RMAR). Contractor to undertake regrading as needed to accommodate frequent construction traffic. Macintyre Brook crossing is suitable for general construction traffic. Confirmation of suitability for specific task when determined.
B2G–LDN054.2	Cremascos Road	54.3	54,000	✓		✓	✓	✓		General construction laydown: Site offices Fuel storage (<10,000 L)	Access off Cremascos Road. Contractor to undertake regrading as needed to accommodate frequent construction traffic. Macintyre Brook crossing is suitable for general construction traffic. Confirmation of suitability for specific task when determined.

Laydown ID	Location	Chainage (km)	Size (m²)	Laydown uses							Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other	Comments	
B2G—LDN055.4	Cremascos Road	55.4	33,000							Bridge Construction Site Laydown for UT2 Macintyre Brook Rail Bridge	Access off Cremascos Road (via B2G-TRK055.0 – which will be future RMAR). Contractor to undertake regrading as needed to accommodate frequent construction traffic. Macintyre Brook crossing is suitable for general construction traffic. Confirmation of suitability for specific task when determined.
B2G—LDN060.4	Bybera Road	60.5	27,000	✓		✓				General construction laydown Top ballast (8000 t) Bottom ballast (16000 t)	Access off Bybera Road. Contractor to undertake regrading as needed to accommodate frequent construction traffic. Macintyre Brook crossing is suitable for general construction traffic. Confirmation of suitability for specific task when determined.
B2G—LDN065.8	Lovells Crossing Road	65.8	25,000	✓		✓				General construction laydown Top ballast (4300 t) Bottom ballast (8600 t)	Access off Lovells Crossing Road. Contractor to undertake regrading as needed to accommodate frequent construction traffic. Macintyre Brook crossing is suitable for general construction traffic. Confirmation of suitability for specific task when determined.
B2G—LDN067.6	Thornton Road	67.6	10,000		✓	✓				Bridge construction site Laydown for Pariagara Creek rail bridge	Access via Thornton Road (via B2G-TRK067.8- which will be future RMAR)
B2G—LDN069.0	Thornton Road	68.8	41,000	✓		✓				General construction laydown Top ballast (4100 t) Bottom ballast (8200 t)	Access off Thornton Road.
B2G—LDN073.0	Millmerran—Inglewood Road	72.9	8,000		✓					Laydown for Millmerran—Inglewood Road-rail bridge #1	Access via Millmerran-Inglewood Road (via access track B2G-TRK073.0).
B2G—LDN074.0	Millmerran—Inglewood Road	74.2	148,000	✓		✓	✓	✓		General construction laydown: Site offices Fuel storage (<10,000 L) Top ballast (6000 t) Bottom ballast (12000 t)	Access via Millmerran-Inglewood Road (via B2K TRK074.8 and B2G-TRK73.6).

Laydown ID	Location	Chainage (km)	Size (m²)	Laydown uses							Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other	Comments	
B2G—LDN081.0	Wongavale Yugalbar Road	81.1	27,000	✓		✓	✓	✓		General construction laydown: Fuel storage (<10,000 L) Top ballast (8900 t) Bottom ballast (17800 t)	Access via Wongavale Yugalbar Road
B2G—LDN088.0	Millmerran—Inglewood Road	88.1	29,000	✓		✓				Bridge construction site Laydown for Cattle Tree Creek Rail Bridge	Direct access from Millmerran-Inglewood Road
B2G—LDN091.8	Site track off Millmerran—Inglewood Road	91.9	15,000	✓		✓				General construction laydown Top ballast (13950 t) Bottom ballast (27900 t)	Direct access from Millmerran-Inglewood Road
B2G—LDN093.8	Millmerran—Inglewood Road	93.8	13,000		✓	✓				Bridge construction site Laydown for Native Dog Creek rail bridge	Access off Millmerran-Inglewood Road (via access track B2G-TRK093.6)
B2G—LDN098.0	Millmerran—Inglewood Road	97.9	31,000		✓	✓				Bridge construction site Laydown for Bringalily Creek #1 rail bridge	Direct access from Millmerran-Inglewood Road
B2G—LDN100.6	Millmerran—Inglewood Road	100.7	3,000		✓	✓				Bridge construction site Laydown for Bringalily Creek #3 rail bridge	Access off Millmerran-Inglewood Road (via access track B2G-TRK100.7)
B2G—LDN104.5	Paton Road	104.6	26,000	✓	✓	✓	✓			General construction laydown Bridge construction site Laydown for Nicol Creek rail bridge Top ballast (10150 t) Bottom ballast (20300 t)	Access via Paton Road (via B2G-TRK105.7 – which will be future RMAR).
B2G—LDN112.1	Millwood Road	112.2	26,000	✓		✓				General construction laydown Top ballast (5750 t) Bottom ballast (11500 t)	Access from Millwood Road.

Laydown ID	Location	Chainage (km)	Size (m ²)	Laydown uses							Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other	Comments	
B2G-LDN115.6	Millmerran–Inglewood Road/Heckendorf Road via LDN 116.00	115.7	14,000		✓					Bridge construction site Laydown for Millmerran–Inglewood Road-rail bridge	Access from Heckendorf Road through LDN116.0
B2G-LDN116.0	Heckendorf Road	116.2	94,000	✓		✓	✓	✓		General construction laydown: Site offices Fuel storage (<20,000 L) Top ballast (4050 t) Bottom ballast (8100 t)	Access from Heckendorf Road
B2G-LDN120.2	Blackwell Road	120.2	104,000	✓		✓				General construction laydown Top ballast (6750 t) Bottom ballast (13500 t)	Access from Blackwell Road
B2G-LDN123.6	Scragg Road	123.7	20,000							General construction laydown	Access from Scragg Road
B2G-LDN123.8	Scragg Road	123.8	11,000		✓					General construction laydown	Access from Scragg Road
B2G-LDN126.9	Schwarten Road	126.9	7,000		✓	✓				Bridge Construction Site Laydown for Millmerran-Inglewood #3 Road Bridge	Access from Schwarten Road (via B2G-TRK126.9)
B2G-LDN128.2	Owens Scrub Road	128.4	27,000		✓					Bridge Construction Site Laydown for Back Creek Rail Bridge	Access via Owens Scrub Road (via B2G-TRK-129.0)
B2G-LDN129.5	Foxwood Road	129.4	119,000	✓					✓	General construction laydown Top ballast (11600 t) Bottom ballast (23200 t)	Access via Foxwood Road
B2G-LDN130.0	Owens Scrub Road	130.0	27,000		✓	✓				Laydown for Owens Scrub Road Bridge	Access via Owens Scrub Road (via B2G-TRK129.9)
B2G-LDN130.6	Owens Scrub Road	130.6	168,000						✓	General construction laydown	Access via Owens Scrub Road
B2G-LDN130.4	Owens Scrub Road	130.7	89,000						✓	General construction laydown	Access via Owens Scrub Road (via B2G-TRK129.9)

Laydown ID	Location	Chainage (km)	Size (m ²)	Laydown uses							Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other	Comments	
B2G-LDN138.5	Hall Road	138.6	116,000						✓	General construction laydown: Precast facility Concrete batch plant	Access via Hall Road (via B2G-TRK139.6) through laydown LDN139.0 Contractor to undertake regrading/widening as needed to accommodate construction traffic.
B2G-LDN139.0	Hall Road	139.2	304,000	✓	✓	✓				Bridge Construction Site Laydown for Grasstree Creek #1 & #2 Rail Bridge Top ballast (8800 t) Bottom ballast (17600 t)	Access via Hall Road (via B2G-TRK139.6). Contractor to undertake regrading/widening as needed to accommodate construction traffic.
B2G-LDN140.2	Millmerran-Leyburn Road	141.6	76,000			✓				General construction laydown	Access off Millmerran-Leyburn Road.
B2G-LDN141.3	Millmerran-Leyburn Road	142.6	12,000		✓	✓				Bridge Construction Site Laydown for Condamine River South Branch Rail Bridge	Access off Millmerran-Leyburn Road (via B2G-TRK140.2) through LDN140.2.
B2G-LDN143.0	Gilgai Lane	144.4	9,000		✓					Bridge construction site Laydown for Condamine River Main Rail Bridge	Access via Gilgai Lane (via B2G-TRK144.2 – which is future RMAR).
B2G-LDN144.6	Gilgai Lane	146.0	142,000		✓	✓				Laydown for Condamine River Main Branch Rail Bridge	Access from Gilgai Lane
B2G-LDN147.1	Fysh Road	148.4	4,000	✓		✓				General construction laydown Top ballast (5950 t) Bottom ballast (11900 t)	Access from Fysh Road or proposed realigned Pampas Pit Road (via B2G-TRK148.1)
B2G-LDN149.0	Gore Highway	150.1	47,00		✓	✓				Laydown for Condamine River North Branch rail bridge	Access from Gore Highway
B2G-LDN150.5	Dieckmann Road	152.1	132,000						✓	Potential precast facility and concrete batch plant	Access from Dieckmann Road
B2G-LDN150.9	Ware Street	152.1	5,000	✓						General construction laydown Top ballast (6950 t) Bottom ballast (13900 t)	Access from Ware Street

Laydown ID	Location	Chainage (km)	Size (m ²)	Laydown uses						Comments	Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other		
B2G-LDN152.9	Madelaine Street	153.3	6,000							General construction laydown	Access via Madelaine Street
B2G-LDN153.1	Gore Highway	154.6	91,000		✓	✓				Bridge construction site for Gore Highway bridge	Access from both Gore Highway and Ware Street to accommodate staged laydown areas.
B2G-LDN161.0	Yarranlea Road	162.3	63,000	✓	✓	✓	✓	✓		Major construction laydown: Site offices Fuel storage (<20,000 L) Laydown for Yarranlea Road-rail bridge Top ballast (6700 t) Bottom ballast (13400 t)	Access off Yarranlea Road.
B2G-LDN163.3	Roche Road	164.7	5,000		✓					General construction laydown for Roche Road-rail bridge	Access off Roche Road.
B2G-LDN164.3	Murlaggan Road	165.6	24,000	✓		✓				General construction laydown Top ballast (2300 t) Bottom ballast (4600 t)	Access off Murlaggan. Contractor to undertake regrading as needed to accommodate frequent construction traffic.
B2G-LDN165.6	Kahler Road	166.9	7,000	✓						General construction laydown Top ballast (2600 t) Bottom ballast (5200 t)	Access off Kahler Road.
B2G-LDN169.6	Gore Highway	171.0	30,000	✓		✓				General construction laydown Top ballast (3200 t) Bottom ballast 6400 t)	Access off Gore Highway.
B2G-LDN171.0	Oakey Pittsworth Road	172.3	7,000		✓					Bridge construction site Laydown for Oakey-Pittsworth Road-rail bridge	Access off existing Oakey-Pittsworth Road
B2G-LDN172.0	Lochaber Road	173.3	16,000	✓		✓				General construction laydown Top ballast (2000 t) Bottom ballast (4000 t)	Access from Lochaber Road.
B2G-LDN172.6	Lochaber Road	173.8	19,000		✓					Laydown for Lochaber Road-rail bridge	Access from Lochaber Road.

Laydown ID	Location	Chainage (km)	Size (m ²)	Laydown uses						Comments	Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other		
B2G-LDN173.5	Paint Mine Road	174.8	17,000	✓		✓				General construction laydown Top ballast (3950t) Bottom ballast (7900t)	Access from Paint Mine Road
B2G-LDN175.5	Linthorpe Road	176.9	69,000	✓		✓	✓	✓		Multi-use construction laydown including satellite offices Fuel storage (<10,000 L) Road upgrade laydown Top ballast (2750 t) Bottom ballast (5500 t)	Access from existing Linthorpe Road
B2G-LDN179.0	Geitz Road via Linthorpe Valley Road	180.2	22,000	✓		✓				General construction laydown Top ballast (3750 t) Bottom ballast (7500 t)	Access from Geitz Road via Linthorpe Valley Road
B2G-LDN183.0	Bushy Lane	184.3	20,000	✓		✓				General construction laydown Top ballast (3000 t) Bottom ballast (6000 t)	Access from Bushy Lane
B2G-LDN183.8	Biddeston Southbrook Road	185.1	16,000		✓					Laydown for Biddeston–Southbrook Road-rail bridge	Access from Biddeston Southbrook Road
B2G-LDN185.0	Gore Highway	186.5	30,000	✓		✓				General construction laydown Top ballast (2600 t) Bottom ballast (5200 t)	Access via private property access (off Gore Highway)
B2G-LDN188.2	Athol School Road	189.5	76,000	✓		✓	✓	✓		Major construction laydown: Site offices Fuel storage (<10,000 L) Top ballast (3650 t) Bottom ballast (7300 t)	Access from existing Athol School Road.

Laydown ID	Location	Chainage (km)	Size (m ²)	Laydown uses							Access note
				Ballast	Bridge	Culverts	Fuel	Site office	Other	Comments	
B2G–LDN192.3	via Athol Road	193.6	30,000	✓		✓	✓	✓		General construction laydown: Fuel storage (<10,000 L) Top ballast (9050 t) Bottom ballast (18100 t)	Access via Athol School Road (via B2G-TRK194.0 – which is future RMAR)
B2G–LDN196.2	Toowoomba–Cecil Plains Road via existing side road	197.4	4,000		✓	✓				Bridge construction site for Toowoomba–Cecil Plains Road-rail bridge	Access via Toowoomba–Cecil Plains Road via existing side road (B2G-TRK197.4)
B2G–LDN197.0	Toowoomba-Cecil Plains Road	198.3	4,000		✓	✓				Bridge construction site for Westbrook Creek rail bridge	Access via Toowoomba-Cecil Plains Road (via B2G-TRK197.0 – which his future RMAR)
B2G–LDN198.1	Brimblecombe Road	199.4	4,000		✓	✓				Bridge construction site for Dry Creek rail bridge	Access via Brimblecombe Road (via B2G-TRK198.8 – which is future RMAR).
B2G–LDN198.7	Brimblecombe Road	200.0	3,000		✓					Bridge construction site for Brimblecombe Road-rail bridge	Access off Brimblecombe Road
B2G–LDN203.0	Warrego Highway	204.3	4,000		✓					Bridge construction site for Warrego Highway rail bridge	Access off Warrego Highway via existing property access
B2G–LDN204.2	Chamberlain Road	205.5	35,000		✓	✓				Laydown for Chamberlain Road-rail bridge	Access off Chamberlain Road
B2G–LDN206.3	Leesons Road	207.6	30,000	✓		✓	✓	✓		General construction laydown: Site offices Fuel storage (<10,000 L) Top ballast (7000 t) Bottom ballast (1400 t)	Access off Leesons Road
B2G-FBW206.9	Draper Road	208.2	81,000						✓	General construction laydown	Access off Draper Road.
N/A	Turallin Facility	127.0	200,000	✓	✓	✓	✓	✓		General construction laydown	Access via Turallin Road.

It is no longer proposed to use the Yelarbon rest area as a laydown area for Project construction activities. All proposed laydown areas near Yelarbon will now be accessed off Yelarbon-Kurumbul Road, or Queen Street South.

Each construction site access location along the Project alignment requiring access directly off/onto a SCR will need to be negotiated with and approved by DTMR. For the accesses directly off SCR, some of the key elements to be investigated during detailed design will include:

- Appropriate sight distances in both the vertical and horizontal
- Appropriate turn treatments, if required, in accordance with *Austrroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings* (2019a)
- Deceleration lanes for the trucks to slow down in
- Acceleration lanes for re-entering construction traffic
- Appropriate signage and line marking.

A typical construction traffic access to a laydown area is shown in Figure 3.2. The design and implementation of these traffic accesses will be confirmed during the Detailed Design stage.



Figure 3.2 Typical construction traffic access to laydown area adjacent to State controlled roads

3.6 Proposed road-rail interface locations

Road-rail interfaces are points at which the rail alignment intersects a public road. The Project requires the crossing of SCR and local government (GRC and TRC) roads. An overview of the process followed in the assessment of road-rail interfaces across the Project and the methodology followed in the development of road-rail interface treatments is outlined in Appendix BT. Sufficient sight distance has been achieved for locations where a passive crossing is proposed using available data shown in Appendix BV. A summary of the number of interfaces with each public road type is provided in Table 3.10.

Table 3.10 Public road intersections included in the revised reference design for the Project

Road type	Number of intersections ¹
State Government: DTMR	9
Local Government: GRC	16
Local Government: Toowoomba Regional Council	25

Table note:

- 1 Only includes locations where a crossing solution is provided. Excludes intersection locations where no crossing is provided in the revised reference design.

While ARTC has sought to limit the number of new level crossings in the revised reference design, the Project includes lower-risk level crossings where the road-rail interface treatment assessment has concluded that the risk to safety has been minimised 'so far as is reasonably practicable'.

Treatments for public road-rail interfaces can be categorised as:

- Grade separated crossings—road and rail cross each other at different heights so that traffic flow is not affected. Grade separations are either road-over-rail, or rail-over-road.
- Level crossings—road and rail cross each other at the same level. Level crossings have either passive or active controls to guide road users:
 - Passive—have static warning signs (e.g. stop and give way signs) that are visible on approach. This signage is unchanging with no mechanical aspects or light devices.
 - Active—flashing lights with or without boom barriers for motorists and automated gates for pedestrians. These devices are activated prior to and during the passage of a train through the level crossing.
- Crossing consolidation, relocation, diversion or realignment—existing road-rail interfaces may be closed, consolidated into fewer crossing points, relocated or diverted. Roads will only be closed where the impact of diversions or consolidations is considered acceptable, or where the existing location is not considered safe and cannot reasonably be made safe. Approval for closures, where required, will be progressed in accordance with the requirements of the relevant legislation.

The appropriate design treatment for each road-rail interface has been assessed on a case-by-case basis, with consideration given to current and future usage of the existing road asset, its location relative to other crossings of the rail corridor and the road and rail geometry at the crossing location. The key principles guiding the decision-making process for determining treatments at public road-rail interfaces include:

- Grade separated crossings – road and rail cross each other at different heights so that traffic flow is not affected. Grade separations are either road-over-rail, or rail-over-road.
- Using a risk-based decision-making process focused on minimising risk SFAIRP
- Consistency in the determination of road-rail interface treatments across all projects of the Inland Rail Program
- Applying a consistent methodology to determine if the cost of the potential available treatment is grossly disproportionate to the level of risk to safety and the projected benefits
- Working with stakeholders to minimise the number of level crossings across the Inland Rail Program
- Ensuring the feasibility of the Inland Rail Program by proposing cost-effective solutions.

Where a road-rail interface is required, ARTC apply a consistent safety-based risk approach to determine crossing treatments. This is the Inland Rail Level Crossing Risk Tool available from <https://www.artc.com.au/uploads/RSK-GL-004.pdf>.

The approach completes an ALCAM assessment for all level crossings and this becomes one of the main inputs into the decision process. ALCAM is the only nationally accepted risk tool for level crossings and has been endorsed by State and Territory ministers.

Appendix BT provides OCG, DTMR and the community with further transparency on the design process undertaken and understanding that all designs and ALCAM inputs have been reviewed by the appropriate road manager at all public road-rail interface locations throughout Project. The appendix outlines the major factors of ALCAM: future road traffic volumes, vehicle types, future train volumes, road and rail vehicle speeds and lengths, sighting and stacking distances. Specific input data is provided within Appendix BV Through consultation with the relevant road manager, ARTC have verified these inputs to ensure the data is accurate in the model. The appendix further describes consideration of factors other than ALCAM that may influence the recommended level of control are also considered, where relevant, on a case-by-case basis, including:

- Collision and near-collision history
- Traffic and transport impacts
- Future developments
- Local knowledge of driver or pedestrian behaviour.

ARTC confirm the ALCAM assessment is applied to existing and new level crossings and have actioned the requested updates as follows:

- Appendix BT (Public Level Crossing Treatment Methodology) has been updated to include:
 - The ALCAM assessment review process
 - The updates to the Inland Rail Level Crossing Risk tool which have been utilised in the ALCAM assessments
 - A section on the recent ONRSR audit of Queensland crossings and methodology, and relevant findings
 - A section noting that from a futureproofing perspective, 2040 road and rail traffic volumes are used in determining crossing treatments
 - Response to comments received from the OCG
- Appendix BV (ALCAM Inputs) provides the input data utilised in the ALCAM assessments.

In the development of the proposed treatments, ARTC have also taken into consideration State and national guidelines and strategies, specifically the following:

- *ONRSR Policy: Level Crossings* (ONRSR, 2019)
- *ONRSR Guideline: Meaning of duty to ensure safety so far as is reasonably practicable - SFAIRP* (ONRSR, 2016b)
- *Queensland Level Crossing Safety Strategy 2012-2021* (DTMR, 2012a).

Both the *ONRSR Policy* and *QLCSS* focus on avoiding, where possible, the installation of new level crossings. The *ONRSR Policy* acknowledges that for lower risk level crossings, operators may be able to demonstrate that alternative controls minimise the risk to safety SFAIRP, as defined in *ONRSR Guideline* (ONRSR, 2016a). The revised reference design has been developed to limit the number of new level crossings. However, there are instances where the road-rail interface treatment assessment has concluded that the risk to safety SFAIRP can be achieved through the provision of level crossings in lower risk locations.

In June 2020, ONRSR finalised an audit of the *Inland Rail Road-Rail Crossing Strategy*. The audit recognised a consistent, systematic and comprehensive process for the assessment of level crossings is applied to determine adequate treatments, noting that the approach ensures level crossing safety risks are eliminated or minimised, SFAIRP. There were no findings or recommendations identified by the audit requiring action by ARTC.

In January 2023 ONRSR undertook an audit of the Inland Rail Road-Rail Crossing Strategy in Queensland, specifically focussing on the public level crossings in the Border to Gowrie section. The key findings included that ARTC Inland Rail demonstrated that a consistent, systematic, and comprehensive process for the assessment of level crossings is applied to determine adequate conforming treatments, and that the stakeholder engagement process has fed into the updated designs.

For public crossings, ARTC is undertaking and will continue to undertake, the necessary consultation with the DTMR, QR and local governments in relation to the preferred road-rail interface treatments for each location. Part of this process is to work with the relevant road manager to understand the local environment and gather information on future development plans, which can be used to inform the design. This will ensure that the future assessment process for assessing the appropriate level of treatment takes into consideration changes in road and rail traffic at each crossing, consistent with the selection methodology outlined in Appendix BT. Details of consultation with relevant stakeholders is outlined in the EIS Appendix E: Consultation Report.

3.6.1 Existing road-rail interface locations

Existing public formed road-rail intersection locations, existing crossing type and proposed treatments associated with the Project are summarised in Table 3.11. These locations are shown on Figure 1.2.

Table 3.11 Existing public road-rail intersections and proposed design treatments

Interface ID ¹	Road name	Existing QR crossing type	Proposed treatment in the revised reference design
State Government: Department of Transport and Main Roads			
310-11-E-1	Cunningham Highway (Wondalli Street) (Stock Route)	Active level crossing	No road crossing provided at this location. Active pedestrian crossing provided. Road traffic relocated to 310-11-E-0 (grade separation)
310-40-E-2	Millmerran-Leyburn Road	Passive level crossing	Active level crossing
310-44-E-2	Gore Highway	Active level crossing	Grade separation: road-over-rail
Local Government: Goondiwindi Regional Council			
310-4-E-2	South Kurumbul Road (Stock Route)	Passive level crossing	Active level crossing
310-5-E-2	Wondalli Kurumbul Road (Stock Route)	No crossing infrastructure	No crossing provided at this location—consolidated to 310-4-E-2 (active level crossing)
310-12-E-1	Suttons Road	Passive level crossing	Passive level crossing
310-14-E-1	Springborg Road	Passive level crossing	Passive level crossing – minor road realignment to 310-14-E-0
Local Government: Toowoomba Regional Council			
310-40-E-1	Hall Road	Passive level crossing	No crossing provided at this location – consolidated
310-41-E-6	Gilgai Lane	Passive level crossing	Grade separation: rail-over-road
310-42-E-1	Fysh Road	Active level crossing	No crossing provided at this location – road realignment to Harris Road 310-42-E-0a (active level crossing)
310-43-E-3a	Elsden Road	Passive level crossing	No crossing provided at this location – minor road realignment to 310-43-E-3 (active level crossing)
310-45-E-1	Longhurst Road	Passive level crossing	Active level crossing
310-46-E-1a	Yarranlea Road	Passive level crossing	Grade separation – minor road realignment to 310-46-E-1

Table note:

1 Interface IDs shown on Figure 1.2.

3.6.2 Proposed road-rail interface locations

Road-rail interfaces that are newly created by the Project, as well as road closures associated with the Project, are listed in Table 3.12 – where relevant, changes have been made consistent with QR's submission on the draft EIS proposed treatments. Figure 1.2 shows where proposed road-rail interfaces are located.

Table 3.12 Proposed public road-rail interface and design treatments

Interface ID ¹	Road name	Proposed treatment in the revised reference design
State Government: Department of Transport and Main Roads		
310-11-E-0	Cunningham Highway (Wondalli Street) (Stock Route)	Grade separation: road-over-rail
310-24-P-2	Millmerran–Inglewood Road	Active level crossing
310-35-P-4	Millmerran–Inglewood Road	Grade separation: rail-over-road (bridge)
310-37-P-12a	Millmerran–Inglewood Road	Grade separation: rail-over-road (bridge)
310-48-P-8	Oakey–Pittsworth Road	Grade separation: rail-over-road (bridge)
310-55-P-1	Toowoomba–Cecil Plains Road	Grade separation: rail-over-road (bridge)
310-56-P-2	Warrego Highway	Grade separation: rail-over-road (bridge)
Local Government: Goondiwindi Regional Council		
270-12-P-1	Kildonan Road (Stock Route)	Active level crossing (incorporates stock route level crossing)
310-7-E-1	Unnamed Road	Passive level crossing to provide access to multiple properties
310-10-P-1	Unnamed Road (Stock Route)	Passive level crossing
310-11-E-1	Yelarbon (adjacent to the Cunningham Highway)	Active pedestrian level crossing
310-16-P-1a	Whetstone Access Road	Active level crossing
310-17-P-7a	McDougalls Road	No crossing provided at this location— alternate access via Cremascos Road
310-18-P-8	Cremascos Road	Active level crossing
310-20-P-12	Bybera Road	Grade separation: rail-over-road (bridge)
310-21-P-9	Lovells Crossing Road (Stock Route)	Active level crossing
310-22-P-9	Thornton Road	Active level crossing
310-25-P-3	Grays Road	Passive level crossing
310-26-P-2	Wongavale–Yugilbar Road	Passive level crossing
310-27-P-3	Unnamed Road (Stock Route)	Grade separation: rail-over-road (culverts)
310-28-P-3	Unnamed Road	Active level crossing
Local Government: Toowoomba Regional Council		
310-30-P-2	Kooroongarra Anderson Road (Stock Route)	Passive level crossing
310-31-P-7	Kooroongarra Road	Active level crossing
310-32-P-4	Paton Road	Active level crossing
310-33-P-1	Nicol Creek Road	Active level crossing
310-34-P-1	Millwood Road	Active level crossing
310-35-P-4b	Heckendorf Road	Grade separation: road-over-rail
310-36-P-1	Blackwell Road	Active level crossing
310-36-P-8a	Scragg Road	No crossing provided at this location – relocated
310-36-P-8b	Commodore Peak Road/ Scragg Road	Grade separation: rail-over-road

Interface ID ¹	Road name	Proposed treatment in the revised reference design
310-37-P-12	Schwarten Road	No crossing provided at this location – consolidated
310-38-P-3b	Owens Scrub Road	Grade separation: road-over-rail
310-42-E-0a	Harris Road	Active level crossing
310-43-P-8a	Mann Silo Road	Active level crossing
310-46-P-3	Roche Road	Grade separation: rail-over-road (bridge)
310-46-P-4c	Murlaggan Road	No crossing provided at this location – relocated
310-47-P-1	Kahler Road	No crossing provided at this location – consolidated
310-47-P-3	French Road	No crossing provided at this location – road diverted/re-aligned
310-48-P-1	Tip Road	Active level crossing
310-48-P-9	Quibet Road	No crossing provided at this location – road diverted/re-aligned
310-48-P-10	Dallman Road	No crossing provided at this location – road diverted/re-aligned
310-49-P-2	Lochaber Road	Grade separation: rail-over-road (bridge)
310-49-P-6	McEwan Lane	No crossing provided at this location – consolidated
310-49-P-8	Paint Mine Road	No crossing provided at this location – road diverted/re-aligned
310-49-P-11	Linthorpe Road	Grade separation: road-over-rail
310-50-P-5	Geitz Road	No crossing provided at this location – consolidated
310-50-P-11	Linthorpe Valley Road	Active level crossing
310-51-P-8	Bushy Lane	No crossing provided at this location – road diverted/re-aligned
310-51-P-11z	Biddeston-Southbrook Road	Grade separation: rail-over-road (bridge)
310-52-P-3	Purcell Road	No crossing provided at this location – road diverted/re-aligned
310-53-P-1a	Athol School Road	Grade separation: rail-over-road
310-55-P-5	Brimblecombe Road	Grade separation: rail-over-road (bridge)
310-57-P-1	Chamberlain Road	Grade separation: rail-over-road (bridge)
310-57-P-4	Leesons Road	Active level crossing
State of Queensland		
310-24-P-3	Unnamed Road (Stock Route)	No crossing provided - stock route realignment
310-25-P-1	Unnamed Road (Stock Route)	No crossing provided - stock route realignment
310-27-P-3	Unnamed Road (Stock Route)	3 m x 3 m culvert underpass

Table note:

¹ Interface IDs shown on Figure 1.2.

The revised reference design has been developed to prevent short stacking issues with the Project's alignment. Short stacking occurs when a long vehicle does not have enough space to completely clear a rail crossing and stops while part of the vehicle is still within the rail corridor. Short stacking issues have been avoided through development of the revised reference design by maintaining a minimum separation distance between the outer rail of the Project alignment and the centreline of the nearest parallel road, in accordance with Section 5.4 of *AS 1742.7:2016* and with the *Manual of Uniform Traffic Control Devices Part 7: Railway Crossings* (DTMR, 2019b).

Short stacking will continue to be assessed during design development. Where short stacking is not considered sufficient, the safety assessment in Section 5 has recommended the designs be revisited during the Detailed Design stage. Design drawings showing available clearances can be provided to all road managers to demonstrate compliance with relevant standards, at the appropriate design review milestone.

The revised draft EIS construction footprint has been widened around most road-rail interfaces to accommodate side-tracks and other feasible constructability solutions. Impacts during construction will be managed via the Contractor's Traffic Management Plan, supported by appropriate assessments and stakeholder engagement. This may involve the use of alternative routes and/or localised side tracks. ARTC will also be widening most of the existing road reserves across the road network to provide enough land to build the permanent solution and manage side-tracking. Due to site specific constraints, ARTC and their contractor plan to investigate suitable detours, where practicable, for approval by the road manager during detailed design and construction.

Through the greenfield sections of the Project the design caters for future provision of oversized vehicles such as the PBS2B (42 m) vehicle. All brownfield corridors have a minimum of 36.5 m short stacking for formed public roads (not including stock route road reserves).

Further consultation with DTMR, GRC, TRC and the local community will confirm the location and preferred treatment for each road-rail interface. The consultation strategy for the Project is described in EIS Appendix E: Consultation Report.

3.6.3 Road alterations and diversions

The proposed public road alterations as a part of the Project which are noted in Table 3.7 will create permanent diversions and minor changes to existing traffic patterns.

All road alternations proposed will be undertaken in consultation with DTMR and the relevant local council. Any private road alternations will be undertaken with the relevant landowners.

The impacts of the proposed alterations in Table 3.12 are discussed further in Section 5.9.2.

3.7 Reference design reviews and updates

A number of road-rail interface treatments were reviewed during draft EIS submission, with updates made to the reference design as a result of the draft EIS's submissions. Further consultation between ARTC and stakeholders, including DTMR and local governments. Key reference design reviews and updates to be incorporated into the revised reference design are discussed below.

3.7.1 Separation distances

It is important to clarify that separation distances can refer to two design elements at road-rail interfaces:

- **Short Stacking:** Providing sufficient space for the largest design vehicle to store at the level crossing without creating safety issues
- **Queuing:** Providing sufficient space to accommodate traffic arriving at a level crossing without queueing onto a State controlled road asset. This includes assessing the arrival profile and probability of several vehicles arriving during a level crossing closure.

Short stacking has been addressed by maintaining a minimum separation distance between the outer rail of the Project alignment and the centreline of the nearest parallel road, in accordance with Section 5.4 of AS 1742.7:2016 – Manual of uniform traffic control devices Part 7: Railway crossings. Section 5.4 states that the minimum offset distance for short stacking needs to be long enough to accommodate the design vehicle plus a factor of safety of 5 m at the intersection.

The design vehicle for the level crossings is a PBS3B 42m Road Train except at the following locations:

- **310-40-E-2 (Millmerran – Leyburn Road):** PBS2B 30 m Road Train (current access vehicle PBS1 (20 m) – general access)
- **310-7-E-1 (Unnamed Road):** PBS3A 36.5 m Road Train (constrained brownfield site/rural access)
- **310-10-P-1 (Unnamed Road):** PBS1 19 m Semi Trailer (unused stock route).

3.7.2 Yelarbon pedestrian crossing facilities

Further assessment of the feasibility of separate pedestrian access has been undertaken as a part of the revised reference design. The revised reference design proposal consists of a grade separated road-over-rail crossing (310-11-E-0), where Cunningham Highway crosses the rail corridor approximately 400 m further west of the existing level crossing that is proposed for closure (310-11-E-1). A dedicated active pedestrian level crossing has been added at the existing Cunningham Highway interface location (310-11-E-1) to enable pedestrian movement north/south of the Yelarbon township.

ARTC has committed to maintaining connectivity of existing on and off-road pedestrian/shared user facilities, where the need for that facility remains in a Third Party Agreement with local councils. Consultation will continue with local councils regarding pedestrian crossing options during detailed design.

3.7.3 Level crossing between East Sawmill Road and Railway Road at Yelarbon

Further assessment of the feasibility of the existing road-rail interface between East Sawmill Road and Railway Road has been undertaken. The proposed 'no crossing provided' outcome has been retained as a result of:

- The conflict with proposed GrainCorp siding and turnout interface
- The ability for vehicular movements north/south of the rail line to occur via the safer, grade separated Cunningham Highway overpass, which directly connects to Railway Parade
- Revised treatment of 310-11-E-1 to retain existing pedestrian movement north/south of the rail line via a pedestrian crossing at the existing Cunningham Highway level crossing
- Feedback received from GrainCorp (during consultation in Yelarbon on 9 May 2018 and 6 September 2018) regarding the level crossing noting that there were no issues with the closure of this level crossing
- Feedback received from GrainCorp on 14 July 2023 stating GrainCorp no longer object to the closure of the passive crossing located at Yelarbon between Railway Parade and East Sawmill Road.

The Project commits to continuing to work collaboratively with GrainCorp throughout detailed design.

3.7.4 Pampas road-rail interface design

In response to feedback received from TRC and DTMR via their draft EIS submissions and regular ongoing technical liaison and with consideration of ongoing consultation with the community, the design of the Gore Highway/Fysh Road connection has been updated to be via Harris Road and level crossing design in Pampas. ARTC has also upgraded the level crossing treatment for Gilgai Lane from a level crossing to a grade separation—rail-over-road. This updated road design at Pampas influences reference design changes of the road corridor and level crossing location to address stakeholder concerns.

3.7.5 Pittsworth road-rail interface design

In 2021, eight community information sessions were held in Pittsworth to address community concerns about Project impacts, including road, rail and bridge design. Residents were engaged on design treatments for French Road and Tip Road level crossing, and grade separation design for Oakey Pittsworth Road, Quibet Road and Dallman Road, Lochaber Road, McEwan Lane and Paint Mine Road, and Linthorpe Road. The rail bridge design at Pittsworth is a topography assisted grade separation (rail bridge over the road) at Oakey Pittsworth Road. The rail bridge spans a natural depression in the landscape as the alignment continues to rise to the highest point on the alignment towards Southbrook. Community information sessions are detailed in EIS Appendix E: Consultation Report.

3.7.6 Millmerran-Inglewood Road level crossing design

From both a road and rail safety perspective, the overarching objective across Inland Rail is to, in so far as is reasonably practicable, minimise the number of level crossings across the alignment. This has resulted in two of the three interfaces with Millmerran-Inglewood Road proposed to be grade separated as part of the Inland Rail Scope.

In consultation with DTMR, the Project team has undertaken extensive reviews and assessed design alternatives for the Millmerran-Inglewood Road interfaces, which included alternative rail alignments and grade separations.

The two northern crossings (310-35-P-4 and 310-37-P-12a) are topography-based grade separations, where the rail height, governed by the vertical rail grades, is naturally higher than the existing road level. The rolling hills of Millwood and Millmerran provide an opportunity for the rail line to bridge Millmerran-Inglewood Road, which falls within localised depressions in the landscape.

The most southern crossing of Millmerran-Inglewood Road, at Inglewood (310-24-P-2), did not meet a topography-based grade separation, nor any criteria triggering an automatic grade separation detailed Public Level Crossing Treatment methodology. Applying the ONRSR audited methodology, higher order treatments, such as grade separation, are not justified at this location as part of the Inland Rail scope, as the cost to grade separate is grossly disproportionate to the benefits.

From a future proofing perspective, ARTC used 2040 road and rail traffic numbers as part of the assessment. These traffic numbers have been reviewed by DTMR and factored in the known growth rates in this area. Noting there is also relatively low train volumes in this area with a forecast approximate 1 train every 2 hours on average when IR is first operational and increasing to around 1 train every hour by 2040.

The IR scope for this location is to construct an active level crossing with boom barriers and flashing lights. This is the highest form of level crossing control in the Australian Standard (AS1742.7-2016). All level crossings will be designed to meet the relevant Australian, State and Road Authority standards, which include the factors including sighting distances, gradients and approach angles.

ARTC will continue to work collaboratively with DTMR as detailed design progresses regarding the proposed level crossing design solution.

3.7.7 Kildonan Road level crossing design

ARTC have worked closely with GRC as part of the design process, particularly regarding inputs into the assessment. GRC provided their own traffic count information which formed the baseline of the assessment. From a future proofing perspective, ARTC use 2040 road and rail traffic numbers as part of the assessment. These traffic numbers have been reviewed by council and factor in the known developments in this area.

The traffic and transport assessment showed that even if Kildonan Road peak hourly volumes were doubled, it would remain as a LOS A (see definition in Section 5.5.1.1). This is also a reflection of the relatively low train volumes in this area with a forecast approximate 1 train every 2 hours on average when IR is first operational and increasing to around 1 train every hour by 2040.

ARTC, in collaboration with GRC, explored other design options for Kildonan Road including grade separation. This location did not meet the automatic grade separation criteria detailed in the Public Level Crossing Treatment Methodology (provided in Appendix BT), including topography-based criteria, nor any other metrics triggering an automatic grade separation. Applying the ONRSR audited methodology, higher order treatments, such as grade separation, are not justified at this location as part of the Inland Rail scope, as the cost to grade separate is grossly disproportionate to the benefits.

The IR scope for this location is to construct an active level crossing with boom barriers and flashing lights. This is the highest form of level crossing control in the AS1742.7-2016. All level crossings will be designed to meet the relevant Australian, State and Road Authority standards, which include the factors including sighting distances, gradients and approach angles.

ARTC will continue to work collaboratively with GRC as detailed design progresses regarding the proposed level crossing design solution.

3.7.8 Owens Scrub Road

As part of the reference design updates, the section of Owens Scrub Road in the vicinity of Foxwood Road has been realigned and a grade separated road-over-rail crossing (310-38-P-3b) has been proposed.

4 Development traffic

4.1 Traffic generation

Two project stages have been determined for traffic generation, namely the Construction Works and Operations stage. Construction of the Project is anticipated to occur between third quarter 2024 to first quarter 2028, with early works occurring from first quarter 2024. The Project is anticipated to be operational from early 2028. The traffic generation of these two stage are discussed in the sections below.

4.1.1 Construction

Details about the Construction Works stage of the Project are provided below. This provides a simple overview of traffic generation relevant for the TIA, with further detailed information about the Construction Works stage provided in EIS Chapter 5: Project Description.

4.1.1.1 Construction activities and schedule

The construction activities accounted for in the TIA include:

- Delivery of materials to the Project footprint
- Movement of workforce
- Transportation/collection of plant, equipment and other machinery
- Delivery of non-resident workforce accommodation facility cabins to site
- Rail-to-road diversions due to track closures.

The assessment of construction movements contained within this report has been undertaken based on the construction task, material sources, quantities, modes, routes and durations identified in the Project constructability review. The ultimate determination of the final construction and HV routes will be subject to detailed design and consultation between DTMR, the relevant LGA, the construction contractor and, where relevant, QR.

Construction activity related transport will primarily be by road, with materials delivered to key laydown area delivery points along the rail corridor. Additionally, it is intended that rail track and rail sleepers will be delivered to the alignment by rail to ARTC's Whetstone Material Distribution Centre with distribution to occur from this location primarily via rail, with some distribution by trucks allowed for on the road network.

Buffer factors have been applied to each construction activity to allow for additional journeys that may be required as a consequence of factors such as material quality compliance issues, breakages etc. These buffer factors also cater for potential minor changes to material volumes resulting from design and rail alignment updates (horizontal or vertical). The adopted buffer factors are considered conservative and generally considered acceptable for the feasibility stage of the Project based on the delivery of other rail projects. The buffer factors included are based on an understanding, from multiple projects and over 20 years of construction experience, of what happens to materials during delivery and on site. Such experience includes:

- Ballast:
 - Tendency to spread out when it is placed, leading to over placement. It is then difficult to redistribute as it may become contaminated.
- Capping:
 - Unbound materials can be imported with the moisture content over optimum moisture content, resulting in the movement of more water than required and the need further trucks than anticipated
 - To ensure compaction to the edges, there is potential for overplacement and then compact right to the edge and then trim to the required profile. However, this leads to material loss.

- If any double handling of this material is introduced, capping will be lost on the floor of the stockpile each time
- Precast elements (and sleepers);
 - While the quality control on precast elements is very good, these travel long distances over rough roads to reach site during which cracks can form which may lead to the element being rejected
- In situ concrete:
 - Over ordering of concrete leads to returned loads or dumped portions (e.g. ordering 6 m³ for a 5.5 m³ pour)
 - Concrete rejected due to quality control issues such as excessive slump
 - Over excavation in piles leading to more volume than a perfect cylinder
 - Thicker than required blinding layers being installed
- Imported fill:
 - There may be some variable compaction factors and optimum moisture content that need to be accounted for
 - Over-compaction and the trimming leads to losses in the table drains
 - Any stockpiling for double handling will lead to material loss on the floor of the stockpile
- Water:
 - Evaporation
 - Poor targeting of placement
 - Extra wetting of access roads and entrances
 - Wetting of stockpiles, if required
 - Variable optimum moisture content of material types.

It is also envisaged that these factors would cover any peak delivery times.

Table 4.1 lists the delivery method, proposed vehicle type, quantity/volume, adjustment/buffer factors and a schedule of indicative start and end dates by the respective activities. The dates provided in Table 4.1 reflect anticipated time periods that the trucks will be operating along the public road network and do not necessarily reflect all movement of materials. Construction schedules assumed for the purposes of EIS technical assessments have been based on information available at the time of assessment and are subject to change. The assumptions made regarding construction schedules are considered suitably conservative and appropriate for the purposes of EIS impact assessment and any changes unlikely to alter the outcomes and conclusions presented in the EIS.

Table 4.1 Construction activity schedule and details for road network traffic generation

Construction activity	Delivery mode	Total quantity/ volume by public roads	Buffer factor	Austrorads vehicle class	Vehicle capacity	Indicative start date	Indicative end date
Bottom ballast	Road	442,725 t	7.5%	Class 10	28 t	Q1 2027	Q1 2028
Top ballast	Road	226,660 t	7.5%	Class 10	28 t	Q2 2027	Q4 2027
Capping	Road	339,601 m ³	7.5%	Class 10	14 m ³	Q1 2026	Q3 2027
Precast concrete - bridges	Road	1,198 items	2.5%	OSOM	1 to 3 items	Q3 2025	Q2 2027
Precast concrete - culverts	Road	30,667 items	2.5%	Class 9	10 items	Q3 2024	Q3 2026
In situ concrete - bridges	Road	104,246 m ³	5.0%	Class 5	6 m ³	Q1 2025	Q2 2027
In situ concrete - culverts	Road	21,992 m ³	5.0%	Class 5	6 m ³	Q3 2024	Q3 2026
Cut-to-fill	Road/haul routes	2,788,000 m ³ *	0.0%	Class 10	14 m ³	Q2 2024	Q1 2026
Cut-to-spoil	Road/haul routes	525,900 m ³ *	0.0%	Class 10	14 m ³	Q4 2024	Q1 2026
Import fill	Road/haul routes	2,396,999 m ³ *	10.0%	Class 10	14 m ³	Q3 2024	Q1 2026
Water	Road	2,409 ML	10.0%	Class 7	0.02 ML	Q1 2024	Q1 2028
Delivery/collection of plant, tools, other materials	Road	168 veh/month	0.0%	Class 9	-	Q2 2024	Q1 2028
Staff transport to site	Road	495 veh/day	0.0%	Class 1	-	Q1 2024	Q1 2028
Camp Construction	Road	450 items	0.0%	Class 10	1 item	Q1 2024	Q2 2024
Sleepers	Road-rail	37,893 items *	2.5%	Class 10	80 items	Q1 2027	Q3 2027
Rail	Road-rail	4,111 t *	0.0%	OSOM	61.7 t	Q1 2027	Q3 2027
Rail-to-road diversions	Road	714,634 t/year	0.0%	Class 10	38.84 t	Q3 2024	Q1 2028

Table notes:

m³ = cubic metres

t = tonnes

* Volumes are specified for movement along the public road network and exclude the quantities moved along haul routes or via train

A summary of the proposed HV trips (vehicles per month) resulting from the construction activities is shown in Figure 4.1. The peak periods outlined in the figure represent anticipated periods of high earth works transportation (cut-to-fill, cut-to-spoil and import fill) on the network.

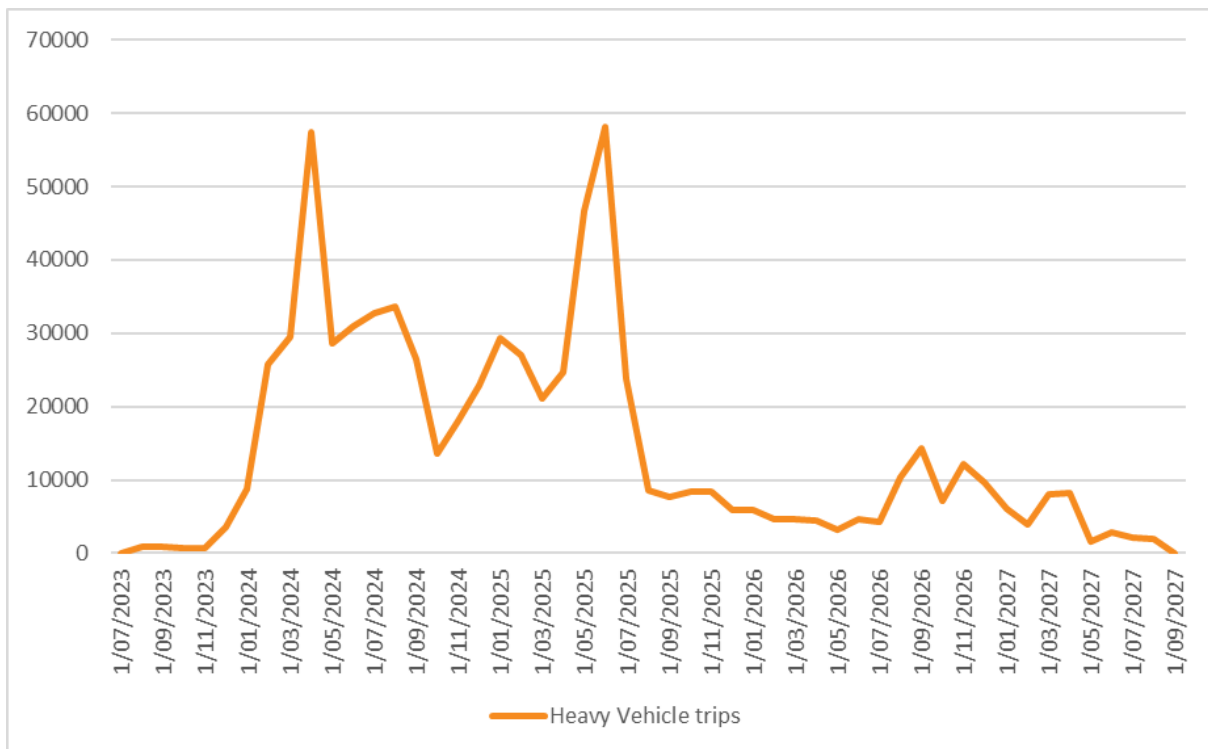


Figure 4.1 Summary of scheduled construction activity trips (vehicles per month)

4.1.1.2 Workforce

A preliminary estimate of the workforce required for construction, including the construction of ARTC's Whetstone Material Distribution Centre is shown in Figure 4.2. Workforce on site for the Project is estimated to peak at 900 full time equivalents between weeks 77 and 83 of construction, with an average requirement of 383 full-time equivalent workers across the full construction period.

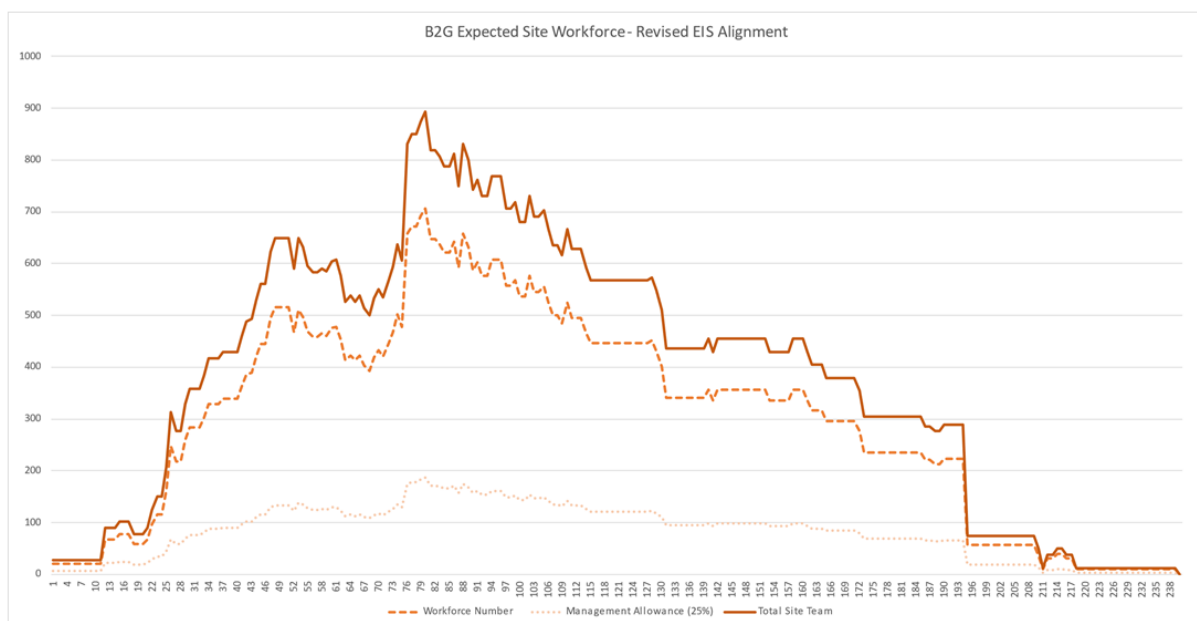


Figure 4.2 Estimated site workforce

An initial assessment of workforce demand and safe commutable distances has identified a potential need for non-resident workforce accommodation facilities. The accommodation requirements for workforce in the northern extent of the Project are expected to be sufficiently met by existing accommodation available in Toowoomba and surrounding towns such as Southbrook and Pittsworth. Existing accommodation is less readily available south of Pittsworth. To compensate for this shortage in accommodation, the Project includes allowance for three non-resident workforce accommodation facilities proximate to Yelarbon, Inglewood and Millmerran to accommodate the forecast construction workforce. The location for a Millmerran based non-resident workforce accommodation has not been included in the revised draft EIS. The location, capacity and layout of the non-resident workforce accommodation facilities that are required will be confirmed and finalised by the construction contractor during the Detailed Design stage of the Project.

4.1.1.3 Hours of work

The proposed hours of work for the Project are detailed in EIS Chapter 5: Project Description in accordance with the DTMR's Transport Noise Management Code of Practice: Volume 2 – Construction Noise and Vibration. The proposed hours of work include standard construction hours of Monday to Friday 7.00 am to 6.00 pm and Saturday 8.00 am to 1.00 pm, with additional non-standard hours spanning the remaining hours of the week.

For the purpose of a conservative assessment, the TIA assumes a 12-hour work day across 22 working days/month. Construction-related traffic is assumed to be linearly distributed across the above work hours.

Peak hour traffic volumes were derived from peak daily volumes using the following key assumptions:

- Material delivery movements will be evenly distributed across the standard daily 12 hours of construction
- It has been assumed that two shifts will occur per day with 50 per cent of total staff working each shift.

4.1.1.4 Summary

Total trips by construction activity for each road section have been derived using material requirements and delivery schedules developed for the Project and detailed in above sections. These total trips have been summarised in Table 4.2 by activity and year of construction for the Project and include all trips generated by the construction vehicles. Vehicle trips are to be considered as round trips; loaded towards its destination and unloaded returning to its origin.

All vehicle trips except for workforce are HV movements, whilst workforce trips will be made via LV movements. Further details on the vehicle type adopted for each route type are provided in Section 5.6.1.

Table 4.2 Total construction vehicle round trips by activity, per year

Transportation task	2024	2025	2026	2027	2028
Movement of workforce	1,643,622	3,231,735	3,230,876	3,211,886	802,972
Material movement: cut to fill	3,057,906	3,478,583	126,379	0	0
Material movement: cut to spoil ²	66,032	365,241	160,629	0	0
Material movement: general fill	186,266	1,463,675	403,609	0	0
Delivery of material from quarries	114,694	34,408	186,581	781,175	27,974
Delivery of rail	0	0	0	4,008	0
Delivery of sleepers	0	0	0	28,368	0
Delivery of water	267,463	557,087	507,049	311,323	488
Delivery of precast concrete bridge components	0	1,875	28,480	9,284	0
Delivery of precast concrete culverts	20,317	190,093	59,944	0	0
Delivery of in situ concrete for culverts	4,918	53,179	14,368	0	0
Delivery of in situ concrete for bridges	0	57,987	190,264	43,652	0

Transportation task	2024	2025	2026	2027	2028
Movement of plant, equipment and tools	71,722	143,443	143,443	143,443	35,861
Delivery of non-resident workforce accommodation facility cabins	850,281	0	0	0	0
Movement of rail-to-road diversions	633,772	1,946,954	1,946,954	1,946,954	367,268

Table notes:

- 1 Traffic impacts associated with the off-site disposal of waste have not been assessed, as waste volumes generated during construction of the Project are not expected to be significant (Chapter 22: Waste and Resource Management)
- 2 Spoil is indicative of material that is expected to be unusable for use in the rail formation without treatment. Opportunities for reuse of this material within the Project footprint will be investigated prior to offsite disposal.

4.1.2 Operation

4.1.2.1 Train operations

The Project will involve operation of a single-rail track with crossing loops, initially, to accommodate double-stacked freight trains 1,800 m long and 6.5 m high. Train speeds will vary according to axle loads and track geometry, and range from 80 to 115 km/h.

The hours of operation are anticipated to be on a 24 hour/7-day calendar. It is estimated that once operational, the Project will involve an annual average of about 14 train services per day during initial years of operation. This is likely to increase to an average of 20 trains per day in 2040 and up to 25 per day during peak operational periods. Annual freight tonnages will increase in parallel, from approximately 14.2 million tonnes per year in 2029 to 21.8 million tonnes per year in 2040.

4.1.2.2 Workforce

It is anticipated that the ongoing operation and maintenance of the Project will require a workforce of approximately 10 to 15 FTE. The operational workforce will be based at provisioning centres outside the immediate vicinity of the Project.

It is assumed that minimal new trips will be generated as existing trips would be accounted for and the dispersed nature of these trips across the road network would have a minimal impact on road network operational performance. Therefore, a detailed analysis was not considered necessary as part of the TIA.

4.1.2.3 Maintenance

During the Operations stage of the Project, it is anticipated that occasional access to and from the corridor will be required to conduct routine inspection and maintenance works. The existing road network will be used by maintenance crews to travel to the rail corridor. Once in the rail corridor, the RMAR incorporated into the design of the Project will be used in preference to the existing road network for project maintenance activities. These activities are likely to be infrequent and the related traffic volumes are likely to be minimal with no envisaged impact to operational conditions of the surrounding road network. These traffic volumes are envisaged not to exceed 5 per cent of base conditions. Therefore, a detailed analysis was not considered necessary as part of the TIA.

4.2 Trip distribution

Trips are distributed on the road network as per the construction routes to laydown areas along the length of the Project alignment. These laydown areas are situated next to the rail corridor to facilitate direct access to/from the laydown to the rail corridor. The laydown areas will act as a centralised point for all material storage.

The exact schedule of delivery is unknown at this stage of the Project; therefore, a uniform delivery schedule has been utilised as an indicative schedule. Further information on the construction delivery schedule will be required to be developed by the appointed construction contractor once delivery materials and routes are determined. Consideration of micro fluctuations will need to be taken into account at that stage. Nonetheless, the mitigation measures provided as a part of this assessment acknowledge these possibilities and the requirement for a traffic management plan to ensure that the impact on the road network is managed.

Primary construction routes determined for the Project are used for the purposes of the TIA. Proposed construction transport routes are identified in Section 1.2.3.2, while Appendix U to Appendix AE illustrate the various primary construction routes. Appendix AF shows the routes identified for diversion routes resulting from the temporary closure of existing rail lines.

Where possible, routes generally follow roads suitable for HV use, considering distance and staying on arterial roads and avoiding populated areas such as town centres. The NHVR journey planner was used to identify roads suitable for HVs. All routes passing through or originating in Toowoomba are using the Toowoomba Bypass, if practical. Haulage routes that were used for the construction of the Toowoomba Second Range Crossing (now Toowoomba Bypass), as well as those suggested in TRC feedback, have been considered.

4.2.1 Workforce routes

The workforce routes proposed within this assessment transport the workforce from the proposed non-resident workforce accommodation facilities and townships to laydown areas along the alignment for construction of the alignment. The workers routes originate from the following:

- Resident accommodation options:
 - Toowoomba
- Non-resident accommodation options:
 - Near Yelarbon
 - Near Inglewood
 - Near Millmerran.

For the purpose of the TIA, workers routes originating from Toowoomba have been considered to commence from the outskirts of the town based on feedback from TRC, compared with a nominal inner-city starting point for all routes which was used previous. This is considered appropriate as workers based on Toowoomba will originate from all areas of the city, therefore making it very hard to predict movements and providing an inaccurate representation of impacts by commencing routes from a single location within Toowoomba.

For the purpose of the workforce routes, all trips have been assumed to be undertaken in dual-cab utility vehicles (Austroads Class 1 vehicle), with no car-sharing/car-pooling in place. This is expected to result in very conservative LV volumes along these routes, with likely implementation of car-sharing or workers buses to be decided in the next stage of the Project.

Table 4.3 provides an overview of workforce movements per year on each of the road links. The proposed construction transport routes for workforce are illustrated in Appendix AD.

Table 4.3 Total light vehicle volumes per year per direction for transportation of workforce

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	16,249	30,186	30,150	30,150	7,537
	Ch 107.4 km to Ch 107.6 km	14,389	26,466	26,430	26,430	6,607
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	14,389	26,466	26,430	26,430	6,607
	Ch 2.0 km to Ch 3.9 km	14,389	26,466	26,430	26,430	6,607
	Ch 3.9 km to Ch 10.2 km	13,459	24,606	24,570	24,570	6,142
	Ch 10.2 km to Ch 13.9 km	11,599	20,886	20,850	20,850	5,212
	Ch 13.9 km to Ch 18.5 km	10,669	19,026	18,990	18,990	4,747
	Ch 18.5 km to Ch 27.1 km	930	1,860	1,860	1,860	465
	Ch 27.1 km to Ch 29.3 km	1,860	3,720	3,720	3,720	930
	Ch 29.3 km to Ch 34.7 km	1,860	3,720	3,720	3,720	930
	Ch 34.7 km to Ch 39.6 km	1,860	3,720	3,720	3,720	930
	Ch 39.6 km to Ch 40.3 km	2,790	5,580	5,580	5,580	1,395
	Ch 40.3 km to Ch 40.5 km	2,790	5,580	5,580	5,580	1,395
	Ch 40.5 km to Ch 43.9 km	8,370	16,740	16,740	16,740	4,185
	Ch 43.9 km to Ch 46.3 km	2,790	5,580	5,580	5,580	1,395
	Ch 46.3 km to Ch 88.0 km	2,790	5,580	5,580	5,580	1,395
	Ch 88.0 km to Ch 88.2 km	2,790	5,580	5,580	5,580	1,395
	Ch 88.2 km to Ch 90.0 km	2,790	5,580	5,580	5,580	1,395
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	12,090	24,180	24,180	24,180	6,045
	Ch 2.2 km to Ch 5.4 km	10,230	20,460	20,460	20,460	5,115
	Ch 5.4 km to Ch 6.7 km	8,370	16,740	16,740	16,740	4,185
	Ch 6.7 km to Ch 7.7 km	7,440	14,880	14,880	14,880	3,720
	Ch 7.7 km to Ch 11.2 km	5,580	11,160	11,160	11,160	2,790
	Ch 11.2 km to Ch 15.3 km	4,650	9,300	9,300	9,300	2,325
	Ch 15.3 km to Ch 17.5 km	3,720	7,440	7,440	7,440	1,860
	Ch 17.5 km to Ch 19.0 km	2,790	5,580	5,580	5,580	1,395
	Ch 19.0 km to Ch 20.3 km	1,860	3,720	3,720	3,720	930
	Ch 20.3 km to Ch 21.5 km	930	1,860	1,860	1,860	465
	Ch 21.5 km to Ch 23.2 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 23.2 km to Ch 25.0 km	2,790	5,580	5,580	5,580	1,395
	Ch 25.0 km to Ch 30.1 km	2,790	5,580	5,580	5,580	1,395
	Ch 30.1 km to Ch 38.7 km	4,650	9,300	9,300	9,300	2,325
	Ch 38.7 km to Ch 41.1 km	6,510	13,020	13,020	13,020	3,255
	Ch 41.1 km to Ch 41.7 km	6,510	13,020	13,020	13,020	3,255
	Ch 41.7 km to Ch 43.2 km	8,370	16,740	16,740	16,740	4,185
	Ch 43.2 km to Ch 44.7 km	10,230	20,460	20,460	20,460	5,115
	Ch 44.7 km to Ch 47.6 km	12,090	24,180	24,180	24,180	6,045
	Ch 47.6 km to Ch 52.2 km	13,950	27,900	27,900	27,900	6,975
	Ch 52.2 km to Ch 53.3 km	15,810	31,620	31,620	31,620	7,905
	Ch 53.3 km to Ch 60.8 km	16,740	33,480	33,480	33,480	8,370
	Ch 60.8 km to Ch 63.0 km	16,740	33,480	33,480	33,480	8,370
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	30,690	61,380	61,380	61,380	15,345
	Ch 0.7 km to Ch 0.8 km	30,690	61,380	61,380	61,380	15,345
	Ch 0.8 km to Ch 1.4 km	30,690	61,380	61,380	61,380	15,345
	Ch 1.4 km to Ch 3.0 km	30,690	61,380	61,380	61,380	15,345
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	0	0
	Ch 2.5 km to Ch 3.5 km	1,860	3,720	3,720	3,720	930
	Ch 3.5 km to Ch 6.2 km	12,090	24,180	24,180	24,180	6,045
	Ch 6.2 km to Ch 9.0 km	11,160	22,320	22,320	22,320	5,580
	Ch 9.0 km to Ch 13.1 km	9,300	18,600	18,600	18,600	4,650
	Ch 13.1 km to Ch 14.0 km	9,300	18,600	18,600	18,600	4,650
	Ch 14.0 km to Ch 17.3 km	7,440	14,880	14,880	14,880	3,720
	Ch 17.3 km to Ch 18.1 km	7,440	14,880	14,880	14,880	3,720
	Ch 18.1 km to Ch 21.8 km	6,510	13,020	13,020	13,020	3,255
	Ch 21.8 km to Ch 28.0 km	4,650	9,300	9,300	9,300	2,325
	Ch 28.0 km to Ch 33.0 km	2,790	5,580	5,580	5,580	1,395
	Ch 33.0 km to Ch 35.6 km	930	1,860	1,860	1,860	465
	Ch 35.6 km to Ch 37.7 km	0	0	0	0	0
	Ch 37.7 km to Ch 39.8 km	0	0	0	0	0
	Ch 39.8 km to Ch 41.9 km	1,860	3,720	3,720	3,720	930
	Ch 41.9 km to Ch 45.9 km	2,790	5,580	5,580	5,580	1,395

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 45.9 km to Ch 47.6 km	3,720	7,440	7,440	7,440	1,860
	Ch 47.6 km to Ch 53.3 km	3,720	7,440	7,440	7,440	1,860
	Ch 53.3 km to Ch 55.7 km	4,650	9,300	9,300	9,300	2,325
	Ch 55.7 km to Ch 56.6 km	4,650	9,300	9,300	9,300	2,325
	Ch 56.6 km to Ch 59.2 km	19,039	35,766	35,730	35,730	8,932
	Ch 59.2 km to Ch 61.0 km	19,039	35,766	35,730	35,730	8,932
	Ch 61.0 km to Ch 65.7 km	17,179	32,046	32,010	32,010	8,002
	Ch 65.7 km to Ch 68.7 km	16,249	30,186	30,150	30,150	7,537
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	1,860	3,720	3,720	3,720	930
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	12,090	24,180	24,180	24,180	6,045
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	2,790	5,580	5,580	5,580	1,395
	Ch 10.1 km to Ch 10.3 km	2,790	5,580	5,580	5,580	1,395
	Ch 10.3 km to Ch 12.1 km	2,790	5,580	5,580	5,580	1,395
	Ch 12.1 km to Ch 14.5 km	2,790	5,580	5,580	5,580	1,395
	Ch 14.5 km to Ch 16.3 km	930	1,860	1,860	1,860	465
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	5,580	11,160	11,160	11,160	2,790
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	5,580	11,160	11,160	11,160	2,790
	Ch 0.4 km to Ch 1.5 km	5,580	11,160	11,160	11,160	2,790
	Ch 1.5 km to Ch 2.4 km	3,720	7,440	7,440	7,440	1,860
	Ch 2.4 km to Ch 4.5 km	1,860	3,720	3,720	3,720	930
	Ch 4.5 km to Ch 5.0 km	1,860	3,720	3,720	3,720	930
	Ch 5.0 km to Ch 5.3 km	930	1,860	1,860	1,860	465
	Ch 5.3 km to Ch 6.2 km	930	1,860	1,860	1,860	465
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	930	1,860	1,860	1,860	465
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	930	1,860	1,860	1,860	465
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	1,860	3,720	3,720	3,720	930
	B2G-LDN055.4 to B2G-LDN054.2	1,860	3,720	3,720	3,720	930

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Cunningham Highway to B2G-LDN052.8	1,860	3,720	3,720	3,720	930
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	930	1,860	1,860	1,860	465
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	1,860	3,720	3,720	3,720	930
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	2,790	5,580	5,580	5,580	1,395
	NS2B-LDN033.2 to NS2B-LDN035.6	930	1,860	1,860	1,860	465
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	930	1,860	1,860	1,860	465
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	0	0
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0
	Cunningham Highway to Eukabilla Road	2,790	5,580	5,580	5,580	1,395
McDougalls Road	B2G-LDN049.8 to McDougalls Road	930	1,860	1,860	1,860	465
	McDougalls Road to Cunningham Highway	930	1,860	1,860	1,860	465
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	930	1,860	1,860	1,860	465
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	930	1,860	1,860	1,860	465
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	930	1,860	1,860	1,860	465
	B2G-LDN067.6 to Millmerran-Inglewood Road	930	1,860	1,860	1,860	465
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	11,599	20,886	20,850	20,850	5,212
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	930	1,860	1,860	1,860	465
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	930	1,860	1,860	1,860	465
	B2G-LDN006.3 to Wondalli Kurumbul Road	1,860	3,720	3,720	3,720	930
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	1,860	3,720	3,720	3,720	930
	Yelarbon Kurumbul Road to B2G-LDN020.3	2,790	5,580	5,580	5,580	1,395
	B2G-LDN020.3 to B2G-LDN025.9	3,720	7,440	7,440	7,440	1,860
	B2G-LDN025.9 to Cunningham Highway	5,580	11,160	11,160	11,160	2,790
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	12,090	24,180	24,180	24,180	6,045
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	1,860	3,720	3,720	3,720	930
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	930	1,860	1,860	1,860	465
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	1,860	3,720	3,720	3,720	930

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	1,860	3,720	3,720	3,720	930
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	1,860	3,720	3,720	3,720	930
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	13,950	27,900	27,900	27,900	6,975
	Saleyards Road to Gore Highway	13,950	27,900	27,900	27,900	6,975
Chamberlain Road	Warrego Highway to B2G-LDN204.2	930	1,860	1,860	1,860	465
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	1,860	3,720	3,720	3,720	930
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	930	1,860	1,860	1,860	465
Dieckmann Road	B2G-LDN150.5 to Gore Highway	1,860	3,720	3,720	3,720	930
Draper Road	Steger Road to B2G-FBW206.9	1,860	3,720	3,720	3,720	930
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	1,860	3,720	3,720	3,720	930
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	930	1,860	1,860	1,860	465
Gilgai Lane	B2G-LDN144.6 to Gore Highway	1,860	3,720	3,720	3,720	930
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	930	1,860	1,860	1,860	465
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	930	1,860	1,860	1,860	465

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	930	1,860	1,860	1,860	465
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	930	1,860	1,860	1,860	465
Koroongarra Road	Borrow Site #13 (Koroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	1,860	3,720	3,720	3,720	930
	Steger Road to B2G-LDN206.3	1,860	3,720	3,720	3,720	930
Linthorpe Road	Gore Highway to B2G-LDN175.5	930	1,860	1,860	1,860	465
Linthorpe Valley Road	Geitz Road to Gore Highway	930	1,860	1,860	1,860	465
Lochaber Road	Gore Highway to B2G-LDN172.0	930	1,860	1,860	1,860	465
	B2G-LDN172.0 to B2G-LDN172.6	930	1,860	1,860	1,860	465
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	1,860	3,720	3,720	3,720	930
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Koroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	1,860	3,720	3,720	3,720	930
	Kahler Road to Gore Highway	2,790	5,580	5,580	5,580	1,395
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	930	1,860	1,860	1,860	465
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	1,860	3,720	3,720	3,720	930
Paint Mine Road	Gore Highway to B2G-LDN173.5	930	1,860	1,860	1,860	465
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	1,860	3,720	3,720	3,720	930
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	930	1,860	1,860	1,860	465

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Scragg Road	Commodore Peak Road to B2G-LDN123.6	1,860	3,720	3,720	3,720	930
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	1,860	3,720	3,720	3,720	930
	New Hope Recycled Water Pipeline to Draper Road	1,860	3,720	3,720	3,720	930
	Draper Road to Leasons Road	0	0	0	0	0
Tummaville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	30,690	61,380	61,380	61,380	15,345
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	1,860	3,720	3,720	3,720	930
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	1,860	3,720	3,720	3,720	930
	B2G-LDN161.0 to Desmonds Lane	930	1,860	1,860	1,860	465

4.2.2 Water routes

ARTC recognises water sourcing and availability is critical to supporting the construction program for the Project. Sources of construction water will be finalised as the construction approach is refined during the Detailed Design stage of the Project (post-EIS). Through this process detailed water demand planning will be undertaken, including detailed contingency options in the event that protracted dry seasonal conditions prevail and water supply options become unavailable.

The ultimate water sourcing strategy for the Project will be documented in a Construction Water Plan and be dependent on:

- Climatic conditions in the lead up to construction
- Confirmation of private water sources made available to the Project by landowners under private agreement
- Confirmation of access agreements with local governments for sourcing of mains water.

Options for the sourcing of construction water, subject to availability, are anticipated to be as follows:

- Commercial, licensed water supplies where capacity exists
- Public surface water storages (i.e. dams and weirs)

- Permanently (perennial) flowing watercourses
- Privately held water storages (i.e. dams or ring tanks, under private agreement)
- Existing registered and licensed bores
- Treated water (e.g. from wastewater treatment plants)
- New bores established to service the Project under appropriate water licence or entitlement (least preferred option).

An assessment of the suitability of each source will need to be made for each construction activity requiring water, based on the following considerations:

- Legal access
- Volumetric requirement for the activity
- Water quality requirement for the activity (e.g. camps will need potable water)
- Source location relative to the location of need.

Construction water will be supplied to various points along the alignment by water trucks (Austroads Class 7 vehicles) for activities including earthworks, haul road maintenance, dust suppression, track works and concrete batching. For the purpose of incorporating the delivery of water into the TIA, the assessment has considered the supply of water from public water storages (dams and weirs). This logic will need to be revised once the construction water strategy for the Project is confirmed during detailed design.

Table 4.4 provides an overview of water truck movements per year on each of the road links, while the proposed construction transport routes for water are illustrated in Appendix AC. For the purpose of this TIA, water has been considered in a uniform delivery schedule.

Table 4.4 Total heavy vehicle loads per year for transportation of water

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	4,662	6,928	2,562	2,067	5
	Ch 96.2 km to Ch 97.5 km	4,662	6,928	2,562	2,067	5
	Ch 97.5 km to Ch 105.7 km	4,662	6,928	2,562	2,067	5
	Ch 105.7 km to Ch 107.4 km	3,258	2,617	1,215	1,039	1
	Ch 107.4 km to Ch 107.6 km	3,258	2,617	1,183	1,039	1
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	3,258	2,617	1,183	1,039	1
	Ch 2.0 km to Ch 3.9 km	3,258	2,617	1,183	1,039	1
	Ch 3.9 km to Ch 10.2 km	0	95	0	0	0
	Ch 10.2 km to Ch 13.9 km	0	0	0	0	0
	Ch 13.9 km to Ch 18.5 km	2,273	1,760	788	725	1

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 18.5 km to Ch 27.1 km	4,673	3,750	1,619	1,491	2
	Ch 27.1 km to Ch 29.3 km	5,455	3,940	1,809	1,802	3
	Ch 29.3 km to Ch 34.7 km	2,230	541	1,521	1,166	3
	Ch 34.7 km to Ch 39.6 km	2,230	541	1,521	1,166	3
	Ch 39.6 km to Ch 40.3 km	2,230	541	1,521	1,118	3
	Ch 40.3 km to Ch 40.5 km	2,230	541	1,521	1,118	3
	Ch 40.5 km to Ch 43.9 km	0	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	2,014	22,203	6,324	5,608	5
	Ch 2.2 km to Ch 5.4 km	1,612	18,374	4,631	4,697	4
	Ch 5.4 km to Ch 6.7 km	1,612	18,374	4,631	4,697	4
	Ch 6.7 km to Ch 7.7 km	1,612	18,374	4,631	4,697	4
	Ch 7.7 km to Ch 11.2 km	1,210	13,842	3,350	3,811	3
	Ch 11.2 km to Ch 15.3 km	1,210	13,842	3,350	3,811	3
	Ch 15.3 km to Ch 17.5 km	794	9,142	2,351	2,000	2
	Ch 17.5 km to Ch 19.0 km	794	9,142	2,351	2,000	2
	Ch 19.0 km to Ch 20.3 km	794	9,142	2,190	2,000	2
	Ch 20.3 km to Ch 21.5 km	794	9,142	2,190	2,000	2
	Ch 21.5 km to Ch 23.2 km	365	4,224	1,083	1,052	1
	Ch 23.2 km to Ch 25.0 km	365	4,224	1,083	1,052	1
	Ch 25.0 km to Ch 30.1 km	365	4,224	1,083	1,052	1
	Ch 30.1 km to Ch 38.7 km	0	103	155	64	0
	Ch 38.7 km to Ch 41.1 km	0	516	1,549	64	0
	Ch 41.1 km to Ch 41.7 km	0	516	1,549	64	0
	Ch 41.7 km to Ch 43.2 km	75	1,364	1,730	170	2
	Ch 43.2 km to Ch 44.7 km	75	1,364	1,730	170	2
	Ch 44.7 km to Ch 47.6 km	75	1,364	1,730	224	2
	Ch 47.6 km to Ch 52.2 km	75	1,364	1,730	224	2
	Ch 52.2 km to Ch 53.3 km	75	1,364	2,001	224	2
	Ch 53.3 km to Ch 60.8 km	224	2,771	3,054	662	3
	Ch 60.8 km to Ch 63.0 km	0	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	0	0	0	0
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	224	2,771	3,054	662	3
	Ch 2.5 km to Ch 3.5 km	595	5,867	5,153	1,484	4
	Ch 3.5 km to Ch 6.2 km	595	5,867	5,153	1,484	4
	Ch 6.2 km to Ch 9.0 km	595	5,877	5,184	1,484	4
	Ch 9.0 km to Ch 13.1 km	595	5,877	5,184	1,527	4
	Ch 13.1 km to Ch 14.0 km	645	6,017	3,256	1,590	4
	Ch 14.0 km to Ch 17.3 km	346	3,532	1,655	779	3
	Ch 17.3 km to Ch 18.1 km	346	3,532	1,644	771	3
	Ch 18.1 km to Ch 21.8 km	346	3,532	1,644	771	3
	Ch 21.8 km to Ch 28.0 km	202	2,283	523	450	2
	Ch 28.0 km to Ch 33.0 km	202	2,283	523	450	2
	Ch 33.0 km to Ch 35.6 km	202	2,283	523	450	2
	Ch 35.6 km to Ch 37.7 km	0	0	0	0	0
	Ch 37.7 km to Ch 39.8 km	0	0	0	0	0
	Ch 39.8 km to Ch 41.9 km	0	0	0	0	0
	Ch 41.9 km to Ch 45.9 km	177	1,993	444	392	1
	Ch 45.9 km to Ch 47.6 km	177	1,993	444	392	1
	Ch 47.6 km to Ch 53.3 km	177	1,993	444	392	1
	Ch 53.3 km to Ch 55.7 km	303	3,433	799	673	2
	Ch 55.7 km to Ch 56.6 km	303	3,433	799	673	2
	Ch 56.6 km to Ch 59.2 km	303	3,433	799	673	2
	Ch 59.2 km to Ch 61.0 km	303	3,433	799	673	2
	Ch 61.0 km to Ch 65.7 km	303	3,457	799	673	2
	Ch 65.7 km to Ch 68.7 km	1,404	4,310	1,348	1,028	4
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	272	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	365	4,121	1,089	988	1
	Ch 8.3 km to Ch 9.2 km	365	4,121	1,089	988	1
	Ch 9.2 km to Ch 10.0 km	1,210	13,842	3,350	3,811	3
	Ch 10.0 km to Ch 10.1 km	1,210	13,842	3,350	3,811	3
	Ch 10.1 km to Ch 10.3 km	0	0	0	0	0
	Ch 10.3 km to Ch 12.1 km	0	0	0	0	0
	Ch 12.1 km to Ch 14.5 km	0	0	0	0	0
	Ch 14.5 km to Ch 16.3 km	1,086	10,329	4,537	2,400	1
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	804	8,361	2,975	1,798	2
	Ch 3.2 km to Ch 4.1 km	804	8,361	2,975	1,798	2
	Ch 4.1 km to Ch 13.0 km	2,014	22,203	6,324	5,608	5
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	804	8,361	2,975	1,798	2
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	804	8,361	2,975	1,798	2
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	1,210	13,739	3,195	3,746	3
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	1,210	13,842	3,350	3,811	3
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	804	8,361	2,975	1,798	2
	Ch 1.5 km to Ch 2.4 km	163	524	1,724	362	1

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 2.4 km to Ch 4.5 km	163	524	1,724	362	1
	Ch 4.5 km to Ch 5.0 km	163	524	1,724	362	1
	Ch 5.0 km to Ch 5.3 km	163	524	1,724	362	1
	Ch 5.3 km to Ch 6.2 km	163	524	1,724	362	1
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	163	524	1,724	362	1
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	1,626	1,914	691	474	1
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	3,258	2,523	1,183	1,039	1
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	4,662	6,928	2,562	2,067	5
	Coolmunda Dam Access to Cunningham Highway	4,662	6,928	2,562	2,067	5
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	95	0	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	95	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	95	0	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	0	47	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	32	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	1,013	1,103	361	334	0
	NS2B-LDN033.2 to NS2B-LDN035.6	506	551	181	169	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	105	25	25	24	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	613	812	330	141	1
	NS2B-LDN031.0 to South Kurumbul Road	613	812	330	141	1
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0
	Cunningham Highway to Eukabilla Road	1,626	1,914	691	474	1
McDougalls Road	B2G-LDN049.8 to McDougalls Road	2,273	1,760	788	725	1
	McDougalls Road to Cunningham Highway	2,273	1,760	788	725	1
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	1,028	249	249	234	2
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	613	812	330	141	1
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	782	190	190	311	1
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	1,101	853	549	355	2
	B2G-LDN067.6 to Millmerran-Inglewood Road	1,101	853	549	355	2
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	2,400	1,990	832	766	1
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	126	1,440	355	281	1
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	508	786	304	117	1
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	0	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	0	0	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	1,028	249	249	234	2
	B2G-LDN020.3 to B2G-LDN025.9	1,028	249	249	234	2
	B2G-LDN025.9 to Cunningham Highway	2,230	541	1,521	1,118	3
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	1,626	1,914	691	474	1
River Road	Newell Highway to Boggabilla Weir Access	1,626	1,914	691	474	1
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	402.6	3,829	1,682	889.1046	1.015385
	B2G-LDN188.2 to Gore Highway	402.6	3,829	1,693	911.8379	1.015385
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	298.5125	2,485	1,601	811.6583	1.269231
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	1,086	10,329	4,537	2,400	1.015385
	Brimblecombe Road to WL 194467R	1,086	10,329	4,537	2,400	1.015385
Bushy Lane	B2G-LDN183.0 to Gore Highway	401.5	4,532	1,282	885.8385	0.761538
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	0	42.9	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	139	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	75	951	335	235	2
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	54	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	0	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	149	1,407	1,052	438	1
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	11	7	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	163	524	1,724	362	1
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	163	524	1,724	362	1
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Leesons Road	Warrego Highway to Steger Road	0	0	0	0	0
	Steger Road to B2G-LDN206.3	661	2,117	6,913	1,468	1
Linthorpe Road	Gore Highway to B2G-LDN175.5	416	4,699	999	1,811	1
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	161	0	0
	B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	144	1,249	1,121	321	1
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	1,240	11,894	8,440	3,117	8
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	0	0
	Kahler Road to Gore Highway	0	0	0	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	845	9,721	2,260	2,823	2
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	372	3,095	2,099	822	1
	B2G-LDN128.2 to B2G-LDN130.0	372	3,095	2,099	822	1
	B2G-LDN130.0 to Millmerran-Inglewood Road	372	3,095	2,099	822	1
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	0	0	0
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	10	31	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	43	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	1,813	18,606	6,959	4,983	5
	New Hope Recycled Water Pipeline to Draper Road	661	2,117	6,913	1,468	1
	Draper Road to Leeson's Road	661	2,117	6,913	1,468	1
Tummaville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	516	1,549	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	365	4,121	929	988	1
	B2G-LDN161.0 to Desmonds Lane	0	0	0	139	0

4.2.3 Mass haul routes

The total fill requirements for the Project have been determined in order to provide for rail, road and supporting infrastructure requirements. The Project is anticipated to create a material deficit, with the quantity dependant on the feasibility and success of material treatment options. As a result of this deficit, spoil disposal is considered to be the least beneficial option and will only be considered where material cannot be treated or otherwise re-used.

Potential material source locations have been identified along the proposed alignment by ARTC as possibly suitable for construction activities. Although the EIS currently only proposed to seek approval for 6 borrow pit sites (Mooroobie Lane, Taits Red Ridge, Mosquito Road, Millmerran Inglewood Road, Kooroongarra Anderson Road and Heckendorf Road), the TIA has conservatively assessed the mass haul based on 7 operational licensed quarries and 12 potential borrow pit sites. The additional borrow pit sites assessed include Cemetery Road, Woodstocks Road, Texas Yelarbon Road, Bybera Road, Fosters Road and Kooroongarra Road). As a result, this TIA demonstrates the larger impact associated with the addition of 6 further borrow pit sites at a later stage and therefore not included as part of the EIS Project Description or design. Therefore, the results documented in the TIA is an extremely conservative assessment of network impacts resulting from the mass haul task where the impact likely is over-estimated.

The viability and feasibility of accessing material from these locations will be confirmed during the Detailed Design stage of the Project (post-EIS). These quarry locations are shown in Appendix Z.

A number of opportunities exist for the reuse of this material. Table 4.5 details options for management of spoil generated by the Project and how this TIA has considered the transport of this material along the road network. The options are presented in order of preference.

Table 4.5 Spoil management hierarchy

Rank	Options	Example	Management strategies for TIA
1	Avoid and reduce spoil	Reduce the amount of spoil generated by the Project by ensuring cuts are only to the extent required for safe and effective construction of the Project.	The quantity of spoil generated is proposed to be reduced by: - Aligning the Project to avoid, where possible, steep terrain and topographical constraints to minimise earthworks and provide for more efficient track geometry and grade - Considering the shape and size of batters to encourage cut and fill balancing - Optimising the number, width and depth of cuts to avoid the generation of material that would be considered surplus to Project requirements. - Where practicable, spoil will continue to be reduced during detailed design and construction methodology development.
2	Re-use within the rail corridor (with or without treatment)	Re-use within the Project, subject to the material complying with the ARTC Earthworks Material Specification, to establish formation, fill embankments and mounds within short haulage distance of the source location.	The large majority of cut material is expected to be suitable for immediate re-use as topsoil, general earth fill and structural fill for the construction of zoned embankments. In addition to the material-specific treatment and re-use opportunities, the following conceptual opportunities have been identified for the re-use of excess cut: - Use excess rock material for scour protection at bridge and culverts, if suitable - Use excess material for construction of temporary works, such as access roads, laydown areas etc. - Construction of the rail maintenance access road at rail formation level - Extend rail formation for future passing loops - Re-habilitate borrow sites.
3	Re-use for environmental works and land restoration (with or without treatment)	Re-use for environmental works, subject to the material complying with the required specifications intended for its purpose. Examples include: - Re-use in the rehabilitation of native vegetation - Re-use in flood mitigation works, e.g. Yelarbon levee modification - Re-use for land reinstatement, e.g. the end-of-use closure of borrow pits used by the Project or the reinstatement of laydown facilities - Re-use for landfill covers (day and intermediate covers) and final capping (where deemed suitable) at licenced facilities within the commonly adopted haul route distance of 50 km from the Project.	Use excess rock material for scour protection at bridge and culverts, if suitable.

Rank	Options	Example	Management strategies for TIA
4	Re-use on other development (with or without treatment)	Re-use for fill embankments and mounds on projects within a reasonable haulage distance from the source location, subject to the material complying with the required specifications intended for its purpose. Other projects in the Inland Rail Program should be prioritised in the first instance. Example includes: Re-use for landfill covers (day and intermediate covers) and final capping (where deemed suitable) at licenced facilities within the commonly adopted haul route distance of 50 km from the Project.	Supply of excess material to other developments near the Project for use as fill.
5	Dispose offsite as waste	Disposal of excess spoil as waste at an approved facility licenced to receive the material. Offsite disposal to landfill should only occur if the material is considered unsuitable for other uses, e.g. due to geotechnical, contamination or saturation reasons.	Not considered in the TIA.

Due to the overall material deficit and the potential opportunities for reuse of localised excess cut, offsite spoil disposal routes have not been included in the TIA. The mass haul quantities of fill and spoil have been estimated based on excavated volume of material, overlaid spatially and temporally across the Project. A minimum of 5 per cent of material excavated from each earthworks area has been allocated as spoil that cannot be reused and will need to be disposed of, to generate a conservative number of HV trips on the road network. A detailed assessment of material movement will form part of the mass haul assessment which will be carried out during detailed design, an impact assessment of material haulage routes to the identified disposal locations will be undertaken at that time, prior to the commencement of construction. This will determine the need for and viability of opportunities for material reuse, which is discussed in EIS Appendix AB: Earthworks Strategy and Draft Spoil Management Strategy.

The movement of mass haul is proposed to be undertaken in Truck and Dogs or Semi Tippers (Austroads Class 10 vehicles). Table 4.6 provides an overview of mass haul movements per year on each of the proposed SCR and local roads road links, while the proposed construction transport routes for mass haul are illustrated in Appendix U. Discussion on how impacts will be addressed and mitigated is provided in Section 5.

Table 4.6 Total heavy vehicle loads per year for transportation of mass haul

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	6,810	4,184	0	0	0
	Ch 105.7 km to Ch 107.4 km	16,800	11,200	0	0	0
	Ch 107.4 km to Ch 107.6 km	16,800	11,200	0	0	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	16,800	11,200	0	0	0
	Ch 2.0 km to Ch 3.9 km	16,800	11,200	0	0	0
	Ch 3.9 km to Ch 10.2 km	16,800	11,200	0	0	0
	Ch 10.2 km to Ch 13.9 km	16,800	11,200	0	0	0
	Ch 13.9 km to Ch 18.5 km	16,800	11,200	0	0	0
	Ch 18.5 km to Ch 27.1 km	16,800	11,200	0	0	0
	Ch 27.1 km to Ch 29.3 km	16,800	11,200	0	0	0
	Ch 29.3 km to Ch 34.7 km	16,800	11,200	0	0	0
	Ch 34.7 km to Ch 39.6 km	16,800	13,864	0	0	0
	Ch 39.6 km to Ch 40.3 km	13,179	18,529	0	0	0
	Ch 40.3 km to Ch 40.5 km	0	2,664	0	0	0
	Ch 40.5 km to Ch 43.9 km	0	2,664	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	2,664	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	11,455	51,545	0	0	0
	Ch 2.2 km to Ch 5.4 km	55,706	77,581	0	0	0
	Ch 5.4 km to Ch 6.7 km	55,706	77,581	0	0	0
	Ch 6.7 km to Ch 7.7 km	55,706	77,581	3,056	0	0
	Ch 7.7 km to Ch 11.2 km	55,706	77,581	3,056	0	0
	Ch 11.2 km to Ch 15.3 km	55,706	77,581	3,056	0	0
	Ch 15.3 km to Ch 17.5 km	44,251	26,036	6,699	0	0
	Ch 17.5 km to Ch 19.0 km	44,251	26,036	6,699	0	0
	Ch 19.0 km to Ch 20.3 km	44,251	26,036	6,699	0	0
	Ch 20.3 km to Ch 21.5 km	44,251	26,036	6,699	0	0
	Ch 21.5 km to Ch 23.2 km	44,251	26,036	6,699	0	0
	Ch 23.2 km to Ch 25.0 km	18,215	18,735	6,699	0	0
	Ch 25.0 km to Ch 30.1 km	18,215	46,715	34,679	0	0
	Ch 30.1 km to Ch 38.7 km	18,215	1,215	3,644	0	0
	Ch 38.7 km to Ch 41.1 km	18,215	1,215	3,644	0	0
	Ch 41.1 km to Ch 41.7 km	18,215	1,215	3,644	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 41.7 km to Ch 43.2 km	18,215	23,868	3,644	0	0
	Ch 43.2 km to Ch 44.7 km	18,215	23,868	3,644	0	0
	Ch 44.7 km to Ch 47.6 km	18,215	23,868	3,644	0	0
	Ch 47.6 km to Ch 52.2 km	18,215	23,868	3,644	0	0
	Ch 52.2 km to Ch 53.3 km	18,215	23,868	0	0	0
	Ch 53.3 km to Ch 60.8 km	18,215	23,868	0	0	0
	Ch 60.8 km to Ch 63.0 km	0	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	0	0	0	0
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	18,215	23,868	0	0	0
	Ch 2.5 km to Ch 3.5 km	16,250	23,868	0	0	0
	Ch 3.5 km to Ch 6.2 km	16,250	23,868	0	0	0
	Ch 6.2 km to Ch 9.0 km	16,250	23,868	7,784	0	0
	Ch 9.0 km to Ch 13.1 km	16,250	23,868	3,892	0	0
	Ch 13.1 km to Ch 14.0 km	16,250	23,868	3,892	0	0
	Ch 14.0 km to Ch 17.3 km	16,250	23,868	3,892	0	0
	Ch 17.3 km to Ch 18.1 km	16,250	16,250	12,841	0	0
	Ch 18.1 km to Ch 21.8 km	16,250	16,250	12,841	0	0
	Ch 21.8 km to Ch 28.0 km	16,250	16,250	12,841	0	0
	Ch 28.0 km to Ch 33.0 km	16,250	16,250	12,841	0	0
	Ch 33.0 km to Ch 35.6 km	16,250	16,250	12,841	0	0
	Ch 35.6 km to Ch 37.7 km	16,250	16,250	0	0	0
	Ch 37.7 km to Ch 39.8 km	16,250	16,250	0	0	0
	Ch 39.8 km to Ch 41.9 km	16,250	16,250	0	0	0
	Ch 41.9 km to Ch 45.9 km	0	872	0	0	0
	Ch 45.9 km to Ch 47.6 km	0	872	0	0	0
	Ch 47.6 km to Ch 53.3 km	0	3,505	0	0	0
	Ch 53.3 km to Ch 55.7 km	0	3,505	0	0	0
	Ch 55.7 km to Ch 56.6 km	0	0	0	0	0
	Ch 56.6 km to Ch 59.2 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 59.2 km to Ch 61.0 km	0	0	0	0	0
	Ch 61.0 km to Ch 65.7 km	16,800	11,200	0	0	0
	Ch 65.7 km to Ch 68.7 km	16,800	11,200	0	0	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	1,215	3,644	0	0
	Ch 2.0 km to Ch 2.2 km	0	1,215	3,644	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	2,664	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	0	0	0	0	0
	Ch 10.1 km to Ch 10.3 km	0	2,917	0	0	0
	Ch 10.3 km to Ch 12.1 km	0	2,917	0	0	0
	Ch 12.1 km to Ch 14.5 km	0	5,042	9,403	0	0
	Ch 14.5 km to Ch 16.3 km	0	5,042	9,403	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	11,455	54,463	0	0	0
	Ch 3.2 km to Ch 4.1 km	11,455	51,545	0	0	0
	Ch 4.1 km to Ch 13.0 km	11,455	51,545	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	11,455	54,463	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	11,455	54,463	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	2,917	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	2,917	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	11,455	54,463	0	0	0
	Ch 1.5 km to Ch 2.4 km	11,455	54,463	0	0	0
	Ch 2.4 km to Ch 4.5 km	11,455	51,545	0	0	0
	Ch 4.5 km to Ch 5.0 km	11,455	51,545	0	0	0
	Ch 5.0 km to Ch 5.3 km	11,455	51,545	0	0	0
	Ch 5.3 km to Ch 6.2 km	11,455	51,545	500	0	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	11,455	51,545	500	0	0
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	4,127	0	0	0	0
	B2G-LDN060.4 to Earthworks Area 2A	4,127	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	3,508	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	0	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	0	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	16,800	15,865	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	0	0	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	0	0	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	6,810	4,184	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	3,505	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0
	NS2B-LDN031.0 to South Kurumbul Road	13,179	15,865	0	0	0
	South Kurumbul Road to Cunningham Highway	13,179	15,865	0	0	0
	Cunningham Highway to Eukabilla Road	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	0	0
	McDougalls Road to Cunningham Highway	0	0	0	0	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	3,508	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	6,172	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	6,172	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	3,505	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	0	0	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	0	0	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	13,179	15,865	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	6,810	4,184	0	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorooobie Lane	0	6,172	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	2,664	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	6,172	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	0	0	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	0	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	0	0	0	0	0
	B2G-LDN025.9 to Cunningham Highway	0	5,328	0	0	0
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	44,251	26,036	0	0	0
	B2G-LDN188.2 to Gore Highway	44,251	26,036	0	0	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	3,056	3,056	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	0	0	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	0	0	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	3,892	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	23,868	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	3,505	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	3,505	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	0	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	0	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	0	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	11,934	12,841	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	11,934	12,841	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	11,455	51,545	500	0	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	11,455	51,545	500	0	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	11,934	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	7,784	0	0
Leesons Road	Warrego Highway to Steger Road	0	2,917	0	0	0
	Steger Road to B2G-LDN206.3	0	2,917	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	11,455	67,225	3,644	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	0	0	0
	B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	11,934	3,892	0	0
	B2G-LDN112.1 to Millwood Road	0	11,934	0	0	0
	Millwood Road to Kooroongarra Road	0	11,934	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	26,036	26,036	0	0	0
	Kahler Road to Gore Highway	26,036	26,036	0	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	18,215	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	34,465	16,250	0	0	0
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	0	0	0
Quarry Road Access	Tummalville Road to Quarry	0	14,465	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	3,892	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	31,036	31,036	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leeson's Road	0	0	0	0	0
Tummalville Road	Access Track to Gore Highway	0	14,465	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	0	0	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	31,036	31,036	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0

4.2.4 Precast concrete bridge routes

Two locations have been identified for the temporary siting of a precast concrete facility and concrete batch plant for the Project (Appendix X). The proposed locations are immediately north and south of the Condamine River floodplain outside the 1% AEP flood line.

For the TIA, it has been assumed that all in situ concrete required for bridges and all precast bridge girders required for bridges north of Ch 145.0 km along the Project alignment will be delivered from the proposed Precast Concrete Facility and Batch Plant North (approximate Ch 150.5 km, near Brookstead). It has been assumed the no in situ concrete but all of the precast bridge girders required for bridges south of Ch 145.0 km along the Project alignment will be delivered from the proposed Precast Concrete Facility and Batch Plant South (Ch 137.0 km approximately).

Routes are based on roads most likely to be used for the transportation of precast concrete considering input from the NHVR journey planner which provides guidance in identifying suitable roads for HVs. For the transportation of some of the larger precast concrete bridge girders, it is expected that police escort will be required. To reduce traffic impact, transportation will most likely have to occur outside busy daytime hours. Further discussion on the use of OSOM vehicles for the delivery of precast concrete bridge girders is provided in Section 5.7.

Table 4.7 provides an overview of precast concrete bridge HV movements per year on each of the road links, while the proposed construction transport routes for precast concrete bridges (i.e. from where they are sourced to where the laydown areas (as per Section 3.5) where crane access is required) are illustrated in Appendix X.

Table 4.7 Total heavy vehicle loads per year for transportation of precast concrete bridges

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	0	8	159	6	0
	Ch 107.4 km to Ch 107.6 km	0	8	159	6	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	8	159	6	0
	Ch 2.0 km to Ch 3.9 km	0	8	159	6	0
	Ch 3.9 km to Ch 10.2 km	0	8	159	0	0
	Ch 10.2 km to Ch 13.9 km	0	8	122	0	0
	Ch 13.9 km to Ch 18.5 km	0	8	122	0	0
	Ch 18.5 km to Ch 27.1 km	0	8	122	0	0
	Ch 27.1 km to Ch 29.3 km	0	8	122	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 29.3 km to Ch 34.7 km	0	8	122	0	0
	Ch 34.7 km to Ch 39.6 km	0	8	122	0	0
	Ch 39.6 km to Ch 40.3 km	0	8	122	0	0
	Ch 40.3 km to Ch 40.5 km	0	0	49	0	0
	Ch 40.5 km to Ch 43.9 km	0	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	8	43	39	0
	Ch 2.2 km to Ch 5.4 km	0	14	43	39	0
	Ch 5.4 km to Ch 6.7 km	0	14	43	39	0
	Ch 6.7 km to Ch 7.7 km	0	14	43	51	0
	Ch 7.7 km to Ch 11.2 km	0	14	43	51	0
	Ch 11.2 km to Ch 15.3 km	0	14	43	51	0
	Ch 15.3 km to Ch 17.5 km	0	14	70	51	0
	Ch 17.5 km to Ch 19.0 km	0	14	70	51	0
	Ch 19.0 km to Ch 20.3 km	0	14	76	51	0
	Ch 20.3 km to Ch 21.5 km	0	14	82	51	0
	Ch 21.5 km to Ch 23.2 km	0	14	82	51	0
	Ch 23.2 km to Ch 25.0 km	0	14	82	51	0
	Ch 25.0 km to Ch 30.1 km	0	14	82	51	0
	Ch 30.1 km to Ch 38.7 km	0	14	98	51	0
	Ch 38.7 km to Ch 41.1 km	0	14	131	51	0
	Ch 41.1 km to Ch 41.7 km	0	14	131	51	0
	Ch 41.7 km to Ch 43.2 km	0	8	302	0	0
	Ch 43.2 km to Ch 44.7 km	0	8	73	0	0
	Ch 44.7 km to Ch 47.6 km	0	8	73	0	0
	Ch 47.6 km to Ch 52.2 km	0	8	73	182	0
	Ch 52.2 km to Ch 53.3 km	0	8	96	182	0
	Ch 53.3 km to Ch 60.8 km	0	31	313	79	0
	Ch 60.8 km to Ch 63.0 km	0	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	0	0	0	0
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	31	313	79	0
	Ch 2.5 km to Ch 3.5 km	0	14	296	58	0
	Ch 3.5 km to Ch 6.2 km	0	14	296	58	0
	Ch 6.2 km to Ch 9.0 km	0	14	282	58	0
	Ch 9.0 km to Ch 13.1 km	0	8	282	58	0
	Ch 13.1 km to Ch 14.0 km	0	8	282	58	0
	Ch 14.0 km to Ch 17.3 km	0	8	282	58	0
	Ch 17.3 km to Ch 18.1 km	0	8	282	39	0
	Ch 18.1 km to Ch 21.8 km	0	8	282	33	0
	Ch 21.8 km to Ch 28.0 km	0	8	282	33	0
	Ch 28.0 km to Ch 33.0 km	0	8	274	33	0
	Ch 33.0 km to Ch 35.6 km	0	8	218	33	0
	Ch 35.6 km to Ch 37.7 km	0	8	218	6	0
	Ch 37.7 km to Ch 39.8 km	0	8	218	6	0
	Ch 39.8 km to Ch 41.9 km	0	8	202	6	0
	Ch 41.9 km to Ch 45.9 km	0	8	202	6	0
	Ch 45.9 km to Ch 47.6 km	0	8	190	6	0
	Ch 47.6 km to Ch 53.3 km	0	8	190	6	0
	Ch 53.3 km to Ch 55.7 km	0	8	190	6	0
	Ch 55.7 km to Ch 56.6 km	0	8	190	6	0
	Ch 56.6 km to Ch 59.2 km	0	8	190	6	0
	Ch 59.2 km to Ch 61.0 km	0	8	190	6	0
	Ch 61.0 km to Ch 65.7 km	0	8	190	6	0
	Ch 65.7 km to Ch 68.7 km	0	8	159	6	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	96	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	96	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	0	0	0	0	0
	Ch 10.1 km to Ch 10.3 km	0	0	0	0	0
	Ch 10.3 km to Ch 12.1 km	0	8	43	0	0
	Ch 12.1 km to Ch 14.5 km	0	8	43	0	0
	Ch 14.5 km to Ch 16.3 km	0	8	21	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	0	0	0	39	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	39	0
	Ch 4.1 km to Ch 13.0 km	0	8	43	39	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	39	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	39	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	8	43	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	8	43	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	0	0	0	39	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 1.5 km to Ch 2.4 km	0	0	0	39	0
	Ch 2.4 km to Ch 4.5 km	0	0	0	39	0
	Ch 4.5 km to Ch 5.0 km	0	0	0	39	0
	Ch 5.0 km to Ch 5.3 km	0	0	0	27	0
	Ch 5.3 km to Ch 6.2 km	0	0	0	27	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	0	0	0	27	0
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	6	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorroobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	18	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	37	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	0	0	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	0	0	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	0	0	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0
	NS2B-LDN031.0 to South Kurumbul Road	0	8	73	0	0
	South Kurumbul Road to Cunningham Highway	0	8	73	0	0
	Cunningham Highway to Eukabilla Road	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	0	0
	McDougalls Road to Cunningham Highway	0	0	0	0	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	0	0	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	0	0	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	0	31	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	0	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	0	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	0	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	0	0	0	0	0
	B2G-LDN025.9 to Cunningham Highway	0	0	49	0	0
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	0	6	0	0	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	12	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	0	23	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	0	0	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	27	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	6	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	10	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	22	434	51	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	0	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	182	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	23	337	261	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	19	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	0	0	27	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	0	0	27	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	0	0	0	0
	Steger Road to B2G-LDN206.3	0	0	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	0	27	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	6	0	0
	B2G-LDN172.0 to B2G-LDN172.6	0	0	6	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	0	0	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	0	0
	Kahler Road to Gore Highway	0	0	0	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	6	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	21	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	17	17	21	0
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	8	0	0
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	14	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	6	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	6	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leeson's Road	0	0	0	0	0
Tummalville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	0	33	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	0	16	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	10	0	0

4.2.5 Precast concrete culvert routes

Precast drainage structures, such as reinforced concrete pipes and reinforced concrete box culverts, have been assumed to be delivered from suppliers in Toowoomba. No precast concrete routes have been assigned to the Precast Concrete Facility and Batch Plant South (Ch 137.0 km approximately). These precast concrete culverts are proposed to be moved in Semi-trailers (Austroads Class 9 vehicles). Table 4.8 provides an overview of precast concrete culverts movements per year on each of the road links, while the proposed construction transport routes for precast concrete culverts are illustrated in Appendix X and Appendix Y.

Table 4.8 Total heavy vehicle loads per year for transportation of precast concrete culverts

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	180	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	121	704	262	0	0
	Ch 107.4 km to Ch 107.6 km	115	670	236	0	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	115	670	236	0	0
	Ch 2.0 km to Ch 3.9 km	115	670	236	0	0
	Ch 3.9 km to Ch 10.2 km	106	616	196	0	0
	Ch 10.2 km to Ch 13.9 km	97	563	156	0	0
	Ch 13.9 km to Ch 18.5 km	94	544	142	0	0
	Ch 18.5 km to Ch 27.1 km	65	371	12	0	0
	Ch 27.1 km to Ch 29.3 km	52	320	12	0	0
	Ch 29.3 km to Ch 34.7 km	52	320	12	0	0
	Ch 34.7 km to Ch 39.6 km	52	320	12	0	0
	Ch 39.6 km to Ch 40.3 km	49	309	12	0	0
	Ch 40.3 km to Ch 40.5 km	49	179	0	0	0
	Ch 40.5 km to Ch 43.9 km	0	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	165	1,943	674	0	0
	Ch 2.2 km to Ch 5.4 km	165	1,896	633	0	0
	Ch 5.4 km to Ch 6.7 km	165	1,888	626	0	0
	Ch 6.7 km to Ch 7.7 km	165	1,888	626	0	0
	Ch 7.7 km to Ch 11.2 km	165	1,843	612	0	0
	Ch 11.2 km to Ch 15.3 km	165	1,804	601	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 15.3 km to Ch 17.5 km	165	1,788	596	0	0
	Ch 17.5 km to Ch 19.0 km	165	1,734	579	0	0
	Ch 19.0 km to Ch 20.3 km	165	1,708	572	0	0
	Ch 20.3 km to Ch 21.5 km	165	1,708	572	0	0
	Ch 21.5 km to Ch 23.2 km	165	1,704	570	0	0
	Ch 23.2 km to Ch 25.0 km	165	1,697	568	0	0
	Ch 25.0 km to Ch 30.1 km	165	1,697	568	0	0
	Ch 30.1 km to Ch 38.7 km	165	1,673	561	0	0
	Ch 38.7 km to Ch 41.1 km	165	1,638	551	0	0
	Ch 41.1 km to Ch 41.7 km	165	1,638	551	0	0
	Ch 41.7 km to Ch 43.2 km	165	1,638	551	0	0
	Ch 43.2 km to Ch 44.7 km	165	1,598	539	0	0
	Ch 44.7 km to Ch 47.6 km	165	1,584	530	0	0
	Ch 47.6 km to Ch 52.2 km	165	1,534	498	0	0
	Ch 52.2 km to Ch 53.3 km	165	1,444	440	0	0
	Ch 53.3 km to Ch 60.8 km	165	1,419	425	0	0
	Ch 60.8 km to Ch 63.0 km	0	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	0	0	0	0
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	165	1,419	425	0	0
	Ch 2.5 km to Ch 3.5 km	165	1,398	412	0	0
	Ch 3.5 km to Ch 6.2 km	165	1,398	412	0	0
	Ch 6.2 km to Ch 9.0 km	165	1,381	401	0	0
	Ch 9.0 km to Ch 13.1 km	165	1,381	401	0	0
	Ch 13.1 km to Ch 14.0 km	165	1,381	401	0	0
	Ch 14.0 km to Ch 17.3 km	165	1,295	346	0	0
	Ch 17.3 km to Ch 18.1 km	165	1,248	316	0	0
	Ch 18.1 km to Ch 21.8 km	165	1,248	316	0	0
	Ch 21.8 km to Ch 28.0 km	165	1,217	296	0	0
	Ch 28.0 km to Ch 33.0 km	165	1,200	285	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 33.0 km to Ch 35.6 km	163	1,176	285	0	0
	Ch 35.6 km to Ch 37.7 km	160	1,140	285	0	0
	Ch 37.7 km to Ch 39.8 km	160	1,140	285	0	0
	Ch 39.8 km to Ch 41.9 km	157	1,107	285	0	0
	Ch 41.9 km to Ch 45.9 km	155	1,082	285	0	0
	Ch 45.9 km to Ch 47.6 km	153	1,053	285	0	0
	Ch 47.6 km to Ch 53.3 km	153	1,053	285	0	0
	Ch 53.3 km to Ch 55.7 km	131	787	285	0	0
	Ch 55.7 km to Ch 56.6 km	131	787	285	0	0
	Ch 56.6 km to Ch 59.2 km	131	787	285	0	0
	Ch 59.2 km to Ch 61.0 km	126	735	285	0	0
	Ch 61.0 km to Ch 65.7 km	126	735	285	0	0
	Ch 65.7 km to Ch 68.7 km	121	704	262	0	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	90	57	0	0
	Ch 2.0 km to Ch 2.2 km	0	49	31	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	165	2,233	770	0	0
	Ch 6.0 km to Ch 6.4 km	165	2,053	770	0	0
	Ch 6.4 km to Ch 8.3 km	165	2,053	770	0	0
	Ch 8.3 km to Ch 9.2 km	165	2,053	770	0	0
	Ch 9.2 km to Ch 10.0 km	165	2,053	770	0	0
	Ch 10.0 km to Ch 10.1 km	165	2,053	770	0	0
	Ch 10.1 km to Ch 10.3 km	0	110	96	0	0
	Ch 10.3 km to Ch 12.1 km	0	110	96	0	0
	Ch 12.1 km to Ch 14.5 km	0	110	96	0	0
	Ch 14.5 km to Ch 16.3 km	0	78	68	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	180	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	180	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	165	1,943	674	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	165	1,943	674	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	165	1,943	674	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	180	0	0	0
	Ch 0.4 km to Ch 1.5 km	0	180	0	0	0
	Ch 1.5 km to Ch 2.4 km	0	180	0	0	0
	Ch 2.4 km to Ch 4.5 km	0	134	0	0	0
	Ch 4.5 km to Ch 5.0 km	0	134	0	0	0
	Ch 5.0 km to Ch 5.3 km	0	134	0	0	0
	Ch 5.3 km to Ch 6.2 km	0	134	0	0	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	0	134	0	0	0
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	9	54	41	0	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorroobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	9	53	40	0	0
	B2G-LDN055.4 to B2G-LDN054.2	9	53	40	0	0
	Cunningham Highway to B2G-LDN052.8	9	53	40	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	3	10	0	0	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	6	34	26	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	131	12	0	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	44	4	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	131	12	0	0
	NS2B-LDN031.0 to South Kurumbul Road	0	131	12	0	0
	South Kurumbul Road to Cunningham Highway	0	131	12	0	0
	Cunningham Highway to Eukabilla Road	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	3	19	14	0	0
	McDougalls Road to Cunningham Highway	3	19	14	0	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	5	19	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Springborg Road	Cunningham highway to B2G-LDN037.6	14	51	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	5	28	21	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	5	32	24	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	29	173	130	0	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	22	266	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	2	9	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	2	9	0	0	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	8	28	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	8	28	0	0	0
	B2G-LDN025.9 to Cunningham Highway	49	179	0	0	0
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	0	47	41	0	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	86	55	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	32	28	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	45	13	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	134	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	0	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	14	9	0	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	39	12	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	50	32	0	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	24	16	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	47	30	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	134	0	0	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	134	0	0	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	46	0	0	0
	Steger Road to B2G-LDN206.3	0	46	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	17	5	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	39	12	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	26	8	0	0
	B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	165	2,233	770	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	31	20	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	7	2	0	0
	Kahler Road to Gore Highway	0	7	2	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	21	13	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	54	16	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	17	11	0	0
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	18	11	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leesons Road	0	0	0	0	0
Tummalville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	35	10	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	24	7	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0

4.2.6 In situ concrete routes

For the purposes of the TIA, it has been assumed that existing concrete suppliers in the vicinity of the construction corridor as well as the Precast Concrete Facility and Batch Plant North (Ch 150.5 km approximately) will be utilised to provide all bulk concrete. Concrete truck routes were determined based on the location of the concrete suppliers in relation to the Project alignment as well as considering the roads most likely to be used for the transportation of concrete. The suppliers adopted for the purpose of the TIA provide viable options for the Project, however, at the time of construction, it will ultimately be up to the Construction contractor to determine the most appropriate suppliers to use. This may result in changes to the construction traffic routes outlined in this assessment.

For the purpose of the TIA, it has been decided that only Precast Concrete Facility and Batch Plant North will be included in the traffic routes, with no use proposed for the respective South facility and plant. However, due to the proximity of both proposed batch plants (less than 15 km apart) and their location along the Gore Highway the change in traffic impact will be negligible should the southern plant be chosen over the northern one.

The movement of in situ concrete is proposed to be undertaken in concrete trucks (Austroads Class 5 vehicles). Table 4.9 provides an overview of in situ concrete movements per year on each of the road links, while the proposed construction transport routes for in situ concrete are illustrated in Appendix V and Appendix W for culverts and bridges, respectively.

Table 4.9 Total heavy vehicle loads per year for transportation of in situ concrete

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	156	1,099	1,385	0	0
	Ch 0.8 km to Ch 2.0 km	156	1,099	1,385	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	97	265	484	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	65	940	463	0	0
	Ch 107.4 km to Ch 107.6 km	75	996	505	0	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	75	996	505	0	0
	Ch 2.0 km to Ch 3.9 km	16	189	978	92	0
	Ch 3.9 km to Ch 10.2 km	5	121	833	46	0
	Ch 10.2 km to Ch 13.9 km	1	7	5	0	0
	Ch 13.9 km to Ch 18.5 km	0	0	0	0	0
	Ch 18.5 km to Ch 27.1 km	16	95	71	0	0
	Ch 27.1 km to Ch 29.3 km	44	199	71	0	0
	Ch 29.3 km to Ch 34.7 km	44	199	71	0	0
	Ch 34.7 km to Ch 39.6 km	44	199	71	0	0
	Ch 39.6 km to Ch 40.3 km	66	280	71	0	0
	Ch 40.3 km to Ch 40.5 km	66	280	71	0	0
	Ch 40.5 km to Ch 43.9 km	156	747	482	0	0
	Ch 43.9 km to Ch 46.3 km	156	747	482	0	0
	Ch 46.3 km to Ch 88.0 km	156	747	482	0	0
	Ch 88.0 km to Ch 88.2 km	0	478	915	0	0
	Ch 88.2 km to Ch 90.0 km	0	478	915	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	219	84	0	0
	Ch 2.2 km to Ch 5.4 km	0	18	16	0	0
	Ch 5.4 km to Ch 6.7 km	0	0	0	0	0
	Ch 6.7 km to Ch 7.7 km	0	0	129	86	0
	Ch 7.7 km to Ch 11.2 km	0	69	150	86	0
	Ch 11.2 km to Ch 15.3 km	0	103	160	86	0
	Ch 15.3 km to Ch 17.5 km	0	116	339	86	0
	Ch 17.5 km to Ch 19.0 km	0	179	358	86	0
	Ch 19.0 km to Ch 20.3 km	0	189	460	86	0
	Ch 20.3 km to Ch 21.5 km	0	189	590	86	0
	Ch 21.5 km to Ch 23.2 km	0	194	592	86	0
	Ch 23.2 km to Ch 25.0 km	0	40	12	0	0
	Ch 25.0 km to Ch 30.1 km	0	40	12	0	0
	Ch 30.1 km to Ch 38.7 km	0	0	301	0	0
	Ch 38.7 km to Ch 41.1 km	0	17	922	0	0
	Ch 41.1 km to Ch 41.7 km	0	17	922	0	0
	Ch 41.7 km to Ch 43.2 km	0	1,391	5,816	1,339	0
	Ch 43.2 km to Ch 44.7 km	0	746	4,324	1,339	0
	Ch 44.7 km to Ch 47.6 km	0	758	4,331	1,339	0
	Ch 47.6 km to Ch 52.2 km	0	818	1,997	260	0
	Ch 52.2 km to Ch 53.3 km	0	412	1,721	260	0
	Ch 53.3 km to Ch 60.8 km	0	321	185	0	0
	Ch 60.8 km to Ch 63.0 km	0	321	185	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	3	1,255	2,018	435	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	237	151	0	0
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	156	1,099	1,385	0	0
	Ch 222.4 km to Ch 224.1 km	156	1,225	1,397	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	0	0
	Ch 2.5 km to Ch 3.5 km	0	188	216	110	0
	Ch 3.5 km to Ch 6.2 km	3	983	1,768	325	0
	Ch 6.2 km to Ch 9.0 km	3	934	1,496	325	0
	Ch 9.0 km to Ch 13.1 km	3	794	1,496	325	0
	Ch 13.1 km to Ch 14.0 km	3	794	1,496	325	0
	Ch 14.0 km to Ch 17.3 km	3	715	1,445	325	0
	Ch 17.3 km to Ch 18.1 km	3	607	1,377	155	0
	Ch 18.1 km to Ch 21.8 km	3	607	1,295	139	0
	Ch 21.8 km to Ch 28.0 km	3	538	1,251	139	0
	Ch 28.0 km to Ch 33.0 km	3	523	1,123	139	0
	Ch 33.0 km to Ch 35.6 km	3	36	642	139	0
	Ch 35.6 km to Ch 37.7 km	0	0	318	0	0
	Ch 37.7 km to Ch 39.8 km	0	0	318	0	0
	Ch 39.8 km to Ch 41.9 km	1	14	0	0	0
	Ch 41.9 km to Ch 45.9 km	2	26	0	0	0
	Ch 45.9 km to Ch 47.6 km	8	294	50	0	0
	Ch 47.6 km to Ch 53.3 km	8	294	50	0	0
	Ch 53.3 km to Ch 55.7 km	51	816	50	0	0
	Ch 55.7 km to Ch 56.6 km	51	816	50	0	0
	Ch 56.6 km to Ch 59.2 km	51	816	50	0	0
	Ch 59.2 km to Ch 61.0 km	58	897	50	0	0
	Ch 61.0 km to Ch 65.7 km	58	897	50	0	0
	Ch 65.7 km to Ch 68.7 km	65	940	463	0	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	715	472	0	0
	Ch 2.0 km to Ch 2.2 km	0	643	426	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	96	84	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	529	822	484	0
	Ch 6.0 km to Ch 6.4 km	0	433	557	0	0
	Ch 6.4 km to Ch 8.3 km	0	433	557	0	0
	Ch 8.3 km to Ch 9.2 km	0	433	557	0	0
	Ch 9.2 km to Ch 10.0 km	0	433	557	0	0
	Ch 10.0 km to Ch 10.1 km	0	433	557	0	0
	Ch 10.1 km to Ch 10.3 km	0	310	557	0	0
	Ch 10.3 km to Ch 12.1 km	0	310	557	0	0
	Ch 12.1 km to Ch 14.5 km	0	310	557	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 14.5 km to Ch 16.3 km	0	297	223	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	97	265	484	0
	Ch 26.9 km to Ch 27.1 km	0	97	265	484	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	0	123	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	123	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	123	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	97	265	484	0
	Ch 0.4 km to Ch 1.5 km	0	97	265	484	0
	Ch 1.5 km to Ch 2.4 km	0	97	265	484	0
	Ch 2.4 km to Ch 4.5 km	0	28	265	484	0
	Ch 4.5 km to Ch 5.0 km	0	28	265	484	0
	Ch 5.0 km to Ch 5.3 km	0	28	213	355	0
	Ch 5.3 km to Ch 6.2 km	0	28	213	355	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	0	28	213	355	0
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	126	11	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	11	68	144	47	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorroobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	4	22	554	0	0
	B2G-LDN055.4 to B2G-LDN054.2	4	22	17	0	0
	Cunningham Highway to B2G-LDN052.8	4	114	828	46	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	22	82	0	0	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	9	56	42	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	273	747	0	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	16	1	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	126	11	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	204	167	0	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	0	0
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0
	Cunningham Highway to Eukabilla Road	0	478	915	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	1	7	5	0	0
	McDougalls Road to Cunningham Highway	1	7	5	0	0
Moorroobie Lane	Cemetery Road to Borrow Site #2 (Moorroobie Lane)	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	9	35	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	28	104	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	6	39	29	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	7	43	413	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	156	1,099	1,385	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	16	95	71	0	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	44	522	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	3	12	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	3	12	0	0	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	13	46	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	13	46	0	0	0
	B2G-LDN025.9 to Cunningham Highway	90	467	411	0	0
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	96	84	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	8	7	0	0
	B2G-LDN188.2 to Gore Highway	0	200	68	0	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	129	86	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	80	51	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	3	1,491	2,168	435	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	13	334	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	69	21	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	3	1,171	1,983	435	0
	Saleyards Road to Gore Highway	3	934	1,832	435	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	28	213	355	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	140	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	217	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	1,374	6,728	1,339	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	237	151	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	12	7	0	0
Gap Road	Gore Highway to Grevillea Street	0	252	609	86	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	34	10	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	60	2,411	1,079	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	252	609	86	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	169	1,586	260	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	108	69	170	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	28	213	355	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	28	213	355	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	68	0	0	0
	Steger Road to B2G-LDN206.3	0	68	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	13	179	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	34	10	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	10	102	0	0
	Ch B2G-LDN172.0 to B2G-LDN172.6	0	0	99	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	529	822	484	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	69	44	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	18	5	0	0
	Kahler Road to Gore Highway	0	18	5	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	130	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	165	110	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	188	216	110	0
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	63	19	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	15	128	0	0
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	237	151	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	49	272	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	140	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	140	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leeson's Road	0	0	0	0	0
Tummaville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	17	620	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	3	1,255	2,018	435	0
	Florence Street to Six Mile Road	3	1,491	2,168	435	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	40	313	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	217	0	0

4.2.7 Quarry material routes

For the purpose of the TIA, it has been assumed that numerous quarries in the vicinity of the construction corridor will be used to provide ballast and capping requirements for the alignment. Quarry routes were determined based on the location of the quarries in relation to the Project's alignment as well as considering the roads most likely to be used for the transportation of quarry materials. The suppliers adopted for the purpose of the TIA provide viable options for the Project, however, at the time of construction, it will ultimately be up to the Construction contractor to determine the most appropriate suppliers to use. This may result in changes to the construction traffic routes outlined in this assessment.

The movement of quarry materials is proposed to be undertaken in Truck and Dogs or Semi Tippers (Austroads Class 10 vehicles). Table 4.10 provides an overview of quarry movements per year on each of the road links, while the proposed construction transport routes for quarry are illustrated in Appendix Z.

Table 4.10 Total heavy vehicle loads per year for transportation of quarry materials

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	5,735	1,720	5,367	17,489	0
	Ch 97.5 km to Ch 105.7 km	5,735	1,720	5,367	17,489	0
	Ch 105.7 km to Ch 107.4 km	5,735	1,720	5,367	13,573	0
	Ch 107.4 km to Ch 107.6 km	5,735	1,720	5,367	12,472	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	5,735	1,720	5,367	12,472	0
	Ch 2.0 km to Ch 3.9 km	5,735	1,720	5,367	12,472	0
	Ch 3.9 km to Ch 10.2 km	5,735	1,720	5,367	10,014	0
	Ch 10.2 km to Ch 13.9 km	5,735	1,720	5,367	10,014	0
	Ch 13.9 km to Ch 18.5 km	5,735	1,720	5,367	8,231	0
	Ch 18.5 km to Ch 27.1 km	0	0	5,367	6,549	0
	Ch 27.1 km to Ch 29.3 km	0	0	4,499	5,714	0
	Ch 29.3 km to Ch 34.7 km	0	0	4,499	5,714	0
	Ch 34.7 km to Ch 39.6 km	0	0	4,499	5,714	0
	Ch 39.6 km to Ch 40.3 km	0	0	4,003	5,040	0
	Ch 40.3 km to Ch 40.5 km	0	0	4,003	5,040	0
	Ch 40.5 km to Ch 43.9 km	0	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	0	0	1,187	111
	Ch 2.2 km to Ch 5.4 km	0	0	0	464	46
	Ch 5.4 km to Ch 6.7 km	0	0	0	0	0
	Ch 6.7 km to Ch 7.7 km	0	0	0	0	0
	Ch 7.7 km to Ch 11.2 km	0	0	0	844	53
	Ch 11.2 km to Ch 15.3 km	0	0	0	2,071	120
	Ch 15.3 km to Ch 17.5 km	0	0	0	2,590	169
	Ch 17.5 km to Ch 19.0 km	0	0	0	2,994	239
	Ch 19.0 km to Ch 20.3 km	0	0	0	3,464	274
	Ch 20.3 km to Ch 21.5 km	0	0	0	3,464	274
	Ch 21.5 km to Ch 23.2 km	0	0	0	4,246	331

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 23.2 km to Ch 25.0 km	0	0	0	5,224	418
	Ch 25.0 km to Ch 30.1 km	0	0	0	0	0
	Ch 30.1 km to Ch 38.7 km	0	0	0	2,711	204
	Ch 38.7 km to Ch 41.1 km	0	0	0	2,711	204
	Ch 41.1 km to Ch 41.7 km	0	0	0	1,762	81
	Ch 41.7 km to Ch 43.2 km	0	0	0	1,762	81
	Ch 43.2 km to Ch 44.7 km	0	0	0	1,762	81
	Ch 44.7 km to Ch 47.6 km	0	0	0	0	0
	Ch 47.6 km to Ch 52.2 km	0	0	0	0	0
	Ch 52.2 km to Ch 53.3 km	0	0	0	0	0
	Ch 53.3 km to Ch 60.8 km	0	0	0	1,259	87
	Ch 60.8 km to Ch 63.0 km	0	0	0	1,259	87
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	1,259	87
	Ch 0.7 km to Ch 0.8 km	0	0	0	1,259	87
	Ch 0.8 km to Ch 1.4 km	0	0	0	1,259	87
	Ch 1.4 km to Ch 3.0 km	0	0	0	3,426	293
	Ch 3.0 km to Ch 13.0 km	0	0	0	3,426	293
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	0	0
	Ch 2.5 km to Ch 3.5 km	0	0	0	2,167	206
	Ch 3.5 km to Ch 6.2 km	0	0	0	0	0
	Ch 6.2 km to Ch 9.0 km	0	0	0	0	0
	Ch 9.0 km to Ch 13.1 km	0	0	0	0	0
	Ch 13.1 km to Ch 14.0 km	0	0	0	0	0
	Ch 14.0 km to Ch 17.3 km	0	0	0	7,653	601
	Ch 17.3 km to Ch 18.1 km	0	0	0	6,765	529
	Ch 18.1 km to Ch 21.8 km	0	0	0	6,765	529
	Ch 21.8 km to Ch 28.0 km	0	0	0	5,336	427
	Ch 28.0 km to Ch 33.0 km	0	0	0	3,028	247
	Ch 33.0 km to Ch 35.6 km	0	0	0	3,028	247
	Ch 35.6 km to Ch 37.7 km	0	0	0	3,028	247
	Ch 37.7 km to Ch 39.8 km	0	0	0	3,028	247
	Ch 39.8 km to Ch 41.9 km	0	0	0	3,028	247
	Ch 41.9 km to Ch 45.9 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 45.9 km to Ch 47.6 km	0	0	0	0	0
	Ch 47.6 km to Ch 53.3 km	0	0	0	0	0
	Ch 53.3 km to Ch 55.7 km	0	0	0	1,824	0
	Ch 55.7 km to Ch 56.6 km	0	0	0	1,824	0
	Ch 56.6 km to Ch 59.2 km	0	0	0	1,824	0
	Ch 59.2 km to Ch 61.0 km	0	0	0	3,092	0
	Ch 61.0 km to Ch 65.7 km	0	0	0	3,092	0
	Ch 65.7 km to Ch 68.7 km	0	0	0	3,915	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	2,383	124
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	0	0	0	0	0
	Ch 10.1 km to Ch 10.3 km	0	0	0	0	0
	Ch 10.3 km to Ch 12.1 km	0	0	0	1,187	111
	Ch 12.1 km to Ch 14.5 km	0	0	0	1,340	161
	Ch 14.5 km to Ch 16.3 km	0	0	0	1,340	161
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	0	0	0	1,187	111
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	1,187	111
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	1,187	111
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	0	0	0	0	0
	Ch 1.5 km to Ch 2.4 km	0	0	0	2,383	124
	Ch 2.4 km to Ch 4.5 km	0	0	0	0	0
	Ch 4.5 km to Ch 5.0 km	0	0	0	0	0
	Ch 5.0 km to Ch 5.3 km	0	0	0	0	0
	Ch 5.3 km to Ch 6.2 km	0	0	0	0	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	0	0	0	0	0
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	2,457	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	0	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	0	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	497	674	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	1,102	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	482	1,561	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	0	482	1,561	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	103	416	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	482	1,561	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	482	1,561	0
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0
	Cunningham Highway to Eukabilla Road	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	1,783	0
	McDougalls Road to Cunningham Highway	0	0	0	1,783	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	0	0	1,146	1,061	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	482	1,561	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	0	0	868	835	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	823	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	0	0	823	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	5,735	1,720	0	1,681	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorooobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	1,824	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	585	1,977	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	0	1,229	2,848	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	1,229	2,848	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	0	2,375	3,909	0
	B2G-LDN020.3 to B2G-LDN025.9	0	0	3,672	4,480	0
	B2G-LDN025.9 to Cunningham Highway	0	0	4,003	5,040	0
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	0	0	0	722	65
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	3,426	293
	Millmerran Quarry to B2G-LDN120.2	0	0	0	8,735	721
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	7,653	601
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	0	0	844	53
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	2,167	206
	Saleyards Road to Gore Highway	0	0	0	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	0	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	2,383	124
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	1,762	81
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	1,227	66
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	0	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	0	1,259	87
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	888	72
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	2,383	124
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	386	46
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	0	0	0	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	0	0	0	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	0	0	2,383	124
	Steger Road to B2G-LDN206.3	0	0	0	2,383	124
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	0	0	519	49

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	1,227	66
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	0	471	35
	Ch B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	0	0	1,429	102
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Koorongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	592	41
	Kahler Road to Gore Highway	0	0	0	978	87
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	2,383	124
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	2,167	206
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	2,167	206
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	0	0	2,167	206
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	404	70
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	0	2,308	180
Quarry Road Access	Tummalville Road to Quarry	0	0	0	4,531	323
Saleyards Road	Campbell Street to Gore Highway	0	0	0	2,167	206
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	5,224	418
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leeson's Road	0	0	0	0	0
Tummalville Road	Access Track to Gore Highway	0	0	0	4,531	323
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	0	0	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	950	123

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	2,383	124
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	0	0	1,819	119
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0

4.2.8 Concrete sleeper routes

Concrete sleepers are expected to be sourced from a manufacturer in Rockhampton, Queensland and transported to ARTC's Whetstone Material Distribution Centre via rail. It is then anticipated that all sleepers will remain within the rail corridor and supplied by rail to the track laying machine which will travel along the proposed alignment. As a conservative allowance, 10 per cent of all sleepers have been assumed to be transported by road from the Whetstone MDC to four laydown areas along the alignment to account for these vehicles on the road network.

The 10 per cent allowance for movement of sleepers along the road network is proposed to be undertaken in semi-trailers (Austroads Class 10 vehicles). Table 4.10 provides an overview of sleeper movements per year on each of the road links, while the proposed construction transport routes along the road network for sleepers are illustrated in Appendix AA.

Table 4.11 Total heavy vehicle loads per year for transportation of sleepers

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	0	0	0	371	0
	Ch 107.4 km to Ch 107.6 km	0	0	0	371	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	0	0	371	0
	Ch 2.0 km to Ch 3.9 km	0	0	0	371	0
	Ch 3.9 km to Ch 10.2 km	0	0	0	371	0
	Ch 10.2 km to Ch 13.9 km	0	0	0	371	0
	Ch 13.9 km to Ch 18.5 km	0	0	0	371	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 18.5 km to Ch 27.1 km	0	0	0	117	0
	Ch 27.1 km to Ch 29.3 km	0	0	0	117	0
	Ch 29.3 km to Ch 34.7 km	0	0	0	117	0
	Ch 34.7 km to Ch 39.6 km	0	0	0	117	0
	Ch 39.6 km to Ch 40.3 km	0	0	0	117	0
	Ch 40.3 km to Ch 40.5 km	0	0	0	0	0
	Ch 40.5 km to Ch 43.9 km	0	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	0	0	0	0
	Ch 2.2 km to Ch 5.4 km	0	0	0	124	0
	Ch 5.4 km to Ch 6.7 km	0	0	0	124	0
	Ch 6.7 km to Ch 7.7 km	0	0	0	124	0
	Ch 7.7 km to Ch 11.2 km	0	0	0	124	0
	Ch 11.2 km to Ch 15.3 km	0	0	0	124	0
	Ch 15.3 km to Ch 17.5 km	0	0	0	124	0
	Ch 17.5 km to Ch 19.0 km	0	0	0	124	0
	Ch 19.0 km to Ch 20.3 km	0	0	0	124	0
	Ch 20.3 km to Ch 21.5 km	0	0	0	124	0
	Ch 21.5 km to Ch 23.2 km	0	0	0	124	0
	Ch 23.2 km to Ch 25.0 km	0	0	0	124	0
	Ch 25.0 km to Ch 30.1 km	0	0	0	124	0
	Ch 30.1 km to Ch 38.7 km	0	0	0	124	0
	Ch 38.7 km to Ch 41.1 km	0	0	0	124	0
	Ch 41.1 km to Ch 41.7 km	0	0	0	124	0
	Ch 41.7 km to Ch 43.2 km	0	0	0	124	0
	Ch 43.2 km to Ch 44.7 km	0	0	0	124	0
	Ch 44.7 km to Ch 47.6 km	0	0	0	124	0
	Ch 47.6 km to Ch 52.2 km	0	0	0	210	0
	Ch 52.2 km to Ch 53.3 km	0	0	0	210	0
	Ch 53.3 km to Ch 60.8 km	0	0	0	210	0
	Ch 60.8 km to Ch 63.0 km	0	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	210	0
	Ch 2.5 km to Ch 3.5 km	0	0	0	210	0
	Ch 3.5 km to Ch 6.2 km	0	0	0	210	0
	Ch 6.2 km to Ch 9.0 km	0	0	0	210	0
	Ch 9.0 km to Ch 13.1 km	0	0	0	210	0
	Ch 13.1 km to Ch 14.0 km	0	0	0	210	0
	Ch 14.0 km to Ch 17.3 km	0	0	0	210	0
	Ch 17.3 km to Ch 18.1 km	0	0	0	210	0
	Ch 18.1 km to Ch 21.8 km	0	0	0	210	0
	Ch 21.8 km to Ch 28.0 km	0	0	0	210	0
	Ch 28.0 km to Ch 33.0 km	0	0	0	210	0
	Ch 33.0 km to Ch 35.6 km	0	0	0	210	0
	Ch 35.6 km to Ch 37.7 km	0	0	0	371	0
	Ch 37.7 km to Ch 39.8 km	0	0	0	371	0
	Ch 39.8 km to Ch 41.9 km	0	0	0	371	0
	Ch 41.9 km to Ch 45.9 km	0	0	0	371	0
	Ch 45.9 km to Ch 47.6 km	0	0	0	371	0
	Ch 47.6 km to Ch 53.3 km	0	0	0	371	0
	Ch 53.3 km to Ch 55.7 km	0	0	0	371	0
	Ch 55.7 km to Ch 56.6 km	0	0	0	371	0
	Ch 56.6 km to Ch 59.2 km	0	0	0	371	0
	Ch 59.2 km to Ch 61.0 km	0	0	0	371	0
	Ch 61.0 km to Ch 65.7 km	0	0	0	371	0
	Ch 65.7 km to Ch 68.7 km	0	0	0	371	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	0	0	0	0	0
	Ch 10.1 km to Ch 10.3 km	0	0	0	0	0
	Ch 10.3 km to Ch 12.1 km	0	0	0	0	0
	Ch 12.1 km to Ch 14.5 km	0	0	0	0	0
	Ch 14.5 km to Ch 16.3 km	0	0	0	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	0	0	0	0	0
	Ch 1.5 km to Ch 2.4 km	0	0	0	0	0
	Ch 2.4 km to Ch 4.5 km	0	0	0	0	0
	Ch 4.5 km to Ch 5.0 km	0	0	0	0	0
	Ch 5.0 km to Ch 5.3 km	0	0	0	0	0
	Ch 5.3 km to Ch 6.2 km	0	0	0	0	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	0	0	0	0	0
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	0	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorooobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	0	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	0	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	0	0	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	0	117	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	0	0	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	117	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	117	0
	South Kurumbul Road to Cunningham Highway	0	0	0	117	0
	Cunningham Highway to Eukabilla Road	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	0	0
	McDougalls Road to Cunningham Highway	0	0	0	0	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	0	0	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	0	0	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	0	0	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	488	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	0	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	0	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	0	0	0	0	0
	B2G-LDN025.9 to Cunningham Highway	0	0	0	0	0
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	0	0	0	124	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	0	0	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	0	0	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	0	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	0	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	86	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	0	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	0	0	0	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	0	0	0	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	0	0	0	0
	Steger Road to B2G-LDN206.3	0	0	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	0	0	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	0	0	0
	Ch B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	0	0	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	0	0
	Kahler Road to Gore Highway	0	0	0	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	0	0	0	0
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	0	0	0
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leeson's Road	0	0	0	0	0
Tummalville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	0	0	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	0	0	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0

4.2.9 Rail routes

For the purposes of this assessment, it has been assumed that rail will be supplied by a single source and will be delivered by the existing QR and ARTC rail network to ARTC's Whetstone Material Distribution Centre along the Project alignment. As a conservative allowance, 10 per cent of all rail deliveries have been assumed to be transported to four laydown areas along the alignment to account for any required use of the road network.

The 10 per cent allowance for movement of rail along the road network is proposed to be undertaken in OSOM trucks. Table 4.12 provides an overview of rail movements per year on each of the road links, while the proposed construction transport routes for rail are illustrated in Appendix AB.

Table 4.12 Total heavy vehicle loads per year for transportation of rail

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	0	0	0	52	0
	Ch 107.4 km to Ch 107.6 km	0	0	0	52	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	0	0	52	0
	Ch 2.0 km to Ch 3.9 km	0	0	0	52	0
	Ch 3.9 km to Ch 10.2 km	0	0	0	52	0
	Ch 10.2 km to Ch 13.9 km	0	0	0	52	0
	Ch 13.9 km to Ch 18.5 km	0	0	0	52	0
	Ch 18.5 km to Ch 27.1 km	0	0	0	16	0
	Ch 27.1 km to Ch 29.3 km	0	0	0	16	0
	Ch 29.3 km to Ch 34.7 km	0	0	0	16	0
	Ch 34.7 km to Ch 39.6 km	0	0	0	16	0
	Ch 39.6 km to Ch 40.3 km	0	0	0	16	0
	Ch 40.3 km to Ch 40.5 km	0	0	0	0	0
	Ch 40.5 km to Ch 43.9 km	0	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	0	0	0	0
	Ch 2.2 km to Ch 5.4 km	0	0	0	18	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 5.4 km to Ch 6.7 km	0	0	0	18	0
	Ch 6.7 km to Ch 7.7 km	0	0	0	18	0
	Ch 7.7 km to Ch 11.2 km	0	0	0	18	0
	Ch 11.2 km to Ch 15.3 km	0	0	0	18	0
	Ch 15.3 km to Ch 17.5 km	0	0	0	18	0
	Ch 17.5 km to Ch 19.0 km	0	0	0	18	0
	Ch 19.0 km to Ch 20.3 km	0	0	0	18	0
	Ch 20.3 km to Ch 21.5 km	0	0	0	18	0
	Ch 21.5 km to Ch 23.2 km	0	0	0	18	0
	Ch 23.2 km to Ch 25.0 km	0	0	0	18	0
	Ch 25.0 km to Ch 30.1 km	0	0	0	18	0
	Ch 30.1 km to Ch 38.7 km	0	0	0	18	0
	Ch 38.7 km to Ch 41.1 km	0	0	0	18	0
	Ch 41.1 km to Ch 41.7 km	0	0	0	18	0
	Ch 41.7 km to Ch 43.2 km	0	0	0	18	0
	Ch 43.2 km to Ch 44.7 km	0	0	0	18	0
	Ch 44.7 km to Ch 47.6 km	0	0	0	18	0
	Ch 47.6 km to Ch 52.2 km	0	0	0	30	0
	Ch 52.2 km to Ch 53.3 km	0	0	0	30	0
	Ch 53.3 km to Ch 60.8 km	0	0	0	30	0
	Ch 60.8 km to Ch 63.0 km	0	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	0	0	0	0
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	30	0
	Ch 2.5 km to Ch 3.5 km	0	0	0	30	0
	Ch 3.5 km to Ch 6.2 km	0	0	0	30	0
	Ch 6.2 km to Ch 9.0 km	0	0	0	30	0
	Ch 9.0 km to Ch 13.1 km	0	0	0	30	0
	Ch 13.1 km to Ch 14.0 km	0	0	0	30	0
	Ch 14.0 km to Ch 17.3 km	0	0	0	30	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 17.3 km to Ch 18.1 km	0	0	0	30	0
	Ch 18.1 km to Ch 21.8 km	0	0	0	30	0
	Ch 21.8 km to Ch 28.0 km	0	0	0	30	0
	Ch 28.0 km to Ch 33.0 km	0	0	0	30	0
	Ch 33.0 km to Ch 35.6 km	0	0	0	30	0
	Ch 35.6 km to Ch 37.7 km	0	0	0	52	0
	Ch 37.7 km to Ch 39.8 km	0	0	0	52	0
	Ch 39.8 km to Ch 41.9 km	0	0	0	52	0
	Ch 41.9 km to Ch 45.9 km	0	0	0	52	0
	Ch 45.9 km to Ch 47.6 km	0	0	0	52	0
	Ch 47.6 km to Ch 53.3 km	0	0	0	52	0
	Ch 53.3 km to Ch 55.7 km	0	0	0	52	0
	Ch 55.7 km to Ch 56.6 km	0	0	0	52	0
	Ch 56.6 km to Ch 59.2 km	0	0	0	52	0
	Ch 59.2 km to Ch 61.0 km	0	0	0	52	0
	Ch 61.0 km to Ch 65.7 km	0	0	0	52	0
	Ch 65.7 km to Ch 68.7 km	0	0	0	52	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	0	0	0	0	0
	Ch 10.1 km to Ch 10.3 km	0	0	0	0	0
	Ch 10.3 km to Ch 12.1 km	0	0	0	0	0
	Ch 12.1 km to Ch 14.5 km	0	0	0	0	0
	Ch 14.5 km to Ch 16.3 km	0	0	0	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	0	0	0	0	0
	Ch 1.5 km to Ch 2.4 km	0	0	0	0	0
	Ch 2.4 km to Ch 4.5 km	0	0	0	0	0
	Ch 4.5 km to Ch 5.0 km	0	0	0	0	0
	Ch 5.0 km to Ch 5.3 km	0	0	0	0	0
	Ch 5.3 km to Ch 6.2 km	0	0	0	0	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	0	0	0	0	0
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorroobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	0	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	0	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	0	0	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	0	16	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	0	0	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	16	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	16	0
	South Kurumbul Road to Cunningham Highway	0	0	0	16	0
	Cunningham Highway to Eukabilla Road	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	0	0
	McDougalls Road to Cunningham Highway	0	0	0	0	0
Moorroobie Lane	Cemetery Road to Borrow Site #2 (Moorroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Moorroobie Lane) to Moorroobie Lane	0	0	0	0	0
	Moorroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	0	0	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	0	0	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	0	0	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	68	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorooobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	0	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	0	0	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	0	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	0	0	0	0	0
	B2G-LDN025.9 to Cunningham Highway	0	0	0	0	0
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	0	0	0	18	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	0	0	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	0	0	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0
Commodore Peak Road	Scrugg Road to Millmerran-Inglewood Road	0	0	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	0	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	0	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	12	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	0	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	0	0	0	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	0	0	0	0
	Steger Road to B2G-LDN206.3	0	0	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	0	0	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	0	0	0
	Ch B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	0	0	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	0	0
	Kahler Road to Gore Highway	0	0	0	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	0	0	0	0
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	0	0	0
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Draper Road to Leeson Road	0	0	0	0	0
Tumaville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	0	0	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	0	0	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0

4.2.10 Plant, tools, materials routes

It is envisaged that the delivery and collection of plant, tools and materials to the construction areas will be cascaded across the road network and occur irregularly. It is considered that the spreading of the trips of this construction activity across the external road network would have a minimal impact and be of an irregular pattern to model. It has been conservatively assumed that all plant, tool and material deliveries will originate from Toowoomba. As these items may originate from a variety of different locations, the construction routes have been determined to commence on the outskirts of Toowoomba city, similar to workforce routes.

During Detailed Design stage, any additional construction related activities, including movement of additional plant and tools and their transport routes will need to be confirmed and agreed with DTMR prior to construction commencing.

The movement of plant, tools and materials is proposed to be undertaken in Semi-trailer (Austroads Class 9 vehicles). Table 4.13 provides an overview of plant, tools and materials movements per year on each of the road links, while the proposed construction transport routes for plant, tools and materials are illustrated in Appendix AD.

Table 4.13 Total heavy vehicle loads per year for transportation of plant, tools and materials

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	298	595	595	595	149
	Ch 107.4 km to Ch 107.6 km	298	595	595	595	149
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	298	595	595	595	149
	Ch 2.0 km to Ch 3.9 km	298	595	595	595	149
	Ch 3.9 km to Ch 10.2 km	298	595	595	595	149
	Ch 10.2 km to Ch 13.9 km	260	521	521	521	130
	Ch 13.9 km to Ch 18.5 km	260	521	521	521	130
	Ch 18.5 km to Ch 27.1 km	260	521	521	521	130
	Ch 27.1 km to Ch 29.3 km	223	446	446	446	112
	Ch 29.3 km to Ch 34.7 km	223	446	446	446	112
	Ch 34.7 km to Ch 39.6 km	223	446	446	446	112
	Ch 39.6 km to Ch 40.3 km	223	446	446	446	112
	Ch 40.3 km to Ch 40.5 km	223	446	446	446	112
	Ch 40.5 km to Ch 43.9 km	112	223	223	223	56
	Ch 43.9 km to Ch 46.3 km	112	223	223	223	56
	Ch 46.3 km to Ch 88.0 km	112	223	223	223	56
	Ch 88.0 km to Ch 88.2 km	112	223	223	223	56
	Ch 88.2 km to Ch 90.0 km	112	223	223	223	56
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	893	1,786	1,786	1,786	446
	Ch 2.2 km to Ch 5.4 km	856	1,711	1,711	1,711	428
	Ch 5.4 km to Ch 6.7 km	856	1,711	1,711	1,711	428
	Ch 6.7 km to Ch 7.7 km	856	1,711	1,711	1,711	428
	Ch 7.7 km to Ch 11.2 km	818	1,637	1,637	1,637	409
	Ch 11.2 km to Ch 15.3 km	818	1,637	1,637	1,637	409
	Ch 15.3 km to Ch 17.5 km	781	1,562	1,562	1,562	391
	Ch 17.5 km to Ch 19.0 km	781	1,562	1,562	1,562	391
	Ch 19.0 km to Ch 20.3 km	781	1,562	1,562	1,562	391
	Ch 20.3 km to Ch 21.5 km	781	1,562	1,562	1,562	391
	Ch 21.5 km to Ch 23.2 km	744	1,488	1,488	1,488	372
	Ch 23.2 km to Ch 25.0 km	744	1,488	1,488	1,488	372
	Ch 25.0 km to Ch 30.1 km	744	1,488	1,488	1,488	372
	Ch 30.1 km to Ch 38.7 km	707	1,414	1,414	1,414	353
	Ch 38.7 km to Ch 41.1 km	670	1,339	1,339	1,339	335
	Ch 41.1 km to Ch 41.7 km	670	1,339	1,339	1,339	335

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 41.7 km to Ch 43.2 km	670	1,339	1,339	1,339	335
	Ch 43.2 km to Ch 44.7 km	670	1,339	1,339	1,339	335
	Ch 44.7 km to Ch 47.6 km	632	1,265	1,265	1,265	316
	Ch 47.6 km to Ch 52.2 km	632	1,265	1,265	1,265	316
	Ch 52.2 km to Ch 53.3 km	595	1,190	1,190	1,190	298
	Ch 53.3 km to Ch 60.8 km	595	1,190	1,190	1,190	298
	Ch 60.8 km to Ch 63.0 km	0	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	0	0	0	0
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	595	1,190	1,190	1,190	298
	Ch 2.5 km to Ch 3.5 km	595	1,190	1,190	1,190	298
	Ch 3.5 km to Ch 6.2 km	595	1,190	1,190	1,190	298
	Ch 6.2 km to Ch 9.0 km	558	1,116	1,116	1,116	279
	Ch 9.0 km to Ch 13.1 km	558	1,116	1,116	1,116	279
	Ch 13.1 km to Ch 14.0 km	558	1,116	1,116	1,116	279
	Ch 14.0 km to Ch 17.3 km	558	1,116	1,116	1,116	279
	Ch 17.3 km to Ch 18.1 km	558	1,116	1,116	1,116	279
	Ch 18.1 km to Ch 21.8 km	521	1,042	1,042	1,042	260
	Ch 21.8 km to Ch 28.0 km	521	1,042	1,042	1,042	260
	Ch 28.0 km to Ch 33.0 km	484	967	967	967	242
	Ch 33.0 km to Ch 35.6 km	446	893	893	893	223
	Ch 35.6 km to Ch 37.7 km	446	893	893	893	223
	Ch 37.7 km to Ch 39.8 km	446	893	893	893	223
	Ch 39.8 km to Ch 41.9 km	409	818	818	818	205
	Ch 41.9 km to Ch 45.9 km	409	818	818	818	205
	Ch 45.9 km to Ch 47.6 km	372	744	744	744	186
	Ch 47.6 km to Ch 53.3 km	372	744	744	744	186
	Ch 53.3 km to Ch 55.7 km	372	744	744	744	186
	Ch 55.7 km to Ch 56.6 km	372	744	744	744	186
	Ch 56.6 km to Ch 59.2 km	372	744	744	744	186

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 59.2 km to Ch 61.0 km	372	744	744	744	186
	Ch 61.0 km to Ch 65.7 km	335	670	670	670	167
	Ch 65.7 km to Ch 68.7 km	298	595	595	595	149
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	37	74	74	74	19
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	893	1,786	1,786	1,786	446
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	149	298	298	298	74
	Ch 9.2 km to Ch 10.0 km	74	149	149	149	37
	Ch 10.0 km to Ch 10.1 km	74	149	149	149	37
	Ch 10.1 km to Ch 10.3 km	74	149	149	149	37
	Ch 10.3 km to Ch 12.1 km	74	149	149	149	37
	Ch 12.1 km to Ch 14.5 km	74	149	149	149	37
	Ch 14.5 km to Ch 16.3 km	37	74	74	74	19
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	0	0	0	0	0
	Ch 1.5 km to Ch 2.4 km	74	149	149	149	37
	Ch 2.4 km to Ch 4.5 km	37	74	74	74	19
	Ch 4.5 km to Ch 5.0 km	37	74	74	74	19
	Ch 5.0 km to Ch 5.3 km	37	74	74	74	19
	Ch 5.3 km to Ch 6.2 km	37	74	74	74	19
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	37	74	74	74	19
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	0	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	37	74	74	74	19
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	37	74	74	74	19
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	112	223	223	223	56
	NS2B-LDN033.2 to NS2B-LDN035.6	37	74	74	74	19
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	0	0
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0
	Cunningham Highway to Eukabilla Road	112	223	223	223	56
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	0	0
	McDougalls Road to Cunningham Highway	0	0	0	0	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	37	74	74	74	19
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	37	74	74	74	19
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	37	74	74	74	19
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorooobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	37	74	74	74	19
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	37	74	74	74	19
	Yelarbon Kurumbul Road to B2G-LDN020.3	74	149	149	149	37
	B2G-LDN020.3 to B2G-LDN025.9	74	149	149	149	37
	B2G-LDN025.9 to Cunningham Highway	112	223	223	223	56
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	149	298	298	298	74
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	893	1,786	1,786	1,786	446
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	37	74	74	74	19
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	37	74	74	74	19
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	37	74	74	74	19
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	0	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	149	298	298	298	74
	Access Track to Greenwattle Street	149	298	298	298	74
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	37	74	74	74	19
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	0	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	0	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	37	74	74	74	19
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	37	74	74	74	19
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	37	74	74	74	19
	Steger Road to B2G-LDN206.3	37	74	74	74	19
Linthorpe Road	Gore Highway to B2G-LDN175.5	37	74	74	74	19
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	0	0	0
	Ch B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	0	0	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	0	0
	Kahler Road to Gore Highway	0	0	0	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	74	149	149	149	37
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	0	0	0	0
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	37	74	74	74	19
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	37	74	74	74	19
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leeson's Road	0	0	0	0	0
Tummalville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	37	74	74	74	19
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	149	298	298	298	74
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Yarranlea Road	Gore Highway to B2G-LDN161.0	37	74	74	74	19
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0

4.2.11 Non-resident workforce accommodation facility cabin routes

Routes have been determined for the construction of the proposed non-resident workforce accommodation facilities near Millmerran, Inglewood and Yelarbon. These routes have been determined to provide for the delivery of all of the non-resident workforce accommodation facility cabins to site from the Port of Brisbane, with 150 cabins adopted to be transported to each non-resident workforce accommodation facility.

The movement of the non-resident workforce accommodation facility cabins are proposed to be undertaken in semi-trailer (Austroads Class 10 vehicles). Table 4.14 provides an overview of non-resident workforce accommodation facility cabin movements per year on each of the road links, while the proposed construction transport routes for non-resident workforce accommodation facility cabins from the Port of Brisbane are illustrated in Appendix AE.

Table 4.14 Total heavy vehicle loads per year for transportation of non-resident workforce accommodation facility materials

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	150	0	0	0	0
	Ch 107.4 km to Ch 107.6 km	150	0	0	0	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	150	0	0	0	0
	Ch 2.0 km to Ch 3.9 km	150	0	0	0	0
	Ch 3.9 km to Ch 10.2 km	150	0	0	0	0
	Ch 10.2 km to Ch 13.9 km	150	0	0	0	0
	Ch 13.9 km to Ch 18.5 km	150	0	0	0	0
	Ch 18.5 km to Ch 27.1 km	150	0	0	0	0
	Ch 27.1 km to Ch 29.3 km	150	0	0	0	0
	Ch 29.3 km to Ch 34.7 km	150	0	0	0	0
	Ch 34.7 km to Ch 39.6 km	150	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 39.6 km to Ch 40.3 km	150	0	0	0	0
	Ch 40.3 km to Ch 40.5 km	150	0	0	0	0
	Ch 40.5 km to Ch 43.9 km	150	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	450	0	0	0	0
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	450	0	0	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	450	0	0	0	0
	Ch 2.2 km to Ch 5.4 km	450	0	0	0	0
	Ch 5.4 km to Ch 6.7 km	450	0	0	0	0
	Ch 6.7 km to Ch 7.7 km	450	0	0	0	0
	Ch 7.7 km to Ch 11.2 km	450	0	0	0	0
	Ch 11.2 km to Ch 15.3 km	450	0	0	0	0
	Ch 15.3 km to Ch 17.5 km	450	0	0	0	0
	Ch 17.5 km to Ch 19.0 km	450	0	0	0	0
	Ch 19.0 km to Ch 20.3 km	450	0	0	0	0
	Ch 20.3 km to Ch 21.5 km	450	0	0	0	0
	Ch 21.5 km to Ch 23.2 km	450	0	0	0	0
	Ch 23.2 km to Ch 25.0 km	450	0	0	0	0
	Ch 25.0 km to Ch 30.1 km	450	0	0	0	0
	Ch 30.1 km to Ch 38.7 km	450	0	0	0	0
	Ch 38.7 km to Ch 41.1 km	450	0	0	0	0
	Ch 41.1 km to Ch 41.7 km	450	0	0	0	0
	Ch 41.7 km to Ch 43.2 km	450	0	0	0	0
	Ch 43.2 km to Ch 44.7 km	450	0	0	0	0
	Ch 44.7 km to Ch 47.6 km	450	0	0	0	0
	Ch 47.6 km to Ch 52.2 km	450	0	0	0	0
	Ch 52.2 km to Ch 53.3 km	450	0	0	0	0
	Ch 53.3 km to Ch 60.8 km	450	0	0	0	0
	Ch 60.8 km to Ch 63.0 km	150	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	150	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	150	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	150	0	0	0	0
	Ch 1.4 km to Ch 3.0 km	150	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	450	0	0	0	0
	Ch 3.7 km to Ch 6.4 km	450	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	450	0	0	0	0
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	450	0	0	0	0
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	300	0	0	0	0
	Ch 2.5 km to Ch 3.5 km	300	0	0	0	0
	Ch 3.5 km to Ch 6.2 km	300	0	0	0	0
	Ch 6.2 km to Ch 9.0 km	300	0	0	0	0
	Ch 9.0 km to Ch 13.1 km	300	0	0	0	0
	Ch 13.1 km to Ch 14.0 km	300	0	0	0	0
	Ch 14.0 km to Ch 17.3 km	300	0	0	0	0
	Ch 17.3 km to Ch 18.1 km	300	0	0	0	0
	Ch 18.1 km to Ch 21.8 km	300	0	0	0	0
	Ch 21.8 km to Ch 28.0 km	300	0	0	0	0
	Ch 28.0 km to Ch 33.0 km	300	0	0	0	0
	Ch 33.0 km to Ch 35.6 km	300	0	0	0	0
	Ch 35.6 km to Ch 37.7 km	300	0	0	0	0
	Ch 37.7 km to Ch 39.8 km	300	0	0	0	0
	Ch 39.8 km to Ch 41.9 km	300	0	0	0	0
	Ch 41.9 km to Ch 45.9 km	300	0	0	0	0
	Ch 45.9 km to Ch 47.6 km	300	0	0	0	0
	Ch 47.6 km to Ch 53.3 km	300	0	0	0	0
	Ch 53.3 km to Ch 55.7 km	300	0	0	0	0
	Ch 55.7 km to Ch 56.6 km	300	0	0	0	0
	Ch 56.6 km to Ch 59.2 km	150	0	0	0	0
	Ch 59.2 km to Ch 61.0 km	150	0	0	0	0
	Ch 61.0 km to Ch 65.7 km	150	0	0	0	0
	Ch 65.7 km to Ch 68.7 km	150	0	0	0	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	450	0	0	0	0
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	450	0	0	0	0
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	0	0	0	0	0
	Ch 10.1 km to Ch 10.3 km	0	0	0	0	0
	Ch 10.3 km to Ch 12.1 km	0	0	0	0	0
	Ch 12.1 km to Ch 14.5 km	0	0	0	0	0
	Ch 14.5 km to Ch 16.3 km	0	0	0	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	450	0	0	0	0
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	450	0	0	0	0
	Ch 0.6 km to Ch 3.2 km	450	0	0	0	0
	Ch 3.2 km to Ch 4.1 km	450	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	450	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	450	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	450	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	450	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	450	0	0	0	0
	Ch 28.9 km to Ch 36.6 km	450	0	0	0	0
	Ch 36.6 km to Ch 55.5 km	450	0	0	0	0
	Ch 55.5 km to Ch 75.4 km	450	0	0	0	0
	Ch 75.4 km to Ch 79.6 km	450	0	0	0	0
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	0	0	0	0	0
	Ch 1.5 km to Ch 2.4 km	0	0	0	0	0
	Ch 2.4 km to Ch 4.5 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 4.5 km to Ch 5.0 km	0	0	0	0	0
	Ch 5.0 km to Ch 5.3 km	0	0	0	0	0
	Ch 5.3 km to Ch 6.2 km	0	0	0	0	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	0	0	0	0	0
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	0	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorooobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	0	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	0	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	0	0	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	0	0	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	0	0	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	0	0
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Cunningham Highway to Eukabilla Road	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	0	0
	McDougalls Road to Cunningham Highway	0	0	0	0	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	0	0	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	0	0	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	0	0	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	0	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	0	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	0	0	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	0	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	0	0	0	0	0
	B2G-LDN025.9 to Cunningham Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	0	0	0	0	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	0	0	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	0	0	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	0	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	0	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	0	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	0	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	0	0	0	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	0	0	0	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	0	0	0	0
	Steger Road to B2G-LDN206.3	0	0	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	0	0	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	0	0	0
	Ch B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	0	0	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	0	0
	Kahler Road to Gore Highway	0	0	0	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	0	0	0
Quarry Road Access	Tummaville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leeson's Road	0	0	0	0	0
Tummaville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	150	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	0	0	0	0
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	0	0	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0

4.2.12 Rail to road diversion routes

Routes have been identified for the diversion of materials which would otherwise be transported by rail, however, will be restricted in train movements during the construction of the Project. The following assumptions have been considered by ARTC for the construction of the rail line:

- a) If the Project utilises the option of road freight for grain and other domestic products during the construction of the QR lines, then the track will be close between certain sections for the length of construction period. Sections of QR track that would be closed:
 - i) South Western Line: Whetstone to Thallon
 - ii) Millmerran Branch Line: Millmerran to Pittsworth
- b) Alternatively, the Project may elect to construct offline (physically separated from the existing track) through the brownfield corridors, under track closures and possessions. In doing so, the Project would not require the use of road freight for the transportation of grain and/or other domestic commodities.

It has been assumed that the Project will require complete closure of the QR lines at the locations specified in Option 1, above. This option requires redirection of all items which would otherwise be travelling via rail, increasing the traffic movements on the road possibly substantially, particularly during peak harvest season.

ARTC have engaged with GrainCorp to confirm the vehicle fleet currently used for grain transportation between Yelarbon and the Port of Brisbane. GrainCorp confirmed that during the first four months of 2024, there were approximately 150 grain transportation trips, all of which were either:

- 9 Axle B-Doubles/Austroroads Class 10 (approximately 20 per cent)
- 11 Axle Road Trains/Austroroads Class 11 (approximately 12 per cent)
- 12 Axle Road Trains/Austroroads Class 11 (approximately 68 per cent).

Based on the above and to represent a conservative assessment, the movement of items travelling via road are assumed to be undertaken as B-double truck trips (Austroroads Class 10 vehicles). The ultimate determination of the final construction and heavy vehicle routes will be subject to detailed design and consultation between DTMR, the relevant local council, the Contractor and, where relevant, QR.

In June 2022, QR provided historical monthly grain haulage data via rail to the Port of Brisbane on the South Western Line (January 2015 to May 2022) and Millmerran Branch Line (May 2020 to May 2022), by origin including Brookstead, Goondiwindi, Toobeah, Talwood, and Thallon.

Table 4.15 and Table 4.16 summarise the supplied QR grain haulage data.

Table 4.15 Historical grain haulage data via rail to the Point of Brisbane – Annual totals by origin

Origin	Year (tonnes)								Total
	2015	2016	2017	2018	2019	2020	2021	2022*	
Thallon	46,202	16,803	91,408	16,799	1,680	38,279	318,042**	66,189	595,401
Goondiwindi	79,853	175,581	68,506	21,896	6,785	34,528	186,228**	92,300	665,677
Talwood	18,169	0	28,727**	0	0	0	3,220	11,784	61,900
Toobeah	1,695	3,320	22,282**	0	0	0	0	0	27,298
Brookstead	n/a	n/a	n/a	n/a	n/a	0	2,595	7,738	10,333
Total	145,919	195,704	210,923	38,695	8,465	72,808	510,085	178,010	1,360,608

Table note:

* Partial year only (January to May 2022)

** Origin total adopted for the propose of the TIA

Table 4.16 Historical grain haulage data via rail to the Point of Brisbane – 2021 totals by month

Month	Tonnes*	Proportion
January	47,143	9.29%
February	27,306	5.38%
March	21,263	4.19%
April	49,371	9.73%
May	71,140	14.02%
June	68,854	13.57%
July	57,362	11.30%
August	57,610	11.35%
September	31,251	6.16%
October	30,398	5.99%
November	37,526	7.39%
December	8,265	1.63%
TOTAL	507,490	100.00%

Table note:

* Excludes Millmerran Branch Line Haulage

Key observations are summarised below:

- The annual total amount of grain hauled via rail varied significantly across the time period
- A total of 1.36M tonnes of grain was hauled via rail between January 2015 and May 2022 (89 months). This equates to an average of approximately 180,000 tonnes per year OR 15,000 tonnes per month.
- The peak grain haulage year at Thallon and Goondiwindi occurred in 2021
- The peak grain haulage year at Talwood and Toobeah occurred in 2017
- Limited data was provided for Brookstead (December 2021 and April 2022)
- The vast majority of the grain was hauled from Goondiwindi (49 per cent) or Thallon (44 per cent)
- Approximately 50 per cent of grain hauled in 2021 occurred between May and August (4 months)

To represent a highly conservative assessment, the peak haulage recorded from Thallon and Goondiwindi in 2021 was added to the peak haulage recorded from Talwood and Toobeah in 2017. Furthermore, the recorded haulage at Brookstead in December 2021 was factored to an estimated annual volume.

Table 4.17 summarises the adopted haulage volumes to be transported via road for the purpose of the TIA.

Table 4.17 Adopted grain haulage volumes via road to the Point of Brisbane

Origin	Tonnes per year	Source/assumption
Thallon	318,042	as per the recorded total amount in 2021
Goondiwindi	186,228	as per the recorded total amount in 2021
Talwood	28,727	as per the recorded total amount in 2017
Toobeah	22,282	as per the recorded total amount in 2017
Brookstead	159,356	Estimated by dividing the December 2021 total by the proportion hauled on the South Western Line in December 2021 (2,595 tonnes/1.63% = 159,356 tonnes)
Total	714,634	Note: this is 1.4 times the max year (510,085 tonnes) Note: this is 3.9 times the average year (183,370 tonnes)

The adopted annual rail to road haulage amount was converted to loaded and unloaded B-double trips for each year of the anticipated rail closure period based on the following assumptions:

- Truck payload: 38.84 tonnes with 100 per cent load efficiency
- Rail closure period: August 2024 to March 2028 (44 months)
- Month to month variation: as per the 2021 QR data (Table 4.16).

Table 4.18 summarises the adopted heavy vehicle loads per year diverted to road due to the rail closures.

Table 4.18 Adopted heavy vehicle loads per year diverted to road due to the rail closures

Parameter	Year of construction					Total
	2024	2025	2026	2027	2028	
Number of months	5	12	12	12	3	44
No of loaded B-Double trips	5,998	18,427	18,427	18,427	3,476	64,755
No of unloaded B-Double trips	5,998	18,427	18,427	18,427	3,476	64,755
Total no. of B-Double trips	11,996	36,854	36,854	36,854	6,952	129,510
Total tonnage of grain hauled	232,614	714,634	714,634	714,634	134,806	2,511,323

The assumed total tonnage in 44 months (2.51M tonnes) is almost double what QR historically recorded in 89 months (1.36M tonnes). This further highlights the conservative nature of the adopted assumptions.

GrainCorp advised that a B-Double is the smallest truck that is currently used for grain transportation between Yelarbon and the Port of Brisbane, with most of the fleet being Road Trains. If the ultimate fleet used during the rail closure period reflected GrainCorp's current fleet configuration, the number of heavy vehicle loads may reduce by approximately 22 per cent from 64,755 to 50,682 trips. However, given the overly conservative grain haulage amount that has been adopted compared to historical data, the assumed vehicle fleet assumption is not critical (i.e. the number of trips may ultimately be half what has been assessed).

Table 4.19 provides an overview of the rail to road movements (loaded trips only) per year on each of the road links, while the proposed construction transport routes are illustrated in Appendix AF.

Grain is currently transported from individual farms to storage facilities before being transported to the Port of Brisbane via train. The estimated rail to road diversion trips does not consider the trips from individual farm to the storage facilities as these trips would be on the road network irrespective of the potential rail closure.

Table 4.19 Total heavy vehicle loads per year diverted to road due to the rail closures

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	3,099	9,518	9,518	9,518	1,796
	Ch 0.8 km to Ch 2.0 km	3,099	9,518	9,518	9,518	1,796
	Ch 2.0 km to Ch 45.9 km	3,099	9,518	9,518	9,518	1,796
	Ch 45.9 km to Ch 88.0 km	2,856	8,774	8,774	8,774	1,656
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	2,856	8,774	8,774	8,774	1,656
	Ch 1.6 km to Ch 66.8 km	2,666	8,194	8,194	8,194	1,546
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	2,666	8,194	8,194	8,194	1,546
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	0	0	0	0	0
	Ch 107.4 km to Ch 107.6 km	0	0	0	0	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 3.9 km	0	0	0	0	0
	Ch 3.9 km to Ch 10.2 km	0	0	0	0	0
	Ch 10.2 km to Ch 13.9 km	0	0	0	0	0
	Ch 13.9 km to Ch 18.5 km	0	0	0	0	0
	Ch 18.5 km to Ch 27.1 km	0	0	0	0	0
	Ch 27.1 km to Ch 29.3 km	0	0	0	0	0
	Ch 29.3 km to Ch 34.7 km	0	0	0	0	0
	Ch 34.7 km to Ch 39.6 km	0	0	0	0	0
	Ch 39.6 km to Ch 40.3 km	0	0	0	0	0
	Ch 40.3 km to Ch 40.5 km	0	0	0	0	0
	Ch 40.5 km to Ch 43.9 km	0	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	1,563	4,801	4,801	4,801	905
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	5,998	18,427	18,427	18,427	3,476
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	5,998	18,427	18,427	18,427	3,476
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	5,998	18,427	18,427	18,427	3,476
	Ch 2.2 km to Ch 5.4 km	5,998	18,427	18,427	18,427	3,476
	Ch 5.4 km to Ch 6.7 km	5,998	18,427	18,427	18,427	3,476
	Ch 6.7 km to Ch 7.7 km	5,998	18,427	18,427	18,427	3,476
	Ch 7.7 km to Ch 11.2 km	5,998	18,427	18,427	18,427	3,476
	Ch 11.2 km to Ch 15.3 km	5,998	18,427	18,427	18,427	3,476
	Ch 15.3 km to Ch 17.5 km	5,998	18,427	18,427	18,427	3,476
	Ch 17.5 km to Ch 19.0 km	5,998	18,427	18,427	18,427	3,476
	Ch 19.0 km to Ch 20.3 km	5,998	18,427	18,427	18,427	3,476
	Ch 20.3 km to Ch 21.5 km	5,998	18,427	18,427	18,427	3,476
	Ch 21.5 km to Ch 23.2 km	5,998	18,427	18,427	18,427	3,476
	Ch 23.2 km to Ch 25.0 km	5,998	18,427	18,427	18,427	3,476
	Ch 25.0 km to Ch 30.1 km	5,998	18,427	18,427	18,427	3,476
	Ch 30.1 km to Ch 38.7 km	5,998	18,427	18,427	18,427	3,476
	Ch 38.7 km to Ch 41.1 km	4,662	14,319	14,319	14,319	2,701
	Ch 41.1 km to Ch 41.7 km	4,662	14,319	14,319	14,319	2,701
	Ch 41.7 km to Ch 43.2 km	4,662	14,319	14,319	14,319	2,701
	Ch 43.2 km to Ch 44.7 km	4,662	14,319	14,319	14,319	2,701
	Ch 44.7 km to Ch 47.6 km	4,662	14,319	14,319	14,319	2,701
	Ch 47.6 km to Ch 52.2 km	4,662	14,319	14,319	14,319	2,701
	Ch 52.2 km to Ch 53.3 km	4,662	14,319	14,319	14,319	2,701
	Ch 53.3 km to Ch 60.8 km	4,662	14,319	14,319	14,319	2,701
	Ch 60.8 km to Ch 63.0 km	4,662	14,319	14,319	14,319	2,701
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	4,662	14,319	14,319	14,319	2,701
	Ch 0.7 km to Ch 0.8 km	4,662	14,319	14,319	14,319	2,701
	Ch 0.8 km to Ch 1.4 km	4,662	14,319	14,319	14,319	2,701
	Ch 1.4 km to Ch 3.0 km	4,662	14,319	14,319	14,319	2,701
	Ch 3.0 km to Ch 13.0 km	4,662	14,319	14,319	14,319	2,701
	Ch 13.0 km to Ch 121.6 km	4,662	14,319	14,319	14,319	2,701
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	5,998	18,427	18,427	18,427	3,476
	Ch 3.7 km to Ch 6.4 km	5,998	18,427	18,427	18,427	3,476
	Ch 6.4 km to Ch 8.3 km	5,998	18,427	18,427	18,427	3,476
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	4,662	14,319	14,319	14,319	2,701
	Ch 220.1 km to Ch 222.4 km	1,563	4,801	4,801	4,801	905

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 222.4 km to Ch 224.1 km	1,563	4,801	4,801	4,801	905
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	5,998	18,427	18,427	18,427	3,476
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	0	0
	Ch 2.5 km to Ch 3.5 km	0	0	0	0	0
	Ch 3.5 km to Ch 6.2 km	0	0	0	0	0
	Ch 6.2 km to Ch 9.0 km	0	0	0	0	0
	Ch 9.0 km to Ch 13.1 km	0	0	0	0	0
	Ch 13.1 km to Ch 14.0 km	0	0	0	0	0
	Ch 14.0 km to Ch 17.3 km	0	0	0	0	0
	Ch 17.3 km to Ch 18.1 km	0	0	0	0	0
	Ch 18.1 km to Ch 21.8 km	0	0	0	0	0
	Ch 21.8 km to Ch 28.0 km	0	0	0	0	0
	Ch 28.0 km to Ch 33.0 km	0	0	0	0	0
	Ch 33.0 km to Ch 35.6 km	0	0	0	0	0
	Ch 35.6 km to Ch 37.7 km	0	0	0	0	0
	Ch 37.7 km to Ch 39.8 km	0	0	0	0	0
	Ch 39.8 km to Ch 41.9 km	0	0	0	0	0
	Ch 41.9 km to Ch 45.9 km	0	0	0	0	0
	Ch 45.9 km to Ch 47.6 km	0	0	0	0	0
	Ch 47.6 km to Ch 53.3 km	0	0	0	0	0
	Ch 53.3 km to Ch 55.7 km	0	0	0	0	0
	Ch 55.7 km to Ch 56.6 km	0	0	0	0	0
	Ch 56.6 km to Ch 59.2 km	0	0	0	0	0
	Ch 59.2 km to Ch 61.0 km	0	0	0	0	0
	Ch 61.0 km to Ch 65.7 km	0	0	0	0	0
	Ch 65.7 km to Ch 68.7 km	0	0	0	0	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	0	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	5,998	18,427	18,427	18,427	3,476
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	5,998	18,427	18,427	18,427	3,476
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	0	0	0	0	0
	Ch 10.1 km to Ch 10.3 km	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 10.3 km to Ch 12.1 km	0	0	0	0	0
	Ch 12.1 km to Ch 14.5 km	0	0	0	0	0
	Ch 14.5 km to Ch 16.3 km	0	0	0	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	5,998	18,427	18,427	18,427	3,476
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	5,998	18,427	18,427	18,427	3,476
	Ch 0.6 km to Ch 3.2 km	5,998	18,427	18,427	18,427	3,476
	Ch 3.2 km to Ch 4.1 km	5,998	18,427	18,427	18,427	3,476
	Ch 4.1 km to Ch 13.0 km	5,998	18,427	18,427	18,427	3,476
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	5,998	18,427	18,427	18,427	3,476
	Ch 7.2 km to Ch 15.1 km	5,998	18,427	18,427	18,427	3,476
	Ch 15.1 km to Ch 18.9 km	5,998	18,427	18,427	18,427	3,476
	Ch 18.9 km to Ch 28.9 km	5,998	18,427	18,427	18,427	3,476
	Ch 28.9 km to Ch 36.6 km	5,998	18,427	18,427	18,427	3,476
	Ch 36.6 km to Ch 55.5 km	5,998	18,427	18,427	18,427	3,476
	Ch 55.5 km to Ch 75.4 km	5,998	18,427	18,427	18,427	3,476
	Ch 75.4 km to Ch 79.6 km	5,998	18,427	18,427	18,427	3,476
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	0	0	0	0	0
	Ch 0.4 km to Ch 1.5 km	0	0	0	0	0
	Ch 1.5 km to Ch 2.4 km	0	0	0	0	0
	Ch 2.4 km to Ch 4.5 km	0	0	0	0	0
	Ch 4.5 km to Ch 5.0 km	0	0	0	0	0
	Ch 5.0 km to Ch 5.3 km	0	0	0	0	0
	Ch 5.3 km to Ch 6.2 km	0	0	0	0	0
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Transport for New South Wales						
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0
Local Government Roads: Balonne Shire Council						
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	2,666	8,194	8,194	8,194	1,546
Local Government Roads: Goondiwindi Regional Council						
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	0	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0
Cemetery Road	Access Track to Moorooobie Lane	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	1,563	4,801	4,801	4,801	905
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	0	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	0	0	0
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	0	0	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	0	0	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	0	0	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	0	0
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0
	Cunningham Highway to Eukabilla Road	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	0	0
	McDougalls Road to Cunningham Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	0	0	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	190	580	580	580	110
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	243	744	744	744	140
Springborg Road	Cunningham highway to B2G-LDN037.6	0	0	0	0	0
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	0	0	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	0	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	0	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	0	0	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	0	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	0	0	0	0	0
	B2G-LDN025.9 to Cunningham Highway	0	0	0	0	0
Local Government Roads: Moree Plains Shire Council						
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Local Government Roads: Toowoomba Regional Council						
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	0	0	0	0	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	0	0	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	0	0	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	0	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	0	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	0	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	0	0	0	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	0	0	0	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	0	0	0	0
	Steger Road to B2G-LDN206.3	0	0	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	0	0	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	0	0	0
	Ch B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	0	0	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	0	0
	Kahler Road to Gore Highway	0	0	0	0	0
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	0	0	0	0
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	0	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0
	Draper Road to Leeson's Road	0	0	0	0	0
Tummalville Road	Access Track to Gore Highway	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	1,336	4,108	4,108	4,108	775
	B2G-LDN153.1 to Gore Highway	1,336	4,108	4,108	4,108	775
	Gore Highway to B2G-LDN150.9	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	0	0	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0

4.3 Development traffic volumes on network

4.3.1 Construction trips per year

Table 4.20 show the total construction trips for each road section in each of the construction years by LVs and HVs, providing an overview of the development traffic proposed on the road network. It is noted that the HV volumes include the movements of OSOM vehicles. For a summary of OSOM-only movements, refer to Table 4.21.

Table 4.20 Total trips per year

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads											
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0	3,255	10,617	10,903	9,518	1,796
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0	3,255	10,617	10,903	9,518	1,796
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0	3,099	9,518	9,518	9,518	1,796
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0	2,856	8,774	8,774	8,774	1,656
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0	2,856	8,774	8,774	8,774	1,656
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0	2,666	8,194	8,194	8,194	1,546
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0	2,666	8,194	8,194	8,194	1,546
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0	0	277	265	484	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0	4,662	6,928	2,562	2,067	5
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0	10,396	8,648	7,929	19,556	5
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0	21,334	12,832	7,929	19,556	5
	Ch 105.7 km to Ch 107.4 km	16,249	30,186	30,150	30,150	7,537	30,553	17,785	8,061	15,637	150
	Ch 107.4 km to Ch 107.6 km	14,389	26,466	26,430	26,430	6,607	30,557	17,807	8,045	14,535	150
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	14,389	26,466	26,430	26,430	6,607	30,557	17,807	8,045	14,535	150
	Ch 2.0 km to Ch 3.9 km	14,389	26,466	26,430	26,430	6,607	30,499	16,999	8,518	14,627	150
	Ch 3.9 km to Ch 10.2 km	13,459	24,606	24,570	24,570	6,142	23,094	14,355	7,150	11,078	149
	Ch 10.2 km to Ch 13.9 km	11,599	20,886	20,850	20,850	5,212	23,044	14,019	6,171	10,958	130
	Ch 13.9 km to Ch 18.5 km	10,669	19,026	18,990	18,990	4,747	25,312	15,753	6,939	9,900	131
	Ch 18.5 km to Ch 27.1 km	930	1,860	1,860	1,860	465	21,964	15,945	7,712	8,694	132
	Ch 27.1 km to Ch 29.3 km	1,860	3,720	3,720	3,720	930	22,724	16,113	6,960	8,096	115
	Ch 29.3 km to Ch 34.7 km	1,860	3,720	3,720	3,720	930	19,499	12,714	6,672	7,459	115
	Ch 34.7 km to Ch 39.6 km	1,860	3,720	3,720	3,720	930	19,499	15,378	6,672	7,459	115

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 39.6 km to Ch 40.3 km	2,790	5,580	5,580	5,580	1,395	15,897	20,114	6,175	6,738	115
	Ch 40.3 km to Ch 40.5 km	2,790	5,580	5,580	5,580	1,395	2,718	4,111	6,090	6,605	115
	Ch 40.5 km to Ch 43.9 km	8,370	16,740	16,740	16,740	4,185	418	3,635	705	223	56
	Ch 43.9 km to Ch 46.3 km	2,790	5,580	5,580	5,580	1,395	268	3,635	705	223	56
	Ch 46.3 km to Ch 88.0 km	2,790	5,580	5,580	5,580	1,395	268	971	705	223	56
	Ch 88.0 km to Ch 88.2 km	2,790	5,580	5,580	5,580	1,395	1,675	5,502	5,939	5,024	961
	Ch 88.2 km to Ch 90.0 km	2,790	5,580	5,580	5,580	1,395	112	701	1,138	223	56
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	12,090	24,180	24,180	24,180	6,045	20,975	96,130	27,338	27,047	4,038
	Ch 2.2 km to Ch 5.4 km	10,230	20,460	20,460	20,460	5,115	64,786	118,022	25,461	25,480	3,954
	Ch 5.4 km to Ch 6.7 km	8,370	16,740	16,740	16,740	4,185	64,786	117,995	25,438	25,016	3,908
	Ch 6.7 km to Ch 7.7 km	7,440	14,880	14,880	14,880	3,720	64,786	121,051	28,622	25,114	3,908
	Ch 7.7 km to Ch 11.2 km	5,580	11,160	11,160	11,160	2,790	64,347	116,469	27,274	24,998	3,942
	Ch 11.2 km to Ch 15.3 km	4,650	9,300	9,300	9,300	2,325	64,347	116,464	27,273	26,225	4,008
	Ch 15.3 km to Ch 17.5 km	3,720	7,440	7,440	7,440	1,860	52,439	75,821	30,044	24,858	4,038
	Ch 17.5 km to Ch 19.0 km	2,790	5,580	5,580	5,580	1,395	52,439	75,830	30,046	25,262	4,108
	Ch 19.0 km to Ch 20.3 km	1,860	3,720	3,720	3,720	930	52,439	75,814	29,986	25,733	4,143
	Ch 20.3 km to Ch 21.5 km	930	1,860	1,860	1,860	465	52,439	75,814	30,122	25,733	4,143
	Ch 21.5 km to Ch 23.2 km	0	0	0	0	0	51,973	70,823	28,941	25,493	4,180
	Ch 23.2 km to Ch 25.0 km	2,790	5,580	5,580	5,580	1,395	25,937	44,626	28,360	26,385	4,268
	Ch 25.0 km to Ch 30.1 km	2,790	5,580	5,580	5,580	1,395	25,937	72,606	56,340	21,161	3,849
	Ch 30.1 km to Ch 38.7 km	4,650	9,300	9,300	9,300	2,325	25,535	22,845	24,600	22,810	4,033
	Ch 38.7 km to Ch 41.1 km	6,510	13,020	13,020	13,020	3,255	24,162	19,161	22,609	18,627	3,240
	Ch 41.1 km to Ch 41.7 km	6,510	13,020	13,020	13,020	3,255	24,162	19,161	22,609	17,678	3,116

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 41.7 km to Ch 43.2 km	8,370	16,740	16,740	16,740	4,185	24,237	45,142	27,700	19,071	3,118
	Ch 43.2 km to Ch 44.7 km	10,230	20,460	20,460	20,460	5,115	24,237	44,457	25,967	19,071	3,118
	Ch 44.7 km to Ch 47.6 km	12,090	24,180	24,180	24,180	6,045	24,199	44,380	25,891	17,289	3,019
	Ch 47.6 km to Ch 52.2 km	13,950	27,900	27,900	27,900	6,975	24,199	44,390	23,524	16,491	3,019
	Ch 52.2 km to Ch 53.3 km	15,810	31,620	31,620	31,620	7,905	24,162	42,605	19,842	16,416	3,000
	Ch 53.3 km to Ch 60.8 km	16,740	33,480	33,480	33,480	8,370	24,311	43,920	19,487	17,749	3,088
	Ch 60.8 km to Ch 63.0 km	16,740	33,480	33,480	33,480	8,370	4,812	14,640	14,504	15,578	2,788
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	30,690	61,380	61,380	61,380	15,345	4,815	15,574	16,337	16,013	2,788
	Ch 0.7 km to Ch 0.8 km	30,690	61,380	61,380	61,380	15,345	4,812	14,319	14,319	15,578	2,788
	Ch 0.8 km to Ch 1.4 km	30,690	61,380	61,380	61,380	15,345	4,812	14,556	14,470	15,578	2,788
	Ch 1.4 km to Ch 3.0 km	30,690	61,380	61,380	61,380	15,345	4,812	14,319	14,319	17,745	2,994
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0	4,662	14,319	14,319	17,745	2,994
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0	4,662	14,319	14,319	14,319	2,701
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0	4,662	14,319	14,319	14,319	2,701
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0	1,719	5,900	6,186	4,801	905
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0	1,719	6,026	6,198	4,801	905
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	0	0	19,499	29,280	4,982	2,171	300
	Ch 2.5 km to Ch 3.5 km	1,860	3,720	3,720	3,720	930	17,906	48,775	7,267	5,250	507
	Ch 3.5 km to Ch 6.2 km	12,090	24,180	24,180	24,180	6,045	17,909	49,570	8,819	3,298	302
	Ch 6.2 km to Ch 9.0 km	11,160	22,320	22,320	22,320	5,580	17,871	49,440	16,263	3,224	283
	Ch 9.0 km to Ch 13.1 km	9,300	18,600	18,600	18,600	4,650	17,871	49,294	12,371	3,267	283

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 13.1 km to Ch 14.0 km	9,300	18,600	18,600	18,600	4,650	17,921	49,435	10,442	3,330	283
	Ch 14.0 km to Ch 17.3 km	7,440	14,880	14,880	14,880	3,720	17,622	46,784	8,736	10,171	883
	Ch 17.3 km to Ch 18.1 km	7,440	14,880	14,880	14,880	3,720	17,622	34,695	21,468	9,086	811
	Ch 18.1 km to Ch 21.8 km	6,510	13,020	13,020	13,020	3,255	17,585	34,621	21,312	8,989	792
	Ch 21.8 km to Ch 28.0 km	4,650	9,300	9,300	9,300	2,325	17,441	21,337	16,235	7,239	689
	Ch 28.0 km to Ch 33.0 km	2,790	5,580	5,580	5,580	1,395	17,404	21,231	16,014	4,857	491
	Ch 33.0 km to Ch 35.6 km	930	1,860	1,860	1,860	465	17,365	20,646	15,403	4,783	472
	Ch 35.6 km to Ch 37.7 km	0	0	0	0	0	17,156	18,291	1,715	4,350	471
	Ch 37.7 km to Ch 39.8 km	0	0	0	0	0	17,156	19,163	1,715	4,350	471
	Ch 39.8 km to Ch 41.9 km	1,860	3,720	3,720	3,720	930	17,118	19,069	1,306	4,276	452
	Ch 41.9 km to Ch 45.9 km	2,790	5,580	5,580	5,580	1,395	1,043	4,800	1,749	1,639	206
	Ch 45.9 km to Ch 47.6 km	3,720	7,440	7,440	7,440	1,860	1,009	4,964	1,713	1,565	187
	Ch 47.6 km to Ch 53.3 km	3,720	7,440	7,440	7,440	1,860	1,009	7,597	1,713	1,565	187
	Ch 53.3 km to Ch 55.7 km	4,650	9,300	9,300	9,300	2,325	1,156	9,293	2,068	3,671	188
	Ch 55.7 km to Ch 56.6 km	4,650	9,300	9,300	9,300	2,325	1,156	5,789	2,068	3,671	188
	Ch 56.6 km to Ch 59.2 km	19,039	35,766	35,730	35,730	8,932	1,006	5,789	2,068	3,671	188
	Ch 59.2 km to Ch 61.0 km	19,039	35,766	35,730	35,730	8,932	1,009	5,817	2,068	4,938	188
	Ch 61.0 km to Ch 65.7 km	17,179	32,046	32,010	32,010	8,002	17,771	16,967	1,994	4,864	170
	Ch 65.7 km to Ch 68.7 km	16,249	30,186	30,150	30,150	7,537	25,648	21,942	2,826	5,968	153
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	1,860	3,720	3,720	3,720	930	37	2,094	4,616	74	19
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0	0	1,907	4,198	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0	0	2,664	0	0	0

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	12,090	24,180	24,180	24,180	6,045	893	1,881	1,869	1,786	446
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0	165	2,763	1,592	484	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0	165	2,486	1,327	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0	530	6,607	2,417	988	1
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0	679	6,904	2,714	3,668	200
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0	1,450	16,476	4,826	3,960	41
	Ch 10.0 km to Ch 10.1 km	2,790	5,580	5,580	5,580	1,395	1,450	16,476	4,826	3,960	41
	Ch 10.1 km to Ch 10.3 km	2,790	5,580	5,580	5,580	1,395	74	3,486	802	149	37
	Ch 10.3 km to Ch 12.1 km	2,790	5,580	5,580	5,580	1,395	74	3,494	845	1,335	148
	Ch 12.1 km to Ch 14.5 km	2,790	5,580	5,580	5,580	1,395	74	5,619	10,249	1,489	198
	Ch 14.5 km to Ch 16.3 km	930	1,860	1,860	1,860	465	1,123	15,828	14,326	3,815	180
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0	0	277	265	484	0
	Ch 26.9 km to Ch 27.1 km	5,580	11,160	11,160	11,160	2,790	0	277	265	484	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0	18,707	81,251	21,402	20,264	3,478
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0	18,707	78,333	21,402	20,264	3,478
	Ch 4.1 km to Ch 13.0 km	0	0	0	0	0	20,082	94,249	25,468	25,261	3,592
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0	12,259	62,824	2,975	1,837	2
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0	12,259	62,824	2,975	1,837	2
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0	0	2,917	0	0	0
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0	0	2,917	0	0	0

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0	1,375	15,813	3,912	4,933	114
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0	1,375	15,916	4,066	4,997	114
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0	6,448	18,427	18,427	18,427	3,476
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	5,580	11,160	11,160	11,160	2,790	0	277	265	484	0
	Ch 0.4 km to Ch 1.5 km	5,580	11,160	11,160	11,160	2,790	12,259	63,101	3,239	2,321	2
	Ch 1.5 km to Ch 2.4 km	3,720	7,440	7,440	7,440	1,860	11,692	55,413	2,138	3,417	162
	Ch 2.4 km to Ch 4.5 km	1,860	3,720	3,720	3,720	930	11,655	52,307	2,063	960	19
	Ch 4.5 km to Ch 5.0 km	1,860	3,720	3,720	3,720	930	11,655	52,307	2,063	960	19
	Ch 5.0 km to Ch 5.3 km	1,860	3,720	3,720	3,720	930	11,655	52,307	2,063	960	19
	Ch 5.3 km to Ch 6.2 km	1,860	3,720	3,720	3,720	930	11,655	52,307	2,563	960	19
Warrego Highway Off-ramp	Warrego Highway to Kingsthorpe Overpass	1,860	3,720	3,720	3,720	930	11,655	52,307	2,563	960	19
State-Controlled Roads: Transport for New South Wales											
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0	1,626	1,914	691	474	1
Local Government Roads: Balonne Shire Council											
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0	0	16,388	16,388	16,388	3,092

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Local Government Roads: Goondiwindi Regional Council											
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0	0	126	11	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	930	1,860	1,860	1,860	465	7,405	2,645	1,367	3,549	1
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0	4,127	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0	0	3,508	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0	1,563	4,801	4,801	4,801	905
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0	4,662	6,928	2,562	2,067	5
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0	4,662	6,928	2,562	2,067	5
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	1,860	3,720	3,720	3,720	930	50	244	687	74	19
	B2G-LDN055.4 to B2G-LDN054.2	1,860	3,720	3,720	3,720	930	13	170	57	0	0
	Cunningham Highway to B2G-LDN052.8	1,860	3,720	3,720	3,720	930	50	336	979	120	19
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	930	1,860	1,860	1,860	465	30,004	27,157	497	721	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	1,860	3,720	3,720	3,720	930	15	91	100	1,102	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	2,790	5,580	5,580	5,580	1,395	1,124	1,730	1,825	2,251	56
	NS2B-LDN033.2 to NS2B-LDN035.6	930	1,860	1,860	1,860	465	543	686	743	1,804	19
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0	10,937	4,184	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	930	1,860	1,860	1,860	465	105	25	129	440	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0	0	3,505	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0	0	126	11	0	0

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0	613	1,147	991	1,835	1
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	0	0	13,792	16,815	897	1,835	1
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0	13,179	16,003	85	133	0
	Cunningham Highway to Eukabilla Road	2,790	5,580	5,580	5,580	1,395	1,737	2,615	1,828	697	57
McDougalls Road	B2G-LDN049.8 to McDougalls Road	930	1,860	1,860	1,860	465	2,277	1,786	807	2,509	1
	McDougalls Road to Cunningham Highway	930	1,860	1,860	1,860	465	2,277	1,786	807	2,509	1
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0	0	3,508	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0	0	6,172	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0	0	6,172	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0	0	3,505	0	0	0
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	930	1,860	1,860	1,860	465	1,080	378	1,470	1,369	20
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0	190	580	580	580	110
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0	613	812	812	1,702	1
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0	243	744	744	744	140
Springborg Road	Cunningham highway to B2G-LDN037.6	930	1,860	1,860	1,860	465	861	419	1,132	1,221	20
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0	13,179	15,865	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	930	1,860	1,860	1,860	465	1,113	920	599	1,179	2

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	B2G-LDN067.6 to Millmerran-Inglewood Road	930	1,860	1,860	1,860	465	7,961	5,187	1,090	1,253	20
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0	156	1,099	1,385	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	11,599	20,886	20,850	20,850	5,212	8,179	3,979	1,033	3,003	1
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorooobie Lane	0	0	0	0	0	0	6,172	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	930	1,860	1,860	1,860	465	192	2,228	355	2,106	1
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0	0	2,664	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	930	1,860	1,860	1,860	465	508	786	890	2,094	1
	B2G-LDN006.3 to Wondalli Kurumbul Road	1,860	3,720	3,720	3,720	930	43	6,267	1,304	2,923	19
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	1,860	3,720	3,720	3,720	930	43	95	1,304	2,923	19
	Yelarbon Kurumbul Road to B2G-LDN020.3	2,790	5,580	5,580	5,580	1,395	1,123	473	2,773	4,292	39
	B2G-LDN020.3 to B2G-LDN025.9	3,720	7,440	7,440	7,440	1,860	1,123	473	4,070	4,863	39
	B2G-LDN025.9 to Cunningham Highway	5,580	11,160	11,160	11,160	2,790	2,480	6,739	6,207	6,382	59
Local Government Roads: Moree Plains Shire Council											
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0	1,626	1,914	691	474	1
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0	1,626	1,914	691	474	1
Local Government Roads: Toowoomba Regional Council											
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0	149	298	298	298	74

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	12,090	24,180	24,180	24,180	6,045	893	1,786	1,786	1,786	446
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0	0	96	84	0	0
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0	44,654	29,873	1,689	889	1
	B2G-LDN188.2 to Gore Highway	1,860	3,720	3,720	3,720	930	44,691	30,193	1,876	1,850	84
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	930	1,860	1,860	1,860	465	0	3,056	3,185	98	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0	0	0	0	3,426	293
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0	0	0	0	8,735	721
	B2G-LDN120.2 to Millmerran-Inglewood Road	1,860	3,720	3,720	3,720	930	299	2,651	1,706	8,464	602
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0	3	1,491	2,168	435	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	1,860	3,720	3,720	3,720	930	1,123	10,449	4,996	2,475	20
	Brimblecombe Road to WL 194467R	0	0	0	0	0	1,086	10,329	4,537	2,400	1
Bushy Lane	B2G-LDN183.0 to Gore Highway	1,860	3,720	3,720	3,720	930	439	4,721	1,390	1,805	73
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	13,950	27,900	27,900	27,900	6,975	3	1,171	1,983	2,602	206
	Saleyards Road to Gore Highway	13,950	27,900	27,900	27,900	6,975	3	934	1,832	435	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	930	1,860	1,860	1,860	465	0	163	213	382	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	1,860	3,720	3,720	3,720	930	0	146	3,892	43	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	930	1,860	1,860	1,860	465	0	0	228	139	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	1,860	3,720	3,720	3,720	930	75	26,216	7,496	1,625	2
Draper Road	Steger Road to B2G-FBW206.9	1,860	3,720	3,720	3,720	930	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0	149	298	298	2,680	198

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Access Track to Greenwattle Street	0	0	0	0	0	149	298	298	298	74
Florence Street	Gore Highway to West Street	0	0	0	0	0	0	237	151	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	4,377	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	3,505	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	1,860	3,720	3,720	3,720	930	37	100	91	1,890	99
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0	0	252	609	86	0
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	930	1,860	1,860	1,860	465	0	73	22	1,227	66
Gilgai Lane	B2G-LDN144.6 to Gore Highway	1,860	3,720	3,720	3,720	930	0	110	2,443	1,359	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0	0	252	609	86	0
Hall Road	B2G-LDN139.0 to Gore Highway	930	1,860	1,860	1,860	465	149	1,624	2,990	2,218	88
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0	0	11,934	12,841	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0	0	12,089	12,951	1,085	72
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0	0	0	0	2,383	124
Kahler Road	Murlaggan Road to B2G-LDN165.6	930	1,860	1,860	1,860	465	0	0	0	386	46
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	1,860	3,720	3,720	3,720	930	11,655	52,307	2,563	960	19
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	1,860	3,720	3,720	3,720	930	11,655	52,307	2,563	960	19
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0	0	11,934	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0	0	0	7,784	0	0
Leesons Road	Warrego Highway to Steger Road	1,860	3,720	3,720	3,720	930	37	3,106	74	2,457	143

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Steger Road to B2G-LDN206.3	1,860	3,720	3,720	3,720	930	698	5,223	6,987	3,926	143
Linthorpe Road	Gore Highway to B2G-LDN175.5	930	1,860	1,860	1,860	465	11,908	72,028	4,928	2,404	68
Linthorpe Valley Road	Geitz Road to Gore Highway	930	1,860	1,860	1,860	465	0	73	22	1,227	66
Lochaber Road	Gore Highway to B2G-LDN172.0	930	1,860	1,860	1,860	465	0	36	276	471	35
	Ch B2G-LDN172.0 to B2G-LDN172.6	930	1,860	1,860	1,860	465	0	0	105	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0	165	2,763	1,592	484	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	1,860	3,720	3,720	3,720	930	144	13,284	5,077	1,750	103
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0	0	11,934	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	11,934	0	0	0
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0	1,240	11,894	8,440	3,117	8
Murlaggan Road	B2G-LDN164.3 to Kahler Road	1,860	3,720	3,720	3,720	930	26,036	26,061	7	592	41
	Kahler Road to Gore Highway	2,790	5,580	5,580	5,580	1,395	26,036	26,061	7	978	87
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	930	1,860	1,860	1,860	465	0	0	136	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0	920	9,869	2,409	5,354	163
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0	372	3,095	2,099	2,989	207
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0	18,587	3,095	2,264	3,120	207
	B2G-LDN130.0 to Millmerran-Inglewood Road	1,860	3,720	3,720	3,720	930	34,837	19,571	2,345	3,120	207
Paint Mine Road	Gore Highway to B2G-LDN173.5	930	1,860	1,860	1,860	465	0	117	35	404	70
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	1,860	3,720	3,720	3,720	930	37	106	221	2,382	198
Quarry Road Access	Tumnaville Road to Quarry	0	0	0	0	0	0	14,465	0	4,531	323
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0	0	237	151	2,167	206

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	930	1,860	1,860	1,860	465	37	151	403	74	19
Scragg Road	Commodore Peak Road to B2G-LDN123.6	1,860	3,720	3,720	3,720	930	0	146	3,892	43	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0	0	146	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0	0	34,091	34,091	5,224	418
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	1,860	3,720	3,720	3,720	930	1,813	18,606	6,959	4,983	5
	New Hope Recycled Water Pipeline to Draper Road	1,860	3,720	3,720	3,720	930	661	2,117	6,913	1,468	1
	Draper Road to Leeson's Road	0	0	0	0	0	661	2,117	6,913	1,468	1
Tummalville Road	Access Track to Gore Highway	0	0	0	0	0	0	14,465	0	4,531	323
Turallin Road	Gore Highway to the Turallin Facility	30,690	61,380	61,380	61,380	15,345	150	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0	1,336	4,108	4,108	4,108	775
	B2G-LDN153.1 to Gore Highway	1,860	3,720	3,720	3,720	930	1,373	4,751	6,395	4,182	794
	Gore Highway to B2G-LDN150.9	0	0	0	0	0	0	0	0	950	123
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0	149	298	298	2,680	198
West Street	Gore Highway to Florence Street	0	0	0	0	0	3	1,255	2,018	435	0
	Florence Street to Six Mile Road	0	0	0	0	0	3	1,491	2,168	435	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	1,860	3,720	3,720	3,720	930	402	35,296	32,376	2,882	139
	B2G-LDN161.0 to Desmonds Lane	930	1,860	1,860	1,860	465	0	0	228	139	0

The total OSOM trips per year on each road section has been provided in Table 4.21. This has only been shown for links used by OSOM vehicles, with all other road links expected to have no OSOM movements.

Table 4.21 Total oversize overmass trips per year

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads						
Cunningham Highway (17C)	Ch 105.7 km to Ch 107.4 km	0	8	159	58	0
	Ch 107.4 km to Ch 107.6 km	0	8	159	58	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	8	159	58	0
	Ch 2.0 km to Ch 3.9 km	0	8	159	58	0
	Ch 3.9 km to Ch 10.2 km	0	8	159	52	0
	Ch 10.2 km to Ch 13.9 km	0	8	122	52	0
	Ch 13.9 km to Ch 18.5 km	0	8	122	52	0
	Ch 18.5 km to Ch 27.1 km	0	8	122	16	0
	Ch 27.1 km to Ch 29.3 km	0	8	122	16	0
	Ch 29.3 km to Ch 34.7 km	0	8	122	16	0
	Ch 34.7 km to Ch 39.6 km	0	8	122	16	0
	Ch 39.6 km to Ch 40.3 km	0	8	122	16	0
	Ch 40.3 km to Ch 40.5 km	0	0	49	0	0
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	8	43	39	0
	Ch 2.2 km to Ch 5.4 km	0	14	43	57	0
	Ch 5.4 km to Ch 6.7 km	0	14	43	57	0
	Ch 6.7 km to Ch 7.7 km	0	14	43	69	0
	Ch 7.7 km to Ch 11.2 km	0	14	43	69	0
	Ch 11.2 km to Ch 15.3 km	0	14	43	69	0
	Ch 15.3 km to Ch 17.5 km	0	14	70	69	0
	Ch 17.5 km to Ch 19.0 km	0	14	70	69	0
	Ch 19.0 km to Ch 20.3 km	0	14	76	69	0
	Ch 20.3 km to Ch 21.5 km	0	14	82	69	0
	Ch 21.5 km to Ch 23.2 km	0	14	82	69	0
	Ch 23.2 km to Ch 25.0 km	0	14	82	69	0
	Ch 25.0 km to Ch 30.1 km	0	14	82	69	0
	Ch 30.1 km to Ch 38.7 km	0	14	98	69	0
	Ch 38.7 km to Ch 41.1 km	0	14	131	69	0
	Ch 41.1 km to Ch 41.7 km	0	14	131	69	0
	Ch 41.7 km to Ch 43.2 km	0	31	737	377	0
	Ch 43.2 km to Ch 44.7 km	0	31	507	377	0
	Ch 44.7 km to Ch 47.6 km	0	31	507	377	0
	Ch 47.6 km to Ch 52.2 km	0	31	507	206	0
	Ch 52.2 km to Ch 53.3 km	0	31	411	206	0
	Ch 53.3 km to Ch 60.8 km	0	31	313	109	0
Millmerran - Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	31	313	109	0
	Ch 2.5 km to Ch 3.5 km	0	14	296	88	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 3.5 km to Ch 6.2 km	0	14	296	88	0
	Ch 6.2 km to Ch 9.0 km	0	14	282	88	0
	Ch 9.0 km to Ch 13.1 km	0	8	282	88	0
	Ch 13.1 km to Ch 14.0 km	0	8	282	88	0
	Ch 14.0 km to Ch 17.3 km	0	8	282	88	0
	Ch 17.3 km to Ch 18.1 km	0	8	282	69	0
	Ch 18.1 km to Ch 21.8 km	0	8	282	63	0
	Ch 21.8 km to Ch 28.0 km	0	8	282	63	0
	Ch 28.0 km to Ch 33.0 km	0	8	274	63	0
	Ch 33.0 km to Ch 35.6 km	0	8	218	63	0
	Ch 35.6 km to Ch 37.7 km	0	8	218	58	0
	Ch 37.7 km to Ch 39.8 km	0	8	218	58	0
	Ch 39.8 km to Ch 41.9 km	0	8	202	58	0
	Ch 41.9 km to Ch 45.9 km	0	8	202	58	0
	Ch 45.9 km to Ch 47.6 km	0	8	190	58	0
	Ch 47.6 km to Ch 53.3 km	0	8	190	58	0
	Ch 53.3 km to Ch 55.7 km	0	8	190	58	0
	Ch 55.7 km to Ch 56.6 km	0	8	190	58	0
	Ch 56.6 km to Ch 59.2 km	0	8	190	58	0
	Ch 59.2 km to Ch 61.0 km	0	8	190	58	0
	Ch 61.0 km to Ch 65.7 km	0	8	190	58	0
	Ch 65.7 km to Ch 68.7 km	0	8	159	58	0
Millmerran - Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	96	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	96	0	0
Toowoomba - Cecil Plains Road (324)	Ch 10.3 km to Ch 12.1 km	0	8	43	0	0
	Ch 12.1 km to Ch 14.5 km	0	8	43	0	0
	Ch 14.5 km to Ch 16.3 km	0	8	21	0	0
Toowoomba Bypass (319B)	Ch 0.6 km to Ch 3.2 km	0	0	0	39	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	39	0
	Ch 4.1 km to Ch 13.0 km	0	8	43	39	0
Toowoomba Bypass Off Ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	39	0
Toowoomba Bypass On Ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	39	0
Toowoomba Bypass Off Ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	8	43	0	0
Toowoomba Bypass On Ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	8	43	0	0
Warrego Highway (18B)	Ch 0.4 km to Ch 1.5 km	0	0	0	39	0
	Ch 1.5 km to Ch 2.4 km	0	0	0	39	0
	Ch 2.4 km to Ch 4.5 km	0	0	0	39	0
	Ch 4.5 km to Ch 5.0 km	0	0	0	39	0
	Ch 5.0 km to Ch 5.3 km	0	0	0	27	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
	Ch 5.3 km to Ch 6.2 km	0	0	0	27	0
Warrego Highway Off Ramp	Warrego Highway to Kingsthorpe Overpass	0	0	0	27	0
Local Government Roads: Goondiwindi Regional Council						
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	6	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	18	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	37	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	0	16	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	16	0
	NS2B-LDN031.0 to South Kurumbul Road	0	8	73	16	0
	South Kurumbul Road to Cunningham Highway	0	8	73	16	0
Thornton Road	B2G-LDN067.6 to Millmerran - Inglewood Road	0	0	31	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	68	0
Yelarbon Kurumbul Road	B2G-LDN025.9 to Cunningham Highway	0	0	49	0	0
Local Government Roads: Toowoomba Regional Council						
Athol School Road	B2G-LDN188.2 to Gore Highway	0	6	0	18	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	12	0
Brimblecombe Road	Toowoomba - Cecil Plains Road to Brimblecombe Road	0	0	23	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	27	0
Commodore Peak Road	Scragg Road to Millmerran - Inglewood Road	0	6	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	10	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	46	868	410	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	194	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	97	97	0
Heckendorf Road	B2G-LDN116.0 to Millmerran - Inglewood Road	0	0	0	19	0
Kingsthorpe Haden Overpass	Warrego Highway Off Ramp to Kingsthorpe Haden Road	0	0	0	27	0
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	0	0	0	27	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	0	27	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	6	0	0
	B2G-LDN172.0 to B2G-LDN172.6	0	0	6	0	0
Oakey - Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	6	0	0
Owens Scrub Road	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	21	0
	B2G-LDN130.0 to Millmerran - Inglewood Road	0	17	17	21	0
Paton Road	Millmerran - Inglewood Road to B2G-LDN104.5	0	0	8	0	0
Schwarten Road	Millmerran - Inglewood Road to B2G-LDN126.9	0	0	14	0	0

Road name	Road section	Year of construction				
		2024	2025	2026	2027	2028
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	6	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	6	0	0	0
Ware Street	B2G-LDN153.1 to Gore Highway	0	0	33	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	0	16	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	10	0	0

4.3.2 Peak construction trips per day

Peak daily trips along each road segment have been calculated from the total trips by construction activity using the following key assumptions:

- 261 working days per year, resulting in an average of 22 working days per month. This is a conservative assumption as it does not take into account potential deliveries occurring on Saturdays or Sundays. This approach is in line with the GTIA and provides a conservative approach to the number of vehicles per day despite the actual duration of the Project being more than 261 working days per year
- Equal distribution of loads throughout the delivery period:
 - Buffer factors provided in Table 4.1 are to cover any potential ‘peak’ delivery times within this period
 - Peak delivery movements for different construction activities will likely not coincide with each other as the start date of construction activities are typically reliant on the end date of others.

While buffer factors have been included in the analysis to cover potential ‘peak’ delivery times, fluctuations may occur on site to coincide with the appointed contractor’s delivery schedule. The adopted buffer values are generally considered acceptable for the feasibility stage of the Project. The construction start-date, end-date and distribution of trips was undertaken consistent with the constructability assessment and is considered suitable for revised reference design.

Revised reference design does not require the design and detailing of the construction activities to be programmed to the day or to the hour, therefore, potential fluctuations in peak deliveries will be assessed as a part of the detailed design for the Project when a Construction contractor is appointed. This assessment will inform the Traffic Management Plan discussed in Section 5.12.3.2, which will ensure that the transport task is managed to reduce overlapping peak periods and impacts on the wider road network, such as peak school hours.

Table 4.22 summarises the peak daily traffic volumes of light and HVs which would occur along each road section of the proposed primary construction routes for each year of construction. Table 4.22 also identifies the peak month of construction where these vehicle volumes are currently scheduled to occur. Plots of the full construction impact by month on the road sections are provided in Appendix V.

The transport of precast bridge girders may require the use of oversize vehicles. If any need arises for an oversize vehicle movement (excess mass or over-dimensional loads), DTMR and other relevant authorities will be notified, and permissions will be obtained as required under the *Transport Operations (Road Use Management) Act (Qld) 1995*. Obtaining vehicle permits is beyond the scope of this assessment.

Table 4.22 Peak daily trips per road section by years

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
State-Controlled Roads: Department of Transport and Main Roads												
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0	98	128	130	121	80	May 2026 to May 2026
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0	98	128	130	121	80	May 2026 to May 2026
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0	98	121	121	121	80	May 2025 to Jul 2025
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0	91	112	112	112	74	May 2025 to Jul 2025
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0	91	112	112	112	74	May 2025 to Jul 2025
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0	85	104	104	104	69	May 2025 to Jul 2025
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0	85	104	104	104	69	May 2025 to Jul 2025
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0	0	4	9	9	0	Nov 2026 to May 2027
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0	102	102	23	17	0	Sep 2024 to Feb 2025
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0	154	154	171	466	0	Apr 2027 to Apr 2027
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0	1148	249	171	466	0	Nov 2024 to Nov 2024
	Ch 105.7 km to Ch 107.4 km	182	325	228	228	228	763	331	171	305	5	Nov 2024 to Nov 2024
	Ch 107.4 km to Ch 107.6 km	153	297	200	200	200	763	331	168	273	5	Nov 2024 to Nov 2024
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	153	297	200	200	200	763	331	168	273	5	Nov 2024 to Nov 2024
	Ch 2.0 km to Ch 3.9 km	153	297	200	200	200	763	326	174	273	5	Nov 2024 to Nov 2024
	Ch 3.9 km to Ch 10.2 km	139	283	186	186	186	315	316	164	185	5	Mar 2025 to Mar 2025
	Ch 10.2 km to Ch 13.9 km	111	255	158	158	158	314	315	154	185	4	Mar 2025 to Mar 2025
	Ch 13.9 km to Ch 18.5 km	97	241	144	144	144	364	321	160	151	4	Mar 2025 to Mar 2025
	Ch 18.5 km to Ch 27.1 km	14	14	14	14	14	364	365	166	101	4	Feb 2025 to Feb 2025
	Ch 27.1 km to Ch 29.3 km	28	28	28	28	28	394	367	140	94	3	Sep 2024 to Sep 2024
	Ch 29.3 km to Ch 34.7 km	28	28	28	28	28	353	266	142	95	3	Aug 2024 to Sep 2024
	Ch 34.7 km to Ch 39.6 km	28	28	28	28	28	353	266	142	95	3	Aug 2024 to Sep 2024
	Ch 39.6 km to Ch 40.3 km	42	42	42	42	42	398	393	127	89	3	Sep 2024 to Sep 2024

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
	Ch 40.3 km to Ch 40.5 km	42	42	42	42	42	99	92	126	87	3	May 2026 to Jun 2026
	Ch 40.5 km to Ch 43.9 km	127	127	127	127	127	7	87	15	2	2	Sep 2025 to Nov 2025
	Ch 43.9 km to Ch 46.3 km	42	42	42	42	42	7	87	15	2	2	Sep 2025 to Nov 2025
	Ch 46.3 km to Ch 88.0 km	42	42	42	42	42	7	15	15	2	2	Dec 2025 to Mar 2026
	Ch 88.0 km to Ch 88.2 km	42	42	42	42	42	51	66	71	63	42	May 2026 to May 2026
	Ch 88.2 km to Ch 90.0 km	42	42	42	42	42	2	11	11	2	2	Nov 2025 to Jan 2026
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	183	183	183	183	183	699	978	298	309	173	May 2025 to May 2025
	Ch 2.2 km to Ch 5.4 km	155	155	155	155	155	1835	1463	289	286	170	Nov 2024 to Nov 2024
	Ch 5.4 km to Ch 6.7 km	127	127	127	127	127	1835	1463	289	284	169	Nov 2024 to Nov 2024
	Ch 6.7 km to Ch 7.7 km	113	113	113	113	113	1835	1463	490	284	169	Nov 2024 to Nov 2024
	Ch 7.7 km to Ch 11.2 km	85	85	85	85	85	1827	1423	482	278	170	Nov 2024 to Nov 2024
	Ch 11.2 km to Ch 15.3 km	70	70	70	70	70	1827	1423	482	298	172	Nov 2024 to Nov 2024
	Ch 15.3 km to Ch 17.5 km	56	56	56	56	56	1299	860	585	276	173	Nov 2024 to Nov 2024
	Ch 17.5 km to Ch 19.0 km	42	42	42	42	42	1299	861	585	279	175	Nov 2024 to Nov 2024
	Ch 19.0 km to Ch 20.3 km	28	28	28	28	28	1299	860	585	292	176	Nov 2024 to Nov 2024
	Ch 20.3 km to Ch 21.5 km	14	14	14	14	14	1299	860	585	292	176	Nov 2024 to Nov 2024
	Ch 21.5 km to Ch 23.2 km	0	0	0	0	0	1290	817	573	307	177	Nov 2024 to Nov 2024
	Ch 23.2 km to Ch 25.0 km	42	42	42	42	42	699	582	571	332	180	Nov 2024 to Nov 2024
	Ch 25.0 km to Ch 30.1 km	42	42	42	42	42	699	2990	3115	260	167	Jan 2026 to Jan 2026
	Ch 30.1 km to Ch 38.7 km	70	70	70	70	70	691	260	286	304	173	Nov 2024 to Nov 2024
	Ch 38.7 km to Ch 41.1 km	99	99	99	99	99	663	207	274	252	137	Nov 2024 to Nov 2024
	Ch 41.1 km to Ch 41.7 km	99	99	99	99	99	663	207	274	249	133	Nov 2024 to Nov 2024

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
	Ch 41.7 km to Ch 43.2 km	127	127	127	127	127	664	742	307	250	134	Aug 2025 to Aug 2025
	Ch 43.2 km to Ch 44.7 km	155	155	155	155	155	664	729	295	250	134	Aug 2025 to Aug 2025
	Ch 44.7 km to Ch 47.6 km	183	183	183	183	183	664	729	294	215	131	Aug 2025 to Aug 2025
	Ch 47.6 km to Ch 52.2 km	211	211	211	211	211	664	729	294	200	131	Aug 2025 to Aug 2025
	Ch 52.2 km to Ch 53.3 km	240	240	240	240	240	663	720	235	200	130	Aug 2025 to Aug 2025
	Ch 53.3 km to Ch 60.8 km	254	254	254	254	254	666	738	231	225	133	Aug 2025 to Aug 2025
	Ch 60.8 km to Ch 63.0 km	254	254	254	254	254	148	185	185	208	124	Jun 2027 to Jun 2027
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	465	465	465	465	465	148	186	203	208	124	Jun 2027 to Jun 2027
	Ch 0.7 km to Ch 0.8 km	465	465	465	465	465	148	182	182	208	124	Jun 2027 to Jun 2027
	Ch 0.8 km to Ch 1.4 km	465	465	465	465	465	148	184	184	208	124	Jun 2027 to Jun 2027
	Ch 1.4 km to Ch 3.0 km	465	465	465	465	465	148	182	182	261	130	Jun 2027 to Jun 2027
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0	148	182	182	261	130	Jun 2027 to Jun 2027
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0	148	182	182	182	121	May 2025 to Jul 2025
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 3.7 km to Ch 6.4 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0	148	182	182	182	121	May 2025 to Jul 2025
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0	50	68	70	61	41	May 2026 to May 2026
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0	50	69	70	61	41	May 2026 to May 2026
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	0	0	570	612	62	23	9	Nov 2025 to Nov 2025
	Ch 2.5 km to Ch 3.5 km	28	28	28	28	28	521	655	103	77	15	Nov 2025 to Nov 2025
	Ch 3.5 km to Ch 6.2 km	183	183	183	183	183	521	665	121	38	9	Nov 2025 to Nov 2025
	Ch 6.2 km to Ch 9.0 km	169	169	169	169	169	520	665	469	38	9	Nov 2025 to Nov 2025
	Ch 9.0 km to Ch 13.1 km	141	141	141	141	141	520	662	292	38	9	Nov 2025 to Nov 2025

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
	Ch 13.1 km to Ch 14.0 km	141	141	141	141	141	521	652	264	43	9	Aug 2025 to Aug 2025
	Ch 14.0 km to Ch 17.3 km	113	113	113	113	113	516	618	231	188	27	Aug 2025 to Aug 2025
	Ch 17.3 km to Ch 18.1 km	113	113	113	113	113	516	545	813	186	25	Jan 2026 to Jan 2026
	Ch 18.1 km to Ch 21.8 km	99	99	99	99	99	515	545	813	186	24	Jan 2026 to Jan 2026
	Ch 21.8 km to Ch 28.0 km	70	70	70	70	70	513	541	615	180	21	Jan 2026 to Jan 2026
	Ch 28.0 km to Ch 33.0 km	42	42	42	42	42	512	540	614	174	15	Jan 2026 to Jan 2026
	Ch 33.0 km to Ch 35.6 km	14	14	14	14	14	511	540	605	173	14	Jan 2026 to Jan 2026
	Ch 35.6 km to Ch 37.7 km	0	0	0	0	0	507	508	20	172	14	Feb 2025 to Mar 2025
	Ch 37.7 km to Ch 39.8 km	0	0	0	0	0	507	587	20	172	14	Mar 2025 to Mar 2025
	Ch 39.8 km to Ch 41.9 km	28	28	28	28	28	506	587	15	172	14	Mar 2025 to Mar 2025
	Ch 41.9 km to Ch 45.9 km	42	42	42	42	42	17	121	18	16	6	Mar 2025 to Mar 2025
	Ch 45.9 km to Ch 47.6 km	56	56	56	56	56	17	121	18	15	6	Mar 2025 to Mar 2025
	Ch 47.6 km to Ch 53.3 km	56	56	56	56	56	17	179	18	15	6	Jun 2025 to Jul 2025
	Ch 53.3 km to Ch 55.7 km	70	70	70	70	70	21	200	22	101	6	Jun 2025 to Jul 2025
	Ch 55.7 km to Ch 56.6 km	70	70	70	70	70	21	63	22	101	6	Apr 2027 to Apr 2027
	Ch 56.6 km to Ch 59.2 km	224	368	271	271	271	21	63	22	101	6	Mar 2025 to Mar 2025
	Ch 59.2 km to Ch 61.0 km	224	368	271	271	271	21	63	22	160	6	Mar 2025 to Mar 2025
	Ch 61.0 km to Ch 65.7 km	196	339	242	242	242	275	317	21	159	5	Mar 2025 to Mar 2025
	Ch 65.7 km to Ch 68.7 km	182	325	228	228	228	913	319	27	182	5	Nov 2024 to Nov 2024
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	28	28	28	28	28	1	121	124	1	1	Feb 2026 to Mar 2026
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0	0	120	123	0	0	Feb 2026 to Mar 2026
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0	0	81	0	0	0	Sep 2025 to Nov 2025

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	183	183	183	183	183	14	15	15	14	14	May 2025 to Jul 2026
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0	8	30	19	9	0	Nov 2025 to Nov 2025
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0	8	26	19	0	0	Nov 2025 to Nov 2025
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0	15	62	27	9	0	Nov 2025 to Nov 2025
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0	17	65	30	169	6	Jun 2027 to Jun 2027
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0	31	152	45	52	1	Nov 2025 to Nov 2025
	Ch 10.0 km to Ch 10.1 km	42	42	42	42	42	31	152	45	52	1	Nov 2025 to Nov 2025
	Ch 10.1 km to Ch 10.3 km	42	42	42	42	42	16	214	28	28	3	Nov 2025 to Nov 2025
	Ch 10.3 km to Ch 12.1 km	42	42	42	42	42	1	277	12	31	4	Nov 2025 to Nov 2025
	Ch 12.1 km to Ch 14.5 km	42	42	42	42	42	1	466	466	27	6	Dec 2025 to Jan 2026
	Ch 14.5 km to Ch 16.3 km	14	14	14	14	14	20	543	543	46	5	Dec 2025 to Jan 2026
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0	0	4	9	9	0	Nov 2026 to May 2027
	Ch 26.9 km to Ch 27.1 km	85	85	85	85	85	0	4	9	9	0	Nov 2026 to May 2027
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0	659	824	253	251	156	May 2025 to May 2025
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0	659	824	253	251	156	May 2025 to May 2025
	Ch 4.1 km to Ch 13.0 km	0	0	0	0	0	686	963	284	296	159	May 2025 to May 2025
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	0	0	0	0	0	268	295	20	8	0	Feb 2025 to Sep 2025
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	0	0	0	0	0	268	295	20	8	0	Feb 2025 to Sep 2025
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0	0	133	0	0	0	Nov 2025 to Nov 2025
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0	0	133	0	0	0	Nov 2025 to Nov 2025

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	0	0	0	0	0	15	70	18	27	2	Nov 2025 to Nov 2025
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	0	0	0	0	0	15	71	19	27	2	Nov 2025 to Nov 2025
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 18.9 km to Ch 28.9 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 28.9 km to Ch 36.6 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 36.6 km to Ch 55.5 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 55.5 km to Ch 75.4 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
	Ch 75.4 km to Ch 79.6 km	0	0	0	0	0	190	235	235	235	156	May 2025 to Jul 2025
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	85	85	85	85	85	268	298	24	17	0	Nov 2026 to May 2027
	Ch 0.4 km to Ch 1.5 km	85	85	85	85	85	535	593	40	25	0	Jun 2025 to Sep 2025
	Ch 1.5 km to Ch 2.4 km	56	56	56	56	56	525	528	23	162	5	Jun 2025 to Sep 2025
	Ch 2.4 km to Ch 4.5 km	28	28	28	28	28	524	526	22	14	1	Jun 2025 to Sep 2025
	Ch 4.5 km to Ch 5.0 km	21	21	21	21	21	531	533	29	21	8	Jun 2025 to Sep 2025
	Ch 5.0 km to Ch 5.3 km	14	14	14	14	14	538	540	56	28	15	Jun 2025 to Sep 2025
	Ch 5.3 km to Ch 6.2 km	14	14	14	14	14	538	540	75	28	15	Jun 2025 to Sep 2025
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	7	7	7	7	7	269	270	38	14	7	Jun 2025 to Sep 2025
State-Controlled Roads: Transport for New South Wales												
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0	46	26	9	4	0	Sep 2024 to Sep 2024
Local Government Roads: Balonne Shire Council												
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0	85	104	104	104	69	May 2025 to Jul 2025
Local Government Roads: Goondiwindi Regional Council												

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0	0	1	1	0	0	Feb 2025 to Jan 2026
Bybera Road	Cunningham Highway to B2G-LDN060.4	14	14	14	14	14	448	73	12	88	0	Nov 2024 to Nov 2024
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0	375	0	0	0	0	Nov 2024 to Nov 2024
Cemetery Road	Access Track to Moorroobie Lane	0	0	0	0	0	0	81	0	0	0	Sep 2025 to Nov 2025
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0	50	61	61	61	41	May 2025 to Jul 2025
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0	102	102	23	17	0	Sep 2024 to Feb 2025
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0	102	102	23	17	0	Sep 2024 to Feb 2025
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	28	28	28	28	28	1	5	9	1	1	Jul 2026 to Aug 2026
	B2G-LDN055.4 to B2G-LDN054.2	28	28	28	28	28	1	5	1	0	0	Nov 2025 to Dec 2025
	Cunningham Highway to B2G-LDN052.8	28	28	28	28	28	1	8	11	3	1	Feb 2026 to May 2026
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	14	14	14	14	14	555	636	15	10	0	Feb 2025 to Apr 2025
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	28	28	28	28	28	1	1	4	33	0	Mar 2027 to Apr 2027
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	42	42	42	42	42	21	23	26	39	2	Jun 2027 to Jun 2027
	NS2B-LDN033.2 to NS2B-LDN035.6	14	14	14	14	14	10	11	24	35	1	Jun 2027 to Jun 2027
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0	994	190	0	0	0	Nov 2024 to Nov 2024
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	14	14	14	14	14	4	0	3	7	0	Oct 2027 to Nov 2027
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0	0	138	0	0	0	Jun 2025 to Jul 2025
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0	0	1	1	0	0	Feb 2025 to Jan 2026
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0	26	9	23	36	0	Jun 2027 to Jun 2027
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	0	0	326	389	23	36	0	Feb 2025 to Apr 2025

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0	300	382	2	2	0	Feb 2025 to Apr 2025
	Cunningham Highway to Eukabilla Road	42	42	42	42	42	47	31	20	6	2	Sep 2024 to Sep 2024
McDougalls Road	B2G-LDN049.8 to McDougalls Road	14	14	14	14	14	50	50	6	46	0	Nov 2024 to Feb 2025
	McDougalls Road to Cunningham Highway	14	14	14	14	14	50	50	6	46	0	Nov 2024 to Feb 2025
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0	0	81	0	0	0	Sep 2025 to Nov 2025
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0	0	161	0	0	0	Sep 2025 to Nov 2025
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0	0	161	0	0	0	Sep 2025 to Nov 2025
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0	0	138	0	0	0	Jun 2025 to Jul 2025
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	14	14	14	14	14	44	3	37	19	1	Aug 2024 to Sep 2024
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0	6	7	7	7	5	May 2025 to Jul 2025
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0	26	7	23	34	0	Jun 2027 to Jun 2027
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0	8	9	9	9	6	May 2025 to Jul 2025
Springborg Road	Cunningham highway to B2G-LDN037.6	14	14	14	14	14	34	3	28	21	1	Aug 2024 to Sep 2024
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0	300	381	0	0	0	Feb 2025 to Apr 2025
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	14	14	14	14	14	25	25	8	24	0	Nov 2024 to Feb 2025
	B2G-LDN067.6 to Millmerran-Inglewood Road	14	14	14	14	14	645	194	12	24	1	Nov 2024 to Nov 2024
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0	5	22	22	0	0	Dec 2025 to Mar 2026
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	111	255	158	158	158	107	60	8	66	0	Mar 2025 to Mar 2025
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	0	0	0	0	0	0	161	0	0	0	Sep 2025 to Nov 2025

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	14	14	14	14	14	8	25	4	85	0	Apr 2027 to Apr 2027
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0	0	81	0	0	0	Sep 2025 to Nov 2025
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	14	14	14	14	14	22	6	23	38	0	Jun 2027 to Jun 2027
	B2G-LDN006.3 to Wondalli Kurumbul Road	28	28	28	28	28	1	162	23	46	1	Sep 2025 to Nov 2025
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	28	28	28	28	28	1	1	23	46	1	Jun 2027 to Jun 2027
	Yelarbon Kurumbul Road to B2G-LDN020.3	42	42	42	42	42	45	4	60	60	1	Apr 2026 to Jun 2026
	B2G-LDN020.3 to B2G-LDN025.9	56	56	56	56	56	45	4	100	65	1	Apr 2026 to Jun 2026
	B2G-LDN025.9 to Cunningham Highway	85	85	85	85	85	97	171	124	85	2	Sep 2025 to Nov 2025
Local Government Roads: Moree Plains Shire Council												
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0	46	26	9	4	0	Sep 2024 to Sep 2024
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0	46	26	9	4	0	Sep 2024 to Sep 2024
Local Government Roads: Toowoomba Regional Council												
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0	2	2	2	2	2	Jul 2024 to Mar 2028
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	183	183	183	183	183	14	14	14	14	14	Jul 2024 to Mar 2028
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0	0	1	1	0	0	May 2025 to Jul 2026
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0	1151	621	29	7	0	Sep 2024 to Nov 2024
	B2G-LDN188.2 to Gore Highway	28	28	28	28	28	1152	621	31	29	3	Sep 2024 to Nov 2024
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	14	14	14	14	14	0	278	278	5	0	Dec 2025 to Jan 2026
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0	0	0	0	85	9	Jun 2027 to Jul 2027

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0	0	0	0	173	22	Apr 2027 to Apr 2027
	B2G-LDN120.2 to Millmerran-Inglewood Road	28	28	28	28	28	5	34	34	182	18	Apr 2027 to Apr 2027
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0	0	22	24	13	0	Jan 2026 to Jan 2026
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	28	28	28	28	28	20	79	83	21	1	Mar 2026 to Mar 2026
	Brimblecombe Road to WL 194467R	0	0	0	0	0	20	78	78	20	0	Jan 2025 to Mar 2026
Bushy Lane	B2G-LDN183.0 to Gore Highway	28	28	28	28	28	8	41	12	35	2	Mar 2025 to Nov 2025
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	211	211	211	211	211	0	20	22	53	6	Jun 2027 to Jul 2027
	Saleyards Road to Gore Highway	211	211	211	211	211	0	18	20	13	0	Jan 2026 to Jan 2026
Chamberlain Road	Warrego Highway to B2G-LDN204.2	14	14	14	14	14	0	2	6	8	0	Apr 2027 to May 2027
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	28	28	28	28	28	0	3	177	2	0	Jan 2026 to Feb 2026
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	14	14	14	14	14	0	0	11	2	0	May 2026 to May 2026
Dieckmann Road	B2G-LDN150.5 to Gore Highway	28	28	28	28	28	1	573	88	35	0	Nov 2025 to Nov 2025
Draper Road	Steger Road to B2G-FBW206.9	28	28	28	28	28	0	0	0	0	0	Jul 2024 to Mar 2028
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0	2	2	2	161	6	Jun 2027 to Jun 2027
	Access Track to Greenwattle Street	0	0	0	0	0	2	2	2	2	2	Jul 2024 to Mar 2028
Florence Street	Gore Highway to West Street	0	0	0	0	0	0	2	2	0	0	Feb 2025 to Jul 2026
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	138	0	0	0	Jun 2025 to Jul 2025
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	138	0	0	0	Jun 2025 to Jul 2025
Fysh Road	B2G-LDN147.1 to Gore Highway	28	28	28	28	28	1	1	1	60	3	Jun 2027 to Jul 2027
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0	0	2	15	4	0	Jun 2026 to Jun 2026
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	14	14	14	14	14	0	1	1	41	2	Mar 2027 to Apr 2027

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
Gilgai Lane	B2G-LDN144.6 to Gore Highway	28	28	28	28	28	0	1	21	24	0	Mar 2027 to May 2027
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0	0	2	15	4	0	Jun 2026 to Jun 2026
Hall Road	B2G-LDN139.0 to Gore Highway	14	14	14	14	14	3	32	39	34	3	Jun 2027 to Jul 2027
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0	0	271	584	0	0	Jan 2026 to Feb 2026
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0	0	273	585	25	2	Jan 2026 to Feb 2026
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0	0	0	0	158	4	Jun 2027 to Jun 2027
Kahler Road	Murlaggan Road to B2G-LDN165.6	14	14	14	14	14	0	0	0	7	1	Mar 2027 to Apr 2027
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	7	7	7	7	7	269	270	38	14	7	Jun 2025 to Sep 2025
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	7	7	7	7	7	269	270	38	14	7	Jun 2025 to Sep 2025
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0	0	271	0	0	0	Aug 2025 to Nov 2025
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0	0	0	354	0	0	Jan 2026 to Feb 2026
Leesons Road	Warrego Highway to Steger Road	28	28	28	28	28	1	267	1	159	4	Nov 2025 to Nov 2025
	Steger Road to B2G-LDN206.3	28	28	28	28	28	13	279	61	171	4	Nov 2025 to Nov 2025
Linthorpe Road	Gore Highway to B2G-LDN175.5	14	14	14	14	14	529	891	119	48	2	Aug 2025 to Sep 2025
Linthorpe Valley Road	Geitz Road to Gore Highway	14	14	14	14	14	0	1	1	41	2	Mar 2027 to Apr 2027
Lochaber Road	Gore Highway to B2G-LDN172.0	14	14	14	14	14	0	0	5	14	1	Mar 2027 to Apr 2027
	B2G-LDN172.0 to B2G-LDN172.6	14	14	14	14	14	0	0	4	0	0	Aug 2026 to Aug 2026
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0	8	30	19	9	0	Nov 2025 to Nov 2025
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	28	28	28	28	28	3	288	198	45	3	Aug 2025 to Nov 2025
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0	0	271	0	0	0	Aug 2025 to Nov 2025

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	271	0	0	0	Aug 2025 to Nov 2025
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0	23	144	140	32	0	Jul 2025 to Aug 2025
Murlaggan Road	B2G-LDN164.3 to Kahler Road	28	28	28	28	28	592	592	0	18	1	Mar 2025 to Apr 2025
	Kahler Road to Gore Highway	42	42	42	42	42	592	592	0	25	3	Mar 2025 to Apr 2025
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	14	14	14	14	14	0	0	12	0	0	Jun 2026 to Jun 2026
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0	16	89	21	175	5	Jun 2027 to Jun 2027
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0	7	40	40	60	6	Jun 2027 to Jul 2027
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0	559	40	40	60	6	Sep 2024 to Nov 2024
	B2G-LDN130.0 to Millmerran-Inglewood Road	28	28	28	28	28	1051	500	45	60	6	Oct 2024 to Nov 2024
Paint Mine Road	Gore Highway to B2G-LDN173.5	14	14	14	14	14	0	1	1	9	2	Oct 2027 to Nov 2027
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	28	28	28	28	28	1	1	3	66	6	Jun 2027 to Jul 2027
Quarry Road Access	Tummalville Road to Quarry	0	0	0	0	0	0	329	0	75	10	Aug 2025 to Nov 2025
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0	0	2	2	53	6	Jun 2027 to Jul 2027
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	14	14	14	14	14	1	4	4	1	1	Dec 2025 to Mar 2026
Scragg Road	Commodore Peak Road to B2G-LDN123.6	28	28	28	28	28	0	3	177	2	0	Jan 2026 to Feb 2026
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0	0	3	0	0	0	Dec 2025 to Dec 2025
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0	0	3099	3099	145	13	Dec 2025 to Jan 2026
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	28	28	28	28	28	33	160	75	62	0	Nov 2025 to Nov 2025
	New Hope Recycled Water Pipeline to Draper Road	28	28	28	28	28	12	60	60	13	0	Dec 2025 to Oct 2026
	Draper Road to Leeson's Road	0	0	0	0	0	12	60	60	13	0	Dec 2025 to Oct 2026
Tummalville Road	Access Track to Gore Highway	0	0	0	0	0	0	329	0	75	10	Aug 2025 to Nov 2025

Road name	Road section	Light vehicle trips in year of construction					Heavy vehicle trips in year of construction					Peak construction months
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	
Turallin Road	Gore Highway to the Turallin Facility	465	465	465	465	465	0	0	0	0	0	Jul 2024 to Mar 2028
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0	42	52	52	52	35	May 2025 to Jul 2025
	B2G-LDN153.1 to Gore Highway	28	28	28	28	28	43	53	76	53	35	May 2026 to May 2026
	Gore Highway to B2G-LDN150.9	0	0	0	0	0	0	0	0	16	4	Mar 2027 to Apr 2027
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0	2	2	2	161	6	Jun 2027 to Jun 2027
West Street	Gore Highway to Florence Street	0	0	0	0	0	0	20	22	13	0	Jan 2026 to Jan 2026
	Florence Street to Six Mile Road	0	0	0	0	0	0	22	24	13	0	Jan 2026 to Jan 2026
Yarranlea Road	Gore Highway to B2G-LDN161.0	28	28	28	28	28	7	2829	2829	65	4	Dec 2025 to Jan 2026
	B2G-LDN161.0 to Desmonds Lane	14	14	14	14	14	0	0	11	2	0	May 2026 to May 2026

5 Impact assessment and mitigation

The operational performance of the transport network in the TIA study area was assessed to develop an understanding on the potential traffic impacts from the Project. The TIA study area primarily consists of impacted roads located in Queensland; however, it also extends to northern NSW. This section provides a summary of the findings from the impact assessment and will identify potential mitigation measures and transport management strategies.

An initial high-level summary of the expected transport task by mode was undertaken for the existing road, rail, port and airport facilities to establish the assessment requirements during the construction and Operations stages of the Project. Table 5.1 summarises the expected Project transport tasks by mode. As shown, the transportation of materials and equipment will typically make use of the existing road and rail network. Therefore, the majority of impacts were considered to be road and rail network based.

Table 5.1 Summary of transport impacts by mode

Project stage	Road	Rail	Port and airport	Active transport
Construction	- Transport of construction material, plant and equipment. The transport of workforce to and from the site - Impact of road closures and realignments on surrounding road network and road-rail interface locations - Impact of rail crossings on vehicle queues and nearby intersections.	- Transport of construction material (i.e. rail) - Temporary possession of South Western Line and Millmerran Branch Line and diversion of existing freight to the road network	Transport of workforce accommodation facilities through Port of Brisbane.	- Diversion of active transport routes. - Additional HVs on network.
Operation	- Rail maintenance workforce movements - Impact of permanent road closures and realignments on surrounding road network and road-rail interface locations - Impact of rail crossings on vehicle queues along adjacent State controlled and local government roads, and impacts on nearby intersections.	Operations and maintenance	- Increased throughput through Port of Brisbane - Interface with Toowoomba Wellcamp Airport Obstacle Limitation Surface contour	Operations of at-grade level crossings.

The construction program includes the transport of construction materials, plant and equipment, and workforce and the impacts that this transportation will have on the surrounding road network. The construction program also includes the establishment of internal haul roads and laydown areas, temporary non-resident workforce accommodation, the Whetstone Material Distribution Centre and a nominal timeframe from contract award to the commencement of work on site for access upgrade works. The design and detailing of these required works are not yet at a level to be programmed and will need to be agreed by the construction contractor and the relevant road authority.

A brief overview of the methodology adopted in this TIA is summarised in Figure 5.1. This centred on establishing a background, without Project traffic scenario for the identified TIA study area and comparing this to the scenario including the Project generated traffic (i.e. the with Project scenario).

The process includes the assessment of the traffic impacts of the Project in terms of road safety, access and frontage, intersections, road links, pavement, road-rail interfaces, transport infrastructure, active travel, stock routes and public transport routes. Following the impact assessment process, potential mitigation and management measures were formulated to address the potential traffic impacts caused by the Project.

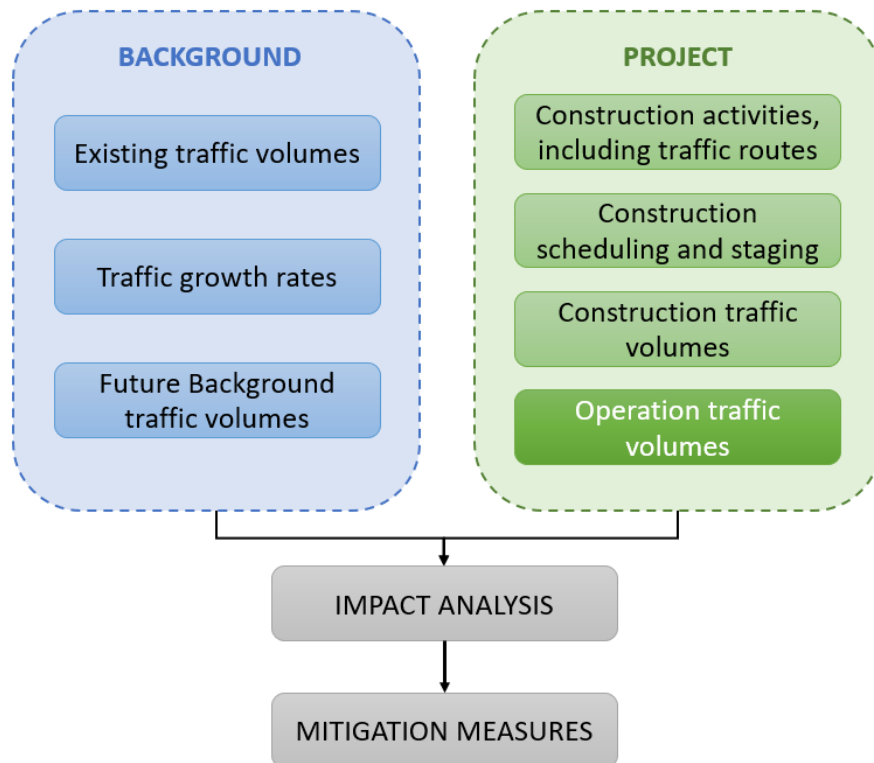


Figure 5.1 Traffic impact assessment methodology including background and project traffic volumes

The impact assessment and mitigation process contained in GTIA was adopted to determine appropriate mitigation measures on identified impacts. The mitigation framework is provided in Figure 5.2.

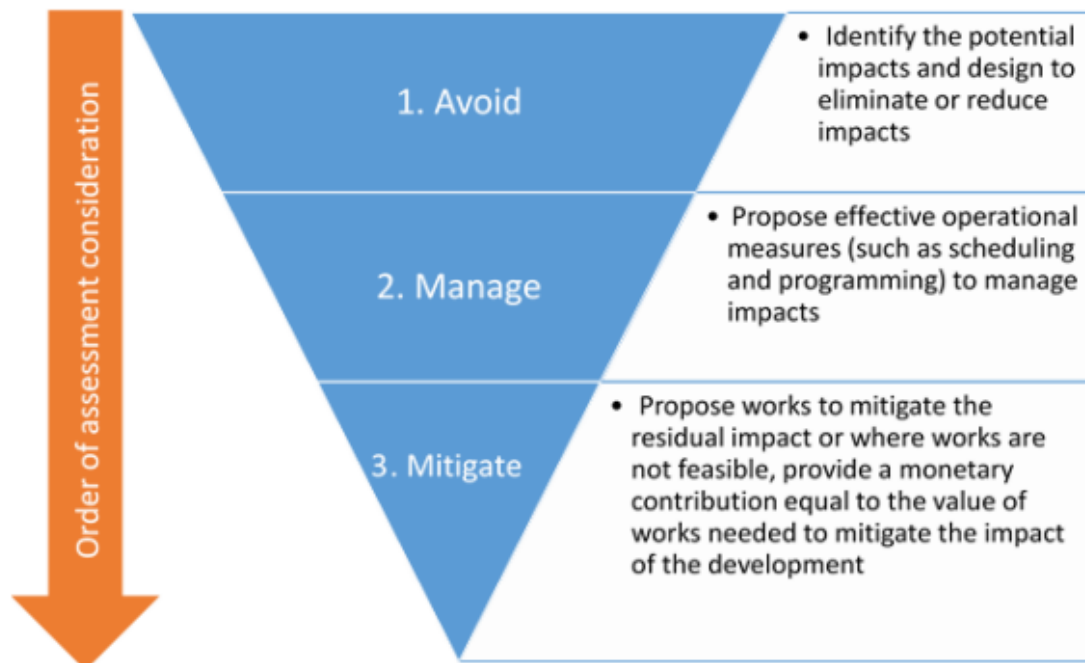


Figure 5.2 Mitigation framework

Source: GTIA (DTMR, 2018b)

Consistent with GTIA, this TIA has considered the impact assessment of the Project on the SCR network and this has been extended to the LGR network (subject to further discussion and agreement with local governments at the Detailed Design stage). It does not apply to private roads. While the use of the guideline is not mandatory for LGR, it provides a basis for assessing potential impacts from the construction and operational stages of the Project on the local and regional transport network.

The extent of the impacts of Project traffic on other users and on infrastructure can range from being localised to quite disperse (i.e. construction routes covering the extent of the TIA study area). The TIA study area encompasses all primary proposed construction routes and the Project's proposed alignment as shown in Figure 1.3.

The impact assessment area and impact assessment year for each assessment type has been provided in Table 5.2. These criteria have been adapted from the GTIA for the purpose of this TIA. The impact assessment year is the year at which the impacts of the Project are assessed for a structural or operational aspect of the road network. The impact assessment year varies depending on impact type because the effects of development can be quite different for structural and operational aspects of the road network. Mitigation measures have been provided for each assessment to address the impacts of the Project within the impact assessment area.

Table 5.2 Impact assessment area by assessment type

Assessment type	Impact assessment area	Impact assessment year
Road safety	- All road links where the Project traffic exceeds 5 per cent of base traffic in either direction on the link's AADT in the peak impact year - All intersections where the Project traffic exceeds 5 per cent of the base traffic for any turning movement in the peak periods of the peak impact year.	Peak impact year of construction
Access	All access intersections interacting with the State or local government road network.	Peak impact year of construction
Intersection	All intersections where the Project traffic exceeds 5 per cent of the base traffic for any turning movement in the peak periods of the peak impact year.	Peak impact year of construction
Road link capacity	All road links where the Project traffic exceeds 5 per cent of base traffic in either direction on the link's AADT in the peak impact year.	Peak impact year of construction
Pavement	All road links where the Project SAR exceeds 5 per cent of the base SAR in either direction of the link in each year of construction.	Each year of construction
Transport infrastructure	All road links where prevailing structural issues of transport infrastructure has been identified, or where construction vehicles for the Project exceed dimensions or weight of those anticipated for non-Project use.	Peak impact year of construction
Level crossing	Existing level crossings which are impacted by construction traffic or proposed active and passive public road-rail interfaces.	Year of opening of each stage including the final stage

It should be noted that for the purpose of seeking approvals for the Project, the majority of impact assessments have been carried out for the peak impact year of construction as it will identify the most significant impacts (i.e. more than 5 per cent from the construction activities). The exceptions are the pavement impact assessment and the transport infrastructure assessment.

The pavement impact assessment considers each year of construction (i.e. 2024 to 2028) as it looks at the total impact over the complete duration of the construction. The transport infrastructure assessment considers the peak impact year of construction as well as the year of opening and 10 or 20 years post opening for the Operations stage of the Project. Further assessments will be carried out during the Detailed Design stage of the Project for the year of opening and 10 or 20 years post opening. However, it is envisaged the likely impact from the Operations stage of the Project, mainly from vehicles used for routine maintenance, would be negligible.

5.1 With and without development traffic volumes

The traffic volume comparison assesses the percentage increase in traffic due to the construction of the Project. The comparison outlines the traffic volumes anticipated on the road network in the without and with Project scenarios. A percentage increase is then calculated using the following formula:

$$\% \text{ increase} = (t_{\text{with Project}} / t_{\text{without Project}}) - 1$$

Where:

- $t_{\text{with Project}}$ = traffic volumes 'with Project'
- $t_{\text{without Project}}$ = traffic volumes 'without Project'

The volume comparison is undertaken to identify the area of impact assessment consistent with Table 5.2 for road safety, intersections, and road links.

5.1.1 Road link volumes

Table 5.3 and Table 5.4 outline the anticipated daily background traffic volumes and daily Project traffic volumes during the construction years for the gazetted/northbound/eastbound (G/NB/EB) and against gazetted/southbound/westbound (AG/SB/WB) directions, respectively. These tables also provide the percentage increase for all road links, with cells shaded in red where the percentage increase is larger than the 5 per cent threshold specified within the GTIA.

Table 5.3 Background and Project traffic volumes (G/NB/EB)

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads																
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	1,097	1,097	1,097	1,097	1,097	49	64	65	61	40	4.5%	5.8%	5.9%	5.5%	3.7%
	Ch 0.8 km to Ch 2.0 km	1,097	1,097	1,097	1,097	1,097	49	64	65	61	40	4.5%	5.8%	5.9%	5.5%	3.7%
	Ch 2.0 km to Ch 45.9 km	333	333	333	333	333	49	61	61	61	40	14.7%	18.2%	18.2%	18.2%	12.1%
	Ch 45.9 km to Ch 88.0 km	333	333	333	333	333	45	56	56	56	37	13.6%	16.8%	16.8%	16.8%	11.1%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	121	121	121	121	121	45	56	56	56	37	37.4%	46.2%	46.2%	46.2%	30.6%
	Ch 1.6 km to Ch 66.8 km	121	121	121	121	121	42	52	52	52	35	34.9%	43.1%	43.1%	43.1%	28.6%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	99	99	99	99	99	42	52	52	52	35	42.7%	52.7%	52.7%	52.7%	34.9%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	2,604	2,692	2,783	2,877	2,974	0	2	4	4	0	0.0%	0.1%	0.2%	0.2%	0.0%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	833	841	850	859	868	51	51	11	9	0	6.1%	6.0%	1.3%	1.0%	0.0%
	Ch 96.2 km to Ch 97.5 km	833	841	850	859	868	77	77	85	233	0	9.5%	9.4%	10.0%	27.1%	0.0%
	Ch 97.5 km to Ch 105.7 km	833	841	850	859	868	574	124	85	233	0	69.2%	14.8%	10.0%	27.1%	0.0%
	Ch 105.7 km to Ch 107.4 km	833	841	850	859	868	472	328	200	267	116	60.3%	37.7%	23.7%	31.3%	13.6%
	Ch 107.4 km to Ch 107.6 km	1,144	1,159	1,174	1,189	1,205	458	314	184	237	102	42.6%	26.2%	15.8%	20.0%	8.7%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	681	686	692	697	702	458	314	184	237	102	71.6%	44.2%	26.9%	34.2%	14.8%
	Ch 2.0 km to Ch 3.9 km	681	686	692	697	702	458	312	187	237	102	71.6%	43.8%	27.3%	34.2%	14.8%
	Ch 3.9 km to Ch 10.2 km	681	686	692	697	702	227	300	175	186	95	37.7%	37.5%	25.6%	26.9%	13.8%
	Ch 10.2 km to Ch 13.9 km	681	686	692	697	702	213	285	156	171	81	35.6%	35.4%	22.8%	24.9%	11.8%
	Ch 13.9 km to Ch 18.5 km	681	686	692	697	702	231	281	152	147	74	38.2%	38.0%	22.2%	21.4%	10.8%
	Ch 18.5 km to Ch 27.1 km	681	686	692	697	702	189	190	90	58	9	27.8%	27.6%	13.0%	8.3%	1.3%
	Ch 27.1 km to Ch 29.3 km	681	686	692	697	702	211	197	84	61	16	31.0%	28.8%	12.2%	8.8%	2.3%
	Ch 29.3 km to Ch 34.7 km	681	686	692	697	702	191	147	85	62	16	28.0%	21.4%	12.3%	8.9%	2.3%
	Ch 34.7 km to Ch 39.6 km	681	686	692	697	702	191	147	85	62	16	28.0%	21.4%	12.3%	8.9%	2.3%
	Ch 39.6 km to Ch 40.3 km	681	686	692	697	702	220	218	85	65	23	32.3%	31.7%	12.2%	9.4%	3.3%
	Ch 40.3 km to Ch 40.5 km	681	686	692	697	702	70	67	84	64	23	10.3%	9.8%	12.2%	9.2%	3.3%
	Ch 40.5 km to Ch 43.9 km	681	686	692	697	702	67	107	71	64	64	9.8%	15.6%	10.2%	9.2%	9.1%
	Ch 43.9 km to Ch 46.3 km	681	686	692	697	702	24	65	29	22	22	3.6%	9.4%	4.1%	3.2%	3.1%
	Ch 46.3 km to Ch 88.0 km	681	686	692	697	702	24	29	29	22	22	3.6%	4.2%	4.1%	3.2%	3.1%
	Ch 88.0 km to Ch 88.2 km	1,685	1,689	1,694	1,699	1,703	47	54	57	53	42	2.8%	3.2%	3.4%	3.1%	2.5%
	Ch 88.2 km to Ch 90.0 km	1,685	1,689	1,694	1,699	1,703	22	27	27	22	22	1.3%	1.6%	1.6%	1.3%	1.3%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	61,406	64,578	67,914	71,423	75,113	95	117	117	117	78	0.2%	0.2%	0.2%	0.2%	0.1%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	19,496	20,287	21,110	21,967	22,858	95	117	117	117	78	0.5%	0.6%	0.6%	0.5%	0.3%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	3,262	3,377	3,496	3,619	3,746	441	581	242	246	178	13.5%	17.2%	6.9%	6.8%	4.7%
	Ch 2.2 km to Ch 5.4 km	3,262	3,377	3,496	3,619	3,746	995	809	223	221	163	30.5%	24.0%	6.4%	6.1%	4.3%
	Ch 5.4 km to Ch 6.7 km	3,262	3,377	3,496	3,619	3,746	981	795	209	207	148	30.1%	23.5%	6.0%	5.7%	3.9%
	Ch 6.7 km to Ch 7.7 km	3,262	3,377	3,496	3,619	3,746	974	788	302	199	141	29.9%	23.3%	8.6%	5.5%	3.8%
	Ch 7.7 km to Ch 11.2 km	3,262	3,377	3,496	3,619	3,746	956	754	284	182	127	29.3%	22.3%	8.1%	5.0%	3.4%
	Ch 11.2 km to Ch 15.3 km	3,262	3,377	3,496	3,619	3,746	949	747	277	185	121	29.1%	22.1%	7.9%	5.1%	3.2%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 15.3 km to Ch 17.5 km	3,262	3,377	3,496	3,619	3,746	677	458	321	167	115	20.8%	13.6%	9.2%	4.6%	3.1%
	Ch 17.5 km to Ch 19.0 km	3,262	3,377	3,496	3,619	3,746	670	451	314	162	109	20.6%	13.4%	9.0%	4.5%	2.9%
	Ch 19.0 km to Ch 20.3 km	3,262	3,377	3,496	3,619	3,746	663	444	307	161	102	20.3%	13.2%	8.8%	4.5%	2.7%
	Ch 20.3 km to Ch 21.5 km	1,715	1,770	1,826	1,884	1,943	656	437	300	154	95	38.3%	24.7%	16.4%	8.2%	4.9%
	Ch 21.5 km to Ch 23.2 km	1,715	1,770	1,826	1,884	1,943	645	409	287	154	88	37.6%	23.1%	15.7%	8.2%	4.6%
	Ch 23.2 km to Ch 25.0 km	1,715	1,770	1,826	1,884	1,943	370	313	308	188	111	21.6%	17.7%	16.9%	10.0%	5.7%
	Ch 25.0 km to Ch 30.1 km	1,715	1,770	1,826	1,884	1,943	370	1,517	1,580	152	105	21.6%	85.7%	86.5%	8.1%	5.4%
	Ch 30.1 km to Ch 38.7 km	1,715	1,770	1,826	1,884	1,943	381	166	179	187	121	22.2%	9.4%	9.8%	9.9%	6.3%
	Ch 38.7 km to Ch 41.1 km	1,715	1,770	1,826	1,884	1,943	381	154	187	176	118	22.2%	8.7%	10.3%	9.3%	6.1%
	Ch 41.1 km to Ch 41.7 km	1,715	1,770	1,826	1,884	1,943	381	154	187	174	116	22.2%	8.7%	10.3%	9.2%	6.0%
	Ch 41.7 km to Ch 43.2 km	1,715	1,770	1,826	1,884	1,943	396	434	218	188	130	23.1%	24.5%	12.0%	10.0%	6.7%
	Ch 43.2 km to Ch 44.7 km	1,715	1,770	1,826	1,884	1,943	410	442	226	203	144	23.9%	25.0%	12.4%	10.8%	7.4%
	Ch 44.7 km to Ch 47.6 km	1,715	1,770	1,826	1,884	1,943	424	456	240	201	157	24.7%	25.8%	13.2%	10.7%	8.1%
	Ch 47.6 km to Ch 52.2 km	1,715	1,770	1,826	1,884	1,943	438	470	254	204	171	25.5%	26.6%	13.9%	10.8%	8.8%
	Ch 52.2 km to Ch 53.3 km	1,715	1,770	1,826	1,884	1,943	451	480	239	218	185	26.3%	27.1%	13.1%	11.6%	9.5%
	Ch 53.3 km to Ch 60.8 km	1,715	1,770	1,826	1,884	1,943	460	495	241	239	193	26.8%	28.0%	13.2%	12.7%	9.9%
	Ch 60.8 km to Ch 63.0 km	1,715	1,770	1,826	1,884	1,943	201	219	219	231	189	11.7%	12.4%	12.0%	12.2%	9.7%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	1,045	1,051	1,057	1,063	1,069	306	326	334	336	294	29.3%	31.0%	31.6%	31.6%	27.5%
	Ch 0.7 km to Ch 0.8 km	1,045	1,051	1,057	1,063	1,069	306	324	324	336	294	29.3%	30.8%	30.6%	31.6%	27.5%
	Ch 0.8 km to Ch 1.4 km	1,045	1,051	1,057	1,063	1,069	306	325	325	336	294	29.3%	30.9%	30.7%	31.6%	27.5%
	Ch 1.4 km to Ch 3.0 km	1,045	1,051	1,057	1,063	1,069	306	324	324	363	297	29.3%	30.8%	30.6%	34.1%	27.8%
	Ch 3.0 km to Ch 13.0 km	1,045	1,051	1,057	1,063	1,069	74	91	91	131	65	7.1%	8.7%	8.6%	12.3%	6.1%
	Ch 13.0 km to Ch 121.6 km	1,045	1,051	1,057	1,063	1,069	74	91	91	91	60	7.1%	8.7%	8.6%	8.6%	5.7%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	55,729	55,729	55,729	55,729	55,729	95	117	117	117	78	0.2%	0.2%	0.2%	0.2%	0.1%
	Ch 3.7 km to Ch 6.4 km	54,051	55,447	56,879	58,347	59,854	95	117	117	117	78	0.2%	0.2%	0.2%	0.2%	0.1%
	Ch 6.4 km to Ch 8.3 km	70,251	73,756	77,435	81,298	85,353	95	117	117	117	78	0.1%	0.2%	0.2%	0.1%	0.1%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	1,280	1,280	1,280	1,280	1,280	74	91	91	91	60	5.8%	7.1%	7.1%	7.1%	4.7%
	Ch 220.1 km to Ch 222.4 km	1,289	1,289	1,289	1,289	1,289	25	34	35	31	20	1.9%	2.6%	2.7%	2.4%	1.6%
	Ch 222.4 km to Ch 224.1 km	1,289	1,289	1,289	1,289	1,289	25	34	35	31	20	1.9%	2.7%	2.7%	2.4%	1.6%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	19,496	20,287	21,110	21,967	22,858	95	117	117	117	78	0.5%	0.6%	0.6%	0.5%	0.3%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	445	464	483	503	524	285	305	30	10	5	64.0%	65.7%	6.3%	2.1%	0.9%
	Ch 2.5 km to Ch 3.5 km	445	464	483	503	524	274	340	64	53	22	61.6%	73.4%	13.3%	10.4%	4.2%
	Ch 3.5 km to Ch 6.2 km	400	400	400	400	400	352	423	151	110	96	88.1%	105.9%	37.8%	27.4%	24.1%
	Ch 6.2 km to Ch 9.0 km	400	400	400	400	400	345	416	318	102	89	86.2%	104.0%	79.6%	25.6%	22.2%
	Ch 9.0 km to Ch 13.1 km	400	400	400	400	400	331	400	216	88	75	82.7%	100.2%	53.9%	22.1%	18.7%
	Ch 13.1 km to Ch 14.0 km	400	400	400	400	400	331	396	203	92	75	82.8%	99.2%	50.7%	23.0%	18.7%
	Ch 14.0 km to Ch 17.3 km	400	400	400	400	400	314	365	172	150	70	78.6%	91.4%	43.0%	37.7%	17.4%
	Ch 17.3 km to Ch 18.1 km	400	400	400	400	400	314	329	463	149	69	78.6%	82.3%	115.8%	37.4%	17.2%
	Ch 18.1 km to Ch 21.8 km	400	400	400	400	400	307	322	456	142	61	76.8%	80.5%	114.0%	35.5%	15.3%
	Ch 21.8 km to Ch 28.0 km	400	400	400	400	400	291	306	343	125	46	72.9%	76.5%	85.7%	31.3%	11.4%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 28.0 km to Ch 33.0 km	400	400	400	400	400	277	291	328	108	29	69.3%	72.9%	82.1%	27.0%	7.1%
	Ch 33.0 km to Ch 35.6 km	400	400	400	400	400	263	277	309	94	14	65.7%	69.3%	77.4%	23.4%	3.6%
	Ch 35.6 km to Ch 37.7 km	400	400	400	400	400	254	254	10	86	7	63.4%	63.6%	2.6%	21.5%	1.8%
	Ch 37.7 km to Ch 39.8 km	400	400	400	400	400	254	294	10	86	7	63.4%	73.5%	2.6%	21.5%	1.8%
	Ch 39.8 km to Ch 41.9 km	197	203	209	215	222	267	307	22	100	21	135.9%	151.6%	10.3%	46.4%	9.4%
	Ch 41.9 km to Ch 45.9 km	197	203	209	215	222	30	82	30	29	24	15.1%	40.3%	14.5%	13.5%	10.9%
	Ch 45.9 km to Ch 47.6 km	197	203	209	215	222	37	89	37	36	31	18.6%	43.7%	17.8%	16.6%	14.0%
	Ch 47.6 km to Ch 53.3 km	197	203	209	215	222	37	118	37	36	31	18.6%	58.1%	17.8%	16.6%	14.0%
	Ch 53.3 km to Ch 55.7 km	197	203	209	215	222	46	135	46	86	38	23.2%	66.8%	22.1%	39.7%	17.1%
	Ch 55.7 km to Ch 56.6 km	197	203	209	215	222	46	67	46	86	38	23.2%	32.8%	22.1%	39.7%	17.1%
	Ch 56.6 km to Ch 59.2 km	197	203	209	215	222	122	215	146	186	138	76.2%	84.2%	70.9%	87.0%	63.1%
	Ch 59.2 km to Ch 61.0 km	197	203	209	215	222	122	215	146	215	138	76.3%	84.3%	70.9%	100.8%	63.1%
	Ch 61.0 km to Ch 65.7 km	197	203	209	215	222	235	328	132	201	124	133.7%	140.0%	64.0%	94.1%	56.6%
	Ch 65.7 km to Ch 68.7 km	197	203	209	215	222	547	322	128	205	117	292.2%	137.1%	62.0%	96.2%	53.3%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	134	142	151	160	170	14	75	76	14	14	10.7%	52.6%	50.5%	9.0%	8.4%
	Ch 2.0 km to Ch 2.2 km	134	142	151	160	170	0	60	61	0	0	0.0%	42.1%	40.7%	0.0%	0.0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	6,512	6,708	6,909	7,116	7,330	95	117	117	117	78	1.5%	1.7%	1.7%	1.6%	1.1%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	6,512	6,708	6,909	7,116	7,330	95	117	117	117	78	1.5%	1.7%	1.7%	1.6%	1.1%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	127	131	136	140	145	0	40	0	0	0	0.0%	30.8%	0.0%	0.0%	0.0%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	1,836	1,836	1,836	1,836	1,836	98	99	99	98	98	5.4%	5.4%	5.4%	5.4%	5.4%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	3,091	3,112	3,132	3,153	3,174	4	15	10	4	0	0.1%	0.5%	0.3%	0.1%	0.0%
	Ch 6.0 km to Ch 6.4 km	1,684	1,684	1,684	1,684	1,684	4	13	10	0	0	0.2%	0.8%	0.6%	0.0%	0.0%
	Ch 6.4 km to Ch 8.3 km	1,684	1,684	1,684	1,684	1,684	7	31	14	4	0	0.4%	1.8%	0.8%	0.3%	0.0%
	Ch 8.3 km to Ch 9.2 km	1,684	1,684	1,684	1,684	1,684	9	32	15	85	3	0.5%	1.9%	0.9%	5.0%	0.2%
	Ch 9.2 km to Ch 10.0 km	2,261	2,394	2,534	2,682	2,839	16	77	23	27	1	0.7%	3.2%	0.9%	1.0%	0.0%
	Ch 10.0 km to Ch 10.1 km	2,261	2,394	2,534	2,682	2,839	37	98	45	48	22	1.6%	4.1%	1.8%	1.8%	0.8%
	Ch 10.1 km to Ch 10.3 km	2,261	2,394	2,534	2,682	2,839	22	159	27	22	22	1.0%	6.7%	1.1%	0.8%	0.8%
	Ch 10.3 km to Ch 12.1 km	2,261	2,394	2,534	2,682	2,839	22	160	27	36	23	1.0%	6.7%	1.1%	1.4%	0.8%
	Ch 12.1 km to Ch 14.5 km	2,261	2,394	2,534	2,682	2,839	22	254	254	35	24	1.0%	10.6%	10.0%	1.3%	0.9%
	Ch 14.5 km to Ch 16.3 km	1,200	1,229	1,259	1,289	1,320	17	279	279	30	10	1.4%	22.7%	22.1%	2.3%	0.7%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	6,775	6,978	7,187	7,403	7,625	0	2	4	4	0	0.0%	0.0%	0.1%	0.1%	0.0%
	Ch 26.9 km to Ch 27.1 km	6,775	6,978	7,187	7,403	7,625	42	44	47	47	42	0.6%	0.6%	0.6%	0.6%	0.6%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	2,125	2,156	2,187	2,219	2,251	95	117	117	117	78	4.5%	5.4%	5.4%	5.3%	3.5%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	2,125	2,156	2,187	2,219	2,251	95	117	117	117	78	4.5%	5.4%	5.4%	5.3%	3.5%
	Ch 0.6 km to Ch 3.2 km	2,125	2,156	2,187	2,219	2,251	330	412	126	126	78	15.5%	19.1%	5.8%	5.7%	3.5%
	Ch 3.2 km to Ch 4.1 km	2,125	2,156	2,187	2,219	2,251	330	412	126	126	78	15.5%	19.1%	5.8%	5.7%	3.5%
	Ch 4.1 km to Ch 13.0 km	2,125	2,156	2,187	2,219	2,251	343	483	143	148	80	16.1%	22.4%	6.5%	6.7%	3.5%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	2,125	2,156	2,187	2,219	2,251	268	295	20	8	0	12.6%	13.7%	0.9%	0.4%	0.0%
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	2,125	2,156	2,187	2,219	2,251	0	133	0	0	0	0.0%	6.1%	0.0%	0.0%	0.0%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	2,125	2,156	2,187	2,219	2,251	15	72	20	28	2	0.7%	3.3%	0.9%	1.3%	0.1%
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	35,886	37,242	38,650	40,111	41,627	95	117	117	117	78	0.3%	0.3%	0.3%	0.3%	0.2%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	35,886	37,242	38,650	40,111	41,627	95	117	117	117	78	0.3%	0.3%	0.3%	0.3%	0.2%
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	17,811	18,192	18,580	18,977	19,382	95	117	117	117	78	0.5%	0.6%	0.6%	0.6%	0.4%
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	16,196	16,522	16,855	17,195	17,542	95	117	117	117	78	0.6%	0.7%	0.7%	0.7%	0.4%
	Ch 7.2 km to Ch 15.1 km	10,701	10,701	10,701	10,701	10,701	95	117	117	117	78	0.9%	1.1%	1.1%	1.1%	0.7%
	Ch 15.1 km to Ch 18.9 km	13,525	13,889	14,263	14,647	15,041	95	117	117	117	78	0.7%	0.8%	0.8%	0.8%	0.5%
	Ch 18.9 km to Ch 28.9 km	13,525	13,889	14,263	14,647	15,041	95	117	117	117	78	0.7%	0.8%	0.8%	0.8%	0.5%
	Ch 28.9 km to Ch 36.6 km	12,183	12,360	12,539	12,720	12,905	95	117	117	117	78	0.8%	0.9%	0.9%	0.9%	0.6%
	Ch 36.6 km to Ch 55.5 km	11,477	12,728	14,116	15,654	17,360	42	44	47	47	42	0.4%	0.3%	0.3%	0.3%	0.2%
	Ch 55.5 km to Ch 75.4 km	11,477	12,728	14,116	15,654	17,360	310	339	62	55	42	2.7%	2.7%	0.4%	0.4%	0.2%
	Ch 75.4 km to Ch 79.6 km	11,477	12,728	14,116	15,654	17,360	291	292	40	109	31	2.5%	2.3%	0.3%	0.7%	0.2%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	6,917	6,999	7,082	7,166	7,251	276	277	25	21	14	4.0%	4.0%	0.4%	0.3%	0.2%
	Ch 0.4 km to Ch 1.5 km	6,917	6,999	7,082	7,166	7,251	276	277	25	21	14	4.0%	4.0%	0.4%	0.3%	0.2%
	Ch 1.5 km to Ch 2.4 km	6,917	6,999	7,082	7,166	7,251	276	277	25	21	14	4.0%	4.0%	0.4%	0.3%	0.2%
	Ch 2.4 km to Ch 4.5 km	6,917	6,999	7,082	7,166	7,251	276	277	45	21	14	4.0%	4.0%	0.6%	0.3%	0.2%
Warrego Highway Off-ramp (18B)	Ch 4.5 km to Ch 5.0 km	99	100	102	103	104	276	277	45	21	14	278.1%	275.9%	43.8%	20.6%	13.8%
State-Controlled Roads: Transport for New South Wales																
Newell Highway	River Road to Queensland/NSW Border	2,562	2,645	2,731	2,820	2,912	23	13	5	2	0	0.9%	0.5%	0.2%	0.1%	0.0%
Local Government Roads: Balonne Shire Council																
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	40	40	40	41	41	42	52	52	52	35	106.5%	130.4%	129.3%	128.2%	84.2%
Local Government Roads: Goondiwindi Regional Council																
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	10	10	10	10	10	0	1	1	0	0	0.0%	5.2%	5.2%	0.0%	0.0%
Bybera Road	Cunningham Highway to B2G-LDN060.4	43	43	43	44	44	231	43	13	51	7	545.8%	101.9%	30.3%	117.5%	16.2%
	B2G-LDN060.4 to Earthworks Area 2A	43	43	43	44	44	188	0	0	0	0	443.2%	0.0%	0.0%	0.0%	0.0%
Cemetery Road	Access Track to Moorobie Lane	112	116	119	123	127	0	40	0	0	0	0.0%	34.9%	0.0%	0.0%	0.0%
	Cunningham Highway to GrainCorp Goondiwindi	68	68	68	69	69	25	31	31	31	20	36.4%	44.8%	44.7%	44.6%	29.5%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	37	38	38	38	39	51	51	11	9	0	136.3%	134.9%	29.7%	22.2%	0.2%
	Coolmunda Dam Access to Cunningham Highway	37	38	38	38	39	51	51	11	9	0	136.3%	134.9%	29.7%	22.2%	0.2%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	60	61	61	61	62	15	17	19	14	14	24.4%	27.8%	30.5%	23.4%	23.2%
	B2G-LDN055.4 to B2G-LDN054.2	60	61	61	61	62	14	17	14	14	14	23.9%	27.3%	23.6%	22.9%	22.8%
	Cunningham Highway to B2G-LDN052.8	60	61	61	61	62	15	18	20	15	14	24.4%	29.5%	32.2%	25.1%	23.2%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	24	24	24	24	24	284	325	15	12	7	1207.9%	1370.3%	60.9%	50.4%	29.0%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	22	23	23	23	24	14	14	16	30	14	64.3%	63.5%	68.9%	130.1%	59.6%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	11	11	12	12	13	32	33	34	41	22	287.9%	288.2%	291.6%	335.3%	175.2%
	NS2B-LDN033.2 to NS2B-LDN035.6	11	11	12	12	13	12	12	19	24	7	110.8%	109.5%	161.3%	200.8%	58.4%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	16	16	16	16	17	497	95	0	0	0	3109.1%	588.7%	0.0%	0.0%	0.0%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	8	8	8	8	9	9	7	9	10	7	122.5%	91.2%	107.7%	123.4%	81.8%
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	13	13	14	14	15	0	69	0	0	0	0.0%	514.5%	0.0%	0.0%	0.0%
Hunt Street	Leichhardt Highway to Boodle Street	10	10	10	10	10	0	1	1	0	0	0.0%	5.2%	5.2%	0.0%	0.0%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	922	952	983	1,015	1,048	13	5	12	18	0	1.4%	0.5%	1.2%	1.8%	0.0%
	NS2B-LDN031.0 to South Kurumbul Road	922	952	983	1,015	1,048	163	194	12	18	0	17.7%	20.4%	1.2%	1.8%	0.0%
	South Kurumbul Road to Cunningham Highway	922	952	983	1,015	1,048	150	191	1	1	0	16.2%	20.1%	0.1%	0.1%	0.0%
	Cunningham Highway to Eukabilla Road	879	886	892	899	906	45	36	31	24	22	5.1%	4.1%	3.5%	2.7%	2.4%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	5	5	5	5	5	32	32	10	30	7	689.0%	683.8%	213.3%	624.9%	146.5%
	McDougalls Road to Cunningham Highway	5	5	5	5	5	32	32	10	30	7	689.0%	683.8%	213.3%	624.9%	146.5%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	18	18	19	20	20	0	40	0	0	0	0.0%	219.9%	0.0%	0.0%	0.0%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	18	18	19	20	20	0	81	0	0	0	0.0%	439.9%	0.0%	0.0%	0.0%
	Mooroobie Lane to Wondalli Kurumbul Road	18	18	19	20	20	0	81	0	0	0	0.0%	439.9%	0.0%	0.0%	0.0%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	14	14	15	15	16	0	69	0	0	0	0.0%	484.4%	0.0%	0.0%	0.0%
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	3	3	3	3	3	29	8	26	16	7	1135.1%	319.0%	932.4%	575.4%	250.8%
Silo Street	Barwon Highway to GrainCorp Talwood	60	60	60	60	60	3	4	4	4	2	5.0%	6.1%	6.1%	6.1%	4.1%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	32	33	35	36	37	13	3	12	17	0	40.4%	9.9%	33.4%	47.6%	0.1%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	44	44	44	44	44	4	5	5	5	3	8.9%	11.0%	11.0%	11.0%	7.3%
Springborg Road	Cunningham highway to B2G-LDN037.6	4	5	5	5	5	24	9	21	17	7	536.8%	192.6%	466.5%	380.5%	159.3%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	4	5	5	5	5	150	190	0	0	0	3346.8%	4224.3%	0.0%	0.0%	0.0%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	9	10	10	10	11	19	19	11	19	7	209.1%	202.9%	114.1%	185.2%	67.3%
	B2G-LDN067.6 to Millmerran-Inglewood Road	9	10	10	10	11	329	104	13	19	7	3540.4%	1086.3%	133.2%	187.9%	70.0%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	178	178	178	178	179	2	11	11	0	0	1.4%	6.1%	6.1%	0.0%	0.0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	12	12	12	12	12	109	158	83	112	79	1178.8%	1169.9%	711.0%	946.3%	666.1%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	15	15	16	16	17	0	81	0	0	0	0.0%	527.0%	0.0%	0.0%	0.0%
Wongavale Yugilbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	9	10	10	10	11	11	20	9	50	7	118.3%	201.9%	89.6%	480.2%	66.2%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	10	10	10	10	10	0	40	0	0	0	0.0%	394.6%	0.0%	0.0%	0.0%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	32	33	35	36	37	18	10	18	26	7	55.2%	30.7%	53.5%	72.9%	19.2%
	B2G-LDN006.3 to Wondalli Kurumbul Road	32	33	35	36	37	14	95	26	37	14	44.6%	284.6%	74.4%	104.4%	39.0%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	32	33	35	36	37	14	14	26	37	14	44.6%	43.2%	74.4%	104.4%	39.0%
	Yelarbon Kurumbul Road to B2G-LDN020.3	32	33	35	36	37	44	23	51	51	22	134.7%	68.6%	148.6%	142.7%	59.0%
	B2G-LDN020.3 to B2G-LDN025.9	31	31	31	32	32	51	30	78	61	29	164.3%	96.5%	249.1%	192.7%	90.5%
	B2G-LDN025.9 to Cunningham Highway	31	31	31	32	32	91	128	104	85	43	294.1%	411.8%	332.3%	268.4%	135.7%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Local Government Roads: Moree Plains Shire Council																
Boggabilla Weir Access	River Road to Boggabilla Weir	11	11	11	12	12	23	13	5	2	0	214.7%	119.0%	41.1%	16.8%	0.2%
River Road	Newell Highway to Boggabilla Weir Access	11	11	11	12	12	23	13	5	2	0	214.7%	119.0%	41.1%	16.8%	0.2%
Local Government Roads: Toowoomba Regional Council																
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	5,537	5,861	6,204	6,567	6,951	1	1	1	1	1	0.0%	0.0%	0.0%	0.0%	0.0%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	3,248	3,259	3,271	3,282	3,294	98	98	98	98	98	3.0%	3.0%	3.0%	3.0%	3.0%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	5,994	6,015	6,036	6,057	6,078	0	1	1	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	141	146	151	157	162	576	310	15	4	0	407.4%	212.2%	9.6%	2.3%	0.0%
	B2G-LDN188.2 to Gore Highway	141	146	151	157	162	590	325	30	28	15	417.6%	222.1%	19.5%	18.1%	9.5%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	97	100	104	108	111	7	146	146	10	7	7.3%	145.4%	140.4%	8.9%	6.3%
Blackwell Road	Gore Highway to Millmerran Quarry	21	22	22	22	22	0	0	0	42	4	0.0%	0.0%	0.0%	193.8%	20.2%
	Millmerran Quarry to B2G-LDN120.2	21	22	22	22	22	0	0	0	87	11	0.0%	0.0%	0.0%	397.4%	49.8%
	B2G-LDN120.2 to Millmerran-Inglewood Road	6	6	6	6	6	17	31	31	105	23	280.6%	515.7%	515.7%	1755.6%	387.7%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	15	15	15	15	15	0	11	12	7	0	0.9%	76.1%	82.5%	45.0%	0.0%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	58	59	60	62	63	24	54	56	25	14	42.1%	91.2%	92.0%	39.8%	22.7%
	Brimblecombe Road to WL 194467R	60	61	63	66	68	10	39	39	10	0	16.6%	63.7%	61.7%	15.6%	0.0%
Bushy Lane	B2G-LDN183.0 to Gore Highway	57	59	61	63	66	18	35	20	31	15	31.5%	58.8%	32.9%	49.4%	23.1%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	587	612	637	664	692	106	116	117	132	109	18.1%	18.9%	18.3%	20.0%	15.8%
	Saleyards Road to Gore Highway	1,111	1,158	1,206	1,256	1,309	106	115	116	112	106	9.5%	9.9%	9.6%	8.9%	8.1%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	10	10	10	11	11	7	8	10	11	7	68.8%	78.2%	98.0%	102.5%	65.6%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	17	17	17	17	17	14	16	103	15	14	81.6%	90.5%	593.6%	87.2%	81.6%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	9	9	10	10	10	7	7	12	8	7	78.0%	75.6%	129.5%	81.6%	68.8%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	11	11	11	12	12	191	147	85	62	16	1791.4%	1340.8%	750.3%	528.5%	131.3%
Draper Road	Steger Road to B2G-FBW206.9	25	25	26	26	26	14	14	14	14	14	56.4%	55.7%	55.1%	54.4%	53.8%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	1,913	2,025	2,144	2,269	2,402	1	1	1	80	3	0.1%	0.1%	0.1%	3.5%	0.1%
	Access Track to Greenwattle Street	1,913	2,025	2,144	2,269	2,402	1	1	1	1	1	0.1%	0.1%	0.1%	0.0%	0.0%
Florence Street	Gore Highway to West Street	168	169	170	171	172	0	1	1	0	0	0.0%	0.6%	0.6%	0.0%	0.0%
Forestry Road	Access Track to Millmerran-Inglewood Road	1	1	1	1	1	0	69	0	0	0	0.0%	5969.1%	0.0%	0.0%	0.0%
	Millmerran-Inglewood Road to Earthworks Area 3B	1	1	1	1	1	0	69	0	0	0	0.0%	5969.1%	0.0%	0.0%	0.0%
Fysh Road	B2G-LDN147.1 to Gore Highway	43	44	45	47	48	14	14	14	44	16	33.7%	32.9%	31.9%	94.5%	32.2%
Gap Road	Gore Highway to Grevillea Street	683	705	727	750	774	0	1	7	2	0	0.0%	0.2%	1.0%	0.3%	0.0%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	25	26	27	28	29	7	7	7	28	8	29.3%	29.6%	28.6%	103.5%	29.2%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	15	16	16	17	17	14	15	24	26	14	91.4%	91.4%	148.4%	155.3%	80.7%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	275	283	292	302	311	0	1	7	2	0	0.0%	0.4%	2.5%	0.6%	0.0%
Hall Road	B2G-LDN139.0 to Gore Highway	1	1	1	1	1	70	67	84	64	23	5937.0%	5483.7%	6664.8%	4944.4%	1702.3%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	25	25	25	25	25	0	136	292	0	0	0.0%	545.1%	1173.1%	0.0%	0.0%
	B2G-LDN116.0 to Millmerran-Inglewood Road	25	25	25	25	25	0	136	292	12	1	0.0%	547.7%	1175.7%	49.4%	4.4%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	11	12	13	13	14	0	0	0	79	2	0.0%	0.0%	0.0%	596.0%	13.4%
Kahler Road	Murlaggan Road to B2G-LDN165.6	7	7	8	8	8	7	7	7	11	8	99.0%	96.0%	93.0%	137.6%	96.1%
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	2,065	2,090	2,115	2,140	2,165	276	277	45	21	14	13.4%	13.3%	2.1%	1.0%	0.7%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	42	42	42	42	42	0	136	0	0	0	0.0%	325.3%	0.0%	0.0%	0.0%
	Millmerran-Inglewood Road to Commodore Mine	1	1	1	1	1	0	0	177	0	0	0.0%	0.0%	19199.7%	0.0%	0.0%
Leesons Road	Warrego Highway to Steger Road	40	41	41	42	42	14	148	14	94	16	35.6%	361.1%	34.7%	223.4%	38.3%
	Steger Road to B2G-LDN206.3	40	41	41	42	42	20	154	45	100	16	50.4%	375.8%	107.6%	237.7%	38.4%
Linthorpe Road	Gore Highway to B2G-LDN175.5	12	12	12	13	13	271	453	66	31	8	2339.8%	3770.1%	534.5%	241.3%	60.7%
Linthorpe Valley Road	Geitz Road to Gore Highway	55	57	59	61	64	7	7	7	28	8	12.7%	12.9%	12.4%	45.0%	12.7%
Lochaber Road	Gore Highway to B2G-LDN172.0	194	201	208	215	223	7	7	10	14	8	3.6%	3.6%	4.6%	6.4%	3.4%
	Ch B2G-LDN172.0 to B2G-LDN172.6	194	201	208	215	223	7	7	9	7	7	3.6%	3.5%	4.2%	3.3%	3.2%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	3,210	3,231	3,253	3,274	3,296	4	15	10	4	0	0.1%	0.5%	0.3%	0.1%	0.0%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	21	21	21	21	21	15	158	113	37	16	74.3%	761.6%	545.1%	176.9%	75.5%
	B2G-LDN112.1 to Millwood Road	21	21	21	21	21	0	136	0	0	0	0.0%	654.1%	0.0%	0.0%	0.0%
	Millwood Road to Kooroongarra Road	4	4	4	4	4	0	136	0	0	0	0.0%	3679.5%	0.0%	0.0%	0.0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	115	115	115	115	115	11	71	69	15	0	9.8%	61.9%	60.0%	12.9%	0.1%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	227	234	241	249	257	310	310	14	23	15	136.7%	132.5%	5.9%	9.3%	5.7%
	Kahler Road to Gore Highway	227	234	241	249	257	317	317	21	34	22	139.8%	135.5%	8.8%	13.6%	8.7%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	722	723	723	724	725	7	7	13	7	7	1.0%	1.0%	1.8%	1.0%	1.0%
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	2,822	2,987	3,162	3,347	3,542	8	46	12	87	2	0.3%	1.5%	0.4%	2.6%	0.1%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	292	305	317	331	344	3	20	20	30	3	1.2%	6.6%	6.3%	9.1%	0.9%
	B2G-LDN128.2 to B2G-LDN130.0	292	305	317	331	344	279	20	20	30	3	95.5%	6.6%	6.3%	9.1%	0.9%
	B2G-LDN130.0 to Millmerran-Inglewood Road	292	305	317	331	344	540	264	37	44	17	184.5%	86.6%	11.5%	13.3%	5.0%
Paint Mine Road	Gore Highway to B2G-LDN173.5	26	27	28	29	30	7	8	8	12	8	26.6%	27.7%	26.7%	39.4%	26.7%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	11	11	11	11	11	14	15	15	47	17	127.7%	128.9%	136.9%	418.1%	151.9%
Quarry Road Access	Tumnaville Road to Quarry	2	2	2	2	2	0	164	0	38	5	0.0%	8815.9%	0.0%	1891.3%	238.9%
Saleyards Road	Campbell Street to Gore Highway	200	208	217	226	235	0	1	1	27	3	0.0%	0.5%	0.5%	11.8%	1.3%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	3	3	3	3	3	7	9	9	7	7	212.1%	268.1%	268.1%	212.1%	212.1%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	10	10	10	10	10	14	16	103	15	14	140.9%	156.4%	1025.5%	150.7%	140.9%
	B2G-LDN123.6 to B2G-LDN123.8	10	10	10	10	10	0	2	0	0	0	0.0%	15.5%	0.0%	0.0%	0.0%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	158	163	168	173	179	0	1,550	1,550	73	6	0.0%	947.1%	918.1%	41.8%	3.5%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	1,045	1,058	1,070	1,083	1,096	31	95	52	46	14	2.9%	9.0%	4.9%	4.3%	1.3%
	New Hope Recycled Water Pipeline to Draper Road	1,045	1,058	1,070	1,083	1,096	20	44	44	21	14	1.9%	4.2%	4.1%	1.9%	1.3%
	Draper Road to Leesons Road	1,045	1,058	1,070	1,083	1,096	6	30	30	7	0	0.6%	2.9%	2.8%	0.6%	0.0%
Tumnaville Road	Access Track to Gore Highway	103	106	110	113	117	0	164	0	38	5	0.0%	154.6%	0.0%	33.2%	4.2%
Turallin Road	Gore Highway to the Turallin Facility	133	133	134	135	136	233	233	233	233	233	175.4%	174.4%	173.4%	172.4%	171.4%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	141	145	150	155	160	21	26	26	26	17	15.0%	18.0%	17.4%	16.9%	10.9%
	B2G-LDN153.1 to Gore Highway	141	145	150	155	160	36	41	52	41	32	25.2%	28.0%	34.8%	26.2%	19.9%
	Gore Highway to B2G-LDN150.9	66	68	70	73	75	0	0	0	8	2	0.0%	0.0%	0.0%	11.1%	2.5%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	686	726	769	814	861	1	1	1	80	3	0.2%	0.2%	0.1%	9.9%	0.3%
West Street	Gore Highway to Florence Street	52	53	53	53	54	0	10	11	7	0	0.3%	19.3%	21.1%	12.5%	0.0%
	Florence Street to Six Mile Road	15	15	15	15	15	0	11	12	7	0	0.9%	76.1%	82.5%	45.0%	0.0%
Yarranlea Road	Gore Highway to B2G-LDN161.0	66	68	70	72	74	18	1,429	1,429	46	16	27.0%	2113.8%	2049.0%	64.6%	21.8%
	B2G-LDN161.0 to Desmonds Lane	66	68	70	72	74	7	7	12	8	7	10.8%	10.4%	17.9%	11.3%	9.5%

Table 5.4 Background and Project traffic volumes (AG/SB/WB)

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads																
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	1,005	1,005	1,005	1,005	1,005	49	64	65	61	40	4.9%	6.4%	6.5%	6.0%	4.0%
	Ch 0.8 km to Ch 2.0 km	1,005	1,005	1,005	1,005	1,005	49	64	65	61	40	4.9%	6.4%	6.5%	6.0%	4.0%
	Ch 2.0 km to Ch 45.9 km	332	332	332	332	332	49	61	61	61	40	14.8%	18.3%	18.3%	18.3%	12.1%
	Ch 45.9 km to Ch 88.0 km	332	332	332	332	332	45	56	56	56	37	13.6%	16.8%	16.8%	16.8%	11.2%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	120	120	120	120	120	45	56	56	56	37	37.7%	46.6%	46.6%	46.6%	30.9%
	Ch 1.6 km to Ch 66.8 km	120	120	120	120	120	42	52	52	52	35	35.2%	43.5%	43.5%	43.5%	28.8%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	92	92	92	92	92	42	52	52	52	35	45.9%	56.7%	56.7%	56.7%	37.6%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	2,938	3,037	3,139	3,245	3,355	0	2	4	4	0	0.0%	0.1%	0.1%	0.1%	0.0%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	889	898	907	916	926	51	51	11	9	0	5.7%	5.7%	1.2%	0.9%	0.0%
	Ch 96.2 km to Ch 97.5 km	889	898	907	916	926	77	77	85	233	0	8.7%	8.6%	9.4%	25.4%	0.0%
	Ch 97.5 km to Ch 105.7 km	889	898	907	916	926	574	124	85	233	0	64.6%	13.9%	9.4%	25.4%	0.0%
	Ch 105.7 km to Ch 107.4 km	889	898	907	916	926	472	328	200	267	116	53.2%	36.6%	22.0%	29.1%	12.6%
	Ch 107.4 km to Ch 107.6 km	1,178	1,194	1,209	1,225	1,241	458	314	184	237	102	38.9%	26.3%	15.2%	19.3%	8.3%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	729	735	740	746	751	458	314	184	237	102	62.9%	42.8%	24.9%	31.7%	13.6%
	Ch 2.0 km to Ch 3.9 km	729	735	740	746	751	458	312	187	237	102	62.9%	42.4%	25.3%	31.7%	13.6%
	Ch 3.9 km to Ch 10.2 km	729	735	740	746	751	227	300	175	186	95	31.2%	40.8%	23.7%	24.9%	12.7%
	Ch 10.2 km to Ch 13.9 km	729	735	740	746	751	213	285	156	171	81	29.2%	38.8%	21.1%	23.0%	10.8%
	Ch 13.9 km to Ch 18.5 km	729	735	740	746	751	231	281	152	147	74	31.6%	38.2%	20.5%	19.8%	9.8%
	Ch 18.5 km to Ch 27.1 km	729	735	740	746	751	189	190	90	58	9	26.0%	25.8%	12.1%	7.7%	1.2%
	Ch 27.1 km to Ch 29.3 km	729	735	740	746	751	211	197	84	61	16	29.0%	26.9%	11.4%	8.2%	2.1%
	Ch 29.3 km to Ch 34.7 km	729	735	740	746	751	191	147	85	62	16	26.2%	20.0%	11.5%	8.3%	2.1%
	Ch 34.7 km to Ch 39.6 km	729	735	740	746	751	191	147	85	62	16	26.2%	20.0%	11.5%	8.3%	2.1%
	Ch 39.6 km to Ch 40.3 km	729	735	740	746	751	220	218	85	65	23	30.2%	29.6%	11.4%	8.8%	3.0%
	Ch 40.3 km to Ch 40.5 km	729	735	740	746	751	70	67	84	64	23	9.7%	9.1%	11.4%	8.6%	3.0%
	Ch 40.5 km to Ch 43.9 km	729	735	740	746	751	67	107	71	64	64	9.2%	14.6%	9.6%	8.6%	8.6%
	Ch 43.9 km to Ch 46.3 km	729	735	740	746	751	24	65	29	22	22	3.4%	8.8%	3.9%	2.9%	2.9%
	Ch 46.3 km to Ch 88.0 km	729	735	740	746	751	24	29	29	22	22	3.4%	3.9%	3.9%	2.9%	2.9%
	Ch 88.0 km to Ch 88.2 km	1,968	1,973	1,978	1,984	1,989	47	54	57	53	42	2.4%	2.7%	2.9%	2.7%	2.1%
	Ch 88.2 km to Ch 90.0 km	1,968	1,973	1,978	1,984	1,989	22	27	27	22	22	1.1%	1.4%	1.3%	1.1%	1.1%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	61,911	65,110	68,473	72,011	75,731	95	117	117	117	78	0.2%	0.2%	0.2%	0.2%	0.1%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	18,768	19,529	20,322	21,146	22,004	95	117	117	117	78	0.5%	0.6%	0.6%	0.6%	0.4%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	3,229	3,343	3,460	3,582	3,708	441	581	242	246	178	13.7%	17.4%	7.0%	6.9%	4.8%
	Ch 2.2 km to Ch 5.4 km	3,229	3,343	3,460	3,582	3,708	995	809	223	221	163	30.8%	24.2%	6.4%	6.2%	4.4%
	Ch 5.4 km to Ch 6.7 km	3,229	3,343	3,460	3,582	3,708	981	795	209	207	148	30.4%	23.8%	6.0%	5.8%	4.0%
	Ch 6.7 km to Ch 7.7 km	3,229	3,343	3,460	3,582	3,708	974	788	302	199	141	30.2%	23.6%	8.7%	5.6%	3.8%
	Ch 7.7 km to Ch 11.2 km	3,229	3,343	3,460	3,582	3,708	956	754	284	182	127	29.6%	22.5%	8.2%	5.1%	3.4%
	Ch 11.2 km to Ch 15.3 km	3,229	3,343	3,460	3,582	3,708	949	747	277	185	121	29.4%	22.3%	8.0%	5.2%	3.3%
	Ch 15.3 km to Ch 17.5 km	3,229	3,343	3,460	3,582	3,708	677	458	321	167	115	21.0%	13.7%	9.3%	4.7%	3.1%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 17.5 km to Ch 19.0 km	3,229	3,343	3,460	3,582	3,708	670	451	314	162	109	20.8%	13.5%	9.1%	4.5%	2.9%
	Ch 19.0 km to Ch 20.3 km	3,229	3,343	3,460	3,582	3,708	663	444	307	161	102	20.5%	13.3%	8.9%	4.5%	2.8%
	Ch 20.3 km to Ch 21.5 km	1,728	1,783	1,839	1,898	1,958	656	437	300	154	95	38.0%	24.5%	16.3%	8.1%	4.9%
	Ch 21.5 km to Ch 23.2 km	1,728	1,783	1,839	1,898	1,958	645	409	287	154	88	37.3%	22.9%	15.6%	8.1%	4.5%
	Ch 23.2 km to Ch 25.0 km	1,728	1,783	1,839	1,898	1,958	370	313	308	188	111	21.4%	17.5%	16.7%	9.9%	5.7%
	Ch 25.0 km to Ch 30.1 km	1,728	1,783	1,839	1,898	1,958	370	1,517	1,580	152	105	21.4%	85.1%	85.9%	8.0%	5.3%
	Ch 30.1 km to Ch 38.7 km	1,728	1,783	1,839	1,898	1,958	381	166	179	187	121	22.0%	9.3%	9.7%	9.9%	6.2%
	Ch 38.7 km to Ch 41.1 km	1,728	1,783	1,839	1,898	1,958	381	154	187	176	118	22.0%	8.6%	10.2%	9.2%	6.0%
	Ch 41.1 km to Ch 41.7 km	1,728	1,783	1,839	1,898	1,958	381	154	187	174	116	22.0%	8.6%	10.2%	9.2%	5.9%
	Ch 41.7 km to Ch 43.2 km	1,728	1,783	1,839	1,898	1,958	396	434	218	188	130	22.9%	24.4%	11.9%	9.9%	6.6%
	Ch 43.2 km to Ch 44.7 km	1,728	1,783	1,839	1,898	1,958	410	442	226	203	144	23.7%	24.8%	12.3%	10.7%	7.4%
	Ch 44.7 km to Ch 47.6 km	1,728	1,783	1,839	1,898	1,958	424	456	240	201	157	24.5%	25.6%	13.1%	10.6%	8.0%
	Ch 47.6 km to Ch 52.2 km	1,728	1,783	1,839	1,898	1,958	438	470	254	204	171	25.3%	26.4%	13.8%	10.8%	8.7%
	Ch 52.2 km to Ch 53.3 km	1,728	1,783	1,839	1,898	1,958	451	480	239	218	185	26.1%	26.9%	13.0%	11.5%	9.4%
	Ch 53.3 km to Ch 60.8 km	1,728	1,783	1,839	1,898	1,958	460	495	241	239	193	26.6%	27.8%	13.1%	12.6%	9.9%
	Ch 60.8 km to Ch 63.0 km	1,728	1,783	1,839	1,898	1,958	201	219	219	231	189	11.6%	12.3%	11.9%	12.2%	9.6%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	1,068	1,075	1,081	1,087	1,094	306	326	334	336	294	28.7%	30.3%	30.9%	30.9%	26.9%
	Ch 0.7 km to Ch 0.8 km	1,068	1,075	1,081	1,087	1,094	306	324	324	336	294	28.7%	30.1%	29.9%	30.9%	26.9%
	Ch 0.8 km to Ch 1.4 km	1,068	1,075	1,081	1,087	1,094	306	325	325	336	294	28.7%	30.2%	30.0%	30.9%	26.9%
	Ch 1.4 km to Ch 3.0 km	1,068	1,075	1,081	1,087	1,094	306	324	324	363	297	28.7%	30.1%	29.9%	33.4%	27.2%
	Ch 3.0 km to Ch 13.0 km	1,068	1,075	1,081	1,087	1,094	74	91	91	131	65	6.9%	8.5%	8.4%	12.0%	5.9%
	Ch 13.0 km to Ch 121.6 km	1,068	1,075	1,081	1,087	1,094	74	91	91	91	60	6.9%	8.5%	8.4%	8.4%	5.5%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	56,166	56,166	56,166	56,166	56,166	95	117	117	117	78	0.2%	0.2%	0.2%	0.2%	0.1%
	Ch 3.7 km to Ch 6.4 km	55,397	56,828	58,295	59,800	61,344	95	117	117	117	78	0.2%	0.2%	0.2%	0.2%	0.1%
	Ch 6.4 km to Ch 8.3 km	67,523	70,891	74,428	78,141	82,039	95	117	117	117	78	0.1%	0.2%	0.2%	0.2%	0.1%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	1,273	1,273	1,273	1,273	1,273	74	91	91	91	60	5.8%	7.2%	7.2%	7.2%	4.8%
	Ch 220.1 km to Ch 222.4 km	1,282	1,282	1,282	1,282	1,282	25	34	35	31	20	1.9%	2.6%	2.7%	2.4%	1.6%
	Ch 222.4 km to Ch 224.1 km	1,282	1,282	1,282	1,282	1,282	25	34	35	31	20	1.9%	2.7%	2.7%	2.4%	1.6%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	18,768	19,529	20,322	21,146	22,004	95	117	117	117	78	0.5%	0.6%	0.6%	0.6%	0.4%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	431	449	468	487	507	285	305	30	10	5	66.1%	67.9%	6.5%	2.1%	0.9%
	Ch 2.5 km to Ch 3.5 km	431	449	468	487	507	274	340	64	53	22	63.7%	75.8%	13.8%	10.8%	4.3%
	Ch 3.5 km to Ch 6.2 km	393	393	393	393	393	352	423	151	110	96	89.6%	107.8%	38.5%	27.9%	24.5%
	Ch 6.2 km to Ch 9.0 km	393	393	393	393	393	345	416	318	102	89	87.8%	105.9%	81.0%	26.1%	22.6%
	Ch 9.0 km to Ch 13.1 km	393	393	393	393	393	331	400	216	88	75	84.2%	102.0%	54.9%	22.5%	19.0%
	Ch 13.1 km to Ch 14.0 km	393	393	393	393	393	331	396	203	92	75	84.3%	100.9%	51.6%	23.4%	19.0%
	Ch 14.0 km to Ch 17.3 km	393	393	393	393	393	314	365	172	150	70	80.0%	93.0%	43.7%	38.3%	17.8%
	Ch 17.3 km to Ch 18.1 km	393	393	393	393	393	314	329	463	149	69	80.0%	83.8%	117.9%	38.0%	17.5%
	Ch 18.1 km to Ch 21.8 km	393	393	393	393	393	307	322	456	142	61	78.1%	81.9%	116.0%	36.2%	15.6%
	Ch 21.8 km to Ch 28.0 km	393	393	393	393	393	291	306	343	125	46	74.2%	77.9%	87.2%	31.9%	11.6%
	Ch 28.0 km to Ch 33.0 km	393	393	393	393	393	277	291	328	108	29	70.6%	74.2%	83.5%	27.5%	7.3%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 33.0 km to Ch 35.6 km	393	393	393	393	393	263	277	309	94	14	66.9%	70.5%	78.8%	23.8%	3.6%
	Ch 35.6 km to Ch 37.7 km	393	393	393	393	393	254	254	10	86	7	64.5%	64.7%	2.6%	21.9%	1.8%
	Ch 37.7 km to Ch 39.8 km	393	393	393	393	393	254	294	10	86	7	64.5%	74.8%	2.6%	21.9%	1.8%
	Ch 39.8 km to Ch 41.9 km	194	200	207	213	219	267	307	22	100	21	137.5%	153.4%	10.5%	46.9%	9.5%
	Ch 41.9 km to Ch 45.9 km	194	200	207	213	219	30	82	30	29	24	15.2%	40.8%	14.6%	13.6%	11.0%
	Ch 45.9 km to Ch 47.6 km	194	200	207	213	219	37	89	37	36	31	18.8%	44.2%	18.0%	16.8%	14.1%
	Ch 47.6 km to Ch 53.3 km	194	200	207	213	219	37	118	37	36	31	18.8%	58.7%	18.0%	16.8%	14.1%
	Ch 53.3 km to Ch 55.7 km	194	200	207	213	219	46	135	46	86	38	23.5%	67.6%	22.4%	40.2%	17.3%
	Ch 55.7 km to Ch 56.6 km	194	200	207	213	219	46	67	46	86	38	23.5%	33.2%	22.4%	40.2%	17.3%
	Ch 56.6 km to Ch 59.2 km	194	200	207	213	219	122	215	146	186	138	63.0%	107.4%	70.8%	87.2%	63.0%
	Ch 59.2 km to Ch 61.0 km	194	200	207	213	219	122	215	146	215	138	63.0%	107.5%	70.8%	101.1%	63.0%
	Ch 61.0 km to Ch 65.7 km	194	200	207	213	219	235	328	132	201	124	121.1%	163.8%	63.9%	94.4%	56.4%
	Ch 65.7 km to Ch 68.7 km	194	200	207	213	219	547	322	128	205	117	281.5%	160.9%	61.8%	96.5%	53.1%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	136	144	153	162	172	14	75	76	14	14	10.6%	52.0%	50.0%	8.9%	8.4%
	Ch 2.0 km to Ch 2.2 km	136	144	153	162	172	0	60	61	0	0	0.0%	41.7%	40.3%	0.0%	0.0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	7,245	7,462	7,686	7,916	8,154	95	117	117	117	78	1.3%	1.6%	1.5%	1.5%	1.0%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	7,245	7,462	7,686	7,916	8,154	95	117	117	117	78	1.3%	1.6%	1.5%	1.5%	1.0%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	128	133	137	142	147	0	40	0	0	0	0.0%	30.4%	0.0%	0.0%	0.0%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	1,889	1,889	1,889	1,889	1,889	98	99	99	98	98	5.2%	5.2%	5.2%	5.2%	5.2%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	2,672	2,690	2,708	2,725	2,743	4	15	10	4	0	0.2%	0.6%	0.4%	0.2%	0.0%
	Ch 6.0 km to Ch 6.4 km	1,693	1,693	1,693	1,693	1,693	4	13	10	0	0	0.2%	0.8%	0.6%	0.0%	0.0%
	Ch 6.4 km to Ch 8.3 km	1,693	1,693	1,693	1,693	1,693	7	31	14	4	0	0.4%	1.8%	0.8%	0.3%	0.0%
	Ch 8.3 km to Ch 9.2 km	1,693	1,693	1,693	1,693	1,693	9	32	15	85	3	0.5%	1.9%	0.9%	5.0%	0.2%
	Ch 9.2 km to Ch 10.0 km	2,256	2,388	2,528	2,675	2,832	16	77	23	27	1	0.7%	3.2%	0.9%	1.0%	0.0%
	Ch 10.0 km to Ch 10.1 km	2,256	2,388	2,528	2,675	2,832	37	98	45	48	22	1.6%	4.1%	1.8%	1.8%	0.8%
	Ch 10.1 km to Ch 10.3 km	2,256	2,388	2,528	2,675	2,832	37	97	43	49	23	1.6%	4.1%	1.7%	1.8%	0.8%
	Ch 10.3 km to Ch 12.1 km	2,256	2,388	2,528	2,675	2,832	22	160	27	36	23	1.0%	6.7%	1.1%	1.4%	0.8%
	Ch 12.1 km to Ch 14.5 km	2,256	2,388	2,528	2,675	2,832	22	254	254	35	24	1.0%	10.6%	10.0%	1.3%	0.9%
	Ch 14.5 km to Ch 16.3 km	1,249	1,279	1,310	1,341	1,373	17	279	279	30	10	1.4%	21.8%	21.3%	2.2%	0.7%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	6,468	6,662	6,861	7,067	7,279	0	2	4	4	0	0.0%	0.0%	0.1%	0.1%	0.0%
	Ch 26.9 km to Ch 27.1 km	6,468	6,662	6,861	7,067	7,279	42	44	47	47	42	0.7%	0.7%	0.7%	0.7%	0.6%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	1,196	1,213	1,231	1,249	1,267	95	117	117	117	78	7.9%	9.7%	9.5%	9.4%	6.1%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	1,196	1,213	1,231	1,249	1,267	95	117	117	117	78	7.9%	9.7%	9.5%	9.4%	6.1%
	Ch 0.6 km to Ch 3.2 km	1,196	1,213	1,231	1,249	1,267	330	412	126	126	78	27.6%	34.0%	10.3%	10.1%	6.1%
	Ch 3.2 km to Ch 4.1 km	1,196	1,213	1,231	1,249	1,267	330	412	126	126	78	27.6%	34.0%	10.3%	10.1%	6.1%
	Ch 4.1 km to Ch 13.0 km	1,196	1,213	1,231	1,249	1,267	343	483	143	148	80	28.7%	39.8%	11.6%	11.8%	6.3%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	1,196	1,213	1,231	1,249	1,267	268	295	20	8	0	22.4%	24.3%	1.6%	0.7%	0.0%
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	1,196	1,213	1,231	1,249	1,267	0	133	0	0	0	0.0%	10.9%	0.0%	0.0%	0.0%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	1,196	1,213	1,231	1,249	1,267	15	70	18	27	2	1.3%	5.8%	1.5%	2.2%	0.1%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	36,970	38,368	39,818	41,323	42,885	95	117	117	117	78	0.3%	0.3%	0.3%	0.3%	0.2%
	Ch 7.2 km to Ch 15.1 km	36,970	38,368	39,818	41,323	42,885	95	117	117	117	78	0.3%	0.3%	0.3%	0.3%	0.2%
	Ch 15.1 km to Ch 18.9 km	17,066	17,430	17,802	18,182	18,570	95	117	117	117	78	0.6%	0.7%	0.7%	0.6%	0.4%
	Ch 18.9 km to Ch 28.9 km	16,391	16,722	17,059	17,403	17,753	95	117	117	117	78	0.6%	0.7%	0.7%	0.7%	0.4%
	Ch 28.9 km to Ch 36.6 km	10,482	10,482	10,482	10,482	10,482	95	117	117	117	78	0.9%	1.1%	1.1%	1.1%	0.7%
	Ch 36.6 km to Ch 55.5 km	13,401	13,761	14,132	14,512	14,902	95	117	117	117	78	0.7%	0.9%	0.8%	0.8%	0.5%
	Ch 55.5 km to Ch 75.4 km	13,401	13,761	14,132	14,512	14,902	95	117	117	117	78	0.7%	0.9%	0.8%	0.8%	0.5%
	Ch 75.4 km to Ch 79.6 km	11,097	11,258	11,421	11,586	11,754	95	117	117	117	78	0.9%	1.0%	1.0%	1.0%	0.7%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	11,222	12,445	13,802	15,306	16,975	310	339	62	55	42	2.8%	2.7%	0.4%	0.4%	0.2%
	Ch 0.4 km to Ch 1.5 km	11,222	12,445	13,802	15,306	16,975	310	339	62	55	42	2.8%	2.7%	0.4%	0.4%	0.2%
	Ch 1.5 km to Ch 2.4 km	11,222	12,445	13,802	15,306	16,975	291	292	40	109	31	2.6%	2.3%	0.3%	0.7%	0.2%
	Ch 2.4 km to Ch 4.5 km	7,165	7,250	7,336	7,423	7,512	276	277	25	21	14	3.9%	3.8%	0.3%	0.3%	0.2%
	Ch 4.5 km to Ch 5.0 km	7,165	7,250	7,336	7,423	7,512	276	277	25	21	14	3.9%	3.8%	0.3%	0.3%	0.2%
	Ch 5.0 km to Ch 5.3 km	7,165	7,250	7,336	7,423	7,512	276	277	45	21	14	3.9%	3.8%	0.6%	0.3%	0.2%
	Ch 5.3 km to Ch 6.2 km	7,165	7,250	7,336	7,423	7,512	276	277	45	21	14	3.9%	3.8%	0.6%	0.3%	0.2%
State-Controlled Roads: Transport for New South Wales																
Newell Highway	River Road to Queensland/NSW Border	2,115	2,131	2,148	2,164	2,181	23	13	5	2	0	1.1%	0.6%	0.2%	0.1%	0.0%
Local Government Roads: Balonne Shire Council																
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	34	35	35	35	36	42	52	52	52	35	122.7%	150.1%	148.9%	147.6%	97.0%
Local Government Roads: Goondiwindi Regional Council																
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	10	10	10	10	10	0	1	1	0	0	0.0%	5.2%	5.2%	0.0%	0.0%
Bybera Road	Cunningham Highway to B2G-LDN060.4	42	43	43	43	44	231	43	13	51	7	545.8%	101.9%	30.3%	117.5%	16.2%
	B2G-LDN060.4 to Earthworks Area 2A	42	42	42	42	42	188	0	0	0	0	449.9%	0.0%	0.0%	0.0%	0.0%
Cemetery Road	Access Track to Moorroobie Lane	112	116	119	123	127	0	40	0	0	0	0.0%	34.9%	0.0%	0.0%	0.0%
	Cunningham Highway to GrainCorp Goondiwindi	68	68	68	69	69	25	31	31	31	20	36.4%	44.8%	44.7%	44.6%	29.5%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	37	38	38	38	39	51	51	11	9	0	136.3%	134.9%	29.7%	22.2%	0.2%
	Coolmunda Dam Access to Cunningham Highway	37	38	38	38	39	51	51	11	9	0	136.3%	134.9%	29.7%	22.2%	0.2%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	60	61	61	61	62	15	17	19	14	14	24.4%	27.8%	30.5%	23.4%	23.2%
	B2G-LDN055.4 to B2G-LDN054.2	60	61	61	61	62	14	17	14	14	14	23.9%	27.3%	23.6%	22.9%	22.8%
	Cunningham Highway to B2G-LDN052.8	60	61	61	61	62	15	18	20	15	14	24.4%	29.5%	32.2%	25.1%	23.2%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	26	26	27	27	27	284	325	15	12	7	1088.2%	1234.5%	54.9%	45.4%	26.1%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	22	23	23	23	24	14	14	16	30	14	64.3%	63.5%	68.9%	130.1%	59.6%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	11	11	12	12	13	32	33	34	41	22	287.9%	288.2%	291.6%	335.3%	175.2%
	NS2B-LDN033.2 to NS2B-LDN035.6	11	11	12	12	13	12	12	19	24	7	110.8%	109.5%	161.3%	200.8%	58.4%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	15	15	16	16	16	497	95	0	0	0	3252.6%	615.8%	0.0%	0.0%	0.0%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	8	8	8	8	9	9	7	9	10	7	122.5%	91.2%	107.7%	123.4%	81.8%
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	14	15	15	16	16	0	69	0	0	0	0.0%	467.7%	0.0%	0.0%	0.0%
Hunt Street	Leichhardt Highway to Boodle Street	10	10	10	10	10	0	1	1	0	0	0.0%	5.2%	5.2%	0.0%	0.0%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	865	893	922	952	983	13	5	12	18	0	1.5%	0.5%	1.2%	1.9%	0.0%
	NS2B-LDN031.0 to South Kurumbul Road	865	893	922	952	983	163	194	12	18	0	18.8%	21.7%	1.2%	1.9%	0.0%
	South Kurumbul Road to Cunningham Highway	32	33	33	33	33	150	191	1	1	0	460.8%	583.3%	2.8%	3.0%	0.0%
	Cunningham Highway to Eukabilla Road	865	893	922	952	983	45	36	31	24	22	5.2%	4.1%	3.4%	2.5%	2.2%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	5	5	5	5	5	32	32	10	30	7	689.0%	683.8%	213.3%	624.9%	146.5%
	McDougalls Road to Cunningham Highway	5	5	5	5	5	32	32	10	30	7	689.0%	683.8%	213.3%	624.9%	146.5%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	18	18	19	20	20	0	40	0	0	0	0.0%	219.9%	0.0%	0.0%	0.0%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	18	18	19	20	20	0	81	0	0	0	0.0%	439.9%	0.0%	0.0%	0.0%
	Mooroobie Lane to Wondalli Kurumbul Road	18	18	19	20	20	0	81	0	0	0	0.0%	439.9%	0.0%	0.0%	0.0%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	14	14	15	15	16	0	69	0	0	0	0.0%	484.4%	0.0%	0.0%	0.0%
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	3	3	3	3	3	29	8	26	16	7	1135.1%	319.0%	932.4%	575.4%	250.8%
Silo Street	Barwon Highway to GrainCorp Talwood	60	60	60	60	60	3	4	4	4	2	5.0%	6.1%	6.1%	6.1%	4.1%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	32	33	35	36	37	13	3	12	17	0	40.4%	9.9%	33.4%	47.6%	0.1%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	43	43	43	43	43	4	5	5	5	3	8.9%	11.0%	11.0%	11.0%	7.3%
Springborg Road	Cunningham Highway to B2G-LDN037.6	4	5	5	5	5	24	9	21	17	7	536.8%	192.6%	466.5%	380.5%	159.3%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	6	6	6	6	6	150	190	0	0	0	2677.4%	3379.4%	0.0%	0.0%	0.0%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	9	10	10	10	11	19	19	11	19	7	209.1%	202.9%	114.1%	185.2%	67.3%
	B2G-LDN067.6 to Millmerran-Inglewood Road	9	10	10	10	11	329	104	13	19	7	3540.4%	1086.3%	133.2%	187.9%	70.0%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	178	178	178	178	179	2	11	11	0	0	1.4%	6.1%	6.1%	0.0%	0.0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	12	12	12	12	12	109	158	83	112	79	1178.8%	1169.9%	711.0%	946.3%	666.1%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	14	14	14	15	15	0	81	0	0	0	0.0%	574.9%	0.0%	0.0%	0.0%
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	9	10	10	10	11	11	20	9	50	7	118.3%	201.9%	89.6%	480.2%	66.2%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	10	10	10	10	10	0	40	0	0	0	0.0%	394.6%	0.0%	0.0%	0.0%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	34	35	36	38	39	18	10	18	26	7	52.4%	29.1%	50.8%	69.2%	18.2%
	B2G-LDN006.3 to Wondalli Kurumbul Road	34	35	36	38	39	14	95	26	37	14	42.4%	270.2%	70.6%	99.1%	37.1%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	34	35	36	38	39	14	14	26	37	14	42.4%	41.0%	70.6%	99.1%	37.1%
	Yelarbon Kurumbul Road to B2G-LDN020.3	34	35	36	38	39	44	23	51	51	22	127.9%	65.1%	141.1%	135.5%	56.0%
	B2G-LDN020.3 to B2G-LDN025.9	32	33	33	33	33	51	30	78	61	29	156.0%	91.6%	236.5%	183.0%	85.9%
	B2G-LDN025.9 to Cunningham Highway	32	33	33	33	33	91	128	104	85	43	279.1%	390.9%	315.4%	254.7%	128.9%
Local Government Roads: Moree Plains Shire Council																
Boggabilla Weir Access	River Road to Boggabilla Weir	11	11	11	12	12	23	13	5	2	0	214.7%	119.0%	41.1%	16.8%	0.2%
River Road	Newell Highway to Boggabilla Weir Access	11	11	11	12	12	23	13	5	2	0	214.7%	119.0%	41.1%	16.8%	0.2%
Local Government Roads: Toowoomba Regional Council																
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	5,537	5,861	6,204	6,567	6,951	1	1	1	1	1	0.0%	0.0%	0.0%	0.0%	0.0%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	3,248	3,259	3,271	3,282	3,294	98	98	98	98	98	3.0%	3.0%	3.0%	3.0%	3.0%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	6,673	6,697	6,720	6,743	6,767	0	1	1	0	0	0.0%	0.0%	0.0%	0.0%	0.0%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	133	138	143	148	153	576	310	15	4	0	432.5%	225.3%	10.2%	2.5%	0.0%
	B2G-LDN188.2 to Gore Highway	133	138	143	148	153	590	325	30	28	15	443.3%	235.7%	20.7%	19.2%	10.1%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	101	104	108	112	116	7	146	146	10	7	7.0%	140.0%	135.3%	8.6%	6.1%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Blackwell Road	Gore Highway to Millmerran Quarry	24	24	24	24	24	0	0	0	42	4	0.0%	0.0%	0.0%	174.8%	18.2%
	Millmerran Quarry to B2G-LDN120.2	24	24	24	24	24	0	0	0	87	11	0.0%	0.0%	0.0%	358.4%	44.9%
	B2G-LDN120.2 to Millmerran-Inglewood Road	6	6	6	6	6	17	31	31	105	23	270.2%	496.6%	496.6%	1690.5%	373.3%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	15	15	15	15	15	0	11	12	7	0	0.9%	76.1%	82.5%	45.0%	0.0%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	60	61	63	64	66	24	54	56	25	14	40.5%	87.7%	88.5%	38.3%	21.8%
	Brimblecombe Road to WL 194467R	60	61	63	64	66	10	39	39	10	0	16.5%	63.8%	62.3%	15.9%	0.0%
Bushy Lane	B2G-LDN183.0 to Gore Highway	50	52	54	56	57	18	35	20	31	15	36.0%	67.1%	37.6%	56.5%	26.4%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	586	610	636	662	690	106	116	117	132	109	18.1%	18.9%	18.3%	20.0%	15.8%
	Saleyards Road to Gore Highway	1,003	1,008	1,014	1,020	1,026	106	115	116	112	106	10.6%	11.4%	11.4%	11.0%	10.3%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	10	10	10	11	11	7	8	10	11	7	68.8%	78.2%	98.0%	102.5%	65.6%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	18	18	18	18	18	14	16	103	15	14	76.5%	84.9%	556.5%	81.8%	76.5%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	8	8	8	9	9	7	7	12	8	7	89.1%	86.4%	148.0%	93.2%	78.7%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	11	11	11	12	12	15	300	58	32	14	138.8%	2736.4%	510.7%	270.7%	117.1%
Draper Road	Steger Road to B2G-FBW206.9	26	26	27	27	27	14	14	14	14	14	54.0%	53.4%	52.8%	52.1%	51.5%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	1,913	2,025	2,144	2,269	2,402	1	1	1	80	3	0.1%	0.1%	0.1%	3.5%	0.1%
	Access Track to Greenwattle Street	1,913	2,025	2,144	2,269	2,402	1	1	1	1	1	0.1%	0.1%	0.1%	0.0%	0.0%
Florence Street	Gore Highway to West Street	168	169	170	171	172	0	1	1	0	0	0.0%	0.6%	0.6%	0.0%	0.0%
Forestry Road	Access Track to Millmerran-Inglewood Road	1	1	1	1	1	0	69	0	0	0	0.0%	5969.1%	0.0%	0.0%	0.0%
	Millmerran-Inglewood Road to Earthworks Area 3B	1	1	1	1	1	0	69	0	0	0	0.0%	5969.1%	0.0%	0.0%	0.0%
Fysh Road	B2G-LDN147.1 to Gore Highway	42	43	44	46	47	14	14	14	44	16	34.6%	33.8%	32.8%	97.2%	33.2%
Gap Road	Gore Highway to Grevillea Street	727	750	774	798	823	0	1	7	2	0	0.0%	0.2%	1.0%	0.2%	0.0%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	24	25	26	27	28	7	7	7	28	8	29.3%	29.6%	28.6%	103.5%	29.2%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	15	16	16	17	17	14	15	24	26	14	91.4%	91.4%	148.4%	155.3%	80.7%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	275	283	292	302	311	0	1	7	2	0	0.0%	0.4%	2.5%	0.6%	0.0%
Hall Road	B2G-LDN139.0 to Gore Highway	2	2	3	3	3	8	23	26	24	8	353.9%	950.1%	1042.4%	923.3%	312.0%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	27	27	27	27	27	0	136	292	0	0	0.0%	494.7%	1064.7%	0.0%	0.0%
	B2G-LDN116.0 to Millmerran-Inglewood Road	27	27	27	27	27	0	136	292	12	1	0.0%	497.1%	1067.0%	44.8%	4.0%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	11	12	13	13	14	0	0	0	79	2	0.0%	0.0%	0.0%	596.0%	13.4%
Kahler Road	Murlaggan Road to B2G-LDN165.6	7	7	8	8	8	7	7	7	11	8	99.0%	96.0%	93.0%	137.6%	96.1%
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	1,950	1,974	1,997	2,021	2,045	276	277	45	21	14	14.2%	14.0%	2.2%	1.0%	0.7%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	44	44	44	44	44	0	136	0	0	0	0.0%	311.5%	0.0%	0.0%	0.0%
	Millmerran-Inglewood Road to Commodore Mine	3	3	3	3	3	0	0	177	0	0	0.0%	0.0%	5485.6%	0.0%	0.0%
Leesons Road	Warrego Highway to Steger Road	43	44	44	45	45	14	148	14	94	16	33.2%	337.5%	32.5%	208.8%	35.8%
	Steger Road to B2G-LDN206.3	43	44	44	45	45	20	154	45	100	16	47.1%	351.2%	100.6%	222.2%	35.9%
Linthorpe Road	Gore Highway to B2G-LDN175.5	22	23	23	24	25	271	453	66	31	8	1243.0%	2002.8%	283.9%	128.2%	32.2%
Linthorpe Valley Road	Geitz Road to Gore Highway	52	54	55	57	59	7	7	7	28	8	13.6%	13.8%	13.3%	48.1%	13.6%
Lochaber Road	Gore Highway to B2G-LDN172.0	198	205	212	219	227	7	7	10	14	8	3.6%	3.5%	4.5%	6.3%	3.3%
	Ch B2G-LDN172.0 to B2G-LDN172.6	198	205	212	219	227	7	7	9	7	7	3.6%	3.4%	4.2%	3.2%	3.1%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	3,210	3,231	3,253	3,274	3,296	4	15	10	4	0	0.1%	0.5%	0.3%	0.1%	0.0%

Road name	Road section	Background traffic daily volumes					Project traffic daily volumes					Road link % increase				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	21	21	21	21	21	15	158	113	37	16	71.9%	737.0%	527.5%	171.2%	73.1%
	B2G-LDN112.1 to Millwood Road	21	21	21	21	21	0	136	0	0	0	0.0%	633.0%	0.0%	0.0%	0.0%
	Millwood Road to Kooroongarra Road	1	1	1	1	1	0	136	0	0	0	0.0%	14717.9%	0.0%	0.0%	0.0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	115	115	115	115	115	11	71	69	15	0	9.8%	61.9%	60.0%	12.9%	0.1%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	226	233	241	248	256	310	310	14	23	15	137.1%	132.9%	5.9%	9.3%	5.7%
	Kahler Road to Gore Highway	226	233	241	248	256	317	317	21	34	22	140.2%	135.9%	8.8%	13.6%	8.8%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	733	734	735	735	736	7	7	13	7	7	1.0%	1.0%	1.8%	1.0%	1.0%
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	2,527	2,557	2,588	2,619	2,650	8	46	12	87	2	0.3%	1.8%	0.4%	3.3%	0.1%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	291	303	316	329	343	3	20	20	30	3	1.2%	6.6%	6.4%	9.1%	0.9%
	B2G-LDN128.2 to B2G-LDN130.0	291	303	316	329	343	279	20	20	30	3	96.0%	6.6%	6.4%	9.1%	0.9%
	B2G-LDN130.0 to Millmerran-Inglewood Road	291	303	316	329	343	540	264	37	44	17	185.5%	87.1%	11.6%	13.4%	5.0%
Paint Mine Road	Gore Highway to B2G-LDN173.5	26	27	28	29	30	7	8	8	12	8	26.6%	27.7%	26.7%	39.4%	26.7%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	12	12	12	12	12	14	15	15	47	17	116.1%	117.2%	124.4%	380.1%	138.1%
Quarry Road Access	Tummalville Road to Quarry	2	2	2	2	2	0	164	0	38	5	0.0%	8815.9%	0.0%	1891.3%	238.9%
Saleyards Road	Campbell Street to Gore Highway	146	147	148	148	149	0	1	1	27	3	0.0%	0.7%	0.7%	17.9%	2.1%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	3	3	3	3	3	7	9	9	7	7	265.1%	335.2%	335.2%	265.1%	265.1%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	10	10	10	10	10	14	16	103	15	14	140.9%	156.4%	1025.5%	150.7%	140.9%
	B2G-LDN123.6 to B2G-LDN123.8	10	10	10	10	10	0	2	0	0	0	0.0%	15.5%	0.0%	0.0%	0.0%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	159	164	169	174	180	0	1,550	1,550	73	6	0.0%	947.1%	918.1%	41.8%	3.5%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	631	639	646	654	662	31	95	52	46	14	4.8%	14.9%	8.1%	7.1%	2.1%
	New Hope Recycled Water Pipeline to Draper Road	631	639	646	654	662	20	44	44	21	14	3.2%	6.9%	6.8%	3.2%	2.1%
	Draper Road to Leeson's Road	631	639	646	654	662	6	30	30	7	0	1.0%	4.7%	4.7%	1.0%	0.0%
Tummalville Road	Access Track to Gore Highway	108	111	115	118	122	0	164	0	38	5	0.0%	148.1%	0.0%	31.8%	4.0%
Turallin Road	Gore Highway to the Turallin Facility	192	193	194	195	196	233	233	233	233	233	121.3%	120.6%	119.9%	119.2%	118.5%
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	138	143	147	152	157	21	26	26	26	17	15.3%	18.3%	17.8%	17.2%	11.1%
	B2G-LDN153.1 to Gore Highway	138	143	147	152	157	36	41	52	41	32	25.7%	28.6%	35.5%	26.7%	20.2%
	Gore Highway to B2G-LDN150.9	62	63	65	68	70	0	0	0	8	2	0.0%	0.0%	0.0%	11.9%	2.7%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	686	726	769	814	861	1	1	1	80	3	0.2%	0.2%	0.1%	9.9%	0.3%
West Street	Gore Highway to Florence Street	52	53	53	53	54	0	10	11	7	0	0.3%	19.3%	21.1%	12.5%	0.0%
	Florence Street to Six Mile Road	15	15	15	15	15	0	11	12	7	0	0.9%	76.1%	82.5%	45.0%	0.0%
Yarranlea Road	Gore Highway to B2G-LDN161.0	57	59	60	62	64	18	1,429	1,429	46	16	31.2%	2439.8%	2365.0%	74.6%	25.2%
	B2G-LDN161.0 to Desmonds Lane	57	59	60	62	64	7	7	12	8	7	12.4%	12.0%	20.6%	13.0%	11.0%

The percentage comparison assessment identified 209 road sections which exceed the 5 per cent threshold in the gazettal direction and 209 road sections which exceed the 5 per cent threshold in the against-gazettal direction. Table 5.5 provides a summary of the number of roads, number of road sections and length of roads by road authority which exceed the prescribed 5 per cent threshold.

Table 5.5 Number of roads exceeding 5 per cent base AADT by road authority

Road authority	Number of roads > 5%	Number of road sections > 5%	Length of roads > 5% (km)
DTMR	18	96	583.6
TfNSW	0	0	0.0
BSC	1	1	0.4
GRC	29	46	159.4
MPSC	2	2	6.7
TRC	44	64	81.4
Total	94	209	831.6

By itself, percentage comparison between traffic conditions without and with the Project does not provide an accurate overview of the Project's impact on the surrounding road network. This is because it does not reflect the magnitude of the Project construction traffic volumes on the performance of the road network. Large exceedances of the 5 per cent threshold are largely attributed to the low background traffic volumes along these road sections.

As per the GTIA, all road links which trigger the 5 per cent threshold are further assessed for road link capacity. This assessment is provided in Section 5.5.

5.1.2 Intersection volumes

Based on the constructability assessment, a list of intersections has been identified which are expected to cater to the movement of construction related activities during the various Construction Works stages. To assist in quantifying the number of intersections which may experience potential construction impacts, a preliminary assessment has been undertaken to compare base traffic flows with construction flows to determine intersections which may require further assessments as per the GTIA.

A summary of the 5 per cent traffic comparison analysis is provided in Table 5.6, which is calculated by expressing the traffic generated by the Project (peak impact year) as a percentage of the background traffic. Red text indicates where the percentage increase is larger than the 5 per cent threshold specified within the GTIA.

Table 5.6 Forecast intersection background and Project traffic volumes

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
State-Controlled Roads: Department of Transport and Main Roads														
Barwon Highway/ Barwon Highway	Southeast - Lagoon Street	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	63	21	61	20	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Northeast - Barwon Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	63	21	61	20	-	-	-	-	0%	0%	0%	0%
		RT	62	16	62	16	-	6	-	6	0%	38%	0%	38%
	Northwest - Barwon Highway	LT	63	21	61	20	-	6	-	6	0%	29%	0%	30%
		T	63	21	61	20	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southwest - Brennans Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	62	16	62	16	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Barwon Highway/ Carnarvon Highway	South - Carnarvon Highway	T	8	4	6	3	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	5	-	5	0%	500%	0%	500%
	East - Barwon Highway	LT	1	0	1	0	-	5	-	5	0%	500%	0%	500%
		RT	9	3	8	2	-	-	-	-	0%	0%	0%	0%
	North - Carnarvon Highway	LT	8	3	8	3	-	-	-	-	0%	0%	0%	0%
		T	6	3	6	3	-	-	-	-	0%	0%	0%	0%
Barwon Highway/ Leichhardt Highway	South - West Street	T	62	16	62	16	-	6	-	6	0%	38%	0%	38%
		RT	58	35	62	38	-	1	-	1	0%	3%	0%	3%
	East - Boundary Road	LT	57	32	61	34	-	1	-	1	0%	3%	0%	3%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Barwon Highway/ Silo Street	North - Leichhardt Highway	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		T	63	21	61	20	-	6	-	6	0%	29%	0%	30%
	South - Silo Road	LT	4	1	4	1	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	East - Barwon Highway	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	9	3	8	2	-	5	-	5	0%	167%	0%	250%
West - Barwon Highway	T	8	3	8	3	-	5	-	5	0%	167%	0%	167%	
	RT	4	2	4	1	-	-	-	-	0%	0%	0%	0%	
Barwon Highway/ South Toobeah Road	South - South Toobeah Road	LT	3	1	2	1	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	East - Barwon Highway	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	23	8	20	7	-	5	-	5	0%	63%	0%	71%
		RT	3	1	3	1	-	-	-	-	0%	0%	0%	0%
	North - Minnel Road	LT	3	1	3	1	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Barwon Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	20	12	19	12	-	-	-	-	0%	0%	0%	0%
		RT	3	1	2	1	-	-	-	-	0%	0%	0%	0%
Barwon Highway/ Town Common Road	Southeast - Barwon Highway	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	62	16	63	16	-	1	-	1	0%	6%	0%	6%
	Northwest - Barwon Highway	T	63	21	61	20	1	-	-	1	2%	0%	0%	5%
		RT	11	4	10	4	-	-	-	-	0%	0%	0%	0%
	Southwest - Town Common Road	LT	9	4	10	4	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Carnarvon Highway/ Noondoo Thallon Road	South - Carnarvon Highway	LT	1	0	1	0	-	5	-	5	0%	500%	0%	500%
		T	3	2	3	1	-	-	-	-	0%	0%	0%	0%
	North - Carnarvon Highway	T	3	1	3	1	-	-	-	-	0%	0%	0%	0%
		RT	8	4	6	3	-	-	-	-	0%	0%	0%	0%
	West - Noondoo Thallon Road	LT	6	3	6	3	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	5	-	5	0%	500%	0%	500%
Cunningham Highway/ Bybera Road	East - Cunningham Highway	T	40	14	28	15	35	14	-	14	88%	100%	0%	93%
		RT	3	0	1	0	4	19	-	19	133%	1900%	0%	1900%
	North - Bybera Road	LT	2	0	4	0	-	19	4	19	0%	1900%	100%	1900%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Cunningham Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	46	20	43	23	-	14	35	14	0%	70%	81%	61%
Cunningham Highway/ Cemetery Road	South - Cunningham Highway	T	78	63	84	69	-	1	11	1	0%	2%	13%	1%
		RT	4	1	4	1	-	-	-	-	0%	0%	0%	0%
	East - Cemetery Road	LT	4	1	4	1	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
	North - Cunningham Highway	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		T	57	59	60	63	11	1	-	1	19%	2%	0%	2%
Cunningham Highway/ Coolmunda Dam Access	South - Coolmunda Dam Access	LT	1	0	1	0	-	5	-	5	0%	500%	0%	500%
		RT	2	1	2	1	-	-	-	-	0%	0%	0%	0%
	East - Cunningham Highway	LT	2	1	2	1	-	-	-	-	0%	0%	0%	0%
		T	36	27	37	28	-	-	-	-	0%	0%	0%	0%
	West - Cunningham Highway	T	37	32	36	32	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	5	-	5	0%	500%	0%	500%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Cunningham Highway/ Cremascos Road	East - Cunningham Highway	T	25	24	25	24	41	1	-	1	164%	4%	0%	4%
		RT	1	0	1	0	7	1	-	1	700%	100%	0%	100%
	North - Cremascos Road	LT	1	0	1	0	-	1	7	1	0%	100%	700%	100%
		RT	3	1	3	1	-	-	-	-	0%	0%	0%	0%
	West - Cunningham Highway	LT	3	1	3	2	-	-	-	-	0%	0%	0%	0%
		T	26	24	29	27	-	1	41	1	0%	4%	141%	4%
Cunningham Highway/ East Sawmill Road	Southeast - Cunningham Highway	T	40	21	30	23	-	1	-	1	0%	5%	0%	4%
		RT	1	0	1	0	-	11	-	11	0%	1100%	0%	1100%
	North - East Sawmill Road	LT	1	0	2	0	-	11	-	11	0%	1100%	0%	1100%
		RT	1	0	1	0	-	16	3	16	0%	1600%	300%	1600%
	Northwest - Cunningham Highway	LT	1	0	1	0	4	16	-	16	400%	1600%	0%	1600%
		T	40	23	40	24	8	1	-	1	20%	4%	0%	4%
Cunningham Highway/ Elizabeth Street	Southeast - Elizabeth Street	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	2	0	2	0	-	-	-	-	0%	0%	0%	0%
	Northeast - Cunningham Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	36	56	36	57	51	12	-	12	142%	21%	0%	21%
		RT	1	0	1	0	7	2	-	2	700%	200%	0%	200%
	Northwest - Elizabeth Street	LT	1	0	1	0	-	2	7	2	0%	200%	700%	200%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southwest - Cunningham Highway	LT	2	0	2	0	-	-	-	-	0%	0%	0%	0%
		T	51	38	59	44	-	12	51	12	0%	32%	86%	27%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Cunningham Highway/ Fosters Road	Northeast - Cunningham Highway	T	33	17	37	20	-	7	-	7	0%	41%	0%	35%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Fosters Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	42	-	42	0%	4200%	0%	4200%
	Southwest - Cunningham Highway	LT	1	0	1	0	-	42	-	42	0%	4200%	0%	4200%
		T	41	19	38	21	-	7	-	7	0%	37%	0%	33%
Cunningham Highway/ Inglewood Quarry Access Road	East - Cunningham Highway	T	33	15	36	18	-	1	-	1	0%	7%	0%	6%
		RT	0	2	0	2	-	-	-	-	0%	0%	0%	0%
	North - Inglewood Quarry Access Road	LT	0	3	0	2	-	-	-	-	0%	0%	0%	0%
		RT	0	2	0	2	-	19	-	19	0%	950%	0%	950%
	West - Cunningham Highway	LT	1	1	0	1	-	19	-	19	0%	1900%	0%	1900%
		T	41	18	38	20	-	1	-	1	0%	6%	0%	5%
Cunningham Highway/ Kildonan Road	South - Newell Highway	LT	34	2	40	3	-	-	-	-	0%	0%	0%	0%
		T	55	49	46	62	-	-	-	-	0%	0%	0%	0%
		RT	2	1	3	2	-	2	-	2	0%	200%	0%	100%
	East - Kildonan Road	LT	2	1	2	1	-	2	-	2	0%	200%	0%	200%
		T	40	3	54	3	-	-	-	-	0%	0%	0%	0%
		RT	15	2	12	6	-	1	11	1	0%	50%	92%	17%
	North - Cunningham Highway	LT	13	2	18	4	11	1	-	1	85%	50%	0%	25%
		T	60	44	50	52	-	-	-	-	0%	0%	0%	0%
		RT	58	5	75	6	-	-	-	-	0%	0%	0%	0%
	West - Goondiwindi Connection Road	LT	72	4	91	3	-	-	-	-	0%	0%	0%	0%
		T	43	3	44	3	-	-	-	-	0%	0%	0%	0%
		RT	24	2	30	4	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Cunningham Highway/ Leichhardt Highway	South - Cunningham Highway	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		T	77	62	83	68	-	1	11	1	0%	2%	13%	1%
	North - Cunningham Highway	T	57	59	60	62	11	1	-	1	19%	2%	0%	2%
		RT	57	32	61	34	-	1	-	1	0%	3%	0%	3%
	West - Leichhardt Highway	LT	58	35	62	38	-	1	-	1	0%	3%	0%	3%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
Cunningham Highway/ McDougalls Road	Northeast - Cunningham Highway	T	25	24	25	24	39	14	-	14	156%	58%	0%	58%
		RT	1	0	1	0	3	1	-	1	300%	100%	0%	100%
	Northwest - McDougalls Road	LT	1	0	1	0	-	1	3	1	0%	100%	300%	100%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
	Southwest - Cunningham Highway	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		T	26	24	29	26	-	14	39	14	0%	58%	134%	54%
Cunningham Highway/ Millmerran-Inglewood Road	East - Cunningham Highway	T	37	14	34	23	-	21	-	21	0%	150%	0%	91%
		RT	1	1	2	2	-	28	-	28	0%	2800%	0%	1400%
	North - Millmerran-Inglewood Road	LT	3	0	3	1	-	28	-	28	0%	2800%	0%	2800%
		RT	13	5	15	3	46	11	-	11	354%	220%	0%	367%
	West - Cunningham Highway	LT	17	8	24	5	-	11	46	11	0%	138%	192%	220%
		T	40	19	35	24	-	21	-	21	0%	111%	0%	88%
Cunningham Highway/ Springborg Road	Northeast - Cunningham Highway	T	24	24	24	24	-	12	4	12	0%	50%	17%	50%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	Northwest - Springborg Road	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		RT	1	0	1	0	-	2	4	2	0%	200%	400%	200%
	Southwest - Cunningham Highway	LT	1	0	1	0	3	2	-	2	300%	200%	0%	200%
		T	26	24	28	26	4	12	-	12	15%	50%	0%	46%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Cunningham Highway/ Texas-Yelarbon Road	South - Texas-Yelarbon Road	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		RT	7	2	7	2	-	-	-	-	0%	0%	0%	0%
	East - Cunningham Highway	LT	8	3	7	2	-	-	-	-	0%	0%	0%	0%
		T	25	24	25	24	-	1	8	1	0%	4%	32%	4%
	West - Cunningham Highway	T	26	24	29	26	8	1	-	1	31%	4%	0%	4%
		RT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
Cunningham Highway/ Whetstone Access Road	Northeast - Cunningham Highway	T	25	24	25	24	-	13	-	13	0%	54%	0%	54%
		RT	1	0	1	0	38	3	-	3	3800%	300%	0%	300%
	Northwest - Whetstone Access Road	LT	1	0	1	0	-	3	38	3	0%	300%	3800%	300%
		RT	1	0	1	0	-	3	4	3	0%	300%	400%	300%
	Southwest - Cunningham Highway	LT	1	0	1	0	4	3	-	3	400%	300%	0%	300%
		T	26	24	29	27	-	13	-	13	0%	54%	0%	48%
Cunningham Highway/ Woodcocks Road	East - Cunningham Highway	T	25	24	25	24	11	1	-	1	44%	4%	0%	4%
		RT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
	North - Woodcocks Road	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Cunningham Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	26	24	29	26	-	1	11	1	0%	4%	38%	4%
Cunningham Highway/ Yelarbon-Keetah Road	East - Cunningham Highway	T	10	2	8	2	-	1	-	1	0%	50%	0%	50%
		RT	39	19	33	22	-	6	11	6	0%	32%	33%	27%
	North - Cunningham Highway	LT	38	21	32	25	11	6	-	6	29%	29%	0%	24%
	West - Wondalli Street	LT	2	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	4	2	3	0	-	1	-	1	0%	50%	0%	100%
Cunningham Highway/ Yelarbon Kurumbul Road	Southeast - Cunningham Highway	LT	2	0	1	0	-	4	22	4	0%	400%	2200%	400%
		T	35	19	32	20	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	2	-	4	-	4	0%	400%	0%	200%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	Northeast - Merton Road	LT	2	1	2	0	-	4	-	4	0%	400%	0%	400%
		T	1	0	1	0	-	1	10	1	0%	100%	1000%	100%
		RT	1	1	1	0	-	-	-	-	0%	0%	0%	0%
	Northwest - Cunningham Highway	LT	1	0	0	1	-	-	1	-	0%	0%	100%	0%
		T	34	19	29	22	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southwest - Yelarbon Kurumbul Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	10	1	-	1	1000%	100%	0%	100%
		RT	1	0	2	0	22	4	-	4	2200%	400%	0%	400%
Gore Highway/ Fysh Road	South - Fysh Road	LT	3	0	3	0	-	-	8	-	0%	0%	267%	0%
		RT	2	2	2	1	-	3	-	3	0%	150%	0%	300%
	East - Gore Highway	LT	2	2	2	1	-	3	-	3	0%	150%	0%	300%
		T	78	38	83	29	-	8	39	8	0%	21%	47%	28%
	West - Gore Highway	T	89	38	111	50	39	8	-	8	44%	21%	0%	16%
		RT	3	1	4	1	8	-	-	-	267%	0%	0%	0%
Gore Highway/ Alderley Street	South - Gore Highway	LT	138	20	96	14	-	1	46	1	0%	5%	48%	7%
		T	389	56	259	39	-	-	-	-	0%	0%	0%	0%
		RT	152	22	152	23	-	1	-	1	0%	5%	0%	4%
	East - Alderley Street	LT	84	11	101	12	-	1	-	1	0%	9%	0%	8%
		T	42	5	25	3	-	-	-	-	0%	0%	0%	0%
		RT	118	15	68	8	-	-	-	-	0%	0%	0%	0%
	North - Gore Highway	LT	132	16	186	23	-	-	-	-	0%	0%	0%	0%
		T	242	30	471	58	-	-	-	-	0%	0%	0%	0%
		RT	120	15	118	15	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Athol School Road	West - Alderley Street	LT	127	16	99	13	-	-	-	-	0%	0%	0%	0%
		T	50	6	58	7	-	-	-	-	0%	0%	0%	0%
		RT	91	12	147	19	46	1	-	1	51%	8%	0%	5%
	East - Gore Highway	T	167	39	268	27	39	7	-	7	23%	18%	0%	26%
		RT	5	3	9	2	8	1	-	1	160%	33%	0%	50%
	North - Athol School Road	LT	11	3	7	2	-	1	8	1	0%	33%	114%	50%
		RT	1	1	1	0	-	48	-	48	0%	4800%	0%	4800%
	West - Gore Highway	LT	1	1	2	0	-	48	-	48	0%	4800%	0%	4800%
		T	274	35	235	42	-	7	39	7	0%	20%	17%	17%
Gore Highway/ Biddeston Southbrook Road	South - Gore Highway	LT	5	1	5	1	-	12	-	12	0%	1200%	0%	1200%
		T	260	33	225	43	-	4	29	4	0%	12%	13%	9%
	North - Gore Highway	T	173	39	254	27	29	4	-	4	17%	10%	0%	15%
		RT	1	0	3	1	3	-	-	-	300%	0%	0%	0%
	West - Biddeston Southbrook Road	LT	3	0	1	0	-	-	4	-	0%	0%	400%	0%
		RT	5	1	6	0	-	12	-	12	0%	1200%	0%	1200%
Gore Highway/ Blackwell Road	South - Gore Highway	T	81	32	58	38	-	8	-	8	0%	25%	0%	21%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Blackwell Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	2	0	-	4	-	4	0%	400%	0%	400%
	North - Gore Highway	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		T	64	30	74	29	-	8	-	8	0%	27%	0%	28%
Gore Highway/ Bushy Lane	South - Gore Highway	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	209	32	212	41	-	56	22	56	0%	175%	10%	137%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	East - Bushy Lane	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Gore Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	165	38	213	27	22	56	-	56	13%	147%	0%	207%
		RT	2	0	7	0	8	2	-	2	400%	200%	0%	200%
	West - Bushy Lane	LT	9	0	5	0	-	2	8	2	0%	200%	160%	200%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
Gore Highway/ Campbell Street	Northeast - Gore Highway	T	47	6	19	2	-	-	-	-	0%	0%	0%	0%
		RT	52	19	22	8	-	9	64	9	0%	47%	291%	113%
	West - Gore Highway	LT	93	12	35	9	64	9	-	9	69%	75%	0%	100%
		RT	14	1	6	2	53	-	-	-	379%	0%	0%	0%
	Southwest - Campbell Street	LT	14	1	6	0	-	-	53	-	0%	0%	883%	0%
		T	54	4	15	1	-	-	-	-	0%	0%	0%	0%
Gore Highway/ Dieckmann Road	Northeast - Gore Highway	T	86	37	93	40	-	6	25	6	0%	16%	27%	15%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	Northwest - Dieckmann Road	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		RT	1	0	1	0	-	24	8	24	0%	2400%	800%	2400%
	Southwest - Gore Highway	LT	1	0	1	0	8	24	-	24	800%	2400%	0%	2400%
		T	97	37	106	41	25	6	-	6	26%	16%	0%	15%
Gore Highway/ Florence Street	East - Gore Highway	T	52	32	50	31	-	3	117	3	0%	9%	234%	10%
		RT	13	1	12	0	-	-	-	-	0%	0%	0%	0%
	Northeast - Florence Street	LT	12	0	13	1	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	West - Gore Highway	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	50	31	52	33	117	3	-	3	234%	10%	0%	9%
Gore Highway/ Gilgai Lane	South - Gilgai Lane	LT	1	0	1	0	-	1	7	1	0%	100%	700%	100%
		RT	1	0	1	1	-	1	-	1	0%	100%	0%	100%
	East - Gore Highway	LT	1	1	1	1	-	1	-	1	0%	100%	0%	100%
		T	92	40	99	43	-	3	46	3	0%	8%	46%	7%
	West - Gore Highway	T	103	40	112	43	46	3	-	3	45%	8%	0%	7%
		RT	1	0	1	0	7	1	-	1	700%	100%	0%	100%
Gore Highway/ Hall Road	East - Hall Road	LT	1	0	1	0	-	2	3	2	0%	200%	300%	200%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Northeast - Gore Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	92	40	99	43	-	8	60	8	0%	20%	61%	19%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Pfeffer Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southwest - Gore Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	103	40	112	43	60	8	-	8	58%	20%	0%	19%
		RT	1	0	1	0	3	2	-	2	300%	200%	0%	200%
Gore Highway/ Linthorpe Road	East - Gore Highway	T	254	51	228	43	15	13	-	13	6%	25%	0%	30%
		RT	2	1	3	0	4	24	-	24	200%	2400%	0%	2400%
	North - Linthorpe Road	LT	5	0	2	0	-	24	4	24	0%	2400%	200%	2400%
		RT	13	2	7	1	-	14	-	14	0%	700%	0%	1400%
	West - Gore Highway	LT	7	1	12	1	-	14	-	14	0%	1400%	0%	1400%
		T	229	44	269	62	-	13	15	13	0%	30%	6%	21%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Linthorpe Valley Road	Northeast - Gore Highway	T	184	51	215	60	18	7	-	7	10%	14%	0%	12%
		RT	3	1	4	1	4	-	-	-	133%	0%	0%	0%
	North - Linthorpe Valley Road	LT	3	1	3	1	-	-	4	-	0%	0%	133%	0%
		RT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
	Southwest - Gore Highway	LT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
		T	222	64	209	60	-	7	18	7	0%	11%	9%	12%
Gore Highway/ Lochaber Road	East - Gore Highway	T	93	34	114	26	8	8	-	8	9%	24%	0%	31%
		RT	2	2	7	1	4	-	-	-	200%	0%	0%	0%
	North - Lochaber Road	LT	12	1	5	0	-	-	4	-	0%	0%	80%	0%
		RT	16	1	12	0	-	1	-	1	0%	100%	0%	100%
	West - Gore Highway	LT	6	1	15	0	-	1	-	1	0%	100%	0%	100%
		T	116	29	151	40	-	8	8	8	0%	28%	5%	20%
Gore Highway/ Millmerran-Inglewood Road	Southeast - Millmerran-Inglewood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	8	8	28	8	-	26	-	26	0%	325%	0%	325%
	Northeast - Gore Highway	LT	7	7	20	10	-	26	-	26	0%	371%	0%	260%
		T	66	29	93	36	-	5	64	5	0%	17%	69%	14%
	Southwest - Gore Highway	T	53	23	90	30	64	5	-	5	121%	22%	0%	17%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Gore Highway/ Millmerran-Leyburn Road	South - Gore Highway	T	63	26	113	40	53	6	-	6	84%	23%	0%	15%
		RT	2	1	4	1	8	1	-	1	400%	100%	0%	100%
	East - Millmerran-Leyburn Road	LT	3	1	4	1	-	1	8	1	0%	100%	200%	100%
		RT	1	1	4	0	-	6	-	6	0%	600%	0%	600%
	North - Gore Highway	LT	2	1	4	1	-	6	-	6	0%	600%	0%	600%
		T	56	27	76	37	-	6	53	6	0%	22%	70%	16%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Murlaggan Road	Southeast - Gap Road	LT	23	1	42	3	-1	1	-	1	-4%	100%	0%	33%
		T	4	0	4	1	-	1	-	1	0%	100%	0%	100%
		RT	2	2	1	1	-	1	-	1	0%	50%	0%	100%
	Northeast - Gore Highway	LT	1	1	1	1	-	1	-	1	0%	100%	0%	100%
		T	53	40	73	37	-	6	-	6	0%	15%	0%	16%
		RT	2	0	2	0	-	25	-	25	0%	2500%	0%	2500%
	Northwest - Murlaggan Road	LT	2	0	14	0	-	25	-	25	0%	2500%	0%	2500%
		T	4	0	21	1	-	1	-	1	0%	100%	0%	100%
		RT	1	0	1	1	-	-	11	-	0%	0%	1100%	0%
	Southwest - Gore Highway	LT	1	0	1	0	10	-	-	-	1000%	0%	0%	0%
		T	67	41	110	50	-	6	-	6	0%	15%	0%	12%
		RT	18	3	49	5	-	1	-	1	0%	33%	0%	20%
Gore Highway/ Oakey-Pittsworth Road	East - Gore Highway	T	61	31	63	24	4	12	-	12	7%	39%	0%	50%
		RT	33	3	56	1	4	-	-	-	12%	0%	0%	0%
	North - Oakey Pittsworth Road	LT	56	3	42	3	-	-	4	-	0%	0%	10%	0%
		RT	5	8	2	6	-	1	-	1	0%	13%	0%	17%
	West - Gore Highway	LT	2	5	8	5	-	1	-	1	0%	20%	0%	20%
		T	80	22	130	38	-	12	4	12	0%	55%	3%	32%
Gore Highway/ Paint Mine Road	East - Gore Highway	T	92	38	124	27	11	7	-	7	12%	18%	0%	26%
		RT	1	0	1	0	3	-	-	-	300%	0%	0%	0%
	North - Paint Mine Road	LT	2	0	1	0	-	-	3	-	0%	0%	300%	0%
		RT	2	0	2	0	-	1	-	1	0%	100%	0%	100%
	West - Gore Highway	LT	1	0	2	0	-	1	-	1	0%	100%	0%	100%
		T	135	30	160	42	-	7	11	7	0%	23%	7%	17%
Gore Highway/ Saleyards Road	South - Saleyards Road	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		RT	9	4	13	6	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	East - Gore Highway	LT	8	3	8	3	-	-	-	-	0%	0%	0%	0%
		T	52	32	50	31	-	9	117	9	0%	28%	234%	29%
	West - Gore Highway	T	50	31	52	33	117	9	-	9	234%	29%	0%	27%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
Gore Highway/ Scrubby Road	Southeast - Scrubby Road	LT	1	0	1	0	-	118	-	118	0%	11800%	0%	11800%
		RT	4	3	4	5	-	12	-	12	0%	400%	0%	240%
	Northeast - Gore Highway	LT	3	3	6	4	-	12	-	12	0%	400%	0%	300%
		T	72	41	116	37	-	8	11	8	0%	20%	9%	22%
	Southwest - Gore Highway	T	83	42	153	52	11	8	-	8	13%	19%	0%	15%
		RT	0	1	1	0	1	118	-	118	100%	11800%	0%	11800%
Gore Highway/ Tummaville Road/ Yarranlea Road	South - Tummaville Road	LT	2	1	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	6	1	4	0	-	-	-	-	0%	0%	0%	0%
	East - Gore Highway	LT	6	2	2	0	-	-	-	-	0%	0%	0%	0%
		T	89	37	87	32	-	7	11	7	0%	19%	13%	22%
		RT	3	1	2	0	-	117	-	118	0%	11700%	0%	11800%
	North - Yarranlea Road	LT	3	0	4	0	-	118	-	118	0%	11800%	0%	11800%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	1	1	1	-	-	8	-	0%	0%	800%	0%
	West - Gore Highway	LT	1	1	1	1	8	-	-	-	800%	0%	0%	0%
		T	84	34	122	40	11	7	-	7	13%	21%	0%	18%
		RT	1	1	2	0	-	-	-	-	0%	0%	0%	0%
Gore Highway/ Turallin Road	East - Gore Highway	T	51	22	68	29	-	-	-	-	0%	0%	0%	0%
		RT	5	1	5	1	-	-	117	-	0%	0%	2340%	0%
	North - Turallin Road	LT	5	3	26	2	117	-	-	-	2340%	0%	0%	0%
		RT	1	0	3	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Ware Street (N)	West - Gore Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	51	23	70	33	-	-	-	-	0%	0%	0%	0%
	South - Ware Street	LT	9	2	9	2	-	1	8	1	0%	50%	89%	50%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
	East - Gore Highway	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		T	100	39	109	42	-	9	18	9	0%	23%	17%	21%
		RT	8	2	9	2	-	-	-	-	0%	0%	0%	0%
	North - Saal Road	LT	8	2	9	2	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Gore Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	107	48	95	50	-	-	-	-	0%	0%	0%	0%
		RT	17	3	9	5	-	-	-	-	0%	0%	0%	0%
Gore Highway/ Ware Street (S)	South - Gore Highway	T	103	40	112	43	25	3	-	3	NA	NA	NA	NA
		RT	4	1	5	1	-	-	-	-	24%	8%	0%	7%
	East - Ware Street	LT	4	1	5	1	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	North - Gore Highway	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	92	40	98	42	-	4	25	4	0%	10%	26%	10%
Gore Highway/ West Street	East - Gore Highway	T	52	32	50	31	-	6	117	6	0%	19%	234%	19%
		RT	2	2	2	2	-	1	-	1	0%	50%	0%	50%
	North - West Street	LT	2	2	2	2	-	1	-	1	0%	50%	0%	50%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Gore Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	50	31	52	33	117	6	-	6	234%	19%	0%	18%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Leichhardt Highway/ Hunt Street	South - Hunt Street	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	East - Leichhardt Highway	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	57	32	61	34	-	2	-	2	0%	6%	0%	6%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Access Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Leichhardt Highway	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	58	35	62	38	-	2	-	2	0%	6%	0%	5%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Millmerran-Inglewood Road/ Blackwell Road	Northeast - Millmerran- Inglewood Road	T	12	9	25	8	29	1	-	1	242%	11%	0%	13%
		RT	1	0	2	0	7	1	-	1	700%	100%	0%	100%
	Northwest - Blackwell Road	LT	1	0	1	0	-	1	7	1	0%	100%	700%	100%
		RT	1	0	1	0	-	8	-	8	0%	800%	0%	800%
	Southwest - Millmerran- Inglewood Road	LT	1	0	1	0	-	8	-	8	0%	800%	0%	800%
		T	21	12	23	6	-	1	29	1	0%	8%	126%	17%
Millmerran-Inglewood Road/ Campbell Street	Northeast - Millmerran- Inglewood Road	T	5	6	11	6	8	3	-	3	160%	50%	0%	50%
		RT	15	5	18	5	46	-	-	-	307%	0%	0%	0%
	Northwest - Campbell Street	LT	1	18	1	30	-	-	45	-	0%	0%	4500%	0%
		RT	16	6	18	3	-	1	-	1	0%	17%	0%	33%
	Southwest - Millmerran- Inglewood Road	LT	17	4	29	2	-	2	-	1	0%	50%	0%	50%
		T	10	10	17	6	-	3	8	3	0%	30%	47%	50%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Millmerran-Inglewood Road/ Commodore Peak Road	South - Millmerran-Inglewood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	16	9	45	6	-	13	36	13	0%	144%	80%	217%
	North - Millmerran-Inglewood Road	T	41	10	28	10	36	13	-	13	88%	130%	0%	130%
		RT	1	0	1	0	7	8	-	8	700%	800%	0%	800%
	West - Commodore Peak Road	LT	1	0	1	0	-	9	7	8	0%	900%	700%	800%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Millmerran-Inglewood Road/ Forestry Road	South - Millmerran-Inglewood Road	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		T	28	10	28	10	-	22	-	22	0%	220%	0%	220%
	North - Millmerran-Inglewood Road	T	24	8	20	7	-	22	-	22	0%	275%	0%	314%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Forestry Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
Millmerran-Inglewood Road/ Grays Road	South - Millmerran-Inglewood Road	T	12	5	11	5	18	3	-	3	150%	60%	0%	60%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Grays Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	6	-	6	0%	600%	0%	600%
	North - Millmerran-Inglewood Road	LT	1	0	1	0	-	6	-	6	0%	600%	0%	600%
		T	10	6	11	6	-	3	18	3	0%	50%	164%	50%
Millmerran-Inglewood Road/ Heckendorf Road	Northeast - Millmerran-Inglewood Road	T	12	9	24	8	29	10	-	10	242%	111%	0%	125%
		RT	1	0	3	0	-	1	-	1	0%	100%	0%	100%
	Northwest - Heckendorf Road	LT	1	0	2	0	-	1	-	1	0%	100%	0%	100%
		RT	1	0	1	0	-	25	-	25	0%	2500%	0%	2500%
	Southwest - Millmerran-Inglewood Road	LT	1	0	1	0	-	25	-	25	0%	2500%	0%	2500%
		T	19	11	20	6	-	10	29	10	0%	91%	145%	167%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Millmerran-Inglewood Road/ Koroongarra Road	South - Millmerran-Inglewood Road	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	16	9	44	8	-	5	43	5	0%	56%	98%	63%
		RT	1	0	1	0	-	15	-	15	0%	1500%	0%	1500%
	East - Koroongarra Road	LT	1	0	1	0	-	15	-	15	0%	1500%	0%	1500%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Millmerran-Inglewood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	42	11	27	10	43	5	-	5	102%	45%	0%	50%
		RT	1	0	1	0	3	1	-	1	300%	100%	0%	100%
	West - Schwarten Road	LT	1	0	1	0	-	1	3	1	0%	100%	300%	100%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
Millmerran-Inglewood Road/ Millwood Road	South - Millmerran-Inglewood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	9	4	18	6	-	3	18	3	0%	75%	100%	50%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Millwood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	12	8	12	0%	1200%	800%	1200%
	North - Millmerran-Inglewood Road	LT	1	0	1	1	7	12	-	12	700%	1200%	0%	1200%
		T	7	2	20	7	18	3	-	3	257%	150%	0%	43%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Millwood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Millmerran-Inglewood Road/ Moffatt Reserve Road	Southeast - Millmerran-Inglewood Road	T	28	10	28	10	-	1	36	1	0%	10%	129%	10%
		RT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
	Northeast - Moffatt Reserve Road	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		RT	8	3	8	3	-	3	-	3	0%	100%	0%	100%
	Northwest - Millmerran-Inglewood Road	LT	7	3	6	2	-	3	-	3	0%	100%	0%	150%
		T	24	8	20	7	36	1	-	1	150%	13%	0%	14%
Millmerran-Inglewood Road/ Owens Scrub Road	South - Owens Scrub Road	LT	8	0	27	2	-	21	8	21	0%	2100%	30%	1050%
		RT	2	0	19	0	-	23	-	23	0%	2300%	0%	2300%
	East - Millmerran-Inglewood Road	LT	6	1	8	0	-	23	-	23	0%	2300%	0%	2300%
		T	19	10	13	7	-	1	-	1	0%	10%	0%	14%
	West - Millmerran-Inglewood Road	T	11	6	18	4	-	1	-	1	0%	17%	0%	25%
		RT	9	4	18	1	8	21	-	21	89%	525%	0%	2100%
Millmerran-Inglewood Road/ Paton Road	South - Millmerran-Inglewood Road	T	28	10	28	10	-	1	11	1	0%	10%	39%	10%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Paton Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	0	1	0	1	1	3	8	3	100%	300%	800%	300%
	North - Millmerran-Inglewood Road	LT	0	1	0	1	8	3	1	3	800%	300%	100%	300%
		T	24	8	20	7	11	1	-	1	46%	13%	0%	14%
Millmerran-Inglewood Road/ Thornton Road	Northeast - Millmerran-Inglewood Road	T	7	3	14	6	46	12	-	12	657%	400%	0%	200%
		RT	1	0	1	0	3	1	-	1	300%	100%	0%	100%
	West - Thornton Road	LT	1	0	1	0	-	1	3	1	0%	100%	300%	100%
		RT	1	0	1	0	-	27	-	27	0%	2700%	0%	2700%
	Southwest - Millmerran-Inglewood Road	LT	1	0	1	0	-	27	-	27	0%	2700%	0%	2700%
		T	8	5	21	6	-	12	46	12	0%	240%	219%	200%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Millmerran-Inglewood Road/ Wongavale Yugalbar Road	South - Millmerran-Inglewood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	12	6	12	6	15	1	-	1	125%	17%	0%	17%
		RT	1	0	1	0	3	4	-	4	300%	400%	0%	400%
	East - Wongavale Yugalbar Road	LT	1	0	1	0	-	4	3	4	0%	400%	300%	400%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Millmerran-Inglewood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	11	6	11	6	1	-	15	1	9%	0%	136%	17%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Robert Wicks Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Texas-Yelarbon Road/ Access Track	South - Texas-Yelarbon Road	T	7	2	7	2	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Unnamed Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
	North - Texas-Yelarbon Road	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		T	8	3	7	2	-	-	-	-	0%	0%	0%	0%
Toowoomba-Cecil Plains Road/ Airport Quarry Wellcamp Access Road	South - Airport Quarry Wellcamp Access Road	LT	1	0	1	0	-	20	-	20	0%	2000%	0%	2000%
		RT	2	9	1	4	-	-	-	-	0%	0%	0%	0%
	East - Toowoomba-Cecil Plains Road	LT	2	12	0	4	-	-	-	-	0%	0%	0%	0%
		T	196	18	93	7	11	1	-	1	6%	6%	0%	14%
	West - Toowoomba-Cecil Plains Road	T	142	14	121	13	-	1	11	1	0%	7%	9%	8%
		RT	1	0	1	0	-	20	-	20	0%	2000%	0%	2000%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Toowoomba-Cecil Plains Road/ Brimblecombe Road	East - Toowoomba-Cecil Plains Road	T	137	25	147	26	4	1	-	1	3%	4%	0%	4%
		RT	3	1	5	3	8	1	-	1	267%	100%	0%	33%
	North - Brimblecombe Road	LT	3	1	5	1	-	1	8	1	0%	100%	160%	100%
		RT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
	West - Toowoomba-Cecil Plains Road	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		T	124	29	189	44	-	1	4	1	0%	3%	2%	2%
Toowoomba-Cecil Plains Road/ Charlton Connection Road	South - Toowoomba-Cecil Plains Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	141	53	194	73	-	-	-	-	0%	0%	0%	0%
		RT	155	75	166	80	-	2	-	2	0%	3%	0%	3%
	East - Carrington Road	LT	155	75	166	80	-	2	-	2	0%	3%	0%	3%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	North - Troys Road	LT	1	1	1	1	-	-	-	-	0%	0%	0%	0%
		T	171	71	145	60	-	-	-	-	0%	0%	0%	0%
		RT	170	75	147	65	-	-	-	-	0%	0%	0%	0%
	West - Heinemann Road	LT	170	75	147	65	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Toowoomba-Cecil Plains Road/ McDougall Street	South - McDougalls Road	LT	97	24	110	27	-	2	-	2	0%	8%	0%	7%
		T	138	34	102	25	-	-	-	-	0%	0%	0%	0%
		RT	97	24	78	19	-	-	-	-	0%	0%	0%	0%
	East - Toowoomba-Cecil Plains Road (Taylor Street)	LT	72	34	52	25	-	-	-	-	0%	0%	0%	0%
		T	453	217	482	230	-	-	-	-	0%	0%	0%	0%
		RT	59	28	52	25	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	North - McDougalls Road	LT	117	29	62	35	-	-	-	-	0%	0%	0%	0%
		T	140	35	89	39	-	-	-	-	0%	0%	0%	0%
		RT	73	18	85	21	-	-	-	-	0%	0%	0%	0%
	West - Toowoomba-Cecil Plains Road (Taylor Street)	LT	41	18	46	21	-	-	-	-	0%	0%	0%	0%
		T	326	144	359	159	-	-	-	-	0%	0%	0%	0%
		RT	107	47	113	50	-	2	-	2	0%	4%	0%	4%
Toowoomba-Cecil Plains Road/ Omara Road	East - Toowoomba-Cecil Plains Road	T	166	30	177	32	-	1	-	1	0%	3%	0%	3%
		RT	201	43	215	46	-	7	-	7	0%	16%	0%	15%
	North - Omara Road	LT	220	36	237	38	-	7	-	7	0%	19%	0%	18%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	West - Toowoomba-Cecil Plains Road	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		T	150	35	228	53	-	1	-	1	0%	3%	0%	2%
Toowoomba-Cecil Plains Road/ Toowoomba Bypass NB Ramps	South - Toowoomba Bypass NB Ramps	LT	2	1	1	1	-	1	-	1	0%	100%	0%	100%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	36	7	14	8	-	6	-	6	0%	86%	0%	75%
	East - Toowoomba-Cecil Plains Road	T	183	25	135	23	11	12	-	12	6%	48%	0%	52%
		RT	6	2	3	1	-	-	-	-	0%	0%	0%	0%
	West - Toowoomba-Cecil Plains Road	LT	28	8	45	8	-	12	-	12	0%	150%	0%	150%
T		102	18	158	19	-	1	11	1	0%	6%	7%	5%	
Toowoomba-Cecil Plains Road/ Toowoomba Bypass SB Ramps	East - Toowoomba-Cecil Plains Road	LT	21	10	26	6	-	6	10	-4	0%	60%	38%	-67%
		T	149	20	113	18	11	1	-	1	7%	5%	0%	6%
	North - Toowoomba Bypass SB Ramp	LT	7	1	4	4	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	40	7	25	6	-	12	-	12	0%	171%	0%	200%
	West - Toowoomba-Cecil Plains Road	T	134	24	170	26	-	7	11	7	0%	29%	6%	27%
RT		4	0	1	0	-	1	-	1	0%	100%	0%	100%	

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Toowoomba-Cecil Plains Road/ Access Track	South - Unnamed Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	4	3	4	0%	400%	300%	400%
	East - Toowoomba-Cecil Plains Road	LT	1	0	1	0	3	4	-	4	300%	400%	0%	400%
		T	70	17	124	31	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	20	-	20	0%	2000%	0%	2000%
	North - Unnamed Road	LT	1	0	1	0	-	20	-	20	0%	2000%	0%	2000%
		T	70	17	124	31	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Toowoomba-Cecil Plains Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Toowoomba-Cecil Plains Road/ Wellcamp Westbrook Road	South - Wellcamp Westbrook Road	LT	45	14	48	15	-	7	-	7	0%	50%	0%	47%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Toowoomba-Cecil Plains Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	130	22	151	25	-	1	-	1	0%	5%	0%	4%
		RT	43	13	65	21	-	-	-	-	0%	0%	0%	0%
	North - Wellcamp Westbrook Road	LT	43	13	65	20	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Toowoomba-Cecil Plains Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	118	41	165	56	-	-	-	-	0%	0%	0%	0%
		RT	45	22	48	22	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Warrego Highway/ Chamberlain Road	North - Chamberlain Road	LT	1	0	1	0	-	1	3	1	0%	100%	300%	100%
	West - Warrego Highway	LT	1	0	1	0	4	1	-	1	400%	100%	0%	100%
		T	466	113	502	121	-	1	4	1	0%	1%	1%	1%
Warrego Highway/ Leesons Road	East - Warrego Highway	T	459	95	636	65	8	1	-	1	2%	1%	0%	2%
		RT	1	0	1	1	8	12	-	12	800%	1200%	0%	1200%
	North - Leesons Road	LT	3	0	3	1	-	12	8	12	0%	1200%	267%	1200%
	West - Warrego Highway	LT	1	0	2	0	-	-	-	-	0%	0%	0%	0%
		T	679	69	641	89	-	1	8	1	0%	1%	1%	1%
Warrego Highway/ Omara Road/ Steger Road	South - Omara Road	LT	133	19	112	10	-	7	-	7	0%	37%	0%	70%
		T	7	1	11	3	-	1	-	1	0%	100%	0%	33%
		RT	17	14	42	12	-	-	-	-	0%	0%	0%	0%
	East - Warrego Highway	LT	34	7	42	5	-	-	-	-	0%	0%	0%	0%
		T	8	2	13	3	-	1	-	1	0%	50%	0%	33%
		RT	32	8	31	4	8	1	-	1	25%	13%	0%	25%
	North - Steger Road	LT	10	5	16	5	-	1	8	1	0%	20%	50%	20%
		T	8	2	13	3	-	1	-	1	0%	50%	0%	33%
		RT	5	2	11	2	-	1	-	1	0%	50%	0%	50%
	West - Warrego Highway	LT	31	2	30	5	-	1	-	1	0%	50%	0%	20%
		T	7	1	11	3	-	1	-	1	0%	100%	0%	33%
		RT	128	14	170	18	-	7	-	7	0%	50%	0%	39%
Warrego Highway/ Toowoomba Bypass NB Ramps	South - Toowoomba Bypass NB Ramps	LT	6	1	8	7	-	25	-	25	0%	2500%	0%	357%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	25	1	36	3	-	-	-	-	0%	0%	0%	0%
	East - Warrego Highway	T	427	90	532	84	22	-	-	-	5%	0%	0%	0%
		RT	2	10	5	8	-	-	-	-	0%	0%	0%	0%
		UT	1	0	3	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	West - Warrego Highway	LT	83	34	131	38	-	-	-	-	0%	0%	0%	0%
		T	526	65	519	59	-	25	22	25	0%	38%	4%	42%
Warrego Highway/ Toowoomba Bypass SB Ramps	East - Warrego Highway	LT	42	3	25	2	-	-	-	-	0%	0%	0%	0%
		T	334	62	481	48	22	-	-	-	7%	0%	0%	0%
	North - Toowoomba Bypass SB Ramps	LT	6	8	4	10	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	95	39	58	44	-	-	-	-	0%	0%	0%	0%
	West - Warrego Highway	T	547	63	548	58	-	-	22	-	0%	0%	4%	0%
		RT	4	3	6	3	-	25	-	25	0%	833%	0%	833%
Warrego Highway Off-ramp/ Kingsthorpe Overpass	South - Gowrie Mountain School Road	T	9	1	11	2	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southeast --	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	5	0	5	0	-	-	-	-	0%	0%	0%	0%
	Northeast - Warrego Highway On/Off Ramp	LT	1	0	1	0	3	22	3	22	300%	2200%	300%	2200%
		LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	144	10	155	11	-	-	-	-	0%	0%	0%	0%
	North - Kingsthorpe Overpass	LT	5	1	7	2	-	-	-	-	0%	0%	0%	0%
		LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	10	2	11	2	-	-	-	-	0%	0%	0%	0%
State-Controlled Roads: Transport for New South Wales														
Newell Highway/ River Road	South - Newell Highway	T	162	76	143	67	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - River Road South	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	2	-	2	0%	200%	0%	200%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	North - Newell Highway	LT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
		T	161	79	158	78	-	-	-	-	0%	0%	0%	0%
Local Government Roads: Goondiwindi Regional Council														
Cemetery Road/ Access Track	Southeast - Cemetery Road	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	9	2	8	1	-	-	-	-	0%	0%	0%	0%
	North - Unnamed Road	LT	9	2	9	2	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
	Northwest - Cemetery Road	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Coolmunda Dam Access/ Coolmunda Dam Access	South - Coolmunda Access	T	2	1	2	1	-	-	-	-	0%	0%	0%	0%
		RT	2	1	2	1	-	-	-	-	0%	0%	0%	0%
	East - Coolmunda Dam Access	LT	2	1	2	1	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	5	-	5	0%	500%	0%	500%
	North - Coolmunda Access	LT	1	0	1	0	-	5	-	5	0%	500%	0%	500%
		T	2	1	2	1	-	-	-	-	0%	0%	0%	0%
Hunt Street/ Boodle Street	South - Boodle Street	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Hunt Street	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Hunt Street	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
Kildonan Road/ Eukabilla Road	Southeast - Kildonan Road	T	82	9	81	9	-	1	-	1	0%	11%	0%	11%
		RT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
	Northeast - Eukabilla Road	LT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
		RT	1	0	1	0	-	1	11	1	0%	100%	1100%	100%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Kildonan Road/ South Kurumbul Road	Northwest - Kildonan Road	LT	1	0	1	0	11	1	-	1	1100%	100%	0%	100%
		T	84	9	75	8	-	1	-	1	0%	11%	0%	13%
	Northeast - Kildonan Road	T	82	9	81	9	-	1	-	1	0%	11%	0%	11%
		RT	2	1	2	1	-	-	-	-	0%	0%	0%	0%
	North - South Kurumbul Road	LT	2	1	2	1	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
McDougalls Road/ Access Track	Southeast - McDougalls Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	3	3	-	3	300%	300%	0%	300%
	Northwest - Unnamed Road	T	1	0	1	0	-	3	3	3	0%	300%	300%	300%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southwest - McDougalls Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Mooroobie Lane/ Cemetery Road	Northeast - Mooroobie Lane	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
	Northwest - Cemetery Road	LT	1	0	1	0	-	4	-	4	0%	400%	0%	400%
		RT	9	1	9	1	-	-	-	-	0%	0%	0%	0%
	Southwest - Mooroobie Lane	LT	10	2	8	1	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Mooroobie Lane/ Mooroobie Lane	Northeast - Mooroobie Lane	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
	West - Mooroobie Lane	LT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southwest - Boggabilla Lane	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Mosquito Creek Road/ Grays Road	South - Mosquito Creek Road	LT	1	0	1	0	-	6	-	6	0%	600%	0%	600%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Mosquito Creek Road	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southwest - Grays Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	6	-	6	0%	600%	0%	600%
Suttons Road/Access Track	Southeast - Unnamed Road	LT	1	0	1	0	-	16	-	16	0%	1600%	0%	1600%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Northeast - Suttons Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Southwest - Suttons Road	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	16	-	16	0%	1600%	0%	1600%
Wondalli Kurumbul Road/ Moorobie Lane	South - Wondalli Kurumbul Road	LT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Danes Lane	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Wondalli Kurumbul Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Moorobie Lane	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	7	-	7	0%	700%	0%	700%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Yelarbon Kurumbul Road/Queen Street South	East - Yelarbon Kurumbul Road	T	3	0	3	0	8	1	-	1	267%	100%	0%	100%
		RT	1	0	1	0	3	2	-	2	300%	200%	0%	200%
	Northeast - Queen Street South	LT	1	0	1	0	-	2	3	2	0%	200%	300%	200%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Yelarbon Kurumbul Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	2	0	2	0	-	1	8	1	0%	100%	400%	100%
Yelarbon Kurumbul Road/South Kurumbul Road	East - Yelarbon Kurumbul Road	LT	2	1	2	1	-	2	-	2	0%	200%	0%	200%
		T	4	0	4	0	4	1	-	1	100%	100%	0%	100%
	West - Yelarbon Kurumbul Road	T	2	0	2	0	-	1	4	1	0%	100%	200%	100%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	Southwest - South Kurumbul Road	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		RT	2	1	2	1	-	2	-	2	0%	200%	0%	200%
Yelarbon Kurumbul Road/Wondalli Kurumbul Road	East - Yelarbon Kurumbul Road	T	3	0	3	0	8	1	-	1	267%	100%	0%	100%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Wondalli Kurumbul Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
	West - Yelarbon Kurumbul Road	LT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
		T	2	0	2	0	-	1	8	1	0%	100%	400%	100%
Local Government Roads: Moree Plains Shire Council														
River Road/River Road	South - River Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
	East - River Road	LT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Unnamed Road	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Local Government Roads: Toowoomba Regional Council														
Campbell Street/Saleyards Road	South - Campbell Street	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		T	81	9	110	11	-	-	53	-	0%	0%	48%	0%
	North - Campbell Street	T	82	9	86	9	53	-	-	-	65%	0%	0%	0%
		RT	10	4	10	4	-	-	-	-	0%	0%	0%	0%
	West - Saleyards Road	LT	11	5	16	6	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
Commodore Peak Road/Scragg Road	East - Commodore Peak Road	T	2	0	2	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	7	8	-1	8	700%	800%	-100%	800%
	North - Scragg Road	LT	1	0	1	0	-1	8	7	8	-100%	800%	700%	800%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Commodore Peak Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Drayton Wellcamp Road/Boundary Street South	South - Boundary Street South	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Drayton Wellcamp Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	133	24	202	36	-	1	-	1	0%	4%	0%	3%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Unnamed Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
	West - Drayton Wellcamp Road	LT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
		T	141	25	150	27	-	1	-	1	0%	4%	0%	4%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Forestry Road/ Access Track	East – Forestry Road	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	6	-	6	0%	600%	0%	600%
	North - Unnamed Road	LT	1	0	1	0	-	6	-	6	0%	600%	0%	600%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Forestry Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Gap Road/Grevillea Street	South - Grevillea Road	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		RT	16	6	17	7	-	-	-	-	0%	0%	0%	0%
	East - Gap Road	LT	15	6	16	6	-	-	-	-	0%	0%	0%	0%
		T	51	7	56	8	-	-	-	-	0%	0%	0%	0%
	West - Gap Road	T	45	6	49	6	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
Greenwattle Street/Alderley Street	South - Greenwattle Street	T	149	27	159	28	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
	East - Alderley Street	LT	1	0	1	0	-	1	-	1	0%	100%	0%	100%
		RT	426	53	648	82	-	-	-	-	0%	0%	0%	0%
	North - Greenwattle Street	LT	451	56	482	60	-	-	-	-	0%	0%	0%	0%
		T	141	25	214	38	-	-	-	-	0%	0%	0%	0%
Kingsthorpe Haden Road/Kingsthorpe Overpass	South - Kingsthorpe Haden Road	LT	2	0	3	0	-	-	-	-	0%	0%	0%	0%
		T	6	0	5	1	-	-	-	-	0%	0%	0%	0%
	North - Kingsthorpe Haden Road	T	275	15	90	7	-	-	-	-	0%	0%	0%	0%
		RT	5	2	7	1	-	-	-	-	0%	0%	0%	0%
	West - Kingsthorpe Overpass	LT	54	9	249	12	-	-	-	-	0%	0%	0%	0%
		RT	16	1	5	1	4	22	4	22	25%	2200%	80%	2200%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Koroongarra Road/Millwood Road	South - Koroongarra Road	LT	1	0	1	0	-	12	-	12	0%	1200%	0%	1200%
		T	3	2	2	2	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Stafford Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Koroongarra Road	LT	1	1	1	0	-	-	-	-	0%	0%	0%	0%
		T	3	2	3	2	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Millwood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	12	-	12	0%	1200%	0%	1200%
Leesons Road/Steger Road	South - Leesons Road	T	2	0	3	0	8	1	-	1	400%	100%	0%	100%
		RT	37	14	40	15	-	-	-	-	0%	0%	0%	0%
	East - Steger Road	LT	56	13	70	16	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
	North - Leesons Road	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		T	3	0	3	0	-	1	8	1	0%	100%	267%	100%
Linthorpe Valley Road/Geitz Road	South - Luck Road	T	1	0	2	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	2	3	2	0%	200%	300%	200%
	East - Linthorpe Valley Road	LT	1	0	1	0	3	2	-	2	300%	200%	0%	200%
		RT	4	1	4	1	-	-	-	-	0%	0%	0%	0%
	North - Linthorpe Valley Road	LT	4	1	4	1	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Millwood Road/Millwood Road	South - Millwood Road	LT	1	0	1	0	-	12	-	12	0%	1200%	0%	1200%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Millmerran Road	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Millwood Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	12	-	12	0%	1200%	0%	1200%
Murlaggan Road/Kahler Road	South - Kahler Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Murlaggan Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	18	1	19	1	8	1	-	1	44%	100%	0%	100%
		RT	1	0	1	0	3	1	-	1	300%	100%	0%	100%
	North - Kahler Road	LT	1	0	1	0	-	1	3	1	0%	100%	300%	100%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Murlaggan Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	16	1	18	1	-	1	8	1	0%	100%	44%	100%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Six Mile Road/Bligh Street	Southeast - Six Mile Road	T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
	Northeast - Bligh Street	LT	1	0	1	0	-	2	-	2	0%	200%	0%	200%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Northwest - Six Mile Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
Steger Road/Draper Road	South - Steger Road	LT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
		T	56	13	70	16	8	-	-	-	14%	0%	0%	0%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	North - Draper Road	T	37	14	40	15	-	-	8	-	0%	0%	20%	0%
		RT	56	14	70	16	-	-	-	-	0%	0%	0%	0%
	West - Steger Road	LT	37	13	40	15	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	3	-	3	0%	300%	0%	300%
Tummaville Road/Quarry Road Access	South - Tummaville Road	T	7	2	2	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	East - Unnamed Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	14	-	14	0%	1400%	0%	1400%
	North - Tummaville Road	LT	1	0	1	0	-	14	-	14	0%	1400%	0%	1400%
		T	4	1	6	1	-	-	-	-	0%	0%	0%	0%
Wellcamp Westbrook Road/Drayton Wellcamp Road	South - Wellcamp Westbrook Road	T	45	15	48	15	-	-	-	-	0%	0%	0%	0%
		RT	141	25	150	27	-	-	-	-	0%	0%	0%	0%
	East - Drayton Wellcamp Road	LT	133	24	202	36	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
	North - Wellcamp Westbrook Road	LT	1	0	1	0	-	7	-	7	0%	700%	0%	700%
		T	43	13	65	20	-	-	-	-	0%	0%	0%	0%
West Street/Florence Street	South - West Street	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	2	2	2	2	-	1	-	1	0%	50%	0%	50%
		RT	12	0	12	0	-	-	-	-	0%	0%	0%	0%
	Northeast - Florence Street	LT	12	0	12	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	Northwest - West Street	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	2	2	2	2	-	1	-	1	0%	50%	0%	50%
		RT	13	0	12	0	-	1	-	1	0%	100%	0%	100%

Intersection	Intersection approach	Turn movement*	Peak impact year Background traffic volumes				Project peak construction traffic				Intersection turn movement % increase			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Yarranlea Road/Desmonds Lane	Southwest - Florence Street	LT	13	0	12	0	-	1	-	1	0%	100%	0%	100%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	South - Yarranlea Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	3	1	3	1	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	3	1	-	1	300%	100%	0%	100%
	East - Desmonds Lane	LT	1	0	1	0	-	1	3	1	0%	100%	300%	100%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	North - Yarranlea Road	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	3	1	3	1	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
	West - Desmonds Lane	LT	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		T	1	0	1	0	-	-	-	-	0%	0%	0%	0%
		RT	1	0	1	0	-	-	-	-	0%	0%	0%	0%

Table note:

* T = through LT = left turn RT = right turn

All intersections where the Project traffic exceeds 5 per cent of the base traffic for any movement in the peak periods require quantifying the impacts on intersection delays as per the GTIA requirement. A detailed intersection delay assessment is provided in Section 5.4.

5.2 Road safety impact assessment and mitigation

5.2.1 Methodology

The road safety impact assessment has been undertaken as per the framework laid out in Part C (Section 9) of the GTIA. This framework relies on the principle that a road's safety is not significantly worsened as a result of the Project and that any pre-existing or Project -introduced unacceptable safety risk is addressed for all road users. Road users are defined as all transport modes that use the infrastructure under assessment, including drivers, cyclists and pedestrians. The GTIA acknowledges that safety is not readily quantifiable and may require scoring based on expert opinion on the changes to likelihood and/or consequence of a risk being realised. This road safety impact assessment has the following aims in accordance with the Project's TIA – Road Safety Methodology Technical Memo which was agreed with DTMR in November 2022 (Appendix BS).

- Establishing the existing safety risks relevant to the Project TIA study area. It is proposed that existing safety issues will be obtained from consultation with the road controlling authorities and a desktop review of relevant available data and information including published crash histories
- Identifying the likely new risks or modified risks resulting from the Project
- Completing a risk assessment of the likelihood and consequence of safety risks being increased because of Project traffic
- Recommending management and mitigation works to ensure the existing safety risk rating for the road is not worsened because of the Project and that any unacceptable safety risk is addressed.

The assessment process methodology is outlined in Figure 5.3. The process applies to intersections, road links and road-rail interface locations along construction traffic routes.

This process has been utilised to determine safety risks along the Project construction traffic routes and project road-rail interface locations.

A safety risk assessment based on existing crash history has been undertaken along the Project construction traffic routes and road-rail interface locations for the following scenarios:

- 'Without' Project
- 'With' Project
- 'With' Project and with mitigation measures (required only if the score in the with Project situation is higher than in the without Project situation, or if the without Project score is in the 'high' category).

It is important to note that impacts to active transport road users (cyclists and pedestrians) caused by construction works will be mitigated through traffic management plans for specific areas and construction tasks. These plans will be prepared within the Early Works and Pre-construction Activities and Construction Works stages of the Project when further construction timeline and staging activity information is available, and therefore active transport impacts have not been specifically addressed in detail through this EIS Road safety impact assessment and mitigation report.

The safety assessment has given high level consideration to the likelihood of local traffic 'rat running' or 'racing' between level crossings to beat a train in order to avoid being caught at level crossing closures at road-rail interfaces. Level crossing spacings on the project are generally in excess of 2 km, as shown in Appendix BV, suggesting that the travel time to rat run to the next nearest level crossing is greater than the average closure time of between 102 and 150 seconds (for a train travel of 110 km/h - Table 5.71, or 60 km/h - Table 5.72, respectively). There are no locations along the alignment where this is possible, and it is likely that it would require unsafe driver behaviour (i.e. speeding) to achieve. Therefore, this safety risk is considered unlikely.



Figure 5.3 Guidelines to Traffic Impact Assessment (2018) road safety impact assessment methodology

As per Part C of the GTIA, road safety risk is considered in terms of changes in:

- Likelihood: how often an event or situation is expected to take place
- Consequence: the effect, result, or outcome of something occurring.

Classifications for likelihood and consequence that have been used in this risk assessment have been provided in Table 5.7 and Table 5.8 respectively. The resulting risk ratings have been provided in Table 5.9. These risk ratings are reflective of those provided in Table 9.3.2(a) of the GTIA.

Table 5.7 Consequence classification – based on five-year reported crash data

Consequence	Safety risk classification
Extreme	One or more reported fatalities
Major	One or more reported crashes resulting in hospitalisation
Moderate	One or more reported crashes resulting in medical treatment
Minor	One or more reported crashes resulting in minor injuries treatment
Not significant	No crashes or property damage only

Table 5.8 Risk likelihood description

Risk Likelihood	Description
Almost certain	Crash severity occurs more than ten times per year
Likely	Crash severity occurs or would potentially occur about five times or more per year
Moderate	Crash severity occurs or is likely to occur about once per year
Unlikely	Crash severity occurs or is likely to occur about once every five years
Rare	Crash severity occurs or is likely to occur less frequently than once every five years

Table 5.9 Risk rating

Risk Likelihood	Consequence				
	Not significant	Minor	Moderate	Major	Extreme
Almost certain	Medium	Medium	High	High	High
Likely	Medium	Medium	Medium	High	High
Moderate	Low	Medium	Medium	Medium	High
Unlikely	Low	Low	Medium	Medium	Medium
Rare	Low	Low	Low	Medium	Medium

Road safety audits for the permanent road changes for the design of the Project, not necessitated by results of the revised draft EIS TIA, will be undertaken as part of the road design development process separate to the revised draft EIS TIA.

Where a road safety audit is required, the audit will be undertaken by DTMR accredited road safety auditors who are independent of the design team. A Feasibility Stage road safety audit will be undertaken in accordance with *Austroads Guide to Road Safety Part 6: Road Safety Audit* (AGRS06-19) and the *DTMR Supplement to Traffic and Road Use Management Manual Volume 2: Guide to Road Safety, Part 6: Road Safety Audit*. Where a road safety assessment is required, this will be undertaken by the Future Freight Joint Venture (FFJV) team.

The revised draft EIS TIA will also assess any existing level crossings within an impact assessment area in accordance with GTIA Section 14 and *DTMR Guide to Development in a Transport Environment: Rail*.

5.2.2 Whole of project mitigation measures

As this road safety impact assessment is part of the revised draft EIS stage of the Project, common non-infrastructure-based mitigation measures applicable in subsequent project stages have been listed in Table 5.10 for intersections and Table 5.11 for road links. These mitigation measures are required by DTMR policies and guidelines, and health and safety legislation for construction sites. For many of the road links and intersections assessed, the mitigation measures recommended include mitigation measures for later Project stages.

Table 5.10 Detailed Design and Construction Works Stage road safety mitigation measures for intersections

Stage	Mitigation
Detailed Design	Road safety audits need be carried out at Detailed Design stage and post-construction stage where such road upgrade works are required. Road safety audits will be undertaken by an accredited road safety auditor, in accordance with the <i>Austrroads Guide to Road Safety Part 6A: Implementing Road Safety Audits</i> (Austrroads, 2019c). Turn lanes will be designed and fully compliant with the requirements and design criteria as outlined in the <i>Guide to Road Design Part 3 - Geometric Design</i>, 2017 and <i>Guide to Road Design Part 4 - Intersections and Crossings</i>, 2017. Requirements for turn lane treatments to be finalised during Detailed Design stage as well as updated during the Construction Works stage and as per contractor required risk assessments when preparing appropriate Traffic Management Plans (TMP) and Traffic Guidance Schemes (TGS) in accordance with the <i>Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads</i> and DTMR's specification 'MRTS02 – Provision for traffic' requirements). This should reflect updated construction duration estimates and final peak hour volumes. All conflict points impacting vehicle turn path to be relocated/removed. Further road widening works of kerb turnouts or carriageway of minor road to accommodate vehicle swept path would be reviewed in detailed design stage. Once a construction contractor is appointed, consultation between the construction contractor, ARTC, local councils and DTMR regarding the provision of road impact assessments and road safety audits for all impacted LGRs and SCR will be required. Additionally, the contractor will be required to commit to delivering appropriate mitigation measures (which have been agreed by the relevant road authorities) which address all identified road operation and safety matters and issues. Ongoing consultation will ensure directly impacted stakeholders are involved in developing the road safety mitigations. Opportunities to accommodate greater separation distances between rail and neighbouring roads will be investigated, in consultation with DTMR and in accordance with <i>AS 1742.7-2016 and Road Planning and the Design Manual – Edition 2: Volume 3, Supplement to Austrroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections</i> (DTMR, 2014).
Pre-Construction Activities and Early Works and Construction Works	Construction traffic on known school bus routes, or routes with significant cyclist or pedestrian activity will be restricted to only essential movements during pick-up and set-down times on school days, or peak active transport periods. Further measures may include measures such as signage or protection on construction routes with a high proportion of cyclists or pedestrians, employing contractor driver briefings on safe driving to avoid active transport users and community notifications. Once a construction contractor is appointed, construction routes and vehicle numbers are finalised, specific measures to mitigate impacts to active transport users will be required to be developed for the construction routes on a case-by-case basis. This is to minimise construction vehicles through areas of higher pedestrian or cyclists' activity, such as schools or town centres, in peak periods will reduce the impact and potential safety issues. Relevant emergency services (e.g. QFES, QPS, QAS) will be notified in advance of temporary and permanent changes to the road network and of construction activities that may affect journey times for emergency vehicles. Relevant emergency services will be notified in advance prior to the movement of all hazardous/dangerous or oversize construction material and equipment. Temporary traffic management to be implemented, for example road signs stipulating reduced speed limits. Involving emergency services through the Construction Works stage will ensure that emergency accesses and routes are provided to ensure local residents are not adversely impacted by Project construction.

Stage	Mitigation
	Heavy vehicle truck turning signage would be required in combination with possible temporary speed reduction signage through the intersection for the duration of construction. This may enhance decision and reaction times for vehicles to identify larger gaps in the traffic stream as speeds would be lower. This will be determined and finalised during Construction Works stage as per contractor required risk assessments when preparing appropriate TMP and TGS in accordance with the <i>Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads</i> and DTMR's specification 'MRTS02 – Provision for traffic' requirements.
	Use pilot vehicle and police escorts to warn opposing vehicles where loads are greater than 3.5 m wide and 25 m long. Additional pilot/escort and/or police escorts are required as per section 6.3 of the <i>Guideline for Excess Dimension Vehicles in Queensland</i> or the <i>Critical Areas and Roads in Queensland for Vehicles/Combinations Requiring Pilot/Escort map</i> , or a police permit when accompanying an oversize vehicle or combination. Travel outside of peak times, perhaps in the evenings or early mornings to avoid other vehicular conflict. All other safety aspects treating OSOM movements to be in accordance with the <i>Guideline for Excess Dimension Vehicles in Queensland</i> .
	Construction speed limits will apply to all unsealed routes used by construction vehicles. Applicable speed limits will be determined through consultation with the relevant local council and documented in the Traffic Management Plan within the Construction Environmental Management Plan (CEMP). Speed limits through construction routes of all types will ensure increased safety for local residents and construction workers.
	All Oversize Overmass and Restricted Access Vehicles will comply with the <i>Guideline for Excess Dimension Vehicles in Queensland</i> (DTMR, 2013) in terms of transport safety.
	Licensed transporters operating in compliance with Australian Code for the Transport of Dangerous Goods by Road and Rail (Commonwealth of Australia, 2018) will be utilised for the transportation of dangerous goods.
	A Form M994 will be completed and signed by a certified Level 3 Traffic Management Operator should any Regulatory Traffic Signs/Devices associated with any SCR be required. Ensuring compliance with all relevant standards and guidelines will ensure that construction vehicles operate safely on all proposed construction vehicles, with appropriate mitigations applied.
	Regular maintenance and vegetation clearance to be carried out to maintain adequate sight lines.

Table 5.11 Detailed Design and Construction Works Stage road safety mitigation measures for road links

Stage	Mitigation
Pre-Construction Activities and Early Works and Construction Works	TMP developed by the proponent in consultation with DTMR, relevant council, an accredited road safety auditor and, where relevant, QR. This plan will identify the impacts that construction traffic is likely to have on the transport infrastructure and detail ameliorative measures required to mitigate all identified impacts of the Project. The TMP will include condition assessment of the road pavement for all construction traffic routes. This will be required to occur before the commencement of any operations and ongoing throughout construction at intervals developed in consultation with the contractor and the asset owner. The contractor will be responsible for all works required to mitigate the impacts of construction traffic. The plans will consider: ■ Final construction routes ■ Approaches to seasonality and stock routes ■ Areas of significant pedestrian and cyclist activity ■ Standard hours of work and deliveries ■ Specific hours of deliveries impacted by local land uses (e.g. school zones) ■ Bus service operators (e.g. public transport, school buses, long distance services) ■ Emergency services ■ Staff transport ■ Staff parking, with the provision of on-site tool storage where practicable. The TMP will be implemented and reviewed annually for effectiveness, including review by relevant road controlling authorities. The purpose of a TMP is to limit impact to the public and asset owners by managing construction movements and deliveries during peak hours and minimising construction staff traffic using shuttles and public transport.

Stage	Mitigation
	Requirements for road upgrades to be finalised during Detailed Design stage as well as updated during the Construction Works stage and as per contract required risk assessments when preparing appropriate TMPs and TGS in accordance with the <i>Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads</i> and DTMR's specification 'MRTS02 – Provision for traffic') requirements. This should reflect updated construction duration estimates and final peak hour volumes. Possible TMP mitigations may include speed reductions and advisory signage and should be placed as per <i>Manual of Uniform Traffic Control Devices Part 3</i> .
	Ongoing consultation with relevant councils, TfNSW, DTMR, emergency services, QR and affected landholders and where applicable the wider community in the Detailed Design stage of the Project to inform of the Project's status and likely disruptions.
	Directional signage and line marking around construction sites and the surrounding network, including using variable message signs if appropriate. Direct and guide drivers and pedestrians past construction sites, and advice of potential delays, traffic diversions, speed restrictions or alternate routes.
	Specific TMP developed for special events (e.g. Australian Camp Oven Festival in Millmerran, regional road cycling events), to be developed in conjunction with DTMR, relevant location councils, event organisers and relevant stakeholders. The outcome of these will include bespoke plans providing safe and efficient pedestrian, cycle, public transport, and traffic flows during occasional events to minimise disruption to the community throughout construction. Bespoke plans to provide safe and efficient pedestrian, cycle, public transport, and traffic flows during occasional events to minimise disruption to the community throughout construction. Specific TMP ensures construction management caters to specific events.
	Relevant emergency services should be notified in advance and any required approvals sought prior to the movement of all hazardous/dangerous or oversize construction material and equipment. Discussions will identify any pre-identified emergency response routes which may be impacted by the transport corridors as well as possible solutions to minimise any potential impacts.
	Physical upgrade works at critical intersections or links where mitigation measures cannot be managed by traffic or construction management. The infrastructure upgrade will ensure additional capacity and resilience within the network to minimise network impacts.
	Secondary alternative construction route activities should be determined as part of the TMPs, in the event of the primary route is blocked off by an emergency/accident. Secondary construction routes will facilitate the continued construction activities, thus managing costs and schedule.
	Construction works cannot commence within a SCR corridor without written approval from DTMR, or within a Local-government Road corridor without necessary approvals from the relevant local council. These will be required to be obtained through consultation with DTMR and the relevant local councils during the Detailed Design stage of the Project.
	Use pilot vehicle and police escorts to warn opposing vehicles where loads are greater than 3.5 m wide and 25 m long. Additional pilot/escort and/or police escorts are required as per section 6.3 of the <i>Guideline for Excess Dimension Vehicles in Queensland</i> or the Critical Areas and Roads in Queensland for Vehicles/Combinations Requiring Pilot/Escort map, or a police permit when accompanying an oversize vehicle or combination. Travel outside of peak times, perhaps in the evenings or early mornings to avoid other vehicular conflict. All other safety aspects treating OSOM movements to be in accordance with the <i>Guideline for Excess Dimension Vehicles in Queensland</i> .
	Travel demand management campaign to inform DTMR, emergency services, local councils and the public on Project works and its effect on network operations. This is to relieve congestion by encouraging travel outside of peaks or mode shift by the public and increase awareness of construction works.
	Develop a protocol between ARTC and emergency service providers, defining appropriate and co-ordinated responses and communication in the event of emergencies during operations, (e.g. access to real time information about crossing times and access to alternate crossing points). Protocol will minimise any impact to emergency services due to potential changes to the road network and Project operation.
	Regular maintenance and vegetation clearance to be carried out to maintain adequate sight lines and maintain clear zones.

5.2.3 Results

5.2.3.1 Intersection assessment results

The results of the road safety impact assessment risk assessment for 116 intersections impacted by primary construction routes are shown in Table 5.12. For individual intersection assessments and detailed mitigation measures, refer to Appendix AN.

It should be noted that the construction routes assumed as a part of this assessment are routes which the construction contractor may use. However, the determination of the final construction and HV routes will be subject to consultation between DTMR, the relevant LGA and the construction contractor.

Once construction routes are finalised, the above analysis should be undertaken again as a part of the Detailed Design and Construction Works stage at which point specific mitigations measures should be applied on a case-by-case basis. The measures developed at this stage should be specific and measurable to enable compliance by construction vehicle operators.

Following the GTIA process, any existing intersections that receive a High-Risk rating, or any 'with Project' intersections that receive a High Risk rating must have the impacts mitigated to reduce the risk to at Medium Risk. There are two intersections that receive a risk rating of High which are further explained below:

■ Gore Highway/Gilgai Lane

- Figure 5.4 shows the existing intersection, from a site visit in December 2022. The site visit photos are also provided in Appendix BU
 - Left image – view of Gilgai Lane from the Gore Highway. Culvert headwall visible on approach to intersection
 - Right image – Gore Highway on approach to Gilgai Lane. Limited warning/signage visible. Power poles on shoulder on approach to Gilgai Lane
- One rear end crash was recorded in the last five-year period. The rear end crash consisted of a multi-vehicle crash during clear daylight hours and resulted in a fatality. The Project traffic may exacerbate the rear end crash, which increased the with Project risk likelihood to Moderate. The proposed mitigation measures include HV truck turning signage in combination with possible temporary speed reduction signage through the intersection for the duration of construction. The provision of a CHR(s) turn lane might also mitigate for rear end crashes. This will be determined and finalised during Construction Works stage as per contractor required assessments when preparing appropriate TMP and TGS in accordance with the *Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads* and DTMR's specification 'MRTS02 – Provision for traffic') requirements.



Figure 5.4 Gore Highway/Gilgai Lane site visit photos

■ X128: Greenwattle Street/Alderley Street

- Figure 5.5 shows the existing intersection, from a site visit in December 2022. The site visit photos are also provided in Appendix BU
 - Left image – view from Greenwattle Street of Alderley Street intersection (facing south)
 - Right image – view from Greenwattle Street of Alderley Street intersection (facing north)
- This intersection analysis has been completed using assumed traffic volumes, generated from the methodology described in Section 2.4.1. The analysis for the existing scenario indicates the intersection is well over capacity and has unsafe levels of delay and queueing for existing peak hour traffic demands. There is a high crash risk for vehicles performing right turn manoeuvres from Alderley Street. The Project traffic may exacerbate the rear end crash rate as well, which increases the with Project risk likelihood to Likely. The proposed mitigation measures include signalisation of the intersection to remove the crash risk, address delay and queuing issues. The treatment will be determined and finalised during Construction Works stage when traffic volume assumptions can be confirmed and as per contractor required assessments when preparing appropriate Traffic Management Plan.



Figure 5.5 Greenwattle Street/Alderley Street site visit photos

To show the reduction in risk likelihood/consequence attributable to Detailed Design and Construction Works stage processes, the mostly non-infrastructure-based mitigation measures described in Section 5.2.2 have been incorporated into the assessment summarised in Table 5.12.

Table 5.12 Safety risk assessment: Intersections impacted by primary construction routes requiring mitigation (without and with Project)

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
State-Controlled Roads: Department of Transport and Main Roads										
Barwon Highway/Barwon Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Barwon Highway/Carnarvon Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Barwon Highway/Leichhardt Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Barwon Highway/Silo Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Barwon Highway/South Toobeah Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Barwon Highway/Town Common Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Carnarvon Highway/Noondoo Thallon Road	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Bybera Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Cemetery Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Coolmunda Dam Access	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Cremascos Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/East Sawmill Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Elizabeth Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Fosters Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Inglewood Quarry Access Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Kildonan Road	Moderate	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Leichhardt Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/McDougalls Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Millmerran-Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Springborg Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Cunningham Highway/Texas-Yelarbon Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Whetstone Access Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Woodcocks Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Yelarbon-Keetah Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway/Yelarbon Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Fysh Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Alderley Street	Moderate	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
Gore Highway/Athol School Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Biddeston Southbrook Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Blackwell Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Bushy Lane	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Campbell Street	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Dieckmann Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Florence Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Gilgai Lane	Unlikely	Extreme	Medium	Moderate	Extreme	High	Required	Unlikely	Extreme	Medium
Gore Highway/Hall Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Linthorpe Road	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Linthorpe Valley Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Lochaber Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Millmerran-Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Gore Highway/Millmerran-Leyburn Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Murlaggan Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Gore Highway/Oakey-Pittsworth Road	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Paint Mine Road	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Saleyards Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Scrubby Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Tumaville Road/ Yarranlea Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Turallin Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Ware Street (N)	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/Ware Street (S)	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway/West Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Leichhardt Highway/Hunt Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Blackwell Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Campbell Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Commodore Peak Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Forestry Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Grays Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Heckendorf Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Kooroongarra Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Millwood Road	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Millmerran-Inglewood Road/Moffatt Reserve Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Millmerran-Inglewood Road/Owens Scrub Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Paton Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Thornton Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road/Wongavale Yugalbar Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Texas-Yelarbon Road/Access Track	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba-Cecil Plains Road/Brimblecombe Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba-Cecil Plains Road/Charlton Connection Road	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Toowoomba-Cecil Plains Road/McDougall Street	Unlikely	Major	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
Toowoomba-Cecil Plains Road/Omara Road	Unlikely	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Toowoomba-Cecil Plains Road/Toowoomba Bypass NB Ramps	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
Toowoomba-Cecil Plains Road/Toowoomba Bypass SB Ramps	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Toowoomba-Cecil Plains Road/Access Track	Moderate	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Warrego Highway/Chamberlain Road	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Warrego Highway/Leesons Road	Rare	Major	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
Warrego Highway/Omara Road/Steger Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Warrego Highway/Toowoomba Bypass NB Ramps	Moderate	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Warrego Highway/Toowoomba Bypass SB Ramps	Moderate	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Warrego Highway Off-ramp/Kingsthorpe Overpass	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
State-Controlled Road: Transport for New South Wales										
Newell Highway/River Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Local Government Road: Goondiwindi Regional Council										
Cemetery Road/Access Track	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Coolmunda Dam Access/Coolmunda Dam Access	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Hunt Street/Boodle Street	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Kildonan Road/Eukabilla Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Kildonan Road/South Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
McDougalls Road/Access Track	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Mooroobie Lane/Cemetery Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Mooroobie Lane/Mooroobie Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Mosquito Creek Road/Grays Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Suttons Road/Access Track	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Wondalli Kurumbul Road/Mooroobie Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Yelarbon Kurumbul Road/Queen Street South	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Yelarbon Kurumbul Road/South Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Yelarbon Kurumbul Road/Wondalli Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Local Government Road: Moree Plains Shire Council										
River Road/River Road	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Local Government Road: Toowoomba Regional Council										
Campbell Street/Saleyards Road	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
Commodore Peak Road/Scragg Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Drayton Wellcamp Road/Boundary Street South	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Forestry Road/Access Track	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gap Road/Grevillea Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Greenwattle Street/Alderley Street	Moderate	Major	Medium	Likely	Major	High	Required	Unlikely	Major	Medium
Kingsthorpe Haden Road/Kingsthorpe Overpass	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Kooroongarra Road/Millwood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Leesons Road/Steger Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Linthorpe Valley Road/Geitz Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millwood Road/Millwood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Murlaggan Road/Kahler Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Six Mile Road/Bligh Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Steger Road/Draper Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Tumnaville Road/Quarry Road Access	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Wellcamp Westbrook Road/Drayton Wellcamp Road	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
West Street/Florence Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Yarranlea Road/Desmonds Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

5.2.3.2 Road link assessment results

The results of the road safety impact assessment risk assessment for intersections impacted by primary construction routes are shown in Table 5.12. For individual intersection assessments and detailed mitigation measures, refer to Appendix AO.

It should be noted that the construction routes assumed as a part of this assessment are routes which the construction contractor may use. However, the determination of the final construction and HV routes will be subject to consultation between DTMR, the relevant LGA and the construction contractor.

Once construction routes are finalised, the above analysis should be undertaken again as a part of the Detailed Design and Construction Works stage at which point specific mitigations measures should be applied on a case-by-case basis. The measures developed at design and construction should be specific and measurable to enable compliance by construction vehicle operators.

Following the GTIA process, any existing road links that receive a High-Risk rating, or any 'with Project' road links that receive a High Risk rating must have the impacts mitigated to reduce the risk rating to Medium Risk. There are four links that receive a risk rating of High during the assessment. The assessment process for each of the links is explained further below, including a summary of all Low, Medium and High risks identified for each link.

- Gore Highway (28A), Southbrook, DTMR Ch 11.2 km to Ch 15.3 km
 - The road segment is a formed sealed road with a 19 m wide carriageway and narrow shoulder. The road has a narrow shoulder which may have an impact on available vehicle recovery area and associated rear end crashes and off carriageway crashes. Casualty crash risks are higher on undivided roads, with no median for head-on crashes, however, the existing traffic volume does not warrant wide centre line treatment (WCLT). Project traffic volumes are minor and are not expected to worsen the existing safety conditions, however, there are OSOM vehicle movements which may increase the risk likelihood to moderate. There is no impact to the Medium risk level, therefore no mitigations required.
 - All accesses and intersections along the section would have sufficient gap acceptance to turn into or across the main road to maintain a 5 second headway gap acceptance. Existing risk likelihood is considered rare and sufficient gap acceptance will prevail even with the impact of the Project and therefore there is no increase in risk likelihood, no change to the Medium risk level and therefore no mitigation required.
 - Project traffic is not expected to exacerbate single vehicle crashes and no change in severity or risk likelihood expected due to project traffic, as the existing horizontal alignment of road is appropriate to accommodate required design speed. There is no impact to the Medium risk level, therefore no mitigations required for the following crashes:
 - One single vehicle out of control on curve crash during darkness which resulted in a fatality
 - One hit animal crash which occurred during darkness resulting in minor injury
 - One multi-vehicle head-on crash in opposite directions of travel resulting in a fatality. Crash occurred during dry and clear daylight conditions on a straight section of road where sufficient sight distance prevails with solid barrier line marking. Crash may be the result of opposing traffic lane encroachment or inadequate visibility. Project traffic may increase such crash types where additional heavy vehicle volumes on the road may increase the need for overtaking and consequently the risk likelihood may increase to moderate, and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, WCLT is proposed to be implemented along this section of road. In addition, the standard mitigation measures discussed in Section 5.2.2 are applicable.
 - In summary, Gore Highway (28A), DTMR Ch 11.2 km to Ch 15.3 km road link safety assessment results in no infrastructure upgrade related mitigation measures required, however, standard mitigations measures discussed in Section 5.2.2 are applicable.

- Gore Highway (28A), Millmerran, DTMR Ch 53.3 km to Ch 60.8 km
 - The road segment is a formed sealed road with a 10 m wide carriageway and narrow shoulder. The road has a narrow shoulder which may have an impact on available vehicle recovery area and associated rear end crashes and off carriageway crashes. Casualty crash risks are higher on undivided roads, with no median for head-on crashes, however, the existing traffic volume does not warrant WCLT. Project traffic volumes and OSOM vehicles may increase the possibility of crashes, increasing the risk likelihood to moderate. There is no impact to the Medium risk level, therefore no mitigations required.
 - All accesses and intersections along the section would have sufficient gap acceptance to turn into or across the main road to maintain a five second headway gap acceptance. Existing risk likelihood is considered rare and sufficient gap acceptance will prevail even with the impact of the Project and therefore there is no increase in risk likelihood, no change to the Medium risk level and therefore no mitigation required.
 - Multi-vehicle head-on crash in opposite directions of travel which resulted in a fatality. Crash occurred during clear daylight on a straight section of road where sufficient sight distance prevails. Likely cause may be inadequate visibility/overtaking from closely spaced headway. Project traffic volumes and OSOM vehicles may increase the possibility of crashes, increasing the risk likelihood to moderate and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
 - One single vehicle off path on straight which resulted in vehicle overturning and hospitalisation. Crash occurred in darkness. Project traffic is not expected to exacerbate such single vehicle crashes. Existing horizontal alignment of road is appropriate to accommodate required design speed. No change in severity or risk likelihood expected due to project traffic. There is no impact to the Medium risk level, therefore no mitigations required.
 - In summary, Gore Highway (28A), DTMR Ch 52.2 km to Ch 53.3 km road link safety assessment results in no infrastructure upgrade related mitigation measures required, however, standard mitigations measures discussed in Section 5.2.2 are applicable.
- Gore Highway (28B), Kindon, DTMR Ch 13.0 km to Ch 121.6 km
 - The road segment is a formed sealed road with a 14 m wide carriageway and narrow shoulder. The road has a narrow shoulder which may have an impact on available vehicle recovery area and associated rear end crashes and off carriageway crashes. Casualty crash risks are higher on undivided roads, with no median for head-on crashes, however, the existing traffic volume does not warrant WCLT. Project traffic volumes and OSOM vehicles may increase the possibility of crashes, increasing the risk likelihood to moderate. There is no impact to the Medium risk level, therefore no mitigations required.
 - All accesses and intersections along the section would have sufficient gap acceptance to turn into or across the main road to maintain a 5 second headway gap acceptance. Existing risk likelihood is considered rare and sufficient gap acceptance will prevail even with the impact of the Project and therefore there is no increase in likelihood, no change to the Medium risk level and therefore no mitigation required.
 - This is a long road segment (160 km) which has several single vehicle crashes over the five year assessment period. Project traffic is not expected to exacerbate single vehicle crashes and no change in severity or risk likelihood expected due to project traffic, as the existing horizontal alignment of road is appropriate to accommodate required design speed. It is likely that driver behaviour contributed to these crashes. There is no impact to the Medium risk level, therefore no mitigations required for the following crashes:
 - One single vehicle off carriageway on straight crash hitting an object in clear, dry conditions during darkness/night which resulted in hospitalisation
 - One single vehicle off carriageway on straight crash hitting an object in clear, dry conditions during darkness/night which resulted in hospitalisation

- One single vehicle off path on curve crash resulting in vehicle hitting an object with fatality as consequence. Crash occurred in clear daylight conditions.
- One single vehicle off carriageway on straight crash and hitting an object in clear, dry conditions during darkness which resulted in hospitalisation
- One single vehicle out of control on straight crash and overturning during clear dawn/dusk conditions which resulted in hospitalisation
- One single vehicle out of control on straight crash and overturning during clear daylight which resulted in hospitalisation
- One single vehicle out of control on straight crash and overturning during clear, wet conditions in darkness which resulted in hospitalisation
- Three single vehicle off path on straight crashes during clear, dry conditions in daylight which resulted in hospitalisation. Two vehicles travelled left off of carriageway with one travelling right off the road, all hitting object.
- One single vehicle travelling right off carriageway on straight crash and overturning during clear, dry conditions during daytime which resulted in hospitalisation
- One single vehicle off path on straight crash during clear, wet conditions in darkness which resulted in hospitalisation. Vehicle travelled left off of carriageway hitting object.
- One single vehicle out of control on curve crash and overturning during darkness which resulted in medical treatment
- One single vehicle out of control on curve crash in clear, wet conditions during daytime resulting in overturned vehicle. Crash required medical treatment. Narrow road shoulder and road condition may have contributed to crash.
- Two single vehicle off path on straight crashes during clear, dry conditions which resulted in hospitalisation. Vehicles travelled left off of carriageway hitting object. One crash occurred in daylight and the other in darkness.
- Two single off carriageway on curve crashes in clear, dry daylight conditions hitting object. One crash resulted in hospitalisation and one required medical treatment.
- One single vehicle off path on straight crash during clear, dry conditions in darkness which required medical treatment. Vehicle travelled left off of carriageway overturning.
- One single vehicle off path on straight crash during clear, dry conditions in daytime which resulted in fatality. Vehicle travelled right off of carriageway hitting object.
- One single vehicle off path on straight crash during clear, dry conditions in daytime which resulted in hospitalisation. Vehicle travelled right off of carriageway hitting object.
- One vehicle struck by external load of another vehicle, resulting in minor injury. Crash occurred during clear daylight conditions. Project traffic is not expected to exacerbate such single vehicle crashes. No change in severity or risk likelihood expected due to project traffic. There is no impact to the Medium risk level, therefore no mitigations required.
- Multi-vehicle rear-end crash in the same direction of travel requiring medical treatment resulting from a vehicle decelerating and needing to turn left into side road and other vehicle traversing straight. Crash occurred during dry and clear daylight conditions. Crash may be the result of inadequate following distance. Project traffic may increase such crash types at side road intersections where separate left turn lanes are not provided (low volume roads). Crashes may increase to moderate likelihood. There is no impact to the Medium risk level, therefore no mitigations required.

- Multi-vehicle (opposing vehicles turning) crash which occurred in clear daylight conditions. Crash resulted in hospitalisation and included an opposing through-right crash. Existing sight distances are considered sufficient along the road link to observe approaching vehicles before making turn movements. Project traffic may increase such crash types at side road intersections where light vehicles may take gaps in the traffic stream at less than required headway gap acceptance standards (driver behaviour). Crashes may increase to moderate likelihood. There is no impact to the Medium risk level, therefore no mitigations required.
 - Multi-vehicle rear-end crash in the same direction of travel requiring medical treatment resulting from a vehicle decelerating and needing to turn into side road and other vehicle traversing straight. Crash occurred during dry and clear daylight conditions. Crash may be the result of inadequate following distance. Project traffic may increase such crash types at side road intersections where separate left turn lanes are not provided (low volume roads). Crashes may increase to moderate likelihood. There is no impact to the Medium risk level, therefore no mitigations required.
 - Multi-vehicle head-on crash on straight during clear, wet conditions in darkness resulting in fatality. Project traffic may increase such crash types where additional heavy vehicle volumes on the road may increase the need for overtaking, which may increase the risk likelihood to Moderate and therefore the risk level increases to High with project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
 - One multi-vehicle head-on crash in opposite directions of travel which resulted in a fatality. Crash occurred during clear daylight on a straight section of road where sufficient sight distance prevails. Likely cause may be inadequate visibility or overtaking from a closely spaced headway. Project traffic may increase such crash types where additional heavy vehicle volumes on the road may increase the need for overtaking, which may increase the risk likelihood to Moderate and therefore the risk level increases to High with project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
 - In summary, Gore Highway (28A), DTMR Ch 52.2 km to Ch 53.3 km road link safety assessment results in no infrastructure upgrade related mitigation measures required, however, standard mitigations measures discussed in Section 5.2.2 are applicable.
- Toowoomba - Athol Road (316), Westbrook, DTMR Ch 2.1 km to Ch 16.8 km
- The road segment is a formed sealed road with a variation of carriageway width, designed to standards with the average being 9 m wide. The road has a narrow shoulder which may have an impact on available vehicle recovery area and associated rear end crashes and off carriageway crashes. Casualty crash risks are higher on undivided roads, with no median for head-on crashes, however, the existing traffic volume does not warrant WCLT. Project traffic volumes are minor and are not expected to worsen the existing safety conditions, however, may increase the risk likelihood to moderate. There is no impact to the Medium risk level, therefore no mitigations required.
 - All accesses and intersections along the section would have sufficient gap acceptance to turn into or across the main road to maintain a five second headway gap acceptance. Existing risk likelihood is considered rare and sufficient gap acceptance will prevail even with the impact of the Project and therefore there is no increase in risk likelihood, no change to the Medium risk level and therefore no mitigation required.
 - Five multi-vehicle (intersecting from adjacent approach) crashes have occurred on the road link. The crashes included three medical treatment and two hospitalisations. Existing sight distances are considered sufficient along the road link to observe approaching vehicles before making turn movements. Project traffic may increase such crash types at side road intersections where light vehicles may take gaps in the traffic stream at less than required headway gap acceptance standards (driver behaviour) and consequently the risk likelihood may increase to likely. Therefore, the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.

- One multi-vehicle head-on crash in opposite directions of travel which resulted in hospitalisation. Crash occurred during clear daylight on a straight section of road where sufficient sight distance prevails with solid barrier line marking. Likely cause may be inadequate visibility or opposing traffic lane encroachment. Project traffic may increase such crash types where additional heavy vehicle volumes on the road may increase the need for overtaking, however, WCLT is not warranted. Consequently, the risk likelihood may increase to moderate with Project traffic. There is no impact to the Medium risk level, therefore no mitigations required.
- Three multi-vehicle (opposing vehicles turning) crashes have occurred on the road link. The crashes included one medical treatment and two hospitalisations. Existing sight distances are considered sufficient along the road link to observe approaching vehicles before making turn movements. Project traffic may increase such crash types at side road intersections where light vehicles may take gaps in the traffic stream at less than required headway gap acceptance standards (driver behaviour). The risk likelihood may increase to likely and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- Seven rear-end crashes occurred on the road link mainly as a result of numerous driveways accessing the road link and vehicles slowing down/stopping to access the driveways and through movement vehicles colliding with stopped vehicles. This mainly occurs along one lane per direction sections. Project traffic may exacerbate rear-end crashes due to slower moving vehicles requiring longer stopping distances and faster reaction times when travelling behind light vehicles wanting to enter driveways/accesses. Consequently, the risk likelihood may increase to likely and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- Project traffic is not expected to exacerbate single vehicle crashes and no change in severity or risk likelihood expected due to project traffic, as the existing horizontal alignment of road is appropriate to accommodate required design speed. There is no impact to the Medium risk level, therefore no mitigations required for the following crashes:
 - Two single vehicle out of control on straight crashes resulting in vehicle hitting an object with hospitalisation and medical treatment as consequence. Possibility of cause being driver behaviour/fatigue/ speeding.
 - Two single vehicle out of control on curve crashes resulting in hospitalisation and medical treatment as consequence. Possibility of cause being driver behaviour/fatigue/speeding.
 - Three single vehicle off carriageway on curve crashes resulting in vehicle hitting an object with hospitalisation and medical treatment as consequence. Possibility of cause being driver behaviour/fatigue/speeding.
- There were also two other related crashes such as vehicle leaving driveway with hospitalisation and medical treatment as result. Such crashes may be exacerbated as a result of the Project due to slower moving vehicles requiring longer stopping distances and faster reaction times when vehicles leave driveways at less than required gap acceptance standards (5 seconds). The risk likelihood may increase to moderate with Project traffic. There is no impact to the Medium risk level, therefore no mitigations required.
- In summary, Toowoomba - Athol Road (316), DTMR Ch 2.1 km to Ch 16.8 km road link safety assessment results in no infrastructure upgrade related mitigation measures required, however, standard mitigations measures discussed in Section 5.2.2 are applicable.

To show the reduction in risk likelihood/consequence attributable to Detailed Design and Construction Works stage processes, the mostly non-infrastructure-based mitigation measures described in Section 5.2.2 have been incorporated into the assessment summarised in Table 5.13.

Table 5.13 Safety risk assessment: project primary construction routes (without and with Project)

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
State-Controlled Roads: Department of Transport Main Roads											
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 0.8 km to Ch 2.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 2.0 km to Ch 45.9 km	Moderate	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
	Ch 45.9 km to Ch 88.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 1.6 km to Ch 66.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 96.2 km to Ch 97.5 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 97.5 km to Ch 105.7 km	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 105.7 km to Ch 107.4 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 107.4 km to Ch 107.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 2.0 km to Ch 3.9 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 3.9 km to Ch 10.2 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 10.2 km to Ch 13.9 km	Unlikely	Extreme	Medium	Unlikely	Extreme	Medium		Unlikely	Extreme	Medium
	Ch 13.9 km to Ch 18.5 km	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 18.5 km to Ch 27.1 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 27.1 km to Ch 29.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 29.3 km to Ch 34.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 34.7 km to Ch 39.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 39.6 km to Ch 40.3 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 40.3 km to Ch 40.5 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 40.5 km to Ch 43.9 km	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Ch 43.9 km to Ch 46.3 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 2.2 km to Ch 5.4 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 5.4 km to Ch 6.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 6.7 km to Ch 7.7 km	Rare	Major	Medium	Rare	Major	Medium		Rare	Major	Medium
	Ch 7.7 km to Ch 11.2 km	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 11.2 km to Ch 15.3 km	Unlikely	Extreme	Medium	Moderate	Extreme	High	Required	Unlikely	Extreme	Medium
	Ch 15.3 km to Ch 17.5 km	Rare	Major	Medium	Rare	Major	Medium		Rare	Major	Medium
	Ch 17.5 km to Ch 19.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 19.0 km to Ch 20.3 km	Rare	Major	Medium	Rare	Major	Medium		Rare	Major	Medium
	Ch 20.3 km to Ch 21.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 21.5 km to Ch 23.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 23.2 km to Ch 25.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 25.0 km to Ch 30.1 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 30.1 km to Ch 38.7 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 38.7 km to Ch 41.1 km	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 41.1 km to Ch 41.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 41.7 km to Ch 43.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 43.2 km to Ch 44.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 44.7 km to Ch 47.6 km	Unlikely	Minor	Low	Moderate	Minor	Medium		Unlikely	Minor	Low
	Ch 47.6 km to Ch 52.2 km	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 52.2 km to Ch 53.3 km	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 53.3 km to Ch 60.8 km	Unlikely	Extreme	Medium	Moderate	Extreme	High	Required	Unlikely	Moderate	Medium
	Ch 60.8 km to Ch 63.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 0.7 km to Ch 0.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 0.8 km to Ch 1.4 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Ch 1.4 km to Ch 3.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 3.0 km to Ch 13.0 km	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 13.0 km to Ch 121.6 km	Unlikely	Extreme	Medium	Moderate	Extreme	High	Required	Unlikely	Extreme	Medium
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
Millmerran - Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 2.0 km to Ch 2.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 2.5 km to Ch 3.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 3.5 km to Ch 6.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 6.2 km to Ch 9.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 9.0 km to Ch 13.1 km	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 13.1 km to Ch 14.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 14.0 km to Ch 17.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 17.3 km to Ch 18.1 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 18.1 km to Ch 21.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 21.8 km to Ch 28.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 28.0 km to Ch 33.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 33.0 km to Ch 35.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 35.6 km to Ch 37.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 37.7 km to Ch 39.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 39.8 km to Ch 41.9 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 41.9 km to Ch 45.9 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 45.9 km to Ch 47.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 47.6 km to Ch 53.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 53.3 km to Ch 55.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 55.7 km to Ch 56.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Ch 56.6 km to Ch 59.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 59.2 km to Ch 61.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 61.0 km to Ch 65.7 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 65.7 km to Ch 68.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba - Athol Road (316)	Ch 2.1 km to Ch 16.8 km	Moderate	Major	Medium	Likely	Major	High	Required	Moderate	Major	Medium
Toowoomba-Cecil Plains Road (324)	Ch 8.3 km to Ch 9.2 km	Rare	Major	Medium	Rare	Major	Medium		Rare	Major	Medium
	Ch 10.3 km to Ch 12.1 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 12.1 km to Ch 14.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 14.5 km to Ch 16.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba Second Range Crossing (319A)	Ch 0.0 km to Ch 26.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba Second Range Crossing (319B)	Ch 0.0 km to Ch 0.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 0.6 km to Ch 3.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 3.2 km to Ch 4.1 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 4.1 km to Ch 13.0 km	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
Toowoomba Second Range Crossing Off-Ramp	Ch 0 to Ch 0.6	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba Second Range Crossing On-Ramp	Ch 3.7 km to Ch 3.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Toowoomba Second Range Crossing Off-Ramp	Ch 4.1 km to Ch 3.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Local Government Roads: Balonne Shire Council											
Noondoo Thallon Road (3514)	Ch 0.0 km to Ch 0.4 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Local Government Roads: Goondiwindi Regional Council											
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Bybera Road	Cunningham Highway to B2G-LDN060.4	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN060.4 to Earthworks Area 2A	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cemetery Road	Cunningham Highway to GrainCorp Goondiwindi	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Unnamed Road to Moorobie Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Coolmunda Dam Access to Cunningham Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Cremascos Road	Cunningham Highway to B2G-LDN052.8	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN052.8 to B2G-LDN055.4	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN055.4 to B2G-LDN054.2	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	NS2B-LDN033.2 to NS2B-LDN035.6	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Grays Road	Millmerran - Inglewood Road to Mosquito Creek Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Hunt Street	Leichhardt Highway to Boodle Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Kildonan Road	NS2B-LDN031.0 to South Kurumbul Road	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	South Kurumbul Road to Cunningham Highway	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
McDougalls Road	B2G-LDN049.8 to McDougalls Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	McDougalls Road to Cunningham Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Silo Street	Barwon Highway to GrainCorp Talwood	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Springborg Road	Cunningham Highway to B2G-LDN037.6	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN067.6 to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorroobie Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Wongavale Yugalbar Road	Millmerran - Inglewood Road to B2G-LDN081.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	South Kurumbul Road to B2G-LDN006.3	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Yelarbon Kurumbul Road	B2G-LDN006.3 to Wondalli Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Yelarbon Kurumbul Road to B2G-LDN020.3	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN020.3 to B2G-LDN025.9	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	B2G-LDN025.9 to Cunningham Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Local Government Roads: Moree Plains Shire Council											
Boggabilla Weir Access	River Road to Boggabilla Weir	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
River Road	Newell Highway to Boggabilla Weir Access	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Local Government Roads: Toowoomba Regional Council											
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN188.2 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Blackwell Road	Gore Highway to Millmerran Quarry	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Millmerran Quarry to B2G-LDN120.2	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN120.2 to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Bligh Street	Six Mile Road to Boral Concrete Millmerran	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Brimblecombe Road	Toowoomba - Cecil Plains Road to Brimblecombe Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Brimblecombe Road to WL 194467R	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Bushy Lane	B2G-LDN183.0 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Campbell Street	Millmerran - Inglewood Road to Saleyards Road	Rare	Major	Medium	Rare	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Saleyards Road to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Chamberlain Road	Warrego Highway to B2G-LDN204.2	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Commodore Peak Road	Scragg Road to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Dieckmann Road	B2G-LDN150.5 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Draper Road	Steger Road to B2G-FBW206.9	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Forestry Road	Unnamed Road to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Millmerran - Inglewood Road to Earthworks Area 3B	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Fysh Road	B2G-LDN147.1 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gilgai Lane	B2G-LDN144.6 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Hall Road	B2G-LDN139.0 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN116.0 to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Kahler Road	Murlaggan Road to B2G-LDN165.6	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Kingsthorpe Overpass	Warrego Highway Off Ramp to Kingsthorpe Haden Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Millmerran - Inglewood Road to Commodore Mine	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Leesons Road	Warrego Highway to Steger Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Steger Road to B2G-LDN206.3	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Linthorpe Road	Gore Highway to B2G-LDN175.5	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Linthorpe Valley Road	Geitz Road to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Lochaber Road	Gore Highway to B2G-LDN172.0	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Millwood Road	Millmerran - Inglewood Road to B2G-LDN112.1	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN112.1 to Millwood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Millwood Road to Kooroongarra Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Moffatt Reserve Road	Millmerran - Inglewood Road to Millmerran Power Station	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Borrow Site #2 (Moorroobie Lane) to Moorroobie Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Moorroobie Lane to Wondalli Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Murlaggan Road	B2G-LDN164.3 to Kahler Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Kahler Road to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	B2G-LDN128.2 to B2G-LDN130.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN130.0 to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Paint Mine Road	Gore Highway to B2G-LDN173.5	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Paton Road	Millmerran - Inglewood Road to B2G-LDN104.5	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Quarry Road Access	Tummalville Road to Quarry Road Quarry	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Saleyards Road	Campbell Street to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Schwarten Road	Millmerran - Inglewood Road to B2G-LDN126.9	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Scragg Road	Commodore Peak Road to B2G-LDN123.6	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	B2G-LDN123.6 to B2G-LDN123.8	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	New Hope Recycled Water Pipeline to Draper Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Tummalville Road	Unnamed Road to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Turallin Road	Gore Highway to Millmerran Construction Camp	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN153.1 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Gore Highway to B2G-LDN150.9	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba - Cecil Plains Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
West Street	Gore Highway to Florence Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Florence Street to Six Mile Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Yarranlea Road	Gore Highway to B2G-LDN161.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN161.0 to Desmonds Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

5.2.3.3 Construction works stage road-rail interface assessment results

The existing safety issues at the road-rail interface locations along the construction traffic routes have been assessed and provided in Section 2.6. These existing safety issues, namely the number of reported crashes and crash severities for each construction traffic route and road-rail interface location have been used to inform the consequence classifications provided in the sections below.

The results of the road safety impact assessment risk assessment for road-rail interfaces impacted by primary construction routes are shown in Table 5.14. For individual road-rail interface assessments and detailed mitigation measures, refer to Appendix AP.

Following the GTIA process, any existing road links that receive a High-Risk rating, or any 'with Project' road-rail interface assessments that receive a High-Risk rating must have the impacts mitigated to reduce the risk to at Medium Risk. There is one road-rail interface that received a risk rating of High which is further explained below:

- 310-12-E-1 Suttons Road, passive level crossing
 - Figure 5.6 shows images of the existing level crossing:
 - Left photo: View of the existing level crossing from Suttons Road, approaching from the north
 - Right photo: View of the existing passive level crossing from Suttons Road, approaching from the west
 - The existing crossing is a passive level crossing, on a curved section of Suttons Road east of Yelarbon. The approaches to the crossing are gravel on both sides.
 - Vehicle queueing related crashes or collision with trains may be exacerbated by the Project at the existing passive level crossing based on the existing road alignment, unsealed pavement, and insufficient sight distance available to approaching vehicles. However, sufficient stacking distance is available to accommodate for the largest design vehicle 36.5 m Road Train. As per AS1742.7 a distance comprising the design vehicle plus a safety factor of 5 m stopped at the intersection without fouling the tracks is required. Stacking of >200 m is available. Existing stacking is sufficient which would have no impact on crashes with railway train or vehicle from opposing direction crashes. Due to the existing geometry and sight lines crashes may change to likely.
 - The proposed upgraded treatment of the crossing will be a passive control crossing with formalising of the approach roads to required geometrical standards and sight distance requirements. The crossing will also be temporarily closed during the Construction Works stage to upgrade the crossing to the required standards of AS1742.7. The upgraded crossing will allow for sufficient safety features. In addition, road safety audits will also be required to be undertaken based on the design and based on as-constructed conditions.



Figure 5.6 310-12-E-1: Suttons Road images

In addition to the mitigation measures for these locations, there are safety mitigation measures that are relevant for all road-rail interface locations throughout the Project lifetime, regardless of the interface assessment. This includes:

- Grade separated road-rail interfaces with warning signage, line marking, and other relevant controls; in accordance with the relevant national and ARTC standards
- Similarly, designed in order to provide for safe design standards for sight distances, lane marking, and signage prevail for a design vehicle consisting of a low loader
- Threshold and ALCAM assessment to be undertaken to determine the appropriate protection type for the proposed crossing (if required). Additionally, these assessments would be undertaken again during detailed design, including all ALCAM considerations, where applicable, as agreed upon between ARTC, the construction contractor, QR and the relevant LGA.
- Road safety audits by a third party at the request of ARTC will be undertaken at the road-rail interfaces during design, pre and post opening in accordance with the Austroads guidelines. Road-rail interfaces will be reviewed to confirm:
 - That the level of protection continues to be appropriate
 - That the infrastructure is appropriate for the traffic conditions
 - That the interface is designed to provide suitable stacking and sight distance.

The safety assessment of construction routes and road-rail interface locations will be updated during detailed design when construction routes and design are finalised, consistent with the requirements of the GTIA. This may include road safety assessments and/or road safety audits.

Table 5.14 Safety risk assessment: road-rail interface (without and with Project)

Interface ID	Road name	Proposed treatment	Without Project			With Project			With Project -with mitigations		
			Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating
State Government: Department of Transport and Main Roads (DTMR)											
310-24-P-2	Millmerran-Inglewood Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Rare	Major	Medium
310-40-E-2	Millmerran-Leyburn Road	Active level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
Local Government: Goondiwindi Regional Council (GRC)											
270-12-P-1	Kildonan Road	Active level crossing (incorporates stock route crossing)	Proposed Crossing			Moderate	Not Significant	Low	Rare	Not Significant	Low
310-4-E-2	South Kurumbul Road	Active level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
310-7-E-1	Unnamed Road	Passive level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
310-10-P-1	Unnamed Road	Passive level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-12-E-1	Suttons Road	Passive level crossing	Rare	Major	Medium	Likely	Major	High	Unlikely	Major	Medium
310-14-E-0	Springborg Road	Passive level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
310-16-P-1a	Whetstone Access Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-18-P-8	Cremascos Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-21-P-9	Lovells Crossing Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-22-P-9	Thornton Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low

Interface ID	Road name	Proposed treatment	Without Project			With Project			With Project -with mitigations		
			Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating
310-25-P-3	Grays Road	Passive level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-26-P-2	Wongavale Yugalbar Road	Passive level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-28-P-3	Unnamed Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
Non-Inland Rail crossing	Coolmunda Dam Access	Active level crossing	Rare	Major	Medium	Rare	Major	Medium	Moderate	Major	Medium
Local Government Roads: Toowoomba Regional Council (TRC)											
310-30-P-2	Unnamed Road	Passive level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-31-P-7	Koorongarra Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-32-P-4	Paton Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-33-P-1	Nicol Creek Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-34-P-1	Millwood Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-36-P-1	Blackwell Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-42-E-0a	Harris Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-43-E-3	Elsden Road	Active level crossing	Rare	Not Significant	Low	Rare	Not Significant	Low	Rare	Not Significant	Low
310-43-P-8a	Mann Silo Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-45-E-1	Longhurst Road	Active level crossing	Rare	Not Significant	Low	Rare	Not Significant	Low	Rare	Not Significant	Low
310-48-P-1	Tip Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low

Interface ID	Road name	Proposed treatment	Without Project			With Project			With Project -with mitigations		
			Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating
310-50-P-11	Linthorpe Valley Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-57-P-4	Leesons Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-16-P-1a	Whetstone Access Road	Active level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium

5.2.3.4 Operations stage road-rail interface assessment results

The results of the road safety impact assessment risk assessment for road-rail interfaces impacted by Operations stage traffic are shown in Table 5.15. For individual road-rail interface assessments and detailed mitigation measures (Appendix AQ).

Following the GTIA process, any existing road links that receive a High Risk rating, or any 'with Project' road-rail interface assessments that receive a High Risk rating must have the impacts mitigated to reduce the risk to at Medium Risk. There are no road-rail interfaces that received a risk rating of High. Safety mitigation measures that are relevant for all road-rail interface locations throughout the Project lifetime, regardless of the interface assessment are provided below:

- Grade separated road-rail interfaces with warning signage, line marking, and other relevant controls; in accordance with the relevant national and ARTC standards
- Similarly, designed in order to provide for safe design standards for sight distances, lane marking, and signage prevail for a design vehicle consisting of a low loader
- Threshold and ALCAM assessment to be undertaken to determine the appropriate protection type for the proposed crossing (if required). Additionally, these assessments would be undertaken again during detailed design, including all ALCAM considerations, where applicable, as agreed upon between ARTC, the construction contractor, QR and the relevant LGA.
- Road safety audits by a third party at the request of ARTC will be undertaken at the road-rail interfaces during design, pre and post opening in accordance with the Austroads guidelines. Road-rail interfaces will be reviewed to confirm:
 - That the level of protection continues to be appropriate
 - That the infrastructure is appropriate for the traffic conditions
 - That the interface is designed to provide suitable stacking and sight distance.

The safety assessment of Operations stage road-rail interface locations will be updated during detailed design when designs are finalised, consistent with the requirements of the GTIA. This may include road safety assessments and/or road safety audits.

Table 5.15 Operations stage Safety risk assessment: road-rail interface (without and with Project)

Interface ID	Road name	Proposed treatment	Without Project			With Project			With Project -with mitigations		
			Consequence	Likelihood	Risk rating	Consequence	Likelihood	Risk rating	Consequence	Likelihood	Risk rating
State Government: Department of Transport and Main Roads (DTMR)											
310-24-P-2	Millmerran-Inglewood Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Unlikely	Major	Medium
310-40-E-2	Millmerran-Leyburn Road	Active level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
Local Government: Goondiwindi Regional Council (GRC)											
270-12-P-1	Kildonan Road	Active level crossing (incorporates stock route crossing)	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-4-E-2	South Kurumbul Road	Active level crossing	Rare	Major	Medium	Rare	Major	Medium	Rare	Major	Medium
310-7-E-1	Unnamed Road	Passive level crossing	Rare	Major	Medium	Moderate	Major	Medium	Moderate	Major	Medium
310-10-P-1	Unnamed Road	Passive level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-12-E-1	Suttons Road	Passive level crossing	Unlikely	Major	Medium	Moderate	Major	Medium	Unlikely	Major	Medium
310-14-E-0	Springborg Road	Passive level crossing	Rare	Major	Medium	Moderate	Major	Medium	Unlikely	Major	Medium
310-16-P-1a	Whetstone Access Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-18-P-8	Cremascos Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-21-P-9	Lovells Crossing Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-22-P-9	Thornton Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-25-P-3	Grays Road	Passive level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-26-P-2	Wongavale Yugalbar Road	Passive level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium

Interface ID	Road name	Proposed treatment	Without Project			With Project			With Project -with mitigations		
			Consequence	Likelihood	Risk rating	Consequence	Likelihood	Risk rating	Consequence	Likelihood	Risk rating
310-28-P-3	Unnamed Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
Local Government Roads: Toowoomba Regional Council (TRC)											
310-30-P-2	Unnamed Road	Passive level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-31-P-7	Kooroongarra Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-32-P-4	Paton Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-33-P-1	Nicol Creek Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-34-P-1	Millwood Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-36-P-1	Blackwell Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-42-E-0a	Harris Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-43-E-3	Elsden Road	Active level crossing	Unlikely	Major	Medium	Moderate	Major	Medium	Moderate	Major	Medium
310-43-P-8a	Mann Silo Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-45-E-1	Longhurst Road	Active level crossing	Unlikely	Major	Medium	Moderate	Major	Medium	Moderate	Major	Medium
310-48-P-1	Tip Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-50-P-11	Linthorpe Valley Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium
310-57-P-4	Leesons Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Moderate	Major	Medium

5.3 Access impact assessment and mitigation

The access impact assessment considers the proposed locations for accesses to laydown areas used by construction traffic. It summarises the construction activities that utilise each access location and investigates the turn warrant and sight distance requirements at each point consistent with Austroads guidance.

All proposed accesses are assumed to be built as new access locations to the road network and are therefore assumed to have no existing background traffic volumes turning in or out of the accesses. Instead, existing two-way traffic volumes were adopted to understand the background traffic volumes on the major road passing the access location. It is proposed that the accesses to some laydown areas will continue to function as accesses to RMAR during the operation of the Project. This is to be developed further during the Detailed Design stage of the Project.

Accesses to private properties which are impacted by the Project are subject to discussions between the impacted landowner and ARTC, this includes local businesses such as Wagners, DA Hall, GrainCorp and Vary Agricultural services. Specific discussion regarding impacts on these local businesses are outlined in Section 5.3.6. No assessment is required for these locations as measures will be specific to individual property requirements.

5.3.1 Methodology

5.3.1.1 Turn warrants

A turn warrants assessment has been conducted at all access locations to laydown areas in order to identify the required turning treatments to accommodate Project traffic flows. The method to determine turn treatment requirements is generally consistent with the warrants outlined in *Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossing Management (2019a)*. The timing of potential access tracks upgrade works will be determined during the Detailed Design stage, including any permit changes.

For the purpose of the access impact assessment, it was assumed that all laydown area access locations will be developed as new access intersections and as such have no 'existing' scenarios have been assessed, only a 'with Project' scenario was investigated. It was also noted that these laydown areas will only be used during construction of the Project and therefore only the peak impact month was assessed. The peak impact month is considered as the month when the access locations experience the most construction turning movements (sum of left and right turn movements). It is noted that this analysis may require update as part of the detailed design TIA once the construction traffic routes, laydown areas and volumes are finalised by the Construction contractor.

Figure 5.7 indicates the left turn volume (Q_L) and right turn volume (Q_R), as well as the volumes representing Q_{T1} and Q_{T2} . The value of the major road volume (Q_M) is calculated as outlined in Table 5.16.

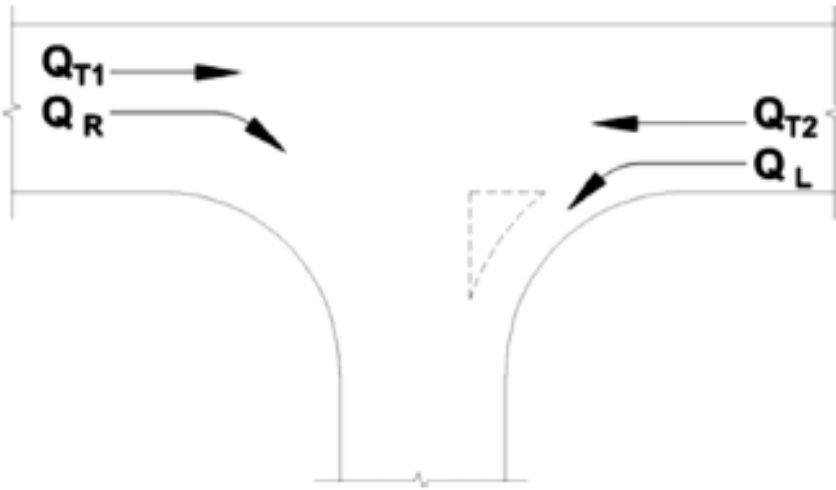


Figure 5.7 Turning movement definitions

Source: *Austroads Guide to Traffic Management Part 6* – Figure 2.27 (2017)

Table 5.16 Calculation of the major road traffic volume (Q_M)

Road type	Turn type	Splitter island	Q_M (vehicles per hour)
Two-lane two-way	Right	No	$= Q_{T1} + Q_{T2} + Q_L$
		Yes	$= Q_{T1} + Q_{T2}$
	Left	Yes or no	$= Q_{T2}$
Four-lane two-way	Right	No	$= 50\% \times Q_{T1} + Q_{T2} + Q_L$
		Yes	$= 50\% \times Q_{T1} + Q_{T2}$
	Left	Yes or no	$= 50\% \times Q_{T2}$
Six-lane two-way	Right	No	$= 33\% \times Q_{T1} + Q_{T2} + Q_L$
		Yes	$= 33\% \times Q_{T1} + Q_{T2}$
	Left	Yes or no	$= 33\% \times Q_{T2}$

Source: *Austroads Guide to Traffic Management Part 6* – 2017

Based on the calculation of Q_L , Q_R and Q_M , turn warrants were determined, plotted on the graph provided in the *Austroads Guide to Traffic Management Part 6*. Where Q_M was greater than 1,200 (veh/hour), and Q_L or Q_R was greater than 120 (for road speeds less than 100 km/h) or 80 (for roads with speeds greater than or equal to 100 km/hour) veh/hour. This maximum value was adopted in order to plot the relevant point on the turn warrant graph.

5.3.1.2 Sight distance

An assessment has been conducted to determine the required safe intersection sight distance (SISD) at each laydown area access location, in order to consider appropriate design of these accesses in detailed design. Safe Intersection Sight Distance (SISD) is the minimum sight distance which should be provided on the major road at any intersection (as shown in Figure 5.8). The method for determining SISD is generally consistent with the *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections* (2017). The timing of any potential upgrade works to access tracks will be determined during the Detailed Design stage.

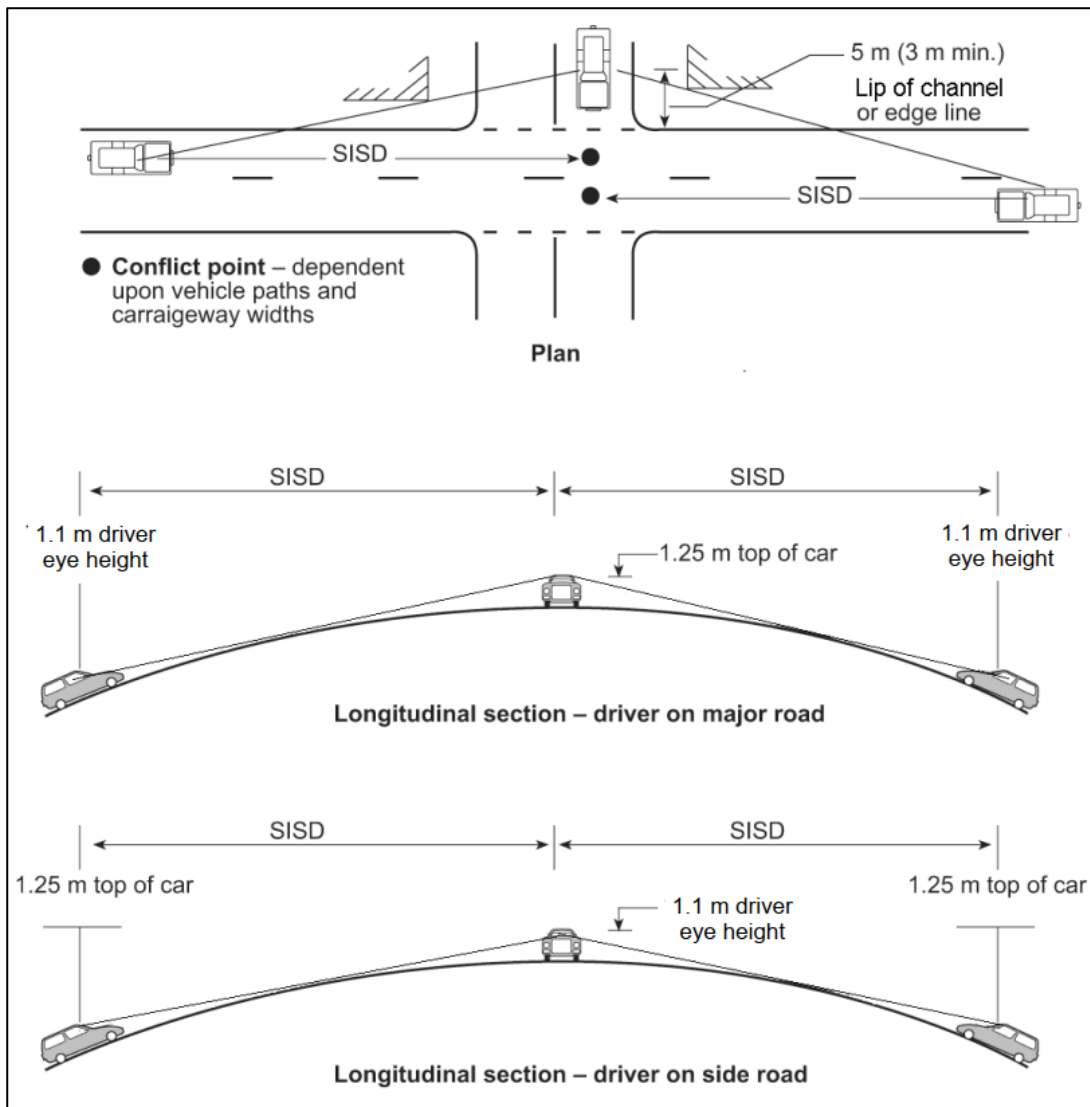


Figure 5.8 Safe intersection sight distance as per AGRD Part 4A (Austroads, 2017b) Section 3.2.2

The SISD at each access location has been calculated using the following equation:

$$SISD = \frac{D_T \times V}{3.6} + \frac{V^2}{254 \times (d + 0.01 \times a)}$$

Where:

- SISD = safe intersection sight distance (m)
- D_T = decision time (sec) = observation time (3 sec) + reaction time
- V = operating (85th percentile) speed (km/h)
- d = coefficient of deceleration
- a = longitudinal grade in per cent (positive for uphill, negative for downhill).

A description of the above factors and the adopted values for the purpose of the TIA assessment is provided in Table 5.17.

Table 5.17 Safe intersection sight distance factors

SISD factors	Factors description	Adopted value																		
Driver reaction time (sec)	Time for a driver to perceive and react to a particular stimulus and take appropriate action. This is dependent on: - Alertness of the driver - Recognition of the hazard - Complexity of the decision or task involved It is desirable for designers to adopt a reaction time of 2.5 seconds for the geometric design of all roads. This generally relates typical road conditions of: - Unalerted driving conditions due to road only having isolated geometric features to maintain driver interest - Areas with high driver workload/complex decisions - High speed roads with long distances between towns Source: <i>Section 5.2.2 of AGRD Part 3 (2016)</i>	2.5 seconds																		
Operating speed (km/h)	Where operating speed cannot be determined through speed measurement, designers should adopt an operating speed 10 km/h higher than the legal (posted) speed limit. The relationship between car speed and truck speed is provided below. <table><tr><td>Car speed (km/h)</td><td>40</td><td>50</td><td>60</td><td>70</td><td>80</td><td>90</td><td>100</td><td>110</td></tr><tr><td>Truck speed (km/h)</td><td>34</td><td>43</td><td>52</td><td>60</td><td>70</td><td>80</td><td>90</td><td>100</td></tr></table> Source: <i>Section 3.1 and 3.7 of AGRD Part 3 (2016)</i>	Car speed (km/h)	40	50	60	70	80	90	100	110	Truck speed (km/h)	34	43	52	60	70	80	90	100	10 km/h above posted speed limit for cars As per table for trucks based on car operating speed
Car speed (km/h)	40	50	60	70	80	90	100	110												
Truck speed (km/h)	34	43	52	60	70	80	90	100												
Coefficient of deceleration (d)	Measure of the longitudinal friction between vehicle tyres and the road surface. It depends on factors such as the speed of vehicle, tyre condition and pressure, type of road surface and its condition, including whether it is wet or dry. For most urban and rural road types, designers should adopt a longitudinal coefficient of deceleration of 0.36. This factor represents about a 90th percentile value for braking on wet, sealed roads. For trucks, the factor of 0.29 is recommended as the maximum value for calculating truck stopping sight distance for most urban and rural road types. This factor represents braking by single unit trucks, semi-trailers, and B-doubles on dry, sealed roads. A factor of 0.27 is recommended on unsealed roads. Source: <i>Section 5.2.3 of AGRD Part 3 (2016)</i>	Sealed roads: 0.36 for cars 0.29 for trucks Unsealed roads: 0.27 for cars and trucks																		
Longitudinal grade (%)	Slope or incline of the road along its length.	Average grade of road circa to access, assumed as downhill (-ve)																		

5.3.2 Access information

Details for each laydown access location is provided in Table 5.18. The table summarises:

- Road from which laydown area access is proposed
- Construction activities accessing the laydown area
- Peak impact month
- Turn movements to be assessed for turn warrants.

Table 5.18 Proposed construction vehicle movements at laydown access locations

Laydown area	Major road	Construction activities accessing laydown area	Peak impact year	Turn movement
State-Controlled Roads: Department of Transport and Main Roads				
B2G-LDN073.0	Millmerran-Inglewood Road	Workforce, cut-to-fill, precast concrete, water	2024	Right
B2G-LDN074.0	Millmerran-Inglewood Road	In situ concrete, plant, and tools,	2024	Left
B2G-LDN088.0	Millmerran-Inglewood Road	Workforce, in situ concrete, plant and tools, precast concrete,	2026	Left
B2G-LDN091.8	Millmerran-Inglewood Road	Workforce, cut-to-fill, in situ concrete, plant and tools, quarry materials, water	2025	Right
B2G-LDN093.8	Millmerran-Inglewood Road	Workforce, in situ concrete, plant and tools, precast concrete,	2026	Left
B2G-LDN098.0	Millmerran-Inglewood Road	Workforce, fill, in situ concrete, plant and tools, rail components, sleepers, water	2026	Left
B2G-LDN100.6	Millmerran-Inglewood Road	Workforce, in situ concrete, plant and tools, precast concrete,	2026	Left, Right
B2G-LDN115.6	Millmerran-Inglewood Road	Workforce, in situ concrete, plant and tools, precast concrete,	2027	Left, Right
B2G-LDN140.2	Millmerran-Leyburn Road	Workforce, in situ concrete, plant and tools, precast concrete, water	2026	Left
B2G-LDN141.3	Millmerran-Leyburn Road	Cut-to-fill, in situ concrete, plant, and tools,	2026	Left
B2G-LDN149.0	Gore Highway	Workforce, in situ concrete, plant, and tools,	2026	Right
B2G-LDN169.6	Gore Highway	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Right
B2G-LDN185.0	Gore Highway	Workforce, in situ concrete, plant and tools, quarry materials,	2027	Left
B2G-LDN196.2 B2G-LDN197.0	Toowoomba-Cecil Plains Road	Workforce, In situ concrete, plant and tools, precast concrete, water	2025	Left, Right
B2G-LDN203.0	Warrego Highway	Workforce, cut-to-fill, in situ concrete, plant and tools, precast concrete, water	2026	Left
Local Government Roads: Goondiwindi Regional Council				
NS2B-LDN031.0 NS2B-LDN032.5	Kildonan Road	Fill, in situ concrete, plant, and tools,	2025	Left
NS2B-LDN033.2 NS2B-LDN035.6	Eukabilla Road	Workforce, in situ concrete, plant and tools, precast concrete, rail components, sleepers, water	2025	Right
B2G-LDN000.9	Georges Lane	Workforce, quarry materials, water	2027	No turn
B2G-LDN006.3	Yelarbon Kurumbul Road	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Left, Right
B2G-LDN016.0	Queen Street South	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials, water	2024	Left
B2G-LDN020.3	Yelarbon Kurumbul Road	Workforce, quarry materials,	2026	Left
B2G-LDN025.9	Yelarbon Kurumbul Road	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Right
B2G-LDN030.0	Suttons Road	Workforce, cut-to-fill, in situ concrete, plant and tools, quarry materials, water	2024	Right

Laydown area	Major road	Construction activities accessing laydown area	Peak impact year	Turn movement
B2G-LDN037.6	Springborg Road	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials, water	2024	Right
B2G-LDN049.8	McDougalls Road	Workforce, in situ concrete, plant and tools, quarry materials, water	2024	Left
B2G-LDN052.8	Cremascos Road	In situ concrete, plant, and tools,	2026	Right
B2G-LDN054.2	Cremascos Road	Workforce, in situ concrete, plant and tools, water	2025	Right
B2G-LDN055.4	Cremascos Road	In situ concrete, plant and tools, precast concrete,	2026	Left
B2G-LDN060.4	Bybera Road	Workforce, in situ concrete, plant and tools, quarry materials, water	2027	Left
B2G-LDN065.8	Lovells Crossing Road	Workforce, in situ concrete, plant and tools, quarry materials, water	2027	Left, Right
B2G-LDN067.6	Thornton Road	Fill, in situ concrete, plant and tools, precast concrete,	2024	Left
B2G-LDN069.0	Thornton Road	Workforce, in situ concrete, plant and tools, quarry materials, water	2024	Left
B2G-LDN081.0	Wongavale Yugilbar Road	Workforce, in situ concrete, plant and tools, quarry materials, water	2027	Left
Local Government Roads: Toowoomba Regional Council				
B2G-LDN104.5	Paton Road	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials,	2027	Right
B2G-LDN112.1	Millwood Road	Workforce, cut-to-spoil, in situ concrete, plant and tools, quarry materials, water	2026	Right
B2G-LDN116.0	Heckendorf Road	In situ concrete, plant and tools, quarry materials, water	2027	Left
B2G-LDN120.2	Blackwell Road	Workforce, in situ concrete, plant and tools, quarry materials, water	2025	Left
B2G-LDN123.6	Scragg Road	Workforce, cut-to-spoil, water	2026	Left
B2G-LDN123.8	Scragg Road	In situ concrete, plant, and tools,	2025	Left
B2G-LDN126.9	Schwarten Road	Workforce, in situ concrete, plant and tools, precast concrete, water	2025	Right
B2G-LDN128.2	Owens Scrub Road	Cut-to-fill, in situ concrete, plant, and tools,	2024	Right
B2G-LDN129.5	Owens Scrub Road	Quarry materials, water	2027	Left
B2G-LDN130.0 B2G-LDN130.4 B2G-LDN130.6	Owens Scrub Road	Workforce, cut-to-fill, in situ concrete, plant, and tools,	2025	Left
B2G-LDN138.5 B2G-LDN139.0	Hall Road	Workforce, in situ concrete, plant and tools, quarry materials, water	2027	Left, Right
B2G-LDN143.0 B2G-LDN144.6	Gilgai Lane	Workforce, in situ concrete, plant and tools, rail components, sleepers,	2027	Left
B2G-LDN147.1	Fysh Road	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials, water	2027	Right
B2G-LDN150.5	Dieckmann Road	Workforce, fill, water	2025	Left
B2G-LDN150.9	Ware Street (South)	Quarry materials	2027	Left
B2G-LDN153.1	Ware Street (North)	Workforce, in situ concrete, plant and tools, precast concrete, water	2026	Right

Laydown area	Major road	Construction activities accessing laydown area	Peak impact year	Turn movement
B2G-LDN161.0	Yarranlea Road	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Left, Right
B2G-LDN163.3	Roche Road	Workforce, in situ concrete, plant and tools, water	2026	Left
B2G-LDN164.3	Murlaggan Road	Workforce, cut-to-fill, in situ concrete, plant and tools, quarry materials,	2025	Left
B2G-LDN165.6	Kahler Road	Workforce, quarry materials,	2027	Left
B2G-LDN171.0	Oakey-Pittsworth Road	Workforce, in situ concrete, plant, and tools,	2026	Right
B2G-LDN172.0	Lochaber Road	In situ concrete, plant and tools, quarry materials, water	2027	Right
B2G-LDN172.6	Lochaber Road	Workforce, in situ concrete, plant, and tools,	2026	Left, Right
B2G-LDN173.5	Paint Mine Road	Workforce, in situ concrete, plant and tools, quarry materials,	2027	Left
B2G-LDN175.5	Linthorpe Road	Workforce, cut-to-fill, cut-to-spoil, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Left, Right
B2G-LDN179.0	Geitz Road	Workforce, in situ concrete, plant and tools, quarry materials,	2027	Left
B2G-LDN183.0	Bushy Lane	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Right
B2G-LDN183.8	Biddeston Southbrook Road	Workforce, cut-to-spoil, in situ concrete, plant, and tools,	2025	Right
B2G-LDN188.2 B2G-LDN192.3	Athol School Road	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right
B2G-LDN198.1 B2G-LDN198.7	Brimblecombe Road	Workforce, in situ concrete, plant and tools, precast concrete	2026	Left
B2G-LDN204.2	Chamberlain Road	Workforce, in situ concrete, plant, and tools,	2027	Left
B2G-LDN206.3	Leesons Road	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Left

5.3.3 Turn warrants assessment

Table 5.19 provides a summary of the turn warrants assessment, including details for peak hour volumes on the major road, peak hour turning volumes into the laydown areas and minimum turn treatment requirements for the access location. The turn treatment requirements should be reconsidered in detailed design following finalisation of routes and volumes in order to provide appropriate access treatments to all points during construction and ensure appropriate mitigation measures are applied at each access location.

Access turn warrant graphs and calculations are provided in Appendix AT.

Table 5.19 Turn warrants assessment at laydown areas

Laydown area	Major road	Major road peak hour volume (Q _M)		Peak hour turn volume into laydown (Q _R)		Minimum turn treatment requirements	
		Right turn	Left turn	Right turn	Left turn	Right turn	Left turn
State-Controlled Roads: Department of Transport and Main Roads							
B2G-LDN073.0	Millmerran-Inglewood Road	406	198	1	11	BAR	BAL
B2G-LDN074.0	Millmerran-Inglewood Road	396	198	1	1	BAR	BAL
B2G-LDN088.0	Millmerran-Inglewood Road	421	210	0	1	BAR	BAL
B2G-LDN091.8	Millmerran-Inglewood Road	435	207	2	21	BAR	BAL
B2G-LDN093.8	Millmerran-Inglewood Road	795	401	0	1	BAR	BAL
B2G-LDN098.0	Millmerran-Inglewood Road	826	401	0	25	BAR	AUL(S)
B2G-LDN100.6	Millmerran-Inglewood Road	802	401	0	1	BAR	BAL
B2G-LDN115.6	Millmerran-Inglewood Road	801	401	1	0	BAR	BAL
B2G-LDN140.2	Millmerran-Leyburn Road	306	153	0	1	BAR	BAL
B2G-LDN141.3	Millmerran-Leyburn Road	311	153	0	6	BAR	BAL
B2G-LDN149.0	Gore Highway	3698	1209	0	1	BAR	BAL
B2G-LDN169.6	Gore Highway	3611	1222	2	1	BAR	BAL
B2G-LDN185.0	Gore Highway	7262	1212	1	0	BAR	BAL
B2G-LDN203.0	Warrego Highway	1	0	0	1	BAR	BAL
Local Government Roads: Goondiwindi Regional Council							
NS2B-LDN031.0	Kildonan Road	1923	953	1	16	BAR	AUL or CHL
NS2B-LDN033.2	Eukabilla Road	25	12	1	0	BAR	BAL
NS2B-LDN035.6	Eukabilla Road	No turn movements to access					
B2G-LDN000.9	Georges Lane	No turn movements to access					
B2G-LDN006.3	Yelarbon Kurumbul Road	77	35	1	7	BAR	BAL
B2G-LDN016.0	Queen Street South	5	3	2	0	BAR	BAL
B2G-LDN020.3	Yelarbon Kurumbul Road	77	38	2	0	BAR	BAL
B2G-LDN025.9	Yelarbon Kurumbul Road	74	34	0	7	BAR	BAL

Laydown area	Major road	Major road peak hour volume (Q _M)		Peak hour turn volume into laydown (Q _R)		Minimum turn treatment requirements	
		Right turn	Left turn	Right turn	Left turn	Right turn	Left turn
B2G-LDN030.0	Suttons Road	76	39	11	0	BAR	BAL
B2G-LDN037.6	Springborg Road	11	4	0	2	BAR	BAL
B2G-LDN044.5	Whetstone Access	29	12	0	5	BAR	BAL
B2G-LDN049.8	McDougalls Road	12	5	0	3	BAR	BAL
B2G-LDN052.8	Cremascos Road	125	62	0	1	BAR	BAL
B2G-LDN054.2	Cremascos Road	122	61	0	1	BAR	BAL
B2G-LDN055.4	Cremascos Road	124	62	1	0	BAR	BAL
B2G-LDN060.4	Bybera Road	91	44	0	4	BAR	BAL
B2G-LDN067.6	Thornton Road	49	11	0	26	BAR	BAL
B2G-LDN069.0	Thornton Road	19	9	2	0	BAR	BAL
B2G-LDN081.0	Wongavale Yugalbar Road	25	10	0	4	BAR	BAL
Local Government Roads: Toowoomba Regional Council							
B2G-LDN065.8	Lovells Crossing Road	47	23	2	0	BAR	BAL
B2G-LDN104.5	Paton Road	25	12	3	0	BAR	BAL
B2G-LDN112.1	Millwood Road	52	21	0	9	BAR	BAL
B2G-LDN116.0	Heckendorf Road	57	27	0	2	BAR	BAL
B2G-LDN120.2	Blackwell Road	45	22	2	0	BAR	BAL
B2G-LDN123.6	Scragg Road	28	10	0	8	BAR	BAL
B2G-LDN123.8	Scragg Road	21	10	0	1	BAR	BAL
B2G-LDN126.9	Schwarten Road	7	3	1	0	BAR	BAL
B2G-LDN128.2	Owens Scrub Road	587	293	23	0	CHR	BAL
B2G-LDN129.5	Owens Scrub Road	661	331	3	0	BAR	BAL
B2G-LDN130.0	Owens Scrub Road	632	306	0	21	BAR	BAL
B2G-LDN139.0	Hall Road	5	3	2	0	BAR	BAL
B2G-LDN144.6	Gilgai Lane	36	17	0	2	BAR	BAL

Laydown area	Major road	Major road peak hour volume (Q _M)		Peak hour turn volume into laydown (Q _R)		Minimum turn treatment requirements	
		Right turn	Left turn	Right turn	Left turn	Right turn	Left turn
B2G-LDN147.1	Fysh Road	97	47	0	3	BAR	BAL
B2G-LDN150.5	Dieckmann Road	24	12	24	0	BAR	BAL
B2G-LDN150.9	Ware Street (North)	145	73	1	0	BAR	BAL
B2G-LDN153.1	Ware Street (South)	305	151	0	3	BAR	BAL
B2G-LDN161.0	Yarranlea Road	253	68	0	118	BAR	BAL
B2G-LDN163.3	Roche Road	19	10	1	0	BAR	BAL
B2G-LDN164.3	Murlaggan Road	468	234	25	0	CHR(s)	BAL
B2G-LDN165.6	Kahler Road	16	8	1	0	BAR	BAL
B2G-LDN171.0	Oakey-Pittsworth Road	1469	735	1	0	BAR	BAL
B2G-LDN172.0	Lochaber Road	438	219	1	0	BAR	BAL
B2G-LDN172.6	Lochaber Road	424	212	1	0	BAR	BAL
B2G-LDN173.5	Paint Mine Road	60	29	0	1	BAR	BAL
B2G-LDN175.5	Linthorpe Road	83	23	0	38	BAR	BAL
B2G-LDN179.0	Geitz Road	58	28	0	2	BAR	BAL
B2G-LDN183.0	Bushy Lane	118	59	2	0	BAR	BAL
B2G-LDN183.8	Biddeston Southbrook Road	220	104	0	12	BAR	BAL
B2G-LDN188.2	Athol School Road	315	158	1	0	BAR	BAL
B2G-LDN204.2	Chamberlain Road	22	11	0	1	BAR	BAL
B2G-LDN206.3	Leesons Road	100	44	0	12	BAR	BAL

5.3.4 Sight distance assessment

Table 5.20 provides a summary of sight distance requirements at each access location, including required inputs relating to the road seal, major road speed limit and longitudinal grade considered for each access location.

Further details relating to the sight distance calculation are provided in Appendix AS.

Table 5.20 Sight distance assessment at laydown areas

Laydown area	Major road	Major road seal	Major road posted speed (km/h)	Longitudinal grade	Required sight distance (m)
State-Controlled Road: Department of Transport and Main Roads					
B2G-LDN073.0	Millmerran-Inglewood Road	Sealed	100	-0.5%	300
B2G-LDN074.0	Millmerran-Inglewood Road	Sealed	100	0.0%	300
B2G-LDN088.0	Millmerran-Inglewood Road	Sealed	100	-0.5%	300
B2G-LDN091.8	Millmerran-Inglewood Road	Sealed	100	-0.5%	300
B2G-LDN093.8	Millmerran-Inglewood Road	Sealed	100	-1.0%	300
B2G-LDN098.0	Millmerran-Inglewood Road	Sealed	100	-0.5%	300
B2G-LDN100.6	Millmerran-Inglewood Road	Sealed	100	0.0%	300
B2G-LDN115.6	Millmerran-Inglewood Road	Sealed	100	-2.0%	300
B2G-LDN140.2	Millmerran-Leyburn Road	Sealed	100	-0.4%	300
B2G-LDN141.3	Millmerran-Leyburn Road	Sealed	100	-0.4%	300
B2G-LDN149.0	Gore Highway	Sealed	100	0.0%	300
B2G-LDN169.6	Gore Highway	Sealed	100	-0.6%	300
B2G-LDN185.0	Gore Highway	Sealed	100	-1.2%	300
B2G-LDN196.2	Toowoomba-Cecil Plains Road	Sealed	100	-0.9%	300
B2G-LDN197.0	Toowoomba-Cecil Plains Road	Sealed	100	-0.9%	300
B2G-LDN203.0	Warrego Highway	Sealed	100	-0.5%	300
Local Government Roads: Goondiwindi Regional Council					
NS2B-LDN031.0	Kildonan Road	Sealed	100	-1.2%	300
NS2B-LDN032.5					
NS2B-LDN033.2	Eukabilla Road	Unsealed	100	-1.0%	345
NS2B-LDN035.6	Eukabilla Road	Unsealed	100	-0.6%	345
B2G-LDN000.9	Georges Lane	Unsealed	100	-1.0%	345
B2G-LDN006.3	Yelarbon Kurumbul Road	Sealed	100	0.0%	300
B2G-LDN016.0	Queen Street South	Unsealed	100	-0.6%	345
B2G-LDN020.3	Yelarbon Kurumbul Road	Unsealed	100	-0.8%	345
B2G-LDN025.9	Yelarbon Kurumbul Road	Sealed	100	-0.4%	300
B2G-LDN030.0	Suttons Road	Unsealed	100	-1.0%	345
B2G-LDN037.6	Springborg Road	Unsealed	100	-3.8%	345
B2G-LDN049.8	McDougalls Road	Unsealed	100	-1.7%	345
B2G-LDN052.8	Cremascos Road	Sealed	100	-2.0%	300
B2G-LDN054.2	Cremascos Road	Sealed	100	-0.6%	300
B2G-LDN055.4	Cremascos Road	Sealed	100	-2.2%	300

Laydown area	Major road	Major road seal	Major road posted speed (km/h)	Longitudinal grade	Required sight distance (m)
B2G-LDN060.4	Bybera Road	Unsealed	100	-1.2%	345
B2G-LDN065.8	Lovells Crossing Road	Unsealed	50	0.0%	144
B2G-LDN067.6	Thornton Road	Unsealed	100	-0.5%	345
B2G-LDN069.0	Thornton Road	Unsealed	100	-1.5%	345
B2G-LDN081.0	Wongavale Yugalbar Road	Unsealed	100	-2.0%	345
Local Government Roads: Toowoomba Regional Council					
B2G-LDN104.5	Paton Road	Unsealed	100	-0.4%	345
B2G-LDN112.1	Millwood Road	Sealed	100	-2.0%	300
B2G-LDN116.0	Heckendorf Road	Sealed	100	-2.8%	300
B2G-LDN120.2	Blackwell Road	Unsealed	100	-2.0%	345
B2G-LDN123.6	Scragg Road	Unsealed	100	0.0%	344
B2G-LDN123.8	Scragg Road	Unsealed	100	-1.7%	345
B2G-LDN126.9	Schwarten Road	Unsealed	100	-0.5%	345
B2G-LDN128.2	Owens Scrub Road	Sealed	100	-0.6%	300
B2G-LDN129.5	Owens Scrub Road	Unsealed	100	-0.8%	345
B2G-LDN130.0	Owens Scrub Road	Sealed	100	0.0%	300
B2G-LDN130.4					
B2G-LDN130.6					
B2G-LDN138.5	Hall Road	Unsealed	100	0.0%	344
B2G-LDN139.0					
B2G-LDN143.0	Gilgai Lane	Unsealed	100	-0.4%	345
B2G-LDN144.6					
B2G-LDN147.1	Fysh Road	Sealed	100	-2.0%	300
B2G-LDN150.5	Dieckmann Road	Unsealed	100	-1.0%	345
B2G-LDN150.9	Ware Street (South)	Sealed	100	-2.0%	300
B2G-LDN153.1	Ware Street (North)	Sealed	100	-0.5%	300
B2G-LDN161.0	Yarranlea Road	Unsealed	100	-0.8%	345
B2G-LDN163.3	Roche Road	Unsealed	100	-1.1%	345
B2G-LDN164.3	Murlaggan Road	Unsealed	100	-1.0%	345
B2G-LDN165.6	Kahler Road	Unsealed	100	-1.8%	345
B2G-LDN171.0	Oakey-Pittsworth Road	Sealed	100	0.0%	300
B2G-LDN172.0	Lochaber Road	Sealed	100	-0.4%	300
B2G-LDN172.6	Lochaber Road	Sealed	100	-1.1%	300
B2G-LDN173.5	Paint Mine Road	Unsealed	100	0.0%	344
B2G-LDN175.5	Linthorpe Road	Sealed	100	-3.6%	301
B2G-LDN179.0	Geitz Road	Unsealed	100	-0.9%	345
B2G-LDN183.0	Bushy Lane	Unsealed	100	-1.9%	345
B2G-LDN183.8	Biddeston Southbrook Road	Unsealed	100	-2.7%	345
B2G-LDN188.2	Athol School Road	Unsealed	100	-0.3%	345
B2G-LDN192.3	Athol School Road	Unsealed	100	-2.1%	345
B2G-LDN198.1	Brimblecombe Road	Unsealed	100	-0.2%	345

Laydown area	Major road	Major road seal	Major road posted speed (km/h)	Longitudinal grade	Required sight distance (m)
B2G-LDN198.7	Brimblecombe Road	Unsealed	100	-0.2%	345
B2G-LDN204.2	Chamberlain Road	Unsealed	100	-2.9%	345
B2G-LDN206.3	Leesons Road	Unsealed	100	-1.7%	345
B2G-FBW206.9	Draper Road	Unsealed	100	-0.5%	345

The available sight distance at each laydown location is subject to detailed design of the laydown access. Therefore, the above sight distance requirements will need to be accommodated when the Project detailed design is undertaken.

5.3.5 Mitigation measures

The potential upgraded turning treatments outlined in this methodology are warranted only temporarily for construction traffic based on the current assumed traffic routes. Road use management strategies may be introduced in the Road Use Management Plan (RUMP) and/or the Traffic Management Plan in order to temporarily mitigate construction related traffic impacts at laydown area accesses.

Where turning lanes are implemented (temporarily or permanently), these will be designed consistent with the requirements of *Austroads Guide to Road Design Part 4A* and accommodate sufficient storage for the largest proposed construction vehicle (currently listed as a 26.0 m B-double, but to be confirmed with the Construction contractor).

It is noted that this treatment is only required during construction, with the requirement no longer necessary post-construction. Any potential intersection upgrades will be developed in consultation with DTMR and GRC. This discussion will be undertaken during the development of the Traffic Management Plan once construction routes are finalised by the Construction contractor and agreed with the relevant asset owners.

All proposed access and egress points, once finalised by the construction contractor, should be communicated to the relevant stakeholders including all emergency service operators.

In particular, the proposed access locations off the Cunningham Highway, Millmerran-Inglewood Road, Gore Highway and Warrego Highway will be investigated in further detail and approved by DTMR prior to construction commencing.

All new accesses formed as a part of the Project will comply with the *Traffic Infrastructure Act 1994* (Qld) and relevant approvals from DTMR or the local road authority.

Table 5.21 Access mitigation measures

Stage	Mitigation	Mitigation outcome
Detailed Design	The detailed design will be developed to ensure that legal access for private properties is maintained. ARTC commits to continue to consult with potentially impacted landowners through the detailed design and construction planning process and agree on outcomes to minimise property access impacts. This includes where property access adjoins State and local government roads.	Develop and implement property-specific measures to avoid or minimise impacts which could affect property access.
	The Construction Works and Operations stage provision of suitable private property access will form a component of property-specific management agreements developed in consultation with landowners. Changes to individual property access onto and across properties may be offset by consolidating access in key locations, which may be facilitated through underpasses for stock and vehicles at appropriate locations. These solutions will be developed in consultation with affected landowners.	

Stage	Mitigation	Mitigation outcome
	Consultation with Toowoomba and Goondiwindi Local Disaster Management Groups, in addition to QPS, QAS and QFES will continue through the detailed design process.	Ensure that appropriate access and egress solutions are incorporated into the detailed design to enable movements across the rail corridor.
	Consultation with the Department of Education to ensure that mitigation measures required to be implemented to maintain the current levels of amenity and operation of Brookstead State School, Southbrook Central State School and Yelarbon State School are incorporated into the detailed design and/or construction planning.	Maintain current level of access operations of schools impacted by the area.
	Safe corridor access and vehicle turnaround points will be provided for maintenance work to ensure sufficient setback while working adjacent to live railway.	Maintenance and emergency access roads will be designed such that it will allow separation to prevent interaction between trains and vehicles without impeding escape or rescue activities.
	Traffic management arrangements for construction sites, laydown areas or non-resident workforce accommodation facilities requiring access directly off/onto a SCR will need to be negotiated with and approved by DTMR.	Ensure appropriate intersection treatments are provided to cater for construction vehicles.
	All construction access locations will be designed in accordance with Australian Standards and Austroads' guidance with: ■ Appropriate sighting distances in both the vertical and horizontal ■ Deceleration lanes for trucks ■ Acceleration lanes for re-entering construction traffic ■ Appropriate signage and line marking.	Ensure safe access for construction vehicles and all traffic.
	Where possible, access will be provided from secondary roads.	Minimise the potential disruptions to the nearby arterial road network.
Operation	The rail maintenance access roads will be available for use by emergency vehicles in the event of an incident.	Ensure sufficient emergency access through operations.

5.3.6 Local business impacts

Accesses to private properties which are impacted by the Project are subject to discussions between the impacted landowner and ARTC, this includes local businesses such as DA Hall, GrainCorp, Vary Agricultural services and Wagner Corporation. Specific discussion regarding impacts on these local businesses is outlined below.

5.3.6.1 DA Hall

The DA Hall properties are no longer impacted by access and connectivity issues due to the Millmerran Alternative Alignment described within EIS Chapter 2: Project Rationale.

5.3.6.2 GrainCorp

Yelarbon

The Yelarbon GrainCorp facility currently operates trucking movements around the silos that interface with the existing QR South Western Line corridor, with future turnout provisions for a siding. Through engagement, designs have been shared with GrainCorp, which communicated the continuation of these existing trucking movements. These movements contained legal and practical access via Railway Parade and the occasional use of the adjacent private crossing. GrainCorp have since confirmed no objections to the removal of the private crossing. The proposed access arrangement is integrated with the Cunningham Highway improvements and Yelarbon safety enhancements. The design includes a road over rail grade separation and realignments of local roads, eliminating the existing level crossing on the Cunningham Highway, following the guidelines outlined in the Public Level Crossing Treatment Methodology in Appendix BT.

Brookstead

The Brookstead GrainCorp facility 1 is located on the north-west side of the QR Millmerran Branch Line, with practical access from Ware Street. The project has no adverse impact on the facility's connectivity. Additionally, the design includes a turnout to provision for a future siding, facilitating grain transportation via Inland Rail.

GrainCorp maintains a backup storage location, facility 2, on the eastern side of Inland Rail, adjacent to the Gore Highway. Access to this site is via a private crossing on the QR line and an informal route from the Gore Highway. The design will aim to preserve the private crossing for vehicles since the Gore Highway is categorised as 'limited access,' and establishing a driveway connection at the current location is not feasible. Formalising the driveway is further complicated by the proposed road over rail grade separation to replace the existing active level crossing.

5.3.6.3 Holdfast Timbers

Holdfast Timbers is situated on the northern side of the existing QR South Western Line in Yelarbon and adjacent to GrainCorp. It currently has two legal and practical accesses:

- Via Railway Parade
- Via a private level crossing connecting to East Sawmill Road.

The private level crossing is located on a proposed rail siding, which if developed, would mean a non-compliance with ARTC standards. The revised reference design proposes to close the private crossing and maintain access via Railway Parade. The proposed access is integrated with the Cunningham Highway improvements and Yelarbon safety enhancements. The design includes a road over rail grade separation and realignments of local roads, eliminating the existing level crossing on the Cunningham Highway, following the guidelines outlined in the Public Level Crossing Treatment Methodology in Appendix BT.

5.3.6.4 Vary Agricultural Services

Vary Agricultural Services is located on the north-west side of the QR Millmerran Branch Line, accessible via Ware Street. The Project has no adverse impact on the facility's access or connectivity requirements. During the construction of the Gore Highway grade separation and level crossing removal, the business may experience minor travel disruptions. To mitigate this, a temporary side road will be constructed to facilitate safe and efficient vehicle movement around the site.

5.3.6.5 Wagner Corporation

Wagner Corporation own a significant portion of land in the Biddeston – Wellcamp area. The primary focus for connectivity and access, determined through consultation, is on the lots adjacent to Toowoomba Cecil Plains Road. In this area, the design proposed is a rail over road grade separation, which enables unimpeded access to both sides of the alignment. This design will not physically impact driveways and private access. However, due to the construction's proximity, it's anticipated temporary traffic control measures will be needed to ensure safety during construction. It's important to note that the details of private access across the railway are part of an ongoing detail design process, and discussions are well underway to address connectivity requirements between lots. Finally, it's acknowledged further work on connectivity will be necessary as Wellcamp progress the intermodal designs.

5.4 Intersection impact assessment and mitigation

5.4.1 Methodology

5.4.1.1 Turn warrants

The same turn warrant methodology has been adopted for the intersection impact assessment of all SCR and LGR intersections as was outlined in Section 5.3.1.1 for the access impact assessment. In contrast to the access impact assessment, the intersections impact assessment turn warrants assessment considers existing intersections with background traffic volumes and provides a comparison between existing turn treatments, required turn treatments without the Project, and required turn treatments with the Project, taking into consideration the peak impact month for turning construction movements.

5.4.1.2 Sight distance

The required sight distance for each intersection has been calculated based on the methodology outlined in the *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (2017)* and summarised of this TIA in Section 5.3.1.2. This distance should be considered during the Detailed Design stage of the Project when 12d models of the impacted intersections are available to ensure adequate sight distance at the temporary or permanent upgrade of any intersections used by construction traffic, or the appropriate mitigations.

5.4.1.3 Delay assessment

A delay assessment as per GTIA Part C Section 11 has been undertaken for each intersection where construction-related vehicles turn. The methodology for this assessment has been outlined in Section 2.5.2. Consistent with the GTIA, each intersection has undergone SIDRA analysis to assess the peak period operational performance for the 'without Project' and 'with Project' scenarios and to calculate the Net vehicle minutes delay for the impact assessment area, as outlined in Figure 5.9.

$$ID = \sum_{i=1}^n WD - \sum_{i=1}^n BC$$

where:

ID is aggregate intersection-delay impact vehicle-minutes.

WD is 'with development' intersection vehicle-minutes for design peak periods. This is calculated by multiplying the 'with development' average delay by movement to the base case volume on each movement, thus not counting the impact as delays to development traffic, only to pre-existing traffic that is affected by these additional delays.

BC is base case intersection vehicle-minutes for design peak periods

n is the number of intersections in the impact assessment area

i is each intersection within the impact assessment area.

Figure 5.9 Aggregate intersection delay calculation

Non-infrastructure-based mitigation measures were recommended to reduce the overall impact area aggregate vehicle minutes delay down to under 5 per cent in accordance with GTIA.

Where the non-infrastructure-based mitigations detailed above are assessed to be insufficient to reduce the overall impact area aggregate vehicle minutes delay down to under 5 per cent, a review of intersection operational performance (LOS, DoS, average delay, and 95th percentile queue) has undertaken to determine which intersections are require infrastructure-based mitigation measures.

5.4.2 Intersection information

Details for each of the intersection is provided in Table 5.22. The table summarises:

- Intersection name (with first street name indicating major road name)
- Construction activities through intersection
- Peak impact year
- The critical construction vehicle turn movements from major road to be assessed.

Table 5.22 Proposed construction vehicle movements at intersections

Intersection	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
State-Controlled Roads: Department of Transport and Main Roads			
Barwon Highway/Barwon Highway	Rail-to-road diversions, in situ concrete	2026	Right
Barwon Highway/Carnarvon Highway	Rail-to-road diversions	2025	Right
Barwon Highway/Leichhardt Highway	Rail-to-road diversions, in situ concrete	2026	Right, Left
Barwon Highway/Silo Street	Rail-to-road diversions	2025	Left
Barwon Highway/South Toobeah Road	Rail-to-road diversions	2025	Right
Barwon Highway/Town Common Road	Rail-to-road diversions, in situ concrete	2025	Left
Carnarvon Highway/Noondoo Thallon Road	Rail-to-road diversions	2025	Left
Cunningham Highway/Bybera Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2024	Right

Intersection	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
Cunningham Highway/ Cemetery Road	Workforce, Rail-to-road diversions, in situ concrete, precast concrete	2025	Left
Cunningham Highway/ Coolmunda Dam Access	Water	2024	Right
Cunningham Highway/ Cremascos Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2026	Right
Cunningham Highway/East Sawmill Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Cunningham Highway/ Elizabeth Street	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right
Cunningham Highway/Fosters Road	Cut-to-spoil, fill, quarry materials, water	2024	Left
Cunningham Highway/ Inglewood Quarry Access Road	Quarry materials, water	2027	Left
Cunningham Highway/ Kildonan Road	Workforce, in situ concrete, precast concrete, water	2024	Left
Cunningham Highway/ Leichhardt Highway	Workforce, Rail-to-road diversions, in situ concrete, precast concrete	2026	Right, Left
Cunningham Highway/ McDougalls Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2024	Right, Left
Cunningham Highway/ Millmerran-Inglewood Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2024	Right, Left
Cunningham Highway/ Springborg Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2024	Right, Left
Cunningham Highway/Texas- Yelarbon Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right
Cunningham Highway/ Whetstone Access Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2024	Right, Left
Cunningham Highway/ Woodcocks Road	Workforce, fill, in situ concrete, precast concrete	2025	Right
Cunningham Highway/ Yelarbon-Keetah Road	Workforce, non-resident workforce accommodation facility, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2026	Right
Cunningham Highway/ Yelarbon Kurumbul Road	Workforce, non-resident workforce accommodation facility, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Right, Left

Intersection	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
Gore Highway/Fysh Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right, Left
Gore Highway/Alderley Street	Workforce, in situ concrete, precast concrete	2025	Right, Left
Gore Highway/Athol School Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2024	Right, Left
Gore Highway/Biddeston Southbrook Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, rail components, sleepers, water	2025	Right, Left
Gore Highway/Blackwell Road	Rail-to-road diversions, quarry materials	2027	Left
Gore Highway/Bushy Lane	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Gore Highway/Campbell Street	Workforce, non-resident workforce accommodation facility, Rail-to-road diversions, in situ concrete, quarry materials	2027	Right
Gore Highway/Dieckmann Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Gore Highway/Florence Street	Workforce, non-resident workforce accommodation facility, Rail-to-road diversions, in situ concrete, quarry materials	2025	Left
Gore Highway/Gilgai Lane	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, rail components, sleepers, water	2027	Right, Left
Gore Highway/Hall Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right
Gore Highway/Linthorpe Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Gore Highway/Linthorpe Valley Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right, Left
Gore Highway/Lochaber Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right, Left

Intersection	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
Gore Highway/Millmerran-Inglewood Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Left
Gore Highway/Millmerran-Leyburn Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, rail components, sleepers, water	2026	Right, Left
Gore Highway/Murlaggan Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Gore Highway/Oakey-Pittsworth Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2026	Right, Left
Gore Highway/Paint Mine Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right, Left
Gore Highway/Saleyards Road	Workforce, non-resident workforce accommodation facility, Rail-to-road diversions, in situ concrete, quarry materials	2027	Right
Gore Highway/Scrubby Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Gore Highway/Tummaville Road/Yarranlea Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Gore Highway/Turallin Road	Workforce, non-resident workforce accommodation facility, Rail-to-road diversions, quarry materials	2026	Right
Gore Highway/Ware Street	Workforce, non-resident workforce accommodation facility, cut-to-fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2026	Left
Gore Highway/Ware Street	Workforce, non-resident workforce accommodation facility, cut-to-fill, Rail-to-road diversions, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Left
Gore Highway/West Street	Workforce, non-resident workforce accommodation facility, Rail-to-road diversions, in situ concrete, quarry materials	2026	Right
Leichhardt Highway/Hunt Street	Rail-to-road diversions, in situ concrete	2025	Left

Intersection	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
Millmerran-Inglewood Road/ Blackwell Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right, Left
Millmerran-Inglewood Road/ Campbell Street	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right, Left
Millmerran-Inglewood Road/ Commodore Peak Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, in situ concrete, plant and tools, precast concrete, rail components, sleepers, water	2026	Right
Millmerran-Inglewood Road/ Forestry Road	Construction camp, cut-to-fill, cut-to-spoil, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers	2025	Left
Millmerran-Inglewood Road/ Grays Road	Workforce, non-resident workforce accommodation facility, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Left
Millmerran-Inglewood Road/ Heckendorf Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2026	Right, Left
Millmerran-Inglewood Road/ Kooroongarra Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, in situ concrete, plant and tools, precast concrete, rail components, sleepers, water	2026	Right, Left
Millmerran-Inglewood Road/ Millwood Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right
Millmerran-Inglewood Road/ Moffatt Reserve Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, cut-to-spoil, fill, in situ concrete, plant and tools, precast concrete, rail components, sleepers, water	2025	Right, Left
Millmerran-Inglewood Road/ Owens Scrub Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2024	Right, Left
Millmerran-Inglewood Road/ Paton Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right, Left
Millmerran-Inglewood Road/ Thornton Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2024	Right, Left
Millmerran-Inglewood Road/ Wongavale Yugilbar Road	Workforce, non-resident workforce accommodation facility, fill, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right
Texas-Yelarbon Road/Access Track	Fill	2025	Left
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials	2025	Right

Intersection	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
Toowoomba-Cecil Plains Road/Brimblecombe Road	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2026	Right, Left
Toowoomba-Cecil Plains Road/Charlton Connection Road	In situ concrete, plant, and tools	2024	Right
Toowoomba-Cecil Plains Road/McDougall Street	In situ concrete, plant, and tools	2024	Right
Toowoomba-Cecil Plains Road/Omara Road	In situ concrete, plant and tools, precast concrete, quarry materials, water	2027	Right, Left
Toowoomba-Cecil Plains Road/Toowoomba Bypass (East)	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Left
Toowoomba-Cecil Plains Road/Toowoomba Bypass (West)	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Left
Toowoomba-Cecil Plains Road/Access Track	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Right, Left
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road	In situ concrete, plant and tools, precast concrete, quarry materials, water	2027	Left
Warrego Highway/Chamberlain Road	Workforce, cut-to-fill, in situ concrete, plant and tools, precast concrete, water	2027	Left
Warrego Highway/Leesons Road	Workforce, cut-to-fill, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Right
Warrego Highway/Omara Road/Steger Road	Workforce, cut-to-fill, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Right, Left
Warrego Highway/Toowoomba Bypass NB Ramps	Workforce, cut-to-fill, fill, in situ concrete, plant and tools, water	2025	Left
Warrego Highway/Toowoomba Bypass SB Ramps	Workforce, cut-to-fill, fill, in situ concrete, plant and tools, water	2025	Left
Warrego Highway Off-ramp/Kingsthorpe Overpass	Workforce, cut-to-fill, in situ concrete, plant and tools, precast concrete, water	2024	Right
State-Controlled Roads: Transport for New South Wales			
Newell Highway/River Road	Water	2024	Left
Local Government Roads: Goondiwindi Regional Council			
Cemetery Road/Access Track	Fill	2025	Left
Coolmunda Dam Access/Coolmunda Dam Access	Water	2024	Left
Hunt Street/Boodle Street	In situ concrete	2025	Right
Kildonan Road/Eukabilla Road	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2027	Right, Left
Kildonan Road/South Kurumbul Road	Fill, plant and tools, quarry materials, rail components, sleepers, water	2027	Left
McDougalls Road/Access Track	Workforce, in situ concrete, plant and tools, quarry materials, water	2024	Right
Mooroobie Lane/Cemetery Road	Fill	2025	Right

Intersection	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
Mooroobie Lane/Mooroobie Lane	Fill	2025	Right
Mosquito Creek Road/Grays Road	Fill	2025	Left
Suttons Road/Access Track	Fill	2025	Right
Wondalli Kurumbul Road/Mooroobie Lane	Fill	2025	Left
Yelarbon Kurumbul Road/Queen Street South	Workforce, in situ concrete, plant and tools, precast concrete, quarry materials, water	2024	Right
Yelarbon Kurumbul Road/South Kurumbul Road	Workforce, quarry materials, water	2027	Right, Left
Yelarbon Kurumbul Road/Wondalli Kurumbul Road	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials	2025	Left
Local Government Roads: Moree Plains Shire Council			
River Road/River Road	Water	2024	Left
Local Government Roads: Toowoomba Regional Council			
Campbell Street/Saleyards Road	Workforce, in situ concrete, quarry materials	2027	Left
Commodore Peak Road/Scragg Road	Workforce, cut-to-spoil, in situ concrete, plant and tools, water	2026	Right
Drayton Wellcamp Road/Boundary Street South	Precast concrete, quarry materials	2027	Left
Forestry Road/Access Track	Cut-to-spoil, fill	2025	Right
Gap Road/Grevillea Street	In situ concrete	2026	Right
Greenwattle Street/Alderley Street	Precast concrete	2024	Right
Kingsthorpe Haden Road/Kingsthorpe Overpass	Workforce, cut-to-fill, in situ concrete, plant and tools, precast concrete, water	2024	Right
Kooroongarra Road/Millwood Road	Fill	2025	Right
Leesons Road/Steger Road	Workforce, fill, in situ concrete, plant and tools, precast concrete, quarry materials, water	2025	Left
Linthorpe Valley Road/Geitz Road	Workforce, in situ concrete, plant and tools, quarry materials	2027	Right
Millwood Road/Millwood Road	Fill	2025	Left
Murlaggan Road/Kahler Road	Workforce, cut-to-fill, in situ concrete, plant and tools, quarry materials	2027	Left
Six Mile Road/Bligh Street	In situ concrete	2026	Right
Steger Road/Draper Road	Workforce, water	2025	Left
Tumaville Road/Quarry Road Access	Cut-to-spoil, quarry materials	2025	Left
Wellcamp Westbrook Road/Drayton Wellcamp Road	Precast concrete, quarry materials	2027	Left
West Street/Florence Street	In situ concrete	2025	Right
Yarranlea Road/Desmonds Lane	Workforce, in situ concrete, plant and tools, water	2026	Right

5.4.3 Turn warrant assessment

The results of the turn warrant assessment for intersections are provided in Table 5.23 and Table 5.24 for right and left turning treatments, respectively. It provides a summary of the peak hour volumes for the major road and minor road turning movements without and with Project traffic, existing turn treatments, minimum turn treatment requirements without and with the Project and indicates whether the existing treatment are insufficient and therefore mitigations are required. The turn treatment requirements should be reconsidered in detailed design following finalisation of routes and volumes in order to ensure appropriate intersection treatments are known.

For a number of the below assessments, it is noted that treatments may be warranted under existing conditions based on the adopted traffic flows. When an upgrade to an intersection is warranted under existing conditions, ARTC would be required to provide mitigations for the Project related impacts, regardless of the intersection design or age. Therefore, it is recommended that further detailed assessments, with intersection traffic counts, be undertaken as part of an updated TIA once a construction contractor has been appointed, and construction routes are finalised. At this point, consultation between ARTC, the construction contractor, DTMR and TRC/GRC should occur to determine:

- 1) The required upgrades to intersections on the final construction routes to accommodate the final construction vehicle numbers
- 2) The responsibility for upgrading this intersection to accommodate the construction traffic.

Intersection turn warrant graphs and calculations are provided in Appendix AT.

Table 5.23 Turn warrants assessment for right turning treatments at intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
State-Controlled Roads: Department of Transport and Main Roads									
Barwon Highway/Town Common Road	163	166	15	15	None	BAR	BAR	Yes	Yes
Carnarvon Highway/Noondoo Thallon Road	10	15	12	12	BAR	BAR	BAR	No	No
Cunningham Highway/Bybera Road	121	184	3	26	AUR	BAR	CHR(s)	Yes	Yes
Cunningham Highway/Cemetery Road	258	274	5	5	CHR	BAR	BAR	No	No
Cunningham Highway/Coolmunda Dam Access	133	133	3	8	CHR	BAR	BAR	No	No
Cunningham Highway/Cremascos Road	100	143	4	13	CHR	BAR	BAR	No	No
Cunningham Highway/East Sawmill Road	125	155	1	12	BAR	BAR	BAR	No	No
Cunningham Highway/Elizabeth Street (North)	194	257	1	11	CHR	BAR	BAR	No	No
Cunningham Highway/Elizabeth Street (South)	194	257	2	2	CHR	BAR	BAR	No	No
Cunningham Highway/Fosters Road	111	167	1	1	BAR	BAR	BAR	No	No
Cunningham Highway/Inglewood Quarry Access Road	109	130	2	2	AUR	BAR	BAR	No	No
Cunningham Highway/Leichhardt Highway	256	272	89	90	CHR	CHR	CHR	No	No
Cunningham Highway/McDougalls Crossing Road	100	170	1	5	BAR	BAR	BAR	No	No
Cunningham Highway/Millmerran-Inglewood Road	135	188	2	30	CHR	BAR	BAR	No	No
Cunningham Highway/Springborg Road	99	132	1	2	BAR	BAR	BAR	No	No
Cunningham Highway/Texas-Yelarbon Road	100	110	11	15	CHR(s)	BAR	BAR	No	No
Cunningham Highway/Whetstone Access Road	100	132	1	43	BAR	BAR	BAR	No	No
Cunningham Highway/Woodcocks Road	100	113	1	5	BAR	BAR	BAR	No	No
Cunningham Highway/Yelarbon-Keetah Road	20	22	58	64	BAR	BAR	BAR	No	No
Cunningham Highway/Yelarbon Kurumbul Road (North)	3	15	2	2	BAR	BAR	BAR	No	No
Cunningham Highway/Yelarbon Kurumbul Road (South)	5	21	1	27	BAR	BAR	BAR	No	No
Gore Highway/Athol School Road	517	618	8	17	CHR	CHR(s)	CHR	No	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Gore Highway/Biddeston Southbrook Road	511	560	1	4	None	BAR	BAR	Yes	Yes
Gore Highway/Blackwell Road	208	228	1	1	BAR	BAR	BAR	No	No
Gore Highway/Bushy Lane West (West)	445	580	2	281	BAR	BAR	CHR	Yes	Yes
Gore Highway/Bushy Lane West (East)	445	579	1	1	BAR	BAR	BAR	No	No
Gore Highway/Campbell Street	126	126	71	80	BAR	BAR	BAR	No	No
Gore Highway/Dieckmann Road	258	327	1	2	None	BAR	BAR	Yes	Yes
Gore Highway/Florence Street	166	290	14	14	BAR	BAR	BAR	No	No
Gore Highway/Fysh Road	247	305	4	12	None	BAR	CHR(s)	Yes	Yes
Gore Highway/Gilgai Lane	276	329	2	11	BAR	BAR	CHR(s)	Yes	Yes
Gore Highway/Hall Road (West)	276	352	1	1	BAR	BAR	BAR	No	No
Gore Highway/Hall Road (East)	276	352	1	6	BAR	BAR	BAR	No	No
Gore Highway/Linthorpe Road	586	641	3	31	BAR	BAR	CHR	Yes	Yes
Gore Highway/Linthorpe Valley Road	522	556	4	8	BAR	BAR	CHR(s)	Yes	Yes
Gore Highway/Lochaber Road	279	304	4	8	CHR	BAR	BAR	No	No
Gore Highway/Millmerran-Inglewood Road	185	285	1	1	BAR	BAR	BAR	No	No
Gore Highway/Millmerran-Leyburn Road	175	246	3	12	AUR	BAR	BAR	No	No
Gore Highway/Murlaggan Road (North)	202	224	2	27	CHR	BAR	CHR(s)	No	No
Gore Highway/Murlaggan Road (South)	203	216	21	22	CHR	CHR(s)	CHR(s)	No	No
Gore Highway/Oakey Pittsworth Road	201	230	36	40	CHR	CHR(s)	CHR(s)	No	No
Gore Highway/Paint Mine Road	296	322	1	4	None	BAR	BAR	Yes	Yes
Gore Highway/Saleyards Road	166	301	11	14	BAR	BAR	BAR	No	No
Gore Highway/Scrubby Road	244	283	1	120	None	BAR	CHR	Yes	Yes
Gore Highway/Tummaville Road/Yarranlea Road (North)	246	279	4	121	BAR	BAR	CHR	Yes	Yes
Gore Highway/Tummaville Road/Yarranlea Road (South)	252	277	2	2	BAR	BAR	BAR	No	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Gore Highway/Turallin Road	148	148	6	6	BAR	BAR	BAR	No	No
Gore Highway/Ware Street (North)	295	304	10	10	BAR	CHR(s)	CHR(s)	Yes	Yes
Gore Highway/Ware Street (South)	295	307	20	20	BAR	CHR(s)	CHR(s)	Yes	Yes
Gore Highway/Ware Street	276	309	5	5	AUR	BAR	BAR	No	No
Gore Highway/West Street	166	295	4	5	CHR	BAR	BAR	No	No
Kingsthorpe Haden Road/Kingsthorpe Overpass	298	298	7	7	CHR	BAR	BAR	No	No
Leichhardt Highway/Hunt Street (North)	183	187	1	1	CHR	BAR	BAR	No	No
Leichhardt Highway/Hunt Street (South)	183	188	1	1	CHR	BAR	BAR	No	No
Millmerran-Inglewood Road/Blackwell Road	55	94	1	9	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Campbell Street	52	68	20	66	AUR	BAR	BAR	No	No
Millmerran-Inglewood Road/Commodore Peak Road	77	139	1	16	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Forestry Road	71	119	1	1	None	BAR	BAR	Yes	Yes
Millmerran-Inglewood Road/Grays Road	34	64	1	1	None	BAR	BAR	Yes	Yes
Millmerran-Inglewood Road/Heckendorf Road	52	126	1	2	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Koorongarra Road (North)	3	4	1	1	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Koorongarra Road (South)	3	18	1	2	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Millwood Road (North)	3	3	1	13	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Millwood Road (South)	3	3	1	1	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Moffatt Reserve Road	71	112	10	14	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Owens Scrub Road	53	78	13	42	BAR	BAR	BAR	No	No
Millmerran-Inglewood Road/Paton Road	71	94	1	2	None	BAR	BAR	Yes	Yes
Millmerran-Inglewood Road/Thornton Road	24	121	1	5	None	BAR	BAR	Yes	Yes
Millmerran-Inglewood Road/Wongavale Yugalbar Road (West)	36	53	1	1	None	BAR	BAR	Yes	Yes
Millmerran-Inglewood Road/Wongavale Yugalbar Road (East)	36	53	1	9	None	BAR	BAR	Yes	Yes

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Texas-Yelarbon Road/Unnamed Road	21	25	1	1	None	BAR	BAR	Yes	No
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road	384	397	1	21	BAR	BAR	CHR(s)	Yes	Yes
Toowoomba-Cecil Plains Road/Brimblecombe Road	316	326	4	13	BAR	BAR	CHR(s)	Yes	Yes
Toowoomba-Cecil Plains Road/Omara Road	382	385	244	251	CHR	CHR	CHR	No	No
Toowoomba-Cecil Plains Road/Unnamed Road (West)	89	89	1	1	None	BAR	BAR	Yes	No
Toowoomba-Cecil Plains Road/Unnamed Road (East)	89	109	1	5	None	BAR	BAR	Yes	No
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road (West)	3	10	56	56	BAR	BAR	BAR	No	No
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road (East)	3	3	59	59	BAR	BAR	BAR	No	No
Warrego Highway/Chamberlain Road	0	0	0	0	Not permitted	N/A	N/A	No	No
Warrego Highway/Leesons Road	1303	1313	1	21	CHR	BAR	CHR	No	No
State-Controlled Roads: Transport for New South Wales									
Newell Highway/River Road	479	481	1	1	BAR	BAR	BAR	No	No
Local Government Roads: Goondiwindi Regional Council									
Cemetery Road/Unnamed Road	3	7	11	11	None	BAR	BAR	Yes	No
Coolmunda Dam Access/Coolmunda Dam Access	7	12	3	3	None	BAR	BAR	Yes	No
Hunt Street/Boodle Street	3	3	1	2	None	BAR	BAR	Yes	No
Kildonan Road/Eukabilla Road	185	199	1	3	BAR	BAR	BAR	No	No
Kildonan Road/South Kurumbul Road	185	189	3	3	BAR	BAR	BAR	No	No
McDougalls Road/Unnamed Road	3	3	1	7	None	BAR	BAR	Yes	No
Mooroobie Lane/Cemetery Road	3	3	12	16	BAR	BAR	BAR	No	No
Mooroobie Lane/Mooroobie Lane	3	3	1	8	BAR	BAR	BAR	No	No
Mosquito Creek Road/Grays Road	3	9	1	1	None	BAR	BAR	Yes	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Suttons Road/Unnamed Road	3	3	1	17	None	BAR	BAR	Yes	No
Wondalli Kurumbul Road/Mooroobie Lane (West)	3	10	1	1	BAR	BAR	BAR	No	No
Wondalli Kurumbul Road/Mooroobie Lane (East)	3	3	1	1	BAR	BAR	BAR	No	No
Yelarbon Kurumbul/Queen Street South	6	16	1	6	None	BAR	BAR	Yes	No
Yelarbon Kurumbul Road/South Kurumbul Road	7	15	3	4	None	BAR	BAR	Yes	No
Yelarbon Kurumbul Road/Wondalli Kurumbul Road	6	23	1	1	BAR	BAR	BAR	No	No
Local Government Roads: Moree Plains Shire Council									
River Road/River Road	3	5	1	1	None	BAR	BAR	Yes	No
Local Government Roads: Toowoomba Regional Council									
Campbell Street/Saleyards Road	182	238	14	14	BAR	BAR	BAR	No	No
Commodore Peak Road/Scragg Road	4	4	1	17	None	BAR	BAR	Yes	No
Drayton Wellcamp Road/Unnamed Road (North)	324	333	1	1	CHR	BAR	BAR	No	No
Drayton Wellcamp Road/Unnamed Road (South)	324	326	1	1	CHR	BAR	BAR	No	No
Forestry Road/Unnamed Road	3	3	1	7	None	BAR	BAR	Yes	No
Gap Road/Grevillea Street	110	110	21	22	None	BAR	BAR	Yes	No
Greenwattle Street/Alderley Street*	343	343	507	508	None	CHR	CHR	Yes	No
Kooroongarra Road/Millwood Road (North)	3	3	1	1	BAR	BAR	BAR	No	No
Kooroongarra Road/Millwood Road (South)	3	3	1	13	BAR	BAR	BAR	No	No
Leesons Road/Steger Road	6	19	51	51	None	BAR	BAR	Yes	No
Linthorpe Valley Road/Geitz Road	3	3	5	7	None	BAR	BAR	Yes	No
Millwood Road/Millwood Road	3	15	1	1	BAR	BAR	BAR	No	No
Murlaggan Road/Kahler Road (West)	3	3	1	1	None	BAR	BAR	Yes	No
Murlaggan Road/Kahler Road (East)	3	4	1	1	None	BAR	BAR	Yes	No
Six Mile Road/Bligh Street	3	3	1	3	None	BAR	BAR	Yes	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Steger Road/Draper Road	121	132	70	70	None	BAR	BAR	Yes	No
Tummalville Road/Unnamed Road	15	29	1	1	None	BAR	BAR	Yes	No
Wellcamp Westbrook Road/Drayton Wellcamp Road	117	124	166	166	None	CHR(s)	CHR(s)	Yes	No
West Street/Florence Street (West)	9	11	13	14	BAR	BAR	BAR	No	No
West Street/Florence Street (East)	9	11	12	12	BAR	BAR	BAR	No	No
Yarranlea Road/Desmonds Lane (West)	9	9	1	1	BAR	BAR	BAR	No	No
Yarranlea Road/Desmonds Lane (East)	9	9	1	6	BAR	BAR	BAR	No	No

Table note:

* Refer to Appendix AN for further safety mitigation treatments required

Table 5.24 Turn warrants assessment for left turning treatments at intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
State-Controlled Roads: Department of Transport and Main Roads									
Barwon Highway/Barwon Highway (North)	1	1	78	78	CHL	BAL	BAL	No	No
Barwon Highway/Barwon Highway (South)	1	1	84	84	CHL	BAL	BAL	No	No
Barwon Highway/Carnarvon Highway	9	9	11	11	CHL	BAL	BAL	No	No
Barwon Highway/Leichhardt Highway	84	90	93	96	AUL	BAL	BAL	No	No
Barwon Highway/Silo Street	12	17	6	7	None	BAL	BAL	Yes	No
Barwon Highway/South Toobeah Road (West)	1	1	4	4	BAL	BAL	BAL	No	No
Barwon Highway/South Toobeah Road (East)	1	1	4	4	BAL	BAL	BAL	No	No
Barwon Highway/Town Common Road	78	79	15	16	BAL	BAL	BAL	No	No
Carnarvon Highway/Noondoo Thallon Road	5	5	12	17	BAL	BAL	BAL	No	No
Cunningham Highway/Bybera Road	66	80	1	1	AUL	BAL	BAL	No	No
Cunningham Highway/Cemetery Road	116	128	5	8	BAL	BAL	BAL	No	No
Cunningham Highway/Leichhardt Highway	139	140	89	92	CHL	AUL(s)	AUL(s)	No	No
Cunningham Highway/McDougalls Crossing Road	50	64	1	4	BAL	BAL	BAL	No	No
Cunningham Highway/Millmerran-Inglewood Road	59	80	25	36	CHL	BAL	BAL	No	No
Cunningham Highway/Springborg Road	50	66	1	6	BAL	BAL	BAL	No	No
Cunningham Highway/Texas-Yelarbon Road	49	50	11	11	BAL	BAL	BAL	No	No
Cunningham Highway/Whetstone Access Road	50	63	1	8	BAL	BAL	BAL	No	No
Cunningham Highway/Woodcocks Road	50	51	1	1	BAL	BAL	BAL	No	No
Cunningham Highway/Yelarbon-Keetah Road	6	7	2	2	BAL	BAL	BAL	No	No
Cunningham Highway/Yelarbon Kurumbul Road (North)	1	12	1	1	BAL	BAL	BAL	No	No
Cunningham Highway/Yelarbon Kurumbul Road (South)	1	2	3	7	BAL	BAL	BAL	No	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Gore Highway/Athol School Road	309	316	2	50	AUL	BAL	AUL or CHL	No	No
Gore Highway/Biddeston Southbrook Road	293	297	6	18	None	BAL	AUL(s)	Yes	Yes
Gore Highway/Blackwell Road	94	102	1	5	BAL	BAL	BAL	No	No
Gore Highway/Bushy Lane West (West)	241	297	1	2	BAL	BAL	BAL	No	No
Gore Highway/Bushy Lane West (East)	203	281	1	1	BAL	BAL	BAL	No	No
Gore Highway/Campbell Street	58	58	15	15	BAL	BAL	BAL	No	No
Gore Highway/Dieckmann Road	134	165	1	33	None	BAL	AUL(s)	Yes	Yes
Gore Highway/Florence Street	81	201	14	15	BAL	BAL	BAL	No	No
Gore Highway/Fysh Road	116	124	4	7	BAL	BAL	BAL	No	No
Gore Highway/Gilgai Lane	132	135	2	3	None	BAL	BAL	Yes	No
Gore Highway/Hall Road (West)	143	211	1	1	CHL	BAL	BAL	No	No
Gore Highway/Hall Road (East)	132	140	1	1	CHL	BAL	BAL	No	No
Gore Highway/Linthorpe Road	273	286	8	22	BAL	BAL	AUL(s)	Yes	Yes
Gore Highway/Linthorpe Valley Road	286	293	4	6	BAL	BAL	BAL	No	No
Gore Highway/Lochaber Road	145	153	7	8	CHL	BAL	BAL	No	No
Gore Highway/Millmerran-Inglewood Road	95	100	14	40	CHL	BAL	BAL	No	No
Gore Highway/Millmerran-Leyburn Road	83	89	3	9	BAL	BAL	BAL	No	No
Gore Highway/Murlaggan Road (North)	108	114	1	11	CHL	BAL	BAL	No	No
Gore Highway/Murlaggan Road (South)	93	99	2	3	CHL	BAL	BAL	No	No
Gore Highway/Oakey Pittsworth Road	102	114	7	8	CHL	BAL	BAL	No	No
Gore Highway/Paint Mine Road	165	172	1	2	None	BAL	BAL	Yes	No
Gore Highway/Saleyards Road	84	93	11	11	BAL	BAL	BAL	No	No
Gore Highway/Scrubby Road	113	121	6	18	BAL	BAL	BAL	No	No
Gore Highway/Tummalville Road/Yarranlea Road (North)	118	136	2	10	BAL	BAL	BAL	No	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Gore Highway/Tummalville Road/Yarranlea Road (South)	126	133	8	8	BAL	BAL	BAL	No	No
Gore Highway/Turallin Road	74	74	1	1	None	BAL	BAL	Yes	No
Gore Highway/Ware Street (North)	128	155	11	11	AUL	BAL	BAL	No	No
Gore Highway/Ware Street (South)	139	148	10	13	AUL	BAL	BAL	No	No
Gore Highway/Ware Street	132	136	5	6	BAL	BAL	BAL	No	No
Gore Highway/West Street	81	204	4	4	BAL	BAL	BAL	No	No
Kingsthorpe Haden Road/Kingsthorpe Overpass	6	6	2	2	BAL	BAL	BAL	No	No
Leichhardt Highway/Hunt Street (North)	93	95	1	1	AUL	BAL	BAL	No	No
Leichhardt Highway/Hunt Street (South)	89	91	1	2	AUL	BAL	BAL	No	No
Millmerran-Inglewood Road/Blackwell Road	33	34	1	9	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Campbell Street	20	23	21	23	CHL	BAL	BAL	No	No
Millmerran-Inglewood Road/Commodore Peak Road	25	38	1	1	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Forestry Road	38	60	1	5	None	BAL	BAL	Yes	No
Millmerran-Inglewood Road/Grays Road	16	19	1	7	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Heckendorf Road	30	40	1	26	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Kooroongarra Road (North)	1	1	1	2	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Kooroongarra Road (South)	1	1	1	16	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Millwood Road (North)	1	1	1	1	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Millwood Road (South)	1	1	1	1	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Moffatt Reserve Road	32	69	10	13	AUL	BAL	BAL	No	No
Millmerran-Inglewood Road/Owens Scrub Road	29	30	7	30	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Paton Road	32	44	1	12	BAL	BAL	BAL	No	No
Millmerran-Inglewood Road/Thornton Road	13	25	1	28	None	BAL	BAL	Yes	No
Millmerran-Inglewood Road/Wongavale Yugalbar Road (West)	18	34	1	1	None	BAL	BAL	Yes	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Millmerran-Inglewood Road/Wongavale Yugalbar Road (East)	17	18	1	1	None	BAL	BAL	Yes	No
Texas-Yelarbon Road/Unnamed Road	11	11	1	5	None	BAL	BAL	Yes	No
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road	214	226	14	14	BAL	BAL	BAL	No	No
Toowoomba-Cecil Plains Road/Brimblecombe Road	153	154	4	8	BAL	BAL	BAL	No	No
Toowoomba-Cecil Plains Road/Omara Road	185	186	244	245	None	AUL or CHL	AUL or CHL	Yes	No
Toowoomba-Cecil Plains Road/Unnamed Road (West)	1	1	1	1	None	BAL	BAL	Yes	No
Toowoomba-Cecil Plains Road/Unnamed Road (East)	87	87	1	21	None	BAL	BAL	Yes	No
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road (West)	1	1	59	66	BAL	BAL	BAL	No	No
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road (East)	1	1	56	56	BAL	BAL	BAL	No	No
Warrego Highway/Chamberlain Road	579	580	1	6	None	BAL	AUL(s)	Yes	Yes
Warrego Highway/Leesons Road	748	749	1	1	BAL	BAL	BAL	No	No
State-Controlled Roads: Transport for New South Wales									
Newell Highway/River Road	240	240	1	3	BAL	BAL	BAL	No	No
Local Government Roads: Goondiwindi Regional Council									
Cemetery Road/Unnamed Road	1	1	11	15	None	BAL	BAL	Yes	No
Coolmunda Dam Access/Coolmunda Dam Access	3	3	3	8	None	BAL	BAL	Yes	No
Hunt Street/Boodle Street	1	1	1	1	None	BAL	BAL	Yes	No
Kildonan Road/Eukabilla Road	93	94	1	13	BAL	BAL	BAL	No	No
Kildonan Road/South Kurumbul Road	93	94	3	5	BAL	BAL	BAL	No	No
McDougalls Road/Unnamed Road	1	1	1	1	None	BAL	BAL	Yes	No
Mooroobie Lane/Cemetery Road	1	1	12	12	None	BAL	BAL	Yes	No
Mooroobie Lane/Mooroobie Lane	1	1	1	1	BAL	BAL	BAL	No	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Mosquito Creek Road/Grays Road	1	1	1	7	None	BAL	BAL	Yes	No
Suttons Road/Unnamed Road	1	1	1	1	None	BAL	BAL	Yes	No
Wondalli Kurumbul Road/Mooroobie Lane (West)	1	1	1	8	BAL	BAL	BAL	No	No
Wondalli Kurumbul Road/Mooroobie Lane (East)	1	1	1	1	BAL	BAL	BAL	No	No
Yelarbon Kurumbul/Queen Street South	2	3	1	1	None	BAL	BAL	Yes	No
Yelarbon Kurumbul Road/South Kurumbul Road	4	9	3	5	None	BAL	BAL	Yes	No
Yelarbon Kurumbul Road/Wondalli Kurumbul Road	2	3	1	8	BAL	BAL	BAL	No	No
Local Government Roads: Moree Plains Shire Council									
River Road/River Road	1	1	1	3	None	BAL	BAL	Yes	No
Local Government Roads: Toowoomba Regional Council									
Campbell Street/Saleyards Road	90	90	14	17	BAL	BAL	BAL	No	No
Commodore Peak Road/Scragg Road	1	1	1	1	None	BAL	BAL	Yes	No
Drayton Wellcamp Road/Unnamed Road (North)	166	167	1	8	AUL	BAL	BAL	No	No
Drayton Wellcamp Road/Unnamed Road (South)	157	158	1	1	AUL	BAL	BAL	No	No
Forestry Road/Unnamed Road	1	1	1	1	None	BAL	BAL	Yes	No
Gap Road/Grevillea Street	58	58	21	21	None	BAL	BAL	Yes	No
Greenwattle Street/Alderley Street*	166	166	507	507	None	AUL(s)	AUL(s)	Yes	No
Kooroongarra Road/Millwood Road (North)	1	1	1	1	BAL	BAL	BAL	No	No
Kooroongarra Road/Millwood Road (South)	1	1	1	1	BAL	BAL	BAL	No	No
Leesons Road/Steger Road	3	4	51	54	None	BAL	BAL	Yes	No
Linthorpe Valley Road/Geitz Road	1	1	5	5	None	BAL	BAL	Yes	No
Millwood Road/Millwood Road	1	1	1	13	BAL	BAL	BAL	No	No
Murlaggan Road/Kahler Road (West)	1	1	1	1	None	BAL	BAL	Yes	No
Murlaggan Road/Kahler Road (East)	1	1	1	2	None	BAL	BAL	Yes	No

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required prior to Project?	Mitigations required by Project?
	Without Project	With Project	Without Project	With Project		Without Project	With Project		
Six Mile Road/Bligh Street	1	1	1	1	None	BAL	BAL	Yes	No
Steger Road/Draper Road	69	77	70	73	BAL	BAL	BAL	No	No
Tummaville Road/Unnamed Road	5	5	1	15	BAL	BAL	BAL	No	No
Wellcamp Westbrook Road/Drayton Wellcamp Road	56	56	166	173	BAL	BAL	BAL	No	No
West Street/Florence Street (West)	4	5	12	12	BAL	BAL	BAL	No	No
West Street/Florence Street (East)	4	5	13	13	BAL	BAL	BAL	No	No
Yarranlea Road/Desmonds Lane (West)	4	4	1	1	BAL	BAL	BAL	No	No
Yarranlea Road/Desmonds Lane (East)	4	4	1	1	BAL	BAL	BAL	No	No

Table note:

* Refer to Appendix AN for further safety mitigation treatments required

Based on the above, Table 5.25 summarises the number of intersections expected to require upgrades to right turn lane provisions.

Table 5.25 Number of intersections requiring right turn treatments

Authority	Number of intersections requiring treatment upgrade prior to the Project	Number of intersections requiring treatment upgrade due to the Project	Total number of intersections requiring turn treatments upgrade
DTMR	16*	10*	25
GRC	8	0	8
TRC	13	0	13
MPSC	1	0	1
Total	38*	10*	47

Table note:

* One intersection warrants a treatment upgrade prior to the Project, and a further upgrade due to the Project

The following 10 intersections have additional right turn warrant requirements triggered as a result of the construction traffic:

- Cunningham Highway/Bybera Road
- Gore Highway/Bushy Lane West (West)
- Gore Highway/Fysh Road
- Gore Highway/Gilgai Lane
- Gore Highway/Linthorpe Road
- Gore Highway/Linthorpe Valley Road
- Gore Highway/Scrubby Road
- Gore Highway/Tummaville Road/Yarranlea Road (North)
- Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road
- Toowoomba-Cecil Plains Road/Brimblecombe Road.

Thirty-seven (37) other intersections identified in Table 5.23 currently warrant upgrades to the right turn treatments. However, these are required regardless of the addition of construction related activities.

Based on Table 5.24, Table 5.26 summarises the number of intersections expected to require upgrades to left turn lane provisions.

Table 5.26 Number of intersections requiring left turn treatments

Authority	Number of intersections requiring treatment upgrade prior to the Project	Number of intersections requiring treatment upgrade due to the Project	Total number of intersections requiring turn treatments upgrade
DTMR	15*	4*	16
GRC	9	0	9
TRC	10	0	10
MPSC	1	0	1
Total	35*	4*	36

Table note:

* Three intersections warrant a treatment upgrade prior to the Project, and a further upgrade due to the Project

The following four intersections have additional left turn warrant requirements triggered as a result of the construction traffic:

- Gore Highway/Biddeston Southbrook Road
- Gore Highway/Dieckmann Road
- Gore Highway/Linthorpe Road
- Warrego Highway/Chamberlain Road.

Thirty-two (32) other intersections identified in Table 5.24 currently warrant upgrades to the left turn treatments. However, these are required regardless of the addition of construction related activities.

Following updated assessment in detail design, confirming construction traffic volumes and routes, responsibility for intersection upgrades will be agreed with the relevant road authority.

5.4.4 Sight distance assessment

Table 5.27 provides a summary of sight distance requirements at each intersection, including required inputs relating to the road seal, major road speed limit and longitudinal grade used in the calculation of minimum SISD.

Further details relating to the sight distance calculation are provided in Appendix AU.

Table 5.27 Sight distance assessment at intersections

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
State-Controlled Roads: Department of Transport and Main Roads				
Barwon Highway/Barwon Highway	Sealed	60	-0.5%	161
Barwon Highway/Carnarvon Highway	Sealed	100	0.0%	300
Barwon Highway/Leichhardt Highway	Sealed	60	-0.5%	161
Barwon Highway/Silo Street	Sealed	100	-0.5%	300
Barwon Highway/South Toobeah Road	Sealed	80	-1.5%	226
Barwon Highway/Town Common Road	Sealed	100	-0.5%	300
Carnarvon Highway/Noondoo Thallon Road	Sealed	60	-0.5%	161
Cunningham Highway/Bybera Road	Sealed	100	-1.0%	300
Cunningham Highway/Cemetery Road	Sealed	80	-0.5%	226
Cunningham Highway/Coolmunda Dam Access	Sealed	100	-0.7%	300
Cunningham Highway/Cremascos Road	Sealed	100	-1.0%	300
Cunningham Highway/East Sawmill Road	Sealed	60	-1.5%	161
Cunningham Highway/Elizabeth Street	Sealed	50	-0.5%	131
Cunningham Highway/Fosters Road	Sealed	100	-1.2%	300
Cunningham Highway/Inglewood Quarry Access Road	Sealed	100	-0.8%	300
Cunningham Highway/Kildonan Road	Sealed	80	-0.2%	226
Cunningham Highway/Leichhardt Highway	Sealed	80	-0.4%	226
Cunningham Highway/McDougalls Road	Sealed	100	-0.5%	300
Cunningham Highway/Millmerran-Inglewood Road	Sealed	80	-1.0%	226
Cunningham Highway/Springborg Road	Sealed	100	-2.0%	300
Cunningham Highway/Texas-Yelarbon Road	Sealed	100	-0.5%	300

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Cunningham Highway/Whetstone Access Road	Sealed	100	-0.5%	300
Cunningham Highway/Woodcocks Road	Sealed	100	-1.0%	300
Cunningham Highway/Yelarbon-Keetah Road	Sealed	60	-0.5%	161
Cunningham Highway/Yelarbon Kurumbul Road	Sealed	60	-0.5%	161
Gore Highway/Fysh Road	Sealed	100	-1.5%	300
Gore Highway/Alderley Street	Sealed	60	-1.0%	161
Gore Highway/Athol School Road	Sealed	100	-2.7%	300
Gore Highway/Biddeston Southbrook Road	Sealed	100	-2.8%	300
Gore Highway/Blackwell Road	Sealed	100	-3.0%	300
Gore Highway/Bushy Lane	Sealed	100	-1.8%	300
Gore Highway/Campbell Street	Sealed	60	-1.0%	161
Gore Highway/Dieckmann Road	Sealed	100	-1.0%	300
Gore Highway/Florence Street	Sealed	60	-1.0%	161
Gore Highway/Gilgai Lane	Sealed	100	-1.0%	300
Gore Highway/Hall Road	Sealed	100	-1.5%	300
Gore Highway/Linthorpe Road	Sealed	100	-0.4%	300
Gore Highway/Linthorpe Valley Road	Sealed	100	-3.5%	301
Gore Highway/Lochaber Road	Sealed	100	-1.0%	300
Gore Highway/Millmerran-Inglewood Road	Sealed	80	-0.5%	226
Gore Highway/Millmerran-Leyburn Road	Sealed	100	-1.0%	300
Gore Highway/Murlaggan Road	Sealed	100	-0.8%	300
Gore Highway/Oakey-Pittsworth Road	Sealed	100	-2.5%	300
Gore Highway/Paint Mine Road	Sealed	100	-0.5%	300
Gore Highway/Saleyards Road	Sealed	60	-1.5%	161
Gore Highway/Scrubby Road	Sealed	100	-1.5%	300
Gore Highway/Tummaville Road/Yarranlea Road	Sealed	100	-1.0%	300
Gore Highway/Turallin Road	Sealed	100	-1.7%	300
Gore Highway/Ware Street (N)	Sealed	100	-0.3%	300
Gore Highway/Ware Street (S)	Sealed	100	-0.3%	300
Gore Highway/West Street	Sealed	40	-1.0%	104
Leichhardt Highway/Hunt Street	Sealed	80	0.0%	226
Millmerran-Inglewood Road/Blackwell Road	Sealed	100	-0.5%	300
Millmerran-Inglewood Road/Campbell Street	Sealed	80	-0.5%	226
Millmerran-Inglewood Road/Commodore Peak Road	Sealed	100	-2.5%	300
Millmerran-Inglewood Road/Forestry Road	Sealed	100	-1.5%	300
Millmerran-Inglewood Road/Grays Road	Sealed	100	-1.0%	300
Millmerran-Inglewood Road/Heckendorf Road	Sealed	100	-2.0%	300
Millmerran-Inglewood Road/Kooroongarra Road	Sealed	100	-1.5%	300
Millmerran-Inglewood Road/Millwood Road	Sealed	100	-0.5%	300

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Millmerran-Inglewood Road/Moffatt Reserve Road	Sealed	100	-0.5%	300
Millmerran-Inglewood Road/Owens Scrub Road	Sealed	80	-2.0%	226
Millmerran-Inglewood Road/Paton Road	Sealed	100	-1.5%	300
Millmerran-Inglewood Road/Thornton Road	Sealed	100	-0.7%	300
Millmerran-Inglewood Road/Wongavale Yugalbar Road	Sealed	100	-1.5%	300
Texas-Yelarbon Road/Access Track	Sealed	100	-0.5%	300
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road	Sealed	100	-3.1%	300
Toowoomba-Cecil Plains Road/Brimblecombe Road	Sealed	100	-2.0%	300
Toowoomba-Cecil Plains Road/Charlton Connection Road	Sealed	60	-2.9%	161
Toowoomba-Cecil Plains Road/McDougall Street	Sealed	60	-1.8%	161
Toowoomba-Cecil Plains Road/Omara Road	Sealed	90	-1.5%	262
Toowoomba-Cecil Plains Road/Toowoomba Bypass NB Ramps	Sealed	80	-1.0%	226
Toowoomba-Cecil Plains Road/Toowoomba Bypass SB Ramps	Sealed	80	-3.5%	226
Toowoomba-Cecil Plains Road/Access Track	Sealed	100	-0.5%	300
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road	Sealed	100	-4.5%	301
Warrego Highway/Chamberlain Road	Sealed	80	-3.0%	226
Warrego Highway/Leesons Road	Sealed	80	-0.5%	226
Warrego Highway/Omara Road/Steger Road	Sealed	70	-1.0%	192
Warrego Highway/Toowoomba Bypass NB Ramps	Sealed	80	-0.9%	226
Warrego Highway/Toowoomba Bypass SB Ramps	Sealed	80	-0.9%	226
Warrego Highway Off-ramp/Kingsthorpe Overpass	Sealed	60	-2.0%	-
State-Controlled Roads: Transport for New South Wales				
Newell Highway/River Road	Sealed	100	-0.5%	300
Local Government Roads: Goondiwindi Regional Council				
Cemetery Road/Access Track	Unsealed	100	-0.5%	345
Coolmunda Dam Access/Coolmunda Dam Access	Sealed	80	-1.5%	226
Hunt Street/Boodle Street	Sealed	50	-0.5%	131
Kildonan Road/Eukabilla Road	Sealed	100	-1.5%	300
Kildonan Road/South Kurumbul Road	Sealed	100	-1.5%	300
McDougalls Road/Access Track	Unsealed	100	-0.5%	345
Mooroobie Lane/Cemetery Road	Unsealed	100	0.0%	344
Mooroobie Lane/Mooroobie Lane	Unsealed	100	-2.5%	345
Mosquito Creek Road/Grays Road	Unsealed	100	-1.0%	345

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Suttons Road/Access Track	Unsealed	100	-0.5%	345
Wondalli Kurumbul Road/Mooroobie Lane	Unsealed	100	-1.0%	345
Yelarbon Kurumbul Road/Queen Street South	Sealed	100	-1.0%	300
Yelarbon Kurumbul Road/South Kurumbul Road	Sealed	100	-0.5%	300
Yelarbon Kurumbul Road/Wondalli Kurumbul Road	Sealed	100	-0.5%	300
Local Government Roads: Moree Plains Shire Council				
River Road/River Road	Sealed	50	0.0%	131
Local Government Roads: Toowoomba Regional Council				
Campbell Street/Saleyards Road	Sealed	60	-1.0%	161
Commodore Peak Road/Scragg Road	Sealed	100	-0.8%	300
Drayton Wellcamp Road/Boundary Street South	Sealed	80	-4.0%	226
Forestry Road/Access Track	Unsealed	100	-0.5%	345
Gap Road/Grevillea Street	Sealed	60	-1.0%	161
Greenwattle Street/Alderley Street	Sealed	70	-3.0%	192
Kingsthorpe Haden Road/Kingsthorpe Overpass	Sealed	60	-2.5%	161
Kooroongarra Road/Millwood Road	Sealed	100	-2.0%	300
Leesons Road/Steger Road	Sealed	100	-2.6%	300
Linthorpe Valley Road/Geitz Road	Sealed	100	-0.4%	300
Millwood Road/Millwood Road	Unsealed	100	-1.5%	345
Murlaggan Road/Kahler Road	Unsealed	100	-5.5%	345
Six Mile Road/Bligh Street	Sealed	60	-1.0%	161
Steger Road/Draper Road	Unsealed	60	-2.5%	178
Tummaville Road/Quarry Road Access	Sealed	100	-1.0%	300
Wellcamp Westbrook Road/Drayton Wellcamp Road	Sealed	60	-1.8%	161
West Street/Florence Street	Sealed	50	-0.5%	131
Yarranlea Road/Desmonds Lane	Sealed	100	-1.5%	300

This distance should be considered during the Detailed Design stage of the Project when 12d models of the impacted intersections are available to ensure adequate sight distance at the temporary or permanent upgrade of any intersections used by construction traffic, or the appropriate mitigations.

5.4.5 Delay assessment

Section 5.1.2 identifies the Project intersections that likely to experience a 5 per cent increase in turning volumes through the intersection. In accordance with GTIA requirements, each intersection has undergone SIDRA analysis to assess the peak period operational performance for the without Project and with Project scenarios.

Table 5.28 lists the intersection with more than 5 per cent aggregated vehicle minutes delay. Table 5.29 lists the intersections with less than 5 per cent aggregated vehicle minutes delay. Detailed output tables and SIDRA output summaries are included in Appendix AV.

The overall vehicle minutes delay net increase for the impact assessment area equates to 5.98 per cent, which is just above the GTIA definition of significantly worsening of 5 per cent. Therefore, mitigation of capacity issues causing delay is required to return the intersection to pre-Project levels.

The non-infrastructure and infrastructure-based mitigation measures recommended are discussed in Section 5.4.6. Red text indicates where the percentage increase is larger than the 5 per cent threshold specified within the GTIA.

Table 5.28 SIDRA intersection results summary (>5 % in aggregate)

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
State-Controlled Roads: Department of Transport and Main Roads									
Barwon Highway/ Carnarvon Highway (priority controlled)	AM	Without Project	0.013	5	N-LT	9	A	0	51%
		With Project	0.016	6	E-LT	10	B	1	
	PM	Without Project	0.013	5	N-LT	9	A	0	55%
		With Project	0.014	6	E-LT	10	B	1	
Barwon Highway /Leichhardt Highway (priority controlled)	AM	Without Project	0.135	4	E-RT	8	A	5	7%
		With Project	0.146	4	E-RT	9	A	6	
	PM	Without Project	0.144	4	E-RT	8	A	5	7%
		With Project	0.156	4	E-RT	9	A	6	
Barwon Highway/Silo Street (priority controlled)	AM	Without Project	0.011	3	E-LT	9	A	0	19%
		With Project	0.016	2	E-LT	9	A	0	
	PM	Without Project	0.009	2	E-LT	8	A	0	22%
		With Project	0.014	2	E-LT	9	A	0	
Barwon Highway/ South Toobeah Road (priority controlled)	AM	Without Project	0.022	2	S-LT	9	A	0	12%
		With Project	0.027	2	S-RT	9	A	0	
	PM	Without Project	0.019	2	S-LT	9	A	0	13%
		With Project	0.024	2	S-RT	9	A	0	
Barwon Highway/ Town Common Road (priority controlled)	AM	Without Project	0.055	1	SE-LT	9	A	0	9%
		With Project	0.057	1	SE-LT	9	A	1	
	PM	Without Project	0.055	1	SE-LT	9	A	0	8%
		With Project	0.057	1	SE-LT	9	A	1	
Carnarvon Highway/ Noondoo Thallon Road (priority controlled)	AM	Without Project	0.011	4	S-LT	6	A	0	52%
		With Project	0.016	5	W-RT	6	A	1	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
	PM	Without Project	0.009	4	S-LT	6	A	0	57%
		With Project	0.015	5	S-LT	6	A	1	
Cunningham Highway/Bybera Road (priority controlled)	AM	Without Project	0.041	0	N-RT	8	A	0	787%
		With Project	0.068	2	N-LT	11	B	2	
	PM	Without Project	0.042	1	N-RT	8	A	0	705%
		With Project	0.071	2	N-LT	11	B	2	
Cunningham Highway/Cemetery Road (priority controlled)	AM	Without Project	0.093	0	E-RT	8	A	0	68%
		With Project	0.094	1	E-RT	9	A	1	
	PM	Without Project	0.101	0	E-RT	8	A	0	69%
		With Project	0.108	1	E-RT	10	A	1	
Cunningham Highway/Coolmunda Dam Access (priority controlled)	AM	Without Project	0.046	1	S-RT	9	A	0	154%
		With Project	0.046	1	S-LT	10	B	0	
	PM	Without Project	0.046	1	S-RT	9	A	0	154%
		With Project	0.046	1	S-LT	10	B	0	
Cunningham Highway/Cremascos Road (priority controlled)	AM	Without Project	0.034	1	N-LT	11	B	0	92%
		With Project	0.055	1	N-LT	12	B	0	
	PM	Without Project	0.038	1	N-LT	11	B	0	103%
		With Project	0.060	1	N-LT	11	B	0	
Cunningham Highway/East Sawmill Road (priority controlled)	AM	Without Project	0.041	0	N-RT	7	A	0	1935%
		With Project	0.064	2	N-RT	9	A	2	
	PM	Without Project	0.041	0	N-RT	7	A	0	1521%
		With Project	0.059	3	N-RT	8	A	2	
Cunningham Highway/Elizabeth Street (priority controlled)	AM	Without Project	0.067	0	SE-RT	6	A	0	118%
		With Project	0.110	1	SE-RT	6	A	1	
	PM	Without Project	0.069	0	SE-RT	6	A	0	123%

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
		With Project	0.105	1	NE-RT	6	A	0	
Cunningham Highway/Fosters Road (priority controlled)	AM	Without Project	0.038	0	N-LT	9	A	0	2790%
		With Project	0.081	4	N-RT	11	B	3	
	PM	Without Project	0.038	0	N-LT	9	A	0	2804%
		With Project	0.081	4	N-RT	11	B	3	
Cunningham Highway/Inglewood Quarry Access Road (priority controlled)	AM	Without Project	0.036	1	E-RT	11	B	0	448%
		With Project	0.041	3	E-RT	11	B	2	
	PM	Without Project	0.036	1	E-RT	11	B	0	601%
		With Project	0.040	3	E-RT	11	B	2	
Cunningham Highway/Kildonan Road (roundabout)	AM	Without Project	0.160	8	S-RT	16	B	8	4%
		With Project	0.170	8	S-RT	17	B	8	
	PM	Without Project	0.185	8	S-RT	17	B	9	6%
		With Project	0.187	8	S-RT	17	B	9	
Cunningham Highway/Leichhardt Highway (priority controlled)	AM	Without Project	0.176	4	W-RT	14	B	7	7%
		With Project	0.190	4	W-RT	15	B	7	
	PM	Without Project	0.199	4	W-RT	15	B	7	6%
		With Project	0.213	4	W-RT	15	C	8	
Cunningham Highway/McDougalls Road (priority controlled)	AM	Without Project	0.034	0	NW-LT	8	A	0	358%
		With Project	0.068	1	NW-RT	11	B	0	
	PM	Without Project	0.037	0	NW-LT	8	A	0	367%
		With Project	0.072	1	NW-RT	11	B	0	
Cunningham Highway/Millmerran-Inglewood Road (priority controlled)	AM	Without Project	0.037	2	N-RT	9	A	1	320%
		With Project	0.146	5	E-RT	10	A	6	
	PM	Without Project	0.038	3	N-RT	8	A	1	272%
		With Project	0.092	5	N-RT	11	B	4	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Cunningham Highway/Springborg Road (priority controlled)	AM	Without Project	0.034	0	NW-LT	8	A	0	285%
		With Project	0.050	1	NW-RT	10	B	0	
	PM	Without Project	0.037	0	NW-LT	8	A	0	312%
		With Project	0.049	1	SW-LT	10	A	0	
Cunningham Highway/Texas-Yelarbon Road (priority controlled)	AM	Without Project	0.040	2	S-RT	9	A	0	46%
		With Project	0.041	2	S-LT	10	B	1	
	PM	Without Project	0.039	1	S-RT	9	A	0	51%
		With Project	0.044	2	S-LT	10	B	1	
Cunningham Highway/Whetstone Access Road (priority controlled)	AM	Without Project	0.034	0	NW-LT	8	A	0	1500%
		With Project	0.067	3	NW-RT	11	B	2	
	PM	Without Project	0.038	0	NW-LT	8	A	0	1511%
		With Project	0.052	3	NE-RT	10	A	1	
Cunningham Highway/Woodcocks Road (priority controlled)	AM	Without Project	0.034	0	N-LT	8	A	0	274%
		With Project	0.045	1	N-LT	10	B	0	
	PM	Without Project	0.037	0	N-LT	8	A	0	293%
		With Project	0.044	1	N-LT	10	B	1	
Cunningham Highway/Yelarbon-Keetah Road (priority controlled)	AM	Without Project	0.048	3	E-RT	5	A	0	17%
		With Project	0.054	3	E-RT	5	A	0	
	PM	Without Project	0.046	3	E-RT	5	A	0	24%
		With Project	0.059	4	E-RT	5	A	0	
Cunningham Highway/Yelarbon Kurumbul Road (priority controlled)	AM	Without Project	0.036	1	NE-RT	10	A	0	400%
		With Project	0.044	3	NE-LT	10	A	1	
	PM	Without Project	0.037	1	NE-LT	8	A	0	375%
		With Project	0.057	3	SW-RT	11	B	1	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Gore Highway/Fysh Road (priority controlled)	AM	Without Project	0.081	0	W-RT	6	A	0	110%
		With Project	0.112	1	E-LT	6	A	1	
	PM	Without Project	0.103	0	W-RT	6	A	0	102%
		With Project	0.110	1	W-RT	7	A	1	
Gore Highway/Alderley Street (signalised intersection)	AM	Without Project	0.713	24	W-LT	37	D	83	8%
		With Project	0.746	25	E-RT	35	C	91	
	PM	Without Project	0.924	25	S-RT	55	D	98	2%
		With Project	0.932	25	S-RT	57	E	98	
Gore Highway/Athol School Road (priority controlled)	AM	Without Project	0.170	1	N-RT	17	C	1	760%
		With Project	0.294	4	N-RT	32	D	14	
	PM	Without Project	0.160	0	N-RT	13	B	0	1057%
		With Project	0.323	4	N-RT	36	E	15	
Gore Highway/Biddeston Southbrook Road (priority controlled)	AM	Without Project	0.165	0	W-RT	13	B	0	255%
		With Project	0.179	1	W-RT	20	C	2	
	PM	Without Project	0.157	0	W-RT	12	B	0	271%
		With Project	0.185	1	W-RT	20	C	2	
Gore Highway/Blackwell Road (priority controlled)	AM	Without Project	0.069	0	E-LT	10	A	0	313%
		With Project	0.076	1	E-RT	16	C	0	
	PM	Without Project	0.063	0	E-LT	10	A	0	243%
		With Project	0.073	1	E-RT	15	B	0	
Gore Highway/Bushy Lane (priority controlled)	AM	Without Project	0.135	0	W-RT	11	B	0	112%
		With Project	0.186	1	W-RT	20	C	1	
	PM	Without Project	0.145	0	E-RT	11	B	1	131%
		With Project	0.204	1	W-RT	21	C	1	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Gore Highway/ Campbell Street (priority controlled)	AM	Without Project	0.073	4	NE-RT	7	A	2	63%
		With Project	0.147	5	NE-RT	7	A	3	
	PM	Without Project	0.032	5	NE-RT	7	A	1	116%
		With Project	0.072	5	NE-RT	7	A	2	
Gore Highway/ Dieckmann Road (priority controlled)	AM	Without Project	0.082	0	NW-RT	8	A	0	2052%
		With Project	0.126	2	NW-RT	13	B	2	
	PM	Without Project	0.090	0	NW-RT	9	A	0	2074%
		With Project	0.117	2	NW-RT	12	B	2	
Gore Highway/ Florence Street (priority controlled)	AM	Without Project	0.063	1	NE-LT	6	A	1	14%
		With Project	0.116	1	NE-RT	7	A	1	
	PM	Without Project	0.059	1	NE-LT	6	A	1	9%
		With Project	0.122	1	NE-RT	7	A	1	
Gore Highway/Gilgai Lane (priority controlled)	AM	Without Project	0.089	0	W-RT	10	A	0	251%
		With Project	0.121	1	S-RT	11	B	1	
	PM	Without Project	0.096	0	S-LT	10	A	0	213%
		With Project	0.115	1	S-RT	11	B	0	
Gore Highway/Hall Road (priority controlled)	AM	Without Project	0.088	0	E-RT	9	A	0	83%
		With Project	0.130	0	E-RT	10	B	1	
	PM	Without Project	0.095	0	E-RT	10	A	0	88%
		With Project	0.126	0	SW-LT	10	B	0	
Gore Highway/ Linthorpe Road (priority controlled)	AM	Without Project	0.176	1	N-RT	11	B	1	452%
		With Project	0.238	2	N-RT	16	C	5	
	PM	Without Project	0.198	0	N-RT	11	B	0	699%
		With Project	0.229	2	N-RT	18	C	5	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Gore Highway/ Linthorpe Valley Road (priority controlled)	AM	Without Project	0.169	0	N-LT	11	B	0	115%
		With Project	0.176	0	N-RT	14	B	1	
	PM	Without Project	0.166	0	N-LT	11	B	0	87%
		With Project	0.175	0	N-RT	15	B	0	
Gore Highway/ Lochaber Road (priority controlled)	AM	Without Project	0.084	1	W-RT	8	A	1	17%
		With Project	0.091	1	W-RT	9	A	1	
	PM	Without Project	0.111	1	W-RT	8	A	1	21%
		With Project	0.122	1	W-RT	9	A	1	
Gore Highway/ Millmerran-Inglewood Road (priority controlled)	AM	Without Project	0.058	3	SE-RT	13	B	1	130%
		With Project	0.084	4	SE-RT	16	C	3	
	PM	Without Project	0.078	3	SE-RT	12	B	1	92%
		With Project	0.115	4	SE-RT	15	C	4	
Gore Highway/ Millmerran-Leyburn Road (priority controlled)	AM	Without Project	0.054	1	E-RT	10	B	0	229%
		With Project	0.077	1	E-RT	13	B	1	
	PM	Without Project	0.078	1	E-RT	9	A	0	141%
		With Project	0.111	1	E-RT	13	B	1	
Gore Highway/ Murlaggan Road (priority controlled)	AM	Without Project	0.061	2	SE-RT	17	C	1	123%
		With Project	0.067	4	SE-RT	22	C	2	
	PM	Without Project	0.074	4	SE-RT	22	C	2	65%
		With Project	0.157	5	SE-RT	30	D	5	
Gore Highway/ Oakey-Pittsworth Road (priority controlled)	AM	Without Project	0.074	2	W-RT	10	A	2	7%
		With Project	0.080	2	W-RT	10	B	2	
	PM	Without Project	0.099	2	W-RT	12	B	2	8%
		With Project	0.111	2	W-RT	13	B	2	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Gore Highway/Paint Mine Road (priority controlled)	AM	Without Project	0.095	0	W-LT	8	A	0	100%
		With Project	0.102	0	W-LT	9	A	0	
	PM	Without Project	0.119	0	W-LT	8	A	0	97%
		With Project	0.131	0	W-LT	9	A	0	
Gore Highway/Saleyards Road (priority controlled)	AM	Without Project	0.060	1	S-LT	6	A	1	34%
		With Project	0.132	1	S-RT	7	A	1	
	PM	Without Project	0.062	1	S-LT	6	A	1	37%
		With Project	0.120	1	W-RT	7	A	1	
Gore Highway/Scrubby Road (priority controlled)	AM	Without Project	0.079	1	SW-RT	11	B	0	2256%
		With Project	0.235	6	SE-RT	15	C	14	
	PM	Without Project	0.123	1	SE-RT	12	B	1	1706%
		With Project	0.288	6	SE-RT	18	C	16	
Gore Highway/Tummalville Road/Yarranlea Road (priority controlled)	AM	Without Project	0.082	1	N-RT	12	B	0	899%
		With Project	0.141	6	N-RT	17	C	8	
	PM	Without Project	0.100	1	N-RT	13	B	0	1479%
		With Project	0.165	6	S-RT	15	B	9	
Gore Highway/Turallin Road (priority controlled)	AM	Without Project	0.049	1	N-LT	9	A	0	691%
		With Project	0.084	4	E-RT	8	A	3	
	PM	Without Project	0.064	1	N-LT	8	A	1	296%
		With Project	0.132	4	N-RT	9	A	5	
Gore Highway/Ware Street (N) (priority controlled)	AM	Without Project	0.091	1	S-RT	11	B	1	44%
		With Project	0.114	2	S-RT	19	C	2	
	PM	Without Project	0.099	1	S-RT	11	B	1	58%
		With Project	0.116	2	S-RT	20	C	1	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Gore Highway/Ware Street (S) (priority controlled)	AM	Without Project	0.084	0	E-RT	10	B	0	24%
		With Project	0.088	1	E-RT	11	B	0	
	PM	Without Project	0.089	0	E-RT	10	B	0	20%
		With Project	0.107	1	E-RT	11	B	0	
Gore Highway/West Street (priority controlled)	AM	Without Project	0.057	0	E-RT	7	A	0	53%
		With Project	0.117	0	E-RT	7	A	1	
	PM	Without Project	0.055	0	E-RT	7	A	0	26%
		With Project	0.122	0	E-RT	7	A	0	
Leichhardt Highway/Hunt Street (priority controlled)	AM	Without Project	0.059	0	S-RT	8	A	0	33%
		With Project	0.061	0	S-RT	10	B	0	
	PM	Without Project	0.064	0	S-RT	8	A	0	33%
		With Project	0.066	0	S-RT	10	B	0	
Millmerran-Inglewood Road/Blackwell Road (priority controlled)	AM	Without Project	0.021	1	NW-LT	8	A	0	727%
		With Project	0.035	2	NW-RT	11	B	1	
	PM	Without Project	0.021	1	NW-LT	8	A	0	582%
		With Project	0.041	2	NW-RT	11	B	1	
Millmerran-Inglewood Road/Campbell Street (priority controlled)	AM	Without Project	0.047	5	SW-LT	8	A	2	59%
		With Project	0.051	6	SW-LT	9	A	2	
	PM	Without Project	0.059	5	SW-LT	8	A	2	40%
		With Project	0.096	5	SW-LT	8	A	3	
Millmerran-Inglewood Road/Commodore Peak Road (priority controlled)	AM	Without Project	0.030	0	W-LT	8	A	0	754%
		With Project	0.073	2	W-LT	10	B	1	
	PM	Without Project	0.029	0	W-LT	8	A	0	784%
		With Project	0.058	2	N-RT	11	B	1	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Millmerran-Inglewood Road/Forestry Road (priority controlled)	AM	Without Project	0.023	0	W-LT	8	A	0	478%
		With Project	0.046	1	W-RT	11	B	0	
	PM	Without Project	0.023	1	W-LT	8	A	0	476%
		With Project	0.046	1	W-RT	11	B	0	
Millmerran-Inglewood Road/Grays Road (priority controlled)	AM	Without Project	0.011	1	E-LT	8	A	0	415%
		With Project	0.023	2	E-RT	10	B	0	
	PM	Without Project	0.011	1	E-LT	8	A	0	413%
		With Project	0.029	2	E-RT	10	B	0	
Millmerran-Inglewood Road/Heckendorf Road (priority controlled)	AM	Without Project	0.020	1	NW-LT	10	A	0	1994%
		With Project	0.051	5	NW-RT	15	C	2	
	PM	Without Project	0.021	1	NW-LT	10	A	0	1163%
		With Project	0.062	5	NW-RT	16	C	2	
Millmerran-Inglewood Road/Kooroongarra Road (priority controlled)	AM	Without Project	0.032	1	E-LT	8	A	0	540%
		With Project	0.061	3	E-LT	11	B	2	
	PM	Without Project	0.030	1	W-LT	8	A	0	524%
		With Project	0.076	3	E-LT	11	B	1	
Millmerran-Inglewood Road/Millwood Road (priority controlled)	AM	Without Project	0.009	3	E-LT	10	A	0	422%
		With Project	0.033	5	E-RT	15	B	1	
	PM	Without Project	0.018	2	E-LT	10	A	0	397%
		With Project	0.032	4	E-RT	13	B	1	
Millmerran-Inglewood Road/Moffatt Reserve Road (priority controlled)	AM	Without Project	0.030	2	NE-LT	9	A	1	81%
		With Project	0.042	2	NE-RT	10	B	1	
	PM	Without Project	0.028	2	NE-LT	9	A	0	85%
		With Project	0.053	2	NE-RT	10	B	1	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Millmerran-Inglewood Road/Owens Scrub Road (priority controlled)	AM	Without Project	0.022	4	E-LT	8	A	1	331%
		With Project	0.059	7	S-RT	11	B	3	
	PM	Without Project	0.034	5	S-LT	8	A	1	160%
		With Project	0.091	7	E-LT	10	A	3	
Millmerran-Inglewood Road/Paton Road (priority controlled)	AM	Without Project	0.023	1	E-RT	11	B	0	368%
		With Project	0.034	2	E-RT	10	B	0	
	PM	Without Project	0.023	1	E-RT	11	B	0	364%
		With Project	0.030	2	N-LT	10	A	0	
Millmerran-Inglewood Road/Thornton Road (priority controlled)	AM	Without Project	0.009	1	SW-LT	9	A	0	2160%
		With Project	0.047	5	W-RT	12	B	2	
	PM	Without Project	0.016	1	SW-LT	9	A	0	2165%
		With Project	0.078	4	W-RT	12	B	2	
Millmerran-Inglewood Road/Wongavale Yugalbar Road (priority controlled)	AM	Without Project	0.012	2	S-LT	8	A	0	150%
		With Project	0.027	3	E-LT	10	B	1	
	PM	Without Project	0.012	2	S-LT	8	A	0	156%
		With Project	0.020	3	S-RT	10	A	0	
Texas-Yelarbon Road/Access Track (priority controlled)	AM	Without Project	0.007	1	E-LT	6	A	0	247%
		With Project	0.011	2	E-RT	7	A	0	
	PM	Without Project	0.006	1	E-LT	6	A	0	247%
		With Project	0.010	3	E-RT	7	A	0	
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road (priority controlled)	AM	Without Project	0.116	1	S-RT	13	B	1	174%
		With Project	0.122	2	S-RT	14	B	3	
	PM	Without Project	0.060	0	E-LT	10	B	0	411%
		With Project	0.089	2	W-RT	11	B	2	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Toowoomba-Cecil Plains Road/ Brimblecombe Road (priority controlled)	AM	Without Project	0.095	0	N-LT	9	A	0	226%
		With Project	0.104	1	N-RT	12	B	1	
	PM	Without Project	0.135	0	E-RT	10	A	1	117%
		With Project	0.141	1	N-RT	14	B	1	
Toowoomba-Cecil Plains Road/Omara Road (priority controlled)	AM	Without Project	0.471	7	N-RT	16	C	22	6%
		With Project	0.491	7	N-RT	16	C	24	
	PM	Without Project	0.623	8	N-RT	21	C	33	7%
		With Project	0.650	8	N-RT	22	C	36	
Toowoomba-Cecil Plains Road/ Toowoomba Bypass NB Ramps (signalised intersection)	AM	Without Project	0.270	10	S-RT	24	C	16	10%
		With Project	0.274	10	S-RT	25	C	19	
	PM	Without Project	0.194	8	S-RT	36	D	22	15%
		With Project	0.210	9	S-RT	37	D	24	
Toowoomba-Cecil Plains Road/ Toowoomba Bypass SB Ramps (signalised intersection)	AM	Without Project	0.238	10	N-RT	30	C	22	25%
		With Project	0.399	12	N-RT	25	C	24	
	PM	Without Project	0.183	9	N-RT	30	C	17	28%
		With Project	0.296	10	N-RT	25	C	17	
Toowoomba-Cecil Plains Road/Access Track (priority controlled)	AM	Without Project	0.051	0	S-RT	8	A	0	735%
		With Project	0.081	3	S-RT	12	B	2	
	PM	Without Project	0.091	0	S-RT	9	A	0	755%
		With Project	0.121	2	S-RT	12	B	3	
Toowoomba-Cecil Plains Road/ Wellcamp Westbrook Road (priority controlled)	AM	Without Project	0.133	4	S-RT	11	B	3	10%
		With Project	0.144	4	W-RT	12	B	3	
	PM	Without Project	0.171	4	S-RT	12	B	4	9%
		With Project	0.183	5	W-RT	12	B	5	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Warrego Highway/ Chamberlain Road (priority controlled)	AM	Without Project	0.168	0	N-LT	9	A	0	282%
		With Project	0.169	0	N-LT	11	B	0	
	PM	Without Project	0.180	0	N-LT	9	A	0	348%
		With Project	0.182	0	N-LT	10	A	0	
Warrego Highway/ Leesons Road (priority controlled)	AM	Without Project	0.204	0	E-UT	16	C	0	830%
		With Project	0.204	0	E-RT	17	C	2	
	PM	Without Project	0.203	0	E-UT	15	C	0	496%
		With Project	0.205	0	E-RT	21	C	2	
Warrego Highway/ Toowoomba Bypass NB Ramps (signalised)	AM	Without Project	0.649	11	E-RT	26	C	44	9%
		With Project	0.692	12	E-RT	26	C	48	
	PM	Without Project	0.632	11	E-RT	25	C	42	11%
		With Project	0.697	11	E-RT	25	C	49	
Warrego Highway/ Toowoomba Bypass SB Ramps (signalised)	AM	Without Project	0.410	22	N-RT	40	D	70	7%
		With Project	0.431	23	N-RT	40	D	73	
	PM	Without Project	0.527	24	N-RT	40	D	92	4%
		With Project	0.527	24	N-RT	40	D	92	
Local Government Roads: Goondiwindi Regional Council									
Cemetery Road/ Access Track (priority controlled)	AM	Without Project	0.010	8	NW-LT	9	A	0	42%
		With Project	0.015	9	NW-LT	10	A	0	
	PM	Without Project	0.010	8	NW-LT	9	A	0	47%
		With Project	0.015	9	NW-LT	10	A	0	
Coolmunda Dam Access/Coolmunda Dam Access (priority controlled)	AM	Without Project	0.004	3	E-RT	6	A	0	144%
		With Project	0.009	5	E-RT	6	A	0	
	PM	Without Project	0.004	3	E-RT	6	A	0	144%
		With Project	0.009	5	E-RT	6	A	0	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Hunt Street/Boodle Street (priority controlled)	AM	Without Project	0.001	4	S-LT	6	A	0	61%
		With Project	0.002	4	S-LT	6	A	0	
	PM	Without Project	0.001	4	S-LT	6	A	0	61%
		With Project	0.002	4	S-LT	6	A	0	
Kildonan Road/Eukabilla Road (priority controlled)	AM	Without Project	0.051	0	NW-LT	8	A	0	513%
		With Project	0.059	1	SE-RT	10	A	0	
	PM	Without Project	0.050	0	NW-LT	8	A	0	442%
		With Project	0.053	1	SE-RT	10	A	0	
Kildonan Road/South Kurumbul Road (priority controlled)	AM	Without Project	0.051	0	N-LT	10	B	0	57%
		With Project	0.052	1	N-LT	10	B	0	
	PM	Without Project	0.050	0	N-LT	10	B	0	57%
		With Project	0.051	1	N-LT	10	B	0	
McDougalls Road/Access Track (priority controlled)	AM	Without Project	0.002	6	SW-LT	8	A	0	74%
		With Project	0.005	4	NW-T	8	A	0	
	PM	Without Project	0.002	6	SW-LT	8	A	0	128%
		With Project	0.007	6	SW-LT	8	A	0	
Mooroobie Lane/Cemetery Road (priority controlled)	AM	Without Project	0.009	7	SW-LT	8	A	0	42%
		With Project	0.013	8	NE-RT	10	A	0	
	PM	Without Project	0.009	7	SW-LT	8	A	0	50%
		With Project	0.013	8	NE-RT	10	A	0	
Mooroobie Lane/Mooroobie Lane (priority controlled)	AM	Without Project	0.001	7	SW-LT	10	A	0	342%
		With Project	0.007	9	SW-LT	10	A	0	
	PM	Without Project	0.001	7	SW-LT	10	A	0	342%
		With Project	0.007	9	SW-LT	10	A	0	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Mosquito Creek Road/Grays Road (priority controlled)	AM	Without Project	0.001	5	S-LT	9	A	0	432%
		With Project	0.008	9	S-LT	11	B	0	
	PM	Without Project	0.001	5	S-LT	9	A	0	432%
		With Project	0.008	9	S-LT	11	B	0	
Suttons Road/Access Track (priority controlled)	AM	Without Project	0.001	4	SE-LT	6	A	0	970%
		With Project	0.016	6	SE-LT	7	A	1	
	PM	Without Project	0.001	4	SE-LT	6	A	0	970%
		With Project	0.016	6	SE-LT	7	A	1	
Wondalli Kurumbul Road/Mooroobie Lane (priority controlled)	AM	Without Project	0.002	6	S-LT	8	A	0	195%
		With Project	0.012	8	S-LT	10	B	0	
	PM	Without Project	0.002	6	S-LT	8	A	0	195%
		With Project	0.012	8	S-LT	10	B	0	
Yelarbon Kurumbul Road/Queen Street South (priority controlled)	AM	Without Project	0.002	4	NE-LT	9	A	0	219%
		With Project	0.011	4	NE-LT	11	B	0	
	PM	Without Project	0.002	4	NE-LT	9	A	0	231%
		With Project	0.006	4	E-RT	10	A	0	
Yelarbon Kurumbul Road/South Kurumbul Road (priority controlled)	AM	Without Project	0.003	5	SW-LT	11	B	0	85%
		With Project	0.007	5	SW-LT	11	B	0	
	PM	Without Project	0.003	5	SW-LT	11	B	0	85%
		With Project	0.007	5	SW-LT	11	B	0	
Yelarbon Kurumbul Road/Wondalli Kurumbul Road (priority controlled)	AM	Without Project	0.002	3	N-LT	8	A	0	476%
		With Project	0.010	5	W-LT	10	B	0	
	PM	Without Project	0.002	3	N-LT	8	A	0	477%
		With Project	0.013	5	W-LT	10	B	0	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Local Government Roads: Moree Plains Shire Council									
River Road/River Road (priority controlled)	AM	Without Project	0.002	4	S-LT	6	A	0	103%
		With Project	0.003	5	S-RT	6	A	0	
	PM	Without Project	0.002	4	S-LT	6	A	0	103%
		With Project	0.003	5	S-RT	6	A	0	
Local Government Roads: Toowoomba Regional Council									
Campbell Street/ Saleyards Road (priority controlled)	AM	Without Project	0.061	1	N-RT	6	A	1	24%
		With Project	0.088	1	W-RT	8	A	1	
	PM	Without Project	0.066	1	N-RT	6	A	1	26%
		With Project	0.096	1	W-RT	9	A	1	
Commodore Peak Road/Scragg Road (priority controlled)	AM	Without Project	0.002	4	N-LT	8	A	0	500%
		With Project	0.013	5	N-LT	10	B	1	
	PM	Without Project	0.002	4	N-LT	8	A	0	660%
		With Project	0.014	6	N-LT	9	A	1	
Drayton Wellcamp Road/Boundary Street South (priority controlled)	AM	Without Project	0.093	0	S-RT	14	B	0	220%
		With Project	0.094	1	N-RT	17	C	1	
	PM	Without Project	0.134	0	S-RT	16	C	0	245%
		With Project	0.135	1	N-RT	23	C	2	
Forestry Road/ Access Track (priority controlled)	AM	Without Project	0.001	4	E-RT	6	A	0	364%
		With Project	0.007	6	E-RT	7	A	0	
	PM	Without Project	0.001	4	E-RT	6	A	0	364%
		With Project	0.007	6	E-RT	7	A	0	
Kingsthorpe Haden Road/Kingsthorpe Overpass (priority controlled)	AM	Without Project	0.154	7	N-RT	8	A	2	10%
		With Project	0.154	7	W-RT	9	A	4	
	PM	Without Project	0.170	6	N-RT	8	A	6	9%

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
		With Project	0.204	6	N-RT	8	A	7	
Kooroongarra Road/Millwood Road (priority controlled)	AM	Without Project	0.005	4	N-LT	9	A	0	294%
		With Project	0.019	7	S-LT	10	B	1	
	PM	Without Project	0.004	4	E-LT	8	A	0	336%
		With Project	0.019	8	S-LT	10	B	1	
Leesons Road/Steger Road (priority controlled)	AM	Without Project	0.047	8	E-LT	8	A	2	6%
		With Project	0.051	8	E-RT	10	A	2	
	PM	Without Project	0.058	8	E-LT	8	A	2	6%
		With Project	0.063	8	E-RT	10	A	2	
Linthorpe Valley Road/Geitz Road (priority controlled)	AM	Without Project	0.004	7	E-LT	8	A	0	74%
		With Project	0.008	8	S-RT	9	A	0	
	PM	Without Project	0.004	7	E-LT	8	A	0	73%
		With Project	0.008	7	E-LT	9	A	0	
Millwood Road/ Millwood Road (priority controlled)	AM	Without Project	0.001	5	S-LT	8	A	0	814%
		With Project	0.016	9	S-LT	10	B	1	
	PM	Without Project	0.001	5	S-LT	8	A	0	814%
		With Project	0.016	9	S-LT	10	B	1	
Murlaggan Road/ Kahler Road (priority controlled)	AM	Without Project	0.011	2	W-LT	8	A	0	57%
		With Project	0.019	2	N-LT	9	A	0	
	PM	Without Project	0.012	2	W-LT	8	A	0	70%
		With Project	0.016	2	E-RT	9	A	0	
Six Mile Road/Bligh Street (priority controlled)	AM	Without Project	0.001	5	NE-LT	8	A	0	133%
		With Project	0.003	7	NE-LT	10	A	0	
	PM	Without Project	0.001	5	NE-LT	8	A	0	133%
		With Project	0.003	7	NE-LT	10	A	0	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Increase in vehicle minutes delay (%)
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95 % back of queue length (m)	
Steger Road/Draper Road (priority controlled)	AM	Without Project	0.077	4	W-LT	9	A	3	8%
		With Project	0.078	4	W-RT	11	B	3	
	PM	Without Project	0.091	4	W-LT	9	A	4	6%
		With Project	0.095	4	W-RT	11	B	4	
Tummaville Road/ Quarry Road Access (priority controlled)	AM	Without Project	0.006	2	E-LT	8	A	0	962%
		With Project	0.018	7	N-LT	10	B	1	
	PM	Without Project	0.004	2	E-LT	8	A	0	954%
		With Project	0.018	8	N-LT	10	B	1	
Wellcamp Westbrook Road/Drayton Wellcamp Road (priority controlled)	AM	Without Project	0.162	6	E-RT	9	A	5	6%
		With Project	0.174	7	E-RT	9	A	5	
	PM	Without Project	0.256	7	E-RT	9	A	8	5%
		With Project	0.268	7	E-RT	9	A	8	
West Street/Florence Street (priority controlled)	AM	Without Project	0.013	5	S-LT	5	A	0	7%
		With Project	0.014	5	S-LT	5	A	0	
	PM	Without Project	0.012	5	S-LT	5	A	0	7%
		With Project	0.013	5	S-LT	5	A	0	
Yarranlea Road/ Desmonds Lane (priority controlled)	AM	Without Project	0.003	4	S-LT	8	A	0	75%
		With Project	0.007	5	E-LT	9	A	0	
	PM	Without Project	0.003	4	S-LT	8	A	0	77%
		With Project	0.006	5	S-RT	9	A	0	

Table 5.29 SIDRA intersection results summary (<5% in aggregate)

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Vehicle minutes delay (net) %
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95% back of queue length (m)	
State-Controlled Roads: Department of Transport and Main Roads									
Barwon Highway/ Barwon Highway (Priority controlled)	AM	Without Project	0.172	6	NE-RT	10	A	5	5%
		With Project	0.194	6	NE-RT	10	B	6	
	PM	Without Project	0.169	6	NE-RT	9	A	5	5%
		With Project	0.191	6	NE-RT	10	A	6	
Toowoomba-Cecil Plains Road/Charlton Connection Road (roundabout)	AM	Without Project	0.525	9	E-RT	14	B	37	1%
		With Project	0.528	9	E-RT	14	B	37	
	PM	Without Project	0.553	9	W-RT	14	B	41	1%
		With Project	0.557	9	W-RT	14	B	42	
Toowoomba-Cecil Plains Road/McDougall Street (signalised intersection)	AM	Without Project	0.749	29	S-RT	43	D	109	0%
		With Project	0.763	29	S-RT	43	D	109	
	PM	Without Project	0.710	28	S-RT	44	D	108	0%
		With Project	0.710	28	S-RT	44	D	108	
Warrego Highway/Omara Road/Steger Road (signalised intersection)	AM	Without Project	0.441	17	S-RT	34	C	49	4%
		With Project	0.441	17	S-RT	34	C	49	
	PM	Without Project	0.477	19	S-RT	34	C	51	3%
		With Project	0.491	19	S-RT	34	C	51	
Warrego Highway Off-ramp/Kingsthorpe Overpass (priority controlled)	AM	Without Project	0.091	10	E-RT	12	B	3	4%
		With Project	0.110	9	E-RT	12	B	4	
	PM	Without Project	0.098	10	E-RT	12	B	4	4%
		With Project	0.118	9	E-RT	12	B	5	
State-Controlled Roads: Transport for New South Wales									
Newell Highway/ River Road (priority controlled)	AM	Without Project	0.214	6	S-RT	9	A	8	1%
		With Project	0.216	6	N-LT	10	A	8	

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Vehicle minutes delay (net) %
			DoS	Average delay (s)	Mov.	Delay (s)	LoS	95% back of queue length (m)	
	PM	Without Project	0.207	6	S-RT	9	A	8	1%
		With Project	0.209	6	N-LT	10	A	8	
Local Government Roads: Toowoomba Regional Council									
Gap Road/ Grevillea Street (priority controlled)	AM	Without Project	0.044	2	E-LT	7	A	1	4%
		With Project	0.044	2	E-LT	7	A	1	
	PM	Without Project	0.048	2	E-LT	7	A	1	5%
		With Project	0.048	2	E-LT	7	A	1	
Greenwattle Street/Alderley Street (signalised intersection)	AM	Without Project	0.930	15	E-RT	36	E	121	3%
		With Project	0.933	15	E-RT	37	E	124	
	PM	Without Project	1.726	567	E-RT	1325	F	3015	1%
		With Project	1.731	571	E-RT	1334	F	3035	

Based on the above, Table 5.30 summarises the number of intersections expected to experience a net increase in delay greater than 5 per cent based on the current construction routes and volumes.

Table 5.30 Number of intersections experiencing >5% increase in delay

Authority	Number of intersections
DTMR	76
GRC	14
TRC	17
MPSC	1
Total	108

The outputs in Table 5.28 and Table 5.29 indicated that four intersections have been identified with capacity constraints caused by the project, including:

- Gore Highway/Alderley Street (Signalised)
- Gore Highway/Athol School Road (Priority)
- Toowoomba-Cecil Plains Road/McDougall Street (Signalised)
- Greenwattle Street/Alderley Street (Priority).

Table 5.33 provides information on potential infrastructure-based mitigations proposed at these locations, including provision of additional turn lanes or upgrading the priority intersection to a signalised intersection. It is noted that specific requirements for any upgrade or improved capacity measures should be reassessed during detailed design and in conjunction with the any changes in construction traffic volumes and the proposed traffic management plan.

5.4.6 Mitigation measures

Prior to any mitigation measures being applied, it is recommended that the intersection delay and turn warrant assessments be revisited during the Detailed Design and Early Works and Pre-construction activities stages, when the contractors' construction program and construction routes are finalised.

The GTIA requires the impact assessment area net vehicle minutes delay to be reduced to under 5 per cent. Therefore, mitigation of capacity issues causing delay is required to return the intersection delay to pre-Project levels. The first step is to apply non-infrastructure mitigation measures, as detailed in Section 5.4.6.1. The second step is to apply infrastructure-based mitigation measures, as detailed in Section 5.4.6.2.

5.4.6.1 Non-infrastructure mitigation measures

The mitigation measures suggested are to be developed during the Detailed Design and Early Works and Pre-Construction Works stages in accordance with relevant standards and guidelines to inform construction vehicle operation:

- RUMP will include road-use management strategies to manage intersection impacts, including the use of variable message signs, travel demand management and avoiding peak hour periods (especially near schools and during key harvest periods)
- Road Safety Audit will need to be undertaken to identify the traffic safety risks associated with construction vehicles using these intersections and to determine the appropriate traffic controls to be implemented to mitigate any risks identified as part of the preparation of the Construction Traffic Management Plan
- Traffic Management Plans will be developed by the construction contractors prior to construction in accordance with the current edition of the *Manual of Uniform Traffic Control Devices: Part 3 - Works on Roads* (DTMR 2019a) and Technical Standard MRTS02 - Provision for traffic prior to the commencement of construction (DTMR 2019c). Given the typical peak construction duration at any laydown area of generally less than a year and associated low to moderate increase in traffic, discussions will be held with DTMR and the relevant local council during the Detailed Design stage of the Project to determine the requirement and permanence of any potential upgrades.
- Road safety measures will take into consideration speed restrictions, driver fatigue, in-vehicle communications, signage, demarcations, maintenance, safety checks, interaction with public transport, transport of hazardous and dangerous goods and emergency response and disaster management
- Temporary road works, including diversion and signage, in accordance with the *Manual of Uniform Traffic Control Devices: Part 3 - Works on Roads* (DTMR 2019a) and the Traffic and Road Use Management Manual: Volume 7 Road Works (DTMR 2012)
- All Oversize Overmass and Restricted Access Vehicles will comply with the *Guideline for Excess Dimension Vehicles in Queensland* (DTMR, 2013) in terms of transport safety
- Pedestrian walking routes and crossing points will be established and clearly marked throughout the Construction Works stage.

These measures are to be confirmed through discussions with asset owners following the confirmation of final construction routes.

It is expected that these non-infrastructure measures will reduce the impact assessment area aggregate vehicle minutes delay to under 5 per cent, in line with GTIA requirements and no infrastructure-based mitigation measures will be required.

5.4.6.2 Infrastructure based mitigation measures to improve capacity

The infrastructure mitigation measures suggested below may not be required once appropriate non-infrastructure mitigation measures are developed.

It is recommended to review intersection operational performance to understand whether the aggregate delay meets GTIA requirements once non-infrastructure based mitigation measures are applied.

This operational assessment has reviewed the SIDRA intersection performance parameters LOS, DoS, average delay, and 95th percentile queue to determine which intersections are exceeding acceptable operational limits.

Table 5.31 lists the typical infrastructure-based mitigation measures applicable to capacity issues. Table 5.32 lists the additional mitigation measures for the intersections along OSOM routes.

Table 5.33 summarises the mitigation measures applicable to intersections that exceed 5 per cent net vehicle minutes delay and also exceed acceptable operational capacity limits.

Table 5.31 Possible infrastructure-based mitigation measures for capacity issues

Intersection type	Movement	Capacity issue	Possible infrastructure-based mitigation measures
Signalised intersections	Through	Through movement delay or queuing too high	Additional through capacity required at the intersection either through lane capacity or optimising of phase times. Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan.
	Right turn	Volume demand exceeds capacity, queue spillback interfering with through traffic	Upgrade of the intersection required to extend the right turn pocket and phases. Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan.
		Delay is LOS E or F.	Upgrade of the intersection required to provide additional phase time and/or additional turn lane pockets. Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan.
	Left turn	Volume demand exceeds capacity, queue spillback interfering with through traffic	Upgrade of the intersection required to provide additional left turn exclusive protected right turn lane and phases. Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan. Any left turn lanes require signalised control in line with DTMR Safety Policy 2018.
		Delay is LOS E or F.	Upgrade of the intersection required to provide additional phase time and/or additional turn lane pockets. Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan. Any left turn lanes require signalised control in line with DTMR Safety Policy 2018.
Priority intersections	Through	Through movement delay or queuing too high	Regulatory sign(s) to prevent vehicles moving to and/or from the minor road: ■ turn prohibition sign(s); fulltime or part-time ■ no entry sign(s); full-time or part-time.
	Right turn	Volume demand exceeds capacity, queue spillback interfering with through traffic	CHR treatment on the major road.
		Delay is LOS E or F.	Upgrade to signalised intersection. Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan.

Intersection type	Movement	Capacity issue	Possible infrastructure-based mitigation measures
	Left turn	Volume demand exceeds capacity, queue spillback interfering with through traffic	AUL treatment on the major road.
		Delay is LOS E or F.	Upgrade to signalised intersection. Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan.

Table 5.32 Intersection mitigations if the intersection has an oversize overmass route

Intersection	Additional - if OSOM	Non-infrastructure mitigation
All types of intersection	Additional pilot/escort and/or police escorts are required as per Section 6.3 of the <i>Guideline for Excess Dimension Vehicles in Queensland</i> or the Critical Areas and Roads in Queensland for Vehicles/Combinations Requiring Pilot/Escort map, or police permit when accompanying an oversize vehicle or combination. Travel outside of peak times, perhaps in the evenings or early mornings to avoid other vehicular conflict. All other safety aspects treating OSOM movements to be in accordance with the <i>Guideline for Excess Dimension Vehicles in Queensland</i> .	During detailed design and construction, the contractor is required to undertake suitable risk assessments when preparing appropriate TMP and TGS, in line with the <i>Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads</i> and DTMR's specification 'MRTS02 – Provision for traffic' requirements. The need for infrastructure upgrades should be reassessed with updated construction duration estimates and final peak hour volumes, as capacity mitigation during short construction time frames may be more suited to traffic management control instead of physical upgrades.

Table 5.33 Mitigation measures of capacity constraints caused by the Project

Intersection name	Intersection type	Movement	Capacity issue	Infrastructure mitigation
Gore Highway/ Alderley Street	Signalised	South approach (Anzac Ave) right turn	LOS E (57s average delay), DoS 0.93	Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan. Mitigation measures may be required such as exclusive right turn phase or additional right turn lane capacity.
Gore Highway/ Athol School Road	Priority	North approach (Athol School Road) right turn	LOS E (36s average delay)	Potentially upgrade the intersection to a signalised intersection. Specific requirements for any upgrade or improved capacity measures to be assessed during detailed design and traffic management plan. The safety assessment results indicate no further mitigations are required.
Toowoomba-Cecil Plains Road/ McDougall Street	Signalised	South approach (McDougalls Street) right turn	Queue spillback interfering with through traffic	Pre-existing queue spillback capacity issue projected by construction year without Project volumes. Project traffic has no change on intersection performance. Additional right turn lane capacity may be required.
Greenwattle Street/ Alderley Street	Priority	East approach (Alderley Street) right turn	Delay LOS F, DoS 1.73	Pre-existing queue spillback issue projected to be over capacity by construction year without Project volumes. Project traffic adds to already exceeding capacity. Additional right turn lane capacity may be required or more significant improvement such as signalisation if the safety assessment also flags this intersection.

5.4.6.3 Mitigation measures to improve sight distance

The mitigation measures suggested below may not be required once the construction routes have been finalised. Given that construction traffic is temporary, mitigation measures to improve sight distance will need to be agreed with the relevant road authority.

Table 5.34 Mitigation measures for sight distance issues

Stage	Mitigation	Mitigation outcome
Detailed Design/Pre-Construction Activities and Early Works	Intersections will be assessed against requirements outlined in AGRD4a requirements. Where insufficient sight distance is available, the construction contractor will apply the following mitigation strategies: ■ Avoid – the construction contractor will investigate alternative construction routes which have adequate sight distance. ■ Manage – the construction contractor will manage the sight distance issues through the implementation of TGS and TMP which may temporarily reduce speeds to achieve sight distance compliance. ■ Mitigate – propose works to mitigate the sight distance issues. Temporary road works, including diversion and signage, in accordance with the <i>Manual of Uniform Traffic Control Devices: Part 3 - Works on Roads</i> (DTMR 2019a) and the <i>Traffic and Road Use Management Manual: Volume 7 Road Works</i> (DTMR 2012).	■ Ensuring compliance with all relevant standards and guidelines will ensure that construction vehicles operate safely with appropriate mitigations applied

5.4.6.4 Mitigation measures for turn warrant requirements

This operational assessment has reviewed the existing turn warrant treatments against Austroads requirements to determine which intersections warrant mitigation. The mitigation measures suggested below may not be required once the construction routes have been finalised. Given that a number of intersection warrants are required regardless of the temporary Project traffic, mitigation measures to improve safety issues resulting from inadequate turn lane availability will need to be agreed with the relevant road authority.

Table 5.35 Mitigation measures for turn warrant requirements increased by the Project

Intersection name	Existing provision	Existing requirement	Temporary Project requirement	Infrastructure mitigation
Cunningham Highway/Bybera Road	AUR	BAR	CHR(s)	The existing turn treatment at Cunningham Highway/Bybera Road is substandard but will be further exacerbated by the Project. While the existing AUR treatment is an improvement on the BAR requirement, consistent with DTMR Road Safety Policy (DTMR, 2022), rural AUR treatments shall be replaced by CHR(s) treatments. The onus of this upgrade is on DTMR regardless of the Project. It is recommended that DTMR upgrade this intersection turning lane to a CHR(s) regardless of the Project construction traffic.

Intersection name	Existing provision	Existing requirement	Temporary Project requirement	Infrastructure mitigation
Gore Highway/ Fysh Road	None	BAR	CHR(s)	There is no existing right turn treatment at Gore Highway/Fysh Road, however, the background traffic assessment indicates a treatment warrant of BAR without the Project. The Project construction traffic increases the treatment warrant to a CHR (s). It is expected that this intersection will be removed as a part of the Project, with a diversion introduced via an extension of Pampas Pit Road (Section 5.9.4.6). the proposed intersection of the Gore Highway with Pampas Pit Road will be designed and constructed consistent with Austroads' guidelines and include the warranted turn lane provisions.
Gore Highway/ Bushy Lane West (West)	BAR	BAR	CHR	The existing BAR turn treatment at Gore Highway/Bushy Lane West is consistent with the background traffic requirements. The Project construction traffic increases the treatment warrant to a CHR. The Project will use Bushy Lane to access a laydown area for concrete culverts, water, and other construction activities. It is expected that peak right turn construction movements will be approximately 10 vehicles per hour in March 2025, resulting in a total right turn demand of up to 12 vehicles per hour. This intersection will be used for construction traffic from 2024 to 2028 of the Project construction. And while this is 'temporary', this duration is considered long enough to warrant a permeant upgrade of the intersection to include a CHR, subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes and volumes are finalised.
Gore Highway/ Gilgai Lane	BAR	BAR	CHR(s)	The existing BAR turn treatment at Gore Highway/Gilgai Lane is consistent with the background traffic requirements. The Project construction traffic increases the treatment warrant to a CHR(s). The Project will use Gilgai Lane to access a laydown area for concrete culverts, bridge structures, water, and other construction activities. The intersection is expected to accommodate OSOM vehicles to transport precast concrete girders (OSOM mitigations are discussed in Section 5.8.4). It is expected that peak right turn construction movements will be approximately 8 vehicles per hour in March 2027, resulting in a total right turn demand of up to 9 vehicles per hour (including background traffic). This intersection will be used for HV construction traffic from 2026-2027 and worker vehicles for the full length of the Construction Works stage of the Project. While this is 'temporary', this duration is considered long enough to warrant a permeant upgrade of the intersection to include a CHR(s), subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes and volumes are finalised and take into consideration OSOM turning vehicle requirements.

Intersection name	Existing provision	Existing requirement	Temporary Project requirement	Infrastructure mitigation
Gore Highway/ Linthorpe Road	BAR	BAR	CHR	The existing BAR turn treatment at Gore Highway/Linthorpe Road is consistent with the background traffic requirements. The Project construction traffic increases the treatment warrant to a CHR(s). The Project will use Linthorpe Road to access a laydown area for concrete culverts, bridge structures, water, and other construction activities. The intersection is expected to accommodate OSOM vehicles to transport precast concrete girders (OSOM mitigations are discussed in Section 5.8.4). It is expected that peak right turn construction movements will be approximately 28 vehicles per hour in August 2025, resulting in a total right turn demand of up to 31 vehicles per hour (including background traffic). This intersection will be used for HV construction traffic from 2024-2025 and worker vehicles for the full length of the Construction Works stage of the Project. While this is 'temporary', this duration is considered long enough to warrant a permeant upgrade of the intersection to include a CHR(s), subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes and volumes are finalised and take into consideration OSOM turning vehicle requirements.
	BAL	BAL	AUL(s)	Similar to the above, it is expected that peak left turn construction movements will be approximately 14 vehicles per hour in August 2025, resulting in a total left turn demand of up to 22 vehicles per hour (including background traffic). This intersection will be used for HV construction traffic from 2024-2025 and worker vehicles for the full length of the Construction Works stage of the Project. While this is "temporary", this duration is considered long enough to warrant a permeant upgrade of the intersection to include an AUL(s), subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes and volumes are finalised and take into consideration OSOM turning vehicle requirements.
Gore Highway/ Linthorpe Valley Road	BAR	BAR	CHR(s)	The existing BAR turn treatment at Gore Highway/Linthorpe Valley Road is consistent with the background traffic requirements. The Project construction traffic increases the treatment warrant to a CHR(s). The Project will use Linthorpe Valley Road to access a laydown area for concrete culverts, water, and other construction activities. It is expected that peak right turn construction movements will be approximately 4 vehicles per hour in March 2027, resulting in a total right turn demand of up to 8 vehicles per hour. This intersection will be used for construction traffic for one month in 2027 only. This duration is not considered long enough to warrant a permeant upgrade of the intersection to include a CHR(s), rather temporary traffic management can be incorporated for a month as a part of the TMP to mitigate any impacts, subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes and volumes are finalised.

Intersection name	Existing provision	Existing requirement	Temporary Project requirement	Infrastructure mitigation
Gore Highway/Scrubby Road	None	BAR	CHR	There is no existing right turn treatment at Gore Highway/Scrubby Road, however, the background traffic assessment indicates a treatment warrant of BAR without the Project. The Project construction traffic increases the treatment warrant to a CHR. The Project will use Scrubby Road to access a quarry for ballast and fill. It is expected that peak right turn construction movements will be approximately 119 vehicles per hour in December 2025, resulting in a total right turn demand of up to 120 vehicles per hour. This intersection will be used for construction traffic from 2025 to 2026 of the Project construction. And while this is 'temporary', this increased number of construction vehicles is considered sufficient to warrant a permeant upgrade of the intersection to include a CHR, subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when quarry suppliers are finalised.
Gore Highway/Tummalville Road/Yarranlea Road (North)	BAR	BAR	CHR	The existing BAR turn treatment from the Gore Highway into Yarranlea Road is consistent with the background traffic requirements. The Project construction traffic increases the treatment warrant to a CHR. The Project will use Yarranlea Road to distribute quarry materials to the corridor for ballast and fill. It is expected that peak right turn construction movements will be approximately 117 vehicles per hour in December 2025, resulting in a total right turn demand of up to 121 vehicles per hour. This peak intersection usage will be from 2025 to 2026, with lower usage expected during the remainder of the Construction Works stage of the Project. While this is 'temporary', this increased number of construction vehicles is considered sufficient to warrant a permeant upgrade of the intersection to include a CHR, subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes are finalised.
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road	BAR	BAR	CHR(s)	The existing BAR turn treatment from Toowoomba-Cecil Plains Road into Airport Quarry Wellcamp Access Road is consistent with the background traffic requirements. The Project construction traffic increases the treatment warrant to a CHR(s). The Project will use the quarry for ballast and fill. It is expected that peak right turn construction movements will be approximately 20 vehicles per hour in December 2025, resulting in a total right turn demand of up to 21 vehicles per hour. This peak intersection usage will be from 2025 to 2026, with lower usage expected during the remainder of the Construction Works stage of the Project. While this is 'temporary', this increased number of construction vehicles is considered sufficient to warrant a permeant upgrade of the intersection to include a CHR, subject to agreement between DTMR, ARTC, and Wellcamp Airport/Quarry. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes are finalised.

Intersection name	Existing provision	Existing requirement	Temporary Project requirement	Infrastructure mitigation
Toowoomba-Cecil Plains Road/ Brimblecombe Road	BAR	BAR	CHR(s)	The existing BAR turn treatment from Toowoomba Cecil Plains Road into Brimblecombe Road is consistent with the background traffic requirements. The Project construction traffic increases the treatment warrant to a CHR(s). The Project will use Brimblecombe Road to access a laydown area for concrete culverts, bridge structures, water, and other construction activities. The intersection is expected to accommodate OSOM vehicles to transport precast concrete girders (OSOM mitigations are discussed in Section 5.8.4). It is expected that peak right turn construction movements will be approximately 8 vehicles per hour in March 2028, resulting in a total right turn demand of up to 9 vehicles per hour (including background traffic). This intersection will be used for HV construction traffic from 2024 to 2025 and worker vehicles for the full duration of the Construction Works stage of the Project. While this is 'temporary', this duration is considered long enough to warrant a permeant upgrade of the intersection to include a CHR(s), subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes and volumes are finalised and take into consideration OSOM turning vehicle requirements.
Gore Highway/ Biddeston Southbrook Road	None	BAL	AUL(s)	There is no existing left turn treatment at Gore Highway/Biddeston Southbrook intersection, however, the background traffic assessment indicates a treatment warrant of BAL without the Project. The Project construction traffic increases the treatment warrant to an AUL(s). It is expected that this intersection will be upgraded as a part of the Project, with a diversion introduced with the grade separated crossing over the Project (Section 5.9.4.2). The proposed new intersection of the Gore Highway with Biddeston Southbrook Road will be designed and constructed consistent with Austroads' guidelines and include the warranted turn lane provisions.
Gore Highway/ Dieckmann Road	None	BAL	AUL(s)	There is no existing left turn treatment from Gore Highway into Brimblecombe Road, however, the background traffic assessment indicates a treatment warrant of BAL without the Project. The Project construction traffic increases the treatment warrant to an AUL(s). The Project will use Dieckmann Road to access a laydown area for concrete culverts, bridge structures, water, and other construction activities. The intersection is expected to accommodate OSOM vehicles to transport precast concrete girders (OSOM mitigations are discussed in Section 5.8.4).

Intersection name	Existing provision	Existing requirement	Temporary Project requirement	Infrastructure mitigation
				It is expected that peak left turn construction movements will be approximately 32 vehicles per hour in November 2025, resulting in a total left turn demand of up to 33 vehicles per hour (including background traffic). This intersection will be used for HV construction traffic from 2025 to 2026 and worker vehicles for the duration of Construction Works stage of the Project. This intersection will be the main access to the proposed Precast Concrete Facility and Batch Plant (north). While this is 'temporary', this duration is considered long enough to warrant a permeant upgrade of the intersection to include an AUL(s), subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes and volumes are finalised and take into consideration OSOM turning vehicle requirements.
Warrego Highway/ Chamberlain Road	None	BAL	AUL(s)	There is no existing left turn treatment at Warrego Highway/Chamberlain Road, however, the background traffic assessment indicates a treatment warrant of BAL without the Project. The Project construction traffic increases the treatment warrant to a CHR(s). The Project will use Chamberlain Road to access a laydown area for concrete culverts, bridge structures, water, and other construction activities. The intersection is expected to accommodate OSOM vehicles to transport precast concrete girders (OSOM mitigations are discussed in Section 5.8.4). It is expected that peak left turn construction movements will be approximately 5 vehicles per hour in April 2027, resulting in a total left turn demand of up to 6 vehicles per hour (including background traffic). This intersection will be used for HV construction traffic from 2025 to 2027 and worker vehicles for the duration of the Construction Works stage for the Project. While the number of trips is expected to be low, this intersection will be accessed off a busy section of the Warrego Highway, which warrants upgrade of the intersection to include an AUL(s), subject to agreement between DTMR and ARTC. It is recommended that this treatment is investigated during the Detailed Design stage and confirmed when construction routes and volumes are finalised and take into consideration OSOM turning vehicle requirements.

In addition to the above mitigations, the mitigations outlined in Table 5.36 should be implemented for the additional sixty-nine (69) turning treatments which currently do not meet the Austroads' requirements.

Table 5.36 Mitigation measures for turn warrant requirements at intersection not increased by Project traffic

Stage	Mitigation	Mitigation outcome
Detailed Design/Pre-Construction Activities and Early Works	Intersections will be assessed against requirements outlined in AGRD4a requirements. Where adequate turn lane treatments are not available, the construction contractor will apply the following mitigation strategies: ■ Avoid – the construction contractor will investigate alternative construction routes which avoid intersections with inadequate turn lane treatments. ■ Manage – the construction contractor will manage the turn lane treatments through the implementation of TGS and TMP which may temporarily reduce speeds to achieve sight distance compliance. ■ Mitigate – propose works to upgrade the turn lane treatments. Agreement between ARTC and road authority on upgrade requirements and funding arrangements. Given that these are existing requirements, it is not anticipated that ARTC will fund these upgrades. Temporary road works, including diversion and signage, in accordance with the <i>Manual of Uniform Traffic Control Devices: Part 3 - Works on Roads</i> (DTMR 2019a) and the <i>Traffic and Road Use Management Manual: Volume 7 Road Works</i> (DTMR 2012).	Ensuring compliance with all relevant standards and guidelines will ensure that construction vehicles operate safely with appropriate mitigations applied.

5.5 Road link capacity assessment and mitigation

This section examines the impact of the Project on the road network. Project related traffic consists of traffic generated by construction activities and operational activities. For the road link capacity assessment, it is anticipated that the impacts would primarily be during the Construction Works stage of the Project. During operation, the impacts from the Project are expected to be low given the expected nature of operations (i.e. low vehicle movements to/from depots, transportation of maintenance material within the rail corridor). Therefore, while the associated Project traffic volume during operation may trigger the 5 per cent threshold outlined in GTIA, this is only expected to occur on local roads with very limited background traffic and therefore is expected to have no impact on road link capacity.

5.5.1 Methodology

The road link capacity assessment has been undertaken as per the framework laid out in Part C of the GTIA for all road links with exceed the 5 per cent threshold in Section 5.1.1. This framework relies on the principle that a road's capacity is not significantly worsened as a result of the Project and that any pre-existing or Project-introduced worsening of capacity is addressed. The GTIA outlines that the assessment of road link capacity impacts is based on the incremental worsening of LOS.

An overview of the road capacity assessment process undertaken for the purpose of the TIA is shown in Figure 5.10. The road capacity assessment process undertaken in the following sections includes:

- Determining the existing geometric conditions of the road links triggering the 5 per cent threshold within the Project TIA study area to determine the capacity assessment type.
- Sealed roads with line markings will undertake a LOS analysis through the Highway Capacity Software (HCS) to determine LOS without and with Project traffic.
- Roads that are unsealed or have no line markings are not able to undergo a HCS analysis so have been assessed through a volume/capacity check as shown in Section 5.5.1.2 with the capacity based on the *DTMR Cost-Benefit Analysis Manual*.

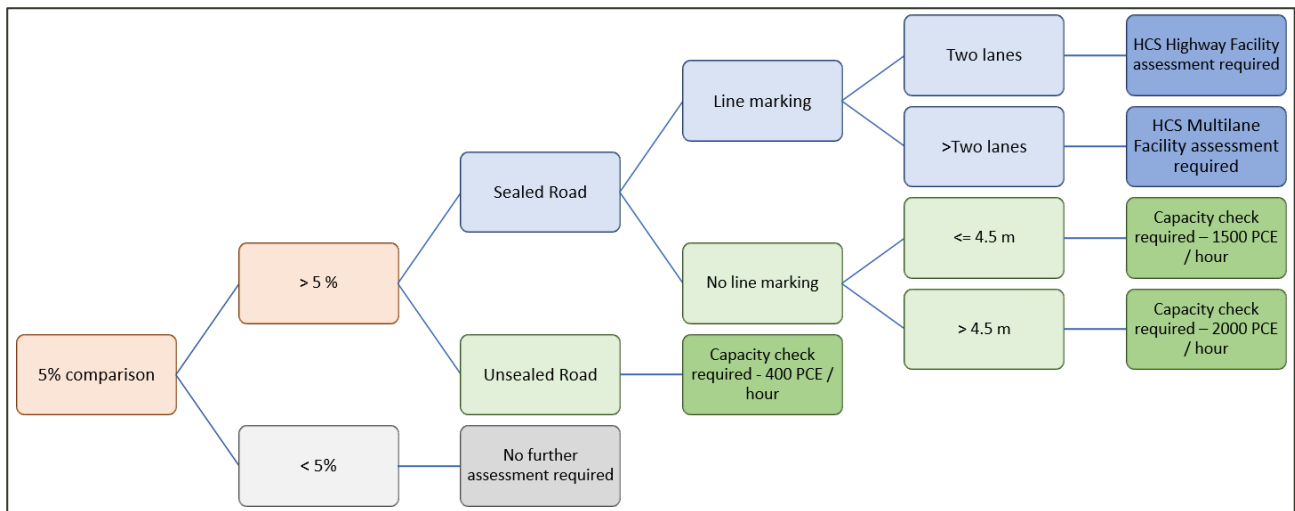


Figure 5.10 Road link capacity assessment methodology - decision tree

This process has been utilised to determine the operation of road links without and with Project traffic.

As per Part C of the GTIA, road capacity is considered in terms of changes in LOS. Level of Service is considered a qualitative index for ranking operating conditions on roads as well as pedestrian and cycling movement based on factors such as speed, flow rate, travel time, freedom to manoeuvre, interruptions, comfort, safety, and convenience.

The performance thresholds for assessment of traffic impact developed with reference to *Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis* (2017a), *GTIA* and *DTMR Guidelines for Assessment of Road Impacts of Development* (2017) are provided below:

- An impact occurs if construction and operational traffic generated by the development exceeds five percent of the existing AADT on the road section
- LOS C can be considered the minimum standard on rural roads. However, LOS D may be accepted in case of event traffic
- LOS E should be considered the limit of acceptable for urban area operation and remedial works would be needed if LOS F would otherwise result.

Classifications for LOS that have been used in this capacity assessment have been provided in Sections 5.5.1.3 and 5.5.1.4 for the HCS highway facility and multilane facility, respectively. The capacity assessment results have been provided in Section 5.5.2.

5.5.1.1 Level of Service definition

LOS is a qualitative measure describing the operational conditions within a traffic stream.

It is defined in terms of service measures such as speed and travel time, freedom to manoeuvre, traffic interruptions, comfort, and convenience. The practical application of LOS to different road environments considers factors such as road hierarchy, volume/capacity ratios, terrain types, proportion of HVs and road gradients. The methodology and LOS criteria have been developed with reference to *Guide to Traffic Management Part 3: Traffic Studies and Analysis* and *Highway Capacity Manual 2022*.

The GTIA defines LOS as a qualitative index for ranking operating conditions on roads as well as pedestrian and cycling movement based on factors such as speed, flow rate, travel time, freedom to manoeuvre, interruptions, comfort, safety, and convenience. Further to LOS, intersection outputs, such as intersection delay, are also used for identifying their operational performance conditions.

There are six LOS as defined in the Austroads Guide mentioned above, each of which represents a range of operating conditions and the driver's perception of those conditions and can generally be described as:

- **LOS A:** A condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent
- **LOS B:** In the zone of stable flow and drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream, although the general level of comfort and convenience is a little less than with LOS A
- **LOS C:** Also in the zone of stable flow, but most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience declines noticeably at this level
- **LOS D:** Close to the limit of stable flow and approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems
- **LOS E:** Occurs when traffic volumes are at or close to capacity and there is virtually no freedom to select desired speeds and to manoeuvre within the traffic stream. Flow is unstable and minor disturbances within the traffic stream will cause flow breakdown
- **LOS F:** In the zone of forced flow. The amount of traffic approaching the point under consideration exceeds that which can pass it. Flow breakdown occurs, and queuing and delays result.

Road authorities generally prefer to design new rural road projects for LOS A or B at opening and LOS C to D in the design year. However, some rural projects and most urban projects will have practical and financial limits on the extent of work that can be achieved and consequently the performance criteria will have to be negotiated throughout the traffic analysis process. In this regard, an analysis of the existing Level of Service on the road network provides a useful benchmark by which to assess changes as a result of the Project.

5.5.1.2 Volume/capacity ratio

The construction routes within the TIA study area contain unsealed and sealed roads with no line markings. These are unable to be analysed using the HCS due to this method being reserved for two-lane two-way highway which indicates the requirement for lane definition. To assess these roads, a volume/capacity check has been undertaken to determine whether the road link is nearing capacity. The hourly capacity has been sourced from the *DTMR Cost-Benefit Analysis Manual* and simplified for the purpose of this assessment.

The following process was used to undertake the volume/capacity check on all roads which triggered the road link volume 5 per cent threshold and who did not meet the requirements for analysis through the HCS (no line markings or unsealed):

- a) Pavement type and seal width is summarised for each road link
- b) Hourly capacity for each road link is determined based on Table 5.37
- c) Background and construction vehicle volumes are converted to passenger car equivalents (PCE) based on the factors provided in Table 5.38. Light vehicles are classified as cars-private vehicle, and HVs are classified as an articulated vehicle type.
- d) Volume/capacity ratio is determined by dividing the volumes in PCE by the capacity provided in PCE.

Table 5.37 Hourly passenger car equivalent capacity

Road width description	Hourly capacity (PCE/h)
Unsealed natural surface or unsealed formed road	400
Narrow seal <= 4.5 m	1,500
Narrow seal >= 4.5 m	2,000
2 lane seal 5.3 m - 5.8 m	2,300
2 lane seal 5.9 m - 6.4 m	2,350
2 lane seal 6.5 m - 7.0 m	2,450
2 lane seal 7.1 m - 7.6 m	2,500
2 lane plus shoulder seal 7.7 m - 8.2 m	2,525
2 lane plus shoulder seal 8.3 m - 9.0 m	2,550
2 lane plus shoulder seal 9.1 m - 9.4 m	2,550
2 lane plus shoulder seal 9.5 m - 10.0 m	2,575
2 lane plus shoulder seal 10.1 m - 11.6 m	2,575
3 lane for overtaking	4,000
4 lane undivided sealed	7,120
6 lane undivided sealed	12,000
4 lane divided sealed	8,000
6 lane divided sealed	12,000
4 lane divided sealed (limited access)	8,000
6 lane divided sealed (limited access)	12,000
8 lane divided sealed (limited access)	16,000

Table 5.38 Passenger car equivalent factors

Vehicle type	Flat – 4%	4% to 6%	6% to 8%
Cars – private	1	1	1
Articulated	2.4	4.8	7.2

Table 5.39 provides a short summary of commonly accepted criteria for relating v/c ratio to network performance. For the purpose of the TIA, all road links which have a v/c ratio of less than 0.5 with Project traffic is considered to be acceptable for the duration of construction. Where the v/c ratio exceeds this threshold, further consideration will be provided to determine the network performance.

Table 5.39 Road network performance criteria

Volume/capacity ratio	Road network performance
0 to 0.5	Free-flowing traffic
0.5 to 0.8	Slowing of vehicles
0.8 to 1.0	Congestion building
>=1.0	Completely congested

5.5.1.3 Highway Capacity Software Highway Facility

The Level of Service analysis was undertaken on all road links which exceeded the 5 per cent threshold. The primary aim of the LOS analysis is to determine the level of impact Project generated traffic has on the road network by determining the change in LOS in the peak hour for each road section. This analysis was undertaken using the HCS, which provides a Level of Service for roads based on the service measure of follower density. Follower density is defined as the number of vehicles in a follower state per kilometre per lane, whereas a 'follower' vehicle is defined by a headway equal to or less than 2.5 s.

This will be determined for both the existing road links as well as during the various Construction Works stages where the Project's construction activities could potentially have an impact on the operational performance of the surrounding road network. The findings from the analysis will lead to the formulation of potential mitigation measures to address the identified impacts.

An assessment of impacts of construction traffic movements for the Project on the existing road network was undertaken by comparing projected traffic volumes without (background) and with the Project. Performance criteria specified in the GTIA state that traffic generated by a development is considered to result in an impact if that traffic equals or exceeds 5 per cent of the existing AADT on a road section.

The process is as follows:

- The 5 per cent threshold must be triggered for the road link within the Project TIA study area. It has been determined that the road link meets the minimum requirements to be analysed using the HCS software. The minimum requirements outline a sealed road with two lanes and line markings
- Operational data about the road link is required as inputs into the analysis software. These variables are defined in Table 5.40
- The software will provide a result summary with a calculated follower density and LOS based on the criteria defined in Table 5.41. These results are compared between 'Without' Project and 'With' Project. If LOS increases in the 'With' Project scenario, mitigation measures will need to be put in place.

Table 5.40 Highway Capacity Software Highway inputs

Variable	Definition	Source	Assumptions
Coded type	■ Passing Constrained – Length of two lane highway in which passing in the oncoming lane is either prohibited or effectively negligible ■ Passing Zone – Length of two lane highway in which passing is permitted	ArcGIS Pro	Passing Constrained adopted for all as worst case scenario – not passing increases the follower density and decreases the free flow speed therefore providing the worst case LOS
Length, m	Length of segment being analysed	ArcGIS Pro	-
Speed limit, km/h	Speed Limit posted on the highway segment in the analysis direction	DTMR	-
Percent grade, %	Longitudinal slope of a roadway	Queensland Globe – maximum absolute average slope	-
Lane width, m	Lateral distance between stripes for a given lane	Manually measured Queensland Globe/ Nearmap cross checked with DTMR Asset Data	-
Shoulder width, m	■ In Multilane – width of shoulder ■ In Two Lane – average shoulder width for both sides of the highway	Manually measured Queensland Globe/ Nearmap cross checked with DTMR Asset Data	-

Variable	Definition	Source	Assumptions
Access location density, points/km	Major driveways and side roads where significant traffic enters and/or leaves the two-lane highway (residential driveway and other low-volume driveways and side roads generally with ADT below 20 vehicles per day).	Manually measured Queensland Globe/Nearmap	-
Directional demand, veh/h	Demand volume for the analysis direction at the entrance of the segment being analysed	Traffic Data – Background Link Volumes Spreadsheet	Vehicle volumes for the peak construction year (one scenario for without Project traffic volumes in peak construction year and another scenario for with Project traffic volumes in peak construction year)
Opposing demand, veh/h	Demand volumes for the opposing direction at the entrance of the segment being analysed	-	Not required when Passing Constrained highway
Peak hour factor, PHF	Hourly volume during the analysis hour divided by the peak 15-min flow rate within the analysis hour. Measure of traffic demand fluctuation within the analysis hour.	-	0.94
Heavy vehicles, %	Percentage of HVs in the traffic stream.	Traffic Data – Background Link Volumes Spreadsheet	-
Pavement condition rating	Description of the road surface in terms of ride quality and surface defects. Pavement condition is rated 2 to 5 based on the Federal Highway Administration (FHWA) 5-point rating scale	-	4

Table 5.41 Highway Capacity Software Highway results criteria

LOS*	Follower density (followers/km)	
	≥ 80 km/h posted speed	< 80 km/h posted speed
A	≤1.2	≤1.6
B	>1.2 to 2.5	>1.6 to 3.1
C	>2.5 to 5.0	>3.1 to 6.2
D	>5.0 to 7.5	>6.2 to 9.3
E	>7.5	>9.3

Table note:

* LOS F exists when demand exceeds capacity.

5.5.1.4 Highway Capacity Software Multilane Facility

The LOS analysis was undertaken on all road links which exceeded the 5 per cent threshold. The primary aim of the LOS analysis is to determine the level of impact Project generated traffic has on the road network by determining the change in LOS in the peak hour for each road section. This analysis was undertaken using the HCS, which provides a Level of Service for roads based on the service measure of follower density. Follower density is defined as the number of vehicles in a follower state per kilometre per lane, whereas a 'follower' vehicle is defined by a headway equal to or less than 2.5 s.

This will be determined for both the existing road links as well as during the various Construction Works stages where the Project's construction activities could potentially have an impact on the operational performance of the surrounding road network. The findings from the analysis will lead to the formulation of potential mitigation measures to address the identified impacts.

An assessment of impacts of construction traffic movements for the Project on the existing road network was undertaken by comparing projected traffic volumes without (background) and with the Project. Performance criteria specified in the GTIA state that traffic generated by a development (i.e. the Project) is considered to result in an impact if that traffic equals or exceeds 5 per cent of the existing AADT on a road section.

The process is as follows:

- The 5 per cent threshold must be triggered for the road link within the Project TIA study area. It has been determined that the road link meets the minimum requirements to be analysed using the HCS software. The minimum requirements outline a sealed road with two lanes and line markings.
- Operational data about the road link is required as inputs into the analysis software. These variables are defined in Table 5.42.
- The software will provide a result summary with a calculated follower density and LOS based on the criteria defined in Table 5.41. These results are compared between 'Without' Project and 'With' Project. If LOS increases in the 'With' Project scenario, mitigation measures will need to be put in place.

Table 5.42 Highway Capacity Software Multilane variables

Variable	Definition	Source	Assumptions
Coded type	■ Passing Constrained – Length of two lane highway in which passing in the oncoming lane is either prohibited or effectively negligible ■ Passing Zone – Length of two lane highway in which passing is permitted	-	Passing Constrained adopted for all road links as worst case scenario – not passing increases the follower density and decreases the free flow speed therefore providing the worst case LOS
Length, m	Length of segment being analysed	ArcGIS Pro	-
Speed limit, km/h	Speed Limit posted on the highway segment in the analysis direction	ArcGIS Pro	-
Percent grade, %	Longitudinal slope of a roadway	DTMR	-
Lane width, m	Lateral distance between stripes for a given lane	Queensland Globe – maximum absolute average slope	-
Shoulder width, m	■ In Multilane – width of shoulder ■ In Two Lane – average shoulder width for both sides of the highway	Manually measured Queensland Globe/Nearmap cross checked with DTMR Asset Data	-
Jam density, veh/km/ln	The maximum density that can be achieved on a segment. It occurs when speed is zero.	-	Default: 190
Queue discharge capacity drop, %	The percent reduction in the prebreak down capacity following breakdown at an active bottleneck.	-	Default: 7%
Area type	Environment of the road segment.	Queensland Globe	Default

Variable	Definition	Source	Assumptions
Access location density, points/km	Major driveways and side roads where significant traffic enters and/or leaves the two-lane highway (residential driveway and other low-volume driveways and side roads generally with ADT below 20 vehicles per day).	Manually measured on Queensland Globe/Nearmap	-
Directional demand, veh/h	Demand volume for the analysis direction at the entrance of the segment being analysed	Traffic Data – Background Link Volumes Spreadsheet	Vehicle volumes for the peak construction year (one scenario for without Project traffic volumes in peak construction year and another scenario for with Project traffic volumes in peak construction year)
Opposing demand, veh/h	Demand volumes for the opposing direction at the entrance of the segment being analysed	-	Not required when passing constrained highway
Peak hour factor, PHF	Hourly volume during the analysis hour divided by the peak 15-min flow rate within the analysis hour. Measure of traffic demand fluctuation within the analysis hour.	-	0.94. Given in Highway Capacity Manual Chapter 15.
Heavy vehicles, %	Percentage of HVs in the traffic stream.	Traffic Data	Heavy vehicle percentage for base traffic in peak construction year and HV percentage of Project traffic in peak construction year
Pavement condition rating	Description of the road surface in terms of ride quality and surface defects. Pavement condition is rated 2 to 5 based on the (FHWA) 5-point rating scale	FHWA	4

5.5.2 Road link capacity assessment

Table 5.43 provides a summary of all road links and their required road link capacity assessment as explained below:

- <5 per cent: Road link 5 per cent volume threshold has not been triggered
- V/C ratio: road link triggers 5 per cent threshold, however, is either unsealed or has no line marking and is therefore assessed via v/c ratio
- HCS Highway: road link is a two-way two-lane road which triggers 5 per cent threshold and is therefore assessed using the HCS highway facility method
- HCS Motorway: road link is a two-way multi-lane road which triggers 5 per cent threshold and is therefore assessed using the HCS multilane motorway method.

Table 5.43 Road link capacity assessment requirement

Road name	Road extents ¹	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
State-Controlled Roads: Department of Transport Main Roads					
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km			✓	
	Ch 0.8 km to Ch 2.0 km			✓	
	Ch 2.0 km to Ch 45.9 km			✓	
	Ch 45.9 km to Ch 88.0 km			✓	
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km			✓	
	Ch 1.6 km to Ch 66.8 km			✓	
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km			✓	
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	✓			
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km			✓	
	Ch 96.2 km to Ch 97.5 km			✓	
	Ch 97.5 km to Ch 105.7 km			✓	
	Ch 105.7 km to Ch 107.4 km			✓	
	Ch 107.4 km to Ch 107.6 km			✓	
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km			✓	
	Ch 2.0 km to Ch 3.9 km			✓	
	Ch 3.9 km to Ch 10.2 km			✓	
	Ch 10.2 km to Ch 13.9 km			✓	
	Ch 13.9 km to Ch 18.5 km			✓	
	Ch 18.5 km to Ch 27.1 km			✓	
	Ch 27.1 km to Ch 29.3 km			✓	
	Ch 29.3 km to Ch 34.7 km			✓	
	Ch 34.7 km to Ch 39.6 km			✓	
	Ch 39.6 km to Ch 40.3 km			✓	
	Ch 40.3 km to Ch 40.5 km			✓	
	Ch 40.5 km to Ch 43.9 km			✓	
	Ch 43.9 km to Ch 46.3 km			✓	
	Ch 46.3 km to Ch 88.0 km	✓			
	Ch 88.0 km to Ch 88.2 km	✓			
	Ch 88.2 km to Ch 90.0 km	✓			
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	✓			
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	✓			
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km			✓	
	Ch 2.2 km to Ch 5.4 km			✓	
	Ch 5.4 km to Ch 6.7 km			✓	
	Ch 6.7 km to Ch 7.7 km			✓	
	Ch 7.7 km to Ch 11.2 km			✓	

Road name	Road extents ¹	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
	Ch 11.2 km to Ch 15.3 km			✓	
	Ch 15.3 km to Ch 17.5 km			✓	
	Ch 17.5 km to Ch 19.0 km			✓	
	Ch 19.0 km to Ch 20.3 km			✓	
	Ch 20.3 km to Ch 21.5 km			✓	
	Ch 21.5 km to Ch 23.2 km			✓	
	Ch 23.2 km to Ch 25.0 km			✓	
	Ch 25.0 km to Ch 30.1 km			✓	
	Ch 30.1 km to Ch 38.7 km			✓	
	Ch 38.7 km to Ch 41.1 km			✓	
	Ch 41.1 km to Ch 41.7 km			✓	
	Ch 41.7 km to Ch 43.2 km			✓	
	Ch 43.2 km to Ch 44.7 km			✓	
	Ch 44.7 km to Ch 47.6 km			✓	
	Ch 47.6 km to Ch 52.2 km			✓	
	Ch 52.2 km to Ch 53.3 km			✓	
	Ch 53.3 km to Ch 60.8 km			✓	
	Ch 60.8 km to Ch 63.0 km			✓	
Gore Highway (28B) Ipswich Motorway (17A)	Ch 0.0 km to Ch 0.7 km			✓	
	Ch 0.7 km to Ch 0.8 km			✓	
	Ch 0.8 km to Ch 1.4 km			✓	
	Ch 1.4 km to Ch 3.0 km			✓	
	Ch 3.0 km to Ch 13.0 km			✓	
	Ch 13.0 km to Ch 121.6 km			✓	
	Ch 0.0 km to Ch 3.7 km	✓			
	Ch 3.7 km to Ch 6.4 km	✓			
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km			✓	
	Ch 220.1 km to Ch 222.4 km	✓			
	Ch 222.4 km to Ch 224.1 km	✓			
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	✓			
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km			✓	
	Ch 2.5 km to Ch 3.5 km			✓	
	Ch 3.5 km to Ch 6.2 km			✓	
	Ch 6.2 km to Ch 9.0 km			✓	
	Ch 9.0 km to Ch 13.1 km			✓	
	Ch 13.1 km to Ch 14.0 km			✓	
	Ch 14.0 km to Ch 17.3 km			✓	
	Ch 17.3 km to Ch 18.1 km			✓	
	Ch 18.1 km to Ch 21.8 km			✓	
	Ch 21.8 km to Ch 28.0 km			✓	

Road name	Road extents ¹	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
	Ch 28.0 km to Ch 33.0 km			✓	
	Ch 33.0 km to Ch 35.6 km			✓	
	Ch 35.6 km to Ch 37.7 km			✓	
	Ch 37.7 km to Ch 39.8 km			✓	
	Ch 39.8 km to Ch 41.9 km			✓	
	Ch 41.9 km to Ch 45.9 km			✓	
	Ch 45.9 km to Ch 47.6 km			✓	
	Ch 47.6 km to Ch 53.3 km			✓	
	Ch 53.3 km to Ch 55.7 km			✓	
	Ch 55.7 km to Ch 56.6 km			✓	
	Ch 56.6 km to Ch 59.2 km			✓	
	Ch 59.2 km to Ch 61.0 km			✓	
	Ch 61.0 km to Ch 65.7 km			✓	
	Ch 65.7 km to Ch 68.7 km			✓	
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km		✓		
	Ch 2.0 km to Ch 2.2 km		✓		
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	✓			
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	✓			
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km			✓	
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km			✓	
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	✓			
	Ch 6.0 km to Ch 6.4 km	✓			
	Ch 6.4 km to Ch 8.3 km	✓			
	Ch 8.3 km to Ch 9.2 km			✓	
	Ch 9.2 km to Ch 10.0 km	✓			
	Ch 10.0 km to Ch 10.1 km	✓			
	Ch 10.1 km to Ch 10.3 km			✓ *	
	Ch 10.3 km to Ch 12.1 km			✓	
	Ch 12.1 km to Ch 14.5 km			✓	
	Ch 14.5 km to Ch 16.3 km			✓	
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	✓			
	Ch 26.9 km to Ch 27.1 km	✓			
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km				✓
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km			✓	
	Ch 0.6 km to Ch 3.2 km			✓	
	Ch 3.2 km to Ch 4.1 km			✓	
	Ch 4.1 km to Ch 13.0 km			✓	
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass		✓		

Road name	Road extents ¹	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road		✓		
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	✓			
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	✓			
	Ch 7.2 km to Ch 15.1 km	✓			
	Ch 15.1 km to Ch 18.9 km	✓			
	Ch 18.9 km to Ch 28.9 km	✓			
	Ch 28.9 km to Ch 36.6 km	✓			
	Ch 36.6 km to Ch 55.5 km	✓			
	Ch 55.5 km to Ch 75.4 km	✓			
	Ch 75.4 km to Ch 79.6 km	✓			
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	✓			
	Ch 0.4 km to Ch 1.5 km	✓			
	Ch 1.5 km to Ch 2.4 km	✓			
	Ch 2.4 km to Ch 4.5 km	✓			
	Ch 4.5 km to Ch 5.0 km	✓			
	Ch 5.0 km to Ch 5.3 km	✓			
	Ch 5.3 km to Ch 6.2 km	✓			
Warrego Highway Off-ramp	Warrego Highway to Kingsthorpe Overpass		✓		
State-Controlled Roads: Transport for New South Wales					
Newell Highway	River Road to Queensland/NSW Border	✓			
Local Government Roads: Balonne Shire Council					
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway		✓		
Local Government Roads: Goondiwindi Regional Council					
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street		✓		
Bybera Road	Cunningham Highway to B2G-LDN060.4		✓		
	B2G-LDN060.4 to Earthworks Area 2A		✓		
Cemetery Road	Access Track to Moorroobie Lane		✓		
	Cunningham Highway to GrainCorp Goondiwindi		✓		
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access		✓		
	Coolmunda Dam Access to Cunningham Highway		✓		
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4		✓		
	B2G-LDN055.4 to B2G-LDN054.2		✓		
	Cunningham Highway to B2G-LDN052.8		✓		

Road name	Road extents ¹	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
East Sawmill Road	Cunningham Highway to B2G-LDN030.0		✓		
Elizabeth Street	Cunningham Highway to B2G-LDN065.8		✓		
Eukabilla Road	Kildonan Road to NS2B-LDN033.2		✓		
	NS2B-LDN033.2 to NS2B-LDN035.6		✓		
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)		✓		
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road		✓		
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road		✓		
Hunt Street	Leichhardt Highway to Boodle Street		✓		
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	✓			
	NS2B-LDN031.0 to South Kurumbul Road		✓		
	South Kurumbul Road to Cunningham Highway		✓		
	Cunningham Highway to Eukabilla Road		✓		
McDougalls Road	B2G-LDN049.8 to McDougalls Road		✓		
	McDougalls Road to Cunningham Highway		✓		
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)		✓		
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane		✓		
	Mooroobie Lane to Wondalli Kurumbul Road		✓		
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road		✓		
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0		✓		
Silo Street	Barwon Highway to GrainCorp Talwood		✓		
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road		✓		
South Toobeah Road	GrainCorp Toobeah to Barwon Highway		✓		
Springborg Road	Cunningham highway to B2G-LDN037.6		✓		
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)		✓		
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6		✓		
	B2G-LDN067.6 to Millmerran-Inglewood Road		✓		
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway		✓		
Whetstone Access	B2G-LDN044.5 to Cunningham Highway		✓		

Road name	Road extents ¹	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane		✓		
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0		✓		
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)		✓		
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3		✓		
	B2G-LDN006.3 to Wondalli Kurumbul Road		✓		
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road		✓		
	Yelarbon Kurumbul Road to B2G-LDN020.3		✓		
	B2G-LDN020.3 to B2G-LDN025.9		✓		
	B2G-LDN025.9 to Cunningham Highway		✓		
Local Government Roads: Moree Plains Shire Council					
Boggabilla Weir Access	River Road to Boggabilla Weir		✓		
River Road	Newell Highway to Boggabilla Weir Access		✓		
Local Government Roads: Toowoomba Regional Council					
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	✓			
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	✓			
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	✓			
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2		✓		
	B2G-LDN188.2 to Gore Highway		✓		
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8		✓		
Blackwell Road	Gore Highway to Millmerran Quarry		✓		
	Millmerran Quarry to B2G-LDN120.2		✓		
	B2G-LDN120.2 to Millmerran-Inglewood Road		✓		
Bligh Street	Six Mile Road to Boral Concrete Millmerran		✓		
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road		✓		
	Brimblecombe Road to WL 194467R		✓		
Bushy Lane	B2G-LDN183.0 to Gore Highway		✓		
Campbell Street	Millmerran-Inglewood Road to Saleyards Road			✓	
	Saleyards Road to Gore Highway			✓	
Chamberlain Road	Warrego Highway to B2G-LDN204.2		✓		
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road		✓		

Road name	Road extents ¹	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
Desmonds Lane	Yarranlea Road to B2G-LDN163.3		✓		
Dieckmann Road	B2G-LDN150.5 to Gore Highway		✓		
Draper Road	Steger Road to B2G-FBW206.9			✓	
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	✓			
	Access Track to Greenwattle Street	✓			
Florence Street	Gore Highway to West Street	✓			
Forestry Road	Access Track to Millmerran-Inglewood Road		✓		
	Millmerran-Inglewood Road to Earthworks Area 3B		✓		
Fysh Road	B2G-LDN147.1 to Gore Highway		✓		
Gap Road	Gore Highway to Grevillea Street	✓			
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road		✓		
Gilgai Lane	B2G-LDN144.6 to Gore Highway		✓		
Grevillea Street	Boral Concrete Pittsworth to Gap Road	✓			
Hall Road	B2G-LDN139.0 to Gore Highway		✓		
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0		✓		
	B2G-LDN116.0 to Millmerran-Inglewood Road		✓		
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry		✓		
Kahler Road	Murlaggan Road to B2G-LDN165.6		✓		
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road			✓	
Koroongarra Road	Borrow Site #13 (Koroongarra Road) to Millwood Road		✓		
	Millmerran-Inglewood Road to Commodore Mine		✓		
Leesons Road	Warrego Highway to Steger Road		✓ **		
	Steger Road to B2G-LDN206.3		✓		
Linthorpe Road	Gore Highway to B2G-LDN175.5			✓	
Linthorpe Valley Road	Geitz Road to Gore Highway		✓		
Lochaber Road	Gore Highway to B2G-LDN172.0			✓	
	Ch B2G-LDN172.0 to B2G-LDN172.6	✓			
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	✓			
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1		✓		
	B2G-LDN112.1 to Millwood Road		✓		
	Millwood Road to Koroongarra Road		✓		
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station			✓	
Murlaggan Road	B2G-LDN164.3 to Kahler Road		✓		

Road name	Road extents ¹	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
	Kahler Road to Gore Highway		✓		
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	✓			
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	✓			
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2		✓		
	B2G-LDN128.2 to B2G-LDN130.0		✓		
	B2G-LDN130.0 to Millmerran-Inglewood Road		✓		
Paint Mine Road	Gore Highway to B2G-LDN173.5		✓		
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5		✓		
Quarry Road Access	Tummalville Road to Quarry		✓		
Saleyards Road	Campbell Street to Gore Highway		✓		
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9		✓		
Scragg Road	Commodore Peak Road to B2G-LDN123.6		✓		
	B2G-LDN123.6 to B2G-LDN123.8		✓		
Scrubby Road	Bland Quarry Pittsworth to Gore Highway		✓		
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline			✓ **	
	New Hope Recycled Water Pipeline to Draper Road			✓ **	
	Draper Road to Leasons Road	✓			
Tummalville Road	Access Track to Gore Highway		✓		
Turallin Road	Gore Highway to the Turallin Facility		✓		
Ware Street	GrainCorp Brookstead to B2G-LDN153.1			✓	
	B2G-LDN153.1 to Gore Highway			✓	
Ware Street	Gore Highway to B2G-LDN150.9		✓		
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road			✓	
West Street	Gore Highway to Florence Street			✓	
	Florence Street to Six Mile Road		✓		
Yarranlea Road	Gore Highway to B2G-LDN161.0		✓		
	B2G-LDN161.0 to Desmonds Lane		✓		

Table notes:

1 Road extents at Chainage locations (Ch) are measured at km points along the Project alignment

* Only in the Gazettal direction

** Only in A-Gazettal direction

The table indicates a total of:

- Fifty-three (53) road links not triggering the 5 per cent threshold
- One-hundred and six (106) road links requiring a volume/capacity check

- One-hundred and two (102) road links requiring a HCS highway facility analysis
- One (1) road link requiring a HCS multilane facility analysis.

5.5.3 Volume/capacity ratio

The volume/capacity (V/C) ratio results are summarised in Table 5.44 and Table 5.45 for the gazettal/northbound/eastbound directions and against-gazettal/southbound/westbound directions, respectively. The table summarises for each road link:

- Road classification
- Correlated road capacity in passenger-car equivalents per hour (PCE/h)
- Peak impact year
- Without Project traffic volumes in PCE/h
- With Project traffic volumes in PCE/h
- V/C ratio
- Whether further investigation or mitigations measures are required.

The V/C ratio assessment has only been undertaken for roads identified in Table 5.43, as required. This does not include roads with a volume increase of greater than 5 per cent, or roads which have lane marking.

Table 5.44 Volume/capacity ratio results G/NB/EB

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Without Project traffic volumes (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
State-Controlled Roads: Department of Transport and Main Roads								
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	Narrow Seal (>4.5 m)	2000	2026	20	35	0.01	No
	Ch 2.0 km to Ch 2.2 km	Narrow Seal (>4.5 m)	2000	2026	20	32	0.01	No
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	Narrow Seal (<4.5 m)	1500	2025	287	346	0.19	No
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	Narrow Seal (<4.5 m)	1500	2025	287	314	0.19	No
Warrego Highway Off-ramp (18B)	Warrego Highway to Kingsthorpe Overpass	Narrow Seal (<4.5 m)	1500	2025	9	66	0.01	No
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	Narrow Seal (>4.5 m)	2000	2025	7	18	0.00	No
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	Narrow Seal (>4.5 m)	2000	2025	1	1	0.00	No
Bybera Road	Cunningham Highway to B2G-LDN060.4	Narrow Seal (<4.5 m)	1500	2024	4	50	0.00	No
	B2G-LDN060.4 to Earthworks Area 2A	Narrow Seal (>4.5 m)	2000	2024	4	41	0.00	No
Cemetery Road	Access Track to Moorroobie Lane	Unsealed	400	2025	13	21	0.03	No
	Cunningham Highway to GrainCorp Goondiwindi	Narrow Seal (>4.5 m)	2000	2025	6	12	0.00	No
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	Narrow Seal (<4.5 m)	1500	2024	4	14	0.00	No
	Coolmunda Dam Access to Cunningham Highway	Narrow Seal (>4.5 m)	2000	2024	4	14	0.00	No
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	Narrow Seal (>4.5 m)	2000	2026	6	10	0.00	No
	B2G-LDN055.4 to B2G-LDN054.2	Narrow Seal (>4.5 m)	2000	2025	7	10	0.00	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Without Project traffic volumes (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
	Cunningham Highway to B2G-LDN052.8	Narrow Seal (>4.5 m)	2000	2026	7	11	0.00	No
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	Unsealed	400	2025	2	67	0.00	No
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	Unsealed	400	2027	2	8	0.01	No
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	Unsealed	400	2027	2	10	0.00	No
	NS2B-LDN033.2 to NS2B-LDN035.6	Unsealed	400	2027	2	6	0.00	No
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	Narrow Seal (>4.5 m)	2000	2024	1	101	0.00	No
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	Unsealed	400	2027	1	5	0.00	No
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	Narrow Seal (>4.5 m)	2000	2025	1	15	0.00	No
Hunt Street	Leichhardt Highway to Boodle Street	Narrow Seal (>4.5 m)	2000	2025	1	1	0.00	No
Kildonan Road	NS2B-LDN031.0 to South Kurumbul Road	Narrow Seal (>4.5 m)	2000	2025	101	140	0.05	No
	South Kurumbul Road to Cunningham Highway	Narrow Seal (>4.5 m)	2000	2025	101	139	0.05	No
	Cunningham Highway to Eukabilla Road	Narrow Seal (>4.5 m)	2000	2024	73	82	0.04	No
McDougalls Road	B2G-LDN049.8 to McDougalls Road	Unsealed	400	2024	0	9	0.00	No
	McDougalls Road to Cunningham Highway	Unsealed	400	2024	0	9	0.00	No
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	Unsealed	400	2025	2	10	0.01	No
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	Unsealed	400	2025	2	18	0.01	No
	Mooroobie Lane to Wondalli Kurumbul Road	Unsealed	400	2025	2	18	0.01	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Without Project traffic volumes (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	Unsealed	400	2025	1	15	0.00	No
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	Unsealed	400	2024	0	6	0.00	No
Silo Street	Barwon Highway to GrainCorp Talwood	Narrow Seal (<4.5 m)	1500	2025	8	9	0.01	No
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	Narrow Seal (<4.5 m)	1500	2027	5	8	0.00	No
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	Narrow Seal (>4.5 m)	2000	2025	5	6	0.00	No
Springborg Road	Cunningham highway to B2G-LDN037.6	Unsealed	400	2024	0	5	0.00	No
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	Unsealed	400	2025	1	39	0.00	No
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	Unsealed	400	2024	1	7	0.00	No
	B2G-LDN067.6 to Millmerran-Inglewood Road	Unsealed	400	2024	1	69	0.00	No
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	Narrow Seal (>4.5 m)	2000	2025	21	23	0.01	No
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	Unsealed	400	2024	1	54	0.00	No
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorooobie Lane	Unsealed	400	2025	2	18	0.00	No
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	Unsealed	400	2027	1	11	0.00	No
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	Unsealed	400	2025	1	9	0.00	No
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	Narrow Seal (<4.5 m)	1500	2027	4	11	0.00	No
	B2G-LDN006.3 to Wondalli Kurumbul Road	Narrow Seal (<4.5 m)	1500	2025	4	27	0.00	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Without Project traffic volumes (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	Unsealed	400	2027	4	16	0.01	No
	Yelarbon Kurumbul Road to B2G-LDN020.3	Unsealed	400	2026	4	20	0.01	No
	B2G-LDN020.3 to B2G-LDN025.9	Unsealed	400	2026	3	27	0.01	No
	B2G-LDN025.9 to Cunningham Highway	Narrow Seal (<4.5 m)	1500	2025	3	41	0.00	No
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	Unsealed	400	2024	1	6	0.00	No
River Road	Newell Highway to Boggabilla Weir Access	Narrow Seal (>4.5 m)	2000	2024	1	6	0.00	No
Local Government Roads: Toowoomba Regional Council								
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	Narrow Seal (<4.5 m)	1500	2024	13	128	0.01	No
	B2G-LDN188.2 to Gore Highway	Narrow Seal (<4.5 m)	1500	2024	13	135	0.01	No
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	Narrow Seal (<4.5 m)	1500	2025	9	38	0.01	No
Blackwell Road	Gore Highway to Millmerran Quarry	Unsealed	400	2027	2	10	0.00	No
	Millmerran Quarry to B2G-LDN120.2	Unsealed	400	2027	2	19	0.00	No
	B2G-LDN120.2 to Millmerran-Inglewood Road	Unsealed	400	2027	1	26	0.00	No
Bligh Street	Six Mile Road to Boral Concrete Millmerran	Narrow Seal (>4.5 m)	2000	2026	1	4	0.00	No
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	Narrow Seal (>4.5 m)	2000	2026	10	21	0.01	No
	Brimblecombe Road to WL 194467R	Narrow Seal (>4.5 m)	2000	2025	10	18	0.01	No
Bushy Lane	B2G-LDN183.0 to Gore Highway	Unsealed	400	2025	5	16	0.01	No
Chamberlain Road	Warrego Highway to B2G-LDN204.2	Unsealed	400	2027	1	3	0.00	No
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	Narrow Seal (<4.5 m)	1500	2026	2	26	0.00	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Without Project traffic volumes (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	Unsealed	400	2026	1	6	0.00	No
Dieckmann Road	B2G-LDN150.5 to Gore Highway	Unsealed	400	2025	1	66	0.00	No
Forestry Road	Access Track to Millmerran-Inglewood Road	Unsealed	400	2025	0	14	0.00	No
	Millmerran-Inglewood Road to Earthworks Area 3B	Unsealed	400	2025	0	14	0.00	No
Fysh Road	B2G-LDN147.1 to Gore Highway	Narrow Seal (>4.5 m)	2000	2027	4	18	0.00	No
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	Narrow Seal (<4.5 m)	1500	2027	3	10	0.00	No
Gilgai Lane	B2G-LDN144.6 to Gore Highway	Unsealed	400	2027	2	11	0.00	No
Hall Road	B2G-LDN139.0 to Gore Highway	Unsealed	400	2027	0	7	0.00	No
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	Narrow Seal (>4.5 m)	2000	2026	3	61	0.00	No
	B2G-LDN116.0 to Millmerran-Inglewood Road	Narrow Seal (>4.5 m)	2000	2026	3	61	0.00	No
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	Narrow Seal (>4.5 m)	2000	2027	1	17	0.00	No
Kahler Road	Murlaggan Road to B2G-LDN165.6	Unsealed	400	2027	1	5	0.00	No
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	Narrow Seal (>4.5 m)	2000	2025	5	32	0.00	No
	Millmerran-Inglewood Road to Commodore Mine	Unsealed	400	2026	0	35	0.00	No
Leesons Road	Warrego Highway to Steger Road	Narrow Seal (>4.5 m)	2000	2025	4	33	0.00	No
	Steger Road to B2G-LDN206.3	Narrow Seal (>4.5 m)	2000	2025	4	35	0.00	No
Linthorpe Valley Road	Geitz Road to Gore Highway	Narrow Seal (<4.5 m)	1500	2027	6	14	0.00	No
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	Narrow Seal (<4.5 m)	1500	2025	2	34	0.00	No
	B2G-LDN112.1 to Millwood Road	Narrow Seal (>4.5 m)	2000	2025	2	29	0.00	No
	Millwood Road to Kooroongarra Road	Unsealed	400	2025	0	27	0.00	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Without Project traffic volumes (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
Murlaggan Road	B2G-LDN164.3 to Kahler Road	Unsealed	400	2025	22	147	0.05	No
	Kahler Road to Gore Highway	Unsealed	400	2025	19	89	0.05	No
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	Narrow Seal (>4.5 m)	2000	2027	38	44	0.02	No
	B2G-LDN128.2 to B2G-LDN130.0	Narrow Seal (>4.5 m)	2000	2024	34	90	0.02	No
	B2G-LDN130.0 to Millmerran-Inglewood Road	Narrow Seal (>4.5 m)	2000	2024	34	146	0.02	No
Paint Mine Road	Gore Highway to B2G-LDN173.5	Unsealed	400	2027	3	5	0.01	No
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	Unsealed	400	2027	2	11	0.00	No
Quarry Road Access	Tumnaville Road to Quarry	Unsealed	400	2025	0	33	0.00	No
Saleyards Road	Campbell Street to Gore Highway	Narrow Seal (>4.5 m)	2000	2027	31	36	0.02	No
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	Unsealed	400	2025	0	2	0.00	No
Scragg Road	Commodore Peak Road to B2G-LDN123.6	Unsealed	400	2026	1	22	0.00	No
	B2G-LDN123.6 to B2G-LDN123.8	Unsealed	400	2025	1	1	0.00	No
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	Narrow Seal (<4.5 m)	1500	2025	21	331	0.01	No
Tumnaville Road	Access Track to Gore Highway	Narrow Seal (<4.5 m)	1500	2025	10	43	0.01	No
Turallin Road	Gore Highway to the Turallin Facility	Narrow Seal (>4.5 m)	2000	2024	13	129	0.01	No
Ware Street	Gore Highway to B2G-LDN150.9	Narrow Seal (>4.5 m)	2000	2027	7	9	0.00	No
West Street	Florence Street to Six Mile Road	Narrow Seal (>4.5 m)	2000	2026	1	4	0.00	No
Yarranlea Road	Gore Highway to B2G-LDN161.0	Narrow Seal (>4.5 m)	2000	2025	7	293	0.00	No
	B2G-LDN161.0 to Desmonds Lane	Narrow Seal (<4.5 m)	1500	2026	7	10	0.00	No

Table 5.45 Volume/capacity ratio results AG/SB/WB

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Background traffic (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
State-Controlled Roads: Department of Transport and Main Roads								
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	Narrow Seal (>4.5 m)	2000	2026	17	36	0.01	No
	Ch 2.0 km to Ch 2.2 km	Narrow Seal (>4.5 m)	2000	2026	17	29	0.01	No
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	Narrow Seal (<4.5 m)	1500	2025	175	234	0.12	No
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	Narrow Seal (<4.5 m)	1500	2025	175	201	0.12	No
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	Narrow Seal (<4.5 m)	1500	2025	175	189	0.12	No
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	Narrow Seal (>4.5 m)	2000	2025	6	17	0.00	No
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	Narrow Seal (>4.5 m)	2000	2025	1	1	0.00	No
Bybera Road	Cunningham Highway to B2G-LDN060.4	Narrow Seal (<4.5 m)	1500	2024	4	52	0.00	No
	B2G-LDN060.4 to Earthworks Area 2A	Narrow Seal (>4.5 m)	2000	2024	3	41	0.00	No
Cemetery Road	Access Track to Moorobie Lane	Unsealed	400	2025	13	22	0.03	No
	Cunningham Highway to GrainCorp Goondiwindi	Narrow Seal (>4.5 m)	2000	2025	6	12	0.00	No
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	Narrow Seal (<4.5 m)	1500	2024	4	14	0.00	No
	Coolmunda Dam Access to Cunningham Highway	Narrow Seal (>4.5 m)	2000	2024	4	14	0.00	No
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	Narrow Seal (>4.5 m)	2000	2026	7	15	0.00	No
	B2G-LDN055.4 to B2G-LDN054.2	Narrow Seal (>4.5 m)	2000	2025	7	14	0.00	No
	Cunningham Highway to B2G-LDN052.8	Narrow Seal (>4.5 m)	2000	2026	6	15	0.00	No
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	Unsealed	400	2025	2	69	0.01	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Background traffic (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	Unsealed	400	2027	2	13	0.01	No
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	Unsealed	400	2027	2	16	0.00	No
	NS2B-LDN033.2 to NS2B-LDN035.6	Unsealed	400	2027	2	9	0.00	No
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	Narrow Seal (>4.5 m)	2000	2024	1	101	0.00	No
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	Unsealed	400	2027	1	3	0.00	No
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	Narrow Seal (>4.5 m)	2000	2025	1	15	0.00	No
Hunt Street	Leichhardt Highway to Boodle Street	Narrow Seal (>4.5 m)	2000	2025	1	1	0.00	No
Kildonan Road	NS2B-LDN031.0 to South Kurumbul Road	Narrow Seal (>4.5 m)	2000	2025	98	137	0.05	No
	South Kurumbul Road to Cunningham Highway	Narrow Seal (>4.5 m)	2000	2025	3	41	0.00	No
	Cunningham Highway to Eukabilla Road	Narrow Seal (>4.5 m)	2000	2024	95	110	0.05	No
McDougalls Road	B2G-LDN049.8 to McDougalls Road	Unsealed	400	2024	0	7	0.00	No
	McDougalls Road to Cunningham Highway	Unsealed	400	2024	0	7	0.00	No
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	Unsealed	400	2025	2	10	0.01	No
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	Unsealed	400	2025	2	18	0.01	No
	Mooroobie Lane to Wondalli Kurumbul Road	Unsealed	400	2025	2	18	0.01	No
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	Unsealed	400	2025	1	15	0.00	No
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	Unsealed	400	2024	0	8	0.00	No
Silo Street	Barwon Highway to GrainCorp Talwood	Narrow Seal (<4.5 m)	1500	2025	7	8	0.00	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Background traffic (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	Narrow Seal (<4.5 m)	1500	2027	5	9	0.00	No
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	Narrow Seal (>4.5 m)	2000	2025	5	6	0.00	No
Springborg Road	Cunningham highway to B2G-LDN037.6	Unsealed	400	2024	0	7	0.00	No
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	Unsealed	400	2025	1	39	0.00	No
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	Unsealed	400	2024	1	5	0.00	No
	B2G-LDN067.6 to Millmerran-Inglewood Road	Unsealed	400	2024	1	67	0.00	No
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	Narrow Seal (>4.5 m)	2000	2025	21	23	0.01	No
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	Unsealed	400	2024	1	29	0.00	No
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	Unsealed	400	2025	2	18	0.00	No
Wongavale Yugilbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	Unsealed	400	2027	1	13	0.00	No
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	Unsealed	400	2025	1	9	0.00	No
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	Narrow Seal (<4.5 m)	1500	2027	4	10	0.00	No
	B2G-LDN006.3 to Wondalli Kurumbul Road	Narrow Seal (<4.5 m)	1500	2025	4	23	0.00	No
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	Unsealed	400	2027	4	12	0.01	No
	Yelarbon Kurumbul Road to B2G-LDN020.3	Unsealed	400	2026	4	14	0.01	No
	B2G-LDN020.3 to B2G-LDN025.9	Unsealed	400	2026	3	19	0.01	No
	B2G-LDN025.9 to Cunningham Highway	Narrow Seal (<4.5 m)	1500	2025	3	29	0.00	No
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	Unsealed	400	2024	1	6	0.00	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Background traffic (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
River Road	Newell Highway to Boggabilla Weir Access	Narrow Seal (>4.5 m)	2000	2024	1	6	0.00	No
Local Government Roads: Toowoomba Regional Council								
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	Narrow Seal (<4.5 m)	1500	2024	13	128	0.01	No
	B2G-LDN188.2 to Gore Highway	Narrow Seal (<4.5 m)	1500	2024	13	130	0.01	No
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	Narrow Seal (<4.5 m)	1500	2025	9	41	0.01	No
Blackwell Road	Gore Highway to Millmerran Quarry	Unsealed	400	2027	2	10	0.00	No
	Millmerran Quarry to B2G-LDN120.2	Unsealed	400	2027	2	19	0.00	No
	B2G-LDN120.2 to Millmerran-Inglewood Road	Unsealed	400	2027	1	22	0.00	No
Bligh Street	Six Mile Road to Boral Concrete Millmerran	Narrow Seal (>4.5 m)	2000	2026	1	4	0.00	No
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	Narrow Seal (>4.5 m)	2000	2026	9	24	0.00	No
	Brimblecombe Road to WL 194467R	Narrow Seal (>4.5 m)	2000	2025	9	17	0.00	No
Bushy Lane	B2G-LDN183.0 to Gore Highway	Unsealed	400	2025	4	11	0.01	No
Chamberlain Road	Warrego Highway to B2G-LDN204.2	Unsealed	400	2027	1	5	0.00	No
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	Narrow Seal (<4.5 m)	1500	2026	2	22	0.00	No
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	Unsealed	400	2026	1	6	0.00	No
Dieckmann Road	B2G-LDN150.5 to Gore Highway	Unsealed	400	2025	1	61	0.00	No
Forestry Road	Access Track to Millmerran-Inglewood Road	Unsealed	400	2025	0	14	0.00	No
	Millmerran-Inglewood Road to Earthworks Area 3B	Unsealed	400	2025	0	14	0.00	No
Fysh Road	B2G-LDN147.1 to Gore Highway	Narrow Seal (>4.5 m)	2000	2027	5	14	0.00	No
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	Narrow Seal (<4.5 m)	1500	2027	3	8	0.00	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Background traffic (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
Gilgai Lane	B2G-LDN144.6 to Gore Highway	Unsealed	400	2027	2	7	0.01	No
Hall Road	B2G-LDN139.0 to Gore Highway	Unsealed	400	2027	0	5	0.00	No
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	Narrow Seal (>4.5 m)	2000	2026	4	62	0.00	No
	B2G-LDN116.0 to Millmerran-Inglewood Road	Narrow Seal (>4.5 m)	2000	2026	4	62	0.00	No
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	Narrow Seal (>4.5 m)	2000	2027	2	18	0.00	No
Kahler Road	Murlaggan Road to B2G-LDN165.6	Unsealed	400	2027	1	6	0.00	No
Kooroongarra Road	Millmerran-Inglewood Road to Commodore Mine	Narrow Seal (>4.5 m)	2000	2025	6	33	0.00	No
Leesons Road	Warrego Highway to Steger Road	Unsealed	400	2026	0	36	0.00	No
	Steger Road to B2G-LDN206.3	Narrow Seal (>4.5 m)	2000	2025	4	38	0.00	No
Linthorpe Road	Gore Highway to B2G-LDN175.5	Narrow Seal (>4.5 m)	2000	2025	4	39	0.00	No
Lochaber Road	Gore Highway to B2G-LDN172.0	Narrow Seal (<4.5 m)	1500	2027	6	12	0.00	No
Millwood Road	B2G-LDN112.1 to Millwood Road	Narrow Seal (<4.5 m)	1500	2025	3	38	0.00	No
	Millwood Road to Kooroongarra Road	Narrow Seal (>4.5 m)	2000	2025	3	30	0.00	No
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	Unsealed	400	2025	0	27	0.00	No
Murlaggan Road	Kahler Road to Gore Highway	Unsealed	400	2025	24	148	0.06	No
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	Unsealed	400	2025	21	84	0.05	No
Owens Scrub Road	B2G-LDN128.2 to B2G-LDN130.0	Narrow Seal (>4.5 m)	2000	2027	34	40	0.02	No
	B2G-LDN130.0 to Millmerran-Inglewood Road	Narrow Seal (>4.5 m)	2000	2024	30	86	0.02	No
Paint Mine Road	Gore Highway to B2G-LDN173.5	Narrow Seal (>4.5 m)	2000	2024	30	138	0.02	No
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	Unsealed	400	2027	3	7	0.01	No
Quarry Road Access	Tummalville Road to Quarry	Unsealed	400	2027	2	16	0.01	No

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Background traffic (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
Saleyards Road	Campbell Street to Gore Highway	Unsealed	400	2025	0	33	0.00	No
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	Narrow Seal (>4.5 m)	2000	2027	16	22	0.01	No
Scragg Road	Commodore Peak Road to B2G-LDN123.6	Unsealed	400	2025	0	4	0.00	No
	B2G-LDN123.6 to B2G-LDN123.8	Unsealed	400	2026	1	26	0.00	No
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	Unsealed	400	2025	1	2	0.00	No
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	Narrow Seal (<4.5 m)	1500	2025	21	331	0.01	No
Turallin Road	Gore Highway to the Turallin Facility	Narrow Seal (<4.5 m)	1500	2025	12	45	0.01	No
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	Narrow Seal (>4.5 m)	2000	2024	18	65	0.01	No
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	Narrow Seal (>4.5 m)	2000	2027	7	9	0.00	No
Yarranlea Road	Gore Highway to B2G-LDN161.0	Narrow Seal (>4.5 m)	2000	2026	1	4	0.00	No
	B2G-LDN161.0 to Desmonds Lane	Narrow Seal (>4.5 m)	2000	2025	7	296	0.00	No

The volume/capacity ratio assessment indicates that none of the road links assessed require further assessment or mitigations as they all remain below a v/c ratio of 0.5. The highest v/c ratio noted was 0.37 on Murlaggan Road between the Laydown Area 164.3 and Kahler Road. The second highest v/c ratio noted was 0.23 on the Toowoomba Bypass On-ramp between Warrego Highway to Toowoomba Bypass. The third highest v/c ratio noted was 0.22 on Scrubby Road, between Bland Quarry Pittsworth and Gore Highway, and Murlaggan between Kahler Road and Gore Highway.

As explained above, all roads remain below a v/c ratio of 0.5 and it is therefore considered the Project does not have sufficient impact to warrant mitigation measures.

5.5.4 Highway Capacity Software highway facility Level of Service

The following section summarises the results of the HCS highway facility analyses carried out to determine the with Project and without Project traffic LOS for various construction route road sections during the peak impact year.

As per the GTIA, the assessment of road link capacity is based on the incremental worsening of LOS. The LOS analysis was undertaken for the construction route sections which exceeds the 5 per cent threshold, as well as all construction route sections of which traffic volumes were assumed. All road segments have been analysed based on their operations, using thresholds defined in Section 5.5.1.3 for all road types. The LOS with Project and without Project related traffic has been summarised in Table 5.46 and Table 5.47 for the gazetted/northbound/eastbound (G/NB/EB) directions and against-gazetted/southbound/westbound (AG/SB/WB) directions, respectively. Green and yellow shading within the tables indicate LOS A and LOS B, respectively.

The complete HCS output summaries are provided in Appendix AX.

Table 5.46 Highway Capacity Software highway facility Level of Service results G/NB/EB

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
State-Controlled Roads: Department of Transport and Main Roads									
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	2026	89	17	A	94	18	A	No
	Ch 0.8 km to Ch 2.0 km	2026	89	23	A	94	25	A	No
	Ch 2.0 km to Ch 45.9 km	2025	32	12	A	38	14	A	No
	Ch 45.9 km to Ch 88.0 km	2025	32	11	A	37	13	A	No
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	2025	12	5	A	17	7	A	No
	Ch 1.6 km to Ch 66.8 km	2025	12	4	A	17	6	A	No
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	2025	12	5	A	17	7	A	No
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	2024	69	29	A	74	31	A	No
	Ch 96.2 km to Ch 97.5 km	2027	71	21	A	92	28	A	No
	Ch 97.5 km to Ch 105.7 km	2024	69	133	A	120	232	A	No
	Ch 105.7 km to Ch 107.4 km	2024	69	28	A	114	45	A	No
	Ch 107.4 km to Ch 107.6 km	2024	95	17	A	195	35	A	No
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	2024	51	18	A	95	32	A	No
	Ch 2.0 km to Ch 3.9 km	2024	51	24	A	95	44	A	No
	Ch 3.9 km to Ch 10.2 km	2025	52	77	A	75	111	A	No
	Ch 10.2 km to Ch 13.9 km	2025	52	45	A	73	64	A	No
	Ch 13.9 km to Ch 18.5 km	2025	52	57	A	75	82	A	No
	Ch 18.5 km to Ch 27.1 km	2025	52	105	A	72	146	A	No
	Ch 27.1 km to Ch 29.3 km	2024	51	26	A	76	39	A	No
	Ch 29.3 km to Ch 34.7 km	2024	51	66	A	75	96	A	No
	Ch 34.7 km to Ch 39.6 km	2024	51	60	A	75	87	A	No
	Ch 39.6 km to Ch 40.3 km	2024	51	8	A	80	12	A	No
	Ch 40.3 km to Ch 40.5 km	2026	52	3	A	69	3	A	No

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
	Ch 40.5 km to Ch 43.9 km	2025	52	41	A	89	71	A	No
	Ch 43.9 km to Ch 46.3 km	2025	52	30	A	58	33	A	No
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	2025	273	139	A	325	165	A	No
	Ch 2.2 km to Ch 5.4 km	2024	264	200	A	352	268	B	Yes
	Ch 5.4 km to Ch 6.7 km	2024	264	75	A	351	100	B	Yes
	Ch 6.7 km to Ch 7.7 km	2024	264	67	A	350	89	B	Yes
	Ch 7.7 km to Ch 11.2 km	2024	264	214	A	349	282	B	Yes
	Ch 11.2 km to Ch 15.3 km	2024	264	259	A	348	342	B	Yes
	Ch 15.3 km to Ch 17.5 km	2024	264	135	A	324	166	B	Yes
	Ch 17.5 km to Ch 19.0 km	2024	264	90	A	323	110	A	No
	Ch 19.0 km to Ch 20.3 km	2024	264	81	A	323	99	B	Yes
	Ch 20.3 km to Ch 21.5 km	2024	137	40	A	195	57	A	No
	Ch 21.5 km to Ch 23.2 km	2024	137	54	A	194	77	A	No
	Ch 23.2 km to Ch 25.0 km	2024	137	59	A	179	77	A	No
	Ch 25.0 km to Ch 30.1 km	2026	146	175	A	295	354	A	No
	Ch 30.1 km to Ch 38.7 km	2024	137	278	A	186	378	A	No
	Ch 38.7 km to Ch 41.1 km	2024	137	78	A	193	110	A	No
	Ch 41.1 km to Ch 41.7 km	2024	137	19	A	193	26	A	No
	Ch 41.7 km to Ch 43.2 km	2025	141	49	A	208	72	A	No
	Ch 43.2 km to Ch 44.7 km	2025	141	51	A	215	78	A	No
	Ch 44.7 km to Ch 47.6 km	2025	141	95	A	222	150	A	No
	Ch 47.6 km to Ch 52.2 km	2025	141	151	A	230	245	A	No
	Ch 52.2 km to Ch 53.3 km	2025	141	38	A	237	64	A	No
	Ch 53.3 km to Ch 60.8 km	2025	141	252	A	241	430	A	No
	Ch 60.8 km to Ch 63.0 km	2027	150	74	A	227	111	A	No

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	2027	89	14	A	222	36	A	No
	Ch 0.7 km to Ch 0.8 km	2027	89	3	A	222	8	A	No
	Ch 0.8 km to Ch 1.4 km	2027	89	13	A	222	33	A	No
	Ch 1.4 km to Ch 3.0 km	2027	89	32	A	225	81	A	No
	Ch 3.0 km to Ch 13.0 km	2027	89	213	A	101	241	A	No
	Ch 13.0 km to Ch 121.6 km	2025	88	33	A	96	36	A	No
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	2025	105	370	A	113	398	A	No
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	2025	48	28	A	75	44	A	No
	Ch 2.5 km to Ch 3.5 km	2025	48	11	A	84	20	A	No
	Ch 3.5 km to Ch 6.2 km	2025	34	23	A	72	47	A	No
	Ch 6.2 km to Ch 9.0 km	2025	34	23	A	71	47	A	No
	Ch 9.0 km to Ch 13.1 km	2025	34	33	A	70	67	A	No
	Ch 13.1 km to Ch 14.0 km	2025	34	8	A	70	15	A	No
	Ch 14.0 km to Ch 17.3 km	2025	34	27	A	67	52	A	No
	Ch 17.3 km to Ch 18.1 km	2026	34	7	A	75	15	A	No
	Ch 18.1 km to Ch 21.8 km	2026	34	30	A	75	64	A	No
	Ch 21.8 km to Ch 28.0 km	2026	34	50	A	65	95	A	No
	Ch 28.0 km to Ch 33.0 km	2026	34	41	A	64	75	A	No
	Ch 33.0 km to Ch 35.6 km	2026	34	20	A	62	37	A	No
	Ch 35.6 km to Ch 37.7 km	2025	34	17	A	57	28	A	No
	Ch 37.7 km to Ch 39.8 km	2025	34	17	A	60	30	A	No
	Ch 39.8 km to Ch 41.9 km	2025	17	9	A	51	25	A	No
	Ch 41.9 km to Ch 45.9 km	2025	17	16	A	34	32	A	No
	Ch 45.9 km to Ch 47.6 km	2025	17	7	A	38	15	A	No
	Ch 47.6 km to Ch 53.3 km	2025	17	23	A	40	53	A	No

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
	Ch 53.3 km to Ch 55.7 km	2025	17	10	A	45	26	A	No
	Ch 55.7 km to Ch 56.6 km	2027	19	4	A	42	10	A	No
	Ch 56.6 km to Ch 59.2 km	2027	19	11	A	35	21	A	No
	Ch 59.2 km to Ch 61.0 km	2027	19	8	A	38	16	A	No
	Ch 61.0 km to Ch 65.7 km	2025	17	20	A	43	48	A	No
	Ch 65.7 km to Ch 68.7 km	2024	17	12	A	68	48	A	No
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	2025	11	3	A	14	4	A	No
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	2025	164	574	A	173	605	A	No
Toowoomba-Cecil Plains Road (324)	Ch 8.3 km to Ch 9.2 km	2027	142	29	A	149	31	A	No
	Ch 10.1 km to Ch 10.3 km	2025	199	11	A	213	11	A	No
	Ch 10.3 km to Ch 12.1 km	2025	199	83	A	213	89	A	No
	Ch 12.1 km to Ch 14.5 km	2025	199	115	A	221	128	A	No
	Ch 14.5 km to Ch 16.3 km	2025	161	67	A	186	77	A	No
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	2025	170	24	A	180	25	A	No
	Ch 0.6 km to Ch 3.2 km	2025	170	106	A	206	129	A	No
	Ch 3.2 km to Ch 4.1 km	2025	170	34	A	206	42	A	No
	Ch 4.1 km to Ch 13.0 km	2025	170	359	A	212	449	A	No
Local Government Roads: Toowoomba Regional Council									
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	2026	62	2	A	94	23	A	No
Campbell Street	Saleyards Road to Gore Highway	2026	124	30	A	182	43	A	No
Draper Road	Steger Road to B2G-FBW206.9	2024	2	1	A	3	1	A	No
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	2025	178	23	A	206	27	A	No

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
Linthorpe Road	Gore Highway to B2G-LDN175.5	2025	1	0	A	41	4	A	No
Lochaber Road	Gore Highway to B2G-LDN172.0	2027	17	0	A	19	0	A	No
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	2025	10	12	A	16	20	A	No
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	2025	12	3	A	14	3	A	No
Ware Street	B2G-LDN153.1 to Gore Highway	2026	12	0	A	23	1	A	No
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	2027	68	13	A	75	14	A	No
West Street	Gore Highway to Florence Street	2026	4	0	A	5	0	A	No

Table 5.47 Highway Capacity Software highway facility Level of Service results AG/SB/WB

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
State-Controlled Roads: Department of Transport and Main Roads									
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	2026	83	16	A	89	17	A	No
	Ch 0.8 km to Ch 2.0 km	2026	83	22	A	89	24	A	No
	Ch 2.0 km to Ch 45.9 km	2025	29	10	A	34	12	A	No
	Ch 45.9 km to Ch 88.0 km	2025	29	101	A	34	118	A	No
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	2025	12	5	A	17	6	A	No
	Ch 1.6 km to Ch 66.8 km	2025	12	5	A	16	6	A	No
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	2025	10	4	A	15	6	A	No
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	2024	73	30	A	77	32	A	No
	Ch 96.2 km to Ch 97.5 km	2027	75	23	A	96	29	A	No
	Ch 97.5 km to Ch 105.7 km	2024	73	140	A	124	239	A	No
	Ch 105.7 km to Ch 107.4 km	2024	73	29	A	170	68	A	No
	Ch 107.4 km to Ch 107.6 km	2024	105	19	A	195	35	A	No
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	2024	58	20	A	148	50	A	No
	Ch 2.0 km to Ch 3.9 km	2024	58	27	A	148	68	A	No
	Ch 3.9 km to Ch 10.2 km	2025	59	87	A	125	185	A	No
	Ch 10.2 km to Ch 13.9 km	2025	59	51	A	117	102	A	No
	Ch 13.9 km to Ch 18.5 km	2025	59	64	A	115	126	A	No
	Ch 18.5 km to Ch 27.1 km	2025	59	119	A	75	153	A	No
	Ch 27.1 km to Ch 29.3 km	2024	58	29	A	77	39	A	No
	Ch 29.3 km to Ch 34.7 km	2024	58	75	A	75	96	A	No
	Ch 34.7 km to Ch 39.6 km	2024	58	67	A	75	87	A	No
	Ch 39.6 km to Ch 40.3 km	2024	58	9	A	78	12	A	No
	Ch 40.3 km to Ch 40.5 km	2026	59	3	A	67	3	A	No

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
	Ch 40.5 km to Ch 43.9 km	2025	59	47	A	68	54	A	No
	Ch 43.9 km to Ch 46.3 km	2025	59	34	A	74	42	A	No
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	2025	284	145	A	376	191	B	Yes
	Ch 2.2 km to Ch 5.4 km	2024	275	209	A	397	302	B	Yes
	Ch 5.4 km to Ch 6.7 km	2024	275	79	A	390	111	B	Yes
	Ch 6.7 km to Ch 7.7 km	2024	275	70	A	386	98	B	Yes
	Ch 7.7 km to Ch 11.2 km	2024	275	223	A	378	306	B	Yes
	Ch 11.2 km to Ch 15.3 km	2024	275	270	A	375	368	B	Yes
	Ch 15.3 km to Ch 17.5 km	2024	275	141	A	347	178	B	Yes
	Ch 17.5 km to Ch 19.0 km	2024	275	93	A	344	117	A	No
	Ch 19.0 km to Ch 20.3 km	2024	275	84	A	340	104	B	Yes
	Ch 20.3 km to Ch 21.5 km	2024	151	44	A	212	62	A	No
	Ch 21.5 km to Ch 23.2 km	2024	151	60	A	208	83	A	No
	Ch 23.2 km to Ch 25.0 km	2024	151	65	A	184	79	A	No
	Ch 25.0 km to Ch 30.1 km	2026	160	193	A	160	193	A	No
	Ch 30.1 km to Ch 38.7 km	2024	151	306	A	185	374	A	No
	Ch 38.7 km to Ch 41.1 km	2024	151	86	A	185	105	A	No
	Ch 41.1 km to Ch 41.7 km	2024	151	21	A	185	25	A	No
	Ch 41.7 km to Ch 43.2 km	2025	156	54	A	194	67	A	No
	Ch 43.2 km to Ch 44.7 km	2025	156	56	A	195	71	A	No
	Ch 44.7 km to Ch 47.6 km	2025	156	105	A	196	132	A	No
	Ch 47.6 km to Ch 52.2 km	2025	156	166	A	197	211	A	No
	Ch 52.2 km to Ch 53.3 km	2025	156	42	A	198	53	A	No
	Ch 53.3 km to Ch 60.8 km	2025	156	277	A	199	355	A	No
	Ch 60.8 km to Ch 63.0 km	2027	166	81	A	186	91	A	No

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	2027	90	14	A	120	19	A	No
	Ch 0.7 km to Ch 0.8 km	2027	90	3	A	120	4	A	No
	Ch 0.8 km to Ch 1.4 km	2027	90	14	A	120	18	A	No
	Ch 1.4 km to Ch 3.0 km	2027	90	32	A	122	44	A	No
	Ch 3.0 km to Ch 13.0 km	2027	90	215	A	102	243	A	No
	Ch 13.0 km to Ch 121.6 km	2025	89	34	A	97	37	A	No
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	2025	100	353	A	108	382	A	No
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	2025	42	25	A	69	40	A	No
	Ch 2.5 km to Ch 3.5 km	2025	42	10	A	72	17	A	No
	Ch 3.5 km to Ch 6.2 km	2025	40	26	A	118	77	A	No
	Ch 6.2 km to Ch 9.0 km	2025	40	26	A	114	75	A	No
	Ch 9.0 km to Ch 13.1 km	2025	40	39	A	107	103	A	No
	Ch 13.1 km to Ch 14.0 km	2025	40	9	A	106	23	A	No
	Ch 14.0 km to Ch 17.3 km	2025	40	31	A	97	75	A	No
	Ch 17.3 km to Ch 18.1 km	2026	40	8	A	106	20	A	No
	Ch 18.1 km to Ch 21.8 km	2026	40	35	A	102	88	A	No
	Ch 21.8 km to Ch 28.0 km	2026	40	59	A	86	126	A	No
	Ch 28.0 km to Ch 33.0 km	2026	40	47	A	79	93	A	No
	Ch 33.0 km to Ch 35.6 km	2026	40	24	A	71	42	A	No
	Ch 35.6 km to Ch 37.7 km	2025	40	20	A	63	31	A	No
	Ch 37.7 km to Ch 39.8 km	2025	40	20	A	66	33	A	No
	Ch 39.8 km to Ch 41.9 km	2025	18	9	A	45	22	A	No
	Ch 41.9 km to Ch 45.9 km	2025	18	17	A	25	24	A	No
	Ch 45.9 km to Ch 47.6 km	2025	18	7	A	26	10	A	No
	Ch 47.6 km to Ch 53.3 km	2025	18	24	A	29	38	A	No

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
	Ch 53.3 km to Ch 55.7 km	2025	18	10	A	30	17	A	No
	Ch 55.7 km to Ch 56.6 km	2027	19	4	A	27	6	A	No
	Ch 56.6 km to Ch 59.2 km	2027	19	12	A	97	58	A	No
	Ch 59.2 km to Ch 61.0 km	2027	19	8	A	99	42	A	No
	Ch 61.0 km to Ch 65.7 km	2025	18	21	A	99	112	A	No
	Ch 65.7 km to Ch 68.7 km	2024	18	12	A	121	85	A	No
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	2025	12	4	A	16	5	A	No
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	2025	228	858	A	179	673	A	No
Toowoomba-Cecil Plains Road (324)	Ch 8.3 km to Ch 9.2 km	2027	177	36	A	184	38	A	No
	Ch 10.3 km to Ch 12.1 km	2025	267	112	A	290	122	A	No
	Ch 12.1 km to Ch 14.5 km	2025	267	155	B	299	173	B	No
	Ch 14.5 km to Ch 16.3 km	2025	141	59	A	169	70	A	No
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	2025	103	14	A	114	16	A	No
	Ch 0.6 km to Ch 3.2 km	2025	103	64	A	140	87	A	No
	Ch 3.2 km to Ch 4.1 km	2025	103	21	A	140	28	A	No
	Ch 4.1 km to Ch 13.0 km	2025	103	218	A	146	308	A	No
Local Government Roads: Toowoomba Regional Council									
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	2027	62	2	A	74	2	A	No
	Saleyards Road to Gore Highway	2026	84	20	A	94	23	A	No
Draper Road	Steger Road to B2G-FBW206.9	2024	2	1	A	10	3	A	No
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	2025	178	16	A	204	19	A	No
Linthorpe Road	Gore Highway to B2G-LDN175.5	2025	2	0	A	45	4	A	No
Lochaber Road	Gore Highway to B2G-LDN172.0	2027	19	0	A	23	0	A	No

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	2025	12	15	A	18	22	A	No
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	2025	57	18	A	72	22	A	No
	New Hope Recycled Water Pipeline to Draper Road	2025	57	2	A	67	3	A	No
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	2025	12	3	A	15	3	A	No
	B2G-LDN153.1 to Gore Highway	2026	13	0	A	17	0	A	No
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	2027	91	17	A	98	18	A	No
West Street	Gore Highway to Florence Street	2026	4	0	A	5	0	A	No

The results of the LOS comparison indicates that the Project-related traffic may cause an incremental change in LOS on eight (7) road links in the gazettal/northbound/eastbound directions and eight (8) in the against-gazettal/southbound/westbound directions. Table 5.48 and Table 5.49 provides an overview of all road links which change in LOS between without and with Project traffic for the gazettal/northbound/eastbound directions and against-gazettal/southbound/westbound directions, respectfully. The table provides further context regarding daily traffic volumes on each road link without and with Project traffic, as well as the LOS in each scenario where this has changed due to the Project. Apart from those road links listed below, the road network is anticipated to continue to operate with no net worsening as a result of the Project.

Table 5.48 Summary of road links with incremental Level of Service change G/NB/EB

Road name	Road section	Peak impact year daily traffic volumes		LOS	
		Without Project	With Project	Without Project	With Project
Gore Highway (28A)	Ch 2.2 km to Ch 5.4 km	264	352	A	B
Gore Highway (28A)	Ch 5.4 km to Ch 6.7 km	264	351	A	B
Gore Highway (28A)	Ch 6.7 km to Ch 7.7 km	264	350	A	B
Gore Highway (28A)	Ch 7.7 km to Ch 11.2 km	264	349	A	B
Gore Highway (28A)	Ch 11.2 km to Ch 15.3 km	264	348	A	B
Gore Highway (28A)	Ch 15.3 km to Ch 17.5 km	264	324	A	B
Gore Highway (28A)	Ch 19.0 km to Ch 20.3 km	264	323	A	B

Table 5.49 Summary of road links with incremental Level of Service change AG/SB/WB

Road name	Road section	Peak impact year daily traffic volumes		LOS	
		Without Project	With Project	Without Project	With Project
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	284	376	A	B
Gore Highway (28A)	Ch 2.2 km to Ch 5.4 km	275	397	A	B
Gore Highway (28A)	Ch 5.4 km to Ch 6.7 km	275	390	A	B
Gore Highway (28A)	Ch 6.7 km to Ch 7.7 km	275	386	A	B
Gore Highway (28A)	Ch 7.7 km to Ch 11.2 km	275	378	A	B
Gore Highway (28A)	Ch 11.2 km to Ch 15.3 km	275	375	A	B
Gore Highway (28A)	Ch 15.3 km to Ch 17.5 km	275	347	A	B
Gore Highway (28A)	Ch 19.0 km to Ch 20.3 km	275	340	A	B

Although there is a change in operational LOS for the road sections above, the expected operational LOS B is within the generally preferred LOS range, as defined in Section 5.5.1.1. Given the LOS B results includes allowance for peak harvest season, it is not expected that travel times along the routes will be impacted significantly by construction vehicles both during and outside of harvest season. In addition, the operational performance of the road would return to base conditions after construction is complete.

Based on the LOS comparison, it is not expected that the Project would generate the need to upgrade the road network for these temporary construction activities. Regardless, as per the earlier assessments, it is important that the routes are reviewed in the preparation of a Traffic Management Plan from a physical and safety perspective prior to the commencement of construction activities to ensure they are suitable. This will include joint visual inspection of all routes by the contractor, the asset owner, and an accredited road safety auditor to agree on routes and any works required to ensure the routes are suitable for the level of construction activity proposed.

5.5.5 Highway Capacity Software Multilane Motorway Level of Service

The following section summarises the results of the HCS highway facility analyses carried out to determine the with Project and without Project traffic LOS for various construction route road sections during the peak impact year.

As per the GTIA, the assessment of road link capacity is based on the incremental worsening of LOS. The LOS analysis was undertaken for the construction route sections which exceeds the 5 per cent threshold, as well as all construction route sections of which traffic volumes were assumed. All road segments have been analysed based on their operations, using thresholds defined in Section 5.5.1.3 for all road types. The LOS without and with the Project related traffic has been summarised in Table 5.50 and Table 5.51 for the gazetted/northbound/eastbound directions and against-gazetted/southbound/westbound directions, respectively.

The complete HCS output summaries are provided in Appendix AY.

Table 5.50 Highway Capacity Software multilane motorway facility Level of Service results G/NB/EB

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
State-Controlled Roads: Department of Transport and Main Roads									
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	2025	153	1.90	A	169	2.1	A	No

Table 5.51 Highway Capacity Software multilane motorway facility Level of Service results AG/SB/WB

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
State-Controlled Roads: Department of Transport and Main Roads									
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	2025	97	1.20	A	107	1.4	A	No

The HCS multilane motorway assessment indicated no incremental worsening of LOS for the road link assessed. As such, it is not expected that any mitigation is required on this road link.

5.5.6 Mitigation measures

The impacts identified due to various construction activities on road links are expected to be accommodated within the existing road link capacity, with the worst Level of Service experienced being LOS B on some links of the Gore Highway. Therefore, it is not expected that additional road link capacity is required to accommodate the construction related traffic. Further, generally, the level of impacts identified would only be for limited periods which can be mitigated through adequate traffic management measures. Regardless, Table 5.52 outlines whole of project mitigations should be incorporated into the Project TMP to manage any road link impacts that do arise.

Table 5.52 Road link impact mitigations

Stage	Mitigation	Mitigation outcome
Pre-Construction Activities and Early Works and Construction Works	Travel demand management campaign to inform DTMR, emergency services, local councils and the public on Project works and its effect on network operations.	Relieve congestion by encouraging travel outside of peaks or mode shift by the public and increase awareness of construction works.
	TMP developed by the proponent in consultation with DTMR, relevant council, an accredited road safety auditor and, where relevant, QR. This plan will identify the impacts that construction traffic is likely to have on the transport infrastructure and detail ameliorative measures required to mitigate all identified impacts of the Project. The TMP will include condition assessment of the road pavement for all construction traffic routes. This will be required to occur before the commencement of any operations and ongoing throughout construction at intervals developed in consultation with the contractor and the asset owner. The contractor will be responsible for all works required to mitigate the impacts of construction traffic. The plans will consider: ■ Final construction routes ■ Approaches to seasonality and stock routes ■ Areas of significant pedestrian and cyclist activity ■ Standard hours of work and deliveries ■ Specific hours of deliveries impacted by local land uses (e.g. school zones) ■ Bus service operators (e.g. public transport, school buses, long distance services) ■ Emergency services ■ Staff transport ■ Staff parking, with the provision of on-site tool storage where practicable. The TMP will be implemented and reviewed annually for effectiveness, including review by relevant road controlling authorities.	Limit impact to the public and asset owners by managing construction movements and deliveries during peak hours, and minimising construction staff traffic by the use of shuttles and public transport.

Stage	Mitigation	Mitigation outcome
	Ongoing consultation with relevant councils, TfNSW, DTMR, emergency services, QR and affected landholders and where applicable the wider community in the Detailed Design stage of the Project to inform of the Project's status and likely disruptions. Consultation with QR will be required prior to use of existing level crossings. During construction, mitigations for existing level crossings along the construction routes may be required depending on the specific activity and the locations. The construction contractor will be required to consult QR to determine appropriate controls at existing level crossings.	Minimise traffic and transport impacts during construction.
	Directional signage and line marking around construction sites and the surrounding network, including using variable message signs if appropriate.	Direct and guide drivers and pedestrians past construction sites, and advice of potential delays, traffic diversions, speed restrictions or alternate routes.
	Specific TMP developed for special events (e.g. Australian Camp Oven Festival in Millmerran, regional road cycling events), to be developed in conjunction with DTMR, relevant location councils, event organisers and relevant stakeholders. The outcome of these will include bespoke plans providing safe and efficient pedestrian, cycle, public transport, and traffic flows during occasional events to minimise disruption to the community throughout construction.	Bespoke plans to provide safe and efficient pedestrian, cycle, public transport, and traffic flows during occasional events to minimise disruption to the community throughout construction. Ensure construction management caters to specific events.
	Relevant emergency services should be notified in advance and any required approvals sought prior to the movement of all hazardous/dangerous or oversize construction material and equipment.	Discussions will identify any pre-identified emergency response routes which may be impacted by the transport corridors as well as possible solutions to minimise any potential impacts.
	Physical upgrade works at critical intersections or links where mitigation measures cannot be managed by traffic or construction management.	Additional capacity and resilience within the network to minimise network impacts.
	Secondary alternative construction route activities should be determined as part of the TMPs, in the event of the primary route is blocked off by an emergency/accident.	Secondary construction routes will facilitate the continued construction activities, thus managing costs and schedule.
	Construction works cannot commence within a SCR corridor without written approval from DTMR, or within a Local-government road corridor without necessary approvals from the relevant local council. These will be required to be obtained through consultation with DTMR and the relevant local councils during the Detailed Design stage of the Project.	Ensure necessary approvals obtained by road controlling authorities.
Operation	Develop a protocol between ARTC and emergency service providers, defining appropriate and co-ordinated responses and communication in the event of emergencies during operations, (e.g. access to real time information about crossing times and access to alternate crossing points).	Protocol will minimise any impact to emergency services due to potential changes to the road network and Project operation.

5.6 Pavement impact assessment and mitigation

The PIA is a process to determine impacts to pavement caused by HVs. It is based on SAR for HVs using the road network and considers pavement type, background traffic and Project loading. The following sections detail the methodology used in the PIA as well as the results and mitigation measures proposed for impacted road sections.

As per the GTIA, the PIA will be updated at the Detailed Design stage once the Construction contractor is appointed and the final construction methodology, transport routes and traffic generation is clearer and more certain.

5.6.1 Methodology

The PIA was undertaken to identify the likely magnitude of pavement impacts on the road network due to the additional HV movements generated by the Project during construction. Where the pavement loadings of the additional Project related traffic equals or exceeds 5 per cent of the background loadings, the pavement is considered to be significantly impacted.

A more detailed analysis was completed for the DTMR road links where the 5 per cent SAR threshold was exceeded in order to develop a preliminary estimate of monetary contributions to offset the impacts to the pavement. The calculation of contributions was only limited to DTMR roads, as local council was unable to provide suitable marginal cost rates for road rehabilitation.

An overview of the vehicle configurations, 5 per cent comparison method and calculation of contributions is provided below, taking into consideration Austroads' Freight Axle Mass Limits Investigation Tool asset data and associated Project generated SAR4, SAR5 and SAR 12 load impacts.

5.6.1.1 Vehicle configurations

Table 5.53 indicates the Austroads vehicle types by construction activity that have been adopted for the assessment and it's corresponding SAR/HV values for load damage exponential factors SAR4, SAR5 and SAR12. The vehicle types were determined through the constructability assessment, with Austroads vehicle classes assigned to each of these (including the transport of ready-mix concrete).

Table 5.53 Project traffic standard axle repetitions parameters

Vehicle class	Construction activity	SAR4/HV		SAR5/HV		SAR12/HV	
		Loaded	Unloaded	Loaded	Unloaded	Loaded	Unloaded
Austroads Class 1	■ Workforce movement	-	-	-	-	-	-
Austroads Class 5	■ In situ concrete bridges	4.09	0.46	4.89	0.37	17.07	0.09
	■ In situ concrete culverts						
Austroads Class 7	■ Water	5.02	0.56	5.73	0.44	15.13	0.11
Austroads Class 9	■ Precast concrete culverts	4.93	0.51	5.61	0.41	14.63	0.11
	■ Plant, tools and other						
Austroads Class 10	■ Rail to road diversions	6.3	0.53	7.09	0.42	17.17	0.11
	■ Cut-to-fill						
	■ Cut-to-spoil						
	■ Quarry						
	■ Fill						
	■ Sleepers						
	■ Construction camp cabins						

Vehicle class	Construction activity	SAR4/HV		SAR5/HV		SAR12/HV	
		Loaded	Unloaded	Loaded	Unloaded	Loaded	Unloaded
OSOM vehicle	■ Precast concrete bridges	9.12	6.47	9.94	8.19	57.29	57.22
	■ Rail						

The SAR/HV values in Table 5.53 were sourced from the *DTMR Guide to Traffic Impact Assessment Practice Note: Pavement Impact Assessment* for Austroads Classes 5 to 10. The SAR/HV values for the OSOM vehicle was determined based on standard axle loading for different axle groups and the anticipated loading spread across the proposed vehicle. A breakdown of the OSOM SAR/HV calculation is included in Appendix AZ.

5.6.1.2 Five per cent standard axle repetition comparison

The following approach was adopted for the preliminary desktop pavement impact assessment for affected SCR:

- The number and types of vehicles that will be generated by the Project during construction was determined for each road link
- The Project traffic volumes were converted into SAR based on the assumed SAR/HV for each different vehicle class
- Background HV volumes were converted into SAR using a factor of 3.2 based on the GTIA Practice Note (provided in Section 2.18)
- An impact comparison of background SAR to Project-related SAR was conducted for each road link.

5.6.1.3 Contributions

An increase in the total vehicle and HV movements on the existing road network has the potential to result in the accelerated degradation of the trafficable surface. Construction activities are likely to involve intensive, short-term haulage and the pavement impacts of this haulage over the construction period are anticipated to require mitigations and rehabilitation following construction conclusion.

Contributions for road rehabilitation and maintenance have been determined for DTMR road links where the Project generated traffic SAR exceeds 5 per cent of the base traffic SAR in either direction on the link in the year of analysis. The impacts on pavements have been identified and mitigation measures proposed to avoid, reduce, or mitigate the effects on pavement life from Project traffic.

For road links which exceed the 5 per cent SAR threshold, marginal cost rates per SAR-km from DTMR's marginal cost data base has requested and provided by the DTMR road asset team. As per the GTIA, the contribution required to offset pavement impacts is calculated using the following formula:

$$\text{Pavement contribution} = \sum_{i=1}^n [(C + O)_i \times MC_i \times L_i]$$

Where:

- *i* is each road segment triggered
- *C* Project SAR
- *O*: operational period SAR for the impact mitigation period (in this case, *O* is considered negligible)
- *MC* is the relevant marginal cost (per SAR-km) prescribed in the department's database for each road segment
- *L* is the length of road section in km
- *n* is the number of road segments triggered in the TIA study area.

The marginal contributions process within the GTIA calculates Project contributions in dollar values for each 100 m road section of a particular SCR used by construction vehicles, on road sections that generated loading units that exceed 5 per cent of the background loading units. The sum of all 100 m segments contributions is combined to determine the total amount that the Project would be required to contribute per years of construction to offset road impacts on the DTMR network.

5.6.2 Five per cent standard axle repetitions comparison

The pavement analysis provides a 5 per cent comparison of the background traffic SAR and Project generated SAR for each SCR link that is proposed to be used by construction traffic. The outputs of this analysis are presented in Table 5.54 and Table 5.55 for both each link direction. Cells are shaded in red where the percentage increase is larger than the 5 per cent threshold specified within the GTIA. The number of construction vehicles loaded in both directions, along with the other calculations, are provided in Appendix BA.

Table 5.54 Without Project and with Project standard axle repetitions G/NB/EB

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads																
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	349,294	355,984	362,803	369,753	376,836	1,714	5,550	5,682	5,045	952	0%	2%	2%	1%	0%
	Ch 0.8 km to Ch 2.0 km	349,294	355,984	362,803	369,753	376,836	1,714	5,550	5,682	5,045	952	0%	2%	2%	1%	0%
	Ch 2.0 km to Ch 45.9 km	101,509	101,957	102,407	102,859	103,313	1,642	5,045	5,045	5,045	952	2%	5%	5%	5%	1%
	Ch 45.9 km to Ch 88.0 km	101,509	101,957	102,407	102,859	103,313	1,514	4,650	4,650	4,650	878	1%	5%	5%	5%	1%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	32,703	32,703	32,703	32,703	32,703	1,514	4,650	4,650	4,650	878	5%	14%	14%	14%	3%
	Ch 1.6 km to Ch 66.8 km	32,703	32,703	32,703	32,703	32,703	1,413	4,343	4,343	4,343	819	4%	13%	13%	13%	3%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	38,540	38,540	38,540	38,540	38,540	16,796	51,622	51,622	51,622	9,740	44%	134%	134%	134%	25%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	926,788	964,167	1,003,054	1,043,509	1,085,595	0	1,284	1,082	1,980	0	0%	0%	0%	0%	0%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	442,215	451,839	461,672	471,718	481,984	23,402	34,776	12,863	10,378	25	5%	8%	3%	2%	0%
	Ch 96.2 km to Ch 97.5 km	442,215	451,839	461,672	471,718	481,984	59,530	45,615	46,675	120,556	25	13%	10%	10%	26%	0%
	Ch 97.5 km to Ch 105.7 km	442,215	451,839	461,672	471,718	481,984	104,621	71,976	46,675	120,556	25	24%	16%	10%	26%	0%
	Ch 105.7 km to Ch 107.4 km	442,215	451,839	461,672	471,718	481,984	163,549	101,447	45,798	94,253	740	37%	22%	10%	20%	0%
	Ch 107.4 km to Ch 107.6 km	1,010,468	1,067,642	1,128,051	1,191,878	1,259,317	163,525	101,304	45,530	87,311	740	16%	9%	4%	7%	0%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	450,079	465,961	482,403	499,426	517,049	163,525	101,304	45,530	87,311	740	36%	22%	9%	17%	0%
	Ch 2.0 km to Ch 3.9 km	450,079	465,961	482,403	499,426	517,049	163,557	101,618	49,296	87,688	740	36%	22%	10%	18%	0%
	Ch 3.9 km to Ch 10.2 km	450,079	465,961	482,403	499,426	517,049	144,925	88,410	42,569	66,743	734	32%	19%	9%	13%	0%
	Ch 10.2 km to Ch 13.9 km	450,079	465,961	482,403	499,426	517,049	144,683	86,843	38,283	66,190	642	32%	19%	8%	13%	0%
	Ch 13.9 km to Ch 18.5 km	450,079	465,961	482,403	499,426	517,049	145,935	87,707	38,633	55,361	642	32%	19%	8%	11%	0%
	Ch 18.5 km to Ch 27.1 km	450,079	465,961	482,403	499,426	517,049	111,016	77,172	38,491	45,546	643	25%	17%	8%	9%	0%
	Ch 27.1 km to Ch 29.3 km	450,079	465,961	482,403	499,426	517,049	111,215	76,709	32,765	40,091	552	25%	16%	7%	8%	0%
	Ch 29.3 km to Ch 34.7 km	450,079	465,961	482,403	499,426	517,049	119,353	77,220	39,386	44,934	565	27%	17%	8%	9%	0%
	Ch 34.7 km to Ch 39.6 km	450,079	465,961	482,403	499,426	517,049	119,353	94,004	39,386	44,934	565	27%	20%	8%	9%	0%
	Ch 39.6 km to Ch 40.3 km	450,079	465,961	482,403	499,426	517,049	96,534	123,378	36,257	40,450	565	21%	26%	8%	8%	0%
	Ch 40.3 km to Ch 40.5 km	450,079	465,961	482,403	499,426	517,049	13,509	22,712	35,534	39,568	565	3%	5%	7%	8%	0%
	Ch 40.5 km to Ch 43.9 km	450,079	465,961	482,403	499,426	517,049	1,567	2,856	1,322	1,100	275	0%	1%	0%	0%	0%
	Ch 43.9 km to Ch 46.3 km	450,079	465,961	482,403	499,426	517,049	622	2,856	1,322	1,100	275	0%	1%	0%	0%	0%
	Ch 46.3 km to Ch 88.0 km	450,079	465,961	482,403	499,426	517,049	622	1,444	1,322	1,100	275	0%	0%	0%	0%	0%
	Ch 88.0 km to Ch 88.2 km	1,157,873	1,196,598	1,236,618	1,277,976	1,320,718	1,379	5,599	7,386	3,645	755	0%	0%	1%	0%	0%
	Ch 88.2 km to Ch 90.0 km	1,157,873	1,196,598	1,236,618	1,277,976	1,320,718	550	3,054	4,841	1,100	275	0%	0%	0%	0%	0%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	18,796,287	21,823,127	25,337,392	29,417,572	34,154,800	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	864,644	864,644	864,644	864,644	864,644	6,014	9,766	9,766	9,766	1,842	1%	1%	1%	1%	0%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	896,653	943,565	992,932	1,044,881	1,099,549	27,412	168,729	55,546	54,988	4,767	3%	18%	6%	5%	0%
	Ch 2.2 km to Ch 5.4 km	896,653	943,565	992,932	1,044,881	1,099,549	48,660	161,929	46,200	45,676	4,262	5%	17%	5%	4%	0%
	Ch 5.4 km to Ch 6.7 km	896,653	943,565	992,932	1,044,881	1,099,549	48,660	161,813	46,099	42,750	3,972	5%	17%	5%	4%	0%
	Ch 6.7 km to Ch 7.7 km	896,653	943,565	992,932	1,044,881	1,099,549	48,660	181,063	65,408	42,869	3,972	5%	19%	7%	4%	0%
	Ch 7.7 km to Ch 11.2 km	896,653	943,565	992,932	1,044,881	1,099,549	46,461	157,756	58,551	38,503	3,904	5%	17%	6%	4%	0%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 11.2 km to Ch 15.3 km	896,653	943,565	992,932	1,044,881	1,099,549	46,461	157,581	58,498	39,153	3,940	5%	17%	6%	4%	0%
	Ch 15.3 km to Ch 17.5 km	896,653	943,565	992,932	1,044,881	1,099,549	38,118	205,010	76,302	29,969	3,869	4%	22%	8%	3%	0%
	Ch 17.5 km to Ch 19.0 km	896,653	943,565	992,932	1,044,881	1,099,549	38,118	204,775	76,231	30,183	3,906	4%	22%	8%	3%	0%
	Ch 19.0 km to Ch 20.3 km	896,653	943,565	992,932	1,044,881	1,099,549	38,118	204,651	75,473	30,433	3,925	4%	22%	8%	3%	0%
	Ch 20.3 km to Ch 21.5 km	572,705	584,439	596,414	608,634	621,105	38,118	204,651	75,573	30,433	3,925	7%	35%	13%	5%	1%
	Ch 21.5 km to Ch 23.2 km	572,705	584,439	596,414	608,634	621,105	35,781	179,578	69,645	25,725	3,858	6%	31%	12%	4%	1%
	Ch 23.2 km to Ch 25.0 km	572,705	584,439	596,414	608,634	621,105	21,982	165,820	69,412	26,204	3,904	4%	28%	12%	4%	1%
	Ch 25.0 km to Ch 30.1 km	572,705	584,439	596,414	608,634	621,105	21,982	342,097	245,689	23,435	3,683	4%	59%	41%	4%	1%
	Ch 30.1 km to Ch 38.7 km	572,705	584,439	596,414	608,634	621,105	19,966	34,100	45,293	35,191	4,869	3%	6%	8%	6%	1%
	Ch 38.7 km to Ch 41.1 km	572,705	584,439	596,414	608,634	621,105	19,074	31,682	44,063	32,647	4,367	3%	5%	7%	5%	1%
	Ch 41.1 km to Ch 41.7 km	572,705	584,439	596,414	608,634	621,105	19,074	31,682	44,063	26,665	3,590	3%	5%	7%	4%	1%
	Ch 41.7 km to Ch 43.2 km	572,705	584,439	596,414	608,634	621,105	19,116	49,244	71,317	34,317	3,591	3%	8%	12%	6%	1%
	Ch 43.2 km to Ch 44.7 km	572,705	584,439	596,414	608,634	621,105	19,116	46,268	63,018	34,317	3,591	3%	8%	11%	6%	1%
	Ch 44.7 km to Ch 47.6 km	572,705	584,439	596,414	608,634	621,105	18,933	45,839	62,612	22,880	2,991	3%	8%	10%	4%	0%
	Ch 47.6 km to Ch 52.2 km	572,705	584,439	596,414	608,634	621,105	18,933	45,619	52,767	16,928	2,991	3%	8%	9%	3%	0%
	Ch 52.2 km to Ch 53.3 km	572,705	584,439	596,414	608,634	621,105	18,749	34,934	26,953	16,561	2,900	3%	6%	5%	3%	0%
	Ch 53.3 km to Ch 60.8 km	572,705	584,439	596,414	608,634	621,105	18,833	34,992	20,062	15,461	2,946	3%	6%	3%	3%	0%
	Ch 60.8 km to Ch 63.0 km	572,705	584,439	596,414	608,634	621,105	3,416	7,737	7,674	8,256	1,478	1%	1%	1%	1%	0%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	488,030	495,567	503,221	510,993	518,885	3,417	8,166	8,517	8,456	1,478	1%	2%	2%	2%	0%
	Ch 0.7 km to Ch 0.8 km	488,030	495,567	503,221	510,993	518,885	3,416	7,589	7,589	8,256	1,478	1%	2%	2%	2%	0%
	Ch 0.8 km to Ch 1.4 km	488,030	495,567	503,221	510,993	518,885	3,416	8,557	8,205	8,256	1,478	1%	2%	2%	2%	0%
	Ch 1.4 km to Ch 3.0 km	488,030	495,567	503,221	510,993	518,885	3,416	7,589	7,589	9,405	1,587	1%	2%	2%	2%	0%
	Ch 3.0 km to Ch 13.0 km	488,030	495,567	503,221	510,993	518,885	2,471	7,589	7,589	9,405	1,587	1%	2%	2%	2%	0%
	Ch 13.0 km to Ch 121.6 km	488,030	495,567	503,221	510,993	518,885	2,471	7,589	7,589	7,589	1,432	1%	2%	2%	1%	0%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	7,304,575	7,304,575	7,304,575	7,304,575	7,304,575	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 3.7 km to Ch 6.4 km	7,230,222	7,447,129	7,670,542	7,900,659	8,137,678	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 6.4 km to Ch 8.3 km	8,209,949	8,456,248	8,709,935	8,971,233	9,240,370	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	600,793	608,229	615,757	623,379	631,094	2,471	7,589	7,589	7,589	1,432	0%	1%	1%	1%	0%
	Ch 220.1 km to Ch 222.4 km	604,981	612,469	620,050	627,724	635,493	1,468	7,040	8,210	2,545	480	0%	1%	1%	0%	0%
	Ch 222.4 km to Ch 224.1 km	604,981	612,469	620,050	627,724	635,493	1,468	7,555	8,257	2,545	480	0%	1%	1%	0%	0%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	864,644	864,644	864,644	864,644	864,644	6,014	9,766	9,766	9,766	1,842	1%	1%	1%	1%	0%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	164,469	177,285	191,100	205,991	222,043	15,417	27,256	12,388	7,205	1,469	9%	15%	6%	3%	1%
	Ch 2.5 km to Ch 3.5 km	164,469	177,285	191,100	205,991	222,043	108,346	131,194	13,444	8,678	1,578	66%	74%	7%	4%	1%
	Ch 3.5 km to Ch 6.2 km	147,411	152,996	158,793	164,810	171,055	108,358	135,127	20,574	8,809	1,469	74%	88%	13%	5%	1%
	Ch 6.2 km to Ch 9.0 km	147,411	152,996	158,793	164,810	171,055	108,175	134,481	23,053	8,442	1,378	73%	88%	15%	5%	1%
	Ch 9.0 km to Ch 13.1 km	147,411	152,996	158,793	164,810	171,055	108,175	133,854	20,990	8,466	1,378	73%	87%	13%	5%	1%
	Ch 13.1 km to Ch 14.0 km	147,411	152,996	158,793	164,810	171,055	111,079	160,865	34,575	15,655	1,396	75%	105%	22%	9%	1%
	Ch 14.0 km to Ch 17.3 km	147,411	152,996	158,793	164,810	171,055	109,580	147,640	26,063	59,793	5,176	74%	96%	16%	36%	3%
	Ch 17.3 km to Ch 18.1 km	147,411	152,996	158,793	164,810	171,055	109,580	140,643	106,479	53,287	4,723	74%	92%	67%	32%	3%
	Ch 18.1 km to Ch 21.8 km	147,411	152,996	158,793	164,810	171,055	109,397	140,276	105,780	52,798	4,631	74%	92%	67%	32%	3%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 21.8 km to Ch 28.0 km	147,411	152,996	158,793	164,810	171,055	108,673	127,242	97,811	42,183	3,983	74%	83%	62%	26%	2%
	Ch 28.0 km to Ch 33.0 km	147,411	152,996	158,793	164,810	171,055	108,490	126,732	96,792	27,278	2,758	74%	83%	61%	17%	2%
	Ch 33.0 km to Ch 35.6 km	147,411	152,996	158,793	164,810	171,055	108,297	124,256	93,954	26,911	2,666	73%	81%	59%	16%	2%
	Ch 35.6 km to Ch 37.7 km	147,411	152,996	158,793	164,810	171,055	107,254	112,472	9,102	24,069	2,659	73%	74%	6%	15%	2%
	Ch 37.7 km to Ch 39.8 km	147,411	152,996	158,793	164,810	171,055	107,254	112,934	9,102	24,069	2,659	73%	74%	6%	15%	2%
	Ch 39.8 km to Ch 41.9 km	89,427	94,212	99,253	104,564	110,159	107,058	112,410	7,285	23,702	2,567	120%	119%	7%	23%	2%
	Ch 41.9 km to Ch 45.9 km	89,427	94,212	99,253	104,564	110,159	4,772	11,031	7,533	4,844	1,009	5%	12%	8%	5%	1%
	Ch 45.9 km to Ch 47.6 km	89,427	94,212	99,253	104,564	110,159	4,579	10,648	7,077	4,477	918	5%	11%	7%	4%	1%
	Ch 47.6 km to Ch 53.3 km	89,427	94,212	99,253	104,564	110,159	4,579	12,043	7,077	4,477	918	5%	13%	7%	4%	1%
	Ch 53.3 km to Ch 55.7 km	89,427	94,212	99,253	104,564	110,159	4,561	11,779	7,276	5,601	918	5%	13%	7%	5%	1%
	Ch 55.7 km to Ch 56.6 km	89,427	94,212	99,253	104,564	110,159	4,561	9,921	7,276	5,601	918	5%	11%	7%	5%	1%
	Ch 56.6 km to Ch 59.2 km	89,427	94,212	99,253	104,564	110,159	3,616	9,921	7,276	5,601	918	4%	11%	7%	5%	1%
	Ch 59.2 km to Ch 61.0 km	89,427	94,212	99,253	104,564	110,159	3,597	9,702	7,276	6,273	918	4%	10%	7%	6%	1%
	Ch 61.0 km to Ch 65.7 km	89,427	94,212	99,253	104,564	110,159	109,254	79,909	6,909	5,906	827	122%	85%	7%	6%	1%
	Ch 65.7 km to Ch 68.7 km	89,427	94,212	99,253	104,564	110,159	113,274	82,102	6,643	6,175	736	127%	87%	7%	6%	1%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	31,992	34,004	36,142	38,415	40,830	183	11,389	27,778	367	92	1%	33%	77%	1%	0%
	Ch 2.0 km to Ch 2.2 km	31,992	34,004	36,142	38,415	40,830	0	10,527	25,733	0	0	0%	31%	71%	0%	0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	3,204,643	3,300,783	3,399,806	3,501,800	3,606,854	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	3,204,643	3,300,783	3,399,806	3,501,800	3,606,854	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	35,223	36,574	37,976	39,432	40,944	0	1,412	0	0	0	0%	4%	0%	0%	0%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	235,889	235,889	235,889	235,889	235,889	4,402	9,195	9,146	8,803	2,201	2%	4%	4%	4%	1%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	1,130,482	1,131,624	1,132,766	1,133,910	1,135,054	813	13,175	7,158	1,980	0	0%	1%	1%	0%	0%
	Ch 6.0 km to Ch 6.4 km	281,465	281,465	281,465	281,465	281,465	813	11,891	6,076	0	0	0%	4%	2%	0%	0%
	Ch 6.4 km to Ch 8.3 km	281,465	281,465	281,465	281,465	281,465	2,646	32,579	11,544	4,960	6	1%	12%	4%	2%	0%
	Ch 8.3 km to Ch 9.2 km	281,465	281,465	281,465	281,465	281,465	3,379	34,046	13,011	21,439	1,155	1%	12%	5%	8%	0%
	Ch 9.2 km to Ch 10.0 km	410,439	436,594	464,416	494,010	525,491	7,256	82,967	24,909	20,399	200	2%	19%	5%	4%	0%
	Ch 10.0 km to Ch 10.1 km	410,439	436,594	464,416	494,010	525,491	7,256	82,967	24,909	20,399	200	2%	19%	5%	4%	0%
	Ch 10.1 km to Ch 10.3 km	410,439	436,594	464,416	494,010	525,491	367	4,089	3,487	734	183	0%	1%	1%	0%	0%
	Ch 10.3 km to Ch 12.1 km	410,439	436,594	464,416	494,010	525,491	367	4,164	3,880	1,363	242	0%	1%	1%	0%	0%
	Ch 12.1 km to Ch 14.5 km	410,439	436,594	464,416	494,010	525,491	367	34,381	63,121	9,177	1,195	0%	8%	14%	2%	0%
Toowoomba Connection Road (315)	Ch 14.5 km to Ch 16.3 km	346,156	367,506	390,174	414,240	439,790	5,635	85,653	83,819	20,859	1,108	2%	23%	21%	5%	0%
	Ch 26.3 km to Ch 26.9 km	1,489,220	1,533,896	1,579,913	1,627,311	1,676,130	0	136	122	223	0	0%	0%	0%	0%	0%
Toowoomba Connection Road (315)	Ch 26.9 km to Ch 27.1 km	1,489,220	1,533,896	1,579,913	1,627,311	1,676,130	0	1,284	1,082	1,980	0	0%	0%	0%	0%	0%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	38,026	116,090	116,090	116,090	21,899	3%	9%	9%	9%	2%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	38,026	116,090	116,090	116,090	21,899	3%	9%	9%	9%	2%
	Ch 0.6 km to Ch 3.2 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	16,121	80,603	24,700	19,043	1,851	1%	6%	2%	1%	0%
	Ch 3.2 km to Ch 4.1 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	16,121	79,057	24,700	19,043	1,851	1%	6%	2%	1%	0%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 4.1 km to Ch 13.0 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	23,010	159,534	46,401	46,185	2,566	2%	12%	4%	3%	0%
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	5,642,693	5,872,254	6,111,155	6,359,775	6,618,509	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 7.2 km to Ch 15.1 km	5,642,693	5,872,254	6,111,155	6,359,775	6,618,509	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 15.1 km to Ch 18.9 km	4,110,619	4,230,067	4,352,987	4,479,478	4,609,645	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 18.9 km to Ch 28.9 km	3,246,055	3,246,055	3,246,055	3,246,055	3,246,055	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 28.9 km to Ch 36.6 km	7,327,528	9,046,920	11,169,764	13,790,731	17,026,702	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 36.6 km to Ch 55.5 km	3,037,489	3,138,631	3,243,141	3,351,130	3,462,716	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 55.5 km to Ch 75.4 km	3,037,489	3,138,631	3,243,141	3,351,130	3,462,716	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
	Ch 75.4 km to Ch 79.6 km	2,764,871	2,826,781	2,890,077	2,954,791	3,020,953	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	0	1,284	1,082	1,980	0	0%	0%	0%	0%	0%
	Ch 0.4 km to Ch 1.5 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	72,614	349,081	2,748	3,342	1	4%	19%	0%	0%	0%
	Ch 1.5 km to Ch 2.4 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	73,351	347,766	10,472	19,899	969	4%	19%	1%	1%	0%
	Ch 2.4 km to Ch 4.5 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	73,168	328,514	10,105	4,520	96	4%	16%	0%	0%	0%
	Ch 4.5 km to Ch 5.0 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	73,168	328,514	10,105	4,520	96	4%	16%	0%	0%	0%
	Ch 5.0 km to Ch 5.3 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	6,181	28,429	1,899	2,075	10	0%	1%	0%	0%	0%
	Ch 5.3 km to Ch 6.2 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	72,274	325,846	5,049	2,075	10	4%	16%	0%	0%	0%
State-Controlled Roads: Transport for New South Wales																
Newell Highway	River Road to Queensland/NSW Border	1,970,221	2,255,126	2,581,231	2,954,492	3,381,730	8,161	9,609	3,466	2,380	6	0%	0%	0%	0%	0%
Local Government Roads: Balonne Shire Council																
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	15,184	15,184	15,184	15,184	15,184	1,413	4,343	4,343	4,343	819	9%	29%	29%	29%	5%
Local Government Roads: Goondiwindi Regional Council																
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	2,336	2,336	2,336	2,336	2,336	0	516	47	0	0	0%	22%	2%	0%	0%
Bybera Road	Cunningham Highway to B2G-LDN060.4	3,749	3,881	4,018	4,160	4,307	18,632	13,208	6,727	20,945	6	497%	340%	167%	503%	0%
	B2G-LDN060.4 to Earthworks Area 2A	3,749	3,881	4,018	4,160	4,307	2,187	0	0	0	0	58%	0%	0%	0%	0%
Cemetery Road	Access Track to Moorroobie Lane	113,136	129,496	148,222	169,655	194,189	0	22,100	0	0	0	0%	17%	0%	0%	0%
	Cunningham Highway to GrainCorp Goondiwindi	19,922	20,588	21,277	21,988	22,724	828	2,545	2,545	2,545	480	4%	12%	12%	12%	2%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	12,051	12,313	12,581	12,855	13,134	23,402	34,776	12,863	10,378	25	194%	282%	102%	81%	0%
	Coolmunda Dam Access to Cunningham Highway	12,051	12,313	12,581	12,855	13,134	23,402	34,776	12,863	10,378	25	194%	282%	102%	81%	0%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	28,064	29,055	30,080	31,141	32,240	242	1,195	2,999	367	92	1%	4%	10%	1%	0%
	B2G-LDN055.4 to B2G-LDN054.2	28,064	29,055	30,080	31,141	32,240	59	828	265	0	0	0%	3%	1%	0%	0%
	Cunningham Highway to B2G-LDN052.8	28,064	29,055	30,080	31,141	32,240	242	1,568	4,286	553	92	1%	5%	14%	2%	0%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	2,904	3,006	3,112	3,222	3,336	112,930	79,354	3,129	4,484	0	3889%	2640%	101%	139%	0%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	4,195	4,432	4,683	4,948	5,228	67	400	460	6,942	0	2%	9%	10%	140%	0%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	4,620	5,288	6,052	6,928	7,929	5,633	8,396	9,065	13,494	275	122%	159%	150%	195%	3%
	NS2B-LDN033.2 to NS2B-LDN035.6	4,620	5,288	6,052	6,928	7,929	2,725	3,419	4,338	11,050	92	59%	65%	72%	160%	1%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	1,124	1,148	1,173	1,199	1,225	29,609	2,218	0	0	0	2635%	193%	0%	0%	0%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	5,212	5,966	6,829	7,816	8,947	59	14	69	234	0	1%	0%	1%	3%	0%
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	863	909	957	1,009	1,063	0	1,857	0	0	0	0%	204%	0%	0%	0%
Hunt Street	Leichhardt Highway to Boodle Street	2,336	2,336	2,336	2,336	2,336	0	58	5	0	0	0%	2%	0%	0%	0%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	138,785	158,855	181,826	208,119	238,214	3,078	4,978	2,600	1,699	6	2%	3%	1%	1%	0%
	NS2B-LDN031.0 to South Kurumbul Road	138,785	158,855	181,826	208,119	238,214	10,062	12,602	2,388	1,699	6	7%	8%	1%	1%	0%
	South Kurumbul Road to Cunningham Highway	138,785	158,855	181,826	208,119	238,214	6,985	8,527	478	166	0	5%	5%	0%	0%	0%
	Cunningham Highway to Eukabilla Road	107,771	108,701	109,640	110,587	111,542	8,711	12,664	8,307	3,481	281	8%	12%	8%	3%	0%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	1,154	1,194	1,236	1,280	1,325	1,275	998	451	1,351	1	111%	84%	36%	106%	0%
	McDougalls Road to Cunningham Highway	1,154	1,194	1,236	1,280	1,325	1,275	998	451	1,351	1	111%	84%	36%	106%	0%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	16,562	18,957	21,699	24,837	28,428	0	22,100	0	0	0	0%	117%	0%	0%	0%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	16,562	18,957	21,699	24,837	28,428	0	38,884	0	0	0	0%	205%	0%	0%	0%
	Mooroobie Lane to Wondalli Kurumbul Road	16,562	18,957	21,699	24,837	28,428	0	38,884	0	0	0	0%	205%	0%	0%	0%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	2,835	2,987	3,147	3,315	3,492	0	22,079	0	0	0	0%	739%	0%	0%	0%
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	1,026	1,174	1,344	1,538	1,761	5,408	1,856	8,839	8,225	99	527%	158%	658%	535%	6%
Silo Street	Barwon Highway to GrainCorp Talwood	19,664	19,664	19,664	19,664	19,664	101	307	307	307	58	1%	2%	2%	2%	0%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	27,375	31,334	35,865	41,051	46,987	3,078	4,075	1,910	1,534	6	11%	13%	5%	4%	0%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	13,940	14,002	14,063	14,126	14,188	1,531	4,687	4,687	4,687	882	11%	33%	33%	33%	6%
Springborg Road	Cunningham highway to B2G-LDN037.6	738	764	791	819	848	4,293	1,995	6,785	7,192	98	582%	261%	858%	878%	12%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	3,628	3,756	3,889	4,026	4,168	6,985	8,408	0	0	0	193%	224%	0%	0%	0%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	597	629	663	698	736	622	510	332	635	1	104%	81%	50%	91%	0%
	B2G-LDN067.6 to Millmerran-Inglewood Road	597	629	663	698	736	4,251	2,769	746	673	10	712%	440%	113%	96%	1%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	58,937	58,937	58,937	58,937	58,937	640	4,495	5,666	0	0	1%	8%	10%	0%	0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	2,590	2,681	2,776	2,873	2,975	4,405	2,158	565	5,014	1	170%	81%	20%	174%	0%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroolbie Lane	2,407	2,755	3,153	3,609	4,131	0	3,271	0	0	0	0%	119%	0%	0%	0%
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	2,407	2,536	2,672	2,815	2,966	920	10,675	1,783	12,905	6	38%	421%	67%	458%	0%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	2,504	2,592	2,684	2,778	2,876	0	1,412	0	0	0	0%	54%	0%	0%	0%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	7,099	8,126	9,301	10,645	12,185	2,550	3,947	1,837	1,633	5	36%	49%	20%	15%	0%
	B2G-LDN006.3 to Wondalli Kurumbul Road	7,099	8,126	9,301	10,645	12,185	22	3,319	689	1,547	9	0%	41%	7%	15%	0%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	7,099	8,126	9,301	10,645	12,185	22	48	689	1,547	9	0%	1%	7%	15%	0%
	Yelarbon Kurumbul Road to B2G-LDN020.3	7,099	8,126	9,301	10,645	12,185	623	251	1,474	2,279	20	9%	3%	16%	21%	0%
	B2G-LDN020.3 to B2G-LDN025.9	5,808	6,013	6,225	6,444	6,672	623	251	2,162	2,581	20	11%	4%	35%	40%	0%
	B2G-LDN025.9 to Cunningham Highway	5,808	6,013	6,225	6,444	6,672	1,372	3,547	3,595	3,411	30	24%	59%	58%	53%	0%
Local Government Roads: Moree Plains Shire Council																
Boggabilla Weir Access	River Road to Boggabilla Weir	3,060	3,503	4,010	4,589	5,253	910	1,072	387	266	1	30%	31%	10%	6%	0%
River Road	Newell Highway to Boggabilla Weir Access	3,060	3,503	4,010	4,589	5,253	910	1,072	387	266	1	30%	31%	10%	6%	0%
Local Government Roads: Toowoomba Regional Council																
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	754,352	802,423	853,557	907,950	965,809	76	152	152	152	38	0%	0%	0%	0%	0%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	484,879	493,479	502,231	511,139	520,205	4,402	8,803	8,803	8,803	2,201	1%	2%	2%	2%	0%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	1,231,310	1,253,149	1,275,375	1,297,995	1,321,017	0	44	39	0	0	0%	0%	0%	0%	0%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	23,062	24,269	25,538	26,874	28,281	23,678	15,947	945	498	1	103%	66%	4%	2%	0%
	B2G-LDN188.2 to Gore Highway	23,062	24,269	25,538	26,874	28,281	23,697	16,137	1,038	1,114	44	103%	66%	4%	4%	0%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	8,923	9,390	9,881	10,398	10,942	0	1,619	2,148	464	0	0%	17%	22%	4%	0%
Blackwell Road	Gore Highway to Millmerran Quarry	555	563	572	581	590	0	0	0	1,816	155	0%	0%	0%	313%	26%
	Millmerran Quarry to B2G-LDN120.2	555	563	572	581	590	0	0	0	55,029	4,542	0%	0%	0%	9472%	770%
	B2G-LDN120.2 to Millmerran-Inglewood Road	580	602	624	648	673	167	1,472	948	48,667	3,788	29%	245%	152%	7509%	563%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	2,913	2,958	3,003	3,050	3,097	1	686	997	200	0	0%	23%	33%	7%	0%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	26,419	28,048	29,778	31,615	33,565	792	6,365	4,619	1,711	92	3%	23%	16%	5%	0%
	Brimblecombe Road to WL 194467R	26,419	28,048	29,778	31,615	33,565	608	5,784	2,541	1,344	1	2%	21%	9%	4%	0%
Bushy Lane	B2G-LDN183.0 to Gore Highway	2,745	2,889	3,040	3,199	3,367	244	2,631	772	981	38	9%	91%	25%	31%	1%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	107,853	116,258	125,317	135,082	145,609	1	539	912	1,349	109	0%	0%	1%	1%	0%
	Saleyards Road to Gore Highway	129,737	139,846	150,744	162,491	175,153	1	430	843	200	0	0%	0%	1%	0%	0%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Chamberlain Road	Warrego Highway to B2G-LDN204.2	2,596	2,737	2,886	3,042	3,208	0	778	871	1,695	0	0%	28%	30%	56%	0%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	1,449	1,504	1,561	1,620	1,682	0	104	24,520	24	0	0%	7%	1571%	1%	0%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	269	274	280	285	291	0	0	982	696	0	0%	0%	351%	244%	0%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	2,433	2,483	2,533	2,585	2,638	42	19,008	31,660	6,074	1	2%	766%	1250%	235%	0%
Draper Road	Steger Road to B2G-FBW206.9	2,694	2,840	2,994	3,156	3,328	0	0	0	0	0	0%	0%	0%	0%	0%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	350,488	372,823	396,581	421,853	448,736	76	152	152	1,415	104	0%	0%	0%	0%	0%
	Access Track to Greenwattle Street	350,488	372,823	396,581	421,853	448,736	76	152	152	152	38	0%	0%	0%	0%	0%
Florence Street	Gore Highway to West Street	7,987	8,111	8,236	8,363	8,492	0	109	69	0	0	0%	1%	1%	0%	0%
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	22,541	0	0	0	No background HV movements, therefore unable to calculate				
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	22,079	0	0	0	No background HV movements, therefore unable to calculate				
Fysh Road	B2G-LDN147.1 to Gore Highway	8,118	8,285	8,455	8,628	8,805	19	50	46	1,002	52	0%	1%	1%	12%	1%
Gap Road	Gore Highway to Grevillea Street	83,137	84,841	86,579	88,353	90,163	0	116	280	40	0	0%	0%	0%	0%	0%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	5,400	5,682	5,980	6,292	6,622	0	35	11	650	35	0%	1%	0%	10%	1%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	4,139	4,224	4,310	4,398	4,489	0	53	1,125	1,801	0	0%	1%	26%	41%	0%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	78,542	80,151	81,793	83,469	85,180	0	1,031	2,491	352	0	0%	1%	3%	0%	0%
Hall Road	B2G-LDN139.0 to Gore Highway	663	677	691	705	719	83	1089	4398	3416	47	13%	161%	637%	485%	7%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	8,405	8,724	9,054	9,397	9,753	0	75,184	80,901	0	0	0%	862%	894%	0%	0%
	B2G-LDN116.0 to Millmerran-Inglewood Road	8,405	8,724	9,054	9,397	9,753	0	75,257	80,954	679	38	0%	863%	894%	7%	0%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	2,643	2,812	2,991	3,181	3,384	0	0	0	1,263	66	0%	0%	0%	40%	2%
Kahler Road	Murlaggan Road to B2G-LDN165.6	239	244	249	254	259	0	0	0	2,432	291	0%	0%	0%	958%	112%
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	171,402	180,704	190,510	200,849	211,749	72,274	325,846	5,049	2,075	10	42%	180%	3%	1%	0%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	12,463	12,935	13,425	13,934	14,462	0	75,184	0	0	0	0%	581%	0%	0%	0%
	Millmerran-Inglewood Road to Commodore Mine	290	301	312	324	336	0	0	49,039	0	0	0%	0%	15707%	0%	0%
Leesons Road	Warrego Highway to Steger Road	6,338	6,682	7,045	7,427	7,830	183	19,252	367	15,379	873	3%	288%	5%	207%	11%
	Steger Road to B2G-LDN206.3	6,338	6,682	7,045	7,427	7,830	3,501	29,881	35,070	22,750	877	55%	447%	498%	306%	11%
Linthorpe Road	Gore Highway to B2G-LDN175.5	1,922	2,022	2,128	2,240	2,357	8,344	59,721	8,313	12,727	405	434%	2953%	391%	568%	17%
Linthorpe Valley Road	Geitz Road to Gore Highway	16,559	17,426	18,338	19,297	20,307	0	35	11	650	35	0%	0%	0%	3%	0%
Lochaber Road	Gore Highway to B2G-LDN172.0	13,727	14,446	15,201	15,997	16,834	0	168	1,316	2,966	223	0%	1%	9%	19%	1%
	B2G-LDN172.0 to B2G-LDN172.6	13,727	14,446	15,201	15,997	16,834	0	0	460	0	0	0%	0%	3%	0%	0%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	713,322	714,043	714,763	715,485	716,207	813	13,175	7,158	1,980	0	0%	2%	1%	0%	0%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	6,376	6,618	6,869	7,129	7,399	723	13,034	7,969	10,614	649	11%	197%	116%	149%	9%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	B2G-LDN112.1 to Millwood Road	6,376	6,618	6,869	7,129	7,399	0	6,325	0	0	0	0%	96%	0%	0%	0%
	Millwood Road to Kooroongarra Road	290	301	312	324	336	0	6,325	0	0	0	0%	2103%	0%	0%	0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	52,279	54,260	56,315	58,449	60,664	695	6,565	4,583	1,686	5	1%	12%	8%	3%	0%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	17,557	17,917	18,284	18,658	19,041	164,027	164,039	4	314	22	934%	916%	0%	2%	0%
	Kahler Road to Gore Highway	17,557	17,917	18,284	18,658	19,041	164,027	164,039	4	518	46	934%	916%	0%	3%	0%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	181,457	189,300	197,483	206,020	214,926	0	0	589	0	0	0%	0%	0%	0%	0%
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	591,641	629,343	669,448	712,108	757,487	840	6,273	2,143	17,386	966	0%	1%	0%	2%	0%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	45,330	48,862	52,670	56,774	61,198	208	1,733	1,176	1,609	110	0%	4%	2%	3%	0%
	B2G-LDN128.2 to B2G-LDN130.0	45,330	48,862	52,670	56,774	61,198	114,963	1,733	1,252	1,792	110	254%	4%	2%	3%	0%
	B2G-LDN130.0 to Millmerran-Inglewood Road	45,330	48,862	52,670	56,774	61,198	217,338	104,315	1,391	1,792	110	479%	213%	3%	3%	0%
Paint Mine Road	Gore Highway to B2G-LDN173.5	5,610	5,903	6,212	6,537	6,879	0	522	157	2,544	442	0%	9%	3%	39%	6%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	12,323	12,790	13,275	13,778	14,300	183	511	1,018	14,905	1,225	1%	4%	8%	108%	9%
Quarry Road Access	Tummalville Road to Quarry	775	790	807	823	840	0	91,130	0	2,401	171	0%	11529%	0%	292%	20%
Saleyards Road	Campbell Street to Gore Highway	95,294	102,720	110,724	119,352	128,653	0	109	69	1,148	109	0%	0%	0%	1%	0%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0	183	705	1,821	367	92	No background HV movements, therefore unable to calculate				
Scragg Road	Commodore Peak Road to B2G-LDN123.6	2,516	2,612	2,711	2,813	2,920	0	627	2,063	215	0	0%	24%	76%	8%	0%
	B2G-LDN123.6 to B2G-LDN123.8	2,516	2,612	2,711	2,813	2,920	0	627	0	0	0	0%	24%	0%	0%	0%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	72,035	73,511	75,017	76,554	78,123	0	197,146	197,146	32,914	2,635	0%	268%	263%	43%	3%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	236,987	249,848	263,407	277,702	292,772	1,015	10,515	4,041	2,850	3	0%	4%	2%	1%	0%
	New Hope Recycled Water Pipeline to Draper Road	236,987	249,848	263,407	277,702	292,772	3,317	10,630	34,704	7,372	4	1%	4%	13%	3%	0%
	Draper Road to Leeson's Road	236,987	249,848	263,407	277,702	292,772	3,317	10,630	34,704	7,372	4	1%	4%	13%	3%	0%
Tummalville Road	Access Track to Gore Highway	24,528	25,031	25,544	26,067	26,601	0	7,666	0	28,545	2,033	0%	31%	0%	110%	8%
Turallin Road	Gore Highway to the Turallin Facility	20,460	20,776	21,097	21,423	21,754	945	0	0	0	0	5%	0%	0%	0%	0%
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	35,175	35,895	36,631	37,381	38,147	8,417	25,880	25,880	25,880	4,883	24%	72%	71%	69%	13%
	B2G-LDN153.1 to Gore Highway	35,175	35,895	36,631	37,381	38,147	8,436	26,233	27,289	25,918	4,892	24%	73%	74%	69%	13%
	Gore Highway to B2G-LDN150.9	17,521	17,880	18,247	18,621	19,002	0	0	0	5,982	777	0%	0%	0%	32%	4%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	199,141	211,831	225,330	239,689	254,963	734	1,467	1,467	16,479	1,148	0%	1%	1%	7%	0%
West Street	Gore Highway to Florence Street	29,999	30,463	30,933	31,411	31,896	1	577	928	200	0	0%	2%	3%	1%	0%
	Florence Street to Six Mile Road	2,913	2,958	3,003	3,050	3,097	1	686	997	200	0	0%	23%	33%	7%	0%
Yarranlea Road	Gore Highway to B2G-LDN161.0	21,623	22,066	22,519	22,980	23,451	2,016	216,867	202,023	16,789	847	9%	983%	897%	73%	4%
	B2G-LDN161.0 to Desmonds Lane	21,623	22,066	22,519	22,980	23,451	0	0	982	696	0	0%	0%	4%	3%	0%

Table 5.55 Without Project and with Project standard axle repetitions AG/SB/WB

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
State-Controlled Roads: Department of Transport and Main Roads																
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	263,701	268,752	273,900	279,147	284,494	20,163	64,458	65,629	59,963	11,315	8%	24%	24%	21%	4%
	Ch 0.8 km to Ch 2.0 km	263,701	268,752	273,900	279,147	284,494	20,163	64,458	65,629	59,963	11,315	8%	24%	24%	21%	4%
	Ch 2.0 km to Ch 45.9 km	102,671	103,124	103,579	104,036	104,496	19,524	59,963	59,963	59,963	11,315	19%	58%	58%	58%	11%
	Ch 45.9 km to Ch 88.0 km	102,671	103,124	103,579	104,036	104,496	17,993	55,276	55,276	55,276	10,433	18%	54%	53%	53%	10%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	39,707	39,707	39,707	39,707	39,707	17,993	55,276	55,276	55,276	10,433	45%	139%	139%	139%	26%
	Ch 1.6 km to Ch 66.8 km	39,707	39,707	39,707	39,707	39,707	16,796	51,622	51,622	51,622	9,740	42%	130%	130%	130%	25%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	35,041	35,041	35,041	35,041	35,041	1,413	4,343	4,343	4,343	819	4%	12%	12%	12%	2%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	980,128	1,019,658	1,060,783	1,103,566	1,148,075	0	136	122	223	0	0%	0%	0%	0%	0%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	513,782	524,963	536,387	548,060	559,987	2,611	3,879	1,435	1,158	3	1%	1%	0%	0%	0%
	Ch 96.2 km to Ch 97.5 km	513,782	524,963	536,387	548,060	559,987	5,650	4,791	4,279	10,427	3	1%	1%	1%	2%	0%
	Ch 97.5 km to Ch 105.7 km	513,782	524,963	536,387	548,060	559,987	35,259	7,009	4,279	10,427	3	7%	1%	1%	2%	0%
	Ch 105.7 km to Ch 107.4 km	513,782	524,963	536,387	548,060	559,987	40,327	12,872	6,885	10,931	77	8%	2%	1%	2%	0%
	Ch 107.4 km to Ch 107.6 km	722,797	763,694	806,905	852,561	900,800	40,363	13,086	7,027	10,347	77	6%	2%	1%	1%	0%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	468,182	484,703	501,806	519,514	537,845	40,363	13,086	7,027	10,347	77	9%	3%	1%	2%	0%
	Ch 2.0 km to Ch 3.9 km	468,182	484,703	501,806	519,514	537,845	40,065	9,098	5,410	10,390	77	9%	2%	1%	2%	0%
	Ch 3.9 km to Ch 10.2 km	468,182	484,703	501,806	519,514	537,845	12,231	7,626	4,660	8,444	76	3%	2%	1%	2%	0%
	Ch 10.2 km to Ch 13.9 km	468,182	484,703	501,806	519,514	537,845	12,206	7,456	3,982	8,385	66	3%	2%	1%	2%	0%
	Ch 13.9 km to Ch 18.5 km	468,182	484,703	501,806	519,514	537,845	23,614	16,279	7,927	11,082	71	5%	3%	2%	2%	0%
	Ch 18.5 km to Ch 27.1 km	468,182	484,703	501,806	519,514	537,845	32,672	25,658	12,326	11,388	77	7%	5%	2%	2%	0%
	Ch 27.1 km to Ch 29.3 km	468,182	484,703	501,806	519,514	537,845	36,687	26,971	12,781	12,470	73	8%	6%	3%	2%	0%
	Ch 29.3 km to Ch 34.7 km	468,182	484,703	501,806	519,514	537,845	10,553	7,495	4,551	4,075	59	2%	2%	1%	1%	0%
	Ch 34.7 km to Ch 39.6 km	468,182	484,703	501,806	519,514	537,845	10,553	8,907	4,551	4,075	59	2%	2%	1%	1%	0%
	Ch 39.6 km to Ch 40.3 km	468,182	484,703	501,806	519,514	537,845	8,723	11,708	4,288	3,691	59	2%	2%	1%	1%	0%
	Ch 40.3 km to Ch 40.5 km	468,182	484,703	501,806	519,514	537,845	1,738	3,181	3,810	3,525	59	0%	1%	1%	1%	0%
	Ch 40.5 km to Ch 43.9 km	468,182	484,703	501,806	519,514	537,845	776	19,955	2,086	114	28	0%	4%	0%	0%	0%
	Ch 43.9 km to Ch 46.3 km	468,182	484,703	501,806	519,514	537,845	697	19,955	2,086	114	28	0%	4%	0%	0%	0%
	Ch 46.3 km to Ch 88.0 km	468,182	484,703	501,806	519,514	537,845	697	3,171	2,086	114	28	0%	1%	0%	0%	0%
	Ch 88.0 km to Ch 88.2 km	1,197,779	1,237,839	1,279,238	1,322,022	1,366,237	9,904	30,580	30,781	30,360	5,730	1%	2%	2%	2%	0%
	Ch 88.2 km to Ch 90.0 km	1,197,779	1,237,839	1,279,238	1,322,022	1,366,237	57	334	535	114	28	0%	0%	0%	0%	0%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	24,762,058	28,749,591	33,379,251	38,754,444	44,995,225	38,026	116,090	116,090	116,090	21,899	0%	0%	0%	0%	0%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	341,669	341,669	341,669	341,669	341,669	38,026	116,090	116,090	116,090	21,899	11%	34%	34%	34%	6%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	916,568	964,522	1,014,986	1,068,089	1,123,971	111,857	455,432	121,461	121,186	22,188	12%	47%	12%	11%	2%
	Ch 2.2 km to Ch 5.4 km	916,568	964,522	1,014,986	1,068,089	1,123,971	390,394	617,217	120,422	121,200	22,144	43%	64%	12%	11%	2%
	Ch 5.4 km to Ch 6.7 km	916,568	964,522	1,014,986	1,068,089	1,123,971	390,394	617,205	120,411	120,954	22,119	43%	64%	12%	11%	2%
	Ch 6.7 km to Ch 7.7 km	916,568	964,522	1,014,986	1,068,089	1,123,971	390,394	618,824	122,559	121,418	22,119	43%	64%	12%	11%	2%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 7.7 km to Ch 11.2 km	916,568	964,522	1,014,986	1,068,089	1,123,971	390,150	616,509	121,882	126,203	22,445	43%	64%	12%	12%	2%
	Ch 11.2 km to Ch 15.3 km	916,568	964,522	1,014,986	1,068,089	1,123,971	390,150	616,628	121,917	133,931	22,864	43%	64%	12%	13%	2%
	Ch 15.3 km to Ch 17.5 km	916,568	964,522	1,014,986	1,068,089	1,123,971	317,734	297,577	124,225	136,147	23,162	35%	31%	12%	13%	2%
	Ch 17.5 km to Ch 19.0 km	916,568	964,522	1,014,986	1,068,089	1,123,971	317,734	297,807	124,294	138,692	23,604	35%	31%	12%	13%	2%
	Ch 19.0 km to Ch 20.3 km	916,568	964,522	1,014,986	1,068,089	1,123,971	317,734	297,834	124,672	141,658	23,828	35%	31%	12%	13%	2%
	Ch 20.3 km to Ch 21.5 km	531,303	542,189	553,298	564,635	576,204	317,734	297,834	125,260	141,658	23,828	60%	55%	23%	25%	4%
	Ch 21.5 km to Ch 23.2 km	531,303	542,189	553,298	564,635	576,204	317,475	295,059	124,608	146,014	24,176	60%	54%	23%	26%	4%
	Ch 23.2 km to Ch 25.0 km	531,303	542,189	553,298	564,635	576,204	153,448	130,255	122,193	151,825	24,724	29%	24%	22%	27%	4%
	Ch 25.0 km to Ch 30.1 km	531,303	542,189	553,298	564,635	576,204	153,448	145,084	137,023	118,911	22,089	29%	27%	25%	21%	4%
	Ch 30.1 km to Ch 38.7 km	531,303	542,189	553,298	564,635	576,204	153,225	118,592	121,388	119,757	22,187	29%	22%	22%	21%	4%
	Ch 38.7 km to Ch 41.1 km	531,303	542,189	553,298	564,635	576,204	144,789	95,318	106,079	93,839	17,295	27%	18%	19%	17%	3%
	Ch 41.1 km to Ch 41.7 km	531,303	542,189	553,298	564,635	576,204	144,789	95,318	106,079	93,335	17,230	27%	18%	19%	17%	3%
	Ch 41.7 km to Ch 43.2 km	531,303	542,189	553,298	564,635	576,204	145,166	250,491	109,249	96,565	17,237	27%	46%	20%	17%	3%
	Ch 43.2 km to Ch 44.7 km	531,303	542,189	553,298	564,635	576,204	145,166	250,315	107,113	96,565	17,237	27%	46%	19%	17%	3%
	Ch 44.7 km to Ch 47.6 km	531,303	542,189	553,298	564,635	576,204	145,147	250,317	107,100	95,864	17,185	27%	46%	19%	17%	3%
	Ch 47.6 km to Ch 52.2 km	531,303	542,189	553,298	564,635	576,204	145,147	250,535	106,148	94,838	17,185	27%	46%	19%	17%	3%
	Ch 52.2 km to Ch 53.3 km	531,303	542,189	553,298	564,635	576,204	145,128	250,182	105,120	94,801	17,176	27%	46%	19%	17%	3%
	Ch 53.3 km to Ch 60.8 km	531,303	542,189	553,298	564,635	576,204	145,874	256,477	107,864	103,642	17,731	27%	47%	19%	18%	3%
	Ch 60.8 km to Ch 63.0 km	531,303	542,189	553,298	564,635	576,204	29,450	91,522	90,968	98,140	17,565	6%	17%	16%	17%	3%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	505,390	513,196	521,122	529,170	537,343	29,462	95,341	98,462	99,921	17,565	6%	19%	19%	19%	3%
	Ch 0.7 km to Ch 0.8 km	505,390	513,196	521,122	529,170	537,343	29,450	90,210	90,210	98,140	17,565	6%	18%	17%	19%	3%
	Ch 0.8 km to Ch 1.4 km	505,390	513,196	521,122	529,170	537,343	29,450	90,319	90,279	98,140	17,565	6%	18%	17%	19%	3%
	Ch 1.4 km to Ch 3.0 km	505,390	513,196	521,122	529,170	537,343	29,450	90,210	90,210	111,792	18,861	6%	18%	17%	21%	4%
	Ch 3.0 km to Ch 13.0 km	505,390	513,196	521,122	529,170	537,343	29,371	90,210	90,210	111,792	18,861	6%	18%	17%	21%	4%
	Ch 13.0 km to Ch 121.6 km	505,390	513,196	521,122	529,170	537,343	29,371	90,210	90,210	90,210	17,016	6%	18%	17%	17%	3%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	6,098,648	6,098,648	6,098,648	6,098,648	6,098,648	38,026	116,090	116,090	116,090	21,899	1%	2%	2%	2%	0%
	Ch 3.7 km to Ch 6.4 km	6,138,767	6,322,930	6,512,618	6,707,997	6,909,237	38,026	116,090	116,090	116,090	21,899	1%	2%	2%	2%	0%
	Ch 6.4 km to Ch 8.3 km	6,537,118	6,733,231	6,935,228	7,143,285	7,357,583	38,026	116,090	116,090	116,090	21,899	1%	2%	2%	2%	0%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	570,833	577,898	585,051	592,292	599,623	29,371	90,210	90,210	90,210	17,016	5%	16%	15%	15%	3%
	Ch 220.1 km to Ch 222.4 km	574,812	581,927	589,129	596,421	603,803	9,919	30,752	30,884	30,246	5,702	2%	5%	5%	5%	1%
	Ch 222.4 km to Ch 224.1 km	574,812	581,927	589,129	596,421	603,803	9,919	30,810	30,889	30,246	5,702	2%	5%	5%	5%	1%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	341,669	341,669	341,669	341,669	341,669	38,026	116,090	116,090	116,090	21,899	11%	34%	34%	34%	6%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	223,197	240,590	259,338	279,547	301,330	116,424	164,955	16,896	5,502	166	52%	69%	7%	2%	0%
	Ch 2.5 km to Ch 3.5 km	223,197	240,590	259,338	279,547	301,330	12,148	189,755	28,200	23,598	1,468	5%	79%	11%	8%	0%
	Ch 3.5 km to Ch 6.2 km	142,597	148,000	153,608	159,428	165,469	12,149	189,438	28,132	9,646	172	9%	128%	18%	6%	0%
	Ch 6.2 km to Ch 9.0 km	142,597	148,000	153,608	159,428	165,469	12,130	189,421	77,067	9,608	163	9%	128%	50%	6%	0%
	Ch 9.0 km to Ch 13.1 km	142,597	148,000	153,608	159,428	165,469	12,130	189,317	52,547	9,824	163	9%	128%	34%	6%	0%
	Ch 13.1 km to Ch 14.0 km	142,597	148,000	153,608	159,428	165,469	9,503	164,041	29,630	3,585	145	7%	111%	19%	2%	0%
	Ch 14.0 km to Ch 17.3 km	142,597	148,000	153,608	159,428	165,469	9,336	162,569	28,683	7,187	462	7%	110%	19%	5%	0%
	Ch 17.3 km to Ch 18.1 km	142,597	148,000	153,608	159,428	165,469	9,336	87,311	35,435	6,507	424	7%	59%	23%	4%	0%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 18.1 km to Ch 21.8 km	142,597	148,000	153,608	159,428	165,469	9,317	87,273	35,360	6,422	415	7%	59%	23%	4%	0%
	Ch 21.8 km to Ch 28.0 km	142,597	148,000	153,608	159,428	165,469	9,236	11,342	10,182	5,485	360	6%	8%	7%	3%	0%
	Ch 28.0 km to Ch 33.0 km	142,597	148,000	153,608	159,428	165,469	9,217	11,289	10,027	4,224	255	6%	8%	7%	3%	0%
	Ch 33.0 km to Ch 35.6 km	142,597	148,000	153,608	159,428	165,469	9,197	11,015	9,409	4,186	246	6%	7%	6%	3%	0%
	Ch 35.6 km to Ch 37.7 km	142,597	148,000	153,608	159,428	165,469	9,081	9,702	2,161	4,912	245	6%	7%	1%	3%	0%
	Ch 37.7 km to Ch 39.8 km	142,597	148,000	153,608	159,428	165,469	9,081	15,195	2,161	4,912	245	6%	10%	1%	3%	0%
	Ch 39.8 km to Ch 41.9 km	78,826	83,044	87,487	92,168	97,100	9,065	15,196	1,871	4,874	235	12%	18%	2%	5%	0%
	Ch 41.9 km to Ch 45.9 km	78,826	83,044	87,487	92,168	97,100	1,342	16,629	4,097	5,236	109	2%	20%	5%	6%	0%
	Ch 45.9 km to Ch 47.6 km	78,826	83,044	87,487	92,168	97,100	1,344	17,671	4,186	5,198	100	2%	21%	5%	6%	0%
	Ch 47.6 km to Ch 53.3 km	78,826	83,044	87,487	92,168	97,100	1,344	34,256	4,186	5,198	100	2%	41%	5%	6%	0%
	Ch 53.3 km to Ch 55.7 km	78,826	83,044	87,487	92,168	97,100	2,143	43,484	5,968	18,103	106	3%	52%	7%	20%	0%
	Ch 55.7 km to Ch 56.6 km	78,826	83,044	87,487	92,168	97,100	2,143	21,405	5,968	18,103	106	3%	26%	7%	20%	0%
	Ch 56.6 km to Ch 59.2 km	78,826	83,044	87,487	92,168	97,100	2,064	21,405	5,968	18,103	106	3%	26%	7%	20%	0%
	Ch 59.2 km to Ch 61.0 km	78,826	83,044	87,487	92,168	97,100	2,089	21,708	5,968	26,088	106	3%	26%	7%	28%	0%
	Ch 61.0 km to Ch 65.7 km	78,826	83,044	87,487	92,168	97,100	10,974	27,727	5,931	26,050	97	14%	33%	7%	28%	0%
	Ch 65.7 km to Ch 68.7 km	78,826	83,044	87,487	92,168	97,100	59,415	58,494	10,125	32,982	95	75%	70%	12%	36%	0%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	41,660	44,279	47,063	50,023	53,168	19	1,057	2,991	38	9	0%	2%	6%	0%	0%
	Ch 2.0 km to Ch 2.2 km	41,660	44,279	47,063	50,023	53,168	0	965	2,767	0	0	0%	2%	6%	0%	0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	3,577,632	3,684,961	3,795,510	3,909,376	4,026,657	6,014	9,766	9,766	9,766	1,842	0%	0%	0%	0%	0%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	3,577,632	3,684,961	3,795,510	3,909,376	4,026,657	38,026	116,090	116,090	116,090	21,899	1%	3%	3%	3%	1%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	36,912	38,327	39,797	41,323	42,907	0	16,784	0	0	0	0%	44%	0%	0%	0%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	280,427	280,427	280,427	280,427	280,427	455	955	949	911	228	0%	0%	0%	0%	0%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	925,870	926,805	927,741	928,677	929,615	84	1,383	771	223	0	0%	0%	0%	0%	0%
	Ch 6.0 km to Ch 6.4 km	496,333	496,333	496,333	496,333	496,333	84	1,246	649	0	0	0%	0%	0%	0%	0%
	Ch 6.4 km to Ch 8.3 km	496,333	496,333	496,333	496,333	496,333	289	3,554	1,259	553	1	0%	1%	0%	0%	0%
	Ch 8.3 km to Ch 9.2 km	496,333	496,333	496,333	496,333	496,333	364	3,706	1,411	1,968	104	0%	1%	0%	0%	0%
	Ch 9.2 km to Ch 10.0 km	509,141	541,586	576,099	612,811	651,862	800	9,169	2,744	2,270	21	0%	2%	0%	0%	0%
	Ch 10.0 km to Ch 10.1 km	509,141	541,586	576,099	612,811	651,862	800	9,169	2,744	2,270	21	0%	2%	0%	0%	0%
	Ch 10.1 km to Ch 10.3 km	509,141	541,586	576,099	612,811	651,862	800	9,069	2,793	9,650	719	0%	2%	0%	2%	0%
	Ch 10.3 km to Ch 12.1 km	509,141	541,586	576,099	612,811	651,862	38	18,706	660	7,552	718	0%	3%	0%	1%	0%
	Ch 12.1 km to Ch 14.5 km	509,141	541,586	576,099	612,811	651,862	38	3,000	5,644	786	104	0%	1%	1%	0%	0%
	Ch 14.5 km to Ch 16.3 km	332,768	353,293	375,084	398,220	422,782	627	8,724	7,833	2,092	95	0%	2%	2%	1%	0%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	1,163,338	1,198,239	1,234,186	1,271,211	1,309,348	0	1,284	1,082	1,980	0	0%	0%	0%	0%	0%
	Ch 26.9 km to Ch 27.1 km	1,163,338	1,198,239	1,234,186	1,271,211	1,309,348	0	136	122	223	0	0%	0%	0%	0%	0%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	6,014	9,766	9,766	9,766	1,842	1%	1%	1%	1%	0%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	6,014	9,766	9,766	9,766	1,842	1%	1%	1%	1%	0%
	Ch 0.6 km to Ch 3.2 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	110,640	463,887	117,756	117,452	21,900	11%	44%	11%	11%	2%
	Ch 3.2 km to Ch 4.1 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	110,640	445,509	117,756	117,452	21,900	11%	42%	11%	11%	2%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	Ch 4.1 km to Ch 13.0 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	111,402	454,478	120,512	120,275	21,960	11%	43%	11%	11%	2%
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	5,110,705	5,318,623	5,535,001	5,760,181	5,994,522	38,026	116,090	116,090	116,090	21,899	1%	2%	2%	2%	0%
	Ch 7.2 km to Ch 15.1 km	5,110,705	5,318,623	5,535,001	5,760,181	5,994,522	38,026	116,090	116,090	116,090	21,899	1%	2%	2%	2%	0%
	Ch 15.1 km to Ch 18.9 km	3,131,353	3,222,345	3,315,982	3,412,340	3,511,497	38,026	116,090	116,090	116,090	21,899	1%	4%	4%	3%	1%
	Ch 18.9 km to Ch 28.9 km	2,732,512	2,732,512	2,732,512	2,732,512	2,732,512	38,026	116,090	116,090	116,090	21,899	1%	4%	4%	4%	1%
	Ch 28.9 km to Ch 36.6 km	8,164,732	10,080,572	12,445,961	15,366,385	18,972,081	38,026	116,090	116,090	116,090	21,899	0%	1%	1%	1%	0%
	Ch 36.6 km to Ch 55.5 km	3,321,145	3,431,732	3,546,001	3,664,075	3,786,081	38,026	116,090	116,090	116,090	21,899	1%	3%	3%	3%	1%
	Ch 55.5 km to Ch 75.4 km	3,321,145	3,431,732	3,546,001	3,664,075	3,786,081	38,026	116,090	116,090	116,090	21,899	1%	3%	3%	3%	1%
	Ch 75.4 km to Ch 79.6 km	2,611,302	2,669,773	2,729,554	2,790,673	2,853,161	38,026	116,090	116,090	116,090	21,899	1%	4%	4%	4%	1%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	1,642,340	1,699,184	1,757,994	1,818,840	1,881,792	10,107	70,973	15,055	9,499	9	1%	4%	1%	1%	0%
	Ch 0.4 km to Ch 1.5 km	1,642,340	1,699,184	1,757,994	1,818,840	1,881,792	10,107	70,973	15,055	9,499	9	1%	4%	1%	1%	0%
	Ch 1.5 km to Ch 2.4 km	1,642,340	1,699,184	1,757,994	1,818,840	1,881,792	6,200	29,371	1,163	2,016	85	0%	2%	0%	0%	0%
	Ch 2.4 km to Ch 4.5 km	1,997,364	2,105,758	2,220,035	2,340,514	2,467,531	6,181	27,732	1,125	716	10	0%	1%	0%	0%	0%
	Ch 4.5 km to Ch 5.0 km	1,997,364	2,105,758	2,220,035	2,340,514	2,467,531	6,181	28,429	1,899	2,075	10	0%	1%	0%	0%	0%
	Ch 5.0 km to Ch 5.3 km	1,997,364	2,105,758	2,220,035	2,340,514	2,467,531	72,274	325,846	5,049	2,075	10	4%	15%	0%	0%	0%
	Ch 5.3 km to Ch 6.2 km	1,997,364	2,105,758	2,220,035	2,340,514	2,467,531	72,274	325,846	5,049	2,075	10	4%	15%	0%	0%	0%
State-Controlled Roads: Transport for New South Wales																
Newell Highway	River Road to Queensland/NSW Border	819,932	827,012	834,154	841,357	848,623	910	1,072	387	266	1	0%	0%	0%	0%	0%
Local Government Roads: Balonne Shire Council																
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	9,343	9,343	9,343	9,343	9,343	16,796	51,622	51,622	51,622	9,740	180%	553%	553%	553%	104%
Local Government Roads: Goondiwindi Regional Council																
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	2,336	2,336	2,336	2,336	2,336	0	58	5	0	0	0%	2%	0%	0%	0%
Bybera Road	Cunningham Highway to B2G-LDN060.4	3,749	3,881	4,018	4,160	4,307	27,834	1,471	749	1,946	1	742%	38%	19%	47%	0%
	B2G-LDN060.4 to Earthworks Area 2A	3,749	3,881	4,018	4,160	4,307	26,000	0	0	0	0	694%	0%	0%	0%	0%
Cemetery Road	Access Track to Moorroobie Lane	113,136	129,496	148,222	169,655	194,189	0	1,859	0	0	0	0%	1%	0%	0%	0%
	Cunningham Highway to GrainCorp Goondiwindi	19,922	20,588	21,277	21,988	22,724	9,847	30,246	30,246	30,246	5,702	49%	147%	142%	138%	25%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	12,051	12,313	12,581	12,855	13,134	2,611	3,879	1,435	1,158	3	22%	32%	11%	9%	0%
	Coolmunda Dam Access to Cunningham Highway	12,051	12,313	12,581	12,855	13,134	2,611	3,879	1,435	1,158	3	22%	32%	11%	9%	0%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	28,064	29,055	30,080	31,141	32,240	25	128	433	38	9	0%	0%	1%	0%	0%
	B2G-LDN055.4 to B2G-LDN054.2	28,064	29,055	30,080	31,141	32,240	6	90	28	0	0	0%	0%	0%	0%	0%
	Cunningham Highway to B2G-LDN052.8	28,064	29,055	30,080	31,141	32,240	25	170	678	59	9	0%	1%	2%	0%	0%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	4,065	4,209	4,357	4,511	4,670	91,941	105,927	263	384	0	2262%	2517%	6%	9%	0%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	6,363	6,723	7,104	7,506	7,930	7	43	50	584	0	0%	1%	1%	8%	0%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	4,620	5,288	6,052	6,928	7,929	624	924	921	1,294	28	14%	17%	15%	19%	0%
	NS2B-LDN033.2 to NS2B-LDN035.6	4,620	5,288	6,052	6,928	7,929	302	377	398	960	9	7%	7%	7%	14%	0%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	1,124	1,148	1,173	1,199	1,225	45,091	26,362	0	0	0	4013%	2296%	0%	0%	0%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	5,212	5,966	6,829	7,816	8,947	528	128	778	2,742	1	10%	2%	11%	35%	0%
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	2,087	2,199	2,317	2,441	2,571	0	22,079	0	0	0	0%	1004%	0%	0%	0%
Hunt Street	Leichhardt Highway to Boodle Street	2,336	2,336	2,336	2,336	2,336	0	516	47	0	0	0%	22%	2%	0%	0%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	123,877	141,791	162,295	185,763	212,626	343	1,192	3,358	10,798	1	0%	1%	2%	6%	0%
	NS2B-LDN031.0 to South Kurumbul Road	123,877	141,791	162,295	185,763	212,626	83,368	101,120	3,945	10,798	1	67%	71%	2%	6%	0%
	South Kurumbul Road to Cunningham Highway	5,517	5,712	5,914	6,122	6,338	83,025	100,666	723	882	0	1505%	1762%	12%	14%	0%
	Cunningham Highway to Eukabilla Road	123,877	141,791	162,295	185,763	212,626	967	1,406	921	379	29	1%	1%	1%	0%	0%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	1,442	1,493	1,545	1,600	1,656	11,431	8,957	4,045	14,877	5	793%	600%	262%	930%	0%
	McDougalls Road to Cunningham Highway	1,442	1,493	1,545	1,600	1,656	11,431	8,957	4,045	14,877	5	793%	600%	262%	930%	0%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	16,562	18,957	21,699	24,837	28,428	0	1,859	0	0	0	0%	10%	0%	0%	0%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	16,562	18,957	21,699	24,837	28,428	0	3,271	0	0	0	0%	17%	0%	0%	0%
	Mooroobie Lane to Wondalli Kurumbul Road	16,562	18,957	21,699	24,837	28,428	0	3,271	0	0	0	0%	17%	0%	0%	0%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	2,835	2,987	3,147	3,315	3,492	0	1,857	0	0	0	0%	62%	0%	0%	0%
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	1,026	1,174	1,344	1,538	1,761	602	203	785	731	10	59%	17%	58%	48%	1%
Silo Street	Barwon Highway to GrainCorp Talwood	15,291	15,291	15,291	15,291	15,291	1,197	3,654	3,654	3,654	693	8%	24%	24%	24%	5%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	25,971	29,727	34,026	38,946	44,578	343	455	3,222	9,916	1	1%	2%	9%	25%	0%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	13,940	14,002	14,063	14,126	14,188	129	394	394	394	74	1%	3%	3%	3%	1%
Springborg Road	Cunningham highway to B2G-LDN037.6	738	764	791	819	848	477	218	604	655	10	65%	29%	76%	80%	1%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	5,688	5,889	6,097	6,312	6,535	83,025	99,948	0	0	0	1460%	1697%	0%	0%	0%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	597	629	663	698	736	5,578	4,578	2,978	6,970	8	934%	728%	449%	998%	1%
	B2G-LDN067.6 to Millmerran-Inglewood Road	597	629	663	698	736	48,672	31,343	5,207	7,337	99	8150%	4981%	786%	1051%	14%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	58,937	58,937	58,937	58,937	58,937	72	506	637	0	0	0%	1%	1%	0%	0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	6,312	6,535	6,765	7,004	7,251	48,383	22,072	5,106	15,135	5	767%	338%	75%	216%	0%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	1,445	1,654	1,893	2,166	2,480	0	38,884	0	0	0	0%	2352%	0%	0%	0%
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	2,407	2,536	2,672	2,815	2,966	102	1,182	199	1,124	1	4%	47%	7%	40%	0%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	2,504	2,592	2,684	2,778	2,876	0	16,784	0	0	0	0%	648%	0%	0%	0%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	6,744	7,719	8,836	10,113	11,576	284	440	3,858	12,523	1	4%	6%	44%	124%	0%
	B2G-LDN006.3 to Wondalli Kurumbul Road	6,744	7,719	8,836	10,113	11,576	208	39,342	8,111	18,311	92	3%	510%	92%	181%	1%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	6,744	7,719	8,836	10,113	11,576	208	458	8,111	18,311	92	3%	6%	92%	181%	1%
	Yelarbon Kurumbul Road to B2G-LDN020.3	6,744	7,719	8,836	10,113	11,576	5,617	2,314	16,950	26,535	191	83%	30%	192%	262%	2%
	B2G-LDN020.3 to B2G-LDN025.9	5,517	5,712	5,914	6,122	6,338	5,617	2,314	25,117	30,131	191	102%	41%	425%	492%	3%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
	B2G-LDN025.9 to Cunningham Highway	5,517	5,712	5,914	6,122	6,338	12,352	40,178	36,082	38,468	290	224%	703%	610%	628%	5%
Local Government Roads: Moree Plains Shire Council																
Boggabilla Weir Access	River Road to Boggabilla Weir	3,060	3,503	4,010	4,589	5,253	8,161	9,609	3,466	2,380	6	267%	274%	86%	52%	0%
River Road	Newell Highway to Boggabilla Weir Access	3,060	3,503	4,010	4,589	5,253	8,161	9,609	3,466	2,380	6	267%	274%	86%	52%	0%
Local Government Roads: Toowoomba Regional Council																
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	754,352	802,423	853,557	907,950	965,809	734	1,467	1,467	1,467	367	0%	0%	0%	0%	0%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	484,879	493,479	502,231	511,139	520,205	455	911	911	911	228	0%	0%	0%	0%	0%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	2,325,007	2,366,244	2,408,212	2,450,925	2,494,395	0	392	343	0	0	0%	0%	0%	0%	0%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	18,395	19,357	20,370	21,436	22,557	280,802	183,282	8,473	4,463	5	1527%	947%	42%	21%	0%
	B2G-LDN188.2 to Gore Highway	18,395	19,357	20,370	21,436	22,557	280,986	184,721	9,346	10,439	505	1528%	954%	46%	49%	2%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	12,011	12,640	13,301	13,997	14,729	0	19,250	19,309	119	0	0%	152%	145%	1%	0%
Blackwell Road	Gore Highway to Millmerran Quarry	832	845	858	871	885	0	0	0	21,582	1,844	0%	0%	0%	2477%	208%
	Millmerran Quarry to B2G-LDN120.2	832	845	858	871	885	0	0	0	4,629	382	0%	0%	0%	531%	43%
	B2G-LDN120.2 to Millmerran-Inglewood Road	290	301	312	324	336	1,499	13,224	8,512	8,130	325	517%	4396%	2727%	2509%	97%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	2,913	2,958	3,003	3,050	3,097	12	6,100	8,869	1,780	0	0%	206%	295%	58%	0%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	16,162	17,159	18,217	19,341	20,534	5,471	51,913	23,128	12,087	15	34%	303%	127%	62%	0%
	Brimblecombe Road to WL 194467R	16,162	17,159	18,217	19,341	20,534	5,452	51,853	22,776	12,049	5	34%	302%	125%	62%	0%
Bushy Lane	B2G-LDN183.0 to Gore Highway	2,745	2,889	3,040	3,199	3,367	2,199	23,623	6,952	10,133	432	80%	818%	229%	317%	13%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	107,853	116,258	125,317	135,082	145,609	12	4,788	8,111	15,432	1,296	0%	4%	6%	11%	1%
	Saleyards Road to Gore Highway	115,688	117,474	119,289	121,131	123,002	12	3,820	7,494	1,780	0	0%	3%	6%	1%	0%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	2,596	2,737	2,886	3,042	3,208	0	82	98	336	0	0%	3%	3%	11%	0%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	2,319	2,406	2,498	2,592	2,691	0	627	2,063	215	0	0%	26%	83%	8%	0%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	244	249	254	259	265	0	0	166	78	0	0%	0%	65%	30%	0%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	2,433	2,483	2,533	2,585	2,638	377	155,919	7,584	2,126	8	15%	6281%	299%	82%	0%
Draper Road	Steger Road to B2G-FBW206.9	2,811	2,963	3,124	3,294	3,472	0	0	0	0	0	0%	0%	0%	0%	0%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	350,488	372,823	396,581	421,853	448,736	734	1,467	1,467	16,479	1,148	0%	0%	0%	4%	0%
	Access Track to Greenwattle Street	350,488	372,823	396,581	421,853	448,736	734	1,467	1,467	1,467	367	0%	0%	0%	0%	0%
Florence Street	Gore Highway to West Street	7,987	8,111	8,236	8,363	8,492	0	968	616	0	0	0%	12%	7%	0%	0%
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	7,351	0	0	0	No background HV movements, therefore unable to calculate				
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	1,857	0	0	0	No background HV movements, therefore unable to calculate				
Fysh Road	B2G-LDN147.1 to Gore Highway	10,679	10,897	11,121	11,349	11,581	183	482	440	11,737	600	2%	4%	4%	103%	5%
Gap Road	Gore Highway to Grevillea Street	98,887	100,913	102,981	105,091	107,244	0	1,031	2,491	352	0	0%	1%	2%	0%	0%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	5,400	5,682	5,980	6,292	6,622	0	329	99	7,728	419	0%	6%	2%	123%	6%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	7,588	7,743	7,902	8,064	8,229	0	491	10,017	6,728	0	0%	6%	127%	83%	0%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Grevillea Street	Boral Concrete Pittsworth to Gap Road	78,542	80,151	81,793	83,469	85,180	0	116	280	40	0	0%	0%	0%	0%	0%
Hall Road	B2G-LDN139.0 to Gore Highway	1,592	1,624	1,658	1,692	1,726	745	8,026	14,025	12,884	555	47%	494%	846%	762%	32%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	7,246	7,520	7,805	8,101	8,408	0	6,325	6,806	0	0	0%	84%	87%	0%	0%
	B2G-LDN116.0 to Millmerran-Inglewood Road	7,246	7,520	7,805	8,101	8,408	0	6,997	7,290	6,506	453	0%	93%	93%	80%	5%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	2,643	2,812	2,991	3,181	3,384	0	0	0	15,012	781	0%	0%	0%	472%	23%
Kahler Road	Murlaggan Road to B2G-LDN165.6	239	244	249	254	259	0	0	0	205	24	0%	0%	0%	81%	9%
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	161,757	170,536	179,790	189,547	199,834	72,274	325,846	5,049	2,075	10	45%	191%	3%	1%	0%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	13,042	13,536	14,049	14,582	15,134	0	6,325	0	0	0	0%	47%	0%	0%	0%
	Millmerran-Inglewood Road to Commodore Mine	290	301	312	324	336	0	0	4,126	0	0	0%	0%	1321%	0%	0%
Leesons Road	Warrego Highway to Steger Road	5,236	5,520	5,819	6,135	6,468	19	1,639	38	1,301	75	0%	30%	1%	21%	1%
	Steger Road to B2G-LDN206.3	5,236	5,520	5,819	6,135	6,468	389	2,825	3,909	2,123	76	7%	51%	67%	35%	1%
Linthorpe Road	Gore Highway to B2G-LDN175.5	3,295	3,467	3,648	3,839	4,040	72,416	426,201	23,809	1,327	36	2198%	12293%	653%	35%	1%
Linthorpe Valley Road	Geitz Road to Gore Highway	18,704	19,683	20,713	21,796	22,937	0	329	99	7,728	419	0%	2%	0%	35%	2%
Lochaber Road	Gore Highway to B2G-LDN172.0	15,787	16,612	17,482	18,396	19,359	0	18	180	250	19	0%	0%	1%	1%	0%
	B2G-LDN172.0 to B2G-LDN172.6	15,787	16,612	17,482	18,396	19,359	0	0	85	0	0	0%	0%	0%	0%	0%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	713,322	714,043	714,763	715,485	716,207	84	1,383	771	223	0	0%	0%	0%	0%	0%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	4,058	4,211	4,371	4,537	4,708	81	75,931	25,178	937	55	2%	1803%	576%	21%	1%
	B2G-LDN112.1 to Millwood Road	4,058	4,211	4,371	4,537	4,708	0	75,184	0	0	0	0%	1785%	0%	0%	0%
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	75,184	0	0	0	0%	7518357%	0%	0%	0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	52,279	54,260	56,315	58,449	60,664	6,226	58,853	41,085	15,113	41	12%	108%	73%	26%	0%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	15,233	15,545	15,864	16,189	16,521	13,799	13,907	32	3,731	258	91%	89%	0%	23%	2%
	Kahler Road to Gore Highway	15,233	15,545	15,864	16,189	16,521	13,799	13,907	32	6,163	549	91%	89%	0%	38%	3%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	170,664	178,041	185,737	193,766	202,142	0	0	100	0	0	0%	0%	0%	0%	0%
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	447,795	472,096	497,716	524,727	553,203	4,281	49,730	12,708	16,045	95	1%	11%	3%	3%	0%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	51,895	55,939	60,298	64,996	70,061	1,866	15,538	10,539	17,779	1,302	4%	28%	17%	27%	2%
	B2G-LDN128.2 to B2G-LDN130.0	51,895	55,939	60,298	64,996	70,061	11,520	15,538	11,214	18,416	1,302	22%	28%	19%	28%	2%
	B2G-LDN130.0 to Millmerran-Inglewood Road	51,895	55,939	60,298	64,996	70,061	20,133	25,175	11,640	18,416	1,302	39%	45%	19%	28%	2%
Paint Mine Road	Gore Highway to B2G-LDN173.5	2,640	2,778	2,923	3,076	3,237	0	56	17	214	37	0%	2%	1%	7%	1%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	13,013	13,506	14,018	14,549	15,100	19	53	155	1,261	105	0%	0%	1%	9%	1%
Quarry Road Access	Tumnaville Road to Quarry	775	790	807	823	840	0	7,666	0	28,545	2,033	0%	970%	0%	3468%	242%
Saleyards Road	Campbell Street to Gore Highway	55,677	56,537	57,410	58,297	59,197	0	968	616	13,651	1,296	0%	2%	1%	23%	2%

Road name	Road section	Background yearly SAR					Project yearly SAR					% SAR comparison				
		2024	2025	2026	2027	2028	2024	2025	2026	2027	2028	2024	2025	2026	2027	2028
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0	19	75	279	38	9	No background HV movements, therefore unable to calculate				
Scragg Road	Commodore Peak Road to B2G-LDN123.6	2,516	2,612	2,711	2,813	2,920	0	104	24,520	24	0	0%	4%	905%	1%	0%
	B2G-LDN123.6 to B2G-LDN123.8	2,516	2,612	2,711	2,813	2,920	0	104	0	0	0	0%	4%	0%	0%	0%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	72,035	73,511	75,017	76,554	78,123	0	35,699	35,699	2,769	222	0%	49%	48%	4%	0%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	216,870	228,640	241,048	254,129	267,920	9,100	94,259	36,221	25,549	23	4%	41%	15%	10%	0%
	New Hope Recycled Water Pipeline to Draper Road	216,870	228,640	241,048	254,129	267,920	370	1,186	3,871	822	0	0%	1%	2%	0%	0%
	Draper Road to Leeson's Road	216,870	228,640	241,048	254,129	267,920	370	1,186	3,871	822	0	0%	1%	2%	0%	0%
Tummalville Road	Access Track to Gore Highway	25,496	26,019	26,552	27,096	27,651	0	91,130	0	2,401	171	0%	350%	0%	9%	1%
Turallin Road	Gore Highway to the Turallin Facility	44,389	45,074	45,770	46,477	47,195	80	0	0	0	0	0%	0%	0%	0%	0%
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	33,594	34,282	34,985	35,701	36,433	708	2,177	2,177	2,177	411	2%	6%	6%	6%	1%
	B2G-LDN153.1 to Gore Highway	33,594	34,282	34,985	35,701	36,433	891	5,377	13,210	2,544	502	3%	16%	38%	7%	1%
	Gore Highway to B2G-LDN150.9	14,360	14,654	14,954	15,261	15,573	0	0	0	503	65	0%	0%	0%	3%	0%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	199,141	211,831	225,330	239,689	254,963	76	152	152	1,415	104	0%	0%	0%	1%	0%
West Street	Gore Highway to Florence Street	29,999	30,463	30,933	31,411	31,896	12	5,132	8,253	1,780	0	0%	17%	27%	6%	0%
	Florence Street to Six Mile Road	2,913	2,958	3,003	3,050	3,097	12	6,100	8,869	1,780	0	0%	206%	295%	58%	0%
Yarranlea Road	Gore Highway to B2G-LDN161.0	14,200	14,491	14,788	15,091	15,401	223	18,826	17,261	1,556	73	2%	130%	117%	10%	0%
	B2G-LDN161.0 to Desmonds Lane	14,200	14,491	14,788	15,091	15,401	0	0	166	78	0	0%	0%	1%	1%	0%

The analysis indicates that the majority of SCR road segments would have a minimal pavement impact given the duration of construction activities and pavement loading. However, it was found that the 5 per cent threshold would be exceeded for several road sections, as outlined in Table 5.56.

Table 5.56 Number of roads exceeding 5 per cent base standard axle repetitions by road authority

Road authority	Number of roads > 5%	Number of road links > 5%	Length of roads > 5% (km)
DTMR	12	83	531.2
TfNSW	0	0	0
BSC	1	1	0.4
GRC	26	39	136.8
MPSC	2	2	6.7
TRC	42	59	76.9
Total	83	184	752.0

It should be noted that some of the percentages are relatively high due to very low background traffic volumes along the particular road sections. Detailed analysis outputs and results of these road segments are provided in Appendix BA.

Detailed pavement design life assessments will be carried out prior to the commencement of construction, in consultation with DTMR, once specific construction routes are agreed in the Detailed Design stage of the Project. Further detailed assessment will assist in identifying if contributions may be required towards the maintenance costs for the affected road sections as a result of additional pavement loading. This will form part of the draft Outline Environmental Management Plan and subsequent EMPs to be developed prior to construction. This will assist further discussions with DTMR to identify if contributions may be required towards the maintenance costs for the affected road sections as a result of additional pavement loading.

5.6.3 State-controlled roads mitigation measures

Pavement mitigations on DTMR roads can be comprised of financial marginal cost contributions, non-financial mitigations, or a combination of both based on SAR assessment criteria, and further discussions between ARTC, DTMR and the construction contractor. The below mitigation measures are based on the *DTMR Guide to Traffic Impact Assessment Practice Note: Pavement Impact Assessment, December 2018*, and further guidance from DTMR regarding the approaches for pavement impacts. These are based on the below SAR assessment criteria:

- 0 per cent to 5 per cent increase in SAR based on the *Guide to Traffic Impact Assessment Practice Note: Pavement Impact Assessment, December 2018*
- >5 per cent to 400 per cent increase in SAR based on meeting with DTMR, FFJV and ARTC on 29/06/2022. The Department of Transport and Main Roads Subject Matter Experts (SME's) advised the financial contribution is linear between 5 per cent and 400 per cent and calculated contribution would be considered appropriate. However, each individual site should be evaluated in terms of existing condition, ability to withstand construction traffic and likely final condition as well as the required financial contribution.
- Above 400 per cent increase in SAR based on meeting with DTMR, FFJV and ARTC on 29 June 2022. The DTMR's Subject Matter Experts (SMEs) advised that a separate analysis was required. Moreover, there is currently no assessment model to determine the pavement impacts over 400 per cent.

No unsealed SCR are expected to be impacted by the Project construction traffic. Therefore, no mitigation measures for this road type are proposed.

The PIA results indicate that a total of 265 SCR road sections (including franchise roads where information was provided) were assessed between 2024 and 2028 when construction activities are assumed to occur, to determine the impacts on SAR. Table 5.57 provides a breakdown of the road segments that will be reaching the SAR assessment criteria thresholds mentioned above in each year of construction.

Table 5.57 Road segments which trigger the specified thresholds by year

Impact threshold	2024	2025	2026	2027	2028
≤ 5%	152	106	133	159	257
> 5% and ≤ 400%	113	159	132	106	8
> 400%	0	0	0	0	0

The SCR pavement mitigation decision tree is shown in Figure 5.11, with mitigation measures discussed below.

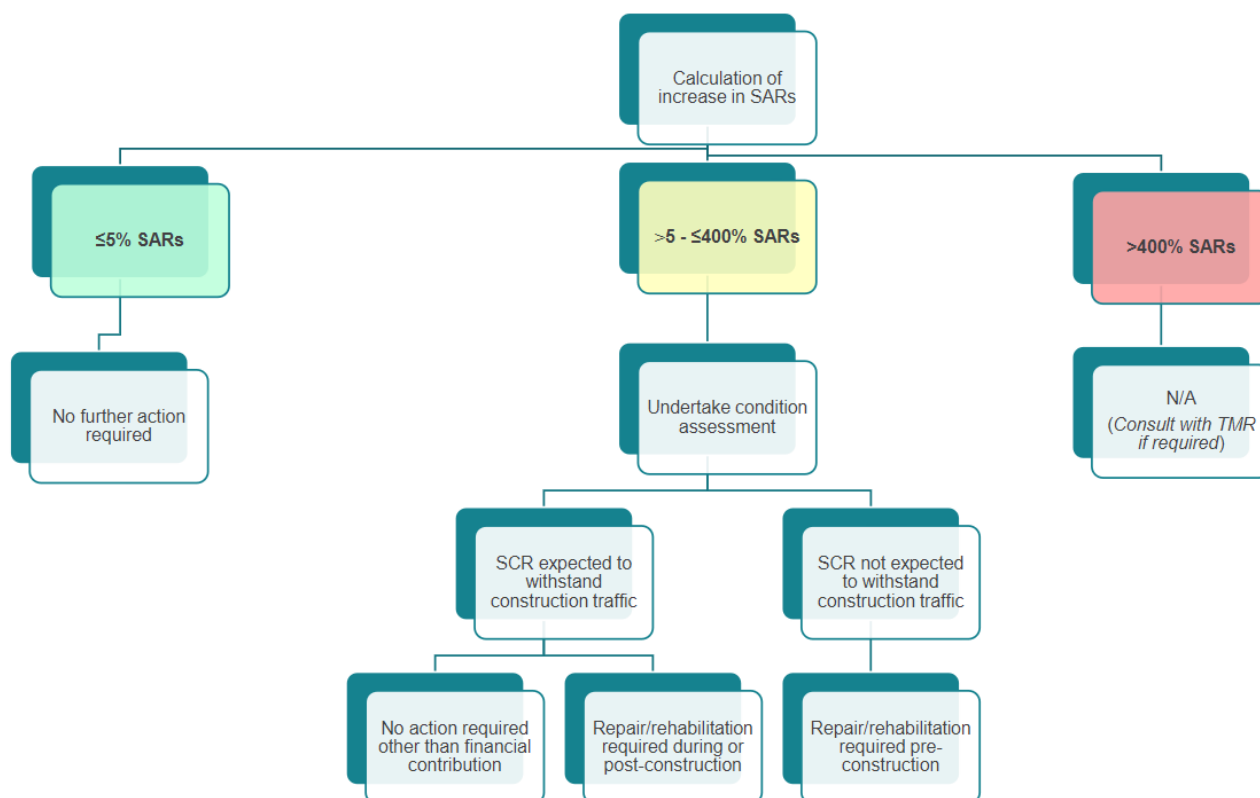


Figure 5.11 State controlled roads pavement mitigation decision tree

As shown in Figure 5.11, it is recommended that no action or further assessment is required for SCR that are categorised ≤5 per cent SAR. All other road segments require a condition assessment, as outlined in Section 5.6.3.1.

After each site has had its condition assessed, the mitigation actions have been separated into the following categories:

- No action required other than financial contribution:
 - The existing pavement is expected to remain in acceptable condition after construction and therefore no pre or post works are anticipated
 - This mitigation measure can be applied to pavements where a financial contribution is acceptable up to the contribution amount discussed in Section 5.6.3.2.
- No action required prior to construction (Repair/rehabilitation required post-construction):
 - The existing condition of the SCR is sufficient to enable construction traffic and therefore does not warrant any mitigation measure prior to construction
 - Mitigation actions may be required include:
 - The condition of the pavement remains acceptable even after construction is complete and therefore only a financial contribution post-construction up to the contribution amount discussed in Section 5.6.3.2 is required

- The pavement condition is unacceptable after construction and therefore repairs/rehabilitation is required post-construction up to the contribution amount discussed in Section 5.6.3.2.
- Repair/rehabilitation required before construction:
 - The existing condition of the SCR is poor and is not expected to withstand the construction traffic, thereby requiring works before construction as discussed in Section 5.6.3.3
 - A mitigation action is required pre-construction to bring the SCR up to a serviceable level up to the contribution amount discussed in Section 5.6.3.2

Consideration should also be given to how the contribution amount is allowed for each SCR depending on the SAR and pavement condition.

If the SCR is in poor condition prior to the start of construction, then the mitigation should be provided by DTMR with the option for ARTC to undertake an appropriate action to make the SCR suitable for use. If the SCR dilapidates due to construction activities, then ARTC will work with the road authority to ensure no net worsening of the SCR.

5.6.3.1 Condition assessment

It is proposed that for the road segments which are categorised 0 per cent to 5 per cent increase in SAR, a condition assessment be discounted as there is minimal impact to the existing pavement.

Condition assessments are required in the Construction Works stage of the Project to determine the appropriate mitigation measure to be applied to the road segments which were categorised over 5 per cent increase in SAR.

Terminal limits are to be agreed upon with asset owners prior to condition assessment. Terminal values for rutting, roughness, and maximum deflection (to be determined via Traffic Speed Deflectometer) are to be agreed upon prior to assessment of the road segments.

5.6.3.2 Financial marginal cost contributions

The 5 per cent comparison assessment concluded that 12 DTMR roads exceed the 5 per cent threshold in at least one year of construction. Since the 5 per cent threshold has been reached, contributions for these sections of the SCR network may be required. Contribution amounts for the SCR network have been calculated and provided in a technical memo to the OCG.

No estimate was undertaken for local government roads as marginal cost information is not available for these roads.

5.6.3.3 Non-financial mitigations

Table 5.58 outlines pavement mitigations to be implemented to minimise impacts on the road network.

Table 5.58 Pavement mitigations to minimise impact

Stage	Mitigation	Mitigation outcome
Pre-Construction Activities and Early Works and Construction Works	All vehicles, machinery and mobile construction equipment will be required to carry a clean-down record. Mobile weed clean-down facilities will be provided at construction areas accessed by public roads and of high-risk weed infestation depending on construction staging and methodology.	Will prevent track-out and deterioration of the pavement surface.
	A rock bed may be installed as appropriate at vehicle/equipment site exit points.	
	Install shaker grids or rumble pads at site exit points from construction activities.	Reduce the potential for soil spill onto transport corridors and the deterioration of the pavement surface.

Where reconstruction or rehabilitation of pavements is required prior, during and post construction, mitigation measures will be developed through consultation with relevant asset owners prior to the commencement of construction. Mitigation measures which could be adopted include:

- Regrade and reseal
- Overlay of existing pavement with appropriate material
- Application of sprayed seal wearing course
- Asphalt re-sheeting
- Selective reconstruction with appropriate material. Where failures are evident.
- In situ stabilisation of existing pavement materials
- Total reconstruction.

Additional investigation may be required depending on the action that is adopted. For example, a geotechnical investigations and traffic design may be required to provide a pavement design for a total reconstruction action.

5.6.4 Local government road mitigation measures

Pavement mitigations on local government roads are proposed to be comprised of condition assessments and pavement rehabilitation and upgrade, based on SAR assessment criteria, and further discussions between ARTC, LGA and the construction contractor. Table 5.59 outlines proposed LGR pavement mitigation measures.

Table 5.59 Local Government Road pavement mitigation measures

Stage	Mitigation	Mitigation outcome
Pre-Construction Activities and Early Works and Construction Works	All vehicles, machinery and mobile construction equipment will be required to carry a clean-down record. Mobile weed clean-down facilities will be provided at construction areas accessed by public roads and of high-risk weed infestation depending on construction staging and methodology.	Will prevent track-out and deterioration of the pavement surface.
	A rock bed may be installed as appropriate at vehicle/equipment site exit points.	
	Install shaker grids or rumble pads at site exit points from construction activities.	Reduce the potential for soil spill onto transport corridors and the deterioration of the pavement surface.
	Unsealed roads: Undertake visual pavement condition assessments (either manual or vehicle mounted high speed condition survey) prior to and post construction activities. The pavement assessment for unsealed LGR roads should be agreed with Council before construction commences and should identify measures to avoid, reduce or mitigate effects on the pavement life of the LGR. Typical measures include: ■ Provide a payment contribution for future pavement works ■ Seal an unsealed pavement ■ Provide maintenance during construction ■ Undertake road rehabilitation. ■ Pre and post construction rutting surveys	A visual condition assessment is advised in order to mitigate for the construction related traffic impacts so that the impacted road is returned to a similar condition to what is identified in the pre-construction visual pavement condition assessment. Maintain road to existing condition (or better) during construction.

Stage	Mitigation	Mitigation outcome
	Sealed and asphalt roads: Commitment to undertake a condition and dilapidation surveys and assessment (e.g. National Association of Australian State Road Authorities (NAASRA) roughness count) prior and post construction activities, as well as at ongoing intervals during construction. These intervals should be agreed with Council before construction commences and should identify measures to avoid, reduce or mitigate effects on the pavement life of the LGR. Typical measures include: ■ Provide a payment contribution for future pavement works ■ Provide extra pavement width (for example, to prevent edge degradation) ■ Provide additional pavement thickness ■ Provide maintenance during construction ■ Undertake pavement rehabilitation ■ Pre and post construction rutting surveys.	The current condition of the pavements will be classified based on Section 4 of <i>Austroads Guide to Pavement Technology, Part 5</i> (2019), whereby the degradation of the pavements will be based on international roughness index values or NAASRA roughness counts to enable the impact of construction traffic and <i>Austroads Guide to Pavement Terminology 05-11 2019</i> Table 4.1. The degradation of the pavements based on NAASRA roughness count will be calculated, enabling the impact of construction traffic and the works required to restore the pavement to the pre-construction condition to be quantified. Where the level of roughness measured prior to construction exceeds the maximum desirable level for the class of road, the road has already exceeded its design life. In these cases, the intervention required will be agreed on a case-by-case basis with the road controlling authority. Maintain road to existing condition (or better) during construction.
	Commitment to consult with relevant stakeholders during the Detailed Design stage on mitigation measures to ensure structural capacities are maintained and agreement on the minimum design life of returned works (to be included in a Third-Party Agreement) as well as agreed contribution towards the consumption of pavement design life by construction related vehicles.	To ensure that pavement structural capacities are maintained and that deterioration as a result of construction related traffic is mitigated during and post construction.
	The use of a LGR owner-approved maintenance contractor to maintain the envisaged impacted road for the duration of the construction period. This may entail works such as crack sealing, pothole patching, edge repairs, resealing, and grading (of gravel roads) etc.	To ensure that pavement deterioration as a result of construction related traffic is mitigated during and post construction.

5.7 Transport infrastructure impact assessment and mitigation

5.7.1 Bridge and culvert constraints

No detailed assessment has currently been undertaken with regards to bridge and culvert limits, however, a preliminary assessment identified a number of potential construction traffic restrictions along local government roads as provided in Table 5.60. These were confirmed in a site visit, with site visit photos provided in Appendix BU. Should HVs be required to traverse these bridges or culverts, an assessment will need to be undertaken and further investigation and inspections will need to take place – the outcomes of which may lead to upgrading these bridges for construction and operational purposes.

Table 5.60 Potential construction traffic restrictions

Name/location	Restriction	Comment	Largest construction vehicle
Goondiwindi Regional Council			
Mooroobie Lane	Creek crossing/potential floodway	Mooroobie Lane is used to access Cemetery Road Borrow Site and Mooroobie Lane Borrow Site	Austroads Class 10
McDougalls Crossing	Creek crossing/potential load limited crossing structure	Crossing structure over Macintyre Brook potentially unsuitable for construction traffic	Austroads Class 10
Cremascos Road	Creek crossing/potential load limited crossing structure	Crossing structure over Macintyre Brook potentially unsuitable for construction traffic	OSOM
Bybera Road	Creek crossing/potential load limited crossing structure	Crossing structure over Macintyre Brook potentially unsuitable for construction traffic	OSOM
Lovell's Crossing	Creek crossing/potential load limited crossing structure	Crossing structure over Macintyre Brook potentially unsuitable for construction traffic	Austroads Class 10
Grays Road	Creek crossing/potential load limited crossing structure	Crossing structure over Canning Creek potentially unsuitable for construction traffic Grays Road is used to access Mosquito Road Borrow Site	Austroads Class 10

No over-height construction vehicles are currently considered necessary in the construction of the Project. Based on the site visits and desktop assessments undertaken, there have been no known horizontal clearance issues for construction or maintenance requirements. This will also require further assessment during the next stage once construction routes are finalised.

Once a construction contractor is appointed and the final construction routes are determined, all construction routes will be further assessed and ground-truthed prior to use by construction vehicles. This includes obtaining all necessary permits and ensuring roads meet appropriate performance standards and any road upgrades that may be required are considered. Any roads or existing structures located along construction routes that may warrant upgrades to cater for the Project's construction vehicles will be required to be assessed in consultation with the asset owner, the road controlling authority, local councils, ARTC and the construction contractor to determine if the upgrade is warranted as a part of the Project.

5.7.2 Heavy vehicle routes and restrictions

Table 5.62 provides a summary of HV routes restrictions and descriptions as defined for Queensland (abbreviations expanded in Table 5.61, while also providing a comparison of the largest construction vehicle proposed for each road section.

Table 5.61 Heavy vehicle routes and restrictions abbreviations

Heavy vehicle route restrictions	Description
B23	B-double vehicles up to 23 m
B25	B-double vehicles up to 25 m
RT1	Road train type 1
RT1	Road train type 2
HML	Higher mass limits vehicles
P2B	Performance-based standards scheme
1TMT	1 Tonne Tri-Axle Mass Transfer Allowance

Table 5.62 Heavy vehicle routes and restrictions along construction routes

Road name	Road section	Heavy vehicle routes and restrictions	Largest construction vehicle
State-Controlled Roads: Department of Transport and Main Roads			
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	1TMT, HML, RT1	Class 10
	Ch 0.8 km to Ch 2.0 km	1TMT, HML, RT1	Class 10
	Ch 2.0 km to Ch 45.9 km	RT1	Class 10
	Ch 45.9 km to Ch 88.0 km	RT1	Class 10
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	RT1	Class 10
	Ch 1.6 km to Ch 66.8 km	RT1	Class 10
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	1TMT, HML, RT1	Class 10
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	1TMT, HML, RT1	Class 9
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	RT1	Class 7
	Ch 96.2 km to Ch 97.5 km	RT1	Class 10
	Ch 97.5 km to Ch 105.7 km	RT1	Class 10
	Ch 105.7 km to Ch 107.4 km	RT1	OSOM
	Ch 107.4 km to Ch 107.6 km	RT1	OSOM
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	RT1	OSOM
	Ch 2.0 km to Ch 3.9 km	RT1	OSOM
	Ch 3.9 km to Ch 10.2 km	RT1	OSOM
	Ch 10.2 km to Ch 13.9 km	RT1	OSOM
	Ch 13.9 km to Ch 18.5 km	RT1	OSOM
	Ch 18.5 km to Ch 27.1 km	RT1	OSOM
	Ch 27.1 km to Ch 29.3 km	RT1	OSOM
	Ch 29.3 km to Ch 34.7 km	RT1	OSOM
	Ch 34.7 km to Ch 39.6 km	RT1	OSOM
	Ch 39.6 km to Ch 40.3 km	RT1	OSOM
	Ch 40.3 km to Ch 40.5 km	RT1	OSOM
	Ch 40.5 km to Ch 43.9 km	RT1	Class 10
	Ch 43.9 km to Ch 46.3 km	RT1	Class 10
	Ch 46.3 km to Ch 88.0 km	RT1	Class 9
	Ch 88.0 km to Ch 88.2 km	RT1	Class 10
	Ch 88.2 km to Ch 90.0 km	RT1	Class 9
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	P2B, 1TMT, HML, B25	Class 10
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	P2B, 1TMT, HML, B25	Class 10
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	1TMT, HML, RT1	OSOM
	Ch 2.2 km to Ch 5.4 km	1TMT, HML, RT1	OSOM
	Ch 5.4 km to Ch 6.7 km	1TMT, HML, RT1	OSOM
	Ch 6.7 km to Ch 7.7 km	1TMT, HML, RT1	OSOM
	Ch 7.7 km to Ch 11.2 km	1TMT, HML, RT1	OSOM

Road name	Road section	Heavy vehicle routes and restrictions	Largest construction vehicle
	Ch 11.2 km to Ch 15.3 km	1TMT, HML, RT1	OSOM
	Ch 15.3 km to Ch 17.5 km	1TMT, HML, RT1	OSOM
	Ch 17.5 km to Ch 19.0 km	1TMT, HML, RT1	OSOM
	Ch 19.0 km to Ch 20.3 km	1TMT, HML, RT1	OSOM
	Ch 20.3 km to Ch 21.5 km	1TMT, HML, RT1	OSOM
	Ch 21.5 km to Ch 23.2 km	1TMT, HML, RT1	OSOM
	Ch 23.2 km to Ch 25.0 km	1TMT, HML, RT1	OSOM
	Ch 25.0 km to Ch 30.1 km	1TMT, HML, RT1	OSOM
	Ch 30.1 km to Ch 38.7 km	1TMT, HML, RT1	OSOM
	Ch 38.7 km to Ch 41.1 km	1TMT, HML, RT1	OSOM
	Ch 41.1 km to Ch 41.7 km	1TMT, HML, RT1	OSOM
	Ch 41.7 km to Ch 43.2 km	1TMT, HML, RT1	OSOM
	Ch 43.2 km to Ch 44.7 km	1TMT, HML, RT1	OSOM
	Ch 44.7 km to Ch 47.6 km	1TMT, HML, RT1	OSOM
	Ch 47.6 km to Ch 52.2 km	1TMT, HML, RT1	OSOM
	Ch 52.2 km to Ch 53.3 km	1TMT, HML, RT1	OSOM
	Ch 53.3 km to Ch 60.8 km	1TMT, HML, RT1	OSOM
	Ch 60.8 km to Ch 63.0 km	1TMT, HML, RT1	Class 10
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	1TMT, HML, RT1	Class 10
	Ch 0.7 km to Ch 0.8 km	1TMT, HML, RT1	Class 10
	Ch 0.8 km to Ch 1.4 km	1TMT, HML, RT1	Class 10
	Ch 1.4 km to Ch 3.0 km	1TMT, HML, RT1	Class 10
	Ch 3.0 km to Ch 13.0 km	1TMT, HML, RT1	Class 10
	Ch 13.0 km to Ch 121.6 km	1TMT, HML, RT1	Class 10
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	P2B, 1TMT, HML, B25	Class 10
	Ch 3.7 km to Ch 6.4 km	P2B, 1TMT, HML, B25	Class 10
	Ch 6.4 km to Ch 8.3 km	P2B, 1TMT, HML, B25	Class 10
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	1TMT, HML, RT1	Class 10
	Ch 220.1 km to Ch 222.4 km	1TMT, HML, RT1	Class 10
	Ch 222.4 km to Ch 224.1 km	1TMT, HML, RT1	Class 10
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	P2B, 1TMT, HML, B25	Class 10
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	1TMT, HML, RT1	OSOM
	Ch 2.5 km to Ch 3.5 km	1TMT, HML, RT1	OSOM
	Ch 3.5 km to Ch 6.2 km	1TMT, HML, RT1	OSOM
	Ch 6.2 km to Ch 9.0 km	1TMT, HML, RT1	OSOM
	Ch 9.0 km to Ch 13.1 km	1TMT, HML, RT1	OSOM
	Ch 13.1 km to Ch 14.0 km	1TMT, HML, RT1	OSOM
	Ch 14.0 km to Ch 17.3 km	1TMT, HML, RT1	OSOM
	Ch 17.3 km to Ch 18.1 km	1TMT, HML, RT1	OSOM

Road name	Road section	Heavy vehicle routes and restrictions	Largest construction vehicle
	Ch 18.1 km to Ch 21.8 km	RT1	OSOM
	Ch 21.8 km to Ch 28.0 km	RT1	OSOM
	Ch 28.0 km to Ch 33.0 km	RT1	OSOM
	Ch 33.0 km to Ch 35.6 km	RT1	OSOM
	Ch 35.6 km to Ch 37.7 km	RT1	OSOM
	Ch 37.7 km to Ch 39.8 km	RT1	OSOM
	Ch 39.8 km to Ch 41.9 km	RT1	OSOM
	Ch 41.9 km to Ch 45.9 km	RT1	OSOM
	Ch 45.9 km to Ch 47.6 km	RT1	OSOM
	Ch 47.6 km to Ch 53.3 km	RT1	OSOM
	Ch 53.3 km to Ch 55.7 km	RT1	OSOM
	Ch 55.7 km to Ch 56.6 km	RT1	OSOM
	Ch 56.6 km to Ch 59.2 km	RT1	OSOM
	Ch 59.2 km to Ch 61.0 km	RT1	OSOM
	Ch 61.0 km to Ch 65.7 km	RT1	OSOM
	Ch 65.7 km to Ch 68.7 km	RT1	OSOM
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	-	OSOM
	Ch 2.0 km to Ch 2.2 km	-	OSOM
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	P2B, 1TMT, HML, B25	Class 10
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	P2B, 1TMT, HML, B25	Class 10
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	-	Class 10
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	1TMT, HML, RT1	Class 9
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	1TMT, HML, RT1	Class 9
	Ch 6.0 km to Ch 6.4 km	1TMT, HML, RT1	Class 9
	Ch 6.4 km to Ch 8.3 km	1TMT, HML, RT1	Class 9
	Ch 8.3 km to Ch 9.2 km	1TMT, HML, RT1	Class 10
	Ch 9.2 km to Ch 10.0 km	1TMT, HML, RT1	Class 9
	Ch 10.0 km to Ch 10.1 km	1TMT, HML, RT1	Class 9
	Ch 10.1 km to Ch 10.3 km	1TMT, HML, RT1	Class 10
	Ch 10.3 km to Ch 12.1 km	1TMT, HML, RT1	OSOM
	Ch 12.1 km to Ch 14.5 km	RT1	OSOM
	Ch 14.5 km to Ch 16.3 km	RT1	OSOM
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	1TMT, HML, RT1	Class 9
	Ch 26.9 km to Ch 27.1 km	1TMT, HML, RT1	Class 9
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	1TMT, HML, RT1	Class 10
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	1TMT, HML, RT1	Class 10
	Ch 0.6 km to Ch 3.2 km	1TMT, HML, RT1	OSOM
	Ch 3.2 km to Ch 4.1 km	1TMT, HML, RT1	OSOM

Road name	Road section	Heavy vehicle routes and restrictions	Largest construction vehicle
	Ch 4.1 km to Ch 13.0 km	1TMT, HML, RT1	OSOM
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	1TMT, HML, RT1	OSOM
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	1TMT, HML, RT1	OSOM
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	1TMT, HML, RT1	Class 10
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	1TMT, HML, RT1	Class 10
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	1TMT, HML, RT1	OSOM
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	1TMT, HML, RT1	OSOM
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	P2B, 1TMT, HML, B25	Class 10
	Ch 7.2 km to Ch 15.1 km	P2B, 1TMT, HML, B25	Class 10
	Ch 15.1 km to Ch 18.9 km	P2B, 1TMT, HML, B25	Class 10
	Ch 18.9 km to Ch 28.9 km	P2B, 1TMT, HML, B25	Class 10
	Ch 28.9 km to Ch 36.6 km	P2B, 1TMT, HML, B25	Class 10
	Ch 36.6 km to Ch 55.5 km	P2B, 1TMT, HML, B25	Class 10
	Ch 55.5 km to Ch 75.4 km	P2B, 1TMT, HML, RT1	Class 10
	Ch 75.4 km to Ch 79.6 km	P2B, 1TMT, HML, RT1	Class 10
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	1TMT, HML, RT1	Class 9
	Ch 0.4 km to Ch 1.5 km	1TMT, HML, RT1	OSOM
	Ch 1.5 km to Ch 2.4 km	1TMT, HML, RT1	OSOM
	Ch 2.4 km to Ch 4.5 km	1TMT, HML, RT1	OSOM
	Ch 4.5 km to Ch 5.0 km	1TMT, HML, RT1	OSOM
	Ch 5.0 km to Ch 5.3 km	1TMT, HML, RT1	OSOM
	Ch 5.3 km to Ch 6.2 km	1TMT, HML, RT1	OSOM
State-Controlled Road: Transport for New South Wales			
Newell Highway	River Road to Queensland/NSW Border	1TMT, HML, RT1	Class 7
Local Government Road: Balonne Shire Council			
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	RT1	Class 10
Local Government Road: Goondiwindi Regional Council			
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	RT1	Class 5
Bybera Road	Cunningham Highway to B2G-LDN060.4	-	OSOM
	B2G-LDN060.4 to Earthworks Area 2A	-	Class 10
Cemetery Road	Access Track to Moorobie Lane	-	Class 10
	Cunningham Highway to GrainCorp Goondiwindi	RT1	Class 10

Road name	Road section	Heavy vehicle routes and restrictions	Largest construction vehicle
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	-	Class 7
	Coolmunda Dam Access to Cunningham Highway	-	Class 7
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	B25	OSOM
	B2G-LDN055.4 to B2G-LDN054.2	B25	Class 9
	Cunningham Highway to B2G-LDN052.8	B25	OSOM
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	-	Class 10
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	-	Class 10
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	-	OSOM
	NS2B-LDN033.2 to NS2B-LDN035.6	-	Class 10
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	-	Class 10
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	-	Class 10
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	-	Class 10
Hunt Street	Leichhardt Highway to Boodle Street	RT1	Class 5
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	-	OSOM
	NS2B-LDN031.0 to South Kurumbul Road	-	OSOM
	South Kurumbul Road to Cunningham Highway	1TMT, HML, RT1	OSOM
	Cunningham Highway to Eukabilla Road	1TMT, HML, RT1	Class 9
McDougalls Road	B2G-LDN049.8 to McDougalls Road	-	Class 10
	McDougalls Road to Cunningham Highway	-	Class 10
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	-	Class 10
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	-	Class 10
	Mooroobie Lane to Wondalli Kurumbul Road	-	Class 10
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	-	Class 10
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	-	Class 10
Silo Street	Barwon Highway to GrainCorp Talwood	-	Class 10
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	-	Class 10
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	-	Class 10
Springborg Road	Cunningham highway to B2G-LDN037.6	-	Class 10
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	-	Class 10
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	-	Class 10
	B2G-LDN067.6 to Millmerran-Inglewood Road	-	OSOM
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	1TMT, HML	Class 5
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	-	OSOM
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	-	Class 10

Road name	Road section	Heavy vehicle routes and restrictions	Largest construction vehicle
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	-	Class 10
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	-	Class 10
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	-	Class 10
	B2G-LDN006.3 to Wondalli Kurumbul Road	-	Class 10
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	-	Class 10
	Yelarbon Kurumbul Road to B2G-LDN020.3	-	Class 10
	B2G-LDN020.3 to B2G-LDN025.9	-	Class 10
	B2G-LDN025.9 to Cunningham Highway	-	OSOM
Local Government Road: Moree Plains Shire Council			
Boggabilla Weir Access	River Road to Boggabilla Weir	-	Class 7
River Road	Newell Highway to Boggabilla Weir Access	-	Class 7
Local Government Road: Toowoomba Regional Council			
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	RT1	Class 9
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	RT1	Class 9
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	RT1	Class 5
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	-	Class 10
	B2G-LDN188.2 to Gore Highway	-	OSOM
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	-	OSOM
Blackwell Road	Gore Highway to Millmerran Quarry	-	Class 10
	Millmerran Quarry to B2G-LDN120.2	-	Class 10
	B2G-LDN120.2 to Millmerran-Inglewood Road	-	Class 10
Bligh Street	Six Mile Road to Boral Concrete Millmerran	-	Class 5
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	-	OSOM
	Brimblecombe Road to WL 194467R	-	Class 7
Bushy Lane	B2G-LDN183.0 to Gore Highway	-	Class 10
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	RT1	Class 10
	Saleyards Road to Gore Highway	RT1	Class 5
Chamberlain Road	Warrego Highway to B2G-LDN204.2	-	OSOM
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	-	OSOM
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	-	OSOM
Dieckmann Road	B2G-LDN150.5 to Gore Highway	-	OSOM
Draper Road	Steger Road to B2G-FBW206.9	RT1	Workers
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	RT1	Class 10
	Access Track to Greenwattle Street	RT1	Class 9

Road name	Road section	Heavy vehicle routes and restrictions	Largest construction vehicle
Florence Street	Gore Highway to West Street	-	Class 5
Forestry Road	Access Track to Millmerran-Inglewood Road	-	Class 10
	Millmerran-Inglewood Road to Earthworks Area 3B	-	Class 10
Fysh Road	B2G-LDN147.1 to Gore Highway	-	Class 10
Gap Road	Gore Highway to Grevillea Street	-	Class 5
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	-	Class 10
Gilgai Lane	B2G-LDN144.6 to Gore Highway	-	OSOM
Grevillea Street	Boral Concrete Pittsworth to Gap Road	-	Class 5
Hall Road	B2G-LDN139.0 to Gore Highway	-	OSOM
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	-	Class 10
	B2G-LDN116.0 to Millmerran-Inglewood Road	-	OSOM
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	-	Class 10
Kahler Road	Murlaggan Road to B2G-LDN165.6	-	Class 10
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	-	OSOM
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	1TMT, HML, B25	OSOM
Koroongarra Road	Borrow Site #13 (Koroongarra Road) to Millwood Road	-	Class 10
	Millmerran-Inglewood Road to Commodore Mine	-	Class 10
Leesons Road	Warrego Highway to Steger Road	-	Class 10
	Steger Road to B2G-LDN206.3	-	Class 10
Linthorpe Road	Gore Highway to B2G-LDN175.5	-	OSOM
Linthorpe Valley Road	Geitz Road to Gore Highway	-	Class 10
Lochaber Road	Gore Highway to B2G-LDN172.0	RT1	OSOM
	B2G-LDN172.0 to B2G-LDN172.6	RT1	OSOM
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	-	Class 9
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	-	Class 10
	B2G-LDN112.1 to Millwood Road	-	Class 10
	Millwood Road to Koroongarra Road	-	Class 10
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	-	Class 7
Murlaggan Road	B2G-LDN164.3 to Kahler Road	-	Class 10
	Kahler Road to Gore Highway	-	Class 10
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	1TMT, HML, RT1	OSOM
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	1TMT, HML, RT1	Class 10
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	-	Class 10
	B2G-LDN128.2 to B2G-LDN130.0	-	OSOM

Road name	Road section	Heavy vehicle routes and restrictions	Largest construction vehicle
	B2G-LDN130.0 to Millmerran-Inglewood Road	-	OSOM
Paint Mine Road	Gore Highway to B2G-LDN173.5	-	Class 10
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	-	OSOM
Quarry Road Access	Tummalville Road to Quarry	-	Class 10
Saleyards Road	Campbell Street to Gore Highway	-	Class 10
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	-	OSOM
Scragg Road	Commodore Peak Road to B2G-LDN123.6	-	OSOM
	B2G-LDN123.6 to B2G-LDN123.8	-	OSOM
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	-	Class 10
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	1TMT, HML, RT1	Class 7
	New Hope Recycled Water Pipeline to Draper Road	1TMT, HML, RT1	Class 7
	Draper Road to Leeson's Road	1TMT, HML, RT1	Class 7
Tummalville Road	Access Track to Gore Highway	-	Class 10
Turallin Road	Gore Highway to the Turallin Facility	-	Class 10
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	-	Class 10
	B2G-LDN153.1 to Gore Highway	-	OSOM
	Gore Highway to B2G-LDN150.9	-	Class 10
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	-	Class 10
West Street	Gore Highway to Florence Street	-	Class 5
	Florence Street to Six Mile Road	-	Class 5
Yarranlea Road	Gore Highway to B2G-LDN161.0	B25	OSOM
	B2G-LDN161.0 to Desmonds Lane	B25	OSOM

Where HVs routes and restrictions are defined, the Project construction vehicles comply with these requirements, with the exception of OSOM vehicles. These are generally SCR. There are a number of roads used by construction vehicles which are not defined under the Queensland HV routes and restrictions information. Routes unclassified for HV use are generally local government roads which usually have no requirement for B-double, higher mass limit or road train-sized vehicles. These roads may not typically be designed for such large vehicle types, the construction vehicles could impact on the pavement or road formation or be unsuitable for the road geometry.

5.7.2.1 Oversize overmass vehicles

The transport corridors identified have taken into consideration the restrictions on vehicle sizes through the NHVR journey planner tool. However, if required and necessary for the Project, all RAV (restricted access vehicles) and OSOM vehicles required to transport special equipment will apply for the necessary permits from DTMR, QR and other relevant authorities as well as the Heavy Vehicle (Mass, Dimension and Loading) National Regulation 2013 (the Regulation) including all applicable legislative requirements from TfNSW.

At this stage, oversize vehicles are assumed to be required for the Super-T precast concrete bridge girders, with a possible requirement for movement of a small proportion of rail components. This requirement may change during Detailed Design stage. Similarly, at this stage, the performance based standard level 3B (PBS3B) vehicles are not nominated as the design vehicle for construction traffic, while the majority of the construction routes are not suitable for this vehicle type. The construction contractor may stipulate the use of these vehicles but will be required to prepare route assessments accordingly. If the construction contractor does stipulate the use of PBS Class B vehicles, mitigation measures should be determined through the assessment process using *DTMR Performance Based Standards Queensland Network Classification Guideline – Level 2B, Level 3B, Level 4B Roads (November 2014)*.

Where applicable, the permits and approvals will be sought by the appointed construction contractor once delivery materials and routes are determined. The development of final construction routes should include an assessment of above and underground services as well as vehicle swept paths that may be affected by OSOM vehicles. Noting that ARTC have undertaken consultation with all public utility providers with known assets intersected by the Project, including in relation to the protection of assets from construction traffic (e.g. APA Group regarding the temporary and permanent protection of the Roma Brisbane Gas Pipeline).

The relevant routes being utilised to transport 29 m Super-T precast concrete bridge girder are shown in and Appendix K to Appendix L, with the potentially impacted links listed in Table 5.63.

Table 5.63 Construction routes used by oversize vehicles

Road name	Road section
State-Controlled Roads: Department of Transport and Main Roads	
Cunningham Highway (17C)	Ch 105.7 km to Ch 107.4 km
	Ch 107.4 km to Ch 107.6 km
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km
	Ch 2.0 km to Ch 3.9 km
	Ch 3.9 km to Ch 10.2 km
	Ch 10.2 km to Ch 13.9 km
	Ch 13.9 km to Ch 18.5 km
	Ch 18.5 km to Ch 27.1 km
	Ch 27.1 km to Ch 29.3 km
	Ch 29.3 km to Ch 34.7 km
	Ch 34.7 km to Ch 39.6 km
	Ch 39.6 km to Ch 40.3 km
	Ch 40.3 km to Ch 40.5 km
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km
	Ch 2.2 km to Ch 5.4 km
	Ch 5.4 km to Ch 6.7 km
	Ch 6.7 km to Ch 7.7 km
	Ch 7.7 km to Ch 11.2 km
	Ch 11.2 km to Ch 15.3 km
	Ch 15.3 km to Ch 17.5 km
	Ch 17.5 km to Ch 19.0 km
	Ch 19.0 km to Ch 20.3 km
	Ch 20.3 km to Ch 21.5 km
	Ch 21.5 km to Ch 23.2 km
	Ch 23.2 km to Ch 25.0 km
	Ch 25.0 km to Ch 30.1 km

Road name	Road section
	Ch 30.1 km to Ch 38.7 km
	Ch 38.7 km to Ch 41.1 km
	Ch 41.1 km to Ch 41.7 km
	Ch 41.7 km to Ch 43.2 km
	Ch 43.2 km to Ch 44.7 km
	Ch 44.7 km to Ch 47.6 km
	Ch 47.6 km to Ch 52.2 km
	Ch 52.2 km to Ch 53.3 km
	Ch 53.3 km to Ch 60.8 km
Millmerran - Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km
	Ch 2.5 km to Ch 3.5 km
	Ch 3.5 km to Ch 6.2 km
	Ch 6.2 km to Ch 9.0 km
	Ch 9.0 km to Ch 13.1 km
	Ch 13.1 km to Ch 14.0 km
	Ch 14.0 km to Ch 17.3 km
	Ch 17.3 km to Ch 18.1 km
	Ch 18.1 km to Ch 21.8 km
	Ch 21.8 km to Ch 28.0 km
	Ch 28.0 km to Ch 33.0 km
	Ch 33.0 km to Ch 35.6 km
	Ch 35.6 km to Ch 37.7 km
	Ch 37.7 km to Ch 39.8 km
	Ch 39.8 km to Ch 41.9 km
	Ch 41.9 km to Ch 45.9 km
	Ch 45.9 km to Ch 47.6 km
	Ch 47.6 km to Ch 53.3 km
	Ch 53.3 km to Ch 55.7 km
	Ch 55.7 km to Ch 56.6 km
	Ch 56.6 km to Ch 59.2 km
	Ch 59.2 km to Ch 61.0 km
	Ch 61.0 km to Ch 65.7 km
	Ch 65.7 km to Ch 68.7 km
Millmerran - Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km
	Ch 2.0 km to Ch 2.2 km
Toowoomba - Cecil Plains Road (324)	Ch 10.3 km to Ch 12.1 km
	Ch 12.1 km to Ch 14.5 km
	Ch 14.5 km to Ch 16.3 km
Toowoomba Bypass (319B)	Ch 0.6 km to Ch 3.2 km
	Ch 3.2 km to Ch 4.1 km
	Ch 4.1 km to Ch 13.0 km
Toowoomba Bypass Off Ramp (319B)	Toowoomba Bypass to Warrego Highway

Road name	Road section
Toowoomba Bypass On Ramp (319B)	Warrego Highway to Toowoomba Bypass
Toowoomba Bypass Off Ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road
Toowoomba Bypass On Ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass
Warrego Highway (18B)	Ch 0.4 km to Ch 1.5 km
	Ch 1.5 km to Ch 2.4 km
	Ch 2.4 km to Ch 4.5 km
	Ch 4.5 km to Ch 5.0 km
	Ch 5.0 km to Ch 5.3 km
	Ch 5.3 km to Ch 6.2 km
Warrego Highway Off Ramp	Warrego Highway to Kingsthorpe Overpass
Local Government Roads: Goondiwindi Regional Council	
Bybera Road	Cunningham Highway to B2G-LDN060.4
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4
	Cunningham Highway to B2G-LDN052.8
Eukabilla Road	Kildonan Road to NS2B-LDN033.2
Kildonan Road	Eukabilla Road to NS2B-LDN031.0
	NS2B-LDN031.0 to South Kurumbul Road
	South Kurumbul Road to Cunningham Highway
Thornton Road	B2G-LDN067.6 to Millmerran - Inglewood Road
Whetstone Access	B2G-LDN044.5 to Cunningham Highway
Yelarbon Kurumbul Road	B2G-LDN025.9 to Cunningham Highway
Local Government Roads: Toowoomba Regional Council	
Athol School Road	B2G-LDN188.2 to Gore Highway
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8
Brimblecombe Road	Toowoomba - Cecil Plains Road to Brimblecombe Road
Chamberlain Road	Warrego Highway to B2G-LDN204.2
Commodore Peak Road	Scragg Road to Millmerran - Inglewood Road
Desmonds Lane	Yarranlea Road to B2G-LDN163.3
Dieckmann Road	B2G-LDN150.5 to Gore Highway
Gilgai Lane	B2G-LDN144.6 to Gore Highway
Hall Road	B2G-LDN139.0 to Gore Highway
Heckendorf Road	B2G-LDN116.0 to Millmerran - Inglewood Road
Kingsthorpe Haden Overpass	Warrego Highway Off Ramp to Kingsthorpe Haden Road
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway
Linthorpe Road	Gore Highway to B2G-LDN175.5
Lochaber Road	Gore Highway to B2G-LDN172.0
	B2G-LDN172.0 to B2G-LDN172.6
Oakey - Pittsworth Road	Gore Highway to B2G-LDN171.0
Owens Scrub Road	B2G-LDN128.2 to B2G-LDN130.0
	B2G-LDN130.0 to Millmerran - Inglewood Road

Road name	Road section
Paton Road	Millmerran - Inglewood Road to B2G-LDN104.5
Schwarten Road	Millmerran - Inglewood Road to B2G-LDN126.9
Scragg Road	Commodore Peak Road to B2G-LDN123.6
	B2G-LDN123.6 to B2G-LDN123.8
Ware Street	B2G-LDN153.1 to Gore Highway
Yarranlea Road	Gore Highway to B2G-LDN161.0
	B2G-LDN161.0 to Desmonds Lane

Maps highlighting precast concrete routes are provided in Appendix X and Appendix Y. Maps indicating the multi-combination HV routes are provided in Appendix S.

5.7.3 Oversize overmass swept path analysis

A preliminary swept path analysis has been undertaken along identified pinch point locations of the proposed oversize vehicle routes. This includes the routes used to transport rail components and precast concrete bridge girders. Once the construction contractor has prepared further plans and chosen their preferred design vehicle, these swept path assessments shall be revisited to determine any temporary changes to the existing layout which may be required to accommodate construction traffic movements, such as localised widening or removal of signage and lighting.

5.7.3.1 Methodology

A review of the route was undertaken to identify potential pinch point locations, where OSOM vehicles are proposed to turn or navigate constrained environments. These pinch point locations were then analysed using the Autodesk Civil 3D vehicle tracking tool to determine whether the design vehicle can perform the turn manoeuvre. An evaluation then determined conflicting areas and required mitigation measures or works required to allow the movement. A summary of the process is provided below:

- Vehicle Tracking in Autodesk Civil 3D 2019 was used as the preferred software suite
- The Map Grid of Australia Zone 56, Geocentric Datum of Australia (GDA) 2020 co-ordinate system was assigned to enable the Online Map feature in Autodesk Civil 3D. This feature was used to display aerial imagery (Bing Maps). Aerial imagery of the pinch point areas was used to provide a scaled background view of existing conditions and road alignment.
- Specific focus was given to each pinch point. The design vehicle was placed on the background imagery in relation to the road alignment and with acceptable vehicle trajectory.
- The swept path movement was performed using the AutoDrive function whilst steering the vehicle through the pinch point area, taking cognisance of both front and rear steering axles. A vehicle turn radius of 23.6 m to the outer body was adopted. The travel pathway through the pinch point was based on the scenario of being most realistic given the constraints of the physical environment with a minimum clearance to objects of 0.5 m outside the swept path envelope.
- An iterative process was followed for each pinch point
- Potential conflict points were identified to be further investigated during the site visit.

A site visit and route drive through was conducted in December 2022 where the pinch points were identified to have significant impacts from the swept path analyses. The combination of the swept path analysis and confirmation of the specific conflict points was used to determine the extent of the conflict areas from which mitigation measures and areas requiring significant works are required. The site visit photos are provided in Appendix BU.

5.7.3.2 Design vehicle

A design vehicle for the movement of rail and precast concrete bridge girders was developed for the purpose of a preliminary swept path analysis. This design vehicle was developed based off the *Western Australia Main Roads Guide to Design of Oversize and Overmass Vehicle Corridors*. The guidelines provide proposed OSOM vehicles of a variety of sizes, with designs and pre-defined AutoDrive vehicle design files. For the purpose of the TIA, a Nicolas 22 Row OSOM vehicle was adopted, with two axles removed from the length to reduce the vehicle size to that required for rail and precast bridges. The final design vehicle specifications used for the swept path analysis is provided in Appendix BB.

5.7.3.3 Pinch points

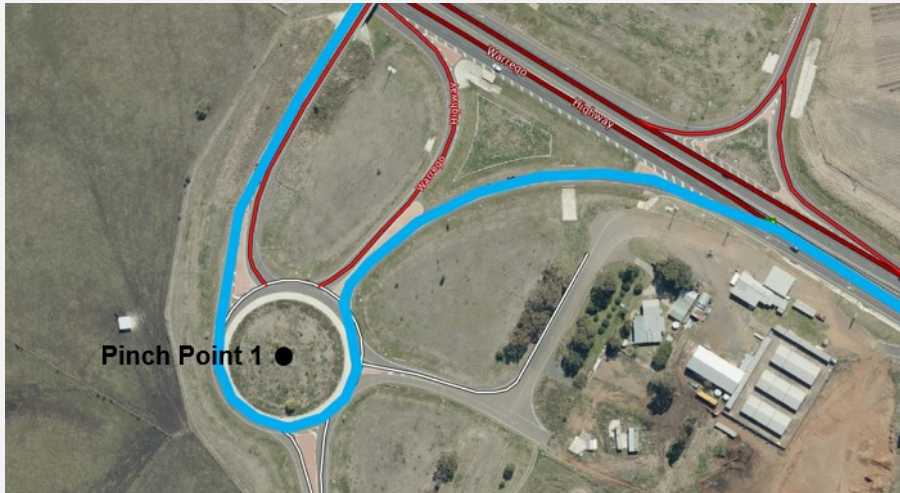
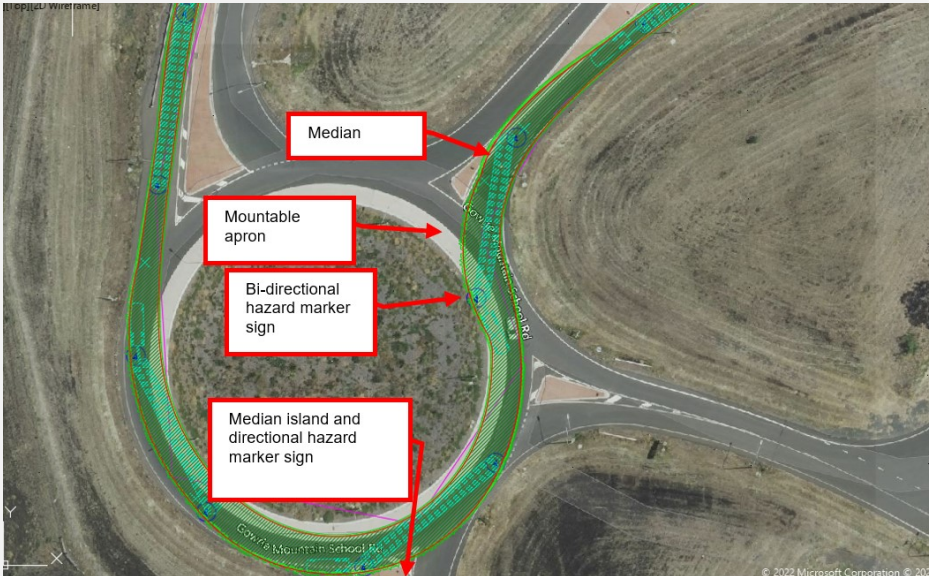
Swept path analysis has been undertaken at a total of 35 identified pinch point locations. These locations were identified through a desktop study of the proposed routes of OSOM movements. The pinch point locations and information is provided in Table 5.64, while the assessment of each pinch point is provided in the following sections. The swept path assessment for each pinch point is provided in Appendix BC.

Table 5.64 Oversize overmass pinch point locations

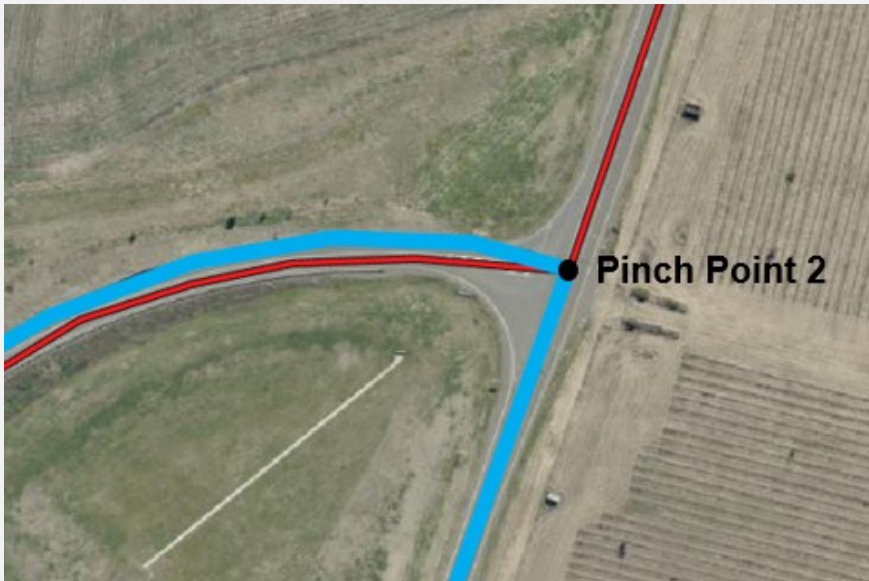
Pinch point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Intersection type
PP1	Warrego Highway off-ramp	Kingsthorpe Overpass	27°49'94.29"S	151°80'42.44"E	Roundabout
PP2	Kingsthorpe Overpass	Kingsthorpe Haden Road	27°49'63.96"S	151°80'75.55"E	Priority 3-way
PP3	Warrego Highway	Access Track	27°50'39.25"S	151°81'58.64"E	Priority 3-way
PP4	Warrego Highway	Chamberlain Road	27°50'65.21"S	151°82'36.47"E	Priority 3-way
PP5	Toowoomba Bypass	Warrego Highway	27°31'25.92"S	151°15'32.56"E	Signalised 4-way
PP6	Warrego Highway	Toowoomba Bypass	27°31'29.36"S	151°51'47.85"E	Signalised 4-way
PP7	Toowoomba-Cecil Plains Road	Toowoomba Bypass	27°32'49.32"S	151°50'07.01"E	Signalised 4-way
PP8	Toowoomba-Cecil Plains Road	Toowoomba Bypass	27°32'48.50"S	151°50'00.20"E	Signalised 4-way
PP9	Gore Highway	Athol School Road	27°37'14.05"S	151°46'01.16"E	Priority 3-way
PP10	Gore Highway	Biddeston Southbrook Road	27°38'41.68"S	151°43'52.32"E	Priority 3-way
PP11	Gore Highway	Linthorpe Road	27°41'42.42"S	151°40'14.98"E	Priority 3-way
PP12	Gore Highway	Lochaber Road	27°42'05.73"S	151°38'10.27"E	Priority 3-way
PP13	Gore Highway	Oakey Pittsworth Road	27°42'28.72"S	151°37'30.67"E	Priority 3-way
PP14	Gore Highway	Yarranlea Road	27°45'14.10"S	151°32'32.10"E	Priority 4-way
PP15	Yarranlea Road	Desmonds Lane	27°43'26.54"S	151°31'52.35"E	Priority 4-way
PP16	Gore Highway	Ware Street	27°75'58.77"S	151°45'58.91"E	Priority 4-way
PP17	Gore Highway	Dieckmann Road	27°76'91.95"S	151°43'30.26"E	Priority 3-way
PP18	Dieckmann Road	Access Track	27°43'26.54"S	151°31'52.35"E	Priority 3-way
PP19	Gore Highway	Access Track	27°77'96.83"S	151°42'44.44"E	Priority 3-way
PP20	Gore Highway	Gilgai Lane	27°79'90.45"S	151°38'64.97"E	Priority 3-way
PP21	Gore Highway	Millmerran-Leyburn Road	27°49'26.23"S	151°21'10.85"E	Priority 3-way
PP22	Gore Highway	Hall Road	27°49'55.68"S	151°20'48.69"E	Priority 3-way

Pinch point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Intersection type
PP23	Gore Highway	Millmerran-Inglewood Road	27°52'06.89"S	151°17'07.79"E	Priority 3-way
PP24	Owens Scrub Road	Millmerran-Inglewood Road	27°53'18.97"S	151°16'40.64"E	Priority 3-way
PP25	Millmerran-Inglewood Road	Schwarten Road	27°91'33.19"S	151°26'33.13"E	Priority 4-way
PP26	Commodore Peak Road/Scragg Road	Millmerran-Inglewood Road	27°53'18.97"S	151°16'40.64"E	Priority 3-way
PP27	Millmerran-Inglewood Road	Heckendorf Road	27°99'12.09"S	151°22'13.94"E	Priority 3-way
PP28	Millmerran-Inglewood Road	Paton Road	28°08'24.78"S	151°19'61.86"E	Priority 3-way
PP29	Thornton Road	Millmerran-Inglewood Road	28°23'07.54"S	151°06'26.78"E	Priority 3-way
PP30	Cunningham Highway	Millmerran-Inglewood Road	28°24'38.95"S	151°05'53.42"E	Priority 3-way
PP31	Cunningham Highway	Bybera Road	28°25'27.08"S	151°02'32.32"E	Priority 3-way
PP32	Cunningham Highway	Cremascos Road	28°26'51.61"S	150°59'07.83"E	Priority 3-way
PP33	Cunningham Highway	Whetstone Access Road	28°50'43.20"S	150°93'88.39"E	Priority 3-way
PP34	Cunningham Highway	Yelarbon Kurumbul Road	28°34'17.58"S	150°44'58.56"E	Priority 3-way
PP35	Kildonan Road	Eukabilla Road	28°38'34.94"S	150°27'23.02"E	Priority 3-way

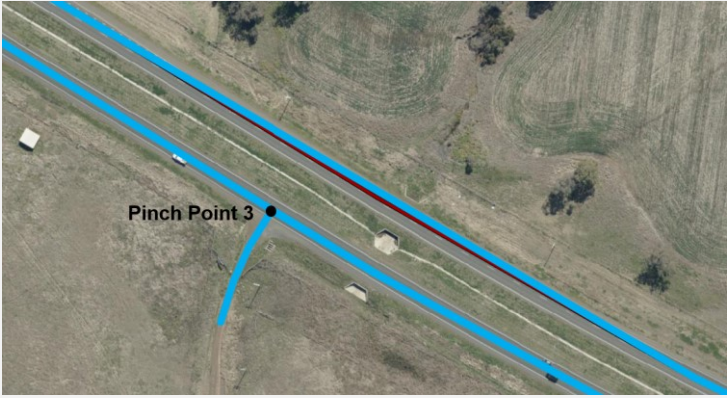
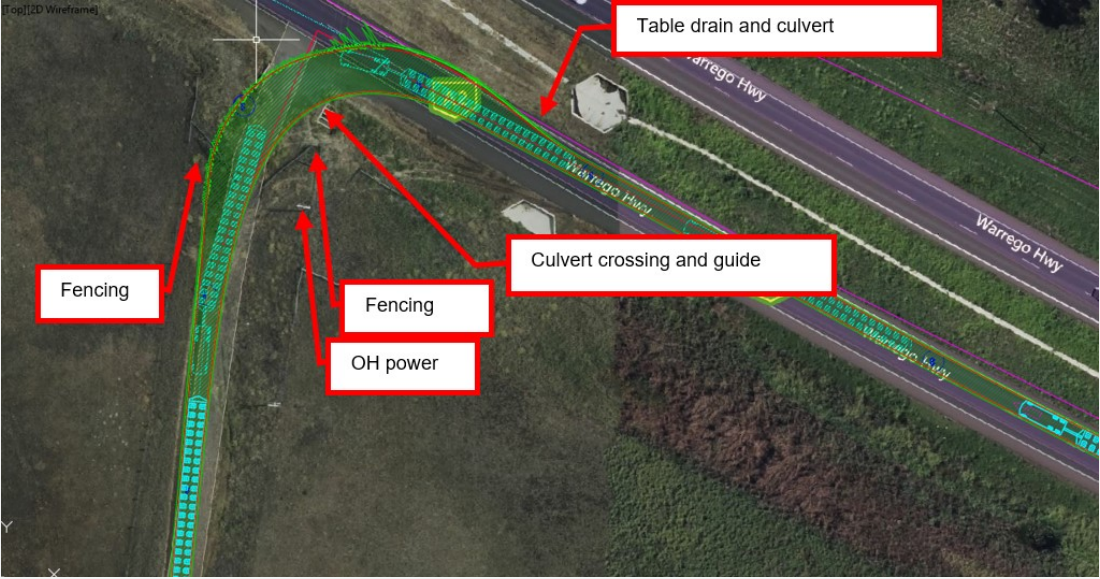
Pinch Point 1 – Warrego Highway off-ramp/Kingsthorpe Overpass

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP1	Warrego Highway off-ramp	Kingsthorpe Overpass	27°49'94.29"S	151°80'42.44"E	Off-ramp and roundabout
Site visit photo			Intersection aerial		
					
Swept path analysis right turn					
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the roundabout there is insufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the turn. The vehicle is required to mount the mountable apron surrounding the roundabout and comes in close proximity to the roundabout kerb. The swept path also requires the vehicle to mount 2 x median traffic islands. The vehicle and its swept path may collide with 2 x signage (1 x bi-directional hazard marker and 1 x directional hazard marker).			Mitigation extends to the temporary removal of 2 x signage. Structural adequacy should be tested before traversing across the median islands. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

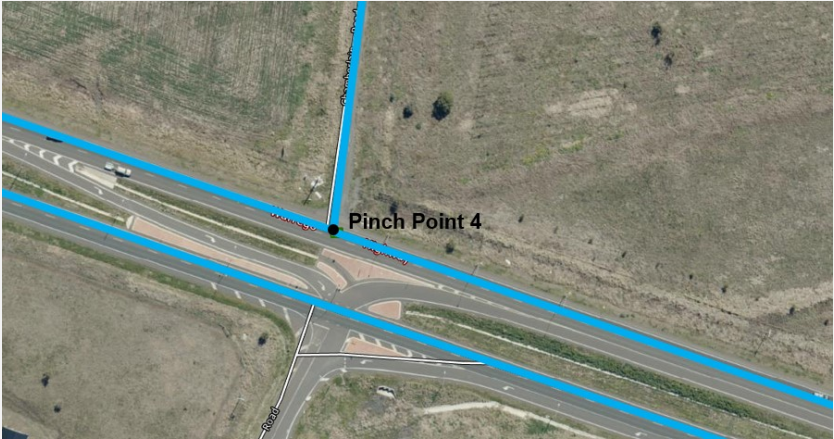
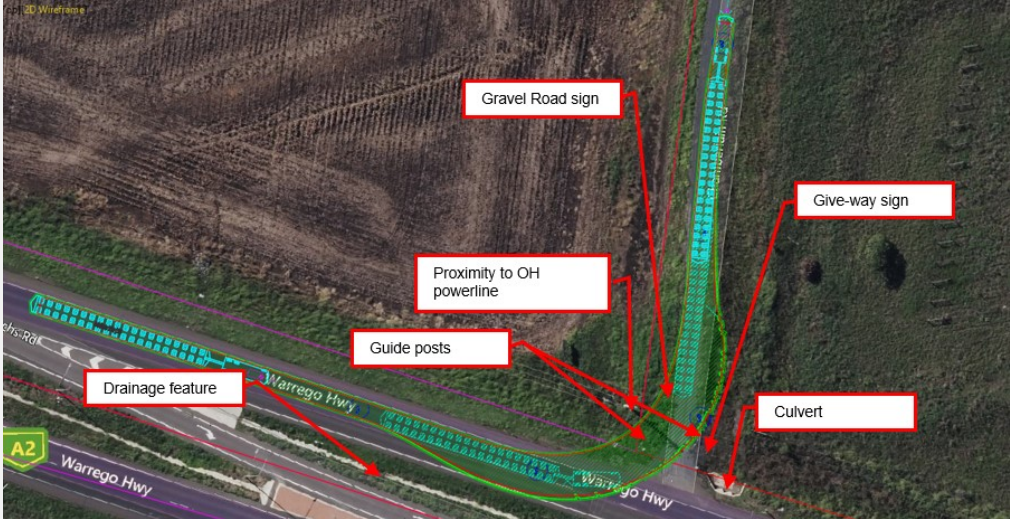
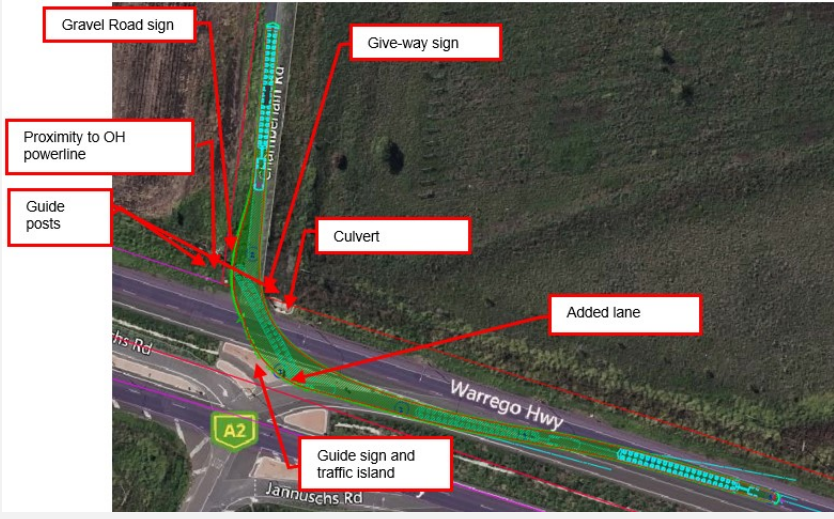
Pinch Point 2 – Kingsthorpe Overpass/Kingsthorpe Haden Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP2	Kingsthorpe Overpass	Kingsthorpe Haden Road	27°49'63.96"S	151°80'75.55"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right turn					
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right hand turn.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

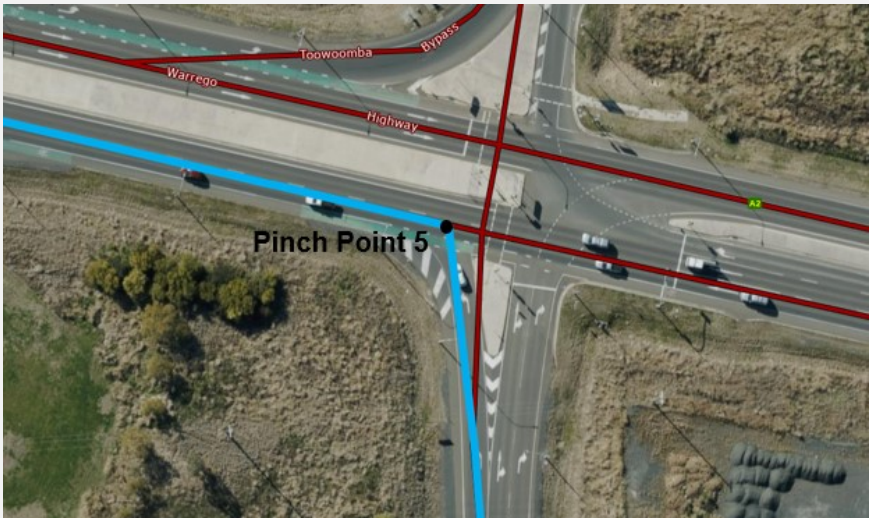
Pinch Point 3 – Warrego Highway/Access Track

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP3	Warrego Highway	Access Track	27°50'39.25"S	151°81'58.64"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is insufficient carriageway width to accommodate the left in and left out manoeuvres. The intersection width is not sufficient to accommodate the turn movements. The vehicles turn path impacts the existing driveway culverts, 4 x guide posts, fencing and signage. The turn path also potentially impacts the stay wire for the overhead power pole. The side road fencing may also be impacted.			Mitigation extends to the temporary removal of the signage, fencing, extension of culverts and widening of the intersection pavement. signage, vegetation and traffic lights. More detailed investigations to locate the position of the overhead power pole should also be conducted. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

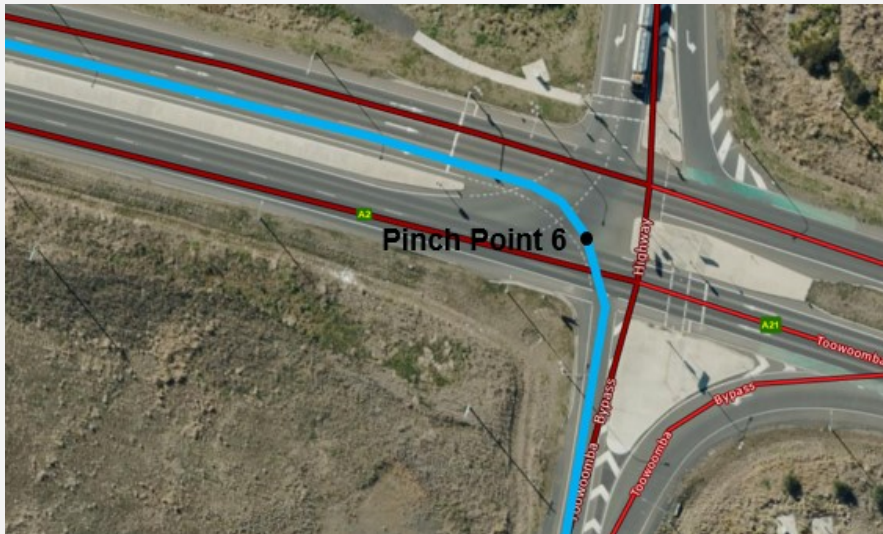
Pinch Point 4 – Warrego Highway/Chamberlain Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP4	Warrego Highway	Chamberlain Road	27°50'65.21"S	151°82'36.47"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is insufficient carriageway width to accommodate the vehicles left and right hand turns movements. The width of the side road intersection does not accommodate the vehicles swept path and the swept path also comes in close proximity to an overhead power pole and large set of culverts. Analyses also indicate that the left out movement requires the vehicle to mount the traffic island which impacts existing signage. 5 x guide posts are also impacted by the swept path.			Mitigation extends to the temporary removal of the signage and guide posts and widening of the side road intersection pavement. Structural adequacy should be tested before traversing across the median island. Additional investigation should be completed to determine the exact location and proximity to the overhead powerline. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

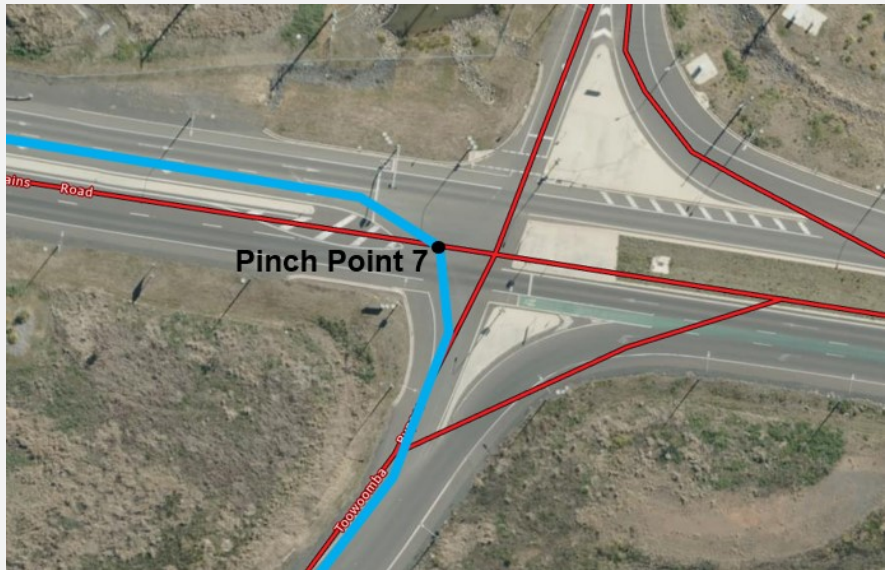
Pinch Point 5 – Toowoomba Bypass/Warrego Highway

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP5	Toowoomba Bypass	Warrego Highway	27°31'25.92"S	151°15'32.56"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left turn					
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using the turning lane and road shoulder to manoeuvre the left hand turn. Analysis also indicates that upon the left turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the traffic island so the vehicle may mount it.			Structural adequacy should be tested before traversing across the median island. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection.		

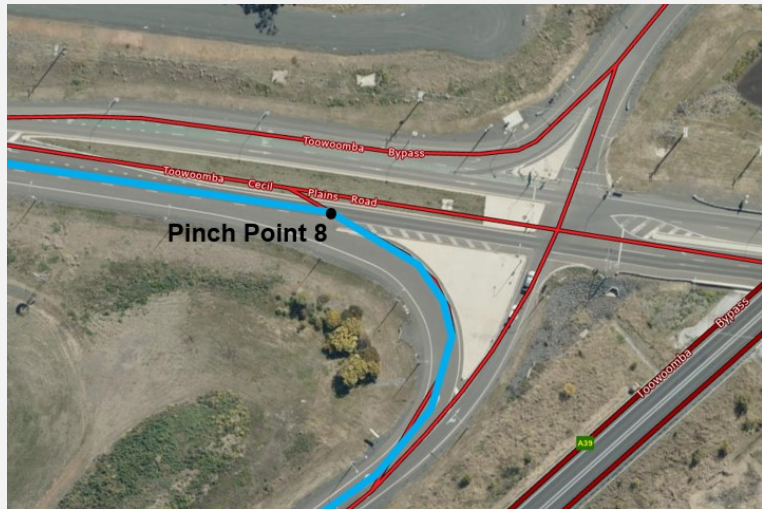
Pinch Point 6 – Warrego Highway/Toowoomba Bypass

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP6	Warrego Highway	Toowoomba Bypass	27°31'29.36"S	151°51'47.85"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right turn					
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using the turning lane and road shoulder to manoeuvre the left hand turn. Analysis also indicates that upon the left turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the traffic island, road edge, and light posts.			Structural adequacy should be tested before traversing across the median island. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection.		

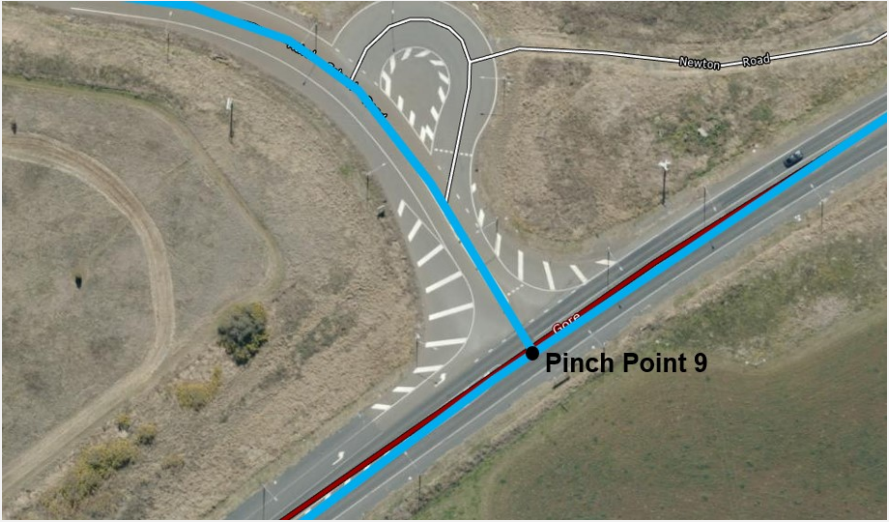
Pinch Point 7 – Toowoomba-Cecil Plains Road/Toowoomba Bypass

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP7	Toowoomba-Cecil Plains Road	Toowoomba Bypass	27°32'49.32"S	151°50'07.01"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right turn					
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using the turning lane and road shoulder to manoeuvre the right hand turn. Analysis also indicates that upon the right turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the traffic island, road edge, and light posts.			Structural adequacy should be tested before traversing across the median island. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection.		

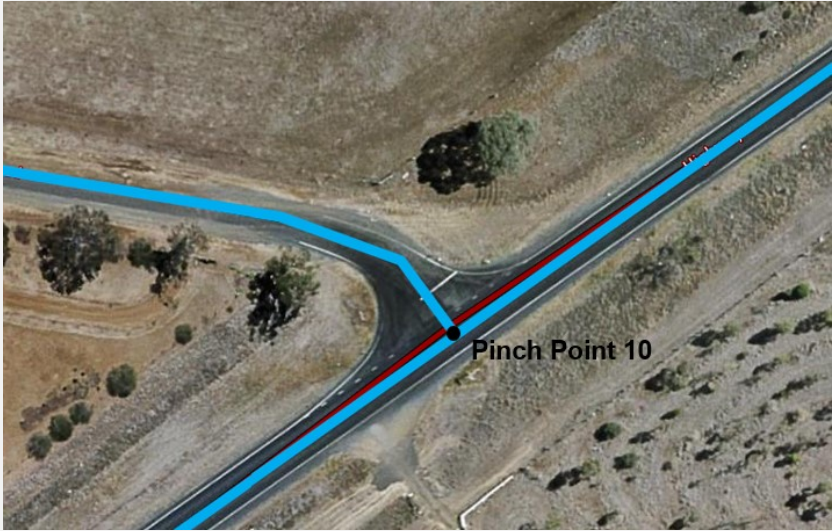
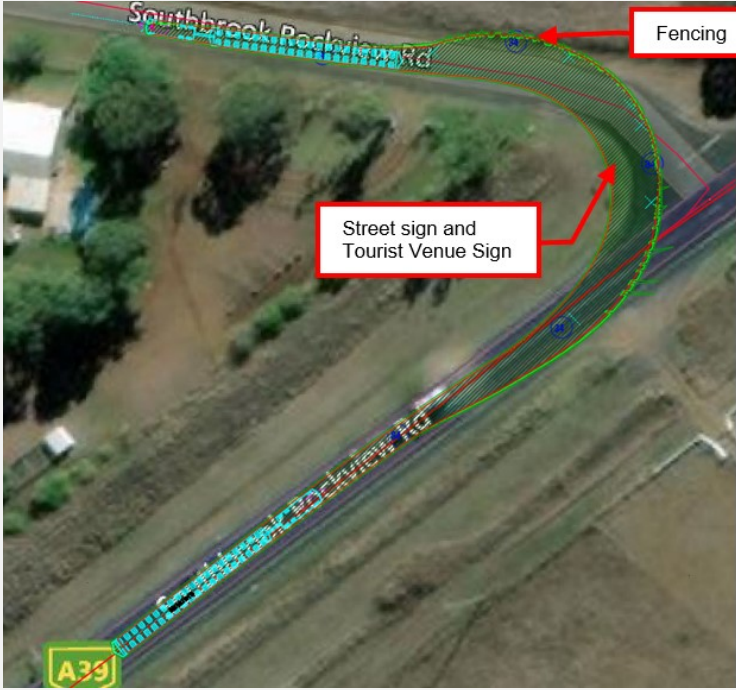
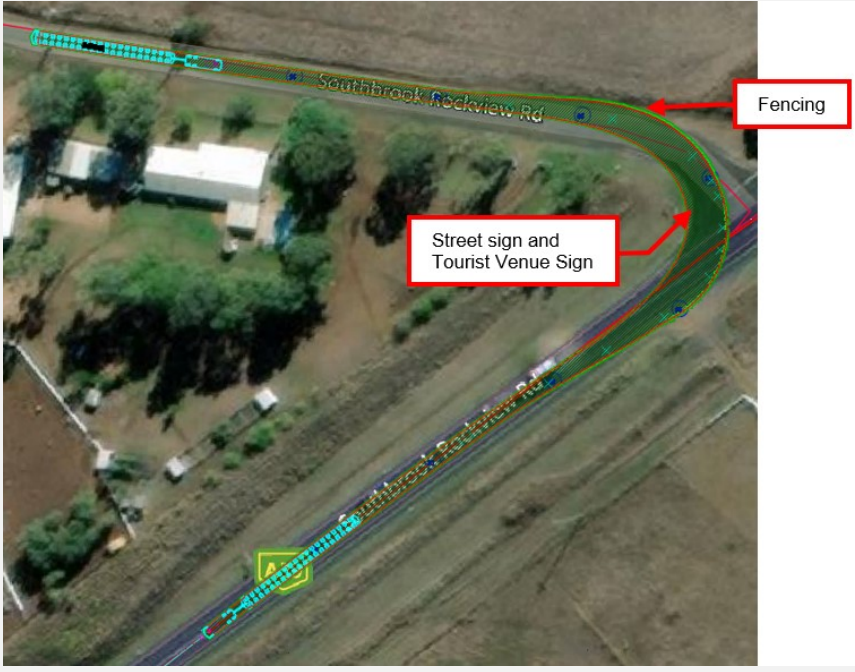
Pinch Point 8 – Toowoomba-Cecil Plains Road/Toowoomba Bypass

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP8	Toowoomba-Cecil Plains Road	Toowoomba Bypass	27°32'48.50"S	151°50'00.20"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left turn					
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using the turning lane and road shoulder to manoeuvre the left hand turn. Analysis also indicates that upon the left turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the traffic island, road edge, and light posts.			Structural adequacy should be tested before traversing across the median island. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection.		

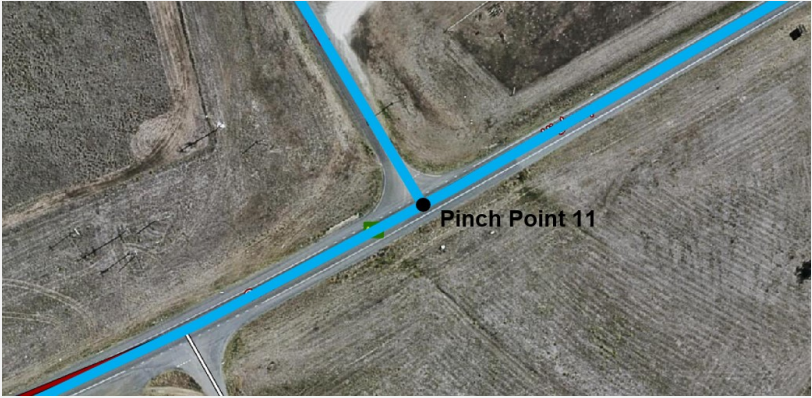
Pinch Point 9 – Gore Highway/Athol School Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP9	Gore Highway	Athol School Road	27°37'14.05"S	151°46'01.16"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using the turning lane and road shoulder to manoeuvre the left and right hand turn. Analysis also indicates that upon the left and right turn movements, the vehicle is required to take a wide angled manoeuvre which is close to the traffic island.			Structural adequacy should be tested before traversing across the median island. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

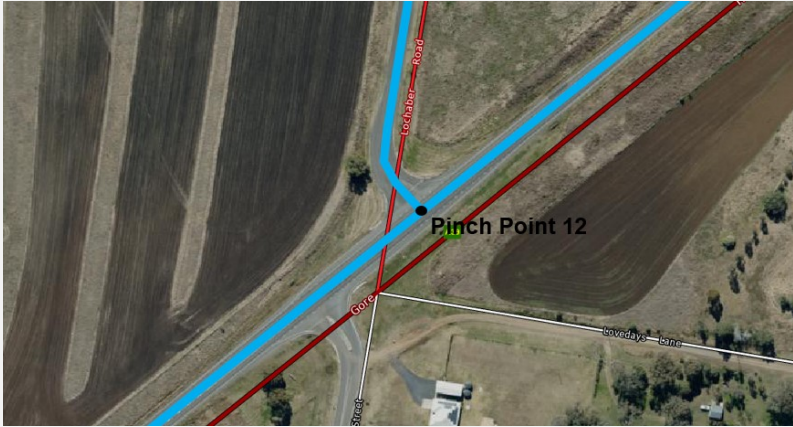
Pinch Point 10 – Gore Highway/Biddeston Southbrook Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP10	Gore Highway	Biddeston Southbrook Road	27°38'41.68"S	151°43'52.32"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is insufficient carriageway width to accommodate the vehicle to manoeuvre the right and left hand turns. The vehicle and sweeping path of the vehicle will collide with 2 x signage, and fencing.			Mitigation extends to the temporary removal of the signage and fencing, and pavement widening of the road. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

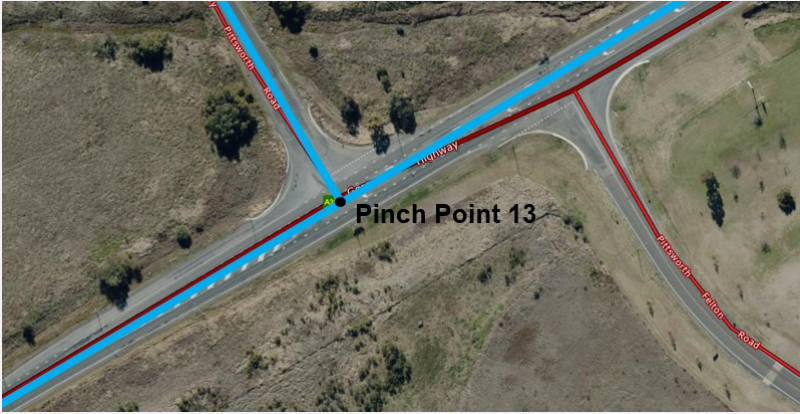
Pinch Point 11 – Gore Highway/Linthorpe Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP11	Gore Highway	Linthorpe Road	27°41'42.42"S	151°40'14.98"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. Analysis also indicates that upon the left and right turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the road edge.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

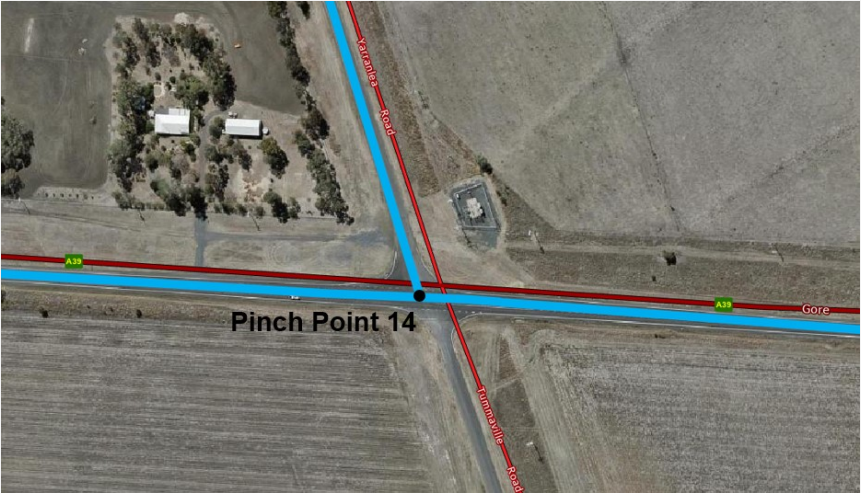
Pinch Point 12 – Gore Highway/Lochaber Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP12	Gore Highway	Lochaber Road	27°42'05.73"S	151°38'10.27"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. Analysis also indicates that upon the right and left turn movements, the vehicle is required to take a wide angled manoeuvre traversing directly over a traffic island located at the intersection. The vehicle and sweeping path of the vehicle may collide with 2 x signage on the traffic island.			Mitigation extends to the temporary removal of the signage. Structural adequacy should be tested before traversing across the median island. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

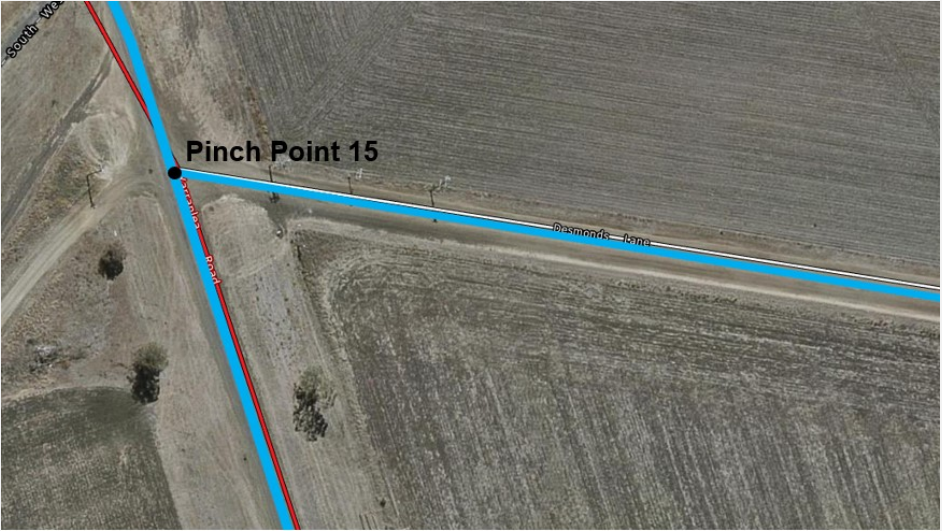
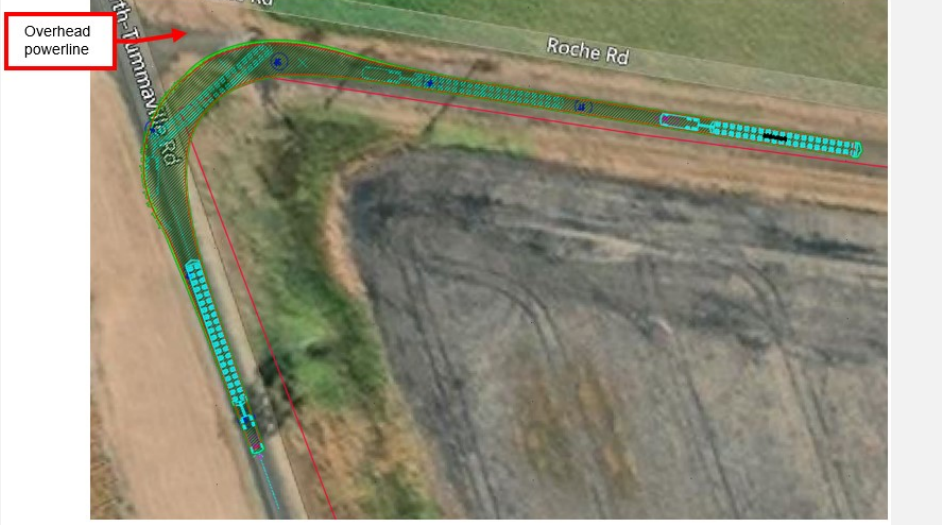
Pinch Point 13 – Gore Highway/Oakey Pittsworth Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP13	Gore Highway	Oakey Pittsworth Road	27°42'28.72"S	151°37'30.67"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

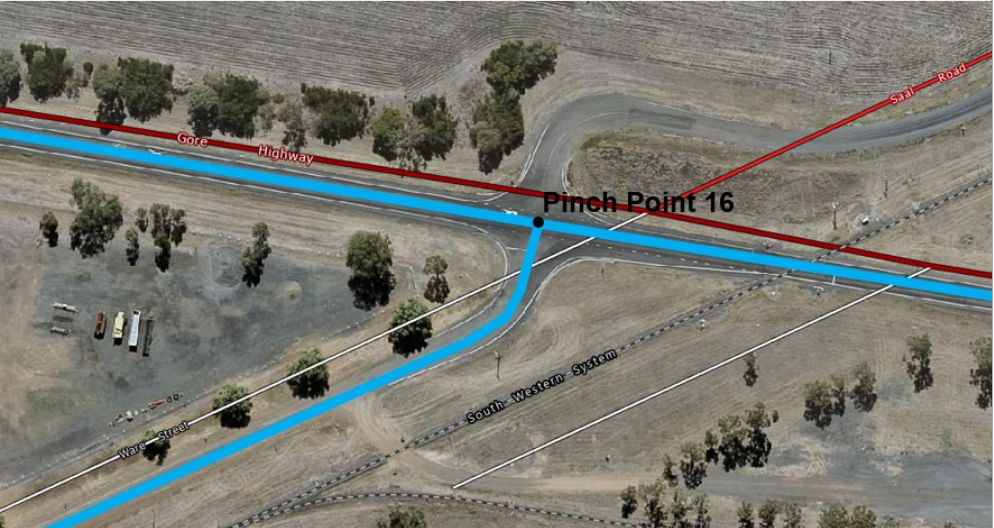
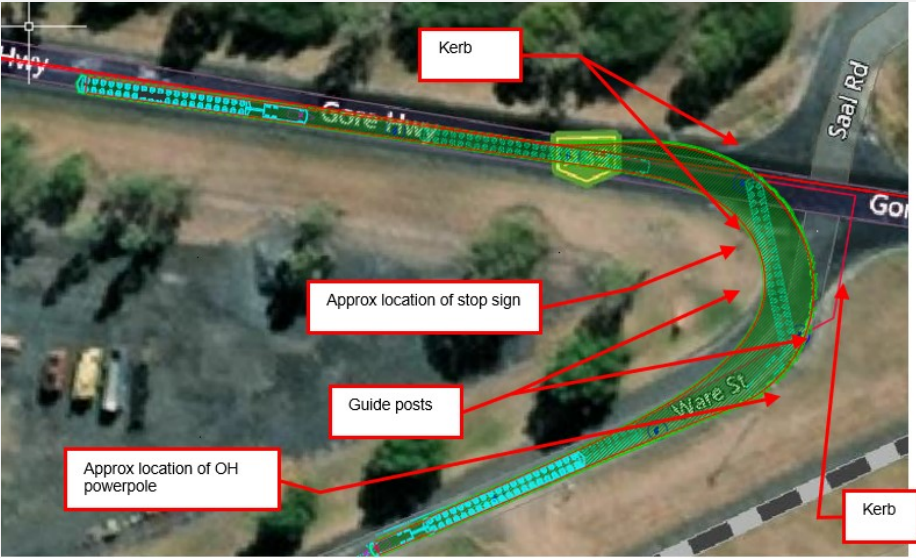
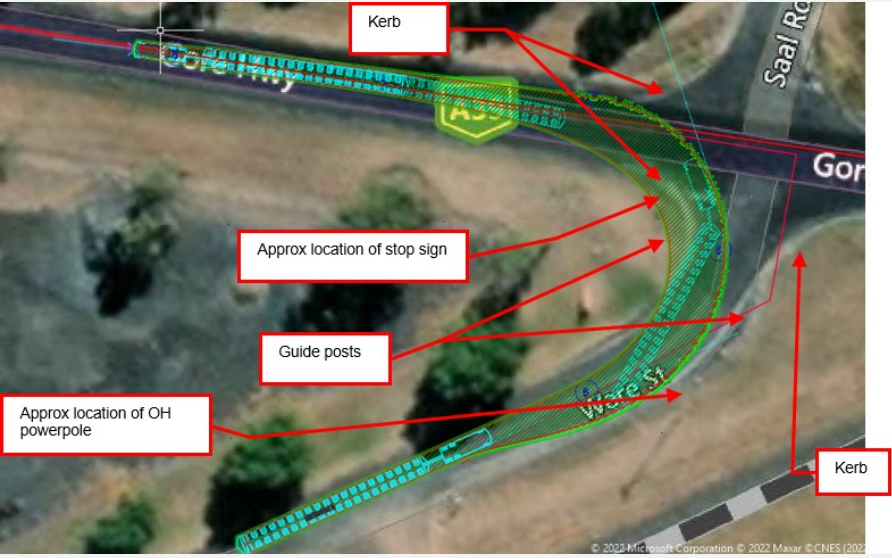
Pinch Point 14 – Gore Highway/Yarranlea Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP14	Gore Highway	Yarranlea Road	27°45'14.10"S	151°32'32.10"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. Analysis also indicates that upon the left and right turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the road edge.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

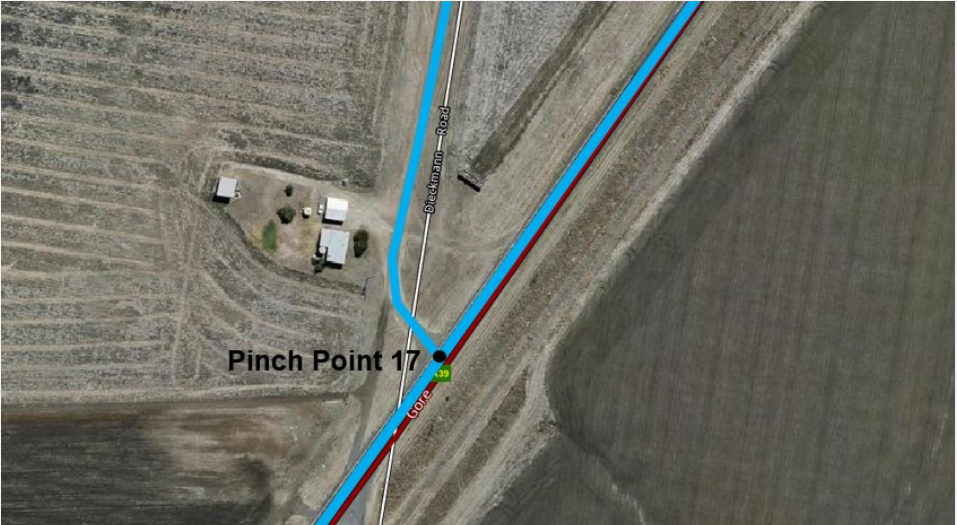
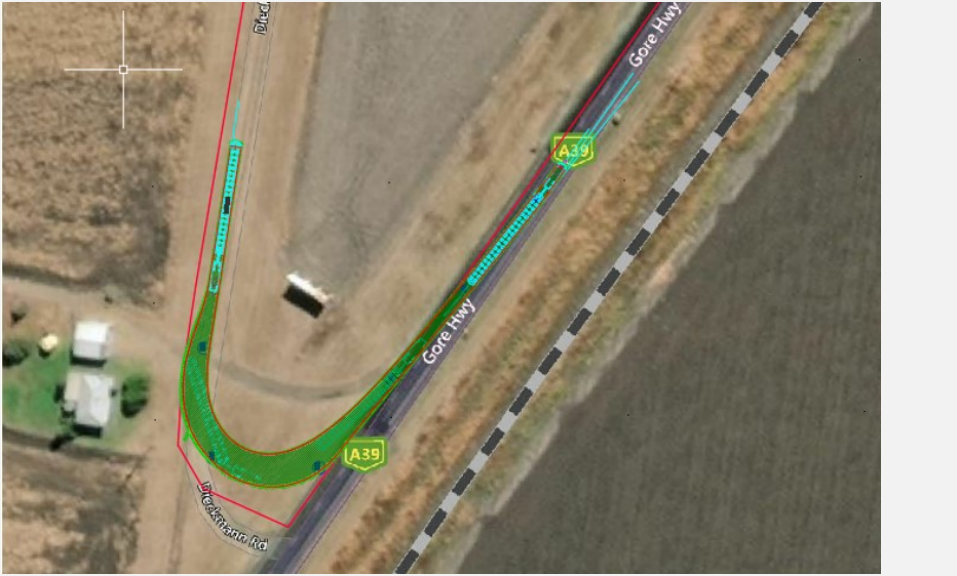
Pinch Point 15 – Yarranlea Road/Desmonds Lane

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP15	Yarranlea Road	Desmonds Lane	27°43'26.54"S	151°31'52.35"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is insufficient carriageway width to accommodate the vehicle to manoeuvre the right and left hand turns.			Mitigation extends to the pavement widening of the road. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

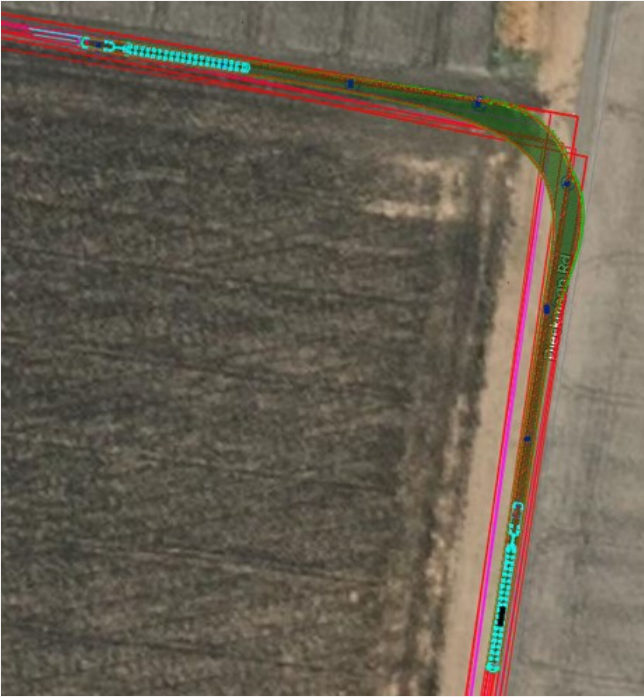
Pinch Point 16 – Gore Highway/Ware Street

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP16	Gore Highway	Ware Street	27°75'58.77"S	151°45'58.91"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is insufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the left and right hand turns. The vehicles swept path extends outside the existing intersection pavement. The vehicle also impacts the existing kerb, stop sign, 5 x guide posts and comes in close proximity to an existing overhead power pole (location is approximate).			Mitigation extends to the temporary removal of signage and guide posts and widening of the pavement on the western side of the intersection to accommodate the turn path. More detailed investigations should also determine the exact location of the existing overhead power pole. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

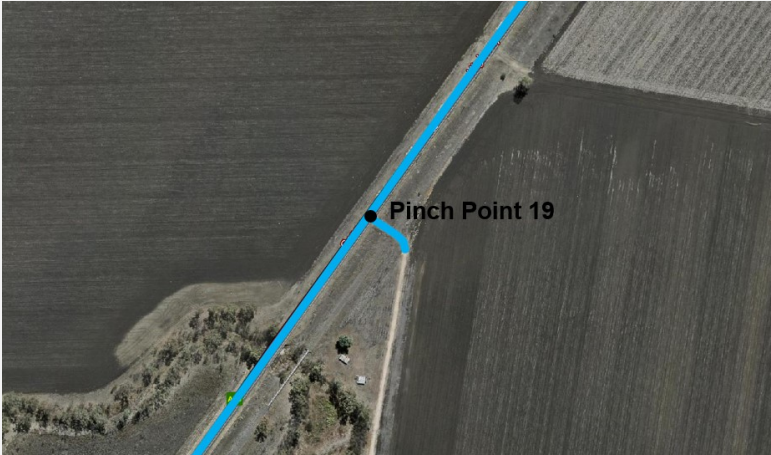
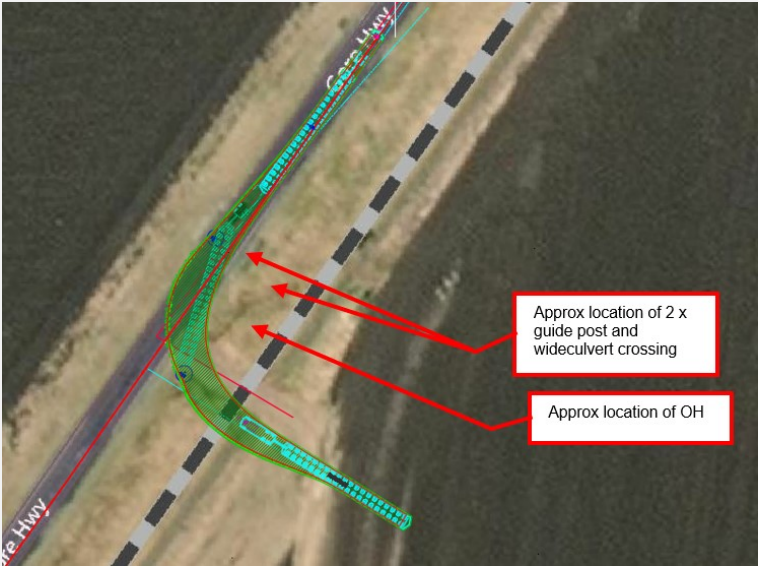
Pinch Point 17 – Gore Highway/Dieckmann Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP17	Gore Highway	Dieckmann Road	27°76'91.95"S	151°43'30.26"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre all turn movements. The side road is unpaved but appears to be traversable for its extent. The right turn movement may encroach on the existing street sign, however, it is not likely to be impacted.			Mitigation extends to assessing the bearing capacity of the unpaved side road to cater for the load of the vehicle. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

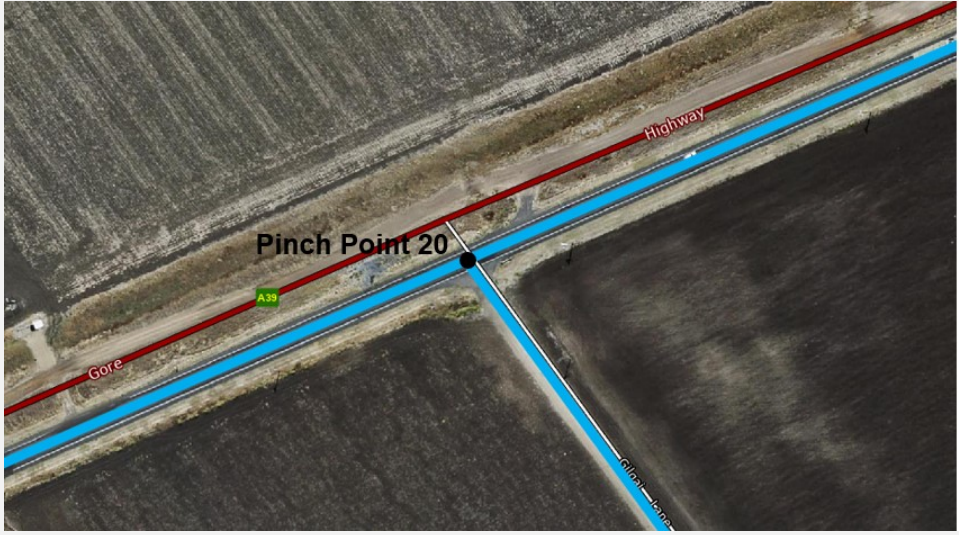
Pinch Point 18 – Dieckmann Road/Access Track

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP18	Dieckmann Road	Access track	27°43'26.54"S	151°31'52.35"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
On site observations (ground-truthing) confirm that there is limited pavement at this location. The swept path analysis indicates that upon approaching the intersection there is insufficient carriageway width to accommodate the vehicle to manoeuvre the right and left hand turns.			Mitigation extends to the pavement widening of the Dieckmann Road and forming the access track to a standard required for the construction vehicle access. Depending on construction vehicle and weather conditions, this may not necessarily need to be a sealed pavement. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

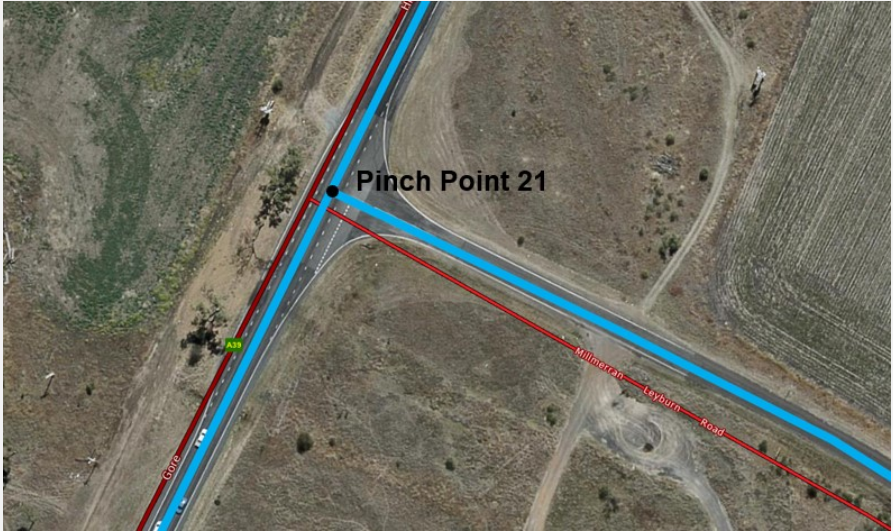
Pinch Point 19 – Gore Highway/Access Track

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP19	Gore Highway	Access Track	27°77'96.83"S	151°42'44.44"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the left hand turn. The shoulders of the Gore Highway are narrow in this location. As the turn path uses the full width of the pavement including the shoulders, the vehicle swept path may encroach on the existing culvert location (location is approximate). The left turn movement takes a wide side overturn to avoid the overhead power pole and the side road intersection is not wide enough to accommodate the turn movement. Analyses also indicate that upon the right turn movement, the vehicle is required to take a wide exit overturn. The width of the existing intersection is not wide enough to accommodate the vehicles turn path and the vehicle may encroach on the roadside batter. Analyses also indicate that upon the right turn movement, the vehicle is required to take a wide angled manoeuvre which may also encroach on the culvert crossing.			Mitigation extends to assessing the structural adequacy of the culvert crossing due to close proximity of the vehicles turn path and widening of the intersection pavement to the south to avoid impacting the overhead power pole. Assess the adequacy of unsealed tracks for the proposed construction vehicle and ensure suitable weather conditions during use of the track. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

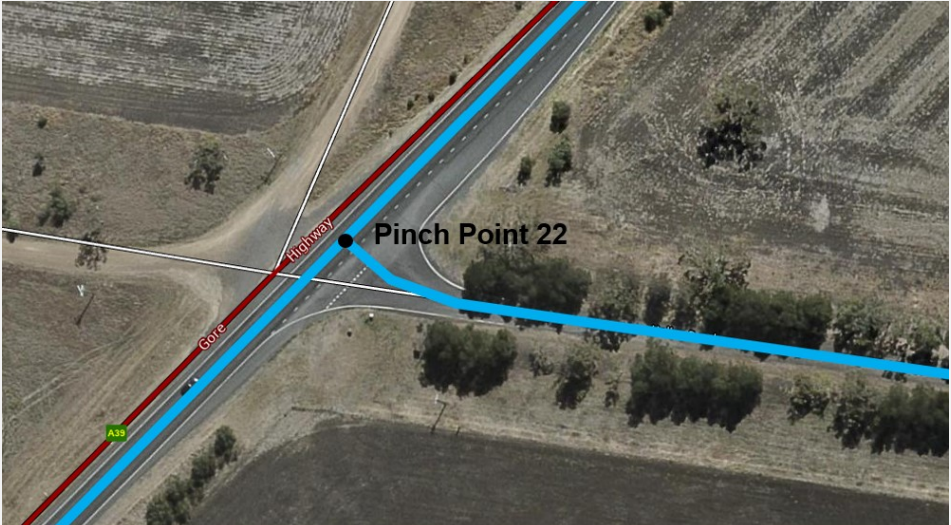
Pinch Point 20 – Gore Highway/Gilgai Lane

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP20	Gore Highway	Gilgai Lane	27°79'90.45"S	151°38'64.97"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is likely to be sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the left hand turn. As the turn path uses the full width of the pavement including the shoulders, the vehicle swept path may encroach on the existing culvert location (location is approximate). Detailed survey of the intersection is required to confirm this. Analyses also indicate that upon the right turn movement, the vehicle is required to take a wide exit overturn. The width of the existing intersection is not wide enough to accommodate the vehicles turn path and the vehicle may encroach on the roadside batter.			Mitigation extends to assessing the structural adequacy of the culvert crossing due to close proximity of the vehicles turn path and widening of the intersection pavement. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

Pinch Point 21 – Gore Highway/Millmerran-Leyburn Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP21	Gore Highway	Millmerran-Leyburn Road	27°49'26.23"S	151°21'10.85"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. Analysis also indicates that upon the left and right turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the road edge.			Pavement may need widening. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

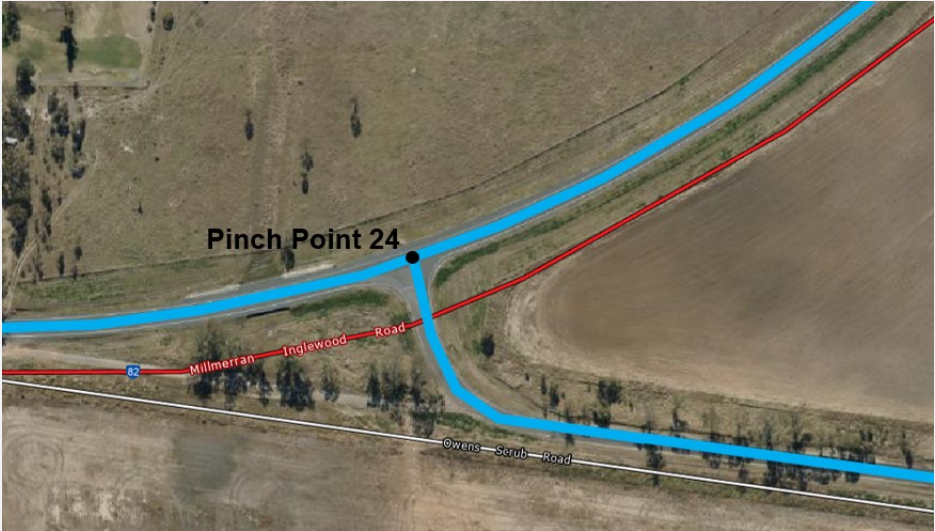
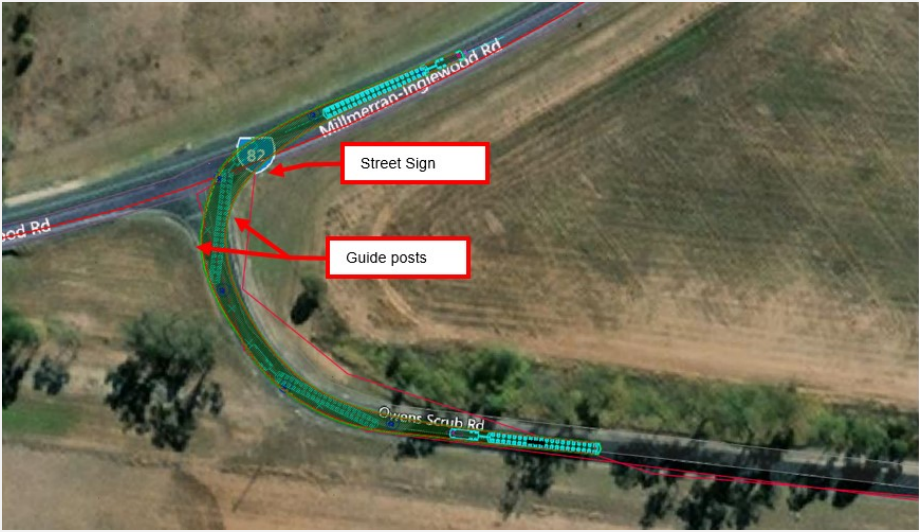
Pinch Point 22 – Gore Highway/Hall Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP22	Gore Highway	Hall Road	27°49'55.68"S	151°20'48.69"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is insufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. Analysis also indicates that upon the left and right turn movement, the vehicle is required to take a wide angled manoeuvre which is close to trees on the left and right of Hall Road.			Mitigation extends to the pavement widening of the road. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

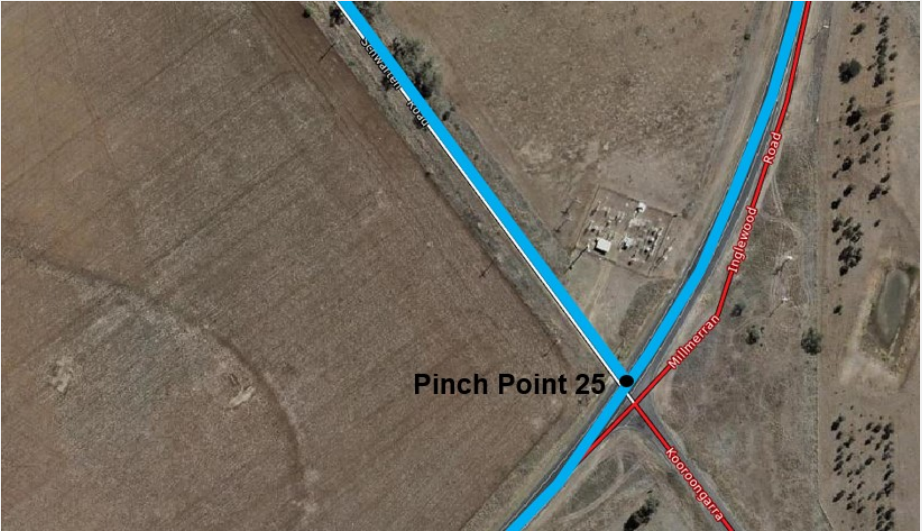
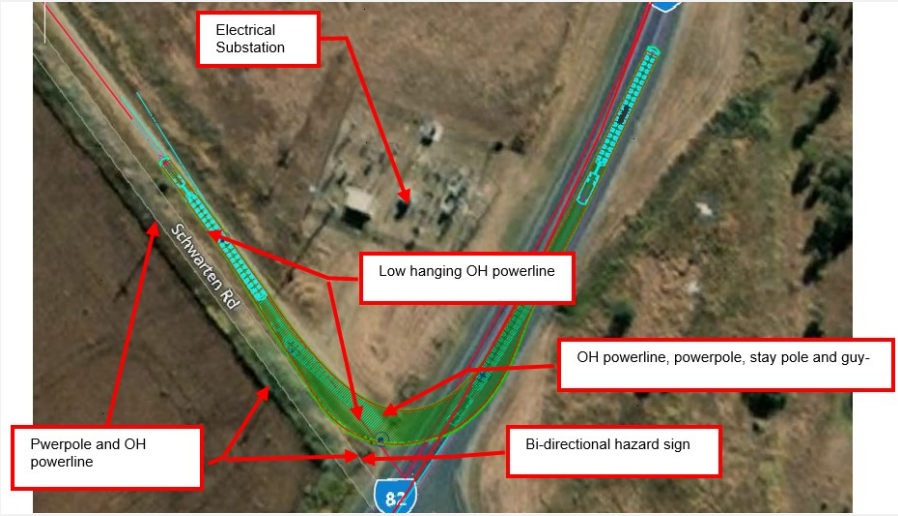
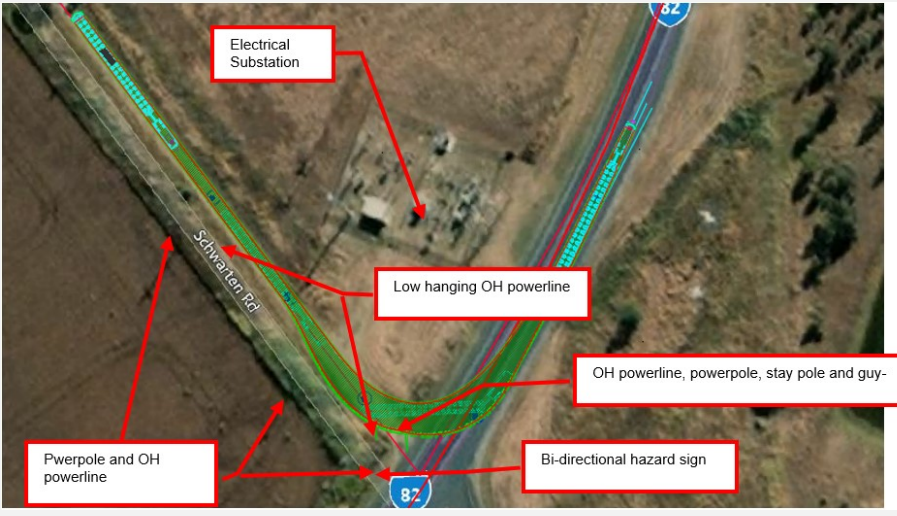
Pinch Point 23 – Gore Highway/Millmerran-Inglewood Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP23	Gore Highway	Millmerran-Inglewood Road	27°52'06.89"S	151°17'07.79"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

Pinch Point 24 – Owens Scrub Road/Millmerran-Inglewood Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP24	Owens Scrub Road	Millmerran-Inglewood Road	27°53'18.97"S	151°16'40.64"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is insufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. The vehicle and sweeping path of the vehicle may collide with 1 x signage and multiple guide posts.			Mitigation extends to the temporary removal of the signage and guide posts, and the pavement widening of the road. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

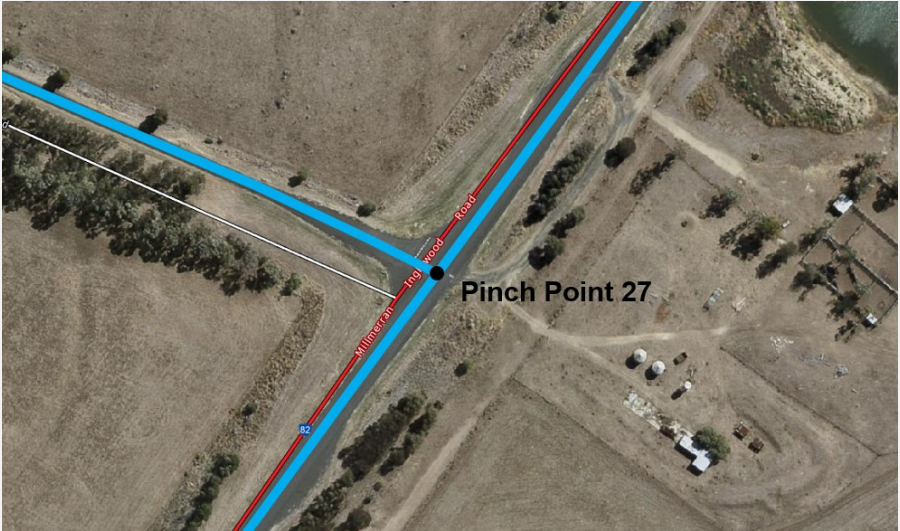
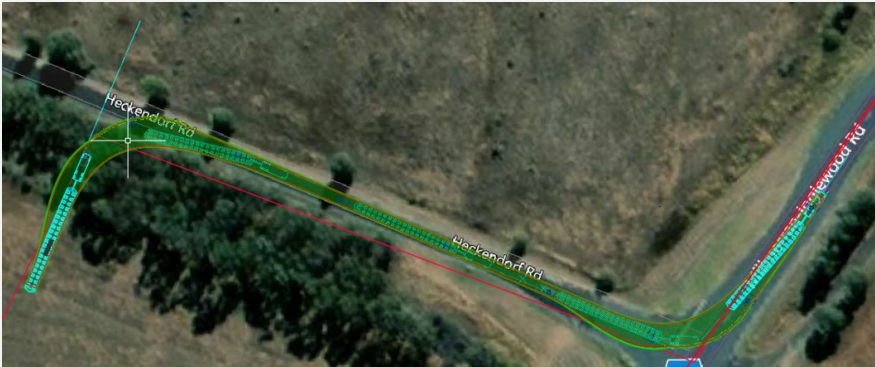
Pinch Point 25 – Millmerran-Inglewood Road/Schwarten Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP25	Millmerran-Inglewood Road	Schwarten Road	27°91'33.19"S	151°26'33.13"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is not sufficient carriageway width to accommodate the vehicle and its swept path. Both left hand and right hand turns impact 4 x power poles and overhead power lines, 1 x stay pole and guy-wire, 2 x signage and 2 x guide posts.			Mitigation extends to the temporary removal/relocation/undergrounding of overhead power lines and surrounding infrastructure. Further analysis is required to determine exact power infrastructure locations, including vertical and horizontal clearance from the roadway. Mitigation also extends to the temporary removal or signage and guide posts. An alternative access location could also be considered. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

Pinch Point 26 – Commodore Peak Road/Scragg Road/Millmerran-Inglewood Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP26	Commodore Peak Road/Scragg Road	Millmerran-Inglewood Road	27°53'18.97"S	151°16'40.64"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

Pinch Point 27 – Millmerran-Inglewood Road/Heckendorf Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP27	Millmerran-Inglewood Road	Heckendorf Road	27°99'12.09"S	151°22'13.94"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the left and right hand turns.			New intersection to provide sufficient pavement width for turns off Heckendorf Road. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

Pinch Point 28 – Millmerran-Inglewood Road/Paton Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP28	Millmerran-Inglewood Road	Paton Road	28°08'24.78"S	151°19'61.86"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the left hand turn. Analyses also indicate that upon both turn movements, the vehicle and swept path encroaches on the overhead powerline and guy wire. The vehicle and swept path also encroach on vegetation for the right turn movement.			Mitigation extends to a more detailed analysis to locate the position of the horizontal and vertical position of the overhead powerline to provide sufficient clearance from the vehicle, its swept path and clearing of vegetation. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

Pinch Point 29 – Millmerran-Inglewood Road/Thornton Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP29	Thornton Road	Millmerran-Inglewood Road	28°23'07.54"S	151°06'26.78"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

Pinch Point 30 – Cunningham Highway/Millmerran-Inglewood Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP30	Cunningham Highway	Millmerran-Inglewood Road	28°24'38.95"S	151°05'53.42"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

Pinch Point 31 – Cunningham Highway/Bybera Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP31	Cunningham Highway	Bybera Road	28°25'27.08"S	151°02'32.32"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. Analysis also indicates that upon the left and right turn movement, the vehicle is required to take a wide angled manoeuvre which is close to guide posts and road edge on the left and right of Bybera Road. Thus, the OSOM vehicle may encroach on the kerb.			Mitigation extends to the temporary removal of guide posts. Structural adequacy should be tested before traversing across the kerb. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

Pinch Point 32 – Cunningham Highway/Cremascos Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP32	Cunningham Highway	Cremascos Road	28°26'51.61"S	150°59'07.83"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. Analysis also indicates that upon the left and right turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the road edge on the left and right of Cremascos Road. Thus, the OSOM vehicle may encroach on the kerb.			Structural adequacy should be tested before traversing across the kerb. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

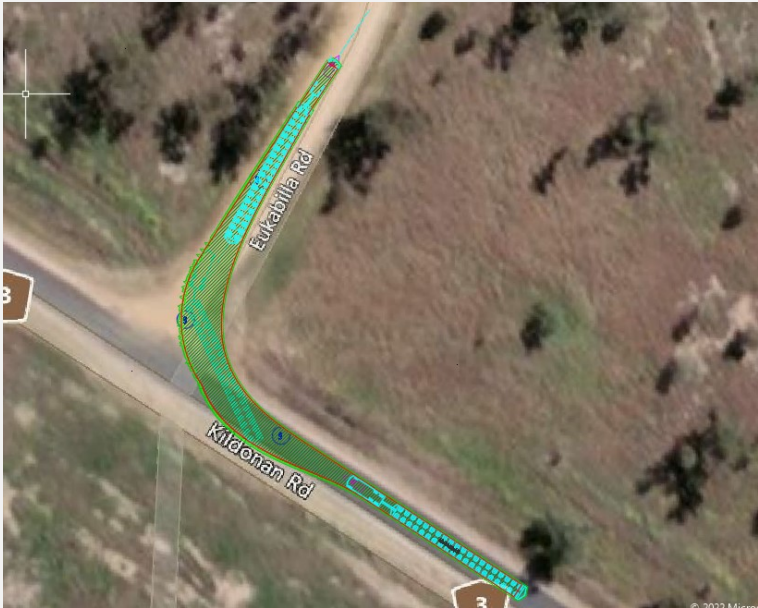
Pinch Point 33 – Cunningham Highway/Whetstone Access Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP33	Cunningham Highway	Whetstone Access Road	28°50'43.20"S	150°93'88.39"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is not sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the left hand turn. The vehicle and sweeping path will collide with 1 x signage. Analyses also indicate that upon the right turn movement, the intersection is not sufficiently wide enough for the vehicle to remain on the road pavement. The vehicle is required to take a wide angle manoeuvre and may encroach on the give-way sign and edge of pavement.			Mitigation extends to the temporary removal and relocation of signage and widening of the pavement on the southern side of the intersection to accommodate swept path of the vehicle. Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Use temporary lighting where required. Ensure minimal delays occur while traversing through the intersection. Provide temporary signage where required.		

Pinch Point 34 – Cunningham Highway/Yelarbon Kurumbul Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP34	Cunningham Highway	Yelarbon Kurumbul Road	28°34'17.58"S	150°44'58.56"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis left in			Swept path analysis right out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection there is sufficient carriageway width to accommodate the vehicle using both lanes to manoeuvre the right and left hand turns. Analysis also indicates that upon the left and right turn movement, the vehicle is required to take a wide angled manoeuvre which is close to the road edge.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection.		

Pinch Point 35 – Kildonan Road/Eukabilla Road

Pinch Point ID	Street 1	Street 2	Approximate latitude	Approximate longitude	Type
PP35	Kildonan Road	Eukabilla Road	28°38'34.94"S	150°27'23.02"E	Intersection
Site visit photo			Intersection aerial		
					
Swept path analysis right in			Swept path analysis left out		
					
Envisaged conflict			Possible mitigation		
The swept path analysis indicates that upon approaching the intersection the swept path encroaches the unsealed shoulder on the left hand side of the road for the right turn movement and encroaches the unsealed shoulder on the right hand side of the road for the left turn movement. The OSOM vehicle turn path should be considered when constructing the intersection to allow for the turn movements.			Use pilot vehicle and police escorts to warn opposing vehicles. Travel outside of peak times, perhaps in the evenings to avoid vehicular conflict. Ensure minimal delays occur while traversing through the intersection. Test bearing capacity of unsealed road or widen the sealed road width.		

5.8 Level crossing impact assessment and mitigation - construction

5.8.1 Works in existing rail corridor

QR owns and manages Queensland's regional freight network and operates both suburban and long-distance passenger services for the Queensland Government. QR's regional freight network comprises seven different systems in the State, with the Project alignment predominantly following the South Western System. The Project utilises approximately 46.8 km of the existing rail corridor for the South Western Line and approximately 21.2 km of the existing rail corridor for the Millmerran Branch Line.

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

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

Online construction of the new railway, being a direct replacement of the existing rail infrastructure, is the preferred construction approach for sections of the Project within existing rail corridor. This approach would require agreement with QR, in the form of an interface agreement and would result in short to medium-term possession of the rail corridor to enable construction. This online construction approach would result in the existing railway being non-operational to rail movements for the duration of the possession. Consequently, alternative means of transportation will be required during these periods for freight that would otherwise be transported via rail. The rail movement data received from QR (Sections 2.13.1 and 2.13.2) has been used to understand the impact closing the rail line during construction will have on the road network. The rail freight quantities have been converted to trips on road to understand what the road capacity, safety, and pavement impacts will be. Once impacts have been calculated, mitigation measures have been determined for these rail-to-road diversion trips alongside the remainder of B2G construction-related trip.

Offline construction is the alternative method within existing rail corridors. This approach would involve the new railway being constructed immediately adjacent to the existing rail infrastructure. The benefit of this approach being that the existing railway could remain operational during the construction period. However, this construction approach would introduce safety and logistical challenges that would be preferable to avoid.

The staging of the works within existing rail corridors and their associated impacts, will be the subject of an interface agreement between ARTC and QR. The timing of works within existing rail corridors will need to be determined in consultation with QR and key supply chain stakeholders in order to identify periods of minimum disruption (e.g. to occur outside of peak harvest times and avoid intercity road freight routes) and to ensure that unintended cumulative impacts across the Project are managed and avoided where possible.

In accordance with Section 255 of the *Transport Infrastructure Act 1994*, works cannot commence within the existing rail corridor without QR's written approval. If the construction of Project components within the existing rail corridor is completed during a temporary possession of the rail corridor, then works will be completed in accordance with the conditions of the temporary possession and/or wayleave agreement granted to ARTC by QR.

ARTC will commit to early consultation with stakeholders which currently utilise the South Western System rail corridor to inform:

- The programming of construction activities requiring track possessions
- Effective communication strategies
- Impact mitigation strategies.

Consultation with AgForce (Queensland's peak organisation representing rural producers) and local governments will assist in identifying the necessary stakeholders in export agriculture supply chains and beef processing supply chains which utilise the South Western System rail corridor. Likely stakeholders will include producers, exporters, the Port of Brisbane, transport operators, logistics managers, processors and road network managers.

The assessment of construction movements has been undertaken based on the construction task, material sources, quantities, modes, routes and durations identified in the Project constructability review, which are described in detail within the EIS Chapter 5: Project Description. It is intended that rail track and rail sleepers will be delivered to the alignment by rail to Whetstone Material Distribution Centre with distribution to occur from this location primarily via rail, with some distribution by trucks allowed for on the road network.

ARTC have engaged with GrainCorp to confirm the vehicle fleet currently used for grain transportation between Yelarbon and the Port of Brisbane. GrainCorp confirmed that during the first four months of 2024, there were approximately 150 grain transportation trips, all of which were either:

- 9 Axle B-Doubles/Austrroads Class 10 (approximately 20 per cent)
- 11 Axle Road Trains/Austrroads Class 11 (approximately 12 per cent)
- 12 Axle Road Trains/Austrroads Class 11 (approximately 68 per cent).

Based on the above and to represent a conservative assessment, the movement of items travelling via road are assumed to be undertaken as B-double truck trips (Austrroads Class 10 vehicles). The ultimate determination of the final construction and heavy vehicle routes will be subject to detailed design and consultation between DTMR, the relevant local council, the Contractor and, where relevant, QR.

ARTC will continue to consult with QR and other stakeholders as the Project progresses through detailed design and construction planning regarding the identification of an acceptable construction method within existing rail corridor.

5.8.2 Existing sidings and loops

The Project will provide for continued connectivity to existing sidings and loops. As a consequence, impacts to these features is expected to be confined to the Construction Works stage of the Project whilst the adjoining rail network is replaced and upgraded. The impacts of temporary access restrictions to crossing loops and sidings is expected to be limited as the adjoining main line will be non-operational whilst under the temporary possession of ARTC for construction purposes. Alternative means of transportation will be required during these periods for freight that would otherwise be loaded or unloaded at sidings along the Project alignment, such as grain at the sidings in Yelarbon and Brookstead.

5.8.3 Rail deliveries

Approximately 41,150 tonnes of rail are required for the Project. It is assumed that rail will be distributed via the existing QR rail network (Western Line, Millmerran Branch and the South Western Line) to ARTC's Whetstone Material Distribution Centre along the Project alignment. Where further transportation is required to distribute rail to designated areas along the Project alignment, road networks will be utilised to achieve this. As a conservative allowance, 10 per cent of all rail deliveries have been assumed to be transported to four laydown areas along the alignment to account for any required use of the road network.

In 2017, the South Western Line had a maximum of 50 monthly train movements (June 2017) and a minimum of five monthly train movements (September 2017). In the same year, the Millmerran Branch Line had a maximum of 19 train movements (August 2017) and a minimum of zero train movements (six of the twelve months). Based on the total numbers and monthly variance of train movements on both of these existing rail lines (Sections 2.13.1 and 2.13.2), it is anticipated that if rail deliveries to Whetstone Material Distribution Centre are via existing rail network, that the additional rail movements would be within the operational capacity of the networks utilised and would not result in network impacts.

The delivery of the rail in full lengths via the QR network will require further investigation and consultation with QR during the construction planning process (Detailed Design stage). The objective of this consultation will be to agree on routes to be used, size and frequency of locomotives and the scheduling of deliveries with consideration for monthly variances in background network usage.

5.8.4 Mitigation measures

ARTC proposes ongoing maintenance measures and the commitment that the maintenance measures will be further discussed and agreed with the relevant road authorities. A summary of the transport infrastructure mitigations is provided below.

5.8.4.1 Bridge and culvert mitigations

The assessment has identified a number of bridges and culverts which are proposed to be used by construction traffic. Prior to use of these structures, a structural assessment will be undertaken to ensure that they are suitable for use. Should the assessment identify the structure is not suitable for use, one of the following mitigations will be required to be undertaken:

- Upgrade structure (load capacity and or width) to accommodate construction vehicle requirements
- Identify an alternative route to the laydown area which avoids the structure.

ARTC and the construction contractor commits to the necessary ongoing maintenance measures required to accommodate construction traffic. These maintenance measures will be further discussed and agreed with the relevant road authorities and included as part of a Third-Party Agreement.

No known horizontal clearance issues have been identified as a part of the assessment. However, once a construction contractor is appointed and the final construction routes are determined, all construction routes will be further assessed and ground-truthed prior to use by construction vehicles.

5.8.4.2 Heavy vehicle mitigations

The assessment has identified a number of roads used by construction vehicles which are not defined under the Queensland HV routes and restrictions information, generally local government roads. As these roads are not designed for such large vehicle types, the construction vehicles could have a significant impact on the pavement or road formation. Mitigations for impacts to these roads due to the use of HVs are outlined in Table 5.65. Mitigations discussed and outlined in the pavement impact assessment in Section 5.6 and for OSOM vehicles in Section 5.8.4.3 also apply.

Table 5.65 Detailed Design and Construction Works stage mitigations for heavy vehicles

Stage	Mitigation
Detailed Design	Road safety audits need be carried out at Detailed Design stage and post-construction stage where such road upgrade works are required to ensure the design vehicle can be accommodated. Road safety audits will be undertaken by an accredited road safety auditor, in accordance with the <i>Austroads Guide to Road Safety Part 6A: Implementing Road Safety Audits</i> (Austroads, 2019c). Turn lanes will be designed and fully compliant with the requirements and design criteria as outlined in the <i>Guide to Road Design Part 3 - Geometric Design</i>, 2017 and <i>Guide to Road Design Part 4 - Intersections and Crossings</i>, 2017. Requirements for turn lane treatments to be finalised during Detailed Design stage as well as updated during the Construction Works stage and as per contractor required risk assessments when preparing appropriate TMP and TGS in accordance with the <i>Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads</i> and DTMR's specification 'MRTS02 – Provision for traffic' requirements. This should reflect updated construction duration estimates, final peak hour volumes and the relevant design vehicle. All conflict points impacting vehicle turn path to be relocated/removed. Further road widening works of kerb turnouts or carriageway of minor road to accommodate vehicle swept path would be reviewed in Detailed Design stage.

Stage	Mitigation
	Once a construction contractor is appointed, consultation between the construction contractor, ARTC, local councils and DTMR regarding the provision of road impact assessments and road safety audits for all impacted LGRs and SCR will be required. Additionally, the contractor will be required to commit to delivering appropriate mitigation measures (which have been agreed by the relevant road authorities) which address all identified road operation and safety matters and issues. Ongoing consultation will ensure directly impacted stakeholders are involved in developing the road safety mitigations.
	Opportunities to accommodate greater separation distances between rail and neighbouring roads will be investigated, in consultation with DTMR and in accordance with AS 1742.7-2016 and Road Planning and the Design Manual – Edition 2: Volume 3, Supplement to Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections (DTMR, 2014).
Pre-Construction Activities and Early Works and Construction Works	Construction traffic on known school bus routes, or routes with significant cyclist or pedestrian activity will be restricted during pick-up and set-down times on school days, or peak active transport periods. Further measures may include measures such as signage or protection on construction routes with a high proportion of cyclists or pedestrians, employing contractor driver briefings on safe driving to avoid active transport users and community notifications. Once a construction contractor is appointed, construction routes and vehicle numbers are finalised, specific measures to mitigate impacts to active transport users will be required to be developed for the construction routes on a case-by-case basis. This is to minimise construction vehicles through areas of higher pedestrian or cyclists' activity, such as schools or town centres, in peak periods will reduce the impact and potential safety issues.
	Relevant emergency services (e.g. QFES, QPS, QAS) will be notified in advance of temporary and permanent changes to the road network and of construction activities that may affect journey times for emergency vehicles.
	Relevant emergency services will be notified in advance prior to the movement of all hazardous/dangerous or oversize construction material and equipment. Temporary traffic management to be implemented, for example road signs stipulating reduced speed limits. Involving emergency services through the Construction Works stage will ensure that emergency accesses and routes are provided to ensure local residents are not adversely impacted by Project construction.
	Heavy vehicle truck turning signage would be required in combination with possible temporary speed reduction signage through the intersection for the duration of construction. This may enhance decision and reaction times for vehicles to identify larger gaps in the traffic stream as speeds would be lower. This will be determined and finalised during Construction Works stage as per contractor required risk assessments when preparing appropriate TMP and TGS in accordance with the <i>Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads</i> and DTMR's specification 'MRTS02 – Provision for traffic' requirements.
	Use pilot vehicle and police escorts to warn opposing vehicles where loads are greater than 3.5 m wide and 25 m long. Additional pilot/escort and/or police escorts are required as per section 6.3 of the <i>Guideline for Excess Dimension Vehicles in Queensland</i> or the Critical Areas and Roads in Queensland for Vehicles/Combinations Requiring Pilot/Escort map, or a police permit when accompanying an oversize vehicle or combination. Travel outside of peak times, perhaps in the evenings or early mornings to avoid other vehicular conflict. All other safety aspects treating OSOM movements to be in accordance with the <i>Guideline for Excess Dimension Vehicles in Queensland</i>.
	Construction speed limits will apply to all unsealed routes used by construction vehicles. Applicable speed limits will be determined through consultation with the relevant local council and documented in the Traffic Management Plan within the CEMP. Speed limits through construction routes of all types will ensure increased safety for local residents and construction workers.
	All Oversize Overmass and Restricted Access Vehicles will comply with the <i>Guideline for Excess Dimension Vehicles in Queensland</i> (DTMR, 2013) in terms of transport safety.
	Licensed transporters operating in compliance with Australian Code for the Transport of Dangerous Goods by Road and Rail (Commonwealth of Australia, 2018) will be utilised for the transportation of dangerous goods.

Stage	Mitigation
	A Form M994 will be completed and signed by a certified Level 3 Traffic Management Operator should any Regulatory Traffic Signs/Devices associated with any SCR be required. Ensuring compliance with all relevant standards and guidelines will ensure that construction vehicles operate safely on all proposed construction vehicles, with appropriate mitigations applied.
	Regular maintenance and vegetation clearance to be carried out to maintain adequate sight lines.

5.8.4.3 Oversize overmass mitigations

The assessment has identified a number of pinch points requiring upgrade (temporary or permanent) to accommodate the movement of OSOM vehicles. Specific mitigation measures for each pinch point are outlined in Section 5.7.3. The key mitigations identified are summarised below:

- Temporary removal of signage, fencing, guard rail and guide posts
- Removal of vegetation
- Widening of intersection pavement (either permanent, or using gravel)
- Locate, identify and flag overhead power lines
- Assessment of structural adequacy of bridges/culverts
- Use of pilot vehicles and police escorts to warn other road users
- Use of traffic control
- Travel outside of peak times (preferably evenings) to minimise vehicle conflict
- Erect temporary lighting power pole
- Erect temporary signage as required.

Once the construction contractor has prepared further plans and chosen their preferred design vehicle, these swept path assessments shall be revisited to determine any temporary or permanent changes to the existing layout which may be required to accommodate construction traffic movements, such as road upgrades, localised lane widening, geometric improvements or removal of signage and lighting. ARTC commits that these mitigations will be further discussed and agreed with the relevant road authorities.

5.8.5 Existing level crossings

There are 16 existing level crossings that are located along the proposed construction transport routes. These level crossings are provided in Table 5.66 along with their associated LGA level crossing type and status during construction. For the purpose of the TIA, it is assumed that two sections of the South Western System are proposed to be closed for the duration of construction, including:

- Millmerran Branch Line, between Wymeera and Millmerran
- South Western Line, between Whetstone and Goondiwindi.

Table 5.66 Existing level crossings along construction routes

Level crossing location	Level crossing type	Status during construction
State Government: Department of Transport and Main Roads		
Barwon Highway (east of Toobeah)	Active level crossing (signals only)	Not operational as South Western Line will be closed for duration of Project at this section of the alignment
Barwon Highway (Goondiwindi)	Active level crossing (signals only)	
Cunningham Highway (Goondiwindi)	Active level crossing (signals only)	
Cunningham Highway (Yelarbon)	Active level crossing (signals and boom gates)	

Level crossing location	Level crossing type	Status during construction
Cunningham Highway (Whetstone)	Active level crossing (signals and boom gates)	Remain as operational active level crossing
Gore Highway (Millmerran)	Passive level crossing	Not operational as Millmerran Branch Line will be closed for duration of Project at this section of the alignment
Gore Highway (east of Millmerran)	Active level crossing (signals only)	
Gore Highway (Brookstead)	Active level crossing (signals only)	
Gore Highway (Pittsworth)	Active level crossing (signals only)	
Local Government: Goondiwindi Regional Council		
South Kurumbul Road	Passive level crossing	Not operational as South Western Line will be closed for duration of Project at this section of the alignment
Suttons Road (East of Yelarbon)	Passive level crossing	
Coolmunda Dam Access Road (Coolmunda)	Passive level crossing	Remain as operational passive level crossing
Local Government: Toowoomba Regional Council		
Hall Road (East of Millmerran)	Passive level crossing	Not operational as Millmerran Branch Line will be closed for duration of Project at this section of the alignment
Roche Road (West of Pittsworth)	Passive level crossing	
Murlaggan Road (West of Pittsworth)	Passive level crossing	
Kahler Road (West of Pittsworth)	Passive level crossing	

As shown above, the majority of existing level crossing locations will not be operational during the construction of the Project, therefore it is considered that current road users will experience a higher LOS at these locations.

There are, however, two locations which remain operational during construction. Further details on these two locations are provided below. Prior to the use of these roads and associated level crossings by construction traffic, further consultation with the existing railway manager (QR) will be required in order to mitigate potential impacts. This consultation and engagement will be required during the Detailed Design stage, prior to and during construction. This will include consultation on adequate traffic and safety management plans for the level crossings. Furthermore, access into the existing rail corridor at these locations during construction will also need to be managed in consultation with QR and the relevant LGA.

5.8.5.1 Cunningham Highway (Whetstone) active level crossing

As the rail alignment is planned to be closed just after the Whetstone crossing, it is anticipated that only trains relating to the IR construction will use this crossing. These trains will access the proposed Whetstone Material Distribution Centre for discharging rail and sleeper units for the track laying machine. The construction traffic along the Cunningham Highway at this location increases volumes from 681 veh/day/direction to 912 veh/day/direction (38.2 per cent increase) in the peak impact year.

At this stage of the Project, it is unclear the length and speed of trains accessing ARTC's Whetstone Material Distribution Centre and therefore a level crossing closure time cannot be estimated. A further assessment will be required by the construction contractor in detailed design.

5.8.5.2 Coolmunda Dam Access Road (Coolmunda) passive level crossing

The Coolmunda Dam Access Road is proposed to be used by water trucks accessing the nearby dam. The construction traffic increases volumes on this road from 37 veh/day/direction to 88 veh/day/direction (136.6 per cent increase) in the peak impact year. Similar to the Cunningham Highway level crossing, it is expected that only trains relating to the IR construction will use this crossing due to its proximity to Whetstone (end of the line). Depending on proposed traffic volumes in detailed design, an ALCAM may be recommended to be undertaken in order to determine whether the existing passive level crossing treatment is sufficient for the increased traffic volumes.

5.9 Level crossing impact assessment and mitigation - operation

The operational performance of proposed public level rail crossings in the TIA study area was assessed to provide an understanding of the impacts on performance during operation, also taking into account any potential impact of diverted traffic created by road closures. The rail crossing impact assessment focuses on vehicle delay and queueing analysis, demonstrating how the Project generated traffic impacts on vehicle delays and queueing issues (i.e. short stacking) at the rail crossing, and at nearby closely spaced intersections.

For further information on the principles guiding the decision-making process for determining treatments at public road-rail interfaces, refer to Appendix BT.

5.9.1 Methodology

5.9.1.1 Analysis assumptions

Analysis of the level crossings was conducted based on the following inputs:

- The design vehicle (train) considered for the analysis account for a maximum length of up to 1,800 m in length for future years 2028 and 2040
 - Note: the 1,800 m long IR express trains (Inland Rail Intermodal Reference Train) are the maximum length of freight trains that will use the Inland Rail network, which is why they have been used in this assessment. As part of the rail network, trains of various lengths and configurations will use different parts of the system. Typically, existing rail operating services with design speeds slower than the 115 km/h, are also significantly shorter than the 1,800 m long IR reference train. Shorter trains, even at lower speeds, would likely take less time to traverse the level crossing. The analysis undertaken within this assessment is considered to be conservative, relative to all train types, up to 1,800 m long, that may use the network.
- Vehicles' wait time at passive crossings were calculated by means of using the *Australian Standard 1742.7, Manual of Uniform Traffic Control Devices, Part 7: Railway crossings*. The estimated wait time is considered a function of:
 - The distance of the train from the crossing at the point where a driver approaching the rail crossing sights a train, judges a stop is needed, decelerates, and stops at a giveaway line
 - The time it takes the train to drive along the distance from where the vehicle sees the train and decides to decelerate
 - The time it takes the train to cross the level crossing.
 - Providing sufficient space for the largest design vehicle to store at the level crossing without creating safety issues (e.g. queues extending back to the adjacent road network).

The following points describe the assumptions relating to the operation and sequence of operations at active level crossings, vehicle wait times at active level crossings and the analysis methodology used to determine the traffic impacts of level crossings for the Project:

- Operation of the active level crossings are described as follows:
 - Active level crossings utilise warning devices to warn road users of the approach of a train. The warning devices operate when the approaching train is at a minimum warning time from entering the road-rail interface. The level crossing warning time is defined as the minimum time of operation of the warning equipment for the fastest train from the initiation of the warning sequence until the front of the train reaches the road-rail intersection.

- For Inland Rail, the minimum warning device protection is defined in the basis of design as being an active level crossing controlled by flashing lights and half boom barriers. The minimum signage, line marking and assembly for this crossings' type is defined in AS 1742.7 and is a RX-5 flashing light assembly and half boom barriers (Note, the standard the term RX-5 is synonymous with the term Type F Highway signal).
- Operation of this type of crossing requires the warning devices to be initiated and maintained automatically by the detection of a train, using crossing control devices that operate on the approach side of the level crossing. This ensures the correct minimum warning time is obtained.
- Typical active level crossing sequence of operations which were adopted in the assessment are as follows:
 - If no train is approaching the level crossing, then the Type F highway signals are extinguished, the half-boom barriers are a fully raised position and no audible warning can be heard
 - As a train approaches the level crossing then, at the minimum warning time point ($t = 0$), the crossing control devices trigger the Type F highway signals to commence and they continue to flash alternately. At the same time warning bells are also triggered to commence and continue to sound. The minimum warning time in Queensland is 25 seconds for Type F lights and boom barrier installations.
 - After 11 seconds ($t = 11$) time interval the half-boom barriers commence to lower and after an additional 11 to 13 seconds ($t = 22-25$) they will reach the fully lowered position and one of the warning bells is silenced. Where there are large articulated vehicles (B triples or Road trains), the delay before the boom barriers commences lowering can be increased by a further 5 seconds to 16 seconds. In this instance the minimum warning time would be increased accordingly.
 - After the minimum approach time has expired ($t = 25-30$) the front of the approaching train will reach the level crossing
 - When the train has cleared the crossing, the boom barriers start to rise to the upright position and the remaining warning bell is silenced. Unless a second train is approaching the level crossing, in the holding section, as the rear of the first train passes clear of the level crossing and there is insufficient time for the half-boom barriers to rise and remain in the fully raised position there set time interval before commencing to lower for the second train, then the boom barriers remain lowered until the rear of the second train has also passed clear of the level crossing.
 - After the last train has cleared the level crossing, the boom barriers commence to rise to the upright position and the remaining warning bell will be silenced. The half-boom barriers reach the fully raised position within 10 seconds and the Type F highway signals become extinguished.
- Train speed and train clearance times (s) calculations and assumptions (as obtained from road-rail interface) for the level crossing are as follows:
 - Maximum train speed of 115 km/h
 - Calculation of the freight train acceleration rate (0.1 m/s^2 as advised by ARTC)
 - Distance of the level crossing from passing loops (varies)
 - Distance required to accelerate to maximum turnout speed (50 km/h)
 - Distance travelled while at constant maximum turnout speed
 - Distance required to accelerate to maximum speed after whole train has passed turnout
 - Total distance required to reach maximum speed for train starting from turnout
 - The wait times determined for each individual level crossing were calculated based on:
 - Level crossing specific operating speeds which are impacted by topography and curvature of the alignment
 - Time taken for the train to cross the level crossing

- Distance from train crossing loops
- Train length.
- For the purpose of the analysis, it was assumed that there will be two trains per peak hour (i.e. two barrier closures in the peak hour for both existing and with Project traffic scenarios)
 - Once operational, the Project will involve an annual average of about 14 train services per day in 2028. This is likely to increase to an average of 20 trains per day in 2040 and up to 25 per day during peak operational periods. This assessment assumes that two Inland Rail length trains pass each level crossing during the peak hour, which is considered more conservative in comparison to existing train crossing closure times.
- EIS Chapter 5: Project Description describes the operation of the double stacked rollingstock up to 1,800 m long. The planning approval for the Project will only allow for development consistent with the Project description and does not include longer trains. As part of the design process, the Project has considered design aspects to allow for future flexibility in use of the network. However, approval for 3,600 m trains is not part of this stage of the Project for which approval is being sought. Design alterations such as the length of crossing loops, software upgrades to signalling systems and further assessment would be required
- A sensitivity test has been undertaken based on a maximum train speed of 60 km/h (as opposed to up to 115 km/h) to highlight the variability in closure times.

Table 5.67 summarises the adopted rail wait time for each active and passive crossing based on a train speed of 115 km/h. For ease of interpretation, the calculations are made up of the following components:

■ **Active LX wait time calculations**

- Signal wait time (25 seconds) +
- Boom gate time (10 seconds) +
- Time for train to clear the LX (varies based on distance to crossing loop: range 56.3 to 136.0 seconds) +
- Additional wait time for large design vehicles (10 seconds)
- Total time: Range = 101.3 to 181.0 seconds (1.69 to 3.02 minutes)

■ **Passive LX wait time calculations**

- Time for train to clear the LX (varies based on distance to crossing loop: range 56.3 to 111.3 seconds) +
- Time for train to travel sighting distance of 700 m = 21.9 seconds
- Total time: Range 78.2 to 133.2 seconds (1.30 to 2.22 minutes).

Crossings located close to a closing loop experience longer wait times as the vehicle/s need to wait for both trains to clear the LX, and the train departing the closing loop would still be accelerating to maximum speed.

For the sensitivity test (i.e. maximum train speed of 60 km/h), the only components of the estimated rail wait time that change is the “Time for Train to Clear the LX” and “Time for Train to Travel Sighting Distance”.

Table 5.67 Rail wait time calculations for 115 km/h train speed

Interface ID	Road name	Proposed treatment	Distance to crossing loop (m)	Signal wait time (s)	Boom gate time (s)	Time taken for train to pass LX (s)	Additional wait time due to large trucks (s)	Time taken for train to travel sight distance (s)	Estimated wait time (s) / (min)
State Government: Department of Transport and Main Roads									
310-24-P-2	Millmerran-Inglewood Road	Active	16,096	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-40-E-2	Millmerran-Leyburn Road	Active	7,028	25	10	56.3	10	n/a (active)	101.3 / 1.69
Local Government: Goondiwindi Regional Council									
270-12-P-1	Kildonan Road	Active	23,300	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-4-E-2	South Kurumbul Road	Active	10,222	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-7-E-1	Unnamed Road	Passive	1,245	n/a (passive)	n/a (passive)	111.3	n/a (passive)	21.9*	133.2 / 2.22
310-10-P-1	Unnamed Road	Passive	6,887	n/a (passive)	n/a (passive)	56.3	n/a (passive)	21.9*	78.3 / 1.30
310-12-E-1	Suttons Road	Passive	11,802	n/a (passive)	n/a (passive)	56.3	n/a (passive)	21.9*	78.3 / 1.30
310-14-E-0	Springborg Road	Passive	12,530	n/a (passive)	n/a (passive)	56.3	n/a (passive)	21.9*	78.3 / 1.30
310-16-P-1a	Whetstone Access Road	Active	4,608	25	10	59.5	10	n/a (active)	104.5 / 1.74
310-18-P-8	Cremascos Road	Active	2,118	25	10	88.1	10	n/a (active)	133.1 / 2.22
310-21-P-9	Lovells Crossing Road (Stock Route)	Active	13,381	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-22-P-9	Thornton Road	Active	16,266	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-25-P-3	Grays Road	Passive	10,777	n/a (passive)	n/a (passive)	56.3	n/a (passive)	21.9*	78.3 / 1.30
310-26-P-2	Wongavale Yugalbar Road	Passive	8,257	n/a (passive)	n/a (passive)	56.3	n/a (passive)	21.9*	78.3 / 1.30
310-28-P-3	Unnamed Road	Active	399	25	10	136.0	10	n/a (active)	181.0 / 3.02
Local Government: Toowoomba Regional Council									
310-30-P-2	Kooroongarra Anderson Road	Passive	4,712	n/a (passive)	n/a (passive)	59.0	n/a (passive)	21.9*	80.9 / 1.35
310-31-P-7	Kooroongarra Road	Active	11,614	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-32-P-4	Paton Road	Active	14,445	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-33-P-1	Nicol Creek Road	Active	16,491	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-34-P-1	Millwood Road	Active	20,110	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-36-P-1	Blackwell Road	Active	11,829	25	10	56.3	10	n/a (active)	101.3 / 1.69

Interface ID	Road name	Proposed treatment	Distance to crossing loop (m)	Signal wait time (s)	Boom gate time (s)	Time taken for train to pass LX (s)	Additional wait time due to large trucks (s)	Time taken for train to travel sight distance (s)	Estimated wait time (s) / (min)
310-42-E-0a	Harris Road	Active	13,784	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-43-E-3	Elsden Road	Active	16,844	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-43-P-8a	Mann Silo Road	Active	19,027	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-45-E-1	Longhurst Road	Active	16,879	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-48-P-1	Tip Road	Active	5,664	25	10	56.3	10	n/a (active)	101.3 / 1.69
310-50-P-11	Linthorpe Valley Road	Active	3,760	25	10	65.5	10	n/a (active)	110.5 / 1.84
310-57-P-4	Leesons Road	Active	29,287	25	10	56.3	10	n/a (active)	101.3 / 1.69

Table note:

* Adopted sighting requirement = 700 m. Train speed = 115 km/h which equates to 31.94 m/s. Therefore additional time = 21.9 seconds.

5.9.1.2 Queue analysis

A queue analysis was completed for all proposed public active and passive level crossings to understand potential short stacking impacts (if any). The queue analysis was based on the assumptions outlined in Section 5.9.1.1 relating to train closure times and associated vehicle “wait times”. Road traffic will be required to stop and wait at level crossings to enable the pass-by of trains. Where there is an existing road crossing of the QR rail network, wait times with the Project may differ from those experienced at present due to a change in rail operating conditions. Where level crossings are newly established for the Project, wait times for road vehicles will be a new inconvenience.

The following methodology was used for the queue analysis:

- a) Determine wait time closure per level crossing location and convert closure time to minutes
- b) Summarise traffic volumes (veh/h) on road links at level crossing locations in the AM and PM peak hours for 2028 and 2040 (including consideration for peak harvest seasons, as per Section 2.4)
- c) Calculate the average traffic arrival rate in veh/min based on an assumed “uniform” distribution profile
- d) Determine total vehicles queued per closure (arrival rate (veh/min) x closure time (min))
- e) Measure available storage length at level crossings
- f) Compare storage length with proposed design vehicle to determine adequacy of queue length
- g) Review the analysis results at “critical” locations to determine if adopting a “normal” distribution profile instead of a “uniform” distribution profile would materially impact the outcomes or key findings.

5.9.1.3 Road diversion assessment

An assessment has been undertaken at a number of road diversion locations where road changes are required by the Project. These assessments have required rerouting of existing traffic volumes to new or existing intersection in order to identify the change in situation without and with Project. The assessments consider the Project opening year of 2028, with a 2038 future year assessment for the AM and PM peak periods.

5.9.2 Proposed road alterations in revised reference design

Impacts to the road network during the Operations stage of the Project are expected to be negligible, with the expectation of only minimal maintenance being required to inspect and maintain the RMAR within the rail corridor.

The requirement for road realignments, temporary roads or changes to existing road networks (i.e. intersection configurations) to facilitate construction will be subject to on-going discussions, consultation and agreement with road controlling authorities, local councils and affected landowners prior during Detailed Design stage and prior to construction.

After submission of the draft EIS for stakeholder and community consultation, the Project alignment was revised and several road-rail interface treatments altered. These changes included altering previously treated passive level crossings to active treatment, or provision of a grade separated crossing. The changes made within this revision are outlined in Table 5.68.

The methodology utilised for determining the level crossing treatments at public road-rail interfaces is outlined in Appendix BT.

Table 5.68 Changes to road-rail interfaces within the revised reference design alignment

Interface ID	Road name	Revised treatment	Details
Local Government: Goondiwindi Regional Council			
270-11-P-9a	Stock Reserve	No crossing provided - relocate	Previously proposed stock route realignment and a grade separated crossing was provided at this location, however, this has been incorporated into the dedicated stock crossing adjacent to Kildonan Road located 350 m to the north.
310-17-P-7a	McDougalls Road	No crossing provided - consolidate	Previously active level crossing.
310-20-P-12	Bybera Road	Grade Separation: rail-over-road	Previously design included a road realignment and passive level crossing.
Local Government: Toowoomba Regional Council			
310-31-P-7	Koorongarra Road	Active level crossing	Previously was proposed for passive level crossing treatment, however, this has been changed to active treatment within the revised alignment based on updated traffic data and ALCAM results.
310-32-P-4	Paton Road	Active level crossing	Previously was proposed for passive level crossing treatment, however, this has been changed to active treatment within the revised alignment based on updated traffic data and ALCAM results.
310-33-P-1	Nicol Creek Road	Active level crossing	Previously was proposed for passive level crossing treatment, however, this has been changed to active treatment within the revised alignment based on updated traffic data and ALCAM results.
310-34-P-1	Millwood Road	Active level crossing	Previously was proposed for passive level crossing treatment, however, this has been changed to active treatment within the revised alignment based on updated traffic data and ALCAM results.
310-35-P-4b	Heckendorf Road	Grade Separation: road-over-rail	Previously no crossing provided at Heckendorf Road. Design included a southern road realignment, which connected to a new intersection on Millmerran Inglewood Road.
310-36-P-8b	Scragg Road	Grade Separation: rail-over-road	Previously design included a road realignment and passive level crossing. The road realignment included a new junction with Commodore Peak Road.
310-38-P-3b	Owens Scrub Road	Grade Separation: road-over-rail	Previously an active level crossing.
310-39-P-1	Lindenmayer Road	No crossing provided	Previously an active level crossing.
310-40-E-1	Hall Road	No crossing provided	Previously a passive level crossing.
310-41-E-6	Gilgai Lane	Grade Separation: rail-over-road	Previously a passive level crossing.
310-42-E-0a	Harris Road	Active level crossing	No change to treatment; however, significant changes to road realignment through this area in consultation with DTMR, TRC and the local community.
310-43-P-8a	Mann Silo Road	Active level crossing	No change to treatment; however, minor change to road realignment.
310-50-P-11	Linthorpe Valley Road	Active Level Crossing	Previously was proposed for passive level crossing treatment, however, this has been changed to active treatment within the revised alignment based on updated traffic data and ALCAM results.

Interface ID	Road name	Revised treatment	Details
310-52-P-3/310-52-P-3a	Purcell Road	No crossing provided. Realignment to Athol School Road.	Previously passive level crossing with new intersection.
310-53-P-1a	Athol School Road	Grade Separation: rail-over-road. Includes new intersection with Purcell Road realignment.	Previously no crossing was to be provided at Athol School Road with a road realignment to the passive level crossing at Purcell Road. Through consultation with road managers and the local community, it was indicated that closing Purcell Road and leaving Athol School Road open was the desired outcome for the Project. The alignment and associated road alterations have been revised in response to this feedback.

The proposed rail crossings result in several road realignments, diversions and closures as discussed in Section 3.6. While these alterations to the external public road network will create permanent diversions, these are not expected to create a significant change to existing traffic patterns and distributions. Associated impacts from road alterations are provided in Table 5.69.

The alterations to the public road network are not expected to be significant at most of these sites as:

- The road network alterations would mainly consist of road realignment whereby existing traffic patterns will be maintained
- Existing geometric lane configurations can be maintained within the newly proposed road realignments.

However, further assessment will be required during the Detailed Design stage to ensure the confirmed road alterations and resulting diverted traffic is accommodated sufficiently. The operations of existing intersections and road links are not worsened, particularly where roads are being closed.

Additionally, further consultation with road controlling authorities, impacted stakeholders and local residents affected by proposed closures will be undertaken in the Detailed Design stage, once the alignment, associated road closures and crossings have been confirmed and a construction contractor is appointed. These consultations and resulting mitigation measures will be discussed and agreed with the road controlling authorities.

Table 5.69 Proposed road alterations and associated impacts

Interface ID	Road name	Proposed treatment	Impact
State Government: Department of Transport and Main Roads			
310-11-E-1	Cunningham Highway (Wondalli Street)	No crossing provided - relocate	Movements using this existing Cunningham Highway (Wondalli Street) active level crossing are now proposed to be realigned approximately 400 m west of the grade separation. The stock crossing 310-10-P-1 will be used instead for stock passage.
Local Government: Goondiwindi Regional Council			
310-14-E-1	Springborg Road	No crossing provided - relocate	Springboard Road has a minor road realignment to improve sight distance and straighten road horizontal curves. Treatment is a passive level crossing at 310-14-E-0.
310-17-P-7a	McDougalls Road	No crossing provided - road divert/re-align	No crossing proposed at McDougalls Road is being realigned to the north of the rail line connecting McDougalls Road to Cremascos Road.
Local Government: Toowoomba Regional Council			
310-36-P-8a	Commodore Peak Road	No crossing provided – relocate	No crossing proposed at this road-rail interface 310-36-P-8a, however Commodore Road has a road realignment to the grade separated interface 310-36-P-8b located approximately 160 m north-east.

Interface ID	Road name	Proposed treatment	Impact
310-37-P-12	Schwarten Road	No crossing provided - consolidate	No crossing proposed at Schwarten Road (310-37-P-12). Alternative access provided using a road realignment within an existing road reserve. This will also create a new intersection with Millmerran Inglewood Road.
310-38-P-3a	Owens Scrub Road	No crossing provided – relocate	No crossing is proposed at this road-rail interface 310-38-P-3a, however, there is a minor road realignment to road over rail grade separation location. New crossing provided at 310-38-P-3b (Owens Scrub Road) located approximately 40 m east.
310-42-E-0	Harris Road	No crossing provided - relocate	No crossing is to be provided at this road-rail interface 310-42-E-0, however, road design has been realigned to an active level crossing provided at 310-42-E-0a (Harris Road) crossing located approximately 60 m to the north-east of the existing interface.
310-42-E-1	Fysh Road	No crossing provided - relocate	No crossing is to be provided at Fysh Road interface (310-42-E-1) as the location does not allow sufficient stacking distance for longer vehicles. Alternative access to the Gore Highway is to be provided through the use of the proposed active level crossing at Harris Road (310-42-E-0a). This alternative access will result in a diversion of approximately 500 m.
310-43-E-3a	Elsden Road	No crossing provided - relocate	No crossing is to be provided at this interface of Elsden Road (310-43-E-3a) however, road design has been realigned to an active level crossing is proposed for 310-43-E-3 located approximately 200 m to the south-west.
310-46-E-1a	Yarranlea Road	Grade separation: rail-over-road	Grade separation at Yarranlea Road triggers a road realignment of Desmond Lane approximately 100 m south of the existing intersection with Yarranlea Road. New intersection will be required with appropriate sight lines.
310-46-P-4c	Murlaggan Road	No crossing provided - relocate	No crossing is to be provided at Murlaggan Road (310-46-P-4c). Alternative access provided by the proposed rail over road grade separation at Roche Road with a new connection road between Roche Road and Murlaggan Road parallel to the rail alignment. This road alteration resulting in a diversion of approximately 900 m.
310-47-P-1	Kahler Road	No crossing provided - consolidate	No crossing is to be provided at Kahler Road (310-47-P-1). Alternate access provided by several road realignments within the area. This includes: access via Glen Devon Road, a new road connection between Glen Devon Road and Murlaggan Road; continued access via Roche Road and the new road connection to Murlaggan Road on the southern side of the rail alignment. Total detour is 3,000 m. Road network alterations to the public road network are not expected to create a significant change to existing traffic patterns.
310-47-P-3	French Road	No crossing provided - road divert/re-align	No crossing is to be provided at French Road (310-47-P-3) with French Road realigned and connected to Tip Road, with alternative access provided by the new active level crossing (310-48-P-1), with this alteration resulting in a diversion of approximately 800 m.
310-48-P-9	Quibet Road	No crossing provided - road divert/re-align	No crossing is to be provided at Quibet Road (310-48-P-9), with access provided at the grade separated crossing at Oakey-Pittsworth Road (310-48-P-8), with this alteration resulting in a diversion of approximately 800 m.
310-48-P-10	Dallman Road	No crossing provided - road divert/re-align	No crossing is to be provided at Dallman Road (310-48-P-10), with a road realignment onto Quibet Road and access provided at the grade separated crossing at Oakey-Pittsworth Road (310-48-P-8), with this alteration resulting in a diversion of approximately 800 m.

Interface ID	Road name	Proposed treatment	Impact
310-49-P-1	Lochaber Road	No crossing provided - road divert/re-align	No crossing is to be provided at Lochaber Road (310-49-P-1). The road is proposed to be realigned to achieve suitable vehicle clearance and access provided at the grade separated crossing at Lochaber Road (310-49-P-2), with this alteration resulting in a diversion of approximately 400 m.
310-49-P-6	McEwan Lane	No crossing provided - consolidate	No crossing is to be provided at McEwan Lane (310-49-P-6). Alternative access is maintained via the grade separated crossing at Lochaber Road (310-49-P-2), with this alteration resulting in a diversion of approximately 2,000 m.
310-49-P-8	Paint Mine Road	No crossing provided - road divert/re-align	No crossing is to be provided at Paint Mine Road (310-49-P-8). The road is proposed to be realigned with access provided through newly realigned McEwan Lane and Lochaber Road grade separated crossing (310-49-P-2), with this alteration resulting in a diversion of approximately 3,000 m.
310-50-P-5	Geitz Road	No crossing provided - consolidate	No crossing is to be provided at Geitz Road (310-50-P-5). Consolidation is to be provided at Linthorpe Valley Road crossing (310-50-P-11), with this alternative access resulting in a diversion of approximately 2,500 m.
310-51-P-8	Bushy Lane	No crossing provided - road divert/re-align	No crossing is to be provided at Bushy Lane, with road realignment to Biddeston Southbrook Road proposed, and alternative access provided at proposed grade separated crossing Biddeston Southbrook Road (310-51-P-11z). Diversion of approximately 1,200 m.
310-52-P-1	Biddeston Southbrook Road	No crossing provided - road divert/re-align	No crossing is to be provided at Biddeston Southbrook Road (310-52-P-1), with the road being realigned to achieve suitable vehicle clearance at the proposed grade separated crossing location (310-51-P-11z).
310-52-P-3/ 310-52-P-3a	Purcell Road	No crossing provided - road divert/re-align	Purcell Road is proposed for closure and is being realigned to the north joining Athol School Road with a T-intersection. The road realignment provides alternative access to the Gore Highway via the Athol School Road-rail over road grade separated crossing (310-53-P-1a). Total road detour is approximately 3,000 m.

5.9.3 Queue analysis

A queue analysis was undertaken at all public active and passive level crossing locations along the Project alignment to determine the impacts of the operation of the level crossings on the road network and highlight potential short stacking issues (if any). The analysis provides an indication of likely maximum number of queued vehicles experienced at each level crossing based on the methodology outlined in Section 5.9.1.2.

As noted in Section 3.4, it is estimated that once operational, the Project will involve an annual average of about 14 train services per day during initial years of operation. This is likely to increase to an average of 20 trains per day in 2040, and up to 25 per day during peak operational periods.

The queue analysis considered two alternative “wait time” scenarios, including:

- **Project Scenario:** total wait time per closure based on a 115 km/h train speed
- **Sensitivity Scenario:** total wait time per closure based on a 60 km/h train speed.

Table 5.70 summarises the adopted “wait time” at each public active and passive level crossing for both scenarios. The Sensitivity Scenario assumes the same maximum turnout speed and distance to turnout, however it adopts a maximum train speed of 60 km/h as opposed to up to 115 km/h. The intent is to provide an indication of the potential increase in wait time (of approximately one minute) associated with a slower train speed to represent an upper-level crossing time delay and increase confidence in the queue analysis.

Table 5.70 Rail wait time sensitivity test

Interface ID	Road name	Total wait time per closure (min) – 115 km/h train speed	Total wait time per closure (min) – 60 km/h maximum train speed
State Government: Department of Transport and Main Roads			
310-24-P-2	Millmerran-Inglewood Road	1.69	2.55
310-40-E-2	Millmerran-Leyburn Road	1.69	2.55
Local Government: Goondiwindi Regional Council			
270-12-P-1	Kildonan Road	1.69	2.55
310-4-E-2	South Kurumbul Road	1.69	2.55
310-7-E-1	Unnamed Road	2.22	2.65
310-10-P-1	Unnamed Road	1.30	2.50
310-12-E-1	Suttons Road	1.30	2.50
310-14-E-0	Springborg Road	1.30	2.50
310-16-P-1a	Whetstone Access Road	1.74	2.55
310-18-P-8	Cremascos Road	2.22	2.55
310-21-P-9	Lovells Crossing Road	1.69	2.55
310-22-P-9	Thornton Road	1.69	2.55
310-25-P-3	Grays Road	1.30	2.50
310-26-P-2	Wongavale Yugilbar Road	1.30	2.50
310-28-P-3	Unnamed Road	3.02	3.02
Local Government: Toowoomba Regional Council			
310-30-P-2	Koorongarra Anderson Road	1.35	2.50
310-31-P-7	Koorongarra Road	1.69	2.55
310-32-P-4	Paton Road	1.69	2.55
310-33-P-1	Nicol Creek Road	1.69	2.55
310-34-P-1	Millwood Road	1.69	2.55
310-36-P-1	Blackwell Road	1.69	2.55
310-42-E-0a	Harris Road	1.69	2.55
310-43-E-3	Elsden Road	1.69	2.55
310-43-P-8a	Mann Silo Road	1.69	2.55
310-45-E-1	Longhurst Road	1.69	2.55
310-48-P-1	Tip Road	1.69	2.55
310-50-P-11	Linthorpe Valley Road	1.84	2.55
310-57-P-4	Leesons Road	1.69	2.55

A summary of the analysis is provided in Table 5.71 (Project Scenario) and Table 5.72 (Sensitivity Scenario), including an overview of the number of impacted vehicles at each closure, the maximum delay they may experience, and the largest design vehicle possible based on the available storage length.

Table 5.73 isolates each location where there is less than 100 m available storage to determine if adopting a “normal” distribution profile instead of a “uniform” distribution profile would materially impact the outcomes.

Key findings from the queue analysis are summarised below:

- The assessment estimated peak hour queueing at a total of 30 public active and passive level crossings

- The assessed public active and passive level crossings are generally located on low volume rural roads (i.e. 2022 peak hour demands vary from 0 to 80 vehicles with the vast majority less than 10 vehicles)
- The number of daily train services at each crossing is expected to be low (i.e. initially 14 train services per day increasing to 20 trains per day in 2040, and up to 25 per day during peak operational periods)
- The estimated “wait time” at the crossings during each closer is expected to be relatively short (i.e. 78.3 to 181.0 seconds in the Project Scenario increasing to 143.0 to 181.0 seconds in the Sensitivity Scenario)
- Given the limited peak hour traffic demands on the assessed rural roads and the relatively low daily train demands and associated “wait times” at the assessed crossings, short stacking is not expected to be an issue (i.e. the design queue at all but one of the crossings is expected to be less than 1 vehicle in 2040)
- The queue analysis results are not considered to be sensitive to the adopted traffic arrival profile (i.e. uniform (average) arrival distribution vs. normal (random) arrival distribution)
- There appears to be sufficient queue storage at each of the assessed active and passive crossings to accommodate the adopted design vehicles during the estimated closure period for both scenarios.

Based on the above, vehicle queue lengths at the assessed crossings are not expected to exceed the available storage length between the crossing and adjacent road network.

Table 5.71 Proposed public level crossing queue analysis results for 115 km/h train speed

Interface ID	Road name	Total wait time per closure (min)	Vehicles per hour [vehs] / arrival rate [veh/min] / maximum expected vehicles queued per closure [vehs]				Available storage		Design vehicle (Section 3.7.1)	Storage > Design Vehicle
			2028 G/NB/EB	2028 AG/SB/WB	2040 G/NB/EB	2040 AG/SB/WB	G/NB/EB	AG/SB/WB		
State Government: Department of Transport and Main Roads										
310-24-P-2	Millmerran-Inglewood Road	1.69	18 / 0.3 / 0.5	19 / 0.3 / 0.5	26 / 0.4 / 0.7	27 / 0.4 / 0.8	200 m+	200 m+	PBS3B (42 m)	Yes
310-40-E-2	Millmerran-Leyburn Road	1.69	17 / 0.3 / 0.5	14 / 0.2 / 0.4	35 / 0.6 / 1.0	29 / 0.5 / 0.8	200 m+	200 m+	PBS2B (30 m)	Yes
Local Government: Goondiwindi Regional Council										
270-12-P-1	Kildonan Road	1.69	97 / 1.6 / 2.7	94 / 1.6 / 2.7	143 / 2.4 / 4.0	139 / 2.3 / 3.9	200 m+	200 m+	PBS3B (42 m)	Yes
310-4-E-2	South Kurumbul Road	1.69	3 / 0.1 / 0.1	4 / 0.1 / 0.1	5 / 0.1 / 0.1	5 / 0.1 / 0.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-7-E-1	Unnamed Road	2.22	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	200 m+*	40 m	PBS3A (36.5 m)	Yes
310-10-P-1	Unnamed Road (Stock Route – minor and unused)	1.30	10** / 0.2 / 0.2	10** / 0.2 / 0.2	10** / 0.2 / 0.2	10** / 0.2 / 0.2	200 m+*	24 m	PBS1 (19 m)	Yes
310-12-E-1	Suttons Road	1.30	0 / 0.0 / 0.0	0 / 0.0 / 0.0	0 / 0.0 / 0.0	0 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-14-E-0	Springborg Road	1.30	0 / 0.0 / 0.0	0 / 0.0 / 0.0	0 / 0.0 / 0.0	0 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-16-P-1a	Whetstone Access Road	1.74	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-18-P-8	Cremascos Road	2.22	4 / 0.1 / 0.2	5 / 0.1 / 0.2	5 / 0.1 / 0.2	5 / 0.1 / 0.2	200 m+	200 m+	PBS3B (42 m)	Yes
310-21-P-9	Lovells Crossing Road	1.69	2 / 0.0 / 0.1	2 / 0.0 / 0.1	2 / 0.0 / 0.1	2 / 0.0 / 0.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-22-P-9	Thornton Road	1.69	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-25-P-3	Grays Road	1.30	1 / 0.0 / 0.0	1 / 0.0 / 0.0	2 / 0.0 / 0.0	2 / 0.0 / 0.0	55 m	200 m+	PBS3B (42 m)	Yes
310-26-P-2	Wongavale Yugalbar Road	1.30	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	56 m	200 m+	PBS3B (42 m)	Yes
310-28-P-3	Unnamed Road	3.02	10** / 0.2 / 0.5	10** / 0.2 / 0.5	10** / 0.2 / 0.5	10** / 0.2 / 0.5	48 m	200 m+	PBS3B (42 m)	Yes
Local Government: Toowoomba Regional Council										
310-30-P-2	Kooroongarra Anderson Road (Stock Route – minor and unused)	1.35	10** / 0.2 / 0.2	10** / 0.2 / 0.2	10** / 0.2 / 0.2	10** / 0.2 / 0.2	48 m	200 m+	PBS3B (42 m)	Yes
310-31-P-7	Kooroongarra Road	1.69	10** / 0.2 / 0.3	10** / 0.2 / 0.3	10** / 0.2 / 0.3	10** / 0.2 / 0.3	62 m	200 m+	PBS3B (42 m)	Yes

Interface ID	Road name	Total wait time per closure (min)	Vehicles per hour [vehs] / arrival rate [veh/min] / maximum expected vehicles queued per closure [vehs]				Available storage		Design vehicle (Section 3.7.1)	Storage > Design Vehicle
			2028 G/NB/EB	2028 AG/SB/WB	2040 G/NB/EB	2040 AG/SB/WB	G/NB/EB	AG/SB/WB		
310-32-P-4	Paton Road	1.69	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-33-P-1	Nicol Creek Road	1.69	10** / 0.2 / 0.3	10** / 0.2 / 0.3	10** / 0.2 / 0.3	10** / 0.2 / 0.3	200 m+	200 m+	PBS3B (42 m)	Yes
310-34-P-1	Millwood Road	1.69	2 / 0.0 / 0.0	2 / 0.0 / 0.1	2 / 0.0 / 0.0	2 / 0.0 / 0.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-36-P-1	Blackwell Road	1.69	0 / 0.0 / 0.0	1 / 0.0 / 0.0	0 / 0.0 / 0.0	1 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-42-E-0a	Harris Road	1.69	4 / 0.1 / 0.1	4 / 0.1 / 0.1	5 / 0.1 / 0.1	6 / 0.1 / 0.2	160 m	200 m+	PBS3B (42 m)	Yes
310-43-E-3	Elsden Road	1.69	10** / 0.2 / 0.3	10** / 0.2 / 0.3	10** / 0.2 / 0.3	10** / 0.2 / 0.3	49 m	200 m+	PBS3B (42 m)	Yes
310-43-P-8a	Mann Silo Road	1.69	14 / 0.2 / 0.4	11 / 0.2 / 0.3	14 / 0.2 / 0.4	11 / 0.2 / 0.3	200 m+	120 m	PBS3B (42 m)	Yes
310-45-E-1	Longhurst Road	1.69	10** / 0.2 / 0.3	10** / 0.2 / 0.3	10** / 0.2 / 0.3	10** / 0.2 / 0.3	200 m+	200 m+	PBS3B (42 m)	Yes
310-48-P-1	Tip Road	1.69	18 / 0.3 / 0.5	34 / 0.6 / 1.0	26 / 0.4 / 0.7	50 / 0.8 / 1.4	200 m+	200 m+	PBS3B (42 m)	Yes
310-50-P-11	Linthorpe Valley Road	1.84	5 / 0.1 / 0.1	5 / 0.1 / 0.1	7 / 0.1 / 0.2	7 / 0.1 / 0.2	200 m+	200 m+	PBS3B (42 m)	Yes
310-57-P-4	Leesons Road	1.69	3 / 0.1 / 0.1	4 / 0.1 / 0.1	4 / 0.1 / 0.1	4 / 0.1 / 0.1	200 m+	200 m+	PBS3B (42 m)	Yes

Table notes:

* Indicates road-rail interface locations where there are no existing roads, therefore available storage is dependent on road design

** Conservatively assumed based on road surrounds and similar road types in the local vicinity

Table 5.72 Proposed public level crossing queue analysis results for 60 km/h train speed

Interface ID	Road name	Total wait time per closure (min)	Vehicles per hour [vehs] / Arrival rate [veh/min] / Maximum expected vehicles queued per closure [vehs]				Available storage		Design vehicle (Section 3.7.1)	Storage > Design Vehicle
			2028 G/NB/EB	2028 AG/SB/WB	2040 G/NB/EB	2040 AG/SB/WB	G/NB/EB	AG/SB/WB		
State Government: Department of Transport and Main Roads										
310-24-P-2	Millmerran-Inglewood Road	2.55	18 / 0.3 / 0.8	19 / 0.3 / 0.8	26 / 0.4 / 1.1	27 / 0.4 / 1.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-40-E-2	Millmerran-Leyburn Road	2.55	17 / 0.3 / 0.7	14 / 0.2 / 0.6	35 / 0.6 / 1.5	29 / 0.5 / 1.2	200 m+	200 m+	PBS3B (42 m)	Yes
Local Government: Goondiwindi Regional Council										
270-12-P-1	Kildonan Road	2.55	97 / 1.6 / 4.1	94 / 1.6 / 4.0	143 / 2.4 / 6.1	139 / 2.3 / 5.9	200 m+	200 m+	PBS3B (42 m)	Yes
310-4-E-2	South Kurumbul Road	2.55	3 / 0.1 / 0.1	4 / 0.1 / 0.2	5 / 0.1 / 0.2	5 / 0.1 / 0.2	200 m+	200 m+	PBS3B (42 m)	Yes
310-7-E-1	Unnamed Road	2.65	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	200 m+*	40 m	PBS3A (36.5 m)	Yes
310-10-P-1	Unnamed Road (Stock Route – minor and unused)	2.50	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	200 m+*	24 m	PBS1 (19 m)	Yes
310-12-E-1	Suttons Road	2.50	0 / 0.0 / 0.0	0 / 0.0 / 0.0	0 / 0.0 / 0.0	0 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-14-E-0	Springborg Road	2.50	0 / 0.0 / 0.0	0 / 0.0 / 0.0	0 / 0.0 / 0.0	0 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-16-P-1a	Whetstone Access Road	2.55	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-18-P-8	Cremascos Road	2.55	4 / 0.1 / 0.2	5 / 0.1 / 0.2	5 / 0.1 / 0.2	5 / 0.1 / 0.2	200 m+	200 m+	PBS3B (42 m)	Yes
310-21-P-9	Lovells Crossing Road	2.55	2 / 0.0 / 0.1	2 / 0.0 / 0.1	2 / 0.0 / 0.1	2 / 0.0 / 0.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-22-P-9	Thornton Road	2.55	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.1	1 / 0.0 / 0.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-25-P-3	Grays Road	2.50	1 / 0.0 / 0.0	1 / 0.0 / 0.1	2 / 0.0 / 0.1	2 / 0.0 / 0.1	55 m	200 m+	PBS3B (42 m)	Yes
310-26-P-2	Wongavale Yugalbar Road	2.50	1 / 0.0 / 0.0	1 / 0.0 / 0.0	1 / 0.0 / 0.1	1 / 0.0 / 0.1	56 m	200 m+	PBS3B (42 m)	Yes
310-28-P-3	Unnamed Road	3.02	10** / 0.2 / 0.5	10** / 0.2 / 0.5	10** / 0.2 / 0.5	10** / 0.2 / 0.5	48 m	200 m+	PBS3B (42 m)	Yes
Local Government: Toowoomba Regional Council										
310-30-P-2	Kooroongarra Anderson Road (Stock Route – minor and unused)	2.50	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	48 m	200 m+	PBS3B (42 m)	Yes
310-31-P-7	Kooroongarra Road	2.55	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	62 m	200 m+	PBS3B (42 m)	Yes

Interface ID	Road name	Total wait time per closure (min)	Vehicles per hour [vehs] / Arrival rate [veh/min] / Maximum expected vehicles queued per closure [vehs]				Available storage		Design vehicle (Section 3.7.1)	Storage > Design Vehicle
			2028 G/NB/EB	2028 AG/SB/WB	2040 G/NB/EB	2040 AG/SB/WB	G/NB/EB	AG/SB/WB		
310-32-P-4	Paton Road	2.55	1 / 0.0 / 0.0	1 / 0.0 / 0.1	1 / 0.0 / 0.0	1 / 0.0 / 0.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-33-P-1	Nicol Creek Road	2.55	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	200 m+	200 m+	PBS3B (42 m)	Yes
310-34-P-1	Millwood Road	2.55	2 / 0.0 / 0.1	2 / 0.0 / 0.1	2 / 0.0 / 0.1	2 / 0.0 / 0.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-36-P-1	Blackwell Road	2.55	0 / 0.0 / 0.0	1 / 0.0 / 0.0	0 / 0.0 / 0.0	1 / 0.0 / 0.0	200 m+	200 m+	PBS3B (42 m)	Yes
310-42-E-0a	Harris Road	2.55	4 / 0.1 / 0.2	4 / 0.1 / 0.2	5 / 0.1 / 0.2	6 / 0.1 / 0.2	160 m	200 m+	PBS3B (42 m)	Yes
310-43-E-3	Elsden Road	2.55	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	49 m	200 m+	PBS3B (42 m)	Yes
310-43-P-8a	Mann Silo Road	2.55	14 / 0.2 / 0.6	11 / 0.2 / 0.5	14 / 0.2 / 0.6	11 / 0.2 / 0.5	200 m+	120 m	PBS3B (42 m)	Yes
310-45-E-1	Longhurst Road	2.55	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	10** / 0.2 / 0.4	200 m+	200 m+	PBS3B (42 m)	Yes
310-48-P-1	Tip Road	2.55	18 / 0.3 / 0.6	34 / 0.6 / 1.4	26 / 0.4 / 1.1	50 / 0.8 / 2.1	200 m+	200 m+	PBS3B (42 m)	Yes
310-50-P-11	Linthorpe Valley Road	2.55	5 / 0.1 / 0.2	5 / 0.1 / 0.2	7 / 0.1 / 0.3	7 / 0.1 / 0.3	200 m+	200 m+	PBS3B (42 m)	Yes
310-57-P-4	Leesons Road	2.55	3 / 0.1 / 0.1	4 / 0.1 / 0.2	4 / 0.1 / 0.2	4 / 0.1 / 0.2	200 m+	200 m+	PBS3B (42 m)	Yes

Table notes:

* Indicates road-rail interface locations where there are no existing roads, therefore available storage is dependent on road design

** Conservatively assumed based on road surrounds and similar road types in the local vicinity

Table 5.73 Review of proposed public level crossing 2040 queue analysis results at critical storage locations for 60 km/h train speed

Interface ID	Road name	Wait time per closure (min)	Critical available storage	Traffic demand [vehs/hr]	Average arrival rate [veh/min]	Estimated queue per closure [vehs]	Commentary
Local Government: Goondiwindi Regional Council							
310-7-E-1	Unnamed Road	2.65	40 m	10	0.2	0.4 [<1 vehicle]	This is a rural property access in a constrained brownfield environment. The assumed peak hour traffic demands are likely to be significantly overstated (i.e. demands likely to be closer to 0 or 1 vehicle) and as such, the maximum number of queued vehicles per closure is expected to be 1 regardless of the adopted arrival profile. There is sufficient distance between the level crossing and Yelarbon Kurumbul Road for the design vehicle to store (i.e. 40 m storage vs. a 36.5 m PBS3A)
310-10-P-1	Unnamed Road	2.50	24 m	10	0.2	0.4 [<1 vehicle]	This is a proposed Stock Route crossing. The assumed peak hour traffic demands are likely to be significantly overstated (i.e. demands are likely to be closer to 0 or 1 vehicle) and as such, the maximum number of queued vehicles per closure is expected to be 1 regardless of the adopted arrival profile. There is sufficient distance between the level crossing and Yelarbon Kurumbul Road for the design vehicle to store (i.e. 24 m storage vs. a 19.0 m PBS1)
310-25-P-3	Grays Road	2.50	55 m	2	0.0	0.1 [<1 vehicle]	Grays Road is a rural road with very low peak hour traffic demands. There is sufficient storage to accommodate 100% of the estimate 2040 peak hour demands (2 vehicles) if they all arrived during a closure period and as such, the arrival rate does not materially impact the outcome of the analysis. There is sufficient distance between the level crossing and Millmerran Inglewood Road for the design vehicle to store (i.e. 55 m storage vs. a 42 m PBS3B)
310-26-P-2	Wongavale Yugalbar Road	2.50	56 m	1	0.0	0.1 [<1 vehicle]	Wongavale Yugalbar Road is a rural road with very low peak hour traffic demands. There is sufficient storage to accommodate 100% of the estimate 2040 peak hour demands (1 vehicle) if they all arrived during a closure period and as such, the arrival rate does not materially impact the outcome of the analysis. There is sufficient distance between the level crossing and Millmerran Inglewood Road for the design vehicle to store (i.e. 56 m storage vs. a 42 m PBS3B)
310-28-P-3	Unnamed Road	3.02	48 m	10	0.2	0.5 [<1 vehicle]	This is an unsealed rural road. The conservatively assumed peak hour traffic demands (10 vehicles) are likely to be significantly overstated (i.e. demands likely to be closer to 0 or 1 vehicle) and as such, the maximum number of queued vehicles per closure is expected to be 1 regardless of the adopted arrival profile. There is sufficient distance between the level crossing and Millmerran Inglewood Road for the design vehicle to store (i.e. 48 m storage vs. a 42 m PBS3B)

Interface ID	Road name	Wait time per closure (min)	Critical available storage	Traffic demand [vehs/hr]	Average arrival rate [veh/min]	Estimated queue per closure [vehs]	Commentary
Local Government: Toowoomba Regional Council							
310-30-P-2	Kooroongarra Anderson Road	2.50	48 m	10	0.2	0.4 [<1 vehicle]	This is a proposed unused Stock Route crossing. The assumed peak hour traffic demands are likely to be significantly overstated (i.e. demands are likely to be closer to 1 vehicle) and as such, the maximum number of queued vehicles per closure is expected to be 1 regardless of the adopted arrival profile. There is sufficient distance between the level crossing and Millmerran Inglewood Road for the design vehicle to store (i.e. 48 m storage vs. a 42 m PBS3B)
310-31-P-7	Kooroongarra Road	2.55	62 m	10	0.2	0.4 [<1 vehicle]	Kooroongarra Road is an unsealed rural road. The conservatively assumed peak hour traffic demands (10 vehicles) are likely to be significantly overstated (i.e. demands likely to be closer to 0 or 1 vehicle) and as such, the maximum number of queued vehicles per closure is expected to be 1 regardless of the adopted arrival profile. There is sufficient distance between the level crossing and Millmerran Inglewood Road for the design vehicle to store (i.e. 62 m storage vs. a 42 m PBS3B)
310-43-E-3	Elsden Road	2.55	49 m	10	0.2	0.4 [<1 vehicle]	Elsden Road is a rural road. The conservatively assumed peak hour traffic demands (10 vehicles) are likely to be overstated. The maximum number of queued vehicles per closure is expected to be 1 regardless of the adopted arrival profile. There is sufficient distance between the level crossing and Gore Highway for the design vehicle to store (i.e. 49 m storage vs. a 42 m PBS3B)

5.9.4 Road diversion assessment

A road diversion assessment has been undertaken at a number of locations where the rail alignment and Road-rail-interface crossing type has led to a requirement for redirection of traffic to an alternative route. Within the TIA study area, seven diversion locations have been identified. These are summarised below, with detailed assessments provided in Sections 5.9.4.1 to 5.9.4.7:

- Athol School Road, Athol
- Biddeston Southbrook Road, Southbrook
- Lochaber Road, Pittsworth
- Oakey Pittsworth Road, Pittsworth
- Tip Road, Pittsworth
- Ware Street, Brookstead
- Fysh Road, Pampas.

At each of these diversion locations, an assessment has been undertaken to summarise the:

- Existing situation, including the road network and active and public transport provisions
- Required site distance length
- Traffic information and rerouting assumptions
- Capacity (SIDRA) and turn warrants assessment without and with Project
- Recommendations.

The Ware Street diversion is an exception to above, as this diversion location has had a separate traffic impact assessment undertaken. As such, the previous TIA work has been summarised within this report, with the full assessment included in Appendix BM.

This is a preliminary assessment, and once further design is available it is recommended that this assessment be revisited to check the design speed and if there are any obstructions to sight distances.

5.9.4.1 Athol School Road

Background

The existing Athol School Road is a 'Z' shaped route that connects Biddeston Southbrook Road to Gore Highway. It is a two-lane, two-way road for most of the section, with some sections unmarked. Purcell Road is an unmarked road, also allowing for a two-way traffic. Gore Highway is a major road that is also two-lane, two-way.

The proposed Inland Rail connection will intersect Athol School Road west of Short Road and east of Trader Road. To facilitate this, an extension of Athol School Road (i.e. new service road) just south of Trader Road will be created that connects to Purcell Road. The connection from Purcell Road to/from Gore Highway will be severed.

Vehicles travelling from Purcell Road to Gore Highway northbound will connect via this new service road onto Athol School Road and then onto Gore Highway. For vehicles travelling south, they will have to use Biddeston Southbrook Road to access Gore Highway.

Figure 5.12 shows the proposed diversion routes.

The diversion of traffic resulting from the Project upgrades will impact the following intersections:

- **Intersection 1:** Athol School Road/New Service Road, a priority-controlled T-intersection
- **Intersection a:** Gore Highway/Purcell Road/Wyreema Athol Road, a priority-controlled four-way intersection
- **Intersection b:** Biddeston Southbrook Road/Purcell Road, a priority-controlled T-intersection
- **Intersection c:** Biddeston Southbrook Road/Athol School Road, a priority-controlled T-intersection
- **Intersection n:** Gore Highway/Short Road, a priority-controlled T-intersection
- **Intersection o:** Wyreema Athol Road/Short Road, a priority-controlled T-intersection
- **Intersection p:** Gore Highway/Athol School Road, a priority-controlled T-intersection.

Based on the 2022 traffic count data, the morning and afternoon peak hours for these intersections are as follows:

- AM Peak: 07:15 to 08:15
- PM Peak: 16:30 to 17:30.

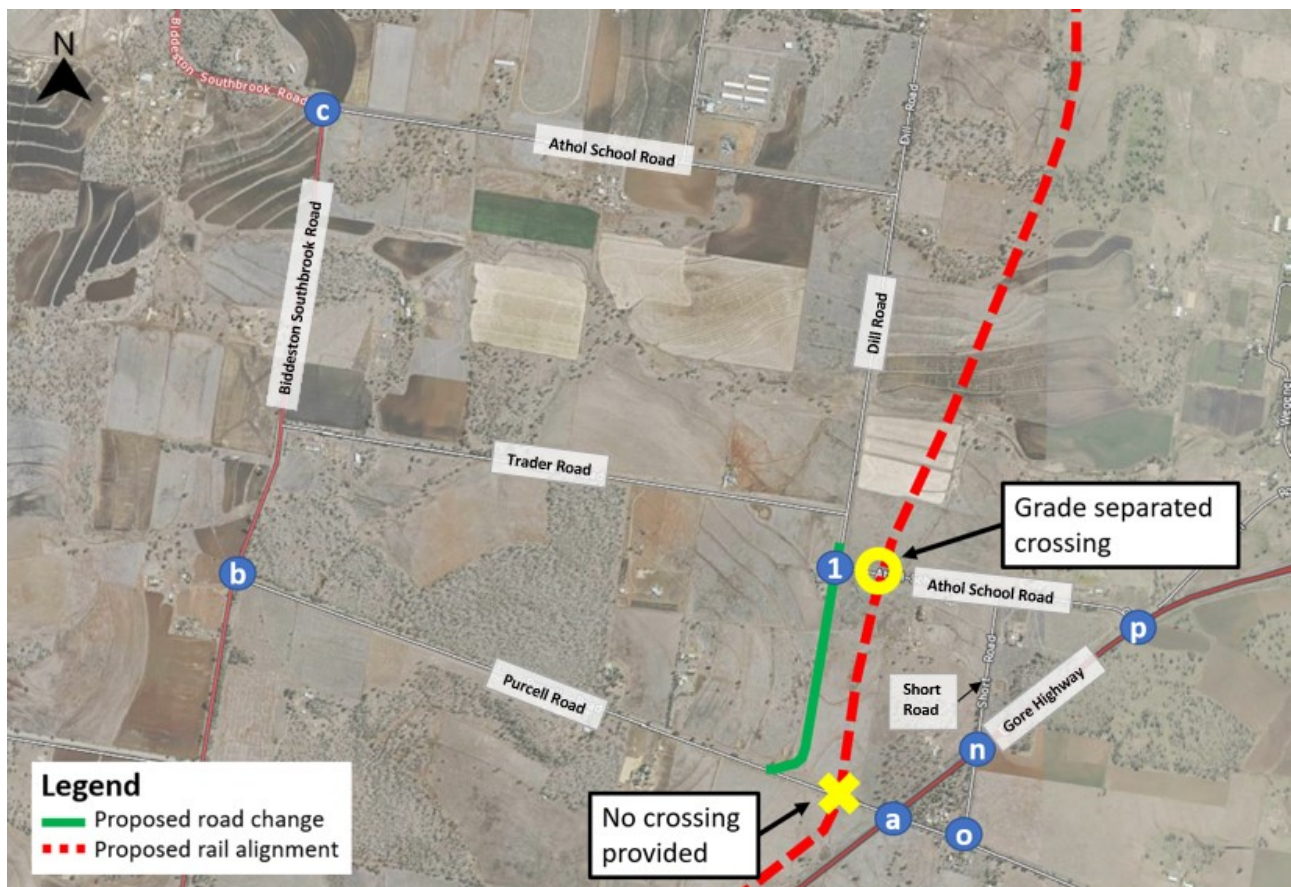


Figure 5.12 Road diversion - Athol School Road and surrounds

Active transport

No shared use paths or bicycle lanes are provided in the vicinity of the study area and there are no designated cycle networks covered in the DTMR Downs South West Principal Cycle Network Plan (2021).

Public transport

No public transport routes are present along Athol School Road and vicinity within the study area and diversion routes, however, one school bus route is present. P1883 from Athol to Bunker's Hill State School travels along Athol School Road. The diversion will not alter the bus route's journey significantly, with the only change being a new t-intersection at intersection 1. It is noted that disruption to the bus route is likely during construction.

Sight distance

Table 5.74 provides a summary of sight distance requirements at each intersection, including inputs relating to the road seal, major road speed limit and longitudinal grade considered for each access location. It is noted that the grade of the intersection is unknown at newly proposed roads, and therefore a best estimate based on current road environment is provided. These should be re-investigated in the Detailed Design stage.

Table 5.74 Sight distance summary table for Athol School Road diversion

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Athol School Road/New Service Road	Sealed	100	-1.8%	300
Gore Highway/Purcell Road/Wyreema Athol Road	Sealed	100	-3.2%	300
Biddeston Southbrook Road/Purcell Road	Sealed	100	-3.2%	300
Biddeston Southbrook Road/Athol School Road	Sealed	100	-4.8%	301
Gore Highway/Short Road	Sealed	100	-1.6%	300
Wyreema Athol Road/Short Road	Sealed	100	-1.4%	300
Gore Highway/Athol School Road	Sealed	100	-3.7%	301

Traffic data

Table 5.75 presents the peak hour traffic volumes of the affected intersections for the base year (2022), the Project opening year (2028) and the design horizon year (2038) under the base case scenario (i.e. no traffic diversion).

In this table, the traffic volumes have been classified based on:

- LV: Austroads class 1 and 2 vehicles
- HV: Austroads class 3 to 12 vehicles.

The base year traffic volumes have been obtained from the results of the 2022 traffic count surveys conducted at these intersections. The future traffic volumes have also been forecast assuming a yearly compound growth rate of 3.52 per cent for each of the intersections.

Table 5.75 Intersection traffic volumes without Project – Athol School Road diversion

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year ‘without Project’ traffic volumes				Future year ‘without Project’ traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Purcell Road/ Wyreema Athol Road	East – Wyreema Athol Road	LT	1	0	1	0	3.52%	1	0	1	0	1	0	1	0
		T	4	0	1	0	3.52%	5	0	1	0	7	0	1	0
		RT	1	0	1	0	3.52%	1	0	1	0	1	0	2	1
	North-east – Gore Highway	LT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
		T	165	38	248	28	3.52%	207	47	311	35	293	67	440	50
		RT	0	0	2	0	3.52%	1	0	3	0	1	0	4	0
	West – Purcell Road	LT	4	0	2	0	3.52%	5	0	3	0	7	0	4	0
		T	1	0	2	0	3.52%	2	0	2	0	2	0	3	0
		RT	0	0	1	0	3.52%	1	0	1	0	1	0	1	0
	South-west – Gore Highway	LT	1	0	0	0	3.52%	2	0	1	0	2	0	1	0
		T	256	34	219	41	3.52%	321	43	275	51	454	61	389	72
		RT	1	0	1	0	3.52%	1	0	2	0	1	0	2	0
Biddeston Southbrook Road/Purcell Road	South – Biddeston Southbrook Road	T	3	1	6	1	3.52%	3	1	7	1	5	1	10	2
		RT	2	0	1	0	3.52%	2	0	2	0	3	0	2	0
	East – Purcell Road	LT	0	0	1	0	3.52%	1	0	2	0	1	0	2	0
		RT	4	0	1	0	3.52%	5	1	1	0	7	1	1	0
	North - Biddeston Southbrook Road	LT	1	0	1	0	3.52%	1	0	2	0	2	0	2	0
		T	5	0	9	1	3.52%	6	1	11	1	9	1	15	1
Biddeston Southbrook Road/Athol School Road	South east – Biddeston Southbrook Road	T	8	1	6	0	3.52%	10	1	8	0	13	1	11	0
		RT	1	0	1	0	3.52%	2	0	2	0	2	0	2	0
	North-east – Athol School Road	LT	1	0	0	0	3.52%	1	0	1	0	1	0	1	0
		RT	4	0	3	0	3.52%	5	0	4	0	6	0	6	0

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year ‘without Project’ traffic volumes				Future year ‘without Project’ traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
	North-east – Athol School Road	LT	4	0	6	0	3.52%	5	0	8	0	6	0	11	0
		T	6	0	8	0	3.52%	7	1	10	0	10	1	15	0
Gore Highway/ Short Road	South – Short Road	LT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
		RT	7	0	4	0	3.52%	9	0	5	0	12	0	7	0
	East – Gore Highway	LT	1	0	9	0	3.52%	2	0	11	1	2	0	16	1
		T	159	36	242	25	3.52%	199	45	304	31	282	64	430	44
	West – Gore Highway	T	262	32	205	35	3.52%	328	40	257	44	464	57	363	62
		RT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
Wyreema Athol Road/ Short Road	East – Wyreema Athol Road	T	6	0	2	0	3.52%	7	1	3	1	10	1	4	1
		RT	7	0	4	0	3.52%	9	1	5	0	13	1	7	0
	North – Short Road	LT	3	0	9	0	3.52%	4	0	11	1	6	0	16	1
		RT	0	1	0	0	3.52%	0	1	1	0	0	2	1	0
	West – Wyreema Athol Road	LT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
		T	2	0	2	0	3.52%	2	0	3	0	3	0	4	0
Gore Highway/ Athol School Road	East – Gore Highway	T	163	38	262	27	3.52%	205	47	328	34	290	67	464	47
		RT	5	3	9	2	3.52%	6	3	12	2	8	4	16	3
	North – Athol School Road	LT	11	3	7	2	3.52%	13	3	8	2	19	4	12	3
		RT	1	1	1	0	3.52%	1	1	1	0	1	1	1	0
	West – Gore Highway	LT	1	1	2	0	3.52%	1	1	2	0	1	1	3	0
		T	267	34	230	41	3.52%	335	43	288	51	474	60	407	72

Rerouting assumptions

The following are the re-routing assumptions adopted as a result of the diversion:

- **Intersection a:** Right-turn traffic from Gore Highway (North) approach will be re-routed to Intersection p
- **Intersection a:** All through traffic from Wyreema Athol Road (East) approach will be re-routed to Intersection p
- **Intersection a:** All left-turn traffic from Gore Highway (South) approach will be re-routed to Intersection p
- **Intersection a:** All left-turn and through traffic from Purcell Road (West) approach will be re-routed to Intersection p
- **Intersection a:** All right-turn and through traffic from Purcell Road (West) approach will be re-routed to Intersection 2.

With the future diversion, the future traffic volumes at these intersections have been calculated for the Project case scenario using the forecast traffic volumes and presented in Table 5.76.

Table 5.76 Intersection traffic volumes with Project – Athol School Road diversion

Intersection	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold				Over 5%
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak		
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	
Athol School Road/New Service Road	South – New Service Road	T	New intersection, no 'without diversion'				1	0	1	0	New intersection, no comparison				
		RT					7	0	5	0					
	East – Athol School Road	LT					7	1	4	0					
		RT					1	0	1	0					
	North – Athol School Road	LT					6	0	10	0					
		T					1	0	1	0					
Gore Highway/Purcell Road/ Wyreema Athol Road	East – Wyreema Athol Road	LT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	> 5%
		T	5	0	1	0	No movement in 'with diversion'				No comparison				
		RT	1	0	1	0	6	0	2	0	500%	0%	100%	0%	
	Northeast – Gore Highway	LT	1	0	1	0	2	0	2	0	100%	0%	100%	0%	
		T	207	47	311	35	207	47	311	35	0%	0%	0%	0%	
		RT	1	0	3	0	No movement in 'with diversion'				No comparison				
	West – Purcell Road	LT	5	0	3	0	No movement in 'with diversion'				No comparison				
		T	2	0	2	0	No movement in 'with diversion'				No comparison				
		RT	1	0	1	0	No movement in 'with diversion'				No comparison				
	Southwest – Gore Highway	LT	2	0	1	0	No movement in 'with diversion'				No comparison				
		T	321	43	275	51	323	43	276	51	1%	0%	0%	0%	
		RT	1	0	2	0	1	0	2	0	0%	0%	0%	0%	
Biddeston Southbrook Road/Purcell Road	South – Biddeston Southbrook Road	T	3	1	7	1	3	1	7	1	0%	0%	0%	0%	<5%
		RT	2	0	2	0	2	0	2	0	0%	0%	0%	0%	
	East – Purcell Road	LT	1	0	2	0	1	0	2	0	0%	0%	0%	0%	
		RT	5	1	1	0	5	1	1	0	0%	0%	0%	0%	

Intersection	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold				Over 5%
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak		
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	
	North – Biddeston Southbrook Road	LT	1	0	2	0	1	0	2	0	0%	0%	0%	0%	
		T	6	1	11	1	6	1	11	1	0%	0%	0%	0%	
Biddeston Southbrook Road/Athol School Road	Southeast – Biddeston Southbrook Road	T	10	1	8	0	10	1	8	0	0%	0%	0%	0%	<5%
		RT	2	0	2	0	2	0	2	0	0%	0%	0%	0%	
	Northeast – Athol School Road	LT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	
		RT	5	0	4	0	5	0	4	0	0%	0%	0%	0%	
	Northwest – Athol School Road	LT	5	0	8	0	5	0	8	0	0%	0%	0%	0%	
		T	7	1	10	0	7	1	10	0	0%	0%	0%	0%	
Gore Highway/Short Road	South – Short Road	LT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	<5%
		RT	9	0	5	0	9	0	5	0	0%	0%	0%	0%	
	East – Gore Highway	LT	2	0	11	1	2	0	11	1	0%	0%	0%	0%	
		T	199	45	304	31	201	45	304	31	1%	0%	0%	0%	
	West – Gore Highway	T	328	40	257	44	335	41	258	44	2%	3%	0%	0%	
		RT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	
Wyreema Athol Road/Short Road	East – Wyreema Athol Road	T	7	1	3	1	7	1	3	1	0%	0%	0%	0%	<5%
		RT	9	1	5	0	9	1	5	0	0%	0%	0%	0%	
	North – Short Road	LT	4	0	11	1	4	0	11	1	0%	0%	0%	0%	
		RT	0	1	1	0	0	1	1	0	0%	0%	0%	0%	
	West – Wyreema Athol Road	LT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	
		T	2	0	3	0	2	0	3	0	0%	0%	0%	0%	
Gore Highway/Athol School Road	East – Gore Highway	T	205	47	328	34	205	47	328	34	0%	0%	0%	0%	>5%
		RT	6	3	12	2	6	3	14	2	0%	0%	17%	0%	
	North – Athol School Road	LT	13	3	8	2	18	3	11	2	38%	0%	38%	0%	
		RT	1	1	1	0	3	1	3	0	200%	0%	200%	0%	

Intersection	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold				Over 5%
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak		
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	
	West – Gore Highway	LT	1	1	2	0	7	1	3	0	600%	0%	50%	0%	
		T	335	43	288	51	335	43	288	51	0%	0%	0%	0%	

Based on the traffic diversion assumptions shown in Figure 5.12 and the forecast traffic demand, the peak hour traffic volumes have been calculated for the Project opening year (2028) and the design horizon year (2038). As can be seen in Table 5.76, the peak hour traffic volumes for the movements at Gore Highway/Purcell Road/Wyreema Athol Road and Gore Highway/Athol School Road intersections will increase by more than 5 per cent due to the traffic diversion resulting from the Project. Therefore, an intersection analysis has been undertaken in this assessment to assess the traffic efficiency of the impacted intersections under the Project case scenario, as detailed in the following section.

Capacity analysis (SIDRA) summary

Using SIDRA Intersection, the relevant intersections below have been analysed under the Project case scenario (with traffic diversion) with the forecast peak hour volumes in the opening year (2028) and the design horizon year (2038).

The summary of the results is presented in Table 5.77, including Degree of Saturation (DOS) and delay for each intersection, and delay, LOS and queue distance for the worst movement.

Table 5.77 SIDRA summary table for Athol School Road diversion

Period	Scenario	Intersection		Worst movement			
		DOS	Delay (s)	Mov.	Delay (s)	LOS	Queue distance (m)
Gore Highway/New Service Road							
2038 AM	With Project	0.285	0.5	NW	12.1	B	1.2
2038 PM	With Project	0.282	0.5	NW	12.1	B	0.8
Gore Highway/Purcell Road/Wyreema Athol Road							
2022 AM	Existing	0.161	0.4	E	16.6	C	0.4
2022 PM	Existing	0.148	0.3	E	17.4	C	0.2
2028 AM	Without Project	0.202	0.4	E	20.6	C	0.5
	With Project	0.202	0.3	E	17.8	C	0.5
2028 PM	Without Project	0.185	0.3	E	21.9	C	0.2
	With Project	0.185	0.2	E	18.7	C	0.2
2038 AM	Without Project	0.286	0.6	E	34.5	D	1.1
	With Project	0.285	0.4	E	27.6	D	1
2038 PM	Without Project	0.261	0.6	E	59.4	F	1.2
	With Project	0.26	0.2	E	29.7	D	0.4
Gore Highway/Short Road							
2028 AM	Without Project	0.203	0.2	S	10.3	B	0.4
	With Project	0.207	0.2	S	10.4	B	0.4
2028 PM	Without Project	0.17	0.2	S	10.4	B	0.3
	With Project	0.171	0.2	S	10.4	B	0.3
2038 AM	Without Project	0.287	0.2	S	14.5	B	0.8
	With Project	0.292	0.2	S	14.8	B	0.9
2038 PM	Without Project	0.24	0.3	S	14.6	B	0.5
	With Project	0.241	0.3	S	14.6	B	0.5
Gore Highway/Athol School Road							
2022 AM	Existing	0.166	0.4	N	14.1	B	0.7
2022 PM	Existing	0.159	0.3	N	10.7	B	0.4

Period	Scenario	Intersection		Worst movement			
		DOS	Delay (s)	Mov.	Delay (s)	LOS	Queue distance (m)
2028 AM	Without Project	0.208	0.5	N	21	C	0.8
	With Project	0.208	0.7	N	17.6	C	1.1
2028 PM	Without Project	0.197	0.4	N	15.3	C	0.4
	With Project	0.197	0.5	N	15.5	C	0.6
2038 AM	Without Project	0.294	0.6	N	35.2	E	1.4
	With Project	0.294	0.8	N	26.5	D	2
2038 PM	Without Project	0.278	0.4	N	23.5	C	0.8
	With Project	0.28	0.6	N	23.8	C	1.2

It can be seen from the above results that the results are mixed with the diversions improving some delays and worsening others, albeit insignificantly. In terms of LOS, the diversions have improved the performance for some of the intersections and retained the same performance levels for the others such that all the analysed intersections are now performing satisfactorily after diversion. In summary, all intersections perform satisfactorily after the diversion project and with negligible vehicle queue distances.

Turn warrants

The turn warrants assessment for each intersection is provided in Table 5.78 and Table 5.79 for right and left turning treatments, respectfully. It provides a summary of the peak hour volumes for the major road and minor road turning movements without and with Project traffic, existing turn treatments, minimum turn treatment requirements without and with the Project and indicates whether the existing treatment are insufficient and therefore mitigations are required.

Table 5.78 Turn warrants assessment for right turning treatments at Athol School Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Athol School Road/New Service Road	No intersection	8	No intersection	7	No intersection	BAR		Yes
Gore Highway/Purcell Road/Wyreema Athol Road	952	954	2	2	CHR	BAR	BAR	No
Biddeston Southbrook Road/Purcell Road	18	18	3	3	BAR	BAR	BAR	No
Biddeston Southbrook Road/Athol School Road	31	31	2	2	BAR	BAR	BAR	No
Gore Highway/Short Road	869	880	1	1	BAR	BAR	BAR	No
Wyreema Athol Road/Short Road	15	15	14	14	None	BAR	BAR	No
Gore Highway/Athol School Road	993	994	19	23	CHR	CHR	CHR	No

Table 5.79 Turn warrants assessment for left turning treatments at Athol School Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into laydown (Q _L)		Existing turn treatments	Minimum left turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Athol School Road/New Service Road	No intersection	1	No intersection	10	No intersection	BAL		Yes
Gore Highway/Purcell Road/Wyreema Athol Road	360	360	1	3	CHL	BAL	BAL	No
Biddeston Southbrook Road/Purcell Road	10	10	2	2	BAL	BAL	BAL	No
Biddeston Southbrook Road/Athol School Road	15	15	11	11	AUL	BAL	BAL	No
Gore Highway/Short Road	474	473	17	17	BAL	AUL(s)	AUL(s)	Yes
Wyreema Athol Road/Short Road	3	3	1	1	None	BAL	BAL	Yes
Gore Highway/Athol School Road	534	534	2	12	CHL	BAL	AUL(s)	No

Recommendations

For the above intersections that have been analysed, all intersections are performing at a satisfactory level post-diversion. The impact on public transport and active modes are also expected to be negligible, if any. Therefore, no further upgrades to any of the intersections impacted by this diversion are required.

5.9.4.2 Biddeston Southbrook Road

Background

The existing Biddeston Southbrook Road is a two-lane, two-way rural road that connects Gore Highway with Athol School Road and further northwards towards Biddeston. At each end of the road is a priority-controlled intersection.

The future diversion project (Figure 5.13) will involve a new service road that connects Biddeston Southbrook Road to/from Bushy Lane on a parallel route with Gore Highway (red line in Figure 5.13). Following the implementation of the diversion project, Biddeston Southbrook Road will no longer have direct access to/from Gore Highway, with the new alternative connection via Purcell Road.

This will also affect the connection between Gore Highway and Bushy Lane. From Bushy Lane, vehicles heading southwards onto Gore Highway will be able to continue using Linthorpe Valley Road, whilst vehicles heading northwards can use the new service road onto Biddeston South Road, onto Purcell Road and then onto Gore Highway.

The diversion projects will impact the following intersections:

- **Intersection 3:** Biddeston Southbrook Road/New Service Road, a priority-controlled T-intersection
- **Intersection d:** Gore Highway/Bushy Lane, a priority-controlled four-way intersection
- **Intersection e:** Gore Highway/Biddeston Southbrook Road, a priority-controlled T-intersection
- **Intersection m:** Gore Highway/Harelmars Road, a priority-controlled T-intersection.

Based on the 2022 traffic count data, the morning and afternoon peak hours for these intersections are as follows:

- AM Peak: 07:15 to 08:15
- PM Peak: 16:30 to 17:30.



Figure 5.13 Traffic diversion - Biddeston Southbrook Road and surrounds

Active transport

No shared use paths or bicycle lanes are provided in the vicinity of the study area and there are no designated cycle networks.

Public transport

No public transport routes are present along Biddeston Southbrook Road and its vicinity within the study area and diversion routes, however, there is one school bus route present. P510 connects Southbrook North to Southbrook Central State School via the current Biddeston Southbrook Road. This bus route will require minor alteration to use the proposed new realignment of Biddeston Southbrook Road. Disruptions can be expected over the period of construction.

Sight distance

Table 5.80 provides a summary of sight distance requirements at each intersection, including inputs relating to the road seal, major road speed limit and longitudinal grade considered for each access location. It is noted that the grade of the intersection is unknown at newly proposed roads, and therefore a best estimate based on current road environment is provided. These should be re-investigated in the Detailed Design stage.

Table 5.80 Sight distance summary table for Biddeston Southbrook Road diversion

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Biddeston Southbrook Road/New Service Road	Sealed	100	-3.8%	301
Gore Highway/Bushy Lane	Sealed	100	-3.0%	300
Gore Highway/Biddeston Southbrook Road	Sealed	100	-2.6%	300
Gore Highway/Haremar Road	Sealed	100	-4.3%	301

Traffic data

Table 5.81 presents the peak hour traffic volumes of the affected intersections for the base year (2022), the Project opening year (2028) and the design horizon year (2038) under the base case scenario (i.e. no traffic diversion).

In this table, the traffic volumes have been classified based on:

- LV: Austroads class 1 and 2 vehicles
- HV: Austroads class 3 to 12 vehicles.

The base year traffic volumes have been obtained from the results of the 2022 traffic count surveys conducted at these intersections. The future traffic volumes have also been forecast assuming a yearly compound growth rate of 3.52 per cent for each of the intersection.

Table 5.81 Intersection traffic volumes without Project – Biddeston Southbrook Road diversion

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year ‘without Project’ traffic volumes				Future year ‘without Project’ traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Bushy Lane	East – Bushy Lane	LT	1	1	0	0	3.52%	1	1	1	0	1	1	1	0
		T	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
		RT	1	0	0	0	3.52%	1	0	1	0	2	0	1	0
	Northeast – Gore Highway	LT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
		T	161	37	208	26	3.52%	202	46	261	33	285	65	369	46
		RT	2	0	7	0	3.52%	3	0	8	0	4	0	12	0
	West – Bushy Lane	LT	9	0	5	0	3.52%	12	0	6	0	16	0	8	0
		T	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
		RT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
	Southwest – Gore Highway	LT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
		T	204	31	207	41	3.52%	256	39	260	51	361	55	368	72
		RT	1	0	0	0	3.52%	1	0	1	0	1	0	1	0
Gore Highway/ Biddestone Southbrook Road	Northeast – Gore Highway	T	169	38	248	27	3.52%	212	48	311	34	300	68	440	47
		RT	0	0	3	1	3.52%	1	0	3	1	1	0	4	1
	Northwest - Biddestone Southbrook Road	LT	3	0	1	0	3.52%	3	0	1	0	5	0	1	0
		RT	5	1	6	0	3.52%	7	1	7	0	9	1	10	0
	Southwest – Gore Highway	LT	5	1	5	1	3.52%	6	1	6	1	8	2	8	1
		T	254	32	220	42	3.52%	319	40	276	53	450	57	390	75
Gore Highway/ Harelmarr Road	South – Harelmarr Road	LT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
		RT	42	2	14	1	3.52%	52	2	17	2	74	3	24	2
	East – Gore Highway	LT	12	2	41	1	3.52%	14	2	52	1	20	3	73	1
		T	162	35	209	25	3.52%	203	44	262	31	287	63	371	44

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year 'without Project' traffic volumes				Future year 'without Project' traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
	West – Gore Highway	T	214	32	209	41	3.52%	269	40	263	52	380	57	371	73
		RT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0

Rerouting assumptions

The following are the re-routing assumptions:

- **Intersection e:** All traffic will be diverted to Intersection 2 on Gore Highway
- **Bushy Lane traffic onto/from Gore Highway:** All the traffic will use the new service road.

With the future diversion, the future traffic volumes at these intersections have been calculated for the Project case scenario using the forecast traffic volumes and presented in Table 5.82.

Table 5.82 Intersection traffic volumes with Project – Biddeston Southbrook Road diversion

Intersection	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold				Over 5%
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak		
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	
Biddeston Southbrook Road/ New Service Road	South: Biddeston Southbrook Road	LT	New intersection, no 'without diversion'				3	0	9	0	New intersection, no comparison				
		T					6	2	9	1					
	North: Biddeston Southbrook Road	T					10	1	8	0					
		RT					1	0	1	0					
	West: New Service Road	LT					1	0	1	0					
		RT					12	0	6	0					
Gore Highway/ Bushy Lane	East – Bushy Lane	LT	1	1	1	0	1	1	1	0	0%	0%	0%	0%	<5%
		T	1	0	1	0	No movement in 'with diversion'				No comparison				
		RT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	
	Northeast – Gore Highway	LT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	
		T	202	46	261	33	202	46	261	33	0%	0%	0%	0%	
		RT	3	0	8	0	No movement in 'with diversion'				No comparison				
	West – Bushy Lane	LT	12	0	6	0	No movement in 'with diversion'				No comparison				
		T	1	0	1	0	No movement in 'with diversion'				No comparison				
		RT	1	0	1	0	No movement in 'with diversion'				No comparison				
	Southwest – Gore Highway	LT	1	0	1	0	No movement in 'with diversion'				No comparison				
		T	256	39	260	51	256	39	260	51	0%	0%	0%	0%	
		RT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	
Gore Highway/ Biddeston Southbrook Road	Northeast – Gore Highway	T	212	48	311	34	212	48	311	34	0%	0%	0%	0%	<5%
		RT	1	0	3	1	No movement in 'with diversion'				No comparison				
	Northwest – Biddestone Southbrook Road	LT	3	0	1	0	No movement in 'with diversion'				No comparison				
		RT	7	1	7	0	No movement in 'with diversion'				No comparison				

Intersection	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold				Over 5%
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak		
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	
	Southwest – Gore Highway	LT	6	1	6	1	No movement in 'with diversion'				No comparison				
		T	319	40	276	53	319	40	276	53	0%	0%	0%	0%	
Gore Highway/ Harelmar Road	South – Harelmar Road	LT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	<5%
		RT	52	2	17	2	52	2	17	2	0%	0%	0%	0%	
	East – Gore Highway	LT	14	2	52	1	14	2	52	1	0%	0%	0%	0%	
		T	203	44	262	31	200	44	254	31	-1%	0%	-3%	0%	
	West – Gore Highway	T	269	40	263	52	269	40	263	52	0%	0%	0%	0%	
		RT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	

As shown in Table 5.82, the volumes at each of the intersection will not experience a significant increase (<5 per cent) in the peak hour traffic demand across all intersections. To comply with the GTIA requirements, an intersection analysis was undertaken in this assessment to investigate the potential impacts of the Project on traffic performance of each of the affected intersection. The results of this assessment are summarised in the following section.

Capacity analysis (SIDRA) summary

Using SIDRA Intersection, the intersections of Gore Highway with Biddeston Southbrook Road, Harelmarr Road and Bushy Lane have been analysed under the Project case scenario (with traffic diversion) with the forecast peak hour volumes in the opening year (2028) and the design horizon year (2038).

The summary of the results is presented in Table 5.83.

Table 5.83 SIDRA summary table for Biddeston Southbrook Road diversion

Period	Scenario	Intersection		Worst Movement			
		DOS	Delay (s)	Mov.	Delay (s)	LOS	Queue distance (m)
Gore Highway/Bushy Lane							
2022 AM	Existing	0.132	0.4	W	11	B	0.3
2022 PM	Existing	0.142	0.3	W	11.5	B	0.2
2028 AM	Without Project	0.166	0.4	W	12.3	B	0.4
	With Project	0.165	0.1	E	9.2	A	0.1
2028 PM	Without Project	0.178	0.3	W	13	B	0.2
	With Project	0.177	0.1	E	9.7	A	0.1
2038 AM	Without Project	0.233	0.4	W	16	C	0.6
	With Project	0.233	0.1	E	11.6	B	0.2
2038 PM	Without Project	0.251	0.3	W	17.6	C	0.4
	With Project	0.25	0.1	E	12.7	B	0.1
Gore Highway/Biddeston Southbrook Road							
2022 AM	Existing	0.161	0.3	NW	11.5	B	0.3
2022 PM	Existing	0.154	0.3	NW	10.6	B	0.2
2028 AM	Without Project	0.202	0.3	NW	12.6	B	0.5
2028 PM	Without Project	0.192	0.3	NW	11.9	B	0.3
2038 AM	Without Project	0.285	0.4	NW	16.6	C	0.9
2038 PM	Without Project	0.271	0.3	NW	16.1	C	0.7
Gore Highway/Harelmar Road							
2022 AM	Existing	0.137	1.1	S	10.4	B	1.6
2022 PM	Existing	0.151	0.8	S	10.8	B	0.6
2028 AM	Without Project	0.173	1.2	S	11.5	B	2.2
	With Project	0.172	1.2	S	11.5	B	2.2
2028 PM	Without Project	0.19	0.8	S	12.6	B	0.9
	With Project	0.185	0.8	S	12.5	B	0.9
2038 AM	Without Project	0.244	1.5	S	15	B	4.5
	With Project	0.244	1.5	S	14.9	B	4.5
2038 PM	Without Project	0.268	0.9	S	16.4	C	1.8
	With Project	0.262	0.9	S	16.2	C	1.8

The results from Table 5.83 shows that with the diversion in place, there is an improvement in terms of delays by up to 0.3 seconds and LOS (from C to B) post-project implementation (albeit insignificantly given the traffic volumes) for Gore Highway/Bushy Lane. All the changes, if any, are negligible and the intersections continue to perform satisfactorily.

Turn warrants

The turn warrants assessment for each intersection is provided in Table 5.84 and Table 5.85 for right and left turning treatments, respectfully. It provides a summary of the peak hour volumes for the major road and minor road turning movements without and with Project traffic, existing turn treatments, minimum turn treatment requirements without and with the Project and indicates whether the existing treatment are insufficient and therefore mitigations are required.

Table 5.84 Turn warrants assessment for right turning treatments at Biddeston Southbrook Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Biddeston Southbrook Road/New Service Road	No intersection	29	No intersection	1	No intersection		BAR	No
Gore Highway/Bushy Lane	767	768	1	1	BAR	BAR	BAR	-
Gore Highway/Biddeston Southbrook Road	885	875	1	No turn permitted	BAR	BAR	No turn permitted	No
Gore Highway/Haremar Road	810	806	1	1	None	BAR	BAR	Yes

Table 5.85 Turn warrants assessment for left turning treatments at Biddeston Southbrook Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into laydown (Q _L)		Existing turn treatments	Minimum left turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Biddeston Southbrook Road/New Service Road	No intersection	15	No intersection	12	No intersection		BAL	Yes
Gore Highway/Bushy Lane	350	350	1	1	BAL	BAL	BAL	-
Gore Highway/Biddeston Southbrook Road	507	507	10	No turn permitted	BAL	BAL	No turn permitted	No
Gore Highway/Haremar Road	415	403	74	74	BAL	AUL	AUL	Yes

Recommendations

For the above intersections that have been analysed, insignificant impact is expected, and the intersections continue to perform satisfactorily with low forecasted traffic volumes, minimal delays, and acceptable Levels of Services. The impact on public transport and active modes are also expected to be negligible, if any. Therefore, no upgrades to any of the intersections impacted by this diversion are required.

5.9.4.3 Lochaber Road

Background

The existing Gore Highway intersects Lochaber Road and Paint Mine Road. Both Lochaber Road and Paint Mine Road are each of a two-lane, two-lane rural road that connects onto Gore Highway at a T-intersection. Gore Highway is the major road, also two-lane, two-way, but has a short right-turn lane for turning into Lochaber Road.

With the proposed future diversion project (Figure 5.14), two new service roads are expected to be constructed. The first one will be an expected upgrade of McEwan Lane which is currently a rural gravel narrow road that connects Lochaber Road to/from Paint Mine Road. The second service road will connect the intersection of the first service road/Lochaber Road to/from Gore Highway, running to/from slightly northeast of the existing Lochaber Road/Gore Highway intersection.

With these diversions, access between Paint Mine Road and Gore Highway will be via these two new service roads, whilst the connection from Lochaber Road to/from Gore Highway will be retained, but with the intersection located slightly northeast.

The diversion projects will impact the following intersections:

- **Intersection 4:** Lochaber Road/New Service Road, a priority-controlled T-intersection
- **Intersection 5:** Lochaber Road (New Service Road)/Gore Highway, a priority-controlled T-intersection
- **Intersection f:** Gore Highway/Paint Mine Road, a priority-controlled T-intersection
- **Intersection g:** Gore Highway/existing Lochaber Road, a priority-controlled T-intersection.

Based on the 2022 traffic count data, the morning and afternoon peak hours for these intersections are as follows:

- AM Peak: 07:15 to 08:15
- PM Peak: 16:30 to 17:30.

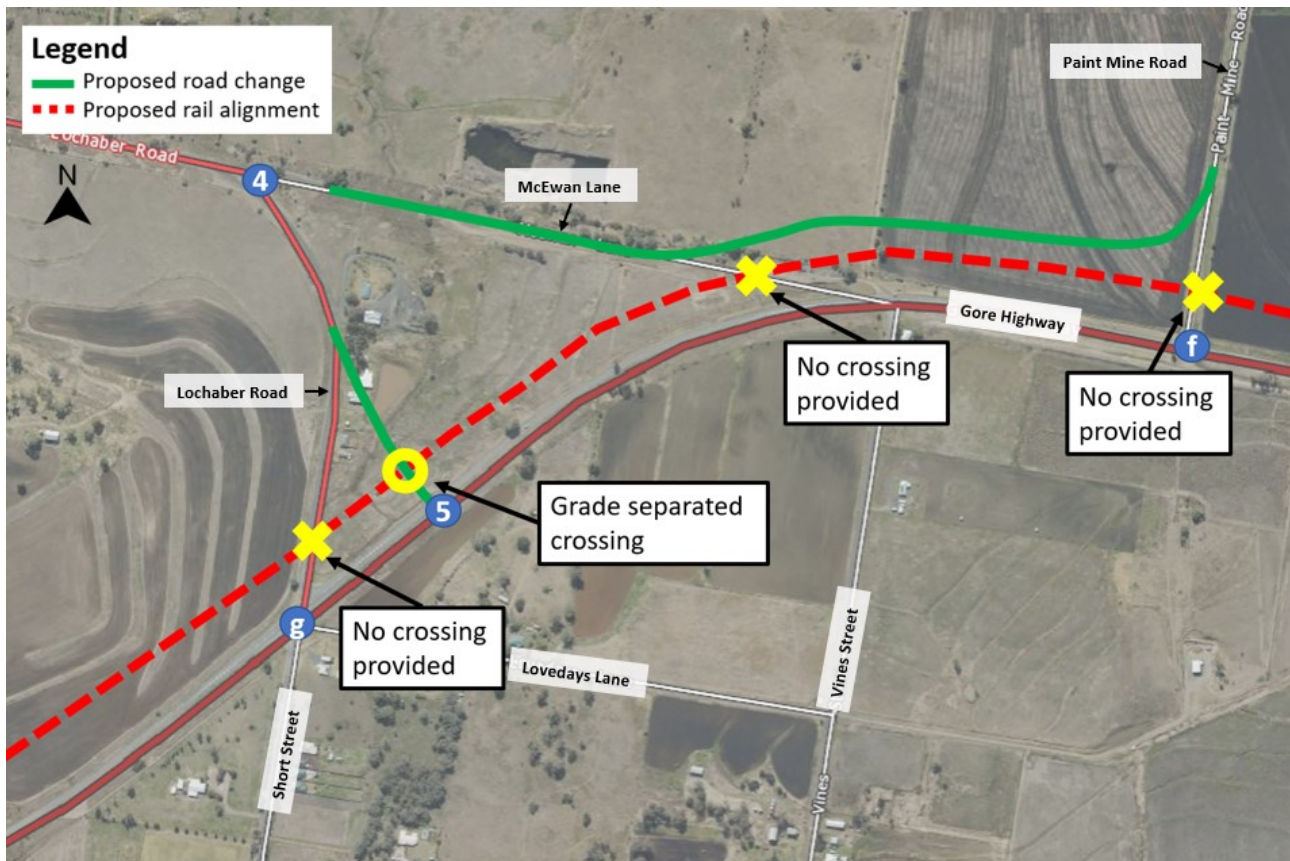


Figure 5.14 Traffic Diversion – Lochaber Road and surrounds

Active transport

No shared use paths or bicycle lanes are provided in the vicinity of the study area.

Public transport

No public transport routes are present along Lochaber Road and its vicinity within the study area and diversion routes, however, two school bus routes are present. P264 from Service Wilga View to Pittsworth State School and P819 from Irongate to Pittsworth State School both currently utilise Lochaber Road. This bus route will require minor alteration to use the proposed new realignment of Lochaber Road. Disruptions can be expected over the period of construction.

Sight distance

Table 5.86 provides a summary of sight distance requirements at each intersection, including inputs relating to the road seal, major road speed limit and longitudinal grade considered for each access location. It is noted that the grade of the intersection is unknown at newly proposed roads, and therefore a best estimate based on current road environment is provided. These should be re-investigated in the Detailed Design stage.

Table 5.86 Sight distance summary Table for Lochaber Road diversion

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Lochaber Road/New Service Road	Sealed	100	-2.0%	300
Lochaber Road (New Service Road)/Gore Highway	Sealed	100	-1.4%	300
Gore Highway/Paint Mine Road	Sealed	100	-0.8%	300
Gore Highway/Lochaber Road	Sealed	100	-1.1%	300

Traffic data

Table 5.87 presents the peak hour traffic volumes of the affected intersections for the base year (2022), the Project opening year (2028) and the design horizon year (2038) under the base case scenario (i.e. no traffic diversion).

In this table, the traffic volumes have been classified based on:

- LV: Austroads class 1 and 2 vehicles
- HV: Austroads class 3 to 12 vehicles.

The base year traffic volumes have been obtained from the results of the 2022 traffic count surveys conducted at these intersections. The future traffic volumes have also been forecast assuming a yearly compound growth rate of 3.52 per cent for each of the intersection.

Table 5.87 Intersection traffic volumes without Project – Lochaber Road diversion

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year ‘without Project’ traffic volumes				Future year ‘without Project’ traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Paint Mine Road	East – Gore Highway	T	90	37	121	27	3.52%	113	46	152	33	159	65	214	47
		RT	0	0	1	0	3.52%	1	0	1	0	1	0	1	0
	North- Paint Mine Road	LT	2	0	0	0	3.52%	2	0	1	0	3	0	1	0
		RT	2	0	2	0	3.52%	2	0	3	0	3	0	4	0
	West – Gore Highway	LT	1	0	2	0	3.52%	1	0	2	0	1	0	3	0
		T	132	29	156	41	3.52%	166	36	196	52	234	51	277	73
Gore Highway/ Lochaber Road	Northeast – Gore Highway	T	91	33	112	1	3.52%	115	42	140	32	162	59	198	45
		RT	2	2	7	26	3.52%	3	2	8	1	4	3	12	1
	Northwest – Lochaber Road	LT	12	1	5	0	3.52%	14	1	6	0	20	1	8	0
		RT	16	1	11	0	3.52%	20	2	14	0	28	2	20	0
	Southwest – Gore Highway	LT	6	1	14	0	3.52%	7	1	18	0	10	1	25	0
		T	113	28	148	39	3.52%	142	35	185	49	201	50	262	69

Rerouting assumptions

The following are the re-routing assumptions:

- **Intersection g:** All traffic will now use Intersection 5
- **Intersection f:** All traffic from Paint Mine Road will now use the first new service road to get to intersection 5, via Intersection 4 and the second new service road, and vice versa.

With the future diversion, the future traffic volumes at these intersections have been calculated for the Project case scenario using the forecast traffic volumes and presented in Table 5.88.

Table 5.88 Intersection traffic volumes with Project – Lochaber Road diversion

Intersection	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold				Over 5%
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak		
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	
Lochaber Road/ New Service Road	South: Lochaber Road S	T	New intersection, no 'without diversion'				11	3	29	1	New intersection, no comparison				
		RT					1	0	1	0					
	East: New Service Road	LT					4	0	3	0					
		RT					1	0	1	0					
	North: Lochaber Road N	LT					1	0	1	0					
		T					34	3	20	0					
Gore Highway /Lochaber Road/New Service Road	East – Gore Highway	T	New intersection, no 'without diversion'				115	42	140	32	New intersection, no comparison				
		RT					3	2	9	1					
	North- New Service Road	LT					16	1	6	0					
		RT					22	2	17	0					
	West – Gore Highway	LT					8	1	20	0					
		T					142	35	185	49					
Gore Highway/ Paint Mine Road	East – Gore Highway	T	113	46	152	33	113	46	152	33	0%	0%	0%	0%	<5%
		RT	1	0	1	0	No movement in 'with diversion'				No comparison				
	North- Paint Mine Road	LT	2	0	1	0	No movement in 'with diversion'				No comparison				
		RT	2	0	3	0	No movement in 'with diversion'				No comparison				
	West – Gore Highway	LT	1	0	2	0	No movement in 'with diversion'				No comparison				
		T	166	36	196	52	166	36	196	52	0%	0%	0%	0%	
Gore Highway/ Lochaber Road	Northeast – Gore Highway	T	115	42	140	32	115	42	140	32	0%	0%	0%	0%	<5%
		RT	3	2	8	1	No movement in 'with diversion'				No comparison				
	Northwest – Lochaber Road	LT	14	1	6	0	No movement in 'with diversion'				No comparison				
		RT	20	2	14	0	No movement in 'with diversion'				No comparison				
	Southwest – Gore Highway	LT	7	1	18	0	No movement in 'with diversion'				No comparison				
		T	142	35	185	49	142	35	185	49	0%	0%	0%	0%	

As can be seen in Table 5.88, the volumes at each of the intersection will not experience a significant increase (greater than 5 per cent) in the peak hour traffic demand across all intersections. To comply with the GTIA requirements, an intersection analysis was undertaken in this assessment to investigate the potential impacts of the Project on traffic performance of each of the affected intersection. The results of this assessment are summarised in the following section.

Capacity analysis (SIDRA) summary

Using SIDRA Intersection, the intersections of Gore Highway with the rerouted Lochaber Road have been analysed under the Project case scenario (with traffic diversion) with the forecast peak hour volumes in the opening year (2028) and the design horizon year (2038).

The summary of the results is presented in Table 5.89.

Table 5.89 SIDRA summary table for Lochaber Road diversion

Period	Scenario	Intersection		Worst Movement			
		DOS	Delay (s)	Mov.	Delay (s)	LOS	Queue distance (m)
Lochaber Road/New Service Road							
2028 AM	With Project	0.021	0.7	E	5.6	A	0.1
2028 PM	With Project	0.016	0.6	E	5.6	A	0.1
2038 AM	With Project	0.029	0.6	E	5.7	A	0.1
2038 PM	With Project	0.022	0.5	E	5.7	A	0.1
Gore Highway/Lochaber Road/New Service Road							
2028 AM	With Project	0.108	1.0	N	7.2	A	1.0
2028 PM	With Project	0.147	0.8	N	7.3	A	0.6
2038 AM	With Project	0.152	1.0	N	8.1	A	1.6
2038 PM	With Project	0.208	0.9	N	8.6	A	1.0
Gore Highway/Paint Mine Road							
2022 AM	Existing	0.093	0.1	N	6.6	A	0.1
2022 PM	Existing	0.116	0.1	N	6.8	A	0.1
2028 AM	Without Project	0.116	0.1	N	6.9	A	0.1
	With Project	0.116	0	E	0	A	0
2028 PM	Without Project	0.146	0.1	N	7.3	A	0.1
	With Project	0.145	0	E	0	A	0
2038 AM	Without Project	0.164	0.1	N	7.8	A	0.2
	With Project	0.163	0	E	0	A	0
2038 PM	Without Project	0.205	0.1	N	8.5	A	0.2
	With Project	0.204	0	W	0.1	A	0
Gore Highway/Lochaber Road							
2022 AM	Existing	0.082	0.9	NW	7.8	A	1
2022 PM	Existing	0.109	0.6	NW	8.2	A	0.5
2028 AM	Without Project	0.102	0.9	NW	8.8	A	1.4
	With Project	0.102	0	NE	0	A	0
2028 PM	Without Project	0.136	0.7	NW	9.1	A	0.7
	With Project	0.136	0	NE	0	A	0

Period	Scenario	Intersection		Worst Movement			
		DOS	Delay (s)	Mov.	Delay (s)	LOS	Queue distance (m)
2038 AM	Without Project	0.145	1.1	NW	10.7	B	2.2
	With Project	0.145	0	NE	0	A	0
2038 PM	Without Project	0.193	0.8	NW	11.8	B	1.3
	With Project	0.193	0	NE	0	A	0

The results show that the delay and LOS assessments are within satisfactory levels.

Turn warrants

The turn warrants assessment for each intersection is provided in Table 5.90 and Table 5.91 for right and left turning treatments, respectfully. It provides a summary of the peak hour volumes for the major road and minor road turning movements without and with Project traffic, existing turn treatments, minimum turn treatment requirements without and with the Project and indicates whether the existing treatment are insufficient and therefore mitigations are required.

Table 5.90 Turn warrants assessment for right turning treatments at Lochaber Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Lochaber Road/New Service Road	No intersection	72	No intersection	1	No intersection		BAR	Yes
Gore Highway/Lochaber Road (New Service Road)	No intersection	602	No intersection	14	No intersection		CHR	Yes
Gore Highway/Paint Mine Road	510	509	1	No turn permitted	CHR	BAR	No turn permitted	No
Gore Highway/Lochaber Road	483	472	7	No turn permitted	CHR	CHR(s)	No turn permitted	No

Table 5.91 Turn warrants assessment for left turning treatments at Lochaber Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into laydown (Q _L)		Existing turn treatments	Minimum left turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Lochaber Road/New Service Road	No intersection	52	No intersection	1	No intersection		BAL	Yes
Gore Highway/Lochaber Road (New Service Road)	No intersection	331	No intersection	28	No intersection		AUL(s)	Yes
Gore Highway/Paint Mine Road	285	285	1	No turn permitted	BAL	BAL	No turn permitted	No
Gore Highway/Lochaber Road	251	251	11	No turn permitted	BAL	BAL	No turn permitted	No

Recommendations

For the above intersections that have been analysed, insignificant impact is expected, and the intersections continue to perform satisfactorily with low forecasted traffic volumes, minimal delays, and acceptable Levels of Services. The impact on public transport and active modes are also expected to be negligible, if any. Therefore, no upgrades to any of the intersections impacted by this diversion are required.

5.9.4.4 Oakey Pittsworth Road

Background

Oakey Pittsworth Road is a two-lane, two-way rural road located northwest of Pittsworth, Queensland. This road intersects with Gore Highway at a sign-controlled T-intersection, which is located approximately 445 m southwest of the Gore Highway/Dallman Road intersection.

Following implementation of the Project, Gore Highway will not be accessed from Dallman Road anymore and consequently the traffic volumes entering the Gore Highway/Dallman Road intersection from the Dallman Road approach will be diverted to the Gore Highway/Oakey Pittsworth Road intersection via Quibet Road, as depicted in Figure 5.15.

This detouring will impact traffic volumes at the following intersections:

- **Intersection h:** Gore Highway/Dallman Road, a priority (stop-sign) controlled 4-way intersection with the southern leg (Helens Street) operating as a one-way exit leg
- **Intersection 6:** Oakey Pittsworth Road/Quibet Road, a priority (give-way sign) controlled T-intersection
- **Intersection i:** Gore Highway/Oakey Pittsworth Road, a priority (give-way sign) controlled T-intersection.

Based on the 2022 traffic count data, the morning and afternoon peak hours for these intersections are as follows:

- AM peak hour: 7:15 to 8:15
- PM peak hour: 16:30 to 17:30.

As shown in Figure 5.15, the current left-turn and right-turn movements from Dallman Road to Gore Highway will be diverted to the Gore Highway/Oakey Pittsworth Road intersection via the re-aligned Quibet Road and its intersection with Oakey Pittsworth Road. In addition, the through movement from Dallman Road to Helen Street is also expected to be redirected to the intersections of Gore Highway with Oakey Pittsworth Road and Pittsworth Felton Road.

The impacts of this traffic diversion are discussed in the following sections.

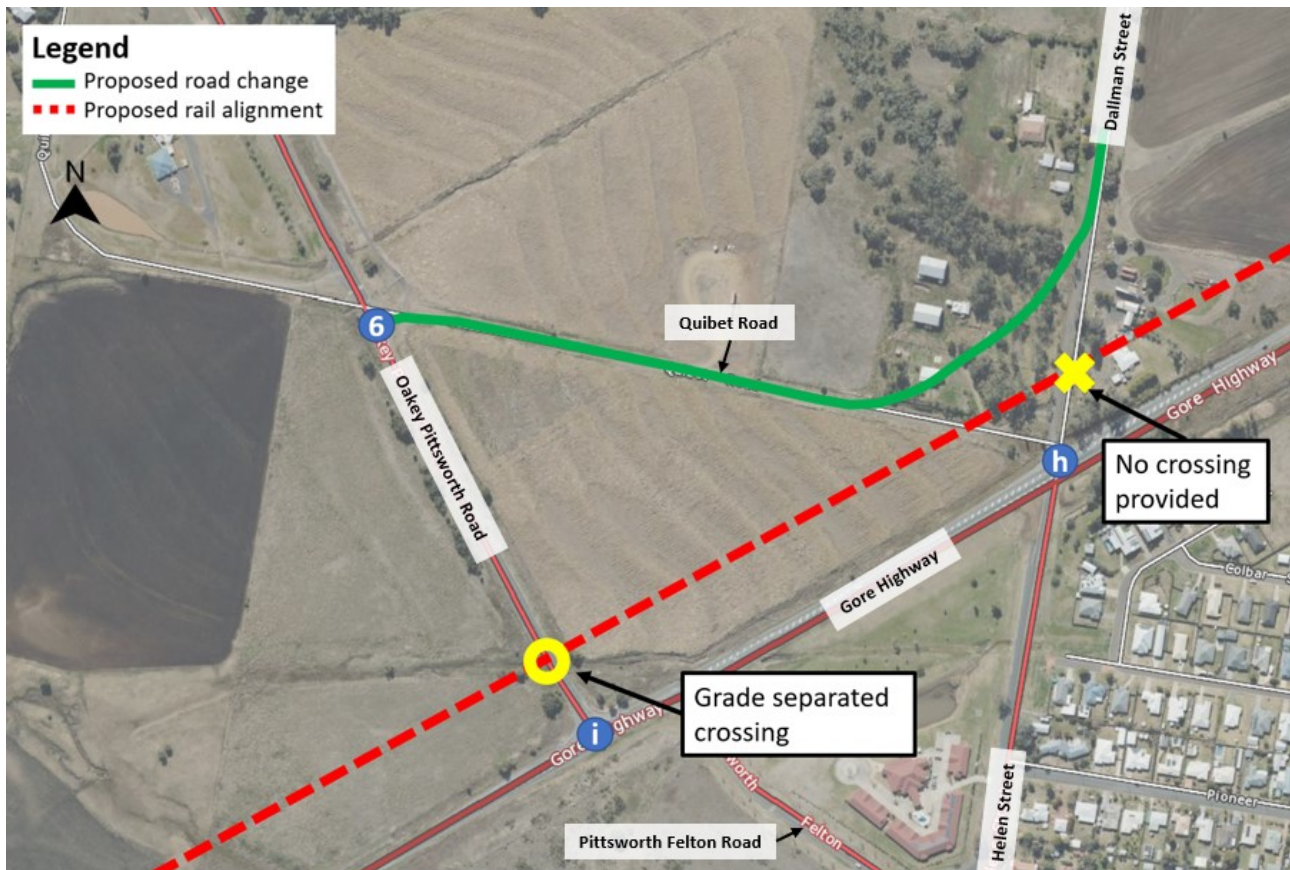


Figure 5.15 Traffic diversion – Oakey Pittsworth Road and surrounds

Active transport

As part of DTMR's Principal Cycle Network Plan (2021), Pittsworth has been included in the Downs South West Principal Cycle Network Plan (DSWPCNP) based on its expected population growth and the number of trip attractors. According to the DSWPCNP, however, no existing or future principal cycle routes are provided on the subject section of Gore Highway, Dallman Road and Oakey Pittsworth Road. Noting no shared-use paths or bicycle lanes are currently provided on the road network in the vicinity of the impact assessment area, the traffic diversion resulting from the Project will not significantly impact cycling within this area.

Public transport

The impact assessment area is not currently serviced by public transport routes. Therefore, the traffic diversion resulting from the Project is not expected to affect public transport operation and accessibility within the intended area.

Sight distance

Table 5.92 provides a summary of sight distance requirements at each intersection, including inputs relating to the road seal, major road speed limit and longitudinal grade considered for each access location. It is noted that the grade of the intersection is unknown at newly proposed roads, and therefore a best estimate based on current road environment is provided. These should be re-investigated in the Detailed Design stage.

Table 5.92 Sight distance summary Table for Oakey Pittsworth Road diversion

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Gore Highway/Dallman Road	Sealed	100	-3.6%	301
Gore Highway/Oakey Pittsworth Road	Sealed	100	-2.4%	300
Oakey Pittsworth Road/Quibet Road	Sealed	100	-0.8%	300

Traffic data

Table 5.93 presents the peak hour traffic volumes of the Gore Highway/Dallman Road and Gore Highway/Oakey Pittsworth Road intersections for the base year (2022), the Project opening year (2028) and the design horizon year (2038) under the base case scenario (i.e. no traffic diversion).

In this table, the traffic volumes have been classified based on:

- LV: Austroads class 1 and 2 vehicles
- HV: Austroads class 3 to 12 vehicles.

The base year traffic volumes have been obtained from the results of the 2022 traffic count surveys conducted at these intersections. The future traffic volumes have also been forecast assuming a yearly compound growth rate of 3.52 per cent and 0.09 per cent for the Gore Highway/Dallman Road intersection and Gore Highway/Oakey Pittsworth Road intersection, respectively, as shown in Table 5.93.

Table 5.93 Intersection traffic volumes without Project – Oakey Pittsworth Road

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year 'without Project' traffic volumes				Future year 'without Project' traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Dallman Road	Northeast – Gore Highway	LT	6	0	6	0	3.52%	8	0	8	0	11	0	11	0
		T	74	33	82	27	3.52%	93	42	103	34	132	59	145	48
		RT	0	0	1	0	3.52%	1	0	1	0	1	0	2	0
	North – Dallman Road	LT	1	0	1	0	3.52%	1	0	1	0	2	0	1	0
		RT	0	0	0	0	3.52%	1	0	1	0	1	0	1	0
	Southwest – Gore Highway	LT	0	0	2	0	3.52%	1	0	3	0	1	0	4	0
		T	91	28	124	45	3.52%	114	35	155	56	161	49	219	79
Gore Highway/ Oakey Pittsworth Road	Northeast – Gore Highway	T	60	30	62	23	0.09%	62	31	63	24	62	31	64	24
		RT	32	3	55	1	0.09%	33	3	56	1	33	3	57	1
	Northwest – Oakey Pittsworth Road	LT	55	3	41	3	0.09%	56	3	42	3	57	3	43	3
		RT	5	8	2	6	0.09%	5	8	2	6	5	8	2	6
	Southwest – Gore Highway	LT	2	5	8	5	0.09%	2	5	8	5	2	5	8	5
		T	79	22	127	37	0.09%	81	22	130	38	81	22	131	38

Rerouting assumptions

As mentioned previously, the movements from Dallman Road onto Gore Highway are expected to be diverted to Quibet Road and Oakey Pittsworth Road due to the traffic diversion resulting from the Project. Based on this assumption, the future traffic volumes at these intersections have been calculated for the Project case scenario (i.e. with traffic diversion) using the forecast traffic volumes.

As can be seen in Table 5.94, the intersection of Gore Highway and Dallman Road will not experience a significant increase (greater than 5 per cent) in the peak hour traffic demand. Nevertheless, the traffic diversion from Dallman Road could increase peak traffic volumes of some movements at the intersection of Gore Highway with Oakey Pittsworth Road by more than 5 per cent. To comply with the GTIA requirements, therefore, an intersection analysis was undertaken in this assessment to investigate the potential impacts of the Project on traffic performance of the affected intersections. The results of this assessment are summarised in the following section.

Table 5.94 Intersection traffic volumes with Project – Oakey Pittsworth Road

Intersection	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold				Over 5%
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak		
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	
Oakey Pittsworth Road/Quibet Road	South – Oakey Pittsworth Road	T	New intersection, no 'without diversion'				35	8	68	6	New intersection, no comparison				
		RT					1	0	1	0					
	East- Quibet Road	LT					2	0	2	0					
		RT					1	0	1	0					
	North – Oakey Pittsworth Road	LT					1	0	1	0					
		T					61	12	45	9					
Gore Highway/ Dallman Road	Northeast – Gore Highway	LT	8	0	8	0	8	0	8	0	0%	0%	0%	0%	<5%
		T	93	42	103	34	94	42	104	34	1%	0%	1%	0%	
		RT	1	0	1	0	No movement in 'with diversion'				No comparison				
	North – Dallman Road	LT	1	0	1	0	No movement in 'with diversion'				No comparison				
		RT	1	0	1	0	No movement in 'with diversion'				No comparison				
	Southwest – Gore Highway	LT	1	0	3	0	No movement in 'with diversion'				No comparison				
		T	114	35	155	56	114	35	155	56	0%	0%	0%	0%	
Gore Highway/ Oakey Pittsworth Road	Northeast – Gore Highway	T	62	31	63	24	62	31	63	24	0%	0%	0%	0%	>5%
		RT	33	3	56	1	33	3	57	1	0%	0%	2%	0%	
	Northwest – Oakey Pittsworth Road	LT	56	3	42	3	57	4	44	3	2%	33%	5%	0%	
		RT	5	8	2	6	5	8	3	6	0%	0%	50%	0%	
	Southwest – Gore Highway	LT	2	5	8	5	2	5	11	6	0%	0%	38%	20%	
		T	81	22	130	38	81	22	130	38	0%	0%	0%	0%	

Capacity analysis (SIDRA) summary

Using SIDRA Intersection, the intersections of Gore Highway with Dallman Road and Oakey Pittsworth Road have been analysed under the Project case scenario (with traffic diversion) with the forecast peak hour volumes in the opening year (2028) and the design horizon year (2038).

As shown in Table 5.95, the traffic diversion resulting from the Project could slightly improve traffic conditions at the Gore Highway/Dallman Road intersection by slightly reducing the average delay and queue distance during the morning and afternoon peak periods.

The intersection analysis also revealed that the additional (diverted) traffic volumes will have negligible impacts on the performance of Gore Highway/Oakey Pittsworth Road intersection. According to the SIDRA outputs, this intersection could perform well below its capacity limits and at a good LOS (A-B) during the 2028 and 2038 peak periods with a maximum delay of 2.4 seconds per vehicle following implementation of the Project. Therefore, no upgrades to this intersection are required to mitigate the adverse impacts of the Project.

It should also be noted that the Oakey Pittsworth Road/Quibet Road intersection have sufficient capacity to cater for the additional traffic volumes diverted from Dallman Road. As shown in Table 5.95, this intersection is expected to perform at a LOS A with an average delay of up to 5.9 seconds per vehicle during the 2038 peak hours.

Table 5.95 SIDRA summary table for Oakey Pittsworth Road diversion

Period	Scenario	Intersection		Worst Movement			
		DOS	Delay (s)	Mov.	Delay (s)	LOS	Queue distance (m)
Gore Highway/Dallman Road							
2028 AM	Without Project	0.088	0.3	N – RT	11.2	B	0.1
	With Project	0.088	0.2	NE – LT	5.7	A	0
2028 PM	Without Project	0.127	0.3	N – RT	12.2	B	0.1
	With Project	0.127	0.2	NE – LT	5.7	A	0
2038 AM	Without Project	0.124	0.3	N – RT	13.2	B	0.1
	With Project	0.124	0.2	NE – LT	5.7	A	0
2038 PM	Without Project	0.179	0.3	N – RT	15.2	C	0.1
	With Project	0.179	0.2	NE – LT	5.7	A	0
Gore Highway/Oakey Pittsworth Road							
2028 AM	Without Project	0.074	2.3	NW	9.6	A	2.2
	With Project	0.077	2.4	NW	9.6	A	2.3
2028 PM	Without Project	0.099	2.1	NW	11.8	B	1.8
	With Project	0.099	2.2	NW	11.4	B	1.8
2038 AM	Without Project	0.075	2.4	NW	9.6	A	2.2
	With Project	0.079	2.4	NW	9.4	A	2.3
2038 PM	Without Project	0.099	2.1	NW	11.8	B	1.8
	With Project	0.099	2.2	NW	11.5	B	1.9
Oakey Pittsworth Road/Quibet Road							
2028 AM	With Project	0.042	0.2	E	5.8	A	0.1
2028 PM	With Project	0.041	0.2	E	5.9	A	0.1
2038 AM	With Project	0.042	0.2	E	5.8	A	0.1
2038 PM	With Project	0.042	0.3	E	5.9	A	0.1

Turn warrants

The turn warrants assessment for each intersection is provided in Table 5.96 and Table 5.97 for right and left turning treatments, respectfully. It provides a summary of the peak hour volumes for the major road and minor road turning movements without and with Project traffic, existing turn treatments, minimum turn treatment requirements without and with the Project and indicates whether the existing treatment are insufficient and therefore mitigations are required.

Table 5.96 Turn warrants assessment for right turning treatments at Oakey Pittsworth Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Gore Highway/Dallman Road	402	401	1	0	CHR	BAR	No turn permitted	No
Gore Highway/Oakey Pittsworth Road	270	275	58	59	CHR	CHR(s)	CHR(s)	No
Oakey Pittsworth Road/Quibet Road	No intersection	131	No intersection	2	No intersection		BAR	Yes

Table 5.97 Turn warrants assessment for left turning treatments at Oakey Pittsworth Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into laydown (Q _L)		Existing turn treatments	Minimum left turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Gore Highway/Dallman Road	210	210	1	0	BAL	BAL	No turn permitted	No
Gore Highway/Oakey Pittsworth Road	169	169	13	18	BAL	BAL	BAL	No
Oakey Pittsworth Road/Quibet Road	No intersection	74	No intersection	1	No intersection		BAL	Yes

Recommendations

Based on the impact assessment and intersection analysis undertaken in this study, the Project will have negligible impacts on the traffic performance of Oakey Pittsworth Road and its intersections with Gore Highway and Quibet Road. Furthermore, the Project is not expected to have significant impacts on public transport operation and active transport on this road and its surrounding road network. From a traffic operation viewpoint, therefore, no upgrades to this road and its intersections with Gore Highway and Quibet Road are proposed as part of this assessment.

5.9.4.5 Tip Road

Background

Currently, Tip Road is an unsealed road located west of Pittsworth, Queensland. This road intersects with Gore Highway at a priority-controlled T-intersection approximately 940 m northeast of the Gore Highway/Murlaggan Road intersection.

Due to the movement restrictions caused by the Project, the traffic flows between Gore Highway and French Road via Murlaggan Road are expected to be diverted to Tip Road. As a result, the traffic demand is anticipated to change the following intersections following implementation of the Project:

- **Intersection k:** Murlaggan Road/French Road, a priority-controlled T-intersection
- **Intersection 39:** Gore Highway/Murlaggan Road, a priority (stop-sign) controlled 4-way intersection
- **Intersection j:** Gore Highway/Tip Road, a priority-controlled T-intersection.

According to the 2022 traffic count data, the morning and afternoon peak hours for the subject intersections are as follows:

- AM peak hour: 11:00 to 12:00
- PM peak hour: 16:00 to 17:00.

In this assessment, it has been assumed that the traffic volume of the right-turn movement from Murlaggan Road onto French Road will be diverted to Tip Road. Likewise, the traffic volume of the left-turn movement from French Road onto Murlaggan Road will be redirected to Tip Road. These rerouting assumptions are depicted in Figure 5.16.

The impacts of this traffic diversion are discussed in the following sections.

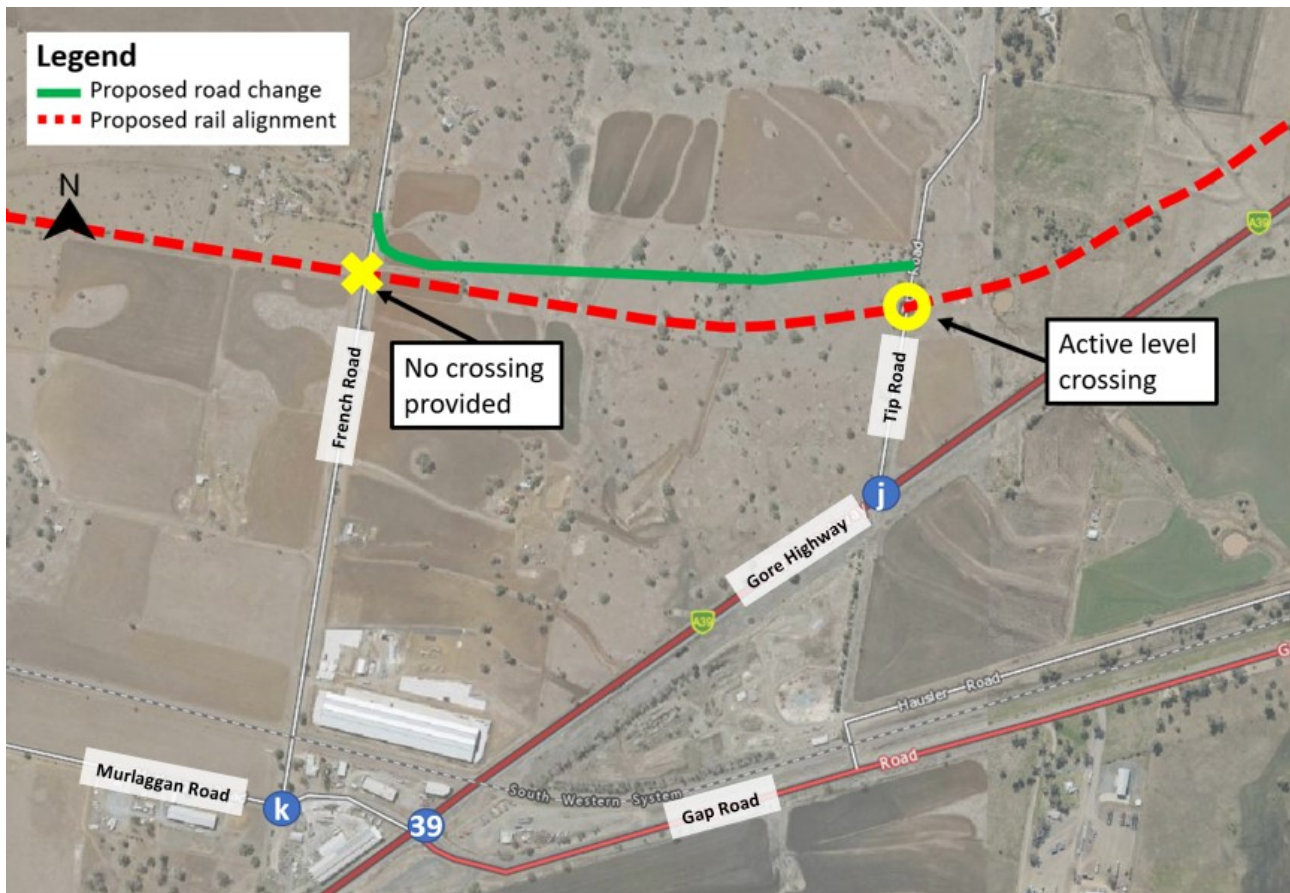


Figure 5.16 Traffic diversion – Tip Road and surrounds

Active transport

As part of DTMR's Principal Cycle Network Plan (2021), Pittsworth has been included in the DSWPCNP based on its expected population growth and the number of trip attractors. According to the DSWPCNP however, no existing or future principal cycle routes are provided on the subject section of Gore Highway, Murlaggan Road, Tip Road and French Road. A desktop assessment using arterial photos also indicated that no shared-use paths or bicycle lanes are currently provided on the road network in the vicinity of the impact assessment area. Therefore, the traffic diversion resulting from the Project will not significantly impact cycling within this area.

Public transport

The impact assessment area is not currently serviced by public transport routes. Therefore, the traffic diversion resulting from the Project is not expected to affect public transport operation and accessibility within the intended area.

Sight distance

Table 5.98 provides a summary of sight distance requirements at each intersection, including inputs relating to the road seal, major road speed limit and longitudinal grade considered for each access location. It is noted that the grade of the intersection is unknown at newly proposed roads, and therefore a best estimate based on current road environment is provided. These should be re-investigated in the Detailed Design stage.

Table 5.98 Sight distance summary table for Tip Road diversion

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Murlaggan Road/French Road	Sealed	100	-1.5%	300
Gore Highway/Murlaggan Road	Sealed	100	-1.2%	345
Gore Highway/Tip Road	Sealed	100	-2.0%	345

Traffic data

Table 5.99 presents the peak hour traffic volumes of the Murlaggan Road/French Road intersection, the Gore Highway/Murlaggan Road intersection, and the Gore Highway/Tip Road intersection under the base case scenario (with no traffic diversion). As can be seen in this table, the volumes have been classified into two categories:

- LV: Austroads class 1 and 2 vehicles
- HV: Austroads class 3 to 12 vehicles.

The base year traffic volumes are based on the results of the traffic count surveys conducted in 2022. To forecast the future year traffic volumes, a yearly compound growth rate of 3.17 per cent has been assumed for all intersection movements, and based on this, the future traffic volumes have been forecast for the morning and afternoon peak hours in the opening year (2028) and the design horizon year (2038), as shown in Table 5.99.

Table 5.99 Intersection traffic volumes without Project – Tip Road diversion

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year 'without Project' traffic volumes				Future year 'without Project' traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
Murlaggan Road/ French Road	East – Murlaggan Road	T	1	0	3	0	3.17%	2	0	4	0	2	1	5	0
		RT	9	1	7	1	3.17%	11	1	8	1	15	2	11	1
	North – French Road	LT	13	1	27	1	3.17%	16	1	33	1	22	2	46	1
		RT	0	0	0	0	3.17%	1	0	1	0	1	0	1	0
	West – Murlaggan Road	LT	0	0	0	0	3.17%	1	0	1	0	1	0	1	0
		T	3	0	4	0	3.17%	3	0	5	0	4	0	6	0
Gore Highway/ Murlaggan Road	Southeast – Gap Road	LT	21	1	40	2	3.17%	26	2	49	3	35	2	67	4
		T	3	0	4	1	3.17%	4	0	5	1	6	0	7	1
		RT	2	2	1	1	3.17%	2	2	2	1	3	3	2	2
	Northeast – Gore Highway	LT	1	1	1	1	3.17%	2	1	2	1	2	1	2	1
		T	50	38	69	35	3.17%	62	47	85	43	85	64	116	59
		RT	2	0	2	0	3.17%	2	0	3	0	3	0	4	0
	Northwest – Murlaggan Road	LT	2	0	14	0	3.17%	2	0	17	0	3	1	23	0
		T	4	0	19	1	3.17%	5	0	24	1	7	0	33	1
		RT	0	0	1	1	3.17%	1	0	1	1	1	0	2	1
	Southwest – Gore Highway	LT	0	0	1	0	3.17%	1	0	1	0	1	0	2	0
		T	63	39	104	47	3.17%	78	48	128	58	106	65	174	79
		RT	17	3	46	5	3.17%	20	3	56	6	28	5	77	8
Gore Highway/ Tip Road	Northeast – Gore Highway	T	70	39	66	31	3.17%	86	47	81	38	118	65	110	52
		RT	0	0	1	0	3.17%	1	0	1	0	1	0	1	0
	Northwest – Tip Road	LT	0	0	0	0	3.17%	1	0	1	0	1	0	1	0
		RT	0	0	0	0	3.17%	1	0	1	0	1	0	1	0

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year ‘without Project’ traffic volumes				Future year ‘without Project’ traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
	Southwest – Gore Highway	LT	0	0	0	0	3.17%	1	0	1	0	1	0	1	0
		T	84	42	118	49	3.17%	103	51	145	60	141	70	198	81

Rerouting assumptions

Based on the traffic diversion assumptions shown in Figure 5.16 and the forecast traffic demand, the peak hour traffic volumes have been calculated for the Project opening year (2028) and the design horizon year (2038). As can be seen in Table 5.100, the peak hour traffic volumes for some of the movements at the intersections of Gore Highway with Murlaggan Road and Tip Road will increase by more than 5 per cent due to the traffic diversion resulting from the Project. Therefore, an intersection analysis has been undertaken in this assessment to assess the traffic efficiency of the impacted intersections under the Project case scenario, as detailed in the following section.

Table 5.100 Intersection traffic volumes with Project – Tip Road diversion

Intersection	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold				Over 5%
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak		
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	
Gore Highway/ Murlaggan Road	Southeast – Gap Road	LT	26	2	49	3	26	2	49	3	0%	0%	0%	0%	>5%
		T	4	0	5	1	4	0	5	1	0%	0%	0%	0%	
		RT	2	2	2	1	2	2	2	1	0%	0%	0%	0%	
	Northeast – Gore Highway	LT	2	1	2	1	12	1	21	1	500%	0%	950%	0%	
		T	62	47	85	43	63	47	86	43	2%	0%	1%	0%	
		RT	2	0	3	0	2	0	3	0	0%	0%	0%	0%	
	Northwest – Murlaggan Road	LT	2	0	17	0	2	0	17	0	0%	0%	0%	0%	
		T	5	0	24	1	5	0	24	1	0%	0%	0%	0%	
		RT	1	0	1	1	1	0	1	1	0%	0%	0%	0%	
	Southwest – Gore Highway	LT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	
		T	78	48	128	58	78	48	128	58	0%	0%	0%	0%	
		RT	20	3	56	6	20	3	56	6	0%	0%	0%	0%	
Gore Highway/ Tip Road	Northeast – Gore Highway	T	86	47	81	38	86	47	81	38	0%	0%	0%	0%	>5%
		RT	1	0	1	0	11	1	9	1	1000%	100%	800%	100%	
	Northwest – Tip Road	LT	1	0	1	0	5	1	13	0	400%	100%	1200%	0%	
		RT	1	0	1	0	11	0	20	1	1000%	0%	1900%	100%	
	Southwest – Gore Highway	LT	1	0	1	0	1	0	1	0	0%	0%	0%	0%	
		T	103	51	145	60	103	51	145	60	0%	0%	0%	0%	
Murlaggan Road/ French Road	East – Murlaggan Road	T	2	0	4	0	2	0	4	0	0%	0%	0%	0%	<5%
		RT	11	1	8	1	No movement in 'with diversion'				No comparison				
	North – French Road	LT	16	1	33	1	No movement in 'with diversion'				No comparison				
		RT	1	0	1	0	No movement in 'with diversion'				No comparison				
	West – Murlaggan Road	LT	1	0	1	0	No movement in 'with diversion'				No comparison				
		T	3	0	5	0	3	0	5	0	0%	0%	0%	0%	

Capacity analysis (SIDRA) summary

In order to assess the impacts of traffic diversion on the subject intersections under the Project case scenario (with traffic diversion), a SIDRA analysis has been carried out in this assessment for each of the impacted intersection. The results of this analysis are summarised in Table 5.101.

As shown in this table, the Project is expected to improve traffic conditions at the Murlaggan Road/French Road intersection due to diverting traffic from this intersection to Tip Road. The intersection analysis also revealed that the traffic diversion will have negligible adverse impacts on the performance of the Gore Highway/Murlaggan Road and Gore Highway/Tip Road intersections. According to the results, these intersections are expected to operate well below their capacity limits during the 2028 and 2038 peak periods. The additional delay caused by the diverted traffic at these intersections is less than one second per vehicle, on average.

Based on the intersection analysis results, therefore, no upgrades to the subject intersections are required to mitigate the impacts of the Project.

Table 5.101 SIDRA summary table for Tip Road diversion

Period	Scenario	Intersection		Worst Movement			
		DOS	Delay (s)	Mov.	Delay (s)	LOS	Queue distance (m)
Murlaggan Road/French Road							
2028 AM	Without Project	0.012	4	E – RT	4.7	A	0.3
	With Project	0.002	0	E – T	0	A	0
2028 PM	Without Project	0.022	3.8	E – RT	4.7	A	0.3
	With Project	0.003	0	E – T	0	A	0
2038 AM	Without Project	0.016	4	E – RT	4.7	A	0.4
	With Project	0.002	0	E – T	0	A	0
2038 PM	Without Project	0.03	3.9	E – RT	4.7	A	0.3
	With Project	0.003	0	E – T	0	A	0
Gore Highway/Murlaggan Road							
2028 AM	Without Project	0.072	2.4	SE – RT	18.2	C	0.6
	With Project	0.072	2.6	SE – RT	18.4	C	0.6
2028 PM	Without Project	0.092	3.8	NW – RT	24.9	C	2.4
	With Project	0.094	3.9	NW – RT	25	C	2.4
2038 AM	Without Project	0.098	2.6	SE – RT	22.9	C	1.2
	With Project	0.098	2.8	SE – RT	23.3	C	1.2
2038 PM	Without Project	0.162	4.2	SE – RT	35.5	E	1.7
	With Project	0.169	4.5	SE – RT	36.6	E	1.7
Gore Highway/Tip Road							
2028 AM	Without Project	0.097	0.1	NW – RT	6.6	A	0
	With Project	0.097	0.6	NW – RT	6.7	A	0.4
2028 PM	Without Project	0.126	0.1	NW – RT	6.8	A	0
	With Project	0.126	0.9	NW – RT	7.1	A	0.8
2038 AM	Without Project	0.132	0.1	NW – RT	7.2	A	0
	With Project	0.132	0.7	NW – RT	7.6	A	0.7
2038 PM	Without Project	0.171	0.1	NW – RT	7.4	A	0
	With Project	0.171	1	NW – RT	7.9	A	1.3

Turn warrants

The turn warrants assessment for each intersection is provided in Table 5.102 and Table 5.103 for right and left turning treatments, respectfully. It provides a summary of the peak hour volumes for the major road and minor road turning movements without and with Project traffic, existing turn treatments, minimum turn treatment requirements without and with the Project and indicates whether the existing treatment are sufficient, or if mitigations are required.

The results in Table 5.102 and Table 5.103 indicate that no further intersection turning treatments are warranted as a result of the expected traffic flows through the intersections, consistent with Austroads' guidance.

Table 5.102 Turn warrants assessment for right turning treatments at Tip Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Murlaggan Road/French Road	8	7	17	No turn permitted	BAR	BAR	No turn permitted	No
Gore Highway/Murlaggan Road	113	113	3	3	CHR(s)	BAR	BAR	Yes
Gore Highway/Tip Road	395	395	1	17	BAR	BAR	CHR(s)	Yes

Table 5.103 Turn warrants assessment for left turning treatments at Tip Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into laydown (Q _L)		Existing turn treatments	Minimum left turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Murlaggan Road/French Road	4	4	1	No turn permitted	BAL	BAL	No turn permitted	No
Gore Highway/Murlaggan Road	253	253	2	2	AUL	BAL	BAL	Yes
Gore Highway/Tip Road	211	211	1	1	BAL	BAL	BAL	No

Recommendations

According to the impact assessment and intersection analysis undertaken in this study, the Project is anticipated to have negligible impacts on the traffic performance of Tip Road and the intersections of Gore Highway with this road and Murlaggan Road. Moreover, the Project is not expected to have significant impacts on public transport operation and active transport on Tip Road and its surrounding road network. From a traffic operation viewpoint, therefore, no upgrades or mitigation works are proposed as part of this assessment.

5.9.4.6 Fysh Road

Background

Fysh Road is a two-lane, two-way rural road located in Pampas, Queensland. Fysh Road intersects with Gore Highway at a priority (give-way) controlled T-intersection approximately 50 m northwest of the Gore Highway/Pampas Road intersection.

As part of the Project, the access from Fysh Road to Gore Highway and vice versa will be closed, with a diverted access provided via a new intersection of Fysh Road with a newly constructed extension of Pampas Pit Road, which will connect to the Gore Highway. It is expected that the traffic volumes at the existing intersection between Gore Highway and Fysh Road will be diverted to the new intersection between these two roads, as shown in Figure 5.17.

Based on the 2022 traffic count survey, the AM and PM peak hours for this intersection have been identified as follows:

- AM peak hour: 10:30 to 11:30
- PM peak hour: 15:15 to 16:15.

The impacts of the traffic diversion resulting from the Project are discussed in the following sections.

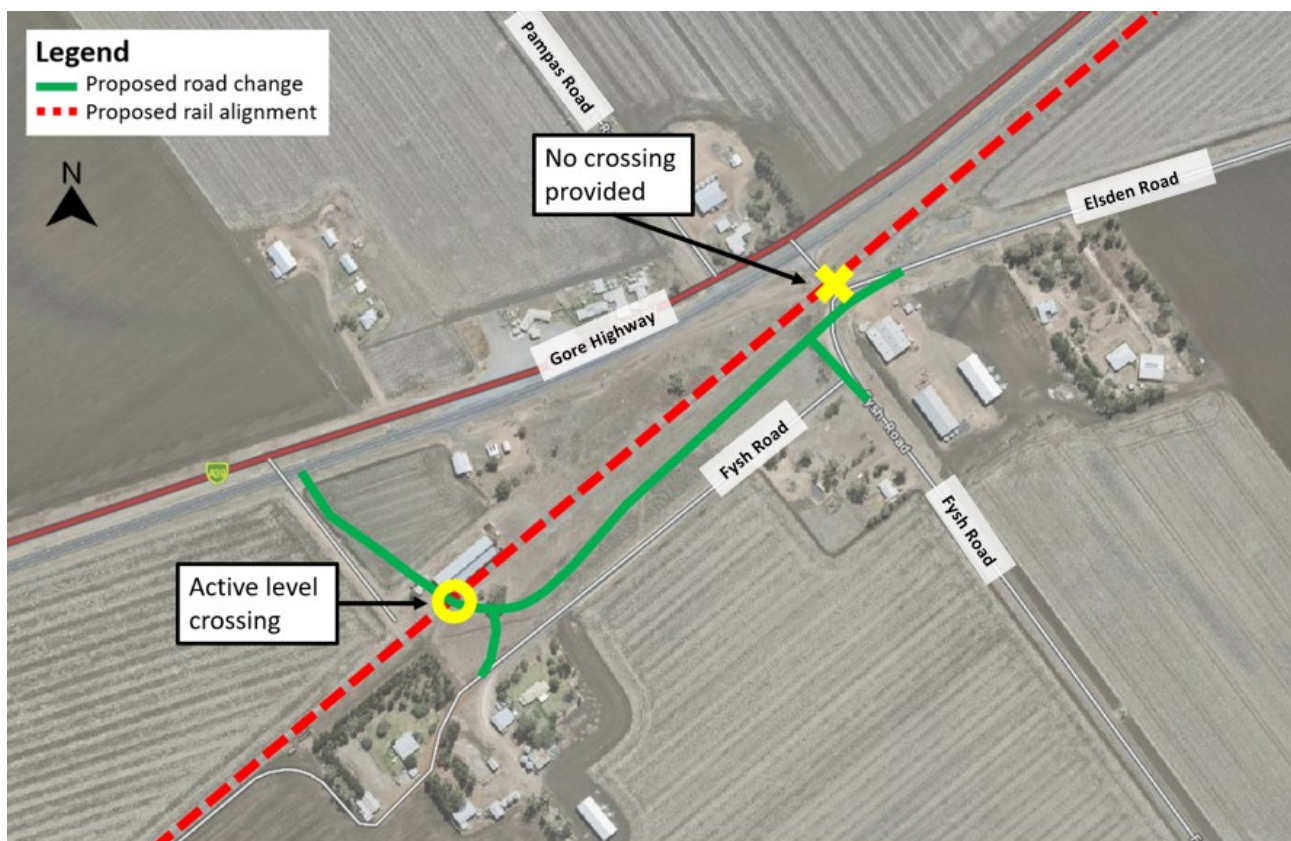


Figure 5.17 Traffic diversion – Fysh Road and surrounds

Active transport

The intersection of Gore Highway with Fysh Road is located within the boundaries of the DSWPCNP. According to the DSWPCNP, however, no existing or future principal cycle routes are provided on the subject section of Gore Highway and Fysh Road. A desktop assessment using arterial photos also indicated that no shared-use paths or bicycle lanes are currently provided on the road network in the vicinity of the impact assessment area.

Given the above, the traffic diversion resulting from the Project will not significantly impact cycling within this area.

Public transport

The impact assessment area is not currently serviced by public transport routes. Therefore, the traffic diversion resulting from the Project is not expected to affect public transport operation and accessibility within the intended area.

Sight distance

Table 5.104 provides a summary of sight distance requirements at each intersection, including inputs relating to the road seal, major road speed limit and longitudinal grade considered for each access location. It is noted that the grade of the intersection is unknown at newly proposed roads, and therefore a best estimate based on current road environment is provided. These should be re-investigated in the Detailed Design stage.

Table 5.104 Sight distance summary Table for Fysh Road diversion

Intersection name	Major road seal	Major road posted speed (km/h)	Longitudinal grade (%)	Required sight distance (m)
Gore Highway/Pampas Pit Road	Sealed	100	-1.1%	345

Traffic data

Table 5.105 presents the peak hour traffic volumes of the Gore Highway/Fysh Road intersection under the base case scenario (with no traffic diversion). This table summarises the traffic volumes based on 2 categories:

- LV: Austroads class 1 and 2 vehicles
- HV: Austroads class 3 to 12 vehicles.

The base year traffic volumes have been obtained from the traffic count surveys conducted in 2022. To forecast the future year traffic volumes, a yearly compound growth rate of 3.17 per cent has been assumed in this assessment for the intersection movements. Based on this, the future traffic volumes have been forecast for the morning and afternoon peak hours in the Project opening year (2028) and the design horizon year (2038), as shown in Table 5.105.

Table 5.105 Intersection traffic volumes without Project – Fysh Road diversion

Intersection	Approach	Turn	2022 traffic counts				Adopted growth rate (p.a.)	Opening year ‘without Project’ traffic volumes				Future year ‘without Project’ traffic volumes			
			AM Peak		PM Peak			AM Peak		PM Peak		AM Peak		PM Peak	
			LV	HV	LV	HV		LV	HV	LV	HV	LV	HV	LV	HV
Gore Highway/ Pampas Pit Road	South – Pampas Pit Road	LT	3	0	3	0	3.17%	4	0	4	0	5	0	6	0
		RT	2	2	2	1	3.17%	2	2	2	1	3	3	3	1
	East – Gore Highway	LT	2	2	2	1	3.17%	2	2	2	1	3	3	3	1
		T	76	37	81	29	3.17%	93	45	99	35	127	62	136	48
	West – Gore Highway	T	87	37	108	49	3.17%	106	46	133	60	145	63	181	81
		RT	3	1	4	1	3.17%	4	1	5	1	6	1	7	1

Rerouting assumptions

As mentioned previously, the traffic volumes of the Gore Highway/Fysh Road intersection will be redirected to the new Gore Highway/Pampas Pit Road intersection due to the traffic diversion caused by the Project. Table 5.106 provides the forecast peak hour traffic volumes of the new Gore Highway/Pampas Pit Road intersection in the opening year (2028) and the horizon design year (2038). It should be noted that the forecast traffic volumes of the new intersection are the same as that of the existing Gore Highway/Fysh Road intersection due to the rerouting assumptions of this assessment (Figure 5.17).

Table 5.106 Intersection traffic volumes with Project – Fysh Road diversion

Intersection	Year	Approach	Turn	Without diversion				With diversion				Diversion traffic 5% threshold							Over 5%
				AM peak		PM peak		AM peak		PM peak		AM peak			PM peak				
				LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	Total	LV	HV	Total		
Gore Highway/ Pampas Pit Road	2028	East	LT	4	0	4	0	4	0	4	0	0%	0%	0%	0%	0%	0%	<5%	
			RT	2	2	2	1	2	2	2	1	0%	0%		0%	0%			
		North	LT	2	2	2	1	2	2	2	1	0%	0%		0%	0%			
			T	93	45	99	35	93	45	99	35	0%	0%		0%	0%			
		West	T	106	46	133	60	106	46	133	60	0%	0%		0%	0%			
			RT	4	1	5	1	4	1	5	1	0%	0%		0%	0%			
	2038	East	LT	5	0	6	0	5	0	6	0	0%	0%	0%	0%	0%	0%		
			RT	3	3	3	1	3	3	3	1	0%	0%		0%	0%			
		North	LT	3	3	3	1	3	3	3	1	0%	0%		0%	0%			
			T	127	62	136	48	127	62	136	48	0%	0%		0%	0%			
		West	T	145	63	181	81	145	63	181	81	0%	0%		0%	0%			
			RT	6	1	7	1	6	1	7	1	0%	0%		0%	0%			

Capacity analysis (SIDRA) summary

In this assessment, a SIDRA analysis was undertaken to investigate the impacts of traffic diversion caused by the Project on the new intersection of Gore Highway with Fysh Road. The results of this analysis are summarised in Table 5.107.

Table 5.107 SIDRA summary Table for Fysh Road diversion

Period	Scenario	Intersection		Worst Movement			
		DOS	Delay (s)	Mov.	Delay (s)	LOS	Queue distance (m)
Gore Highway/Pampas Pit Road							
2028 AM	Without Project	0.097	0.3	E – RT	6.1	A	0
	With Project	0.097	0.3	E – T	6.1	A	0
2028 PM	Without Project	0.123	0.3	E – RT	5.9	A	0
	With Project	0.123	0.3	E – T	5.9	A	0
2038 AM	Without Project	0.133	0.4	S – RT	6.8	A	0.4
	With Project	0.133	0.4	S – T	6.8	A	0.4
2038 PM	Without Project	0.167	0.3	S – RT	6.5	A	0.3
	With Project	0.167	0.3	S – T	6.5	A	0.3

Based on the intersection analysis results, the new intersection of Gore Highway with Pampas Pit Road is anticipated to operate well below capacity limits and at a good LOS (A) under the peak traffic demand in the opening year (2028) and design horizon year (2038), with an average delay of 0.3 to 0.4 seconds per vehicle.

As shown in Table 5.107, the Project is not expected to have significant impacts on the intersection performance. As per the GTIA, therefore, no mitigation works are required to alleviate the Project impacts.

Turn warrants

The turn warrants assessment for each intersection is provided in Table 5.108 and Table 5.109 for right and left turning treatments, respectfully. It provides a summary of the peak hour volumes for the major road and minor road turning movements without and with Project traffic, existing turn treatments, minimum turn treatment requirements without and with the Project and indicates whether the existing treatment are insufficient and therefore mitigations are required.

Table 5.108 Turn warrants assessment for right turning treatments at Fysh Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Gore Highway/Fysh Road	450	450	8	8	None	BAR	BAR	No

Table 5.109 Turn warrants assessment for left turning treatments at Fysh Road diversion intersections

Intersection name	Major road peak hour volume (Q _M)		Peak hour right turn volume into laydown (Q _L)		Existing turn treatments	Minimum left turn treatment requirements		Mitigations required?
	Without Project	With Project	Without Project	With Project		Without Project	With Project	
Gore Highway/Fysh Road	189	189	6	6	BAL	BAL	BAL	No

Recommendations

According to the intersection analysis undertaken in this study, the Project is anticipated to have no significant impacts on the intersection of Pampas Pit Road with Gore Highway. Additionally, this assessment revealed that the Project will not significantly affect public transport operation and active transport on existing Fysh Road, extended Pampas Pit Road, or the surrounding road network. From a traffic operation viewpoint, therefore, no upgrades or mitigation works are proposed as part of this assessment.

5.9.4.7 Ware Street

Background

Brookstead is a rural town located approximately 55 km south-west of Toowoomba and has several silos which generate HV movements. The current IR design proposes a grade separated road crossing over the rail line at the current Gore Highway/Ware Street/Saal Road intersection (Interface ID 310 - 44 - E- 2), and a realignment of Saal Road to move the intersection with Gore Highway. The two proposed network modification options are shown in Figure 5.18 and Figure 5.19.

Reconfiguration option 1 includes the following road network changes:

- Gore Highway/Saal Road/Ware Street intersection is removed
- Gore Highway through movement provided via grade separation (road-over-rail)
- Saal Road and Ware Street connected via underpass adjacent to the rail corridor
- Gore Highway access to/from Saal Road relocated west of existing intersection location and connected via a service road to Saal Road via a left-in left-out access at the Gore Highway
- Proposed Saal Road/Ware Street/Service Road all movements intersection.

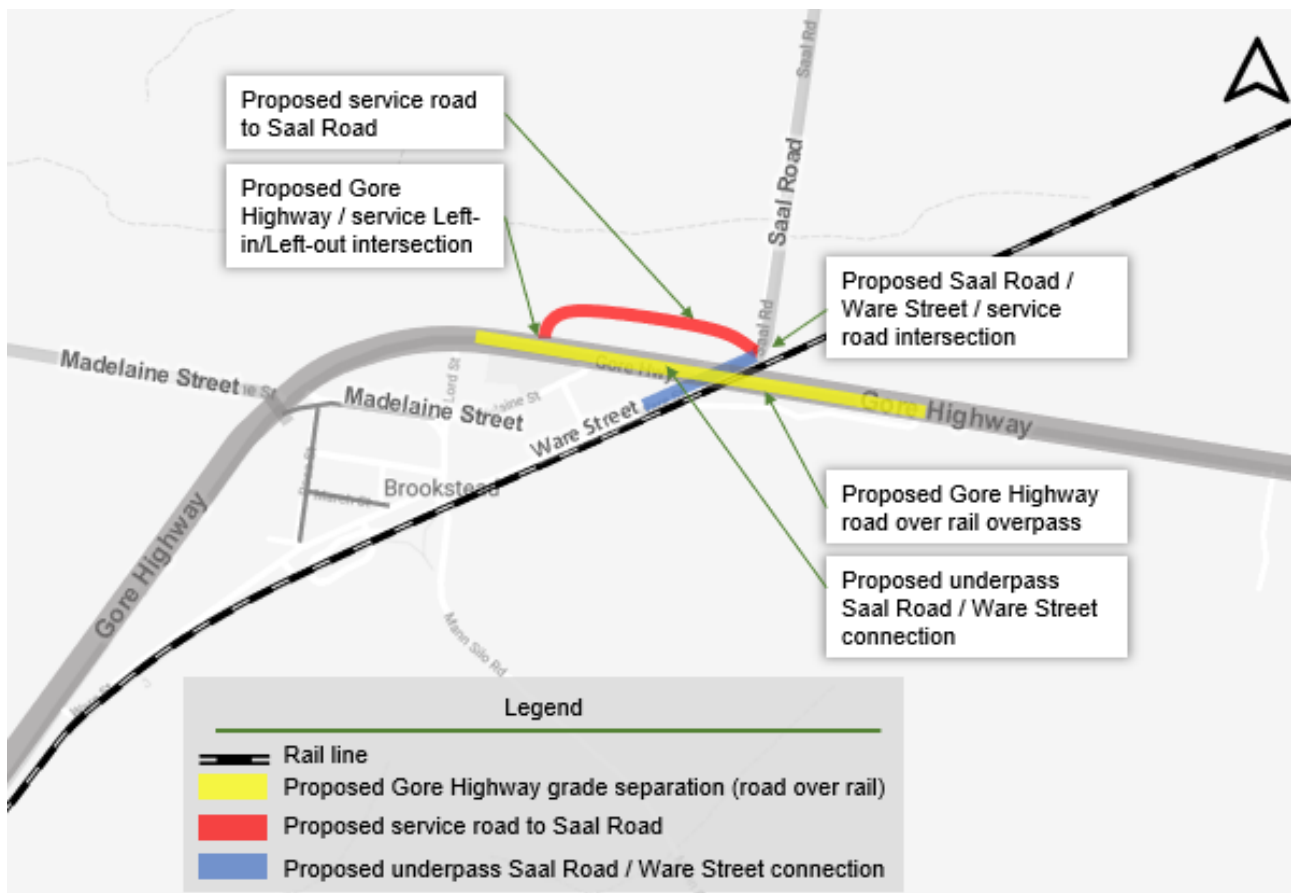


Figure 5.18 Ware Street reconfiguration option 1

Similar to reconfiguration option 1, reconfiguration option 2 includes the following road network changes:

- Gore Highway/Saal Road/Ware Street intersection is removed
- Gore Highway through movement provided via grade separation (road-over-rail)
- Saal Road and Ware Street connected via underpass adjacent to the rail corridor.

Reconfiguration option 2 also includes:

- Gore Highway access to/from Saal Road relocated west of existing intersection location and connected via a service road to Saal Road via a left-in access at the Gore Highway
- Proposed Saal Road/Ware Street/Service Road intersection, with left and right turns out of the Service Road, and through movements on Saal Road and Ware Street only.

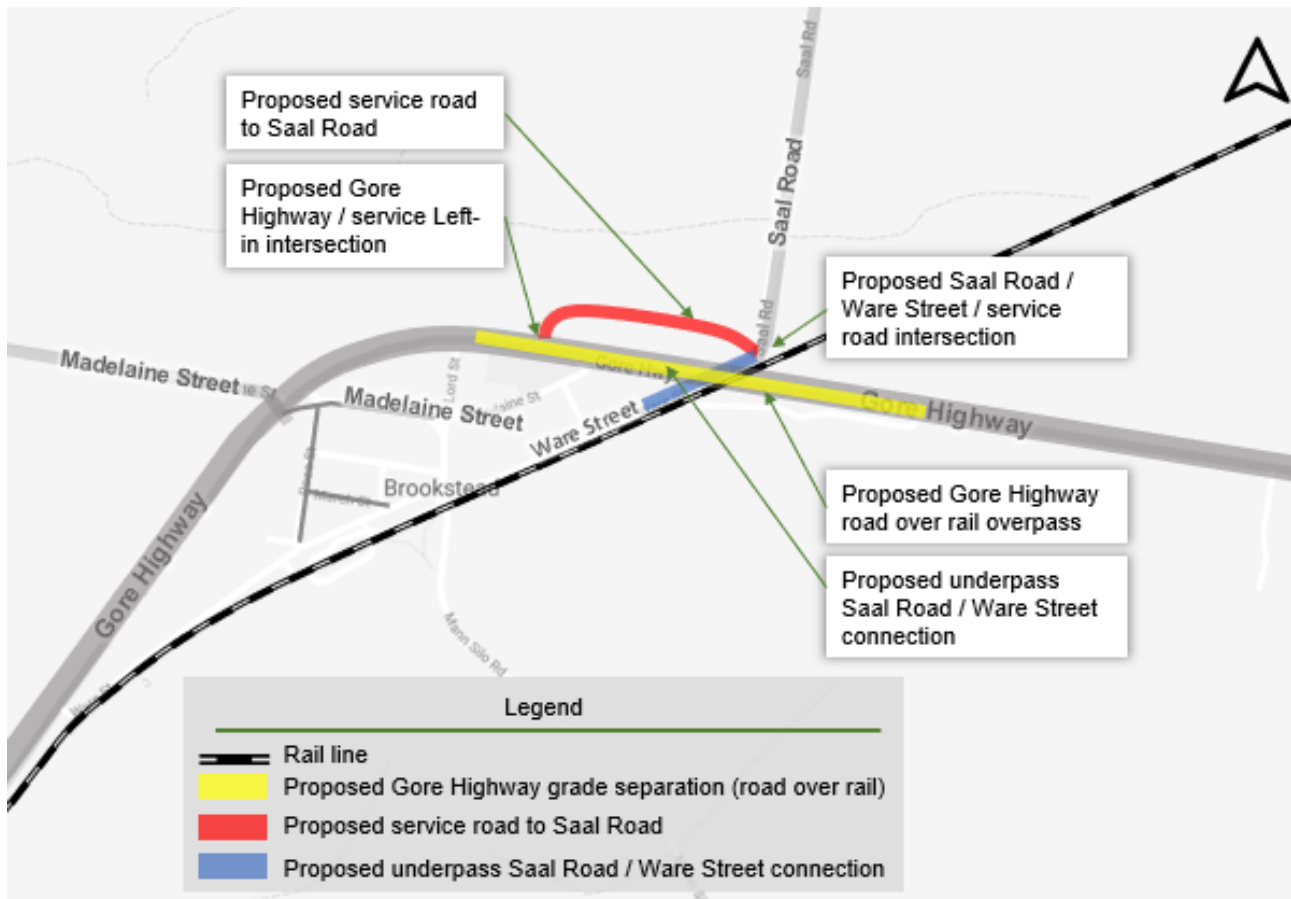


Figure 5.19 Ware Street reconfiguration option 2

The intersections which have been determined to be impacted by the proposed grade-separated level crossing are as follows:

- **Intersection A1:** Gore Highway/Madelaine Street North, a priority (stop-sign) controlled T-intersection
- **Intersection A2:** Gore Highway/Madelaine Street South, a priority (give-way) controlled T-intersection
- **Intersection B:** Gore Highway/Ware Street/Saal Road, a priority (give-way at Saal Road and stop-sign at Ware Street) controlled 4-way intersection
- **Intersection C:** Gore Highway/Ware Street, a priority (give-way) controlled T-intersection
- **Intersection D:** Ware Street/Lord Street, a priority (give-way) controlled 4-way intersection.

The above intersections are identified in Figure 5.20.



Figure 5.20 Project intersections

The existing traffic volumes are sourced from a 24-hour classified traffic count survey conducted by Austraffic at the key intersection locations identified in Figure 5.20 as well as at other local road segments within and surrounding Brookstead to assist with the rerouting analysis as follows:

- Gore Highway/Madelaine Street North
- Gore Highway/Madelaine Street South
- Gore Highway/Ware Street/Saal Road
- Gore Highway/Ware Street
- Ware Street (northern connection) South of Gore Highway
- Gore Highway East of Ware Street
- Ware Street (southern connection) East of Gore Highway
- Lord Street between Daphne Street and Ware Street
- Ware Street between March Street and Lord Street
- Ware Street East of Lord Street
- Mann Silo Road South of Ware Street
- Gore Highway/Yarranlea Road
- Yarranlea Road/Watson Road.

The March 2021 count data was analysed to determine the peak AM and PM hours. Wednesday 10 March 2021 had the highest volumes and defined the peak hours as:

- AM peak hour: 11:00 am to 12:00 pm
- PM peak hour: 3:30 pm to 4:30 pm.

There are some differences from the overall peak time periods across the network, however, the volume differences are very small, therefore no adjustment has been required.

The AM Peak period has been assessed as the 'worst peak' due to the higher HV volumes. Light vehicle volumes are similar between peaks.

Active transport

No shared use paths or bicycle lanes are provided in the vicinity of the study area and there are no designated cycle networks within Brookstead covered in the DTMR Downs Southwest Principal Cycle Network Plan (2021).

Public transport

The study area is not serviced by any public transport routes.

There are two school service bus lines with routes that traverse Brookstead, S740 and S118. The S740 passes through Brookstead via the Gore Highway with no diversions. The S740 services Pittsworth State High School and does not stop in Brookstead. The S118 follows a path to/from Madelaine Street, Lord Street and Ware Street before linking up with the Gore Highway at the Gore Highway/Ware Street/Saal Road intersection as shown in Figure 5.21. This service services Brookstead State School on Ware Street. Darling Downs Transit lists each of these routes as having one morning and afternoon school service running during the school term.



Figure 5.21 Proximity to public transport

During the Construction Works stage, it is suggested that the construction contractor collaborates with Brookstead State School, as well as other key stakeholders in the area (such as DTMR and Toowoomba Regional Council Council), to address and mitigate any construction impacts, particularly concerning the operation and access to the school zone, including the operations of the S118 service. Specific mitigations will be further examined and detailed during the Detailed Design and Construction Works stages and will be documented as part of the Traffic Management Plan.

Traffic data

Table 5.110 details the SCR network intersection traffic volumes in the base case with no detour as well as the detour scenario to understand the movements where traffic volumes change for the intersections that receive the rerouted vehicles. These volumes have been calculated from the 2021 count data sources, and supplemented from the 2022 count data sources, which are slightly higher than the AADT data. If there is no change between base case and detour scenario, the movement has not been shown.

Volumes have been separated into three categories:

- LV which corresponds with Austroads class 1 and 2 vehicles
- HV for class 3 to 9 vehicles
- Extra heavy vehicles (XHV) with class 10 to 12 vehicles.

The traffic volumes and corresponding peak hour volumes are being adopted for further assessments of turn warrants, link analysis, and capacity analysis in subsequent sections of this report.

Table 5.110 Rerouting 24-hour traffic volumes (from 2021 Count data)

Intersection	Reconfiguration option	Approach	Movement	Base case Scenario			Detour scenario		
				LV	HV	XHV	LV	HV	XHV
Gore Highway/ Madelaine Street (A1 and A2)	Reconfiguration option 1	Gore Highway (N)	Through	1,224	188	391	1,200	186	389
			Left	8	1	5	93	12	17
		Madelaine Street (E)	Right	7	1	2	7	1	2
			Left	10	2	5	10	2	5
	Reconfiguration option 2	Gore Highway (N)	Through	-	-	-	-	-	-
			Left	-	-	-	-	-	-
		Madelaine Street (E)	Right	-	-	-	-	-	-
			Left	-	-	-	-	-	-
Gore Highway/ Saal Road/Ware Street (B)	Reconfiguration option 1	Saal Road (N)	Right	9	2	1	-	-	-
			Through	9	1	2	19	3	3
			Left	8	1	1	-	-	-
		Gore Highway (E)	Right	9	-	-	-	-	-
			Through	1,270	194	398	1,362	204	412
			Left	83	10	13	-	-	-
		Ware Str (S)	Right	79	10	14	-	-	-
			Through	9	1	1	96	12	15
			Left	7	1	1	-	-	-
		Gore Highway (W)	Right	2	0	0	-	-	-
			Through	1,254	195	396	1,340	206	411
			Left	11	2	1	-	-	-
	Reconfiguration option 2	Saal Rod (N)	Right	9	2	1	-	-	-
			Through	9	1	2	19	3	3
			Left	8	1	1	-	-	-
		Gore Highway (E)	Right	9	-	-	-	-	-
			Through	1,270	194	398	1,362	204	412
			Left	83	10	13	-	-	-
		Ware Street (S)	Right	79	10	14	-	-	-
			Through	9	1	1	96	12	15

Intersection	Reconfiguration option	Approach	Movement	Base case Scenario			Detour scenario		
				LV	HV	XHV	LV	HV	XHV
		Gore Highway (W)	Left	7	1	1	-	-	-
			Right	2	0	0	-	-	-
			Left	11	2	1	-	-	-
Gore Highway/ Ware Street South (C)	Both reconfiguration options	Gore Highway (N)	Through	1,240	189	395	1,225	186	394
			Left	39	6	4	54	8	6
		Ware Street (E)	Right						
			Through	1,240	189	395	1,225	186	394

Delay assessment

The following section of this report summarise the results of the capacity analyses undertaken of the subject intersections, considering the above intersection performance parameters.

The Project intersections have been assessed at the year of opening (2028) of the Project in accordance with the procedure outlined in the GTIA document, as summarised in the following:

- Each intersection that has any greater than 5 per cent turn movement volume increases has been analysed for the base case, reconfiguration option 1 and reconfiguration option 2 layouts to determine the movement delays. Refer to Figure 5.21 for intersection identification.
- Total vehicle -minutes across each intersection and scenario have been calculated, to determine the Project impact in accordance with the aggregate intersection delay impact vehicle minutes formula. Where Project traffic adds less than 5 per cent of delay to the base case traffic aggregate, no mitigation to treat the intersection delay is required
 - With Project intersection vehicle minutes is calculated by multiplying the 'with Project' scenario average delay by movement, by the base case volume for each movement. This purposely does not count the impact as delays to Project traffic, only to pre-existing traffic that is affected by the additional delays.
 - Base case intersection vehicle minutes is calculated by multiplying the base case average delay by movement by the base case volume for each movement.
- Identify any intersection upgrades if required to mitigate intersection delay.

A SIDRA performance assessment has been carried out for each of these intersections under year of opening (2028) and 10 - year design horizon (2038) peak hour conditions to confirm that they will operate within acceptable capacity limits with the additional traffic forecast to be generated by the Project, in accordance with standard practice.

Table 5.111 provides a summary of the aggregate intersection delay calculations for year of opening, and whether the intersection exceeds 5 per cent of additional delay. There are no increases in delay for pre-existing traffic under reconfiguration option 1 or reconfiguration option 2. The aggregate delay across all intersections is less than 5 per cent therefore no mitigation works are required.

Table 5.111 Summary of 2028 aggregate intersection delay calculations

Intersection	Base (vehicle minutes)	Reconfiguration option 1		Reconfiguration option 2	
		Vehicle minutes	Increase from base (%)	Vehicle minutes	Increase from base (%)
A1: Gore Highway/Madelaine Street North	1 min 7 s	1 min 7 s	0%	1 min 7 s	0%
A2: Gore Highway/Madelaine Street South	1 min 49 s	1 min 49 s	0%	1 min 49 s	0%
B: Gore Highway/Ware Street/Saal Road*	4 min 42 s	28 s	<0%	16 s	<0%

Intersection	Base (vehicle minutes)	Reconfiguration option 1		Reconfiguration option 2	
		Vehicle minutes	Increase from base (%)	Vehicle minutes	Increase from base (%)
C: Gore Highway/Ware Street	1 min 58 s	1 min 58 s	0%	1 min 58 s	0%
D: Ware Street/Lord Street	3 min 57 s	3 min 57 s	0%	3 min 57 s	0%
Total	18 min 17 s	14 min 3 s	<0%	13 min 50 s	<0%

Table note:

* Intersection B has decreased delay in the options compared to the base case due to the closure of movements at the intersection.

Table 5.112 provides a summary of the aggregate intersection delay calculations for the design horizon year (2038), and whether the intersection exceeds 5 per cent of additional delay. There are no increases in delay for pre-existing traffic under reconfiguration option 1 or reconfiguration option 2. The aggregate delay across all intersections is less than 5 per cent therefore no mitigation works are required.

Table 5.112 Summary of 2038 aggregate intersection delay calculations

Intersection	Base (vehicle minutes)	Reconfiguration option 1		Reconfiguration option 2	
		Vehicle minutes	Increase from base (%)	Vehicle minutes	Increase from base (%)
A1: Gore Highway/Madelaine Street North	1 min 26 s	1 min 26 s	-1%	1 min 26 s	-1%
A2: Gore Highway/Madelaine Street South	2 min 29 s	2 min 30 s	1%	2 min 30 s	1%
B: Gore Highway/Ware Street/Saal Road*	5 min 55 s	28 s	<0%	9 s	<0%
C: Gore Highway/Ware Street	3 min 40 s	3 min 39 s	0%	3 min 39 s	0%
D: Ware Street/Lord Street	4 min 23 s	4 min 25 s	0%	4 min 25 s	0%
Total	25 min 2 s	19 min 37 s	<0%	19 min 18 s	<0%

Table note:

* Intersection B has decreased delay in the options compared to the base case due to the closure of movements at the intersection.

Recommendations

All intersections assessed are expected to be operating well within acceptable capacity limits at the year of opening and design horizon both without, and with, the additional traffic forecast to be rerouted by the proposed grade separated crossing reconfiguration options. Therefore, based on the diversions proposed, no further mitigation works are required.

During the Construction Works stage, it is suggested that the construction contractor collaborates with Brookstead State School, as well as other key stakeholders in the area (such as DTMR and Toowoomba Regional Council Council), to address and mitigate any construction impacts, particularly concerning the operation and access to the school zone. Specific mitigations will be further examined and determined during the Detailed Design and Construction Works stages and will be documented as part of the Traffic Management Plan.

5.9.5 Mitigation measures

5.9.5.1 Traffic management strategies at level crossings

Traffic management strategies to be introduced in order to mitigate road-rail interface impacts are included in Table 5.113 and would include:

- Road safety audits will be undertaken at the level crossings pre and post construction, as well as post opening in accordance with the Austroads guidelines

- Physical controls such as boom barrier gates and/or warning lights will be incorporated into the design at active level crossing locations in accordance with the *Guide to Development in a Transport Environment: Rail* (DTMR 2015a), *Manual of Uniform Traffic Control Devices Part 7: Railway Crossings* (DTMR, 2019b) and *ARTC Engineering Code of Practice – Level Crossings*
- Railway safety messages will be provided to the community through awareness activities, community engagement activities, and campaigns to increase public awareness regarding the Project.

Table 5.113 Rail interface mitigation measures

Stage	Mitigation	Mitigation outcome
Detailed Design, Pre-Construction Activities and Early Works and Construction Works	The design of road-rail interfaces will continue to be developed in accordance with the principles established in <i>ONRSR Policy: Level Crossings</i> (ONRSR, 2019), and in reference to the <i>ONRSR Guideline: Meaning of duty to ensure safety so far as is reasonably practicable</i> - SFAIRP (ONRSR, 2016b) and the <i>Queensland Level Crossing Safety Strategy 2012-2021</i> (DTMR, 2012a). For further details on the level crossing strategy, refer to Appendix BT.	The Project alignment will be developed in accordance with relevant guidelines, ensuring a risk-based decision-making process for the treatment of road-rail interfaces.
	Level crossings will be provided with warning signage, line marking, and other relevant controls; in accordance with the relevant national and ARTC standards in accordance with TMP and RUMP procedures. Options for impact mitigation will depend on the specific activity being undertaken, and the location where it is occurring. It will be up to the construction contractor to select and implement appropriate controls. Road safety audits will be undertaken at the level crossings pre and post construction in accordance with the Austroads guidelines. Level crossings will be reviewed to confirm the: - Level of protection continues to be appropriate - Infrastructure is appropriate for the traffic conditions.	Direct and guide active mode users at road-rail interface locations, improving safety and reduces the likelihood of any significant traffic delays due to incidents.
	Detailed design of appropriate exclusion fencing is required near roads or where trespass is likely to occur. Specific fencing requirements are to be agreed through discussion with adjoining landowners and asset owners. Agreed fencing requirements will be documented in a revised fencing strategy for the Project.	Appropriate safety provisions to minimise the risk of trespassing and resulting adverse safety incidents.
	Consultation with the relevant road controlling authority and QR will be required during the Detailed Design stage and throughout construction as applicable.	Ensure that existing level crossings along the Project construction routes are considered and mitigated appropriately.
	Threshold and ALCAM assessment to be undertaken to determine the appropriate protection type for the proposed crossing (if required). Additionally, these assessments would be undertaken again during detailed design, including all ALCAM considerations, where applicable, as agreed upon between ARTC, the construction contractor, QR and the relevant LGA.	Ensure the appropriate protection type for the proposed crossing been determined
	The interoperability of the CTC with QR's network will be confirmed through consultation with QR, with compatibility requirements incorporated into the detailed design for the Project.	Ongoing consultation with QR and integration of assets

Stage	Mitigation	Mitigation outcome
	The construction approach for the components of the Project within the existing rail corridor for the South Western Line and the Millmerran Branch Line will be confirmed through discussion with QR and other key stakeholders. This consultation will be used to inform: ■ The programming of construction activities requiring track possessions ■ Effective communication strategies with QR and other stakeholders.	Ensure those reliant on the existing QR systems, and access the operational lines (e.g. QR, GrainCorp) are informed of the construction approach, to minimise impacts and provide adequate mitigation measures.
	The agreed construction approach within the existing rail corridor for the South Western Line and the Millmerran Branch Line will be formulated in a wayleave agreement, or similar, between ARTC and QR.	
	Track design will incorporate trackside monitoring systems. The locations for trackside monitoring systems will be confirmed and incorporated into the detailed design.	Ensure the alignment has safety controls to detect faults in train wheel set and monitor rail wheel condition and defects.
Pre-Construction Activities and Early Works and Construction Works	In accordance with Section 255 of the <i>Transport Infrastructure Act 1994</i> , works cannot commence within the existing rail corridor without QR's written approval, unless this process is overwritten by a pre-agreement between ARTC and QR.	All necessary approvals from QR will be obtained prior to construction commencing.
	If construction of Project components within the existing rail corridor is completed during a temporary possession of the rail corridor, then works will be completed in accordance with the conditions of the temporary possession and/or wayleave agreement granted to ARTC by QR.	
	All works carried out on QR property will be in accordance with the requirements of QR's Civil Engineering Technical Requirement: Work in or about QR Property (CIVIL-SR-002).	
Operations	ARTC will commit to maintaining safety treatments for passive and active level crossings (including sight lines) by conducting routine inspections of crossing infrastructure in accordance with ARTC's <i>engineering codes of practice</i> and will regularly review crossing performance and incident information to identify opportunities for improved performance and further reduction in risk. ARTC will work with road controlling authorities to manage any incidents at road-rail interfaces.	Commitment to continued review of Project infrastructure through the Operations stage will ensure safety of road-rail interfaces is maintained.
	ARTC will commit to analysing community complaints and suggested improvements to Traffic Management Plans, including at level crossings to capture near-miss information.	Commitment to continued review of Project infrastructure through the Operations stage will ensure safety of road-rail interfaces is maintained and improved where possible.
	In accordance with Section 255 of the <i>Transport Infrastructure Act 1994</i> , works cannot commence within the existing rail corridor without QR's written approval, unless this process is overwritten by a pre-agreement between ARTC and QR.	All necessary approvals from QR will be obtained prior to construction commencing.
	Road safety audits will be undertaken at the level crossings post opening in accordance with the Austroads guidelines. Post commissioning, the level crossing will be managed as a part of business as usual for the relevant road and rail manager under the terms of the signed interface agreement.	Make further enhancements to safety measures and further reduce the likelihood of delays.

Stage	Mitigation	Mitigation outcome
	Increase in traffic associated with the Project is likely to increase vehicle exposure at rail crossings. Public level crossings will be designed in order to provide for safe design standards where sufficient stacking and, sight distances, lane marking, and signage prevail for a design vehicle consisting of a low loader.	To ensure safe design standards are implemented to minimise and mitigate the impact significance and likelihood of crashes which may occur at level crossings.
	Railway safety messages will be provided to the community through awareness activities, community engagement activities, and campaigns to increase public awareness regarding the Project. Fact sheets and guidelines will also be freely available on the ARTC website, aiming to provide guidance to the community regarding safety around level crossings.	Engagement with the community and the provision of education and awareness will provide guidance to the community regarding safety around level crossings.
	Key actions outlined within the <i>Queensland Level Crossing Safety Strategy 2012-2021</i> (DTMR, 2012) will be implemented, including: ■ Promoting level crossing safety through public awareness campaigns ■ Maintain data collection, including near miss reporting ■ Maintain level crossing infrastructure in accordance with Australian Standards. For further details on the level crossing strategy, refer to Appendix BT.	Continued alignment with QLCSS through the Operations stage to maintain safety at road-rail interfaces. Promote ongoing safety improvements at road-rail interface locations.

5.9.5.2 Other

There are a number of existing level crossings owned and operated by QR along the proposed construction routes. In order to mitigate any scheduling and safety issues with these existing level crossings, consultation with QR will be required during the construction planning process (Detailed Design stage).

Relevant mitigation measures for road-rail interface locations are provided within this section. The mitigation measures outlined in Table 5.114 are applicable to SCR and LGR impacted by Project construction traffic.

Table 5.114 Road-rail interface mitigation measures

Stage	Mitigation	Mitigation outcome
Detailed Design, Pre-Construction Activities and Early Works and Construction Works	The design of road-rail interfaces will continue to be developed in accordance with the principles established in <i>ONRSR Policy: Level Crossings</i> (ONRSR, 2019), and in reference to the <i>ONRSR Guideline: Meaning of duty to ensure safety so far as is reasonably practicable - SFAIRP</i> (ONRSR, 2016b) and the <i>Queensland Level Crossing Safety Strategy 2012-2021</i> (DTMR, 2012a). For further details on the level crossing strategy, refer to Appendix BT.	The Project alignment will be developed in accordance with relevant guidelines, ensuring a risk-based decision-making process for the treatment of road-rail interfaces.
	Level crossings will be provided with warning signage, line marking, and other relevant controls; in accordance with the relevant national and ARTC standards in accordance with TMP and RUMP procedures. Options for impact mitigation will depend on the specific activity being undertaken, and the location where it is occurring. It will be up to the construction contractor to select and implement appropriate controls. Road safety audits will be undertaken at the level crossings pre and post construction in accordance with the Austroads guidelines. Level crossings will be reviewed to confirm the: ■ Level of protection continues to be appropriate ■ Infrastructure is appropriate for the traffic conditions.	

Stage	Mitigation	Mitigation outcome
	Detailed design of appropriate exclusion fencing is required near roads or where trespass is likely to occur. Specific fencing requirements are to be agreed through discussion with adjoining landowners and asset owners. Agreed fencing requirements will be documented in a revised fencing strategy for the Project.	Appropriate safety provisions to minimise the risk of trespassing and resulting adverse safety incidents.
	Consultation with the relevant road controlling authority and QR will be required during the Detailed Design stage and throughout construction as applicable.	Ensure that existing level crossings along the Project construction routes are considered and mitigated appropriately.
Operation	ARTC will commit to maintaining safety treatments for passive and active level crossings (including sight lines) by conducting routine inspections of crossing infrastructure in accordance with ARTC's <i>Engineering Codes of Practice</i> and will regularly review crossing performance and incident information to identify opportunities for improved performance and further reduction in risk. ARTC will work with road controlling authorities to manage any incidents at road-rail interfaces.	Commitment to continued review of Project infrastructure through the Operations stage will ensure safety of road-rail interfaces is maintained.
	Road safety audits will be undertaken at the level crossings post opening in accordance with the Austroads guidelines. Post commissioning, the level crossing will be managed as a part of business as usual for the relevant road and rail manager under the terms of the signed interface agreement.	Make further enhancements to safety measures and further reduce the likelihood of delays.
	Increase in traffic associated with the Project is likely to increase vehicle exposure at rail crossings. Public level crossings will be designed in order to provide for safe design standards where sufficient stacking and, sight distances, lane marking, and signage prevail for a design vehicle consisting of a low loader.	To ensure safe design standards are implemented to minimise and mitigate the impact significance and likelihood of crashes which may occur at level crossings.
	Railway safety messages will be provided to the community through awareness activities, community engagement activities, and campaigns to increase public awareness regarding the Project. Fact sheets and guidelines will also be freely available on the ARTC website, aiming to provide guidance to the community regarding safety around level crossings.	Engagement with the community and the provision of education and awareness will provide guidance to the community regarding safety around level crossings.
	Key actions outlined within the <i>Queensland Level Crossing Safety Strategy 2012-2021</i> (DTMR, 2012) will be implemented, including: ■ Promoting level crossing safety through public awareness campaigns ■ Maintain data collection, including near miss reporting ■ Maintain level crossing infrastructure in accordance with Australian Standards. For further details on the level crossing strategy, refer to Appendix BT.	Continued alignment with QLCSS through the Operations stage to maintain safety at road-rail interfaces. Promote ongoing safety improvements at road-rail interface locations.

5.10 Other transport impacts

As part of the TIA, Project impacts other than those affecting the existing road network were considered. These other impacts include impacts on stock routes, cycling and pedestrian networks, public transport networks, and operation of emergency services. These further assessments are provided below.

5.10.1 Impacts on emergency services

The Project has the potential to result in the following impact on emergency service vehicles during construction:

- Increased journey times on road linkages utilised by construction traffic
- Increased waiting time at intersections utilised by construction traffic
- Temporarily altered driving conditions in proximity to construction areas, such as reduced speed limits, mobile traffic lights and lane reconfigurations
- Reduced connectivity across the Project alignment, impacting accessibility during flooding and fires.

Such impacts have potential to result in increased response times for emergency services.

During both construction and operation, response times for emergency services may be delayed if they encounter significant roadworks or passing trains at level crossings. As part of the on-going process, ARTC is consulting and working with the relevant emergency service agencies (e.g. QFES, QAS and QPS) to develop protocols and joint working arrangements to address potential impacts on emergency services and service response times during construction and operation and ensure that access is retained as required. QAS, QPS and QFES have acknowledged the potential impact to their services during construction and operations and are supportive of the Project's proposed approach. The QFES, QAS and QPS will all be consulted to identify suitable emergency access locations to the rail corridor in response to emergencies along the rail track.

Consultation with the community and relevant government agencies (including emergency services) will continue through the detailed design and construction planning process to ensure that safety concerns and issues are addressed.

The Construction Traffic Management Plan will identify and include secondary/alternative construction routes which can be used by construction traffic in the event that a primary construction route is blocked by an accident or emergency situation. Where a suitable secondary route is not identified, the movement of construction vehicles will stop until suitable alternative routes are identified and agreed with the relevant road authority.

5.10.2 Stock routes impacts

The revised reference design for the Project interfaces the stock route network in a number of locations. Project construction routes are also expected to interface with the stock route network. In the revised reference design Inland Rail have updated stock route interface designs to accommodate requirements identified by Department of Resources (DoR) and local councils. The design requirements highlighted below have been developed to ensure mitigation measures at each interface facilitate a safe crossing passage for cattle and drovers in an operational context.

5.10.2.1 Holding yards

Cattle yards, design, materials and construction (Powell and Lapworth, 2006) outlines guidance for suitable yard design and construction. Holding yards should be spatially provisioned to allow an area of 2 m² per head of cattle for the maximum number of stock likely to be handled. The potential herd size ranges from small, localised movements between properties, up to a 1,200 head for the Project area, resulting in a maximum holding yard capacity requirement of 2,400 m² as agreed with DoR.

Complimenting the area allocation, the yard should be designed as close to the optimal perimeter ratio (2:3) width to length for receiving large herds. The locations of these interfaces make this a challenging requirement due to existing infrastructure constraints and other associated impacts. Each holding yard was designed as close to the optimal ratio as was reasonably practical, weighing all site-based factors and practical constraints. The yard sizing ratio ensures it is deep enough to draw the mob in through a centrally located large 7.3 m wide gate, supported by a winged fence arrangement. The site-specific details have been shown within EIS Appendix B2: Stock Routes.

5.10.2.2 Barriers

DoR have identified at grade stock crossings present several challenges which include avoiding cattle entering the rail corridor and preventing cattle injury whilst attempting to cross large herds of cattle that the level crossing interface. High volume cattle crossings have risk of cattle pressure at any opening in the stock proof fence. During detail design, a barrier option assessment will be conducted in consultation with DoR. From DOR's perspective, barriers are an important visual and physical control to assist the stock movement under high stress scenarios to prevent cattle injury.

5.10.2.3 Fencing and gates

Design of fencing and gates are important to achieve the following objectives:

- Keeping cattle securely contained
- Allow the safe and efficient movement of cattle
- Minimise stress and injury to cattle
- Minimise ongoing maintenance costs and
- Maintain a safe working environment for users.

Overall fencing design will consist of posts, cables, top rail, belly rail and a post pot for corrosion protection. Fencing height is still to be agreed in detail design; however, it's expected to be approximately 1.7 m. Funnel fencing will also be required to move cattle efficiently across the level crossing. The design uses a minimum 10 m wide fencing funnel with entry gates of 7.3 m wide. Fences and gates consistent with the published guideline for 7.3 m openings: [Guideline: Fences on stock routes SLM/2019/5152 Version 1.01 20/10/2022](#)

5.10.2.4 Controlled movements

A draft "Call Train Control Process" is being investigated to assist drovers in contacting ARTC network control in advance to obtain information on suitable windows between trains when they can cross their stock. This will account for train frequencies and stock volumes. It's important that the drovers do not cross without the authority given by the ARTC network control centre.

5.10.2.5 Construction

During construction, should cattle move along the stock route/road corridor, communication will occur between Council and ARTC notifying them of the permit. Traffic management will be in place to ensure there is no conflict between stock and construction activities. The timing between construction laydown requirements and the use of the holding yards for the operational rail environment does not create any conflict.

5.10.2.6 Summary of impacts

Details of these stock routes and the potential impacts are outlined in Table 5.115.

Connectivity of the local stock route network, without and with the Project, is shown in figures included in EIS Chapter 5: Project Description.

Table 5.115 Potential impacts to stock routes within the Project footprint

Location and Project interface point (approximate Chainage)	Stock route ID, type, status and class	Interface type	Description	Proposed mitigation
No direct interface	ID: 005BALO Type: Road Status: Open Class: Primary	Construction routes: ■ Carnarvon Highway ■ Barwon Highway	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR (Department of Resources) and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed
No direct interface	ID: 006BALO Type: Road Status: Open Class: Primary	Construction routes: ■ Carnarvon Highway	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed
Kildonan Road Ch 33.1 km (NS2B)	ID: 005GWND Type: Road Status: Open Class: Primary	Road-rail interface: ■ 270-12-P-1 Construction routes: ■ Cunningham Highway ■ Barwon Highway ■ Kildonan Road ■ Silo Street ■ Eukabilla Road	This stock route follows Kildonan Road. The Project alignment crosses this stock route at Kurumbul.	■ A dedicated stock level crossing, adjacent to Kildonan road level crossing will be provided, allowing stock movement across the railway that avoids vehicular traffic interaction. The road level crossing will have flashing lights and boom barriers. ■ Holding yards ■ Funnel Fencing ■ Barrier across tracks* ■ Call train control process for controlled movement.
Rainbow Reserve and Eukabilla Road Ch 33.4 km (NS2B)	ID: RAINBOW RESERVE Type: Reserve Status: Open Class: Primary	Construction routes: ■ Eukabilla Road Project alignment: ■ Parallel to rail corridor	This stock reserve encompasses the Rainbow Reserve camping area and Eukabilla Road. The Project alignment enters this stock reserve at Ch 33.15 km (NS2B) and crosses Eukabilla Road at 33.4 km (NS2B). The Project alignment continues to run parallel to the western edge of the existing Eukabilla Road, within the stock reserve, to Ch 34.9 km (NS2B). At this point it exits the stock reserve.	Eukabilla Road will be realigned to run parallel to the western edge of the new rail corridor, allowing for uninterrupted stock movement from Kildonan Road onto Eukabilla Road. The stock reserve will be otherwise unaffected.

Location and Project interface point (approximate Chainage)	Stock route ID, type, status and class	Interface type	Description	Proposed mitigation
South Kurumbul Road Ch 6.1 km Wondalli-Kurumbul Road and Yelarbon-Kurumbul Road Ch 7.2 km	ID: 081GWND Type: Road Status: Open Class: Secondary	Road-rail interface: 310-4-E-2 310-5-E-2 Construction routes: - Wondalli Kurumbul Road - Yelarbon Kurumbul Road - South Kurumbul Road - Queen Street South - Mooroobie Lane - Kildonan Road	The stock route connects Wondalli-Kurumbul Road and South Kurumbul Road, running parallel and adjacent to the existing South Western Line rail corridor. This stock route is aligned along Wondalli-Kurumbul Road and parallel to Yelarbon-Kurumbul Road, which runs adjacent to the existing South Western Line rail corridor. The Project alignment crosses this stock route at the intersection of Wondalli-Kurumbul Road and Yelarbon-Kurumbul Road.	- A dedicated stock level crossing, adjacent to the upgraded active level crossing at South Kurumbul Road, allowing stock movement across the railway that avoids vehicular traffic interaction. - Holding yards - Funnel Fencing - Barrier across tracks* - Call train control process for controlled movement of stock movement. No crossing provided at Wondalli Kurumbul Road, noting there is no existing crossing on the QR line at this location. The stock will utilise the existing drover movements via South Kurumbul Road.
No direct interface	ID: 083GWND Type: Road Status: Open Class: Secondary	Construction routes: Mooroobie Lane	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed
No direct interface	ID: 084GWND Type: Road Status: Open Class: Secondary	Construction routes: - Barwon Highway - South Toobeah Road	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed
No direct interface	ID: 086GWND Type: Road Status: Open Class: Secondary	Construction routes: Cunningham Highway	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed

Location and Project interface point (approximate Chainage)	Stock route ID, type, status and class	Interface type	Description	Proposed mitigation
No direct interface	ID: 799GWND Type: Road Status: Open Class: Tertiary	Construction routes: Barwon Highway	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed
No direct interface	ID: 806GWND Type: Road Status: Open Class: Tertiary	Construction routes: - Gore Highway - Leichhardt Highway	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed
No direct interface	ID: 807GWND Type: Road Status: Open Class: Tertiary	Construction routes: Gore Highway	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed
Yelarbon Ch 26.0 km	ID: 811GWND Type: Road Status: Open Class: Tertiary	Construction routes: - Cunningham Highway - Yelarbon Kurumbul Road - Kildonan Road	This stock route is aligned with Merton Road, the Cunningham Highway and Yelarbon–Keetah Road. The stock route crosses the existing QR South Western Line at an active level crossing on the Cunningham Highway. The Project will require the closure of the existing active level crossing, to be replaced by a road-over-rail crossing approximately 400 m to the west of the existing crossing point. This road reconfiguration will result in the severance of the current stock route.	Realignment of the stock route to provide continued connectivity between Merton Road and Yelarbon–Keetah Road, via a passive level crossing off Yelarbon–Kurumbul Road. The new rail crossing point would be approximately 640 m west of the existing rail level crossing. - Holding yards - Funnel Fencing - Barrier across tracks* - Call train control process for controlled movement of stock

Location and Project interface point (approximate Chainage)	Stock route ID, type, status and class	Interface type	Description	Proposed mitigation
East Sawmill Road Ch 27.0 km	ID: RESERVE Type: Reserve Status: Open Class: Primary	Project alignment: - Parallel to road upgrades Construction routes: - Cunningham Highway - East Sawmill Road - Suttons Road	This is an isolated stock reserve, with no mapped stock route linkages. The stock reserve is bound by the Cunningham Highway to the west and East Sawmill Road to the north. The Project involves curve easing on East Sawmill Road, which will encroach by up to 15 m into the north-western corner of the stock reserve. The existing Yelarbon levee extends diagonally across this stock reserve. Modifications to the existing Yelarbon levee, will temporarily require works within the stock reserve.	The usability of this stock reserve is not expected to be impacted by the Project and therefore no treatment is proposed.
Lovells Crossing Road Ch 65.8 km	ID: 813GWND Type: Road Status: Open Class: Tertiary	Road-rail interface: 310-21-P-9 Construction routes: - Cunningham Highway - Lovells Crossing Road - Elizabeth Street	This stock route follows Lovells Crossing Road. The Project alignment crosses this stock route approximately 3 km north of Inglewood.	A rail-over-road crossing of Lovells Crossing Road will be provided, allowing stock movement to pass under the railway at the same location. - Holding yards - Funnel Fencing - Barrier across tracks* - Call train control process for controlled movement of stock
Millmerran–Inglewood Road (Inglewood) Ch 73.1 km to Ch 76.5 km and 84.2km	ID: 820GWND Type: Road Status: Open Class: Tertiary	Road-rail interface: 310-27-P-3 310-24-P-2 Construction routes: - Millmerran–Inglewood Road - Lovells Crossing Road - Thornton Road - Elizabeth Street - Grays Road	This stock route follows or runs parallel to the east of Millmerran–Inglewood Road. The Project alignment crosses this stock route twice in 10 km, once at Ch 75.0 km and again at Ch 85.0 km. The Project alignment crosses this stock route at the point of the stock route re-joining Millmerran–Inglewood Road.	This stock route would be realigned to remain on the eastern side of the rail alignment, thus avoiding the need to provide two separate stock route crossing treatments in close proximity. This treatment approach would provide continued connectivity for stock movement in parallel to Millmerran–Inglewood Road in this area. An underpass through the railway embankment will be provided to ensure continued connectivity for stock movement along Millmerran–Inglewood Road. Department of Resources corridor requirements for new stock route corridor is 100 m wide.

Location and Project interface point (approximate Chainage)	Stock route ID, type, status and class	Interface type	Description	Proposed mitigation
No direct interface	ID: 830GWND Type: Road Status: Open Class: Tertiary	Construction routes: ■ Texas-Yelarbon Road	This stock route follows routes proposed to be used by construction traffic.	Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed
Kooroongarra-Anderson Road Ch 96.1 km	ID: 856TOOW Type: Road Status: Open Class: Tertiary	Road-rail interface: ■ 310-30-P-2 Construction routes: ■ Forestry Road	This stock route branches off 820TOOW and provides an east-west connection to Stonehenge Road. The Project alignment crosses this stock route at the intersection of Kooroongarra-Anderson Road and Millmerran-Inglewood Road. Investigations are underway to potentially remove this interface. The Department of Resources have indicated that this stock route may not be required and will progress discussions with TRC on this matter	■ A passive level crossing will be provided, allowing stock movement across the railway at the same location. ■ Funnel fencing ■ Barrier across tracks*

Location and Project interface point (approximate Chainage)	Stock route ID, type, status and class	Interface type	Description	Proposed mitigation
Millmerran-Inglewood Road (near Heckendorf Road) Ch 115.5 km	ID: 820TOOW Type: Road Status: Open Class: Tertiary	Road-rail interface: 310-35-P-4 Construction routes: - Millmerran-Inglewood Road - Forestry Road - Millwood Road - Moffatt Reserve Road - Kooroongarra Road - Schwarten Road - Blackwell Road - Six Mile Road - West Street - Paton Road - Bligh Street - Saleyards Road - Campbell Street - Heckendorf Road	This stock route follows Millmerran-Inglewood Road. The Project alignment crosses this stock route approximately 900 m south of the intersection of Heckendorf Road and Millmerran-Inglewood Road.	A rail-over-road grade separated crossing will be provided at 310-35-P-4 allowing continuation of existing stock movements along Millmerran-Inglewood Road at this location.

Location and Project interface point (approximate Chainage)	Stock route ID, type, status and class	Interface type	Description	Proposed mitigation
Kooroongarra Road (Commodore Mine) Ch 127.2 km	ID: 820TOOW Type: Road Status: Open Class: Tertiary	Road-rail interface: 310-37-P-12a Construction routes: - Millmerran-Inglewood Road - Forestry Road - Millwood Road - Moffatt Reserve Road - Kooroongarra Road - Schwarten Road - Blackwell Road - Six Mile Road - West Street - Paton Road - Bligh Street - Saleyards Road - Campbell Street - Heckendorf Road	The stock route follows Millmerran-Kooroongarra Road and Millmerran-Inglewood Road. This Project alignment crosses this stock route approximately 550 m north of the intersection between Millmerran-Inglewood Road, Millmerran-Kooroongarra Road and Schwarten Road.	A rail-over-road grade separated crossing will be provided at 310-37-P-12a, allowing continuation of existing stock movements along Millmerran-Kooroongarra Road and Millmerran-Inglewood Road at this location.
No direct interface	ID: 869TOOW Type: Road Status: Open Class: Tertiary	Construction routes: - Millwood Road - Kooroongarra Road - Moffatt Reserve Road		Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed

Location and Project interface point (approximate Chainage)	Stock route ID, type, status and class	Interface type	Description	Proposed mitigation
Warrego Highway Ch 204.3 km	ID: No ID – Unused Type: Road Status: Open Class: Tertiary	Road-rail interface: 310-56-P-2 Construction routes: - Warrego Highway - Toowoomba Bypass - Toowoomba Connection Road - Charlton Connection Road - Omara Road - Steger Road - Scrubby Road - Kingsthorpe Haden Road - Kingsthorpe Overpass - Chamberlain Road - Leesons Road - Scrubby Road	This stock route follows the Warrego Highway. The Project alignment crosses this stock route approximately 700 m west of the intersection between the Warrego Highway, Chamberlain Road and Jannuschs Road.	A rail-over-road grade separated crossing will be provided, allowing continuation of existing stock movements along the Warrego Highway at this location.

Table note:

- * Barrier option assessment will be conducted during detail design in consultation with DoR to determine if there is an option which is acceptable to both road and rail managers which adequately manages their respective risks.

Consultation with GRC, TRC, DR and landowners has occurred to determine potential impacts on these stock routes and to identify potential solutions for the treatment of rail and stock route interfaces. This consultation will continue through the Detailed Design stage and as the construction approach is confirmed to further ensure that potential impacts are appropriately managed. For example, construction activities for the Project may result in temporary disruption to the connectivity of the stock route network, particularly in and around the rail-road interface locations.

In addition to the State stock route network, there may also be private stock routes which are used to transfer stock to various grazing paddocks and holding yards within or across the Project footprint. Consultation is ongoing with individual landowners within the Project footprint to identify property-specific impacts, if any, to private stock routes.

Any required works are to be identified in the ongoing RUMP, discussed in Section 5.12.3.1, prepared to support the Project.

5.10.3 Public transport impacts

The existing public transport services that have potential to be impacted by the Project have been identified in Section 2.8. Generally, temporary traffic controls (e.g. reduced speed limits, temporary traffic lights, etc.) and/or an increase in construction traffic, particularly HV traffic, have the potential to impact the operation of public transport services.

Five public transport services have been identified with routes that are proposed to be used, in part, by construction traffic for the Project. These routes utilise roads of high traffic volumes, including using one of the following roads:

- Warrego Highway (less than 5 per cent volume increase)
- Logan Motorway (less than 5 per cent volume increase)
- Gateway Motorway (less than 5 per cent volume increase)
- Toowoomba-Athol Road.

Toowoomba-Athol Road is expected to increase traffic volumes by 99 veh/day in the peak impact year (5.4 per cent increase to background traffic). The road continues to operate at LOS A in the road link assessment.

Based on the above low increase in construction traffic comparatively to background traffic, it is considered unlikely that increased journey times would be experienced on these public transport services as a consequence of construction traffic for the Project.

No public transport routes intersect with the Project alignment.

TransLink and other public transport operators will be consulted as part of the Detailed Design and construction planning stage of the Project to identify public transport service constraints on the local road network. Other service operators would be consulted, as required.

The presence of bus routes will be considered in the preparation of the CEMP, as discussed in Section 5.12.3.

If any temporary bus stop and pedestrian access arrangements or alternative bus routes are required when construction routes are finalised, the contractor must reach agreement on suitable arrangements with the DTMR TransLink Division (bus_stops@translink.com.au or on 3851 8700) prior to any construction or works commencing.

5.10.4 School bus service impacts

The school bus services detailed below are likely to be impacted by the proposed rail alignment. The potential impacts to school bus services due to the upgrade of existing, or introduction of new road-rail intersection for the Project are discussed in Table 5.116.

Table 5.116 Potential impacts to school bus services due to upgraded or new road-rail intersection

School bus service	Potential impact
P473 Yuraraba to Inglewood State School	The rail alignment interfaces with this bus route at 310-24-P-2 (Millmerran-Inglewood Road). This road-rail interface is proposed as an active level crossing. A wait time of approximately 1.69 mins is expected at this crossing during the train pass-by.
P510 Southbrook North to Southbrook Central State School	The rail alignment interfaces with the bus route at 310-50-P11z (Biddeston Southbrook Road) and 310-50-P-11 (Linthorpe Valley Road). 310-50-P11z is proposed as a grade separated (rail-over-road) crossing and realigns Biddeston Southbrook Road from its previous crossing at 310-52-P-1. The route would require realignment to use the new Biddeston Southbrook Road section. This realignment is further discussed in Section 5.9.4.2. There is the opportunity to build the grade separation offline without impacting the movement of school buses during construction. The grade separation will allow buses to cross the rail alignment with no delay. 310-50-P-11 is proposed as an active level crossing with a wait time of approximately 1.68 mins expected during train crossings.
P624 Service Wilga View to Pittsworth State School	The rail alignment interfaces with the bus route at 310-49-P-11a (Linthorpe Road) and 310-49-P-2 (Lochaber Road). 310-49-P-11a is proposed as a grade separated (road-over-rail) crossing. The construction of the grade separation is expected to cause delay to the school bus service, however, once operational the buses will be able to cross the rail alignment with no delay. 310-49-P-2 is proposed as a grade separated (rail-over-road) crossing that realigns Lochaber Road from its previous location (310-49-P-1). The route would require realignment to use the new Lochaber Road alignment. This realignment is further discussed in Section 5.9.4.3. The grade separation will allow buses to cross the rail alignment with no delay.
P772 Tummaville to Millmerran State School	The rail alignment interfaces the bus route at 310-40-E-2 (Millmerran - Leyburn Road) and 310-42-E-0a. 310-40-E-2 is proposed as an active level crossing with a wait time of approximately 1.52 mins expected during train crossings. 310-42-E-0a is located west of the current Fysh Road crossing at 310-42-E-1. This crossing is proposed as an active level crossing with an expected wait time of approximately 1.52 mins during train closures.
P819 Irongate to Pittsworth State School	The rail alignment interfaces with the bus route at 310-49-P-2 (Lochaber Road). This road-rail interface is a grade separated (rail-over-road) crossing is proposed to realign Lochaber Road from its previous location (310-49-P-1). The route would require realignment to use the new Lochaber Road alignment. This realignment is further discussed in Section 5.9.4.3. The grade separation will allow buses to cross the rail alignment with no delay.
P957 Ivanhoe to Millmerran State School	The rail alignment interfaces with the bus route at 310-38-P-3b (Owens Scrub Road). The crossing is proposed as a grade separated (road-over-rail) crossing. The crossing is proposed slightly east of the existing crossing. As such, there is the opportunity to build the grade separation offline without impacting the movement of school buses during construction. Once operational the buses will be able to cross the rail alignment with no delay.
P1082 Koarlo to Goondiwindi State School	The rail alignment interfaces with the bus route at 270-12-P-1 (Kildonan Road). This location is proposed for active level crossing treatment within the revised reference design. A wait time of approximately 97 seconds is expected at this crossing during a train pass-by.
P1883 Athol to Bunker's Hill State School	The rail alignment interfaces with the bus route at 310-53-P-1a (Athol School Road). 310-53-P-1a is proposed for grade separation. Impacts to services passing through this location will be confined to construction of the Project. Once operational, vehicular movements at this location are expected to be unimpeded.

School bus service	Potential impact
S108 Pittsworth State High School to Mount Tyson	The rail alignment interfaces with the bus route at 310-48-P-8 (Oakey - Pittsworth Road) and 310-49-P-2 (Lochaber Road). 310-48-P-8 is proposed as a grade separated (rail-over-road) crossing. Impacts to services passing through this location will be confined to construction of the Project. Once operational vehicular movements at this location are expected to be unimpeded. 310-49-P-2 is proposed as a grade separated (rail-over-road) crossing that realigns Lochaber Road from its previous location (310-49-P-1). The route would require realignment to use the new Lochaber Road alignment. This realignment is further discussed in Section 5.9.4.3. The grade separation will allow buses to cross the rail alignment with no delay.
S118 Pittsworth to Brookstead Area	The rail alignment interfaces with the bus route at 310-44-E-2 (Gore Highway) and 310-46-E-1 (Yarranlea Road). 310-44-E-2 is proposed as a grade separated (road-over-rail) crossing. The crossing will likely cause delays during construction due to its alignment with the existing level crossing location. Once operational vehicular movements at this location are expected to be unimpeded. 310-46-E-1 is proposed as a grade separated (road-over-rail) crossing south of the existing level crossing at 310-46-E-1a. The crossing will likely cause delays during construction due to its alignment with the existing level crossing location. Once operational, vehicular movements at this location are expected to be unimpeded.
S178 Kingsthorpe Secondary to Harristown State High School	The rail alignment interfaces with the bus route at 310-56-P-2 (Warrego Highway). The road-rail interface is proposed as a grade separated (rail-over-road) crossing. The crossing will likely cause delays during construction due to its alignment with the existing road. Once operational, vehicular movements at this location are expected to be unimpeded.
S577 Kingsthorpe/Wellcamp to Harristown State High School	The rail alignment interfaces with the bus route at 310-56-P-2 (Warrego Highway). The road-rail interface is proposed as a grade separated (rail-over-road) crossing. The crossing will likely cause delays during construction due to its alignment with the existing road. Once operational, vehicular movements at this location are expected to be unimpeded.
S740 AM and PM Service Millmerran Years 11 and 12 to Pittsworth State High School	The rail alignment interfaces with the bus route at 310-44-E-2 (Gore Highway). 310-44-E-2 is proposed as a grade separated (road-over-rail) crossing. The crossing will likely cause delays during construction due to its alignment with the existing level crossing location. Once operational vehicular movements at this location are expected to be unimpeded.
YEL5 Yelarbon to Goondiwindi State High School	This bus route interfaces with construction traffic on the Cunningham Highway. It is expected that school bus services would not be substantially impacted from an operational and service reliability perspective as a result of the Project generated traffic during the Project construction. However, the construction contractor should avoid school bus services and school zones, with school zones and routes considered in the preparation of the CEMP.
GLE11 Glenoak Road to Goondiwindi State High School, connecting with P451	This bus route interfaces with construction traffic on the Cunningham Highway. It is expected that school bus services would not be substantially impacted from an operational and service reliability perspective as a result of the Project generated traffic during the Project construction. However, the construction contractor should avoid school bus services and school zones, with school zones and routes considered in the preparation of the CEMP.

It is no longer proposed to use the Yelarbon rest area as a laydown area for Project construction activities, therefore mitigating impacts associated with student bus transfers at this location.

Given that the above school bus routes do not tend to have designated bus stops, apart from the termini, prior to the Construction Works stage of the Project, suitable mitigation measures for all of the affected services, including the location of bus stops, should be identified in consultation with bus operators, local councils, impacted schools, Department of Education and the local community and be documented in the TMP to ensure school bus safety and understand any impacts to journey times, if any. These stakeholders should be consulted as part of the Project and made aware of the proposed changes to the school bus routes. The construction contractor will also be made aware of the presence of school bus routes and bus stops and their operational hours as part of the Project induction process.

ARTC commits to maintaining existing bus stops during the Project construction. Where these require alteration, this will be agreed with the relevant service provider.

There may be additional school bus routes that are not publicly available and have therefore not been captured in this assessment. Consultation with relevant stakeholders, including council authorities and Department of Education, should be undertaken prior to the Construction Works stage of the Project once construction routes have been finalised to ensure that all school bus routes that may be impacted by construction traffic have been accounted for.

It is expected that school bus services would not be substantially impacted from an operational and service reliability perspective as a result of the Project generated traffic during the Project construction. However, the construction contractor should avoid school bus services and school zones, with school zones and routes considered in the preparation of the CEMP, as discussed in Section 5.12.3.

The school bus routes identified in Table 5.116 and the bus stops and pedestrian access to these stops must be maintained during construction of the development. Accordingly, if any temporary bus stop and pedestrian access arrangements or alternative bus routes are required when construction routes are finalised, the contractor must reach agreement on suitable arrangements with the DTMR TransLink Division (bus_stops@translink.com.au or on 3851 8700) and/or bus operator (whichever is relevant) prior to any construction or works commencing.

During the Construction Works stage, it is suggested that the construction contractor collaborates with Brookstead State School, as well as other key stakeholders in the area (such as DTMR and Toowoomba Regional Council Council), to address and mitigate any construction impacts, particularly concerning the operation and access to the school zone. Specific mitigations will be further examined and determined during the Detailed Design and Construction Works stages and will be documented as part of the Traffic Management Plan.

5.10.5 Long distance coach services

Long distance coach services were identified in Section 2.10 to use the following sections which overlap with construction routes on the following road.

- Ipswich Motorway
- Warrego Highway
- Toowoomba Connection Road
- Toowoomba Bypass
- Cunningham Highway
- Newell Highway
- Toowoomba-Cecil Plains Road
- Toowoomba-Athol Road
- Gore Highway
- Leichhardt Highway.

Of the above, only sections of the Gore Highway and Toowoomba-Cecil Plains Road were shown to experience a reduction in Level of Service due to construction related traffic (Section 5.5.4). Although there is a change in operational LOS for the road sections above, the expected operational LOS B is within the generally preferred LOS range, as defined in Section 5.5.1.1. Given the LOS B results includes allowance for peak harvest season, it is not expected that long distance coach route travel times along the routes will be impacted significantly by construction vehicles both during and outside of harvest season. In addition, the operational performance of the road would return to base conditions after construction is complete. Where possible, the construction contractor should avoid use of these routes and consider the operations of long distance bus routes in the preparation of the CEMP and TMP, as discussed in Section 5.12.3.

5.10.6 State strategic touring routes

Given the evaluation of construction traffic on the road network, it is considered that although some strategic touring routes coincide with proposed construction routes, the short-term nature of the Construction Works stage would result in only temporary impacts to these routes, with no substantial impacts based on the road link assessment (Section 5.5).

5.10.7 Cycling and pedestrian network

Some of the proposed construction routes are aligned through areas of moderate to high pedestrian activity through the areas surrounding the towns of Yelarbon, Inglewood, Millmerran, Brookstead, Pittsworth and Toowoomba. Significant increases in HV movements through these locations may adversely impact pedestrian movements. However, whilst increased HV movements through these locations may adversely impact pedestrian movements, the majority of these routes currently facilitate a high proportion of HV movements. Haulage contractors should be made aware of these areas of high pedestrian activity as a part of the TMP, discussed in Section 5.12.3.

During construction within areas where there is potential for higher pedestrian activities, specific pedestrian management measures should be put in place. These will be subject to site specific planning and reflect the nature of the works underway and the impacts on the existing pedestrian and cycle network.

Construction of the Project has the potential to result in the following impacts to existing cycle networks within the TIA study area:

- Temporary diversion of cycling routes or pedestrian access, resulting in modified routes and increased journey times
- Increased vehicle movements on cycleway network linkages that are co-located with construction traffic routes for the Project, which may result in longer journey times and increased likelihood of interactions between cyclists and vehicles.

The PCNP has been identified to intersect with construction routes at 16 locations. While the plan indicates a guide for future cycleway planning, it does not appear that any of the overlap between construction routes and the PCNP includes any on-road cycling facilities. That considered, haulage contractors should be aware of the possibility of cyclists along these routes.

Additionally, the PCNP crosses the rail alignment at 310-56-P-2 along Warrego Highway. This crossing is proposed for grade separation. As the PCNP provides a guide for future planning, the Project should provide allowance in the grade separated structure for the safe movement of cyclists. This should be closely considered during detailed design in consultation with DTMR.

It is also noted that the current reference design includes a grade separated crossing (310-11-E-0), where Cunningham Highway crosses the proposed rail corridor approximately 400 m further west of the existing level crossing that is proposed for closure. This proposal reflects the current layout that does not include any formal pedestrian crossing available across the existing rail line. Informal pedestrian routes crossing existing rail lines present a safety risk to pedestrian users. During the Detailed Design stage, once a construction contractor has been appointed, pedestrian and cyclist provisions at road-over-rail interfaces will be confirmed and agreed with local councils and road controlling authorities on a case-by-case basis and depending on the current and future access requirements.

An active pedestrian level crossing has been proposed at the existing Cunningham Highway interface location (310-11-E-1) in the revised reference design to enable pedestrian connectivity Yelarbon township. Pedestrian and cyclist provisions at other road-rail interfaces will be confirmed and agreed with road controlling authorities and local councils on a case-by-case basis requirements during detailed design once the alignment has been confirmed. At this stage, some road-rail interfaces are likely to include integration of active transport facilities, including Crime Prevention Through Environmental Design considerations and access control.

ARTC has committed to maintaining connectivity of existing on and off-road pedestrian/shared user facilities, where the need for that facility remains in a Third Party Agreement with relevant local councils. Consultation will continue with local councils regarding pedestrian crossing options during detailed design. Once agreed, changes to active transport networks will be communicated to active transport users through regular Project channels.

During the Construction Works stage, it is suggested that the construction contractor collaborates with Brookstead State School, as well as other key stakeholders in the area (such as DTMR and Toowoomba Regional Council), to address and mitigate any construction impacts, particularly concerning the operation and access to the school zone. Specific mitigations will be further examined and determined during the Detailed Design and Construction Works stages and will be documented as part of the Traffic Management Plan.

Guidance has been sought from Austroads Guide to Road Design Part 6A: Paths for Walking and Cycling in relation to pedestrian infrastructure on proposed road over rail interfaces. Section C1.2.2 states:

"In general, all roads should have some type of walking facility out of the vehicle path. An exception may be categories of road that have very low volume and low operating speed such as minor access roads.

The most common type of pedestrian path is used by pedestrians and young cyclists (depending on local road rules). The general principles relating to provision of pedestrian paths include:

- *In general, all roads should have some type of walking facility out of the vehicle path. An exception may be categories of road that have a very low volume and low operating speed such as minor access roads.*
- *Pedestrian path installation warrants based solely on pedestrian volumes are not practical, except in the central business districts of cities and at event locations.*

The need for pedestrian paths should also be related to the pedestrian network functional requirements. For example, the presence of pedestrians on many rural roads is a rare event and the provision of paths is not economically justified. In this situation the provision of shoulders will provide space for a pedestrian who happens to use the road."

Provision has been made where there is the need or future need for pedestrians and cyclist transport (e.g. Yelarbon pedestrian crossing). In all road over rail interfaces assessed, there is no existing desire line or future need, and the provision of separate pedestrian and non-vehicular access is not economically justified.

5.10.8 Parking

An initial assessment of workforce demand and safe commutable distances has identified a potential need for two non-resident workforce accommodation facilities in the vicinity of Yelarbon and Inglewood (and Turallin, including Turallin Road and Ellerslie Road). While parking at these facilities will be completely contained within the site, there is possibilities of workforce travelling to town outside of work hours for leisure. This may have an impact on local parking availability in the towns of Yelarbon, Inglewood and Millmerran, particularly nearby to restaurants, taverns, and shopping. These facilities generally have parking availability either on their properties or along the local roads, which should be sufficient to accommodate off-duty workers accessing these locations.

5.10.9 Airports

During the Construction Works and Operations stages, the expected impact from the Project on airports is not considered to be significant as the transport of materials, workforce and equipment is expected to primarily utilise the existing road and rail transport networks.

The closest strategic airport is the Toowoomba Wellcamp Airport. At its closest point, the northern limit of the runway for Toowoomba Wellcamp Airport is approximately 865 m from the Project footprint and one kilometre from the Project alignment. At its closest point, the Project alignment encroaches into the 470 m Obstacle Limitation Surface contour that extends from north-western end of the runway. Through consultation with the operator of Toowoomba Wellcamp Airport, the Project has been aligned to ensure that a double-stacked train on the rail alignment will not extend vertically into the obstacle limitation surfaces.

5.10.10 Ports

The Port of Brisbane is proposed to receive the non-resident workforce accommodation facility cabins with construction routes linking the Port of Brisbane to the two non-resident workforce accommodation facilities during pre-construction works. In addition, routes are proposed for transporting crops from a variety of locations to the port via road during track closures. The existing Port of Brisbane TEU data reported an average of 118,988 TEU/month from October 2018 to October 2022, with an all-time high of 149,416 TEU in August 2022, and a record low of 87,880 in March 2020 (CEIC Data, 2022).

During the construction of workers camps, it is anticipated that 450 TEUs will be required over a period of two months. The number of TEUs compared with the monthly operating volumes indicates that there should be sufficient capacity to receive these items to the Port of Brisbane.

The export of crops aligns with current volumes and movements through the Port of Brisbane, however, it is anticipated that these crops will be transported via road rather than via rail. This will impact the usual operations of the port with alterations required to allow for the increase in HV movements rather than train movements.

The Project is expected to increase the operational throughputs of freight through the Port of Brisbane. However, the consideration of impacts at ports (freight containers) is not in the scope of this report and has not been assessed. Once the construction contractor has further details, consultation will be required with the Port of Brisbane.

5.10.11 Bulk transport

The Project has a significant requirement for bulk material transportation (i.e. ballast, quarry material, spoil etc.), with the over 6,000,000 m³ of bulk materials requiring transportation as a part of the Project (as outlined in Section 4.1.1. Ongoing consultation between the construction contractor, ARTC and the industry will be required during the Detailed Design and Construction Works stage of the Project to ensure that the required transportation capacity is available to undertake the transport task and ensure that impacts to costs are mitigated.

5.11 Cumulative impact assessment and mitigations

To enable stakeholders to make informed decisions, consideration needs to be given to the potential impacts of other major projects in the area to ensure that the combined impacts of the Projects are accounted for. It is a requirement of the ToR for this Project that the potential for cumulative impacts be considered. Projects with spatial and/or temporal overlap can result in cumulative impacts. Cumulative impacts may:

- Differ from those of an individual project when considered in isolation
- Be positive or negative
- Differ in severity and duration depending on the spatial and temporal overlap of projects occurring in an area.

The cumulative impact assessment is presented below.

5.11.1 Qualitative cumulative traffic impacts

5.11.1.1 Approach

It is a requirement of the ToR for this Project that the potential cumulative impacts be considered. This section provides a discussion on the potential for cumulative impacts in relation to traffic and transport.

The approach used to identify and assess potential Construction Works stage cumulative impacts of the Project is as follows:

- A review of the potential impacts identified within the assessment. The environment at the time of the ToR is the baseline, prior impacts from past land use has not been considered.
- A preliminary list of projects for consideration in the cumulative impact assessment was collated with timelines to demonstrate the temporal relationship between projects. This preliminary list of projects was compiled through consideration of the following:
 - Projects subject to assessment under the *Environmental Protection Act 1994* (Qld) or *State Development and Public Works Organisation Act 1971* (Qld), with an Initial Advice Statement published by Department of Environment and Science or Department of State Development, Tourism, and Innovation
 - Projects listed in GRC and TRC development application databases
 - Development within Priority Development Areas and State Development Areas
 - Economic Development Queensland development projects
 - Community Infrastructure Designation projects
 - Projects within the public register of environmental authorities
 - DTMR infrastructure projects
 - Private infrastructure facilities
 - Development in accordance with Regional Planning Interests
 - The Inland Rail Projects immediately adjacent to the Project, being the North Star to NSW/Queensland Border and Gowrie to Helidon projects, and other Inland Rail Projects in Queensland.
- The preliminary list of projects was assessed to identify those that meet one of the following criteria:
 - Projects that have been approved but where construction has not commenced
 - Projects that have commenced construction subsequent to issuance of the ToR for the Project, but have potential for overlap in construction activities with the Project
 - Projects that have been completed subsequent to issuance of the ToR for the Project
 - Are operational developments that have future plans for expansion.
- Projects that were excluded from further assessment were:
 - Existing projects, with no known plans for expansion. Such projects are typically considered part of the 'existing environment' and have been accounted for in the impact assessment of each specific matter.
 - Proposed projects that have not been developed to the point that details of their scale, size, location and core activities would be publicly available.
- Where there is a potential overlap in impacts (either spatially or temporally), a qualitative cumulative impact assessment was undertaken to determine the nature of the cumulative impact.
- An assessment matrix method has been used to determine the significance of cumulative impacts with respect to beneficial or detrimental effects. This approach requires relevance factors to be established for four aspects (probability, duration, magnitude/intensity and sensitivity of receptors) in relation to each project considered and each potential impact (Table 5.117). Relevance factor scores are combined to derive an impact significance score and rating (Table 5.118)
- Where cumulative impacts are deemed to be of 'medium' or 'high' significance, additional mitigation measures are proposed, beyond those already proposed by the relevant technical impact assessments.
- A quantitative cumulative impact assessment was undertaken for adjoining Inland Rail Projects.

The significance of Construction Works stage cumulative impacts has been determined by using professional judgement to select the most appropriate relevance factor for each aspect in Table 5.117. The sum of the relevance factors determines the impact significance and consequence which are summarised in Table 5.118. For example, if an environmental value (such as traffic) is considered to have a probability of impact of 2, duration of impact of 3, magnitude/intensity of impact of 1 and a sensitivity of receiving environment of 1 the significance of impact would be Medium ($2+3+1+1 = 7$).

Table 5.117 Relevance factor

Aspect	Relevance factor		
	Low	Medium	High
Probability of Impact	1	2	3
Duration of Impact	1	2	3
Magnitude/Intensity of Impact	1	2	3
Sensitivity of Receiving Environment	1	2	3

Table 5.118 Impact significance

Impact significance	Sum of relevant factors	Consequence
Low	1-6	Negative impacts need to be managed by standard environmental management practices. Monitoring to be part of general project monitoring program.
Medium	7-9	Mitigation measures likely to be necessary and specific management practices to be applied. Targeted monitoring program required where appropriate.
High	10-12	Alternative actions should be considered and/or mitigation measures applied to demonstrate improvement. Targeted monitoring program necessary where appropriate.

5.11.1.2 Assessable projects and initial assessment

The Projects initially identified as having potential to contribute to cumulative impacts in combination with the Project. These projects are either currently operational, expected to undergo future expansion or are currently going through an approval process.

Projects that are already operational would not traditionally be considered in a cumulative impact assessment, as their operation would typically be included in baseline assessments for an impact assessment; however, projects that are regarded as operational have been included in the initial list for preliminary consideration for cumulative impact potential in response to feedback from consultation during the draft EIS process. In some instances, operational projects have known or potential expansion plans, e.g. Commodore Mine. Such projects have warranted consideration through cumulative impact assessment. Other operational projects have not progressed beyond preliminary consideration.

A full list of identified projects, with a description of each, is presented in Table 5.119.

Table 5.119 Projects initially considered for cumulative impact assessment

Projects	Location	Description	Status	Construction dates
Wetella Water Pipeline	From Wetella Wastewater Reclamation facility in Toowoomba to New Acland coal mine, 35 km north-west of Toowoomba city. Adjacent to the Project footprint.	A 45 km underground water pipeline to supply up to 5,500 megalitres of treated wastewater to the New Acland coal mine.	Ongoing	2010-2013
Southern Queensland Correctional Precinct - stage 2	Spring Creek, Queensland. 12 km north-east of Gatton, 46 km north-east of the Project.	Stage 2 expansion of high-level security, men's prison. Expansion estimated to house 1,004 beds.	Construction	2021 to 2023
Wagners Intermodal Terminal	Toowoomba, Queensland 2.4 km east of the Project	Major freight terminal, designed to benefit the freight network and future Inland Rail. The terminal will be 24/7 facility, designed to operate 78,000 containers for almost 400 freight customers. Utilising approximately 150 locomotives and 1,500 wagons. Unique features of Wagners Intermodal terminal are a 2.7 km frontage for 1,800 m freight trains, a daily-use fully licensed and bonded international air cargo terminal and reach up to 500,000 capacity by 2040.	Construction	Unknown
Wagners Quarantine Accommodation	Wellcamp Airport, Queensland 2.4 km east of the Project	1000 bed quarantine facility at Wellcamp Airport. Estimated to have 500 beds operational by Q4 2021 and 500 more beds by Q1 2022.	Construction	2021 to 2022
Wellcamp Entertainment Precinct	Wellcamp, Queensland 2.4 km east of the Project	Planned to be Queensland's largest entertainment precinct, designed to withhold 40,000 people for major events and house 5,000 onsite accommodations.		Construction yet to commence. Estimated start of construction 2022
New Acland Coal Mine Stage 3	35 km northwest of Toowoomba 18 km north of the Project footprint	Expansion of the existing New Acland open-cut coal mine to up to 7.5 Mtpa	EIS approval with conditions. Q4 2021, Queensland Lan Court recommends environmental conditions be reassessed.	The mine is operational. Stage 3 expansion works will proceed if legal proceeding ends favourably for New Acland Coal.

Projects	Location	Description	Status	Construction dates
Australia Pacific LNG Project	Walloons gas fields (approximately 20 km west of Millmerran) 13 km west of the Project footprint	Integrated LNG project. The Walloons gas fields, located to the west of the Project, supplies coal seam gas to support the liquified natural gas (LNG) facility on Curtis Island.	EIS approved, with conditions, in 2011	Project started operation in 2015, but subject to continual gas field development
Toowoomba Bypass (formerly the Toowoomba Second Range Crossing)	The 41-km long bypass route extends from the Warrego Highway at Helidon Spa in the east to the Gore Highway at Athol in the west, via Charlton. 1 km to south and east of the Project footprint	This bypass takes HV through-traffic around the north of Toowoomba	Opened in September 2019	2015 to 2019
InterLinkSQ	13 km west of Toowoomba Adjacent to south of the Project footprint	A 200 ha transport, logistics and business hub. Located on the narrow-gauge regional rail network and interstate network. Located at the junction of the Gore, Warrego and New England Highways.	Under construction	First quarter 2022 to last quarter 2022. Assumed to continue development until Inland Rail is operational.
Toowoomba Wellcamp Airport	Wellcamp, Queensland 1 km east of the Project footprint	Airport servicing Toowoomba, promoting interstate, intrastate and international connection for the Darling Downs, Granite Belt, Surat Basin and Southern Downs regions	Operational	2013 to 2014
Wellcamp Business Park	Wellcamp, Queensland 1.5 km east of the Project footprint	A 500 ha industrial and commercial park that forms part of the Toowoomba Enterprise Hub. The business park is located in close proximity to the Toowoomba Wellcamp Airport and other major transportation infrastructure.	Operational	2013 to 2014
Witmack Industry Park and Charlton Logistics Park	Wellcamp, Queensland 3 km southeast of the Project footprint (Witmack Industry Park) Charlton, Queensland 3 km south of the Project footprint (Charlton Logistics Park)	The Witmack Industry Park is a large industrial land development that offers large industrial land parcels. Businesses situated within the Witmack Industrial Park include the Toowoomba Pulse Data Centre. The Charlton Logistics Park is part of the Toowoomba Enterprise Hub and provides fully serviced 2 ha sites and is well situated for potential transport and logistics operators due to its proximity to transport infrastructure.	Operational	2016 to 2018

Projects	Location	Description	Status	Construction dates
Asterion Medicinal Cannabis Facility	Wellcamp, Queensland Adjoins the Project footprint 1 km south of Toowoomba–Cecil Plains Road	A high-tech medicinal cannabis cultivation, research and manufacturing facility. The project involves infrastructure construction spanning approximately 71.0 ha to produce 20,000 plants per day at full capacity. Medicinal-grade cannabis grown at the facility will be manufactured into a range of medicinal products, including single patient packs, cannabis oils, gels, salts and related products, destined solely for the medicinal market. This facility is anticipated to be the largest facility of its kind in the world.	Ongoing (Operational)	2020 to 2021
Commodore Mine and Millmerran Power Station	Domville, Queensland Intersects the Project footprint, located primarily to the east	The Commodore Mine is an open-cut coal mine that provides coal for the 850 megawatts Millmerran Power Station (MiningLink, n.d.) The Millmerran Power Station is a coal-fired power station that supplies enough electricity to power approximately 1.1 million homes (Power Technology, 2018)	Operational	2001 to 2003. Subject to annual maintenance shutdown and continual pit expansion. Also potential for coal reserves to be accessed beyond the current footprint.
Pittsworth Industrial Precinct and Enabling Project	Pittsworth, Queensland 500 m to the south of the Project footprint	Road and sewerage upgrades at the Pittsworth Industrial Precinct to allow for industrial land for industries servicing agriculture and the wider region	Operational	2017 to 2019
Doug Hall Poultry	Millmerran, Queensland Intersects the Project footprint, located primarily to northwest	Poultry farming operation with capacity of approximately 20,000 chickens. Operations include egg grading, a feed mill with output of 1,500 tonnes per week, piggery, cropping and solar farm.	Operational	N/A
Yarranbrook Feedlot	Whetstone, Queensland Intersects the Project footprint, located predominantly to the north	Cattle feedlot licenced for 25,000 heads	Operational	N/A
Sapphire Feedlot	Kildonan, Queensland Adjacent to the south of the Project footprint	Cattle feedlot that currently has a 6,000 head capacity, with plans to expand to 8,700 in the future	Operational	2018-2019
Wyemo Piggery	Glenarbon, Queensland 8 km south of the Project footprint	Piggery with approval for 55,000 pig units	Approved, with conditions, by GRC	Unknown

Projects	Location	Description	Status	Construction dates
Yarranlea Solar	Yarranlea, Queensland Intersects the Project footprint, generally extends equally to north and south	Solar Farm will span over 250 ha area consisting of 360,000 solar panels. Projected to have a generation capacity of up to 100 megawatts once completed. Estimated to power 32,000 homes.	Operational	2018 to 2019
MacIntyre Wind Farm	Karara, Queensland 40 km east of the Project, 10 km south of Karara.	Wind Farm Precinct will span approximately 40,000 ha, predominantly built on sheep farming land. The Macintyre Wind Farm is expected to generate 1,026 megawatts, using up to 120 turbines.	Construction	2022 to 2024
Goondiwindi Abattoir	Goondiwindi, Queensland 13 km north-west of Ch 1 km of the Project footprint	A new beef Abattoir located on the outskirts of Goondiwindi with beef processing of up to 72,000 tonnes per year	Approved with conditions by GRC	Unknown
North Star to NSW/Queensland Border (Inland Rail)	Rail alignment from North Star, NSW to the NSW/Queensland border Adjoins the Project footprint to the south	New 37 km rail corridor to connect North Star to the QR South West Rail Line just north of the NSW/Queensland border	Reference design and draft EIS	2021 to 2024
Gowrie to Helidon Project (Inland Rail)	Rail alignment from Gowrie to Helidon, Queensland Adjoins the Project footprint to the north	New 26 km dual-gauge track between Gowrie (north-west of Toowoomba) and Helidon (east of Toowoomba), extending through the LGAs of Toowoomba and Lockyer Valley. The project includes a 6.38 km tunnel to create an efficient route through the steep terrain of the Toowoomba Range.	Reference design and draft EIS	2024 to 2028
Helidon to Calvert (Inland Rail)	Rail alignment from Helidon to Calvert, Queensland 26 km to the east of the Project footprint	New 47 km dual-gauge rail line connecting Helidon (east of Toowoomba) with Calvert (near Ipswich), via Placid Hills, Gatton, Forest Hill, Laidley and Grandchester, extending through the LGAs of Lockyer Valley and Ipswich City. The project includes a 1.1 km tunnel to create an efficient route through the steep terrain of the Little Liverpool Range.	Reference design and draft EIS	2024 to 2028
Calvert to Kagaru (Inland Rail)	Rail alignment from Calvert to Kagaru, Queensland 70 km to the southeast of the Project footprint	New 53 km dual-gauge track from Calvert to Kagaru to provide convenient access for freight to major proposed industrial developments at Ebenezer in the City of Ipswich, and at Bromelton near Beaudesert in the Scenic Rim Region. The project includes a 1.1 km tunnel through the Teviot Range.	Reference design and draft EIS	2024 to 2028

Projects	Location	Description	Status	Construction dates
Kagaru to Acacia Ridge (Inland Rail)	Rail alignment from Kagaru to Acacia Ridge, Queensland 113 km to the southeast of the Project footprint	Enhancements to, as well as commissioning of, dual-gauge operations along the existing interstate track between Kagaru and Acacia Ridge. The project involves 49 km of existing track to be enhanced, enabling double-stacking capability along the existing interstate route both south from Kagaru to Bromelton and north from Kagaru to Brisbane's major intermodal terminal at Acacia Ridge. It extends across three LGAs—Scenic Rim, Logan and Brisbane.	Reference design and EIS	2023 to 2025
Cross River Rail	Brisbane, Queensland 120 km to the east of the Project footprint	New 10.2 km passenger rail line from Dutton Park to Bowen Hills, which includes 5.9 km of tunnel under the Brisbane River and the central business district. The Project will include four new underground stations at Boggo Road, Woolloongabba, Albert Street and Roma Street, and upgrades to Dutton Park and Exhibition stations.	Construction	2019 to 2024

For the purpose of traffic, transport and access, projects that will have a temporal overlap in construction or expansion activities and may result in traffic usage of the same road network as the Project are considered to have potential to result in cumulative impacts. Only 13 of the projects identified in Table 5.119 meet these criteria, including the five other Inland Rail Projects. The projects considered applicable to the traffic and transport cumulative impact assessment are:

- New Acland Coal Mine Stage 3
- Australia Pacific LNG Project
- InterLinkSQ
- Asterion Medicinal Cannabis Facility
- Commodore Mine and Millmerran Power Station
- Wyemo Piggery
- MacIntyre Wind Farm
- Goondiwindi Abattoir
- North Star to Border (Inland Rail)
- Gowrie to Helidon (Inland Rail)
- Helidon to Calvert (Inland Rail)
- Calvert to Kagaru (Inland Rail)
- Kagaru to Acacia Ridge and Bromelton (Inland Rail).

If construction transportation tasks for the above-mentioned projects occur simultaneously to transportation tasks for the Project, then a cumulative increase in traffic volumes on the local road network may occur. Generally, the following impacts may arise because of the increased number of vehicle movements on the existing road network during construction:

- Increased journey times on road linkages utilised by construction traffic
- Reduced LOS on road links used by construction traffic
- Increased waiting time at intersections utilised by construction traffic
- Accelerated degradation of road pavements due to increased volume of traffic and greater axle load.

A qualitative assessment of cumulative impacts that may arise from these projects in combination with the Project is presented in Table 5.120, with a summary of how potential cumulative impacts would be managed. This assessment has concluded that the cumulative traffic and transport impacts of the Project are expected to be up to a Medium Significance. The following factors contributed to this determination:

- The assessment has only considered the potential for cumulative impacts above and beyond those that have already been factored into the TIA for the Project. A compound growth rate and seasonal variation rate (as outlined in Section 2.4) was applied to the AADT volumes of roads nominated for use by construction traffic to determine future background traffic volumes for the TIA. This means that the addition of Project construction traffic has already been assessed against a future background traffic scenario that includes allowance for growth in road usage
- When establishing the scale of the construction task for the Project, buffer factors were applied to derive vehicle movement numbers for each of the foreseeable construction transportation activities. These buffer factors allow for additional journeys that may be required to deliver the Project. However, these factors also provide contingency in the TIA for the addition of background traffic volumes that may be marginally greater than the forecast future scenario.

The construction contractor is required to develop a Traffic Management Plan and a RUMP for the Project, for implementation during construction.

Table 5.120 Qualitative cumulative impact assessment for traffic

Project	Potential cumulative impact	Impact characteristic	Relevance factor	Sum of relevance factors	Impact significance	Comments and mitigation measures
New Acland Coal Mine Stage 3	Increase traffic volumes on local road network	Probability of the impact	Low (1)	5	Low	The potential for cumulative traffic impacts to arise due to New Acland Coal Mine Stage 3 is considered to be low due to the separation distance between the two projects (18 km north of the Project footprint). The potential for the Project to contribute to increased traffic volumes on the local road network will be managed through: - Development and implementation of a RUMP and Traffic Management Plan - Consultation with DTMR and TRC through the Detailed Design and Construction Works stages of the Project to identify newly occurring issues and risks to the road network that will be used by Project traffic.
		Duration of the impact	Low (1)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Medium (2)			
Australia Pacific LNG Project	Increase traffic volumes on local road network	Probability of the impact	Low (1)	5	Low	The potential for cumulative traffic impacts to arise due to the Australia Pacific LNG Project is considered to be low due to the separation distance between the two projects (13 km north of the Project footprint). The potential for the Project to contribute to increased traffic volumes on the local road network will be managed through: - Development and implementation of a RUMP and Traffic Management Plan - Consultation with DTMR and TRC through the Detailed Design and Construction Works stages of the Project to identify newly occurring issues and risks to the road network that will be used by Project traffic.
		Duration of the impact	Low (1)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Medium (2)			
InterLinkSQ	Increase traffic volumes on local road network	Probability of the impact	Medium (2)	8	Medium	Both projects are expected to be reliant on use of roads north of the Warrego Highway. The shared use of these roads could occur for a large portion of the construction period for the Project. The potential for the Project to contribute to increased traffic volumes on the local road network will be managed through: - Development and implementation of a RUMP and Traffic Management Plan - Consultation with DTMR and TRC through the Pre-Construction Activities and Early Works and Construction Works stages of the Project to identify newly occurring issues and risks to the road network used by Project traffic.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Medium (2)			
		Sensitivity of the receiving environment	Medium (2)			

Project	Potential cumulative impact	Impact characteristic	Relevance factor	Sum of relevance factors	Impact significance	Comments and mitigation measures
						■ Consultation with the developers and operators of InterLinkSQ, throughout construction to understand the scheduling of activities for that project and enable time periods where cumulative traffic impacts may arise to be identified ■ Where new potential for cumulative impacts is identified through the construction period, additional mitigation measures will be developed in consultation with DTMR, TRC and InterLinkSQ and documented in the Traffic Management Plan and RUMP, as appropriate.
Asterion Medicinal Cannabis Facility	Increase traffic volumes on local road network	Probability of the impact	Medium (2)	6	Low	The potential for cumulative traffic impacts to arise due to the Asterion Medicinal Cannabis Facility is considered to be low due to the short duration of overlap in construction time periods and the likely advanced status of construction of the Medicinal Cannabis Facility by the time peak construction activities for the Project occur in the area. The potential for this project to contribute to increased traffic volumes on the local road network will be managed through: ■ Development and implementation of a RUMP and Traffic Management Plan ■ Consultation with DTMR and TRC through the Detailed Design and Construction Works stages of the Project to identify newly occurring issues and risks to the road network that will be used by Project traffic.
		Duration of the impact	Low (1)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Medium (2)			
Commodore Mine and Millmerran Power Station	Increase traffic volumes on local road network	Probability of the impact	High (3)	9	Medium	Both projects are expected to be reliant on use of Millmerran-Inglewood Road in the Millmerran and Clontarf areas. The shared use of this road could occur for a large portion of the construction period for the Project. The potential for the Project to contribute to increased traffic volumes on the local road network will be managed through: ■ Development and implementation of a RUMP and Traffic Management Plan ■ Consultation with DTMR and TRC through the Pre-Construction Activities and Early Works and Construction stages of the Project to identify newly occurring issues and risks to the road network used by Project traffic ■ Consultation with the operators of Commodore Mine, Intergen, throughout construction to understand the scheduling of expansion activities for that Project and enable time periods where cumulative traffic impacts may arise to be identified
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Medium (2)			
		Sensitivity of the receiving environment	Medium (2)			

Project	Potential cumulative impact	Impact characteristic	Relevance factor	Sum of relevance factors	Impact significance	Comments and mitigation measures
						Where new potential for cumulative impacts is identified through the construction period, additional mitigation measures will be developed in consultation with DTMR, TRC and Interger and documented in the Traffic Management Plan and RUMP, as appropriate.
Wyemo Piggery	Increase traffic volumes on local road network	Probability of the impact	Low (1)	5	Low	The potential for cumulative traffic impacts to arise due to the Wyemo Piggery is considered to be low due to the separation distance between the two projects (8 km north of the Project footprint). The potential for the Project to contribute to increased traffic volumes on the local road network will be managed through: - Development and implementation of a RUMP and Traffic Management Plan - Consultation with relevant road controlling authorities through the Detailed Design and Construction Works stages of the Project to identify newly occurring issues and risks to the road network that will be used by Project traffic.
		Duration of the impact	Low (1)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Medium (2)			
MacIntyre Wind Farm	Construction traffic on the local road network.	Probability of the impact	Low (1)	5	Low	The potential for cumulative traffic impacts to arise due to the MacIntyre Wind farm is considered to be low due to the separation distance between the two projects (50 km west of Warwick and 10 km south of Karara). This Project will likely import a large quantity of materials from the Port of Brisbane and use the Cunningham Highway and Toowoomba-Karara Road for the transport of these. Other construction materials will also use these routes, which differ to those used by the Inland Rail Projects.
		Duration of the impact	Low (1)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Medium (2)			
Goondiwindi Abattoir	Increase traffic volumes on local road network	Probability of the impact	Low (1)	6	Low	The potential for cumulative traffic impacts to arise due to the Goondiwindi Abattoir is considered to be low due to the separation distance between the two projects (13 km north of the Project footprint). The potential for the Project to contribute to increased traffic volumes on the local road network will be managed through: - Development and implementation of a RUMP and Traffic Management Plan - Consultation with relevant road controlling authorities through the Detailed Design and Construction Works stages of the Project to identify newly occurring issues and risks to the road network that will be used by Project traffic.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Medium (2)			

Project	Potential cumulative impact	Impact characteristic	Relevance factor	Sum of relevance factors	Impact significance	Comments and mitigation measures
North Star to Border (Inland Rail)	Increase traffic volumes on local road network	Probability of the impact	Medium (2)	8	Medium	There is potential for an overlap of construction traffic. Quantitative cumulative assessment undertaken in Section 5.11.2.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Medium (2)			
		Sensitivity of the receiving environment	Medium (2)			
Calvert to Kagaru (Inland Rail)	Increase traffic volumes on local road network	Probability of the impact	Medium (2)	8	Medium	There is potential for an overlap of construction traffic. Quantitative cumulative assessment undertaken in Section 5.11.2.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Medium (2)			
		Sensitivity of the receiving environment	Medium (2)			
Helidon to Calvert (Inland Rail)	Increase traffic volumes on local road network	Probability of the impact	Medium (2)	8	Medium	There is potential for an overlap of construction traffic. Quantitative cumulative assessment undertaken in Section 5.11.2.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Medium (2)			
		Sensitivity of the receiving environment	Medium (2)			
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Medium (2)			
		Sensitivity of the receiving environment	Medium (2)			

Project	Potential cumulative impact	Impact characteristic	Relevance factor	Sum of relevance factors	Impact significance	Comments and mitigation measures
Gowrie to Helidon (Inland Rail)	Increase traffic volumes on local road network	Probability of the impact	Medium (2)	8	Medium	There is potential for an overlap of construction traffic. Quantitative cumulative assessment undertaken in Section 5.11.2.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Medium (2)			
		Sensitivity of the receiving environment	Medium (2)			

Table notes:

Relevance factors between 1 and 3 were determined using professional judgement to select most appropriate relevance factor for each aspect and summing the relevance factors.

Sum of relevant factors definition:

- Low (1-6): Negative impacts need to be managed by standard environmental management practices. Monitoring to be part of general project monitoring program.
- Medium (7-9): Mitigation measure likely to be necessary and specific management practices to be applied. Targeted monitoring program required, where appropriate.
- High (10-12): Alternative actions should be considered and/or mitigation measures applied to demonstrate improvement. Targeted monitoring program necessary, where appropriate.

5.11.2 Quantitative cumulative impact assessment and mitigations

A quantitative cumulative impact assessment has been undertaken considering the complete Inland Rail construction from North Star to Border to Kagaru to Acacia Ridge/Bromelton. The study area considers the overlap of other Inland Rail packages with the proposed the Project construction routes across the complete construction timeframe over the 6 packages.

Key assessments influenced by volumes have been reassessed as part of the cumulative impact assessment, including the:

- Road safety assessment
- Intersection assessment
- Road link capacity assessment
- Pavement assessment.

For the safety, intersection, and road link capacity assessments, analysis was undertaken where peak hour volumes experienced a change. All road links and intersections with no volume change are considered to be assessed in the 'Project only' assessment covered in the previous sections of the TIA. This was considered appropriate as without a change in peak hour volumes between 'Project only' and the cumulative assessment, the intersections and road links impacts are considered identical.

For the pavement assessment, analysis was undertaken for all road links. This was undertaken as the pavement assessment considers the total yearly impact of HVs on the pavement.

5.11.2.1 Inland Rail traffic volumes on 'Project only' construction routes network

The following section provides an overview of Inland Rail traffic volumes by project for each road link.

- North Star to NSW/Queensland Border
- NSW/Queensland Border to Gowrie (the Project)
- Gowrie to Helidon
- Helidon to Calvert
- Calvert to Kagaru
- Kagaru to Acacia Ridge/Bromelton.

This provides an overview of which package has the highest impact on each road link over the years of construction. Table 5.121, Table 5.122, Table 5.123, Table 5.124, Table 5.125 and Table 5.126 provides the construction vehicle trips for 2024, 2025, 2026, 2027, 2028, and 2029, respectively.

It is noted that the breakdown of volumes along Toowoomba Bypass, Warrego Highway (east of Toowoomba), Ipswich Motorway, Logan Motorway, Gateway Motorway and the Port of Brisbane Motorway is conservative. These roads are separated into several key sections as volumes from other Inland Rail Projects may use only small, non-consistent sections of the road link and therefore not contribute to cumulative impacts along the full length.

Table 5.121 Total construction vehicle traffic volumes in 2024 for Inland Rail packages

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
State-Controlled Roads: Department of Transport and Main Roads								
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	55,427	0	0	0	0	55,427
	Ch 0.8 km to Ch 2.0 km	0	55,427	0	0	0	0	55,427
	Ch 2.0 km to Ch 45.9 km	0	50,010	0	0	0	0	50,010
	Ch 45.9 km to Ch 88.0 km	0	50,010	0	0	0	0	50,010
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	50,329	0	0	0	0	50,329
	Ch 1.6 km to Ch 66.8 km	0	50,329	0	0	0	0	50,329
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	51,406	0	0	0	0	51,406
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	32,074	0	0	0	0	32,074
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	50,005	0	0	0	0	50,005
	Ch 96.2 km to Ch 97.5 km	0	50,005	0	0	0	0	50,005
	Ch 97.5 km to Ch 105.7 km	0	50,005	0	0	0	0	50,005
	Ch 105.7 km to Ch 107.4 km	0	50,005	0	0	0	0	50,005
	Ch 107.4 km to Ch 107.6 km	0	51,840	0	0	0	0	51,840
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	50,023	0	0	0	0	50,023
	Ch 2.0 km to Ch 3.9 km	0	50,023	0	0	0	0	50,023
	Ch 3.9 km to Ch 10.2 km	0	50,023	0	0	0	0	50,023
	Ch 10.2 km to Ch 13.9 km	0	50,023	0	0	0	0	50,023
	Ch 13.9 km to Ch 18.5 km	0	50,023	0	0	0	0	50,023
	Ch 18.5 km to Ch 27.1 km	0	50,023	0	0	0	0	50,023
	Ch 27.1 km to Ch 29.3 km	0	50,023	0	0	0	0	50,023
	Ch 29.3 km to Ch 34.7 km	0	50,023	0	0	0	0	50,023
	Ch 34.7 km to Ch 39.6 km	0	50,023	0	0	0	0	50,023

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
	Ch 39.6 km to Ch 40.3 km	0	50,023	0	0	0	0	50,023
	Ch 40.3 km to Ch 40.5 km	0	50,023	0	0	0	0	50,023
	Ch 40.5 km to Ch 43.9 km	0	50,023	0	0	0	0	50,023
	Ch 43.9 km to Ch 46.3 km	0	50,023	0	0	0	0	50,023
	Ch 46.3 km to Ch 88.0 km	0	50,023	0	0	0	0	50,023
	Ch 88.0 km to Ch 88.2 km	0	50,574	0	0	0	0	50,574
	Ch 88.2 km to Ch 90.0 km	0	50,574	0	0	0	0	50,574
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	5,998	0	5,715	0	0	11,713
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	5,998	0	5,715	0	0	11,713
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	30,042	0	0	0	0	30,042
	Ch 2.2 km to Ch 5.4 km	0	61,704	0	0	0	0	61,704
	Ch 5.4 km to Ch 6.7 km	0	61,704	0	0	0	0	61,704
	Ch 6.7 km to Ch 7.7 km	0	61,704	0	0	0	0	61,704
	Ch 7.7 km to Ch 11.2 km	0	61,704	0	0	0	0	61,704
	Ch 11.2 km to Ch 15.3 km	0	61,704	0	0	0	0	61,704
	Ch 15.3 km to Ch 17.5 km	0	50,249	0	0	0	0	50,249
	Ch 17.5 km to Ch 19.0 km	0	50,249	0	0	0	0	50,249
	Ch 19.0 km to Ch 20.3 km	0	50,249	0	0	0	0	50,249
	Ch 20.3 km to Ch 21.5 km	0	50,249	0	0	0	0	50,249
	Ch 21.5 km to Ch 23.2 km	0	50,249	0	0	0	0	50,249
	Ch 23.2 km to Ch 25.0 km	0	30,024	0	0	0	0	30,024
	Ch 25.0 km to Ch 30.1 km	0	30,024	0	0	0	0	30,024
	Ch 30.1 km to Ch 38.7 km	0	30,024	0	0	0	0	30,024
	Ch 38.7 km to Ch 41.1 km	0	30,024	0	0	0	0	30,024

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
	Ch 41.1 km to Ch 41.7 km	0	30,024	0	0	0	0	30,024
	Ch 41.7 km to Ch 43.2 km	0	31,322	0	0	0	0	31,322
	Ch 43.2 km to Ch 44.7 km	0	33,182	0	0	0	0	33,182
	Ch 44.7 km to Ch 47.6 km	0	35,042	0	0	0	0	35,042
	Ch 47.6 km to Ch 52.2 km	0	36,902	0	0	0	0	36,902
	Ch 52.2 km to Ch 53.3 km	0	38,762	0	0	0	0	38,762
	Ch 53.3 km to Ch 60.8 km	0	39,841	0	0	0	0	39,841
	Ch 60.8 km to Ch 63.0 km	0	30,024	0	0	0	0	30,024
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	35,355	0	0	0	0	35,355
	Ch 0.7 km to Ch 0.8 km	0	35,352	0	0	0	0	35,352
	Ch 0.8 km to Ch 1.4 km	0	35,352	0	0	0	0	35,352
	Ch 1.4 km to Ch 3.0 km	0	35,352	0	0	0	0	35,352
	Ch 3.0 km to Ch 13.0 km	0	30,027	0	0	0	0	30,027
	Ch 13.0 km to Ch 121.6 km	0	30,027	0	0	0	0	30,027
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	140,035	0	5,916	0	0	145,951
	Ch 3.7 km to Ch 6.4 km	0	140,027	0	5,916	0	0	145,943
	Ch 6.4 km to Ch 8.3 km	0	136,081	0	5,916	0	0	141,997
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	50,019	0	0	0	0	50,019
	Ch 220.1 km to Ch 222.4 km	0	50,019	0	0	0	0	50,019
	Ch 222.4 km to Ch 224.1 km	0	50,019	0	0	0	0	50,019
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	5,998	0	5,715	0	0	11,713
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	32,644	0	0	0	0	32,644
	Ch 2.5 km to Ch 3.5 km	0	32,644	0	0	0	0	32,644
	Ch 3.5 km to Ch 6.2 km	0	32,562	0	0	0	0	32,562
	Ch 6.2 km to Ch 9.0 km	0	32,562	0	0	0	0	32,562

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
	Ch 9.0 km to Ch 13.1 km	0	32,562	0	0	0	0	32,562
	Ch 13.1 km to Ch 14.0 km	0	32,562	0	0	0	0	32,562
	Ch 14.0 km to Ch 17.3 km	0	32,562	0	0	0	0	32,562
	Ch 17.3 km to Ch 18.1 km	0	32,562	0	0	0	0	32,562
	Ch 18.1 km to Ch 21.8 km	0	32,562	0	0	0	0	32,562
	Ch 21.8 km to Ch 28.0 km	0	32,562	0	0	0	0	32,562
	Ch 28.0 km to Ch 33.0 km	0	32,562	0	0	0	0	32,562
	Ch 33.0 km to Ch 35.6 km	0	32,562	0	0	0	0	32,562
	Ch 35.6 km to Ch 37.7 km	0	32,562	0	0	0	0	32,562
	Ch 37.7 km to Ch 39.8 km	0	32,562	0	0	0	0	32,562
	Ch 39.8 km to Ch 41.9 km	0	50,024	0	0	0	0	50,024
	Ch 41.9 km to Ch 45.9 km	0	50,024	0	0	0	0	50,024
	Ch 45.9 km to Ch 47.6 km	0	50,024	0	0	0	0	50,024
	Ch 47.6 km to Ch 53.3 km	0	50,024	0	0	0	0	50,024
	Ch 53.3 km to Ch 55.7 km	0	50,024	0	0	0	0	50,024
	Ch 55.7 km to Ch 56.6 km	0	50,024	0	0	0	0	50,024
	Ch 56.6 km to Ch 59.2 km	0	50,024	0	0	0	0	50,024
	Ch 59.2 km to Ch 61.0 km	0	50,024	0	0	0	0	50,024
	Ch 61.0 km to Ch 65.7 km	0	50,024	0	0	0	0	50,024
	Ch 65.7 km to Ch 68.7 km	0	50,024	0	0	0	0	50,024
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	32,032	0	0	0	0	32,032
	Ch 2.0 km to Ch 2.2 km	0	32,032	0	0	0	0	32,032
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	136,238	0	5,715	0	0	141,953
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	136,238	0	5,715	0	0	141,953

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	51,254	0	0	0	0	51,254
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	38,584	0	0	0	0	38,584
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	32,014	0	0	0	0	32,014
	Ch 6.0 km to Ch 6.4 km	0	38,585	0	0	0	0	38,585
	Ch 6.4 km to Ch 8.3 km	0	38,585	0	0	0	0	38,585
	Ch 8.3 km to Ch 9.2 km	0	38,585	0	0	0	0	38,585
	Ch 9.2 km to Ch 10.0 km	0	32,664	0	0	0	0	32,664
	Ch 10.0 km to Ch 10.1 km	0	32,664	0	0	0	0	32,664
	Ch 10.1 km to Ch 10.3 km	0	32,664	0	0	0	0	32,664
	Ch 10.3 km to Ch 12.1 km	0	32,664	0	0	0	0	32,664
	Ch 12.1 km to Ch 14.5 km	0	32,664	0	0	0	0	32,664
	Ch 14.5 km to Ch 16.3 km	0	32,062	0	0	0	0	32,062
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	38,586	0	0	0	0	38,586
	Ch 26.9 km to Ch 27.1 km	0	38,586	0	0	0	0	38,586
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	5,998	0	2,648	0	0	8,646
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	5,998	0	2,648	0	0	8,646
	Ch 0.6 km to Ch 3.2 km	0	17,453	0	0	0	0	17,453
	Ch 3.2 km to Ch 4.1 km	0	17,453	0	0	0	0	17,453
	Ch 4.1 km to Ch 13.0 km	0	17,453	0	0	0	0	17,453
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	135,546	0	5,916	0	0	141,462
	Ch 7.2 km to Ch 15.1 km	0	135,715	0	5,916	0	0	141,631
	Ch 15.1 km to Ch 18.9 km	0	135,964	0	5,916	0	0	141,880
	Ch 18.9 km to Ch 28.9 km	0	10,021	0	3,468	1,292	0	14,781
	Ch 28.9 km to Ch 36.6 km	0	160,004	0	3,468	1,292	0	164,764
	Ch 36.6 km to Ch 55.5 km	0	30,066	0	6,579	1,292	0	37,938

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
Warrego Highway (18B)	Ch 55.5 km to Ch 75.4 km	0	30,041	0	6,579	1,292	0	37,913
	Ch 75.4 km to Ch 79.6 km	0	30,070	0	2,648	0	0	32,718
	Ch 0.0 km to Ch 0.4 km	0	38,587	0	0	0	0	38,587
	Ch 0.4 km to Ch 1.5 km	0	38,587	0	0	0	0	38,587
	Ch 1.5 km to Ch 2.4 km	0	38,587	0	0	0	0	38,587
	Ch 2.4 km to Ch 4.5 km	0	30,025	0	0	0	0	30,025
	Ch 4.5 km to Ch 5.0 km	0	30,025	0	0	0	0	30,025
	Ch 5.0 km to Ch 5.3 km	0	30,025	0	0	0	0	30,025
	Ch 5.3 km to Ch 6.2 km	0	30,025	0	0	0	0	30,025
State-Controlled Roads: Transport for New South Wales								
Newell Highway	River Road to Queensland/NSW Border	0	1,626	0	0	0	0	1,626
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	55,459	0	0	0	0	55,459
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	4,208	0	0	0	0	4,208
	B2G-LDN060.4 to Earthworks Area 2A	0	4,127	0	0	0	0	4,127
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	1,563	0	0	0	0	1,563
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	4,662	0	0	0	0	4,662
	Coolmunda Dam Access to Cunningham Highway	0	4,662	0	0	0	0	4,662
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	1,910	0	0	0	0	1,910
	B2G-LDN055.4 to B2G-LDN054.2	0	1,873	0	0	0	0	1,873
	Cunningham Highway to B2G-LDN052.8	0	1,910	0	0	0	0	1,910

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	17,755	0	0	0	0	17,755
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	1,875	0	0	0	0	1,875
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	3,914	0	0	0	0	3,914
	NS2B-LDN033.2 to NS2B-LDN035.6	0	1,473	0	0	0	0	1,473
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	6,810	0	0	0	0	6,810
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	1,035	0	0	0	0	1,035
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	613	0	0	0	0	613
	NS2B-LDN031.0 to South Kurumbul Road	0	13,179	0	0	0	0	13,179
	South Kurumbul Road to Cunningham Highway	0	13,179	0	0	0	0	13,179
	Cunningham Highway to Eukabilla Road	0	4,527	0	0	0	0	4,527
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	3,207	0	0	0	0	3,207
	McDougalls Road to Cunningham Highway	0	3,207	0	0	0	0	3,207
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	0	2,010	0	0	0	0	2,010
Silo Street	Barwon Highway to GrainCorp Talwood	0	190	0	0	0	0	190
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	613	0	0	0	0	613
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	243	0	0	0	0	243
Springborg Road	Cunningham highway to B2G-LDN037.6	0	1,791	0	0	0	0	1,791

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	13,179	0	0	0	0	13,179
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	2,043	0	0	0	0	2,043
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	8,891	0	0	0	0	8,891
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	156	0	0	0	0	156
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	19,778	0	0	0	0	19,778
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	0	0	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	1,122	0	0	0	0	1,122
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	930	0	0	0	0	930
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	1,903	0	0	0	0	1,903
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	1,903	0	0	0	0	1,903
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	3,913	0	0	0	0	3,913
	B2G-LDN020.3 to B2G-LDN025.9	0	4,843	0	0	0	0	4,843
	B2G-LDN025.9 to Cunningham Highway	0	8,060	0	0	0	0	8,060
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	0	1,626	0	0	0	0	1,626
River Road	Newell Highway to Boggabilla Weir Access	0	1,626	0	0	0	0	1,626
Local Government Roads: Toowoomba Regional Council								
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	149	0	0	0	0	149
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	12,983	0	0	0	0	12,983
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	44,654	0	0	0	0	44,654
	B2G-LDN188.2 to Gore Highway	0	46,551	0	0	0	0	46,551
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	930	0	0	0	0	930
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	2,159	0	0	0	0	2,159
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	3	0	0	0	0	3
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	1,897	0	0	0	0	1,897
	Brimblecombe Road to WL 194467R	0	1,086	0	0	0	0	1,086
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	2,299	0	0	0	0	2,299
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	13,953	0	0	0	0	13,953
	Saleyards Road to Gore Highway	0	13,953	0	0	0	0	13,953
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	930	0	0	0	0	930
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	1,860	0	0	0	0	1,860
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	930	0	0	0	0	930
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	1,935	0	0	0	0	1,935
Draper Road	Steger Road to B2G-FBW206.9	0	1,860	0	0	0	0	1,860
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	149	0	0	0	0	149
	Access Track to Greenwattle Street	0	149	0	0	0	0	149
Florence Street	Gore Highway to West Street	0	0	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	1,897	0	0	0	0	1,897
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	930	0	0	0	0	930
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	1,860	0	0	0	0	1,860
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	1,079	0	0	0	0	1,079
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	930	0	0	0	0	930
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	12,385	0	0	0	0	12,385
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	1,897	0	0	0	0	1,897
	Steger Road to B2G-LDN206.3	0	2,558	0	0	0	0	2,558
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	11,455	0	0	0	0	11,455
Linthorpe Valley Road	Geitz Road to Gore Highway	0	930	0	0	0	0	930
Lochaber Road	Gore Highway to B2G-LDN172.0	0	930	0	0	0	0	930
	B2G-LDN172.0 to B2G-LDN172.6	0	930	0	0	0	0	930
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	165	0	0	0	0	165
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	2,004	0	0	0	0	2,004
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	1,240	0	0	0	0	1,240
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	26,036	0	0	0	0	26,036
	Kahler Road to Gore Highway	0	26,036	0	0	0	0	26,036
Oakey - Pittsworth Road	Gore Highway to B2G-LDN171.0	0	930	0	0	0	0	930
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	845	0	0	0	0	845
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	372	0	0	0	0	372
	B2G-LDN128.2 to B2G-LDN130.0	0	18,215	0	0	0	0	18,215
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	34,465	0	0	0	0	34,465
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	930	0	0	0	0	930
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	1,897	0	0	0	0	1,897
Quarry Road Access	Tumnaville Road to Quarry Road Quarry	0	0	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	967	0	0	0	0	967
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	1,860	0	0	0	0	1,860
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	1,860	0	0	0	0	1,860
	New Hope Recycled Water Pipeline to Draper Road	0	2,521	0	0	0	0	2,521
	Draper Road to Leeson's Road	0	661	0	0	0	0	661
Tumnaville Road	Access Track to Gore Highway	0	0	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	30,690	0	0	0	0	30,690
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	1,336	0	0	0	0	1,336
	B2G-LDN153.1 to Gore Highway	0	1,897	0	0	0	0	1,897

Road name	Road section	Inland Rail package (vehicles per year)						Total Inland Rail traffic
		North Star to NSW/QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/Bromelton	
	Gore Highway to B2G-LDN150.9	0	0	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	149	0	0	0	0	149
West Street	Gore Highway to Florence Street	0	3	0	0	0	0	3
	Florence Street to Six Mile Road	0	3	0	0	0	0	3
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	2,262	0	0	0	0	2,262
	B2G-LDN161.0 to Desmonds Lane	0	930	0	0	0	0	930

Table 5.122 Total construction vehicle loads in 2025 for Inland Rail packages

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
State-Controlled Roads: Department of Transport and Main Roads								
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	10,617	0	0	0	0	10,617
	Ch 0.8 km to Ch 2.0 km	0	10,617	0	0	0	0	10,617
	Ch 2.0 km to Ch 45.9 km	0	9,518	0	0	0	0	9,518
	Ch 45.9 km to Ch 88.0 km	0	8,774	0	0	0	0	8,774
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	8,774	0	0	0	0	8,774
	Ch 1.6 km to Ch 66.8 km	0	8,194	0	0	0	0	8,194
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	8,194	0	0	0	0	8,194
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	277	37	0	0	0	314
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	6,928	0	0	0	0	6,928
	Ch 96.2 km to Ch 97.5 km	0	8,648	0	0	0	0	8,648
	Ch 97.5 km to Ch 105.7 km	0	12,832	0	0	0	0	12,832
	Ch 105.7 km to Ch 107.4 km	0	47,030	0	0	0	0	47,030
	Ch 107.4 km to Ch 107.6 km	0	43,276	0	0	0	0	43,276
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	43,276	0	0	0	0	43,276
	Ch 2.0 km to Ch 3.9 km	0	43,465	0	0	0	0	43,465
	Ch 3.9 km to Ch 10.2 km	0	38,960	0	0	0	0	38,960
	Ch 10.2 km to Ch 13.9 km	0	34,905	0	0	0	0	34,905
	Ch 13.9 km to Ch 18.5 km	0	33,019	0	0	0	0	33,019
	Ch 18.5 km to Ch 27.1 km	0	12,099	0	0	0	0	12,099
	Ch 27.1 km to Ch 29.3 km	0	11,974	0	0	0	0	11,974
	Ch 29.3 km to Ch 34.7 km	0	12,516	0	0	0	0	12,516
	Ch 34.7 km to Ch 39.6 km	0	15,180	0	0	0	0	15,180

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 39.6 km to Ch 40.3 km	0	19,834	0	0	0	0	19,834
	Ch 40.3 km to Ch 40.5 km	0	5,860	0	0	0	0	5,860
	Ch 40.5 km to Ch 43.9 km	0	20,152	0	0	0	0	20,152
	Ch 43.9 km to Ch 46.3 km	0	5,803	0	0	0	0	5,803
	Ch 46.3 km to Ch 88.0 km	0	5,803	0	0	0	0	5,803
	Ch 88.0 km to Ch 88.2 km	0	6,281	0	0	0	0	6,281
	Ch 88.2 km to Ch 90.0 km	0	6,281	0	0	0	0	6,281
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	18,427	415	34,334	57	0	53,232
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	18,427	415	34,334	57	0	53,232
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	69,981	0	0	0	0	69,981
	Ch 2.2 km to Ch 5.4 km	0	96,023	0	0	0	0	96,023
	Ch 5.4 km to Ch 6.7 km	0	96,023	0	0	0	0	96,023
	Ch 6.7 km to Ch 7.7 km	0	96,023	0	0	0	0	96,023
	Ch 7.7 km to Ch 11.2 km	0	96,092	0	0	0	0	96,092
	Ch 11.2 km to Ch 15.3 km	0	96,126	0	0	0	0	96,126
	Ch 15.3 km to Ch 17.5 km	0	44,594	0	0	0	0	44,594
	Ch 17.5 km to Ch 19.0 km	0	44,657	0	0	0	0	44,657
	Ch 19.0 km to Ch 20.3 km	0	44,666	0	0	0	0	44,666
	Ch 20.3 km to Ch 21.5 km	0	44,666	0	0	0	0	44,666
	Ch 21.5 km to Ch 23.2 km	0	44,671	0	0	0	0	44,671
	Ch 23.2 km to Ch 25.0 km	0	26,355	0	0	0	0	26,355
	Ch 25.0 km to Ch 30.1 km	0	54,336	0	0	0	0	54,336
	Ch 30.1 km to Ch 38.7 km	0	27,741	0	0	0	0	27,741
	Ch 38.7 km to Ch 41.1 km	0	27,887	0	0	0	0	27,887

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 41.1 km to Ch 41.7 km	0	27,887	0	0	0	0	27,887
	Ch 41.7 km to Ch 43.2 km	0	56,308	0	0	0	0	56,308
	Ch 43.2 km to Ch 44.7 km	0	60,067	0	0	0	0	60,067
	Ch 44.7 km to Ch 47.6 km	0	63,798	0	0	0	0	63,798
	Ch 47.6 km to Ch 52.2 km	0	67,578	0	0	0	0	67,578
	Ch 52.2 km to Ch 53.3 km	0	71,453	0	0	0	0	71,453
	Ch 53.3 km to Ch 60.8 km	0	74,588	0	0	0	0	74,588
	Ch 60.8 km to Ch 63.0 km	0	48,120	0	0	0	0	48,120
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	76,954	0	0	0	0	76,954
	Ch 0.7 km to Ch 0.8 km	0	75,699	0	0	0	0	75,699
	Ch 0.8 km to Ch 1.4 km	0	75,699	0	0	0	0	75,699
	Ch 1.4 km to Ch 3.0 km	0	75,699	0	0	0	0	75,699
	Ch 3.0 km to Ch 13.0 km	0	14,319	0	0	0	0	14,319
	Ch 13.0 km to Ch 121.6 km	0	14,319	0	0	0	0	14,319
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	18,427	415	35,536	57	0	54,435
	Ch 3.7 km to Ch 6.4 km	0	18,427	415	35,536	57	0	54,435
	Ch 6.4 km to Ch 8.3 km	0	18,427	415	35,536	57	0	54,435
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	14,319	0	0	0	0	14,319
	Ch 220.1 km to Ch 222.4 km	0	4,801	0	0	0	0	4,801
	Ch 222.4 km to Ch 224.1 km	0	4,801	0	0	0	0	4,801
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	18,427	415	34,334	57	0	53,232
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	26,469	0	0	0	0	26,469
	Ch 2.5 km to Ch 3.5 km	0	33,472	0	0	0	0	33,472
	Ch 3.5 km to Ch 6.2 km	0	44,016	0	0	0	0	44,016
	Ch 6.2 km to Ch 9.0 km	0	42,015	0	0	0	0	42,015

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 9.0 km to Ch 13.1 km	0	38,149	0	0	0	0	38,149
	Ch 13.1 km to Ch 14.0 km	0	44,167	0	0	0	0	44,167
	Ch 14.0 km to Ch 17.3 km	0	37,796	0	0	0	0	37,796
	Ch 17.3 km to Ch 18.1 km	0	37,641	0	0	0	0	37,641
	Ch 18.1 km to Ch 21.8 km	0	35,707	0	0	0	0	35,707
	Ch 21.8 km to Ch 28.0 km	0	30,637	0	0	0	0	30,637
	Ch 28.0 km to Ch 33.0 km	0	26,811	0	0	0	0	26,811
	Ch 33.0 km to Ch 35.6 km	0	22,506	0	0	0	0	22,506
	Ch 35.6 km to Ch 37.7 km	0	18,291	0	0	0	0	18,291
	Ch 37.7 km to Ch 39.8 km	0	18,291	0	0	0	0	18,291
	Ch 39.8 km to Ch 41.9 km	0	18,184	0	0	0	0	18,184
	Ch 41.9 km to Ch 45.9 km	0	8,472	0	0	0	0	8,472
	Ch 45.9 km to Ch 47.6 km	0	10,599	0	0	0	0	10,599
	Ch 47.6 km to Ch 53.3 km	0	13,232	0	0	0	0	13,232
	Ch 53.3 km to Ch 55.7 km	0	17,054	0	0	0	0	17,054
	Ch 55.7 km to Ch 56.6 km	0	13,549	0	0	0	0	13,549
	Ch 56.6 km to Ch 59.2 km	0	37,305	0	0	0	0	37,305
	Ch 59.2 km to Ch 61.0 km	0	37,253	0	0	0	0	37,253
	Ch 61.0 km to Ch 65.7 km	0	44,659	0	0	0	0	44,659
	Ch 65.7 km to Ch 68.7 km	0	42,693	0	0	0	0	42,693
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	5,814	0	0	0	0	5,814
	Ch 2.0 km to Ch 2.2 km	0	1,907	0	0	0	0	1,907
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	18,427	415	34,334	57	0	53,232
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	18,427	415	34,334	57	0	53,232

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	2,664	0	0	0	0	2,664
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	26,061	0	0	0	0	26,061
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	2,763	0	0	0	0	2,763
	Ch 6.0 km to Ch 6.4 km	0	2,486	0	0	0	0	2,486
	Ch 6.4 km to Ch 8.3 km	0	6,607	0	0	0	0	6,607
	Ch 8.3 km to Ch 9.2 km	0	6,904	0	0	0	0	6,904
	Ch 9.2 km to Ch 10.0 km	0	16,647	0	0	0	0	16,647
	Ch 10.0 km to Ch 10.1 km	0	22,227	0	0	0	0	22,227
	Ch 10.1 km to Ch 10.3 km	0	6,149	0	0	0	0	6,149
	Ch 10.3 km to Ch 12.1 km	0	6,157	0	0	0	0	6,157
	Ch 12.1 km to Ch 14.5 km	0	11,199	0	0	0	0	11,199
	Ch 14.5 km to Ch 16.3 km	0	17,688	0	0	0	0	17,688
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	277	37	0	0	0	314
	Ch 26.9 km to Ch 27.1 km	0	11,437	37	0	0	0	11,474
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	18,427	415	15,889	0	0	34,731
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	18,427	415	15,889	0	0	34,731
	Ch 0.6 km to Ch 3.2 km	0	72,890	0	0	0	0	72,890
	Ch 3.2 km to Ch 4.1 km	0	69,972	0	0	0	0	69,972
	Ch 4.1 km to Ch 13.0 km	0	69,981	0	0	0	0	69,981
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	54,463	0	0	0	0	54,463
	Ch 7.2 km to Ch 15.1 km	0	2,917	0	0	0	0	2,917
	Ch 15.1 km to Ch 18.9 km	0	16,078	0	0	0	0	16,078
	Ch 18.9 km to Ch 28.9 km	0	18,427	415	35,536	57	0	54,435
	Ch 28.9 km to Ch 36.6 km	0	18,427	415	35,536	57	0	54,435
	Ch 36.6 km to Ch 55.5 km	0	18,427	415	35,536	57	0	54,435

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Warrego Highway (18B)	Ch 55.5 km to Ch 75.4 km	0	18,427	415	20,850	7,753	0	47,445
	Ch 75.4 km to Ch 79.6 km	0	18,427	415	20,850	7,753	0	47,445
	Ch 0.0 km to Ch 0.4 km	0	18,427	415	68,772	7,753	0	95,367
	Ch 0.4 km to Ch 1.5 km	0	18,427	415	68,772	7,753	0	95,367
	Ch 1.5 km to Ch 2.4 km	0	18,427	415	15,889	0	0	34,731
	Ch 2.4 km to Ch 4.5 km	0	11,437	37	0	0	0	11,474
	Ch 4.5 km to Ch 5.0 km	0	65,900	37	0	0	0	65,937
	Ch 5.0 km to Ch 5.3 km	0	62,853	0	0	0	0	62,853
	Ch 5.3 km to Ch 6.2 km	0	56,027	0	0	0	0	56,027
State-Controlled Roads: Transport for New South Wales								
Newell Highway	River Road to Queensland/NSW Border	0	1,914	0	0	0	0	1,914
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	8,194	0	0	0	0	8,194
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	126	0	0	0	0	126
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	4,505	0	0	0	0	4,505
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	3,508	0	0	0	0	3,508
	Cunningham Highway to GrainCorp Goondiwindi	0	4,801	0	0	0	0	4,801
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	6,928	0	0	0	0	6,928
	Coolmunda Dam Access to Cunningham Highway	0	6,928	0	0	0	0	6,928
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	3,964	0	0	0	0	3,964
	B2G-LDN055.4 to B2G-LDN054.2	0	3,890	0	0	0	0	3,890
	Cunningham Highway to B2G-LDN052.8	0	4,056	0	0	0	0	4,056

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	15,865	0	0	0	0	15,865
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	3,811	0	0	0	0	3,811
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	7,310	0	0	0	0	7,310
	NS2B-LDN033.2 to NS2B-LDN035.6	0	2,546	0	0	0	0	2,546
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	4,184	0	0	0	0	4,184
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	1,885	0	0	0	0	1,885
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	3,505	0	0	0	0	3,505
Hunt Street	Leichhardt Highway to Boodle Street	0	126	0	0	0	0	126
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	1,016	0	0	0	0	1,016
	NS2B-LDN031.0 to South Kurumbul Road	0	16,003	0	0	0	0	16,003
	South Kurumbul Road to Cunningham Highway	0	16,003	0	0	0	0	16,003
	Cunningham Highway to Eukabilla Road	0	8,195	0	0	0	0	8,195
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	3,646	0	0	0	0	3,646
	McDougalls Road to Cunningham Highway	0	3,646	0	0	0	0	3,646
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	3,508	0	0	0	0	3,508
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	6,172	0	0	0	0	6,172
	Mooroobie Lane to Wondalli Kurumbul Road	0	6,172	0	0	0	0	6,172
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	3,505	0	0	0	0	3,505
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	0	2,238	0	0	0	0	2,238
Silo Street	Barwon Highway to GrainCorp Talwood	0	580	0	0	0	0	580
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	812	0	0	0	0	812
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	744	0	0	0	0	744
Springborg Road	Cunningham highway to B2G-LDN037.6	0	2,279	0	0	0	0	2,279

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	15,865	0	0	0	0	15,865
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	2,780	0	0	0	0	2,780
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	7,047	0	0	0	0	7,047
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	1,099	0	0	0	0	1,099
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	24,864	0	0	0	0	24,864
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	0	6,172	0	0	0	0	6,172
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	4,088	0	0	0	0	4,088
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	2,664	0	0	0	0	2,664
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	1,860	0	0	0	0	1,860
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	9,987	0	0	0	0	9,987
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	3,815	0	0	0	0	3,815
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	6,053	0	0	0	0	6,053
	B2G-LDN020.3 to B2G-LDN025.9	0	7,913	0	0	0	0	7,913
	B2G-LDN025.9 to Cunningham Highway	0	17,899	0	0	0	0	17,899
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	0	1,914	0	0	0	0	1,914
River Road	Newell Highway to Boggabilla Weir Access	0	1,914	0	0	0	0	1,914
Local Government Roads: Toowoomba Regional Council								
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	298	0	0	0	0	298
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	25,966	0	0	0	0	25,966
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	96	0	0	0	0	96

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	29,873	0	0	0	0	29,873
	B2G-LDN188.2 to Gore Highway	0	33,913	0	0	0	0	33,913
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	3,056	0	0	0	0	3,056
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	6,371	0	0	0	0	6,371
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	1,491	0	0	0	0	1,491
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	10,329	0	0	0	0	10,329
	Brimblecombe Road to WL 194467R	0	10,329	0	0	0	0	10,329
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	8,441	0	0	0	0	8,441
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	29,071	0	0	0	0	29,071
	Saleyards Road to Gore Highway	0	28,834	0	0	0	0	28,834
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	2,023	0	0	0	0	2,023
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	3,866	0	0	0	0	3,866
Desmonds Lanae	Yarranlea Road to B2G-LDN163.3	0	1,860	0	0	0	0	1,860
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	28,710	0	0	0	0	28,710
Draper Road	Steger Road to B2G-FBW206.9	0	3,720	0	0	0	0	3,720
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	298	0	0	0	0	298
	Access Track to Greenwattle Street	0	298	0	0	0	0	298
Florence Street	Gore Highway to West Street	0	237	0	0	0	0	237
Forestry Road	Access Track to Millmerran-Inglewood Road	0	3,505	0	0	0	0	3,505
	Millmerran-Inglewood Road to Earthworks Area 3B	0	3,505	0	0	0	0	3,505
Fysh Road	B2G-LDN147.1 to Gore Highway	0	3,820	0	0	0	0	3,820
Gap Road	Gore Highway to Grevillea Street	0	252	0	0	0	0	252

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	1,933	0	0	0	0	1,933
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	3,830	0	0	0	0	3,830
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	252	0	0	0	0	252
Hall Road	B2G-LDN139.0 to Gore Highway	0	3,290	0	0	0	0	3,290
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	11,934	0	0	0	0	11,934
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	11,934	0	0	0	0	11,934
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	1,860	0	0	0	0	1,860
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	53,568	0	0	0	0	53,568
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	11,934	0	0	0	0	11,934
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	6,826	0	0	0	0	6,826
	Steger Road to B2G-LDN206.3	0	8,943	0	0	0	0	8,943
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	67,225	0	0	0	0	67,225
Linthorpe Valley Road	Geitz Road to Gore Highway	0	1,933	0	0	0	0	1,933
Lochaber Road	Gore Highway to B2G-LDN172.0	0	1,896	0	0	0	0	1,896
	B2G-LDN172.0 to B2G-LDN172.6	0	1,860	0	0	0	0	1,860
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	2,763	0	0	0	0	2,763
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	11,934	0	0	0	0	11,934
	B2G-LDN112.1 to Millwood Road	0	11,934	0	0	0	0	11,934
	Millwood Road to Kooroongarra Road	0	11,934	0	0	0	0	11,934

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	11,724	0	0	0	0	11,724
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	26,036	0	0	0	0	26,036
	Kahler Road to Gore Highway	0	26,036	0	0	0	0	26,036
Oakey - Pittsworth Road	Gore Highway to B2G-LDN171.0	0	1,860	0	0	0	0	1,860
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	9,891	37	0	0	0	9,928
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	3,095	0	0	0	0	3,095
	B2G-LDN128.2 to B2G-LDN130.0	0	3,095	0	0	0	0	3,095
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	16,250	0	0	0	0	16,250
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	1,977	0	0	0	0	1,977
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	3,826	0	0	0	0	3,826
Quarry Road Access	Tumnaville Road to Quarry Road Quarry	0	14,465	0	0	0	0	14,465
Saleyards Road	Campbell Street to Gore Highway	0	237	0	0	0	0	237
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	2,011	0	0	0	0	2,011
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	3,866	0	0	0	0	3,866
	B2G-LDN123.6 to B2G-LDN123.8	0	146	0	0	0	0	146
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	31,036	0	0	0	0	31,036
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	18,777	0	0	0	0	18,777
	New Hope Recycled Water Pipeline to Draper Road	0	5,837	0	0	0	0	5,837
	Draper Road to Leeson's Road	0	2,117	0	0	0	0	2,117
Tumnaville Road	Access Track to Gore Highway	0	14,465	0	0	0	0	14,465
Turallin Road	Gore Highway to the Turallin Facility	0	61,380	0	0	0	0	61,380
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	4,108	0	0	0	0	4,108
	B2G-LDN153.1 to Gore Highway	0	4,363	0	0	0	0	4,363

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Gore Highway to B2G-LDN150.9	0	0	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	298	0	0	0	0	298
West Street	Gore Highway to Florence Street	0	1,255	0	0	0	0	1,255
	Florence Street to Six Mile Road	0	1,491	0	0	0	0	1,491
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	39,016	0	0	0	0	39,016
	B2G-LDN161.0 to Desmonds Lane	0	1,860	0	0	0	0	1,860

Table 5.123 Total construction vehicle loads in 2026 for Inland Rail packages

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
State-Controlled Roads: Department of Transport and Main Roads								
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	10,903	0	0	0	0	10,903
	Ch 0.8 km to Ch 2.0 km	0	10,903	0	0	0	0	10,903
	Ch 2.0 km to Ch 45.9 km	0	9,518	0	0	0	0	9,518
	Ch 45.9 km to Ch 88.0 km	0	8,774	0	0	0	0	8,774
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	8,774	0	0	0	0	8,774
	Ch 1.6 km to Ch 66.8 km	0	8,194	0	0	0	0	8,194
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	8,194	0	0	0	0	8,194
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	265	0	0	0	0	265
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	2,562	0	0	0	0	2,562
	Ch 96.2 km to Ch 97.5 km	0	7,929	0	0	0	0	7,929
	Ch 97.5 km to Ch 105.7 km	0	7,929	0	0	0	0	7,929
	Ch 105.7 km to Ch 107.4 km	0	37,747	0	0	0	0	37,747
	Ch 107.4 km to Ch 107.6 km	0	33,970	0	0	0	0	33,970
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	33,970	0	0	0	0	33,970
	Ch 2.0 km to Ch 3.9 km	0	34,947	0	0	0	0	34,947
	Ch 3.9 km to Ch 10.2 km	0	31,720	0	0	0	0	31,720
	Ch 10.2 km to Ch 13.9 km	0	27,021	0	0	0	0	27,021
	Ch 13.9 km to Ch 18.5 km	0	25,141	0	0	0	0	25,141
	Ch 18.5 km to Ch 27.1 km	0	6,022	0	0	0	0	6,022
	Ch 27.1 km to Ch 29.3 km	0	5,600	0	0	0	0	5,600
	Ch 29.3 km to Ch 34.7 km	0	6,600	0	0	0	0	6,600
	Ch 34.7 km to Ch 39.6 km	0	6,600	0	0	0	0	6,600

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 39.6 km to Ch 40.3 km	0	6,104	0	0	0	0	6,104
	Ch 40.3 km to Ch 40.5 km	0	6,019	0	0	0	0	6,019
	Ch 40.5 km to Ch 43.9 km	0	17,222	0	0	0	0	17,222
	Ch 43.9 km to Ch 46.3 km	0	5,803	0	0	0	0	5,803
	Ch 46.3 km to Ch 88.0 km	0	5,803	0	0	0	0	5,803
	Ch 88.0 km to Ch 88.2 km	0	6,718	0	0	0	0	6,718
	Ch 88.2 km to Ch 90.0 km	0	6,718	0	0	0	0	6,718
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	18,427	699	34,538	70	0	53,734
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	18,427	699	34,538	70	0	53,734
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	33,304	0	0	0	0	33,304
	Ch 2.2 km to Ch 5.4 km	0	27,707	0	0	0	0	27,707
	Ch 5.4 km to Ch 6.7 km	0	23,964	0	0	0	0	23,964
	Ch 6.7 km to Ch 7.7 km	0	25,159	0	0	0	0	25,159
	Ch 7.7 km to Ch 11.2 km	0	20,070	0	0	0	0	20,070
	Ch 11.2 km to Ch 15.3 km	0	18,630	0	0	0	0	18,630
	Ch 15.3 km to Ch 17.5 km	0	18,904	0	0	0	0	18,904
	Ch 17.5 km to Ch 19.0 km	0	18,855	0	0	0	0	18,855
	Ch 19.0 km to Ch 20.3 km	0	18,963	0	0	0	0	18,963
	Ch 20.3 km to Ch 21.5 km	0	19,099	0	0	0	0	19,099
	Ch 21.5 km to Ch 23.2 km	0	19,101	0	0	0	0	19,101
	Ch 23.2 km to Ch 25.0 km	0	24,089	0	0	0	0	24,089
	Ch 25.0 km to Ch 30.1 km	0	38,087	0	0	0	0	38,087
	Ch 30.1 km to Ch 38.7 km	0	28,127	0	0	0	0	28,127
	Ch 38.7 km to Ch 41.1 km	0	29,941	0	0	0	0	29,941

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 41.1 km to Ch 41.7 km	0	29,941	0	0	0	0	29,941
	Ch 41.7 km to Ch 43.2 km	0	32,794	0	0	0	0	32,794
	Ch 43.2 km to Ch 44.7 km	0	36,525	0	0	0	0	36,525
	Ch 44.7 km to Ch 47.6 km	0	40,253	0	0	0	0	40,253
	Ch 47.6 km to Ch 52.2 km	0	44,011	0	0	0	0	44,011
	Ch 52.2 km to Ch 53.3 km	0	48,101	0	0	0	0	48,101
	Ch 53.3 km to Ch 60.8 km	0	50,782	0	0	0	0	50,782
	Ch 60.8 km to Ch 63.0 km	0	47,984	0	0	0	0	47,984
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	77,717	0	0	0	0	77,717
	Ch 0.7 km to Ch 0.8 km	0	75,699	0	0	0	0	75,699
	Ch 0.8 km to Ch 1.4 km	0	75,699	0	0	0	0	75,699
	Ch 1.4 km to Ch 3.0 km	0	75,699	0	0	0	0	75,699
	Ch 3.0 km to Ch 13.0 km	0	14,319	0	0	0	0	14,319
	Ch 13.0 km to Ch 121.6 km	0	14,319	0	0	0	0	14,319
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	18,427	699	35,740	70	0	54,937
	Ch 3.7 km to Ch 6.4 km	0	18,427	699	35,740	70	0	54,937
	Ch 6.4 km to Ch 8.3 km	0	18,427	699	35,740	70	0	54,937
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	14,319	0	0	0	0	14,319
	Ch 220.1 km to Ch 222.4 km	0	4,801	0	0	0	0	4,801
	Ch 222.4 km to Ch 224.1 km	0	4,801	0	0	0	0	4,801
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	18,427	699	34,538	70	0	53,734
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	2,798	0	0	0	0	2,798
	Ch 2.5 km to Ch 3.5 km	0	8,833	0	0	0	0	8,833
	Ch 3.5 km to Ch 6.2 km	0	27,846	0	0	0	0	27,846
	Ch 6.2 km to Ch 9.0 km	0	25,615	0	0	0	0	25,615

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 9.0 km to Ch 13.1 km	0	21,895	0	0	0	0	21,895
	Ch 13.1 km to Ch 14.0 km	0	25,150	0	0	0	0	25,150
	Ch 14.0 km to Ch 17.3 km	0	19,724	0	0	0	0	19,724
	Ch 17.3 km to Ch 18.1 km	0	32,456	0	0	0	0	32,456
	Ch 18.1 km to Ch 21.8 km	0	30,440	0	0	0	0	30,440
	Ch 21.8 km to Ch 28.0 km	0	25,535	0	0	0	0	25,535
	Ch 28.0 km to Ch 33.0 km	0	21,594	0	0	0	0	21,594
	Ch 33.0 km to Ch 35.6 km	0	17,263	0	0	0	0	17,263
	Ch 35.6 km to Ch 37.7 km	0	1,715	0	0	0	0	1,715
	Ch 37.7 km to Ch 39.8 km	0	1,715	0	0	0	0	1,715
	Ch 39.8 km to Ch 41.9 km	0	3,720	0	0	0	0	3,720
	Ch 41.9 km to Ch 45.9 km	0	6,024	0	0	0	0	6,024
	Ch 45.9 km to Ch 47.6 km	0	7,934	0	0	0	0	7,934
	Ch 47.6 km to Ch 53.3 km	0	7,934	0	0	0	0	7,934
	Ch 53.3 km to Ch 55.7 km	0	10,149	0	0	0	0	10,149
	Ch 55.7 km to Ch 56.6 km	0	10,149	0	0	0	0	10,149
	Ch 56.6 km to Ch 59.2 km	0	36,949	0	0	0	0	36,949
	Ch 59.2 km to Ch 61.0 km	0	36,949	0	0	0	0	36,949
	Ch 61.0 km to Ch 65.7 km	0	33,155	0	0	0	0	33,155
	Ch 65.7 km to Ch 68.7 km	0	31,166	0	0	0	0	31,166
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	8,336	0	0	0	0	8,336
	Ch 2.0 km to Ch 2.2 km	0	4,198	0	0	0	0	4,198
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	18,427	699	34,538	70	0	53,734
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	18,427	699	34,538	70	0	53,734

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	26,049	0	0	0	0	26,049
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	1,592	0	0	0	0	1,592
	Ch 6.0 km to Ch 6.4 km	0	1,327	0	0	0	0	1,327
	Ch 6.4 km to Ch 8.3 km	0	2,417	0	0	0	0	2,417
	Ch 8.3 km to Ch 9.2 km	0	2,714	0	0	0	0	2,714
	Ch 9.2 km to Ch 10.0 km	0	5,082	0	0	0	0	5,082
	Ch 10.0 km to Ch 10.1 km	0	10,662	0	0	0	0	10,662
	Ch 10.1 km to Ch 10.3 km	0	6,382	0	0	0	0	6,382
	Ch 10.3 km to Ch 12.1 km	0	6,425	0	0	0	0	6,425
	Ch 12.1 km to Ch 14.5 km	0	15,829	0	0	0	0	15,829
	Ch 14.5 km to Ch 16.3 km	0	16,186	0	0	0	0	16,186
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	265	0	0	0	0	265
	Ch 26.9 km to Ch 27.1 km	0	11,425	0	0	0	0	11,425
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	18,427	10,825	15,889	0	0	45,141
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	18,427	10,825	15,889	0	0	45,141
	Ch 0.6 km to Ch 3.2 km	0	18,427	0	0	0	0	18,427
	Ch 3.2 km to Ch 4.1 km	0	18,427	0	0	0	0	18,427
	Ch 4.1 km to Ch 13.0 km	0	18,470	0	0	0	0	18,470
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	2,975	0	0	0	0	2,975
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	4,279	0	0	0	0	4,279
	Ch 18.9 km to Ch 28.9 km	0	18,427	699	35,740	70	0	54,937
	Ch 28.9 km to Ch 36.6 km	0	18,427	699	35,740	70	0	54,937
	Ch 36.6 km to Ch 55.5 km	0	18,427	699	35,740	70	0	54,937

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Warrego Highway (18B)	Ch 55.5 km to Ch 75.4 km	0	18,427	699	21,054	7,753	0	47,933
	Ch 75.4 km to Ch 79.6 km	0	18,427	699	21,054	7,753	0	47,933
	Ch 0.0 km to Ch 0.4 km	0	18,427	699	29,131	7,753	0	56,010
	Ch 0.4 km to Ch 1.5 km	0	18,427	699	29,131	7,753	0	56,010
	Ch 1.5 km to Ch 2.4 km	0	18,427	10,825	15,889	0	0	45,141
	Ch 2.4 km to Ch 4.5 km	0	11,425	0	0	0	0	11,425
	Ch 4.5 km to Ch 5.0 km	0	11,425	0	0	0	0	11,425
	Ch 5.0 km to Ch 5.3 km	0	9,578	0	0	0	0	9,578
	Ch 5.3 km to Ch 6.2 km	0	5,783	0	0	0	0	5,783
State-Controlled Roads: Transport for New South Wales								
Newell Highway	River Road to Queensland/NSW Border	0	691	0	0	0	0	691
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	8,194	0	0	0	0	8,194
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	11	0	0	0	0	11
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	3,227	0	0	0	0	3,227
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	4,801	0	0	0	0	4,801
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	2,562	0	0	0	0	2,562
	Coolmunda Dam Access to Cunningham Highway	0	2,562	0	0	0	0	2,562
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	4,407	0	0	0	0	4,407
	B2G-LDN055.4 to B2G-LDN054.2	0	3,777	0	0	0	0	3,777
	Cunningham Highway to B2G-LDN052.8	0	4,699	0	0	0	0	4,699

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	2,357	0	0	0	0	2,357
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	3,820	0	0	0	0	3,820
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	7,405	0	0	0	0	7,405
	NS2B-LDN033.2 to NS2B-LDN035.6	0	2,603	0	0	0	0	2,603
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	1,989	0	0	0	0	1,989
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	11	0	0	0	0	11
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	497	0	0	0	0	497
	NS2B-LDN031.0 to South Kurumbul Road	0	567	0	0	0	0	567
	South Kurumbul Road to Cunningham Highway	0	85	0	0	0	0	85
	Cunningham Highway to Eukabilla Road	0	7,408	0	0	0	0	7,408
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	2,667	0	0	0	0	2,667
	McDougalls Road to Cunningham Highway	0	2,667	0	0	0	0	2,667
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	0	3,330	0	0	0	0	3,330
Silo Street	Barwon Highway to GrainCorp Talwood	0	580	0	0	0	0	580
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	482	0	0	0	0	482
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	744	0	0	0	0	744
Springborg Road	Cunningham highway to B2G-LDN037.6	0	2,992	0	0	0	0	2,992

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	2,459	0	0	0	0	2,459
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	2,950	0	0	0	0	2,950
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	1,385	0	0	0	0	1,385
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	21,882	0	0	0	0	21,882
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	0	0	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	2,215	0	0	0	0	2,215
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	2,445	0	0	0	0	2,445
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	5,024	0	0	0	0	5,024
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	5,024	0	0	0	0	5,024
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	8,353	0	0	0	0	8,353
	B2G-LDN020.3 to B2G-LDN025.9	0	11,510	0	0	0	0	11,510
	B2G-LDN025.9 to Cunningham Highway	0	17,367	0	0	0	0	17,367
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	0	691	0	0	0	0	691
River Road	Newell Highway to Boggabilla Weir Access	0	691	0	0	0	0	691
Local Government Roads: Toowoomba Regional Council								
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	298	0	0	0	0	298
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	25,966	0	0	0	0	25,966
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	84	0	0	0	0	84

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	1,689	0	0	0	0	1,689
	B2G-LDN188.2 to Gore Highway	0	5,596	0	0	0	0	5,596
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	3,056	0	0	0	0	3,056
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	5,426	0	0	0	0	5,426
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	2,168	0	0	0	0	2,168
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	4,537	0	0	0	0	4,537
	Brimblecombe Road to WL 194467R	0	4,537	0	0	0	0	4,537
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	5,110	0	0	0	0	5,110
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	29,883	0	0	0	0	29,883
	Saleyards Road to Gore Highway	0	29,732	0	0	0	0	29,732
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	2,073	0	0	0	0	2,073
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	3,892	0	0	0	0	3,892
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	2,088	0	0	0	0	2,088
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	7,595	0	0	0	0	7,595
Draper Road	Steger Road to B2G-FBW206.9	0	3,720	0	0	0	0	3,720
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	298	0	0	0	0	298
	Access Track to Greenwattle Street	0	298	0	0	0	0	298
Florence Street	Gore Highway to West Street	0	151	0	0	0	0	151
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	3,811	0	0	0	0	3,811
Gap Road	Gore Highway to Grevillea Street	0	609	0	0	0	0	609

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	1,882	0	0	0	0	1,882
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	6,163	0	0	0	0	6,163
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	609	0	0	0	0	609
Hall Road	B2G-LDN139.0 to Gore Highway	0	4,355	0	0	0	0	4,355
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	12,841	0	0	0	0	12,841
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	12,841	0	0	0	0	12,841
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	1,860	0	0	0	0	1,860
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	3,710	0	0	0	0	3,710
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	7,784	0	0	0	0	7,784
Leesons Road	Warrego Highway to Steger Road	0	3,794	0	0	0	0	3,794
	Steger Road to B2G-LDN206.3	0	10,707	0	0	0	0	10,707
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	3,644	0	0	0	0	3,644
Linthorpe Valley Road	Geitz Road to Gore Highway	0	1,882	0	0	0	0	1,882
Lochaber Road	Gore Highway to B2G-LDN172.0	0	2,136	0	0	0	0	2,136
	B2G-LDN172.0 to B2G-LDN172.6	0	1,965	0	0	0	0	1,965
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	1,592	0	0	0	0	1,592
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	4,905	0	0	0	0	4,905
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	8,184	0	0	0	0	8,184
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	3,727	0	0	0	0	3,727
	Kahler Road to Gore Highway	0	5,587	0	0	0	0	5,587
Oakey - Pittsworth Road	Gore Highway to B2G-LDN171.0	0	1,996	0	0	0	0	1,996
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	2,516	0	34	0	0	2,550
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	2,099	0	0	0	0	2,099
	B2G-LDN128.2 to B2G-LDN130.0	0	2,264	0	0	0	0	2,264
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	6,065	0	0	0	0	6,065
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	1,895	0	0	0	0	1,895
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	3,941	0	0	0	0	3,941
Quarry Road Access	Tumnaville Road to Quarry Road Quarry	0	0	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	151	0	0	0	0	151
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	2,263	0	0	0	0	2,263
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	3,892	0	0	0	0	3,892
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	31,036	0	0	0	0	31,036
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	7,215	0	0	0	0	7,215
	New Hope Recycled Water Pipeline to Draper Road	0	10,633	0	0	0	0	10,633
	Draper Road to Leeson's Road	0	6,913	0	0	0	0	6,913
Tumnaville Road	Access Track to Gore Highway	0	0	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	61,380	0	0	0	0	61,380
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	4,108	0	0	0	0	4,108
	B2G-LDN153.1 to Gore Highway	0	6,007	0	0	0	0	6,007

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Gore Highway to B2G-LDN150.9	0	0	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	298	0	0	0	0	298
West Street	Gore Highway to Florence Street	0	2,018	0	0	0	0	2,018
	Florence Street to Six Mile Road	0	2,168	0	0	0	0	2,168
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	36,096	0	0	0	0	36,096
	B2G-LDN161.0 to Desmonds Lane	0	2,088	0	0	0	0	2,088

Table 5.124 Total construction vehicle loads in 2027 for Inland Rail packages

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
State-Controlled Roads: Department of Transport and Main Roads								
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	9,518	0	0	0	0	9,518
	Ch 0.8 km to Ch 2.0 km	0	9,518	0	0	0	0	9,518
	Ch 2.0 km to Ch 45.9 km	0	9,518	0	0	0	0	9,518
	Ch 45.9 km to Ch 88.0 km	0	8,774	0	0	0	0	8,774
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	8,774	0	0	0	0	8,774
	Ch 1.6 km to Ch 66.8 km	0	8,194	0	0	0	0	8,194
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	8,194	0	0	0	0	8,194
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	484	0	0	0	0	484
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	2,067	0	0	0	0	2,067
	Ch 96.2 km to Ch 97.5 km	0	19,556	0	0	0	0	19,556
	Ch 97.5 km to Ch 105.7 km	0	19,556	0	0	0	0	19,556
	Ch 105.7 km to Ch 107.4 km	0	45,364	0	0	0	0	45,364
	Ch 107.4 km to Ch 107.6 km	0	40,542	0	0	0	0	40,542
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	40,542	0	0	0	0	40,542
	Ch 2.0 km to Ch 3.9 km	0	40,634	0	0	0	0	40,634
	Ch 3.9 km to Ch 10.2 km	0	35,225	0	0	0	0	35,225
	Ch 10.2 km to Ch 13.9 km	0	31,385	0	0	0	0	31,385
	Ch 13.9 km to Ch 18.5 km	0	27,741	0	0	0	0	27,741
	Ch 18.5 km to Ch 27.1 km	0	7,203	0	0	0	0	7,203
	Ch 27.1 km to Ch 29.3 km	0	6,293	0	0	0	0	6,293
	Ch 29.3 km to Ch 34.7 km	0	7,459	0	0	0	0	7,459
	Ch 34.7 km to Ch 39.6 km	0	7,459	0	0	0	0	7,459

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 39.6 km to Ch 40.3 km	0	6,738	0	0	0	0	6,738
	Ch 40.3 km to Ch 40.5 km	0	6,605	0	0	0	0	6,605
	Ch 40.5 km to Ch 43.9 km	0	16,740	0	0	0	0	16,740
	Ch 43.9 km to Ch 46.3 km	0	5,803	0	0	0	0	5,803
	Ch 46.3 km to Ch 88.0 km	0	5,803	0	0	0	0	5,803
	Ch 88.0 km to Ch 88.2 km	0	5,803	0	0	0	0	5,803
	Ch 88.2 km to Ch 90.0 km	0	5,803	0	0	0	0	5,803
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	3,344	18,427	1,246	34,460	126	3,344	60,947
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	3,344	18,427	1,246	34,460	126	3,344	60,947
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	32,867	0	0	0	0	32,867
	Ch 2.2 km to Ch 5.4 km	0	27,439	0	0	0	0	27,439
	Ch 5.4 km to Ch 6.7 km	0	23,255	0	0	0	0	23,255
	Ch 6.7 km to Ch 7.7 km	0	21,395	0	0	0	0	21,395
	Ch 7.7 km to Ch 11.2 km	0	19,551	0	0	0	0	19,551
	Ch 11.2 km to Ch 15.3 km	0	20,777	0	0	0	0	20,777
	Ch 15.3 km to Ch 17.5 km	0	21,296	0	0	0	0	21,296
	Ch 17.5 km to Ch 19.0 km	0	21,700	0	0	0	0	21,700
	Ch 19.0 km to Ch 20.3 km	0	22,171	0	0	0	0	22,171
	Ch 20.3 km to Ch 21.5 km	0	22,171	0	0	0	0	22,171
	Ch 21.5 km to Ch 23.2 km	0	22,953	0	0	0	0	22,953
	Ch 23.2 km to Ch 25.0 km	0	29,425	0	0	0	0	29,425
	Ch 25.0 km to Ch 30.1 km	0	24,200	0	0	0	0	24,200
	Ch 30.1 km to Ch 38.7 km	0	27,920	0	0	0	0	27,920
	Ch 38.7 km to Ch 41.1 km	0	27,532	0	0	0	0	27,532

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 41.1 km to Ch 41.7 km	0	27,532	0	0	0	0	27,532
	Ch 41.7 km to Ch 43.2 km	0	31,371	0	0	0	0	31,371
	Ch 43.2 km to Ch 44.7 km	0	35,091	0	0	0	0	35,091
	Ch 44.7 km to Ch 47.6 km	0	38,865	0	0	0	0	38,865
	Ch 47.6 km to Ch 52.2 km	0	42,683	0	0	0	0	42,683
	Ch 52.2 km to Ch 53.3 km	0	46,403	0	0	0	0	46,403
	Ch 53.3 km to Ch 60.8 km	0	49,853	0	0	0	0	49,853
	Ch 60.8 km to Ch 63.0 km	0	49,058	0	0	0	0	49,058
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	77,393	0	0	0	0	77,393
	Ch 0.7 km to Ch 0.8 km	0	76,958	0	0	0	0	76,958
	Ch 0.8 km to Ch 1.4 km	0	76,958	0	0	0	0	76,958
	Ch 1.4 km to Ch 3.0 km	0	79,125	0	0	0	0	79,125
	Ch 3.0 km to Ch 13.0 km	0	17,745	0	0	0	0	17,745
	Ch 13.0 km to Ch 121.6 km	0	14,319	0	0	0	0	14,319
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	3,344	18,427	1,246	35,663	126	3,344	62,150
	Ch 3.7 km to Ch 6.4 km	3,344	18,427	1,246	35,663	126	3,344	62,150
	Ch 6.4 km to Ch 8.3 km	3,344	18,427	1,246	35,663	126	3,344	62,150
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	14,319	0	0	0	0	14,319
	Ch 220.1 km to Ch 222.4 km	0	4,801	0	0	0	0	4,801
	Ch 222.4 km to Ch 224.1 km	0	4,801	0	0	0	0	4,801
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	3,344	18,427	1,246	34,460	126	3,344	60,947
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	1,269	0	0	0	0	1,269
	Ch 2.5 km to Ch 3.5 km	0	7,614	0	0	0	0	7,614
	Ch 3.5 km to Ch 6.2 km	0	25,754	0	0	0	0	25,754
	Ch 6.2 km to Ch 9.0 km	0	23,820	0	0	0	0	23,820

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 9.0 km to Ch 13.1 km	0	20,100	0	0	0	0	20,100
	Ch 13.1 km to Ch 14.0 km	0	21,690	0	0	0	0	21,690
	Ch 14.0 km to Ch 17.3 km	0	24,811	0	0	0	0	24,811
	Ch 17.3 km to Ch 18.1 km	0	23,726	0	0	0	0	23,726
	Ch 18.1 km to Ch 21.8 km	0	21,769	0	0	0	0	21,769
	Ch 21.8 km to Ch 28.0 km	0	16,299	0	0	0	0	16,299
	Ch 28.0 km to Ch 33.0 km	0	10,197	0	0	0	0	10,197
	Ch 33.0 km to Ch 35.6 km	0	6,403	0	0	0	0	6,403
	Ch 35.6 km to Ch 37.7 km	0	3,927	0	0	0	0	3,927
	Ch 37.7 km to Ch 39.8 km	0	3,927	0	0	0	0	3,927
	Ch 39.8 km to Ch 41.9 km	0	4,143	0	0	0	0	4,143
	Ch 41.9 km to Ch 45.9 km	0	6,395	0	0	0	0	6,395
	Ch 45.9 km to Ch 47.6 km	0	8,255	0	0	0	0	8,255
	Ch 47.6 km to Ch 53.3 km	0	8,255	0	0	0	0	8,255
	Ch 53.3 km to Ch 55.7 km	0	12,220	0	0	0	0	12,220
	Ch 55.7 km to Ch 56.6 km	0	12,220	0	0	0	0	12,220
	Ch 56.6 km to Ch 59.2 km	0	36,480	0	0	0	0	36,480
	Ch 59.2 km to Ch 61.0 km	0	36,480	0	0	0	0	36,480
	Ch 61.0 km to Ch 65.7 km	0	32,686	0	0	0	0	32,686
	Ch 65.7 km to Ch 68.7 km	0	30,751	0	0	0	0	30,751
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	3,794	0	0	0	0	3,794
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	3,344	18,427	1,246	34,460	126	3,344	60,947
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	3,344	18,427	1,246	34,460	126	3,344	60,947

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	25,966	0	0	0	0	25,966
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	484	0	0	0	0	484
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	988	0	0	0	0	988
	Ch 8.3 km to Ch 9.2 km	0	3,668	0	0	0	0	3,668
	Ch 9.2 km to Ch 10.0 km	0	4,066	0	0	0	0	4,066
	Ch 10.0 km to Ch 10.1 km	0	9,646	0	0	0	0	9,646
	Ch 10.1 km to Ch 10.3 km	0	5,729	0	0	0	0	5,729
	Ch 10.3 km to Ch 12.1 km	0	5,729	0	0	0	0	5,729
	Ch 12.1 km to Ch 14.5 km	0	7,069	0	0	0	0	7,069
	Ch 14.5 km to Ch 16.3 km	0	5,675	0	0	0	0	5,675
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	484	0	0	0	0	484
	Ch 26.9 km to Ch 27.1 km	0	11,644	0	0	0	0	11,644
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	18,427	7,244	16,577	0	0	42,248
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	18,427	7,244	16,577	0	0	42,248
	Ch 0.6 km to Ch 3.2 km	0	18,466	0	0	0	0	18,466
	Ch 3.2 km to Ch 4.1 km	0	18,466	0	0	0	0	18,466
	Ch 4.1 km to Ch 13.0 km	0	18,466	0	0	0	0	18,466
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	1,798	0	0	0	0	1,798
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	5,104	0	0	0	0	5,104
	Ch 18.9 km to Ch 28.9 km	3,344	18,427	1,246	35,663	126	3,344	62,150
	Ch 28.9 km to Ch 36.6 km	3,344	18,427	1,246	35,663	126	3,344	62,150
	Ch 36.6 km to Ch 55.5 km	3,344	18,427	1,246	35,663	126	3,344	62,150

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Warrego Highway (18B)	Ch 55.5 km to Ch 75.4 km	0	18,427	1,246	22,449	7,753	0	49,875
	Ch 75.4 km to Ch 79.6 km	0	18,427	1,246	22,449	7,753	0	49,875
	Ch 0.0 km to Ch 0.4 km	0	18,427	1,246	22,449	7,753	0	49,875
	Ch 0.4 km to Ch 1.5 km	0	18,427	1,246	22,449	7,753	0	49,875
	Ch 1.5 km to Ch 2.4 km	0	18,427	7,244	16,577	0	0	42,248
	Ch 2.4 km to Ch 4.5 km	0	11,644	0	0	0	0	11,644
	Ch 4.5 km to Ch 5.0 km	0	11,683	0	0	0	0	11,683
	Ch 5.0 km to Ch 5.3 km	0	10,857	0	0	0	0	10,857
	Ch 5.3 km to Ch 6.2 km	0	4,680	0	0	0	0	4,680
State-Controlled Roads: Transport for New South Wales								
Newell Highway	River Road to Queensland/NSW Border	0	474	0	0	0	0	474
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	8,194	0	0	0	0	8,194
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	5,409	0	0	0	0	5,409
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	4,801	0	0	0	0	4,801
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	2,067	0	0	0	0	2,067
	Coolmunda Dam Access to Cunningham Highway	0	2,067	0	0	0	0	2,067
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	3,794	0	0	0	0	3,794
	B2G-LDN055.4 to B2G-LDN054.2	0	3,720	0	0	0	0	3,720
	Cunningham Highway to B2G-LDN052.8	0	3,840	0	0	0	0	3,840

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	2,581	0	0	0	0	2,581
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	4,822	0	0	0	0	4,822
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	7,831	0	0	0	0	7,831
	NS2B-LDN033.2 to NS2B-LDN035.6	0	3,664	0	0	0	0	3,664
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	2,300	0	0	0	0	2,300
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	1,694	0	0	0	0	1,694
	NS2B-LDN031.0 to South Kurumbul Road	0	1,694	0	0	0	0	1,694
	South Kurumbul Road to Cunningham Highway	0	133	0	0	0	0	133
	Cunningham Highway to Eukabilla Road	0	6,277	0	0	0	0	6,277
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	4,369	0	0	0	0	4,369
	McDougalls Road to Cunningham Highway	0	4,369	0	0	0	0	4,369
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	0	3,229	0	0	0	0	3,229
Silo Street	Barwon Highway to GrainCorp Talwood	0	580	0	0	0	0	580
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	1,561	0	0	0	0	1,561
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	744	0	0	0	0	744
Springborg Road	Cunningham highway to B2G-LDN037.6	0	3,081	0	0	0	0	3,081

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	3,039	0	0	0	0	3,039
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	3,113	0	0	0	0	3,113
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	23,297	0	0	0	0	23,297
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	0	0	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	3,966	0	0	0	0	3,966
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	3,837	0	0	0	0	3,837
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	6,643	0	0	0	0	6,643
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	6,643	0	0	0	0	6,643
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	9,872	0	0	0	0	9,872
	B2G-LDN020.3 to B2G-LDN025.9	0	12,303	0	0	0	0	12,303
	B2G-LDN025.9 to Cunningham Highway	0	17,542	0	0	0	0	17,542
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	0	474	0	0	0	0	474
River Road	Newell Highway to Boggabilla Weir Access	0	474	0	0	0	0	474
Local Government Roads: Toowoomba Regional Council								
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	298	0	0	0	0	298
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	25,966	0	0	0	0	25,966
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	889	0	0	0	0	889
	B2G-LDN188.2 to Gore Highway	0	5,570	0	0	0	0	5,570
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	1,958	0	0	0	0	1,958
Blackwell Road	Gore Highway to Millmerran Quarry	0	3,426	0	0	0	0	3,426
	Millmerran Quarry to B2G-LDN120.2	0	8,735	0	0	0	0	8,735
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	7,653	0	0	0	0	7,653
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	435	0	0	0	0	435
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	3,794	0	0	0	0	3,794
	Brimblecombe Road to WL 194467R	0	2,400	0	0	0	0	2,400
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	5,525	0	0	0	0	5,525
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	30,502	0	0	0	0	30,502
	Saleyards Road to Gore Highway	0	28,335	0	0	0	0	28,335
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	2,242	0	0	0	0	2,242
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	3,763	0	0	0	0	3,763
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	1,999	0	0	0	0	1,999
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	4,061	0	0	0	0	4,061
Draper Road	Steger Road to B2G-FBW206.9	0	3,720	0	0	0	0	3,720
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	2,680	0	0	0	0	2,680
	Access Track to Greenwattle Street	0	298	0	0	0	0	298
Florence Street	Gore Highway to West Street	0	0	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	5,610	0	0	0	0	5,610
Gap Road	Gore Highway to Grevillea Street	0	86	0	0	0	0	86

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	3,087	0	0	0	0	3,087
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	5,079	0	0	0	0	5,079
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	86	0	0	0	0	86
Hall Road	B2G-LDN139.0 to Gore Highway	0	3,807	0	0	0	0	3,807
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	1,085	0	0	0	0	1,085
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	2,383	0	0	0	0	2,383
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	2,246	0	0	0	0	2,246
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	2,438	0	0	0	0	2,438
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	6,177	0	0	0	0	6,177
	Steger Road to B2G-LDN206.3	0	7,646	0	0	0	0	7,646
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	4,264	0	0	0	0	4,264
Linthorpe Valley Road	Geitz Road to Gore Highway	0	3,087	0	0	0	0	3,087
Lochaber Road	Gore Highway to B2G-LDN172.0	0	2,331	0	0	0	0	2,331
	B2G-LDN172.0 to B2G-LDN172.6	0	1,860	0	0	0	0	1,860
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	484	0	0	0	0	484
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	5,470	0	0	0	0	5,470
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	3,011	0	0	0	0	3,011
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	4,312	0	0	0	0	4,312
	Kahler Road to Gore Highway	0	6,558	0	0	0	0	6,558
Oakey - Pittsworth Road	Gore Highway to B2G-LDN171.0	0	1,860	0	0	0	0	1,860
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	2,929	0	0	0	0	2,929
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	2,989	0	0	0	0	2,989
	B2G-LDN128.2 to B2G-LDN130.0	0	3,120	0	0	0	0	3,120
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	6,840	0	0	0	0	6,840
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	2,264	0	0	0	0	2,264
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	6,102	0	0	0	0	6,102
Quarry Road Access	Tumnaville Road to Quarry Road Quarry	0	4,531	0	0	0	0	4,531
Saleyards Road	Campbell Street to Gore Highway	0	2,167	0	0	0	0	2,167
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	1,934	0	0	0	0	1,934
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	3,763	0	0	0	0	3,763
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	5,224	0	0	0	0	5,224
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	5,089	0	0	0	0	5,089
	New Hope Recycled Water Pipeline to Draper Road	0	5,188	0	0	0	0	5,188
	Draper Road to Leeson's Road	0	1,468	0	0	0	0	1,468
Tumnaville Road	Access Track to Gore Highway	0	4,531	0	0	0	0	4,531
Turallin Road	Gore Highway to the Turallin Facility	0	61,380	0	0	0	0	61,380
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	4,108	0	0	0	0	4,108
	B2G-LDN153.1 to Gore Highway	0	4,108	0	0	0	0	4,108

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Gore Highway to B2G-LDN150.9	0	950	0	0	0	0	950
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	2,680	0	0	0	0	2,680
West Street	Gore Highway to Florence Street	0	435	0	0	0	0	435
	Florence Street to Six Mile Road	0	435	0	0	0	0	435
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	6,602	0	0	0	0	6,602
	B2G-LDN161.0 to Desmonds Lane	0	1,999	0	0	0	0	1,999

Table 5.125 Total construction vehicle loads in 2028 for Inland Rail packages

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
State-Controlled Roads: Department of Transport and Main Roads								
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	1,796	0	0	0	0	1,796
	Ch 0.8 km to Ch 2.0 km	0	1,796	0	0	0	0	1,796
	Ch 2.0 km to Ch 45.9 km	0	1,796	0	0	0	0	1,796
	Ch 45.9 km to Ch 88.0 km	0	1,656	0	0	0	0	1,656
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	1,656	0	0	0	0	1,656
	Ch 1.6 km to Ch 66.8 km	0	1,546	0	0	0	0	1,546
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	1,546	0	0	0	0	1,546
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	5	0	0	0	0	5
	Ch 96.2 km to Ch 97.5 km	0	5	0	0	0	0	5
	Ch 97.5 km to Ch 105.7 km	0	5	0	0	0	0	5
	Ch 105.7 km to Ch 107.4 km	0	7,688	0	0	0	0	7,688
	Ch 107.4 km to Ch 107.6 km	0	6,758	0	0	0	0	6,758
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	6,758	0	0	0	0	6,758
	Ch 2.0 km to Ch 3.9 km	0	6,758	0	0	0	0	6,758
	Ch 3.9 km to Ch 10.2 km	0	6,291	0	0	0	0	6,291
	Ch 10.2 km to Ch 13.9 km	0	5,343	0	0	0	0	5,343
	Ch 13.9 km to Ch 18.5 km	0	4,878	0	0	0	0	4,878
	Ch 18.5 km to Ch 27.1 km	0	467	0	0	0	0	467
	Ch 27.1 km to Ch 29.3 km	0	933	0	0	0	0	933
	Ch 29.3 km to Ch 34.7 km	0	930	0	0	0	0	930
	Ch 34.7 km to Ch 39.6 km	0	930	0	0	0	0	930

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 39.6 km to Ch 40.3 km	0	1,395	0	0	0	0	1,395
	Ch 40.3 km to Ch 40.5 km	0	1,395	0	0	0	0	1,395
	Ch 40.5 km to Ch 43.9 km	0	4,185	0	0	0	0	4,185
	Ch 43.9 km to Ch 46.3 km	0	1,451	0	0	0	0	1,451
	Ch 46.3 km to Ch 88.0 km	0	1,451	0	0	0	0	1,451
	Ch 88.0 km to Ch 88.2 km	0	1,451	0	0	0	0	1,451
	Ch 88.2 km to Ch 90.0 km	0	1,451	0	0	0	0	1,451
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	3,476	1,199	25,719	24	0	30,418
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	3,476	1,199	25,719	24	0	30,418
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	6,607	0	0	0	0	6,607
	Ch 2.2 km to Ch 5.4 km	0	5,593	0	0	0	0	5,593
	Ch 5.4 km to Ch 6.7 km	0	4,617	0	0	0	0	4,617
	Ch 6.7 km to Ch 7.7 km	0	4,152	0	0	0	0	4,152
	Ch 7.7 km to Ch 11.2 km	0	3,529	0	0	0	0	3,529
	Ch 11.2 km to Ch 15.3 km	0	3,596	0	0	0	0	3,596
	Ch 15.3 km to Ch 17.5 km	0	3,645	0	0	0	0	3,645
	Ch 17.5 km to Ch 19.0 km	0	3,715	0	0	0	0	3,715
	Ch 19.0 km to Ch 20.3 km	0	3,750	0	0	0	0	3,750
	Ch 20.3 km to Ch 21.5 km	0	3,750	0	0	0	0	3,750
	Ch 21.5 km to Ch 23.2 km	0	3,807	0	0	0	0	3,807
	Ch 23.2 km to Ch 25.0 km	0	5,289	0	0	0	0	5,289
	Ch 25.0 km to Ch 30.1 km	0	4,871	0	0	0	0	4,871
	Ch 30.1 km to Ch 38.7 km	0	5,801	0	0	0	0	5,801
	Ch 38.7 km to Ch 41.1 km	0	5,956	0	0	0	0	5,956

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 41.1 km to Ch 41.7 km	0	5,956	0	0	0	0	5,956
	Ch 41.7 km to Ch 43.2 km	0	6,888	0	0	0	0	6,888
	Ch 43.2 km to Ch 44.7 km	0	7,818	0	0	0	0	7,818
	Ch 44.7 km to Ch 47.6 km	0	8,748	0	0	0	0	8,748
	Ch 47.6 km to Ch 52.2 km	0	9,678	0	0	0	0	9,678
	Ch 52.2 km to Ch 53.3 km	0	10,608	0	0	0	0	10,608
	Ch 53.3 km to Ch 60.8 km	0	11,161	0	0	0	0	11,161
	Ch 60.8 km to Ch 63.0 km	0	11,158	0	0	0	0	11,158
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	18,133	0	0	0	0	18,133
	Ch 0.7 km to Ch 0.8 km	0	18,133	0	0	0	0	18,133
	Ch 0.8 km to Ch 1.4 km	0	18,133	0	0	0	0	18,133
	Ch 1.4 km to Ch 3.0 km	0	18,339	0	0	0	0	18,339
	Ch 3.0 km to Ch 13.0 km	0	2,994	0	0	0	0	2,994
	Ch 13.0 km to Ch 121.6 km	0	2,701	0	0	0	0	2,701
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	3,476	1,199	26,621	24	0	31,320
	Ch 3.7 km to Ch 6.4 km	0	3,476	1,199	26,621	24	0	31,320
	Ch 6.4 km to Ch 8.3 km	0	3,476	1,199	26,621	24	0	31,320
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	2,701	0	0	0	0	2,701
	Ch 220.1 km to Ch 222.4 km	0	905	0	0	0	0	905
	Ch 222.4 km to Ch 224.1 km	0	905	0	0	0	0	905
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	3,476	1,199	25,719	24	0	30,418
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	298	0	0	0	0	298
	Ch 2.5 km to Ch 3.5 km	0	1,140	0	0	0	0	1,140
	Ch 3.5 km to Ch 6.2 km	0	6,343	0	0	0	0	6,343
	Ch 6.2 km to Ch 9.0 km	0	5,859	0	0	0	0	5,859

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 9.0 km to Ch 13.1 km	0	4,929	0	0	0	0	4,929
	Ch 13.1 km to Ch 14.0 km	0	4,933	0	0	0	0	4,933
	Ch 14.0 km to Ch 17.3 km	0	4,603	0	0	0	0	4,603
	Ch 17.3 km to Ch 18.1 km	0	4,531	0	0	0	0	4,531
	Ch 18.1 km to Ch 21.8 km	0	4,047	0	0	0	0	4,047
	Ch 21.8 km to Ch 28.0 km	0	3,014	0	0	0	0	3,014
	Ch 28.0 km to Ch 33.0 km	0	1,886	0	0	0	0	1,886
	Ch 33.0 km to Ch 35.6 km	0	937	0	0	0	0	937
	Ch 35.6 km to Ch 37.7 km	0	471	0	0	0	0	471
	Ch 37.7 km to Ch 39.8 km	0	471	0	0	0	0	471
	Ch 39.8 km to Ch 41.9 km	0	930	0	0	0	0	930
	Ch 41.9 km to Ch 45.9 km	0	1,396	0	0	0	0	1,396
	Ch 45.9 km to Ch 47.6 km	0	1,861	0	0	0	0	1,861
	Ch 47.6 km to Ch 53.3 km	0	1,861	0	0	0	0	1,861
	Ch 53.3 km to Ch 55.7 km	0	2,327	0	0	0	0	2,327
	Ch 55.7 km to Ch 56.6 km	0	2,327	0	0	0	0	2,327
	Ch 56.6 km to Ch 59.2 km	0	9,118	0	0	0	0	9,118
	Ch 59.2 km to Ch 61.0 km	0	9,118	0	0	0	0	9,118
	Ch 61.0 km to Ch 65.7 km	0	8,170	0	0	0	0	8,170
	Ch 65.7 km to Ch 68.7 km	0	7,686	0	0	0	0	7,686
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	949	0	0	0	0	949
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	3,476	1,199	25,719	24	0	30,418
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	3,476	1,199	25,719	24	0	30,418

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	6,491	0	0	0	0	6,491
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	1	0	0	0	0	1
	Ch 8.3 km to Ch 9.2 km	0	200	0	0	0	0	200
	Ch 9.2 km to Ch 10.0 km	0	41	0	0	0	0	41
	Ch 10.0 km to Ch 10.1 km	0	1,436	0	0	0	0	1,436
	Ch 10.1 km to Ch 10.3 km	0	1,432	0	0	0	0	1,432
	Ch 10.3 km to Ch 12.1 km	0	1,432	622	0	0	0	2,055
	Ch 12.1 km to Ch 14.5 km	0	1,593	0	0	0	0	1,593
	Ch 14.5 km to Ch 16.3 km	0	645	0	0	0	0	645
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	2,790	0	0	0	0	2,790
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	3,476	2,108	12,261	0	0	17,845
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	3,476	2,108	12,261	0	0	17,845
	Ch 0.6 km to Ch 3.2 km	0	3,476	0	0	0	0	3,476
	Ch 3.2 km to Ch 4.1 km	0	3,476	0	0	0	0	3,476
	Ch 4.1 km to Ch 13.0 km	0	3,476	0	0	0	0	3,476
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	2	0	0	0	0	2
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	114	0	0	0	0	114
	Ch 18.9 km to Ch 28.9 km	0	3,476	1,199	26,621	24	0	31,320
	Ch 28.9 km to Ch 36.6 km	0	3,476	1,199	26,621	24	0	31,320
	Ch 36.6 km to Ch 55.5 km	0	3,476	1,199	26,621	24	0	31,320

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Warrego Highway (18B)	Ch 55.5 km to Ch 75.4 km	0	3,476	1,199	16,343	5,815	0	26,832
	Ch 75.4 km to Ch 79.6 km	0	3,476	1,199	16,343	5,815	0	26,832
	Ch 0.0 km to Ch 0.4 km	0	3,476	1,199	16,343	5,815	0	26,832
	Ch 0.4 km to Ch 1.5 km	0	3,476	1,199	16,343	5,815	0	26,832
	Ch 1.5 km to Ch 2.4 km	0	3,476	2,108	12,261	0	0	17,845
	Ch 2.4 km to Ch 4.5 km	0	2,790	0	0	0	0	2,790
	Ch 4.5 km to Ch 5.0 km	0	2,790	0	0	0	0	2,790
	Ch 5.0 km to Ch 5.3 km	0	2,022	0	0	0	0	2,022
	Ch 5.3 km to Ch 6.2 km	0	949	0	0	0	0	949
State-Controlled Roads: Transport for New South Wales								
Newell Highway	River Road to Queensland/NSW Border	0	1	0	0	0	0	1
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	1,546	0	0	0	0	1,546
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	466	0	0	0	0	466
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	905	0	0	0	0	905
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	5	0	0	0	0	5
	Coolmunda Dam Access to Cunningham Highway	0	5	0	0	0	0	5
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	949	0	0	0	0	949
	B2G-LDN055.4 to B2G-LDN054.2	0	930	0	0	0	0	930
	Cunningham Highway to B2G-LDN052.8	0	949	0	0	0	0	949

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	465	0	0	0	0	465
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	930	0	0	0	0	930
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	1,451	0	0	0	0	1,451
	NS2B-LDN033.2 to NS2B-LDN035.6	0	484	0	0	0	0	484
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	465	0	0	0	0	465
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	1	0	0	0	0	1
	NS2B-LDN031.0 to South Kurumbul Road	0	1	0	0	0	0	1
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0	0	0
	Cunningham Highway to Eukabilla Road	0	1,452	0	0	0	0	1,452
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	466	0	0	0	0	466
	McDougalls Road to Cunningham Highway	0	466	0	0	0	0	466
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	0	485	0	0	0	0	485
Silo Street	Barwon Highway to GrainCorp Talwood	0	110	0	0	0	0	110
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	1	0	0	0	0	1
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	140	0	0	0	0	140
Springborg Road	Cunningham highway to B2G-LDN037.6	0	485	0	0	0	0	485

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	467	0	0	0	0	467
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	485	0	0	0	0	485
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	5,213	0	0	0	0	5,213
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	0	0	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	466	0	0	0	0	466
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	465	0	0	0	0	465
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	949	0	0	0	0	949
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	949	0	0	0	0	949
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	1,434	0	0	0	0	1,434
	B2G-LDN020.3 to B2G-LDN025.9	0	1,899	0	0	0	0	1,899
	B2G-LDN025.9 to Cunningham Highway	0	2,849	0	0	0	0	2,849
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	0	1	0	0	0	0	1
River Road	Newell Highway to Boggabilla Weir Access	0	1	0	0	0	0	1
Local Government Roads: Toowoomba Regional Council								
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	74	0	0	0	0	74
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	6,491	0	0	0	0	6,491
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	1	0	0	0	0	1
	B2G-LDN188.2 to Gore Highway	0	1,014	0	0	0	0	1,014
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	465	0	0	0	0	465
Blackwell Road	Gore Highway to Millmerran Quarry	0	293	0	0	0	0	293
	Millmerran Quarry to B2G-LDN120.2	0	721	0	0	0	0	721
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	931	0	0	0	0	931
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	949	0	0	0	0	949
	Brimblecombe Road to WL 194467R	0	1	0	0	0	0	1
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	1,003	0	0	0	0	1,003
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	7,181	0	0	0	0	7,181
	Saleyards Road to Gore Highway	0	6,975	0	0	0	0	6,975
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	465	0	0	0	0	465
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	930	0	0	0	0	930
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	465	0	0	0	0	465
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	932	0	0	0	0	932
Draper Road	Steger Road to B2G-FBW206.9	0	930	0	0	0	0	930
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	198	0	0	0	0	198
	Access Track to Greenwattle Street	0	74	0	0	0	0	74
Florence Street	Gore Highway to West Street	0	0	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	1,029	0	0	0	0	1,029
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	531	0	0	0	0	531
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	930	0	0	0	0	930
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	553	0	0	0	0	553
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	72	0	0	0	0	72
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	124	0	0	0	0	124
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	511	0	0	0	0	511
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	484	0	0	0	0	484
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	1,073	0	0	0	0	1,073
	Steger Road to B2G-LDN206.3	0	1,073	0	0	0	0	1,073
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	533	0	0	0	0	533
Linthorpe Valley Road	Geitz Road to Gore Highway	0	531	0	0	0	0	531
Lochaber Road	Gore Highway to B2G-LDN172.0	0	500	0	0	0	0	500
	B2G-LDN172.0 to B2G-LDN172.6	0	465	0	0	0	0	465
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	1,033	0	0	0	0	1,033
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	8	0	0	0	0	8
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	971	0	0	0	0	971
	Kahler Road to Gore Highway	0	1,482	0	0	0	0	1,482
Oakey - Pittsworth Road	Gore Highway to B2G-LDN171.0	0	465	0	0	0	0	465
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	161	0	0	0	0	161
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	207	0	0	0	0	207
	B2G-LDN128.2 to B2G-LDN130.0	0	207	0	0	0	0	207
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	1,137	0	0	0	0	1,137
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	535	0	0	0	0	535
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	1,128	0	0	0	0	1,128
Quarry Road Access	Tummalville Road to Quarry Road Quarry	0	323	0	0	0	0	323
Saleyards Road	Campbell Street to Gore Highway	0	206	0	0	0	0	206
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	484	0	0	0	0	484
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	930	0	0	0	0	930
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	418	0	0	0	0	418
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	930	0	0	0	0	930
	New Hope Recycled Water Pipeline to Draper Road	0	931	0	0	0	0	931
	Draper Road to Leeson's Road	0	1	0	0	0	0	1
Tummalville Road	Access Track to Gore Highway	0	323	0	0	0	0	323
Turallin Road	Gore Highway to the Turallin Facility	0	15,345	0	0	0	0	15,345
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	775	0	0	0	0	775
	B2G-LDN153.1 to Gore Highway	0	949	0	0	0	0	949

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Gore Highway to B2G-LDN150.9	0	123	0	0	0	0	123
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	198	0	0	0	0	198
West Street	Gore Highway to Florence Street	0	0	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	1,069	0	0	0	0	1,069
	B2G-LDN161.0 to Desmonds Lane	0	465	0	0	0	0	465

Table 5.126 Total construction vehicle loads in 2029 for Inland Rail packages

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
State-Controlled Roads: Department of Transport and Main Roads								
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	0	0	0	0	0	0	0
	Ch 0.8 km to Ch 2.0 km	0	0	0	0	0	0	0
	Ch 2.0 km to Ch 45.9 km	0	0	0	0	0	0	0
	Ch 45.9 km to Ch 88.0 km	0	0	0	0	0	0	0
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0	0	0
	Ch 1.6 km to Ch 66.8 km	0	0	0	0	0	0	0
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	0	0	0	0	0	0	0
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	0	0	0	0	0	0	0
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	0	0	0	0	0	0	0
	Ch 96.2 km to Ch 97.5 km	0	0	0	0	0	0	0
	Ch 97.5 km to Ch 105.7 km	0	0	0	0	0	0	0
	Ch 105.7 km to Ch 107.4 km	0	0	0	0	0	0	0
	Ch 107.4 km to Ch 107.6 km	0	0	0	0	0	0	0
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	0	0	0	0	0	0	0
	Ch 2.0 km to Ch 3.9 km	0	0	0	0	0	0	0
	Ch 3.9 km to Ch 10.2 km	0	0	0	0	0	0	0
	Ch 10.2 km to Ch 13.9 km	0	0	0	0	0	0	0
	Ch 13.9 km to Ch 18.5 km	0	0	0	0	0	0	0
	Ch 18.5 km to Ch 27.1 km	0	0	0	0	0	0	0
	Ch 27.1 km to Ch 29.3 km	0	0	0	0	0	0	0
	Ch 29.3 km to Ch 34.7 km	0	0	0	0	0	0	0
	Ch 34.7 km to Ch 39.6 km	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 39.6 km to Ch 40.3 km	0	0	0	0	0	0	0
	Ch 40.3 km to Ch 40.5 km	0	0	0	0	0	0	0
	Ch 40.5 km to Ch 43.9 km	0	0	0	0	0	0	0
	Ch 43.9 km to Ch 46.3 km	0	0	0	0	0	0	0
	Ch 46.3 km to Ch 88.0 km	0	0	0	0	0	0	0
	Ch 88.0 km to Ch 88.2 km	0	0	0	0	0	0	0
	Ch 88.2 km to Ch 90.0 km	0	0	0	0	0	0	0
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	0	0	467	0	0	0	467
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	0	0	467	0	0	0	467
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	0	0	0	0	0	0	0
	Ch 2.2 km to Ch 5.4 km	0	0	0	0	0	0	0
	Ch 5.4 km to Ch 6.7 km	0	0	0	0	0	0	0
	Ch 6.7 km to Ch 7.7 km	0	0	0	0	0	0	0
	Ch 7.7 km to Ch 11.2 km	0	0	0	0	0	0	0
	Ch 11.2 km to Ch 15.3 km	0	0	0	0	0	0	0
	Ch 15.3 km to Ch 17.5 km	0	0	0	0	0	0	0
	Ch 17.5 km to Ch 19.0 km	0	0	0	0	0	0	0
	Ch 19.0 km to Ch 20.3 km	0	0	0	0	0	0	0
	Ch 20.3 km to Ch 21.5 km	0	0	0	0	0	0	0
	Ch 21.5 km to Ch 23.2 km	0	0	0	0	0	0	0
	Ch 23.2 km to Ch 25.0 km	0	0	0	0	0	0	0
	Ch 25.0 km to Ch 30.1 km	0	0	0	0	0	0	0
	Ch 30.1 km to Ch 38.7 km	0	0	0	0	0	0	0
	Ch 38.7 km to Ch 41.1 km	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 41.1 km to Ch 41.7 km	0	0	0	0	0	0	0
	Ch 41.7 km to Ch 43.2 km	0	0	0	0	0	0	0
	Ch 43.2 km to Ch 44.7 km	0	0	0	0	0	0	0
	Ch 44.7 km to Ch 47.6 km	0	0	0	0	0	0	0
	Ch 47.6 km to Ch 52.2 km	0	0	0	0	0	0	0
	Ch 52.2 km to Ch 53.3 km	0	0	0	0	0	0	0
	Ch 53.3 km to Ch 60.8 km	0	0	0	0	0	0	0
	Ch 60.8 km to Ch 63.0 km	0	0	0	0	0	0	0
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	0	0	0	0	0	0	0
	Ch 0.7 km to Ch 0.8 km	0	0	0	0	0	0	0
	Ch 0.8 km to Ch 1.4 km	0	0	0	0	0	0	0
	Ch 1.4 km to Ch 3.0 km	0	0	0	0	0	0	0
	Ch 3.0 km to Ch 13.0 km	0	0	0	0	0	0	0
	Ch 13.0 km to Ch 121.6 km	0	0	0	0	0	0	0
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	0	0	467	0	0	0	467
	Ch 3.7 km to Ch 6.4 km	0	0	467	0	0	0	467
	Ch 6.4 km to Ch 8.3 km	0	0	467	0	0	0	467
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	0	0	0	0	0	0	0
	Ch 220.1 km to Ch 222.4 km	0	0	0	0	0	0	0
	Ch 222.4 km to Ch 224.1 km	0	0	0	0	0	0	0
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	0	0	467	0	0	0	467
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	0	0	0	0	0	0	0
	Ch 2.5 km to Ch 3.5 km	0	0	0	0	0	0	0
	Ch 3.5 km to Ch 6.2 km	0	0	0	0	0	0	0
	Ch 6.2 km to Ch 9.0 km	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Ch 9.0 km to Ch 13.1 km	0	0	0	0	0	0	0
	Ch 13.1 km to Ch 14.0 km	0	0	0	0	0	0	0
	Ch 14.0 km to Ch 17.3 km	0	0	0	0	0	0	0
	Ch 17.3 km to Ch 18.1 km	0	0	0	0	0	0	0
	Ch 18.1 km to Ch 21.8 km	0	0	0	0	0	0	0
	Ch 21.8 km to Ch 28.0 km	0	0	0	0	0	0	0
	Ch 28.0 km to Ch 33.0 km	0	0	0	0	0	0	0
	Ch 33.0 km to Ch 35.6 km	0	0	0	0	0	0	0
	Ch 35.6 km to Ch 37.7 km	0	0	0	0	0	0	0
	Ch 37.7 km to Ch 39.8 km	0	0	0	0	0	0	0
	Ch 39.8 km to Ch 41.9 km	0	0	0	0	0	0	0
	Ch 41.9 km to Ch 45.9 km	0	0	0	0	0	0	0
	Ch 45.9 km to Ch 47.6 km	0	0	0	0	0	0	0
	Ch 47.6 km to Ch 53.3 km	0	0	0	0	0	0	0
	Ch 53.3 km to Ch 55.7 km	0	0	0	0	0	0	0
	Ch 55.7 km to Ch 56.6 km	0	0	0	0	0	0	0
	Ch 56.6 km to Ch 59.2 km	0	0	0	0	0	0	0
	Ch 59.2 km to Ch 61.0 km	0	0	0	0	0	0	0
	Ch 61.0 km to Ch 65.7 km	0	0	0	0	0	0	0
	Ch 65.7 km to Ch 68.7 km	0	0	0	0	0	0	0
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	0	0	0	0	0	0	0
	Ch 2.0 km to Ch 2.2 km	0	0	0	0	0	0	0
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	0	0	467	0	0	0	467
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	0	0	467	0	0	0	467

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	0	0	0	0	0	0	0
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	0	0	0	0	0	0	0
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	0	0	0	0	0	0	0
	Ch 6.0 km to Ch 6.4 km	0	0	0	0	0	0	0
	Ch 6.4 km to Ch 8.3 km	0	0	0	0	0	0	0
	Ch 8.3 km to Ch 9.2 km	0	0	0	0	0	0	0
	Ch 9.2 km to Ch 10.0 km	0	0	0	0	0	0	0
	Ch 10.0 km to Ch 10.1 km	0	0	0	0	0	0	0
	Ch 10.1 km to Ch 10.3 km	0	0	0	0	0	0	0
	Ch 10.3 km to Ch 12.1 km	0	0	0	0	0	0	0
	Ch 12.1 km to Ch 14.5 km	0	0	0	0	0	0	0
	Ch 14.5 km to Ch 16.3 km	0	0	0	0	0	0	0
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	0	0	0	0	0	0	0
	Ch 26.9 km to Ch 27.1 km	0	0	0	0	0	0	0
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	0	0	467	0	0	0	467
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	0	0	467	0	0	0	467
	Ch 0.6 km to Ch 3.2 km	0	0	0	0	0	0	0
	Ch 3.2 km to Ch 4.1 km	0	0	0	0	0	0	0
	Ch 4.1 km to Ch 13.0 km	0	0	0	0	0	0	0
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	0	0	0	0	0	0	0
	Ch 7.2 km to Ch 15.1 km	0	0	0	0	0	0	0
	Ch 15.1 km to Ch 18.9 km	0	0	0	0	0	0	0
	Ch 18.9 km to Ch 28.9 km	0	0	467	0	0	0	467
	Ch 28.9 km to Ch 36.6 km	0	0	467	0	0	0	467
	Ch 36.6 km to Ch 55.5 km	0	0	467	0	0	0	467

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Warrego Highway (18B)	Ch 55.5 km to Ch 75.4 km	0	0	467	0	0	0	467
	Ch 75.4 km to Ch 79.6 km	0	0	467	0	0	0	467
	Ch 0.0 km to Ch 0.4 km	0	0	467	0	0	0	467
	Ch 0.4 km to Ch 1.5 km	0	0	467	0	0	0	467
	Ch 1.5 km to Ch 2.4 km	0	0	467	0	0	0	467
	Ch 2.4 km to Ch 4.5 km	0	0	0	0	0	0	0
	Ch 4.5 km to Ch 5.0 km	0	0	0	0	0	0	0
	Ch 5.0 km to Ch 5.3 km	0	0	0	0	0	0	0
	Ch 5.3 km to Ch 6.2 km	0	0	0	0	0	0	0
State-Controlled Roads: Transport for New South Wales								
Newell Highway	River Road to Queensland/NSW Border	0	0	0	0	0	0	0
Local Government Roads: Balonne Shire Council								
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	0	0	0	0	0	0	0
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	0	0	0	0	0	0	0
Bybera Road	Cunningham Highway to B2G-LDN060.4	0	0	0	0	0	0	0
	B2G-LDN060.4 to Earthworks Area 2A	0	0	0	0	0	0	0
Cemetery Road	Access Track to Moorobie Lane	0	0	0	0	0	0	0
	Cunningham Highway to GrainCorp Goondiwindi	0	0	0	0	0	0	0
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	0	0	0	0	0	0	0
	Coolmunda Dam Access to Cunningham Highway	0	0	0	0	0	0	0
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	0	0	0	0	0	0	0
	B2G-LDN055.4 to B2G-LDN054.2	0	0	0	0	0	0	0
	Cunningham Highway to B2G-LDN052.8	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	0	0	0	0	0	0	0
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	0	0	0	0	0	0	0
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	0	0	0	0	0	0	0
	NS2B-LDN033.2 to NS2B-LDN035.6	0	0	0	0	0	0	0
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	0	0	0	0	0	0	0
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	0	0	0	0	0	0	0
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	0	0	0	0	0	0	0
Hunt Street	Leichhardt Highway to Boodle Street	0	0	0	0	0	0	0
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	0	0	0	0	0	0	0
	NS2B-LDN031.0 to South Kurumbul Road	0	0	0	0	0	0	0
	South Kurumbul Road to Cunningham Highway	0	0	0	0	0	0	0
	Cunningham Highway to Eukabilla Road	0	0	0	0	0	0	0
McDougalls Road	B2G-LDN049.8 to McDougalls Road	0	0	0	0	0	0	0
	McDougalls Road to Cunningham Highway	0	0	0	0	0	0	0
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	0	0	0	0	0	0	0
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	0	0	0	0	0	0	0
	Mooroobie Lane to Wondalli Kurumbul Road	0	0	0	0	0	0	0
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	0	0	0	0	0	0	0
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	0	0	0	0	0	0	0
Silo Street	Barwon Highway to GrainCorp Talwood	0	0	0	0	0	0	0
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	0	0	0	0	0	0	0
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	0	0	0	0	0	0	0
Springborg Road	Cunningham highway to B2G-LDN037.6	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	0	0	0	0	0	0	0
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	0	0	0	0	0	0	0
	B2G-LDN067.6 to Millmerran-Inglewood Road	0	0	0	0	0	0	0
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	0	0	0	0	0	0	0
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	0	0	0	0	0	0	0
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	0	0	0	0	0	0	0
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	0	0	0	0	0	0	0
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	0	0	0	0	0	0	0
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	0	0	0	0	0	0	0
	B2G-LDN006.3 to Wondalli Kurumbul Road	0	0	0	0	0	0	0
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	0	0	0	0	0	0	0
	Yelarbon Kurumbul Road to B2G-LDN020.3	0	0	0	0	0	0	0
	B2G-LDN020.3 to B2G-LDN025.9	0	0	0	0	0	0	0
	B2G-LDN025.9 to Cunningham Highway	0	0	0	0	0	0	0
Local Government Roads: Moree Plains Shire Council								
Boggabilla Weir Access	River Road to Boggabilla Weir	0	0	0	0	0	0	0
River Road	Newell Highway to Boggabilla Weir Access	0	0	0	0	0	0	0
Local Government Roads: Toowoomba Regional Council								
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	0	0	0	0	0	0	0
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	0	0	0	0	0	0	0
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	0	0	0	0	0	0	0
	B2G-LDN188.2 to Gore Highway	0	0	0	0	0	0	0
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	0	0	0	0	0	0	0
Blackwell Road	Gore Highway to Millmerran Quarry	0	0	0	0	0	0	0
	Millmerran Quarry to B2G-LDN120.2	0	0	0	0	0	0	0
	B2G-LDN120.2 to Millmerran-Inglewood Road	0	0	0	0	0	0	0
Bligh Street	Six Mile Road to Boral Concrete Millmerran	0	0	0	0	0	0	0
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	0	0	0	0	0	0	0
	Brimblecombe Road to WL 194467R	0	0	0	0	0	0	0
Bushy Lane	B2G-LDN183.0 to Gore Highway	0	0	0	0	0	0	0
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	0	0	0	0	0	0	0
	Saleyards Road to Gore Highway	0	0	0	0	0	0	0
Chamberlain Road	Warrego Highway to B2G-LDN204.2	0	0	0	0	0	0	0
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	0	0	0	0	0	0	0
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	0	0	0	0	0	0	0
Dieckmann Road	B2G-LDN150.5 to Gore Highway	0	0	0	0	0	0	0
Draper Road	Steger Road to B2G-FBW206.9	0	0	0	0	0	0	0
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	0	0	0	0	0	0	0
	Access Track to Greenwattle Street	0	0	0	0	0	0	0
Florence Street	Gore Highway to West Street	0	0	0	0	0	0	0
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	0
Fysh Road	B2G-LDN147.1 to Gore Highway	0	0	0	0	0	0	0
Gap Road	Gore Highway to Grevillea Street	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	0	0	0	0	0	0	0
Gilgai Lane	B2G-LDN144.6 to Gore Highway	0	0	0	0	0	0	0
Grevillea Street	Boral Concrete Pittsworth to Gap Road	0	0	0	0	0	0	0
Hall Road	B2G-LDN139.0 to Gore Highway	0	0	0	0	0	0	0
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	0	0	0	0	0	0	0
	B2G-LDN116.0 to Millmerran-Inglewood Road	0	0	0	0	0	0	0
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	0	0	0	0	0	0	0
Kahler Road	Murlaggan Road to B2G-LDN165.6	0	0	0	0	0	0	0
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	0	0	0	0	0	0	0
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	0	0	0	0	0	0	0
	Millmerran-Inglewood Road to Commodore Mine	0	0	0	0	0	0	0
Leesons Road	Warrego Highway to Steger Road	0	0	0	0	0	0	0
	Steger Road to B2G-LDN206.3	0	0	0	0	0	0	0
Linthorpe Road	Gore Highway to B2G-LDN175.5	0	0	0	0	0	0	0
Linthorpe Valley Road	Geitz Road to Gore Highway	0	0	0	0	0	0	0
Lochaber Road	Gore Highway to B2G-LDN172.0	0	0	0	0	0	0	0
	B2G-LDN172.0 to B2G-LDN172.6	0	0	0	0	0	0	0
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	0	0	0	0	0	0	0
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	0	0	0	0	0	0	0
	B2G-LDN112.1 to Millwood Road	0	0	0	0	0	0	0
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	0	0	0	0	0	0	0
Murlaggan Road	B2G-LDN164.3 to Kahler Road	0	0	0	0	0	0	0
	Kahler Road to Gore Highway	0	0	0	0	0	0	0
Oakey - Pittsworth Road	Gore Highway to B2G-LDN171.0	0	0	0	0	0	0	0
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	0	0	0	0	0	0	0
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	0	0	0	0	0	0	0
	B2G-LDN128.2 to B2G-LDN130.0	0	0	0	0	0	0	0
	B2G-LDN130.0 to Millmerran-Inglewood Road	0	0	0	0	0	0	0
Paint Mine Road	Gore Highway to B2G-LDN173.5	0	0	0	0	0	0	0
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	0	0	0	0	0	0	0
Quarry Road Access	Tummalville Road to Quarry Road Quarry	0	0	0	0	0	0	0
Saleyards Road	Campbell Street to Gore Highway	0	0	0	0	0	0	0
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0	0	0
Scragg Road	Commodore Peak Road to B2G-LDN123.6	0	0	0	0	0	0	0
	B2G-LDN123.6 to B2G-LDN123.8	0	0	0	0	0	0	0
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	0	0	0	0	0	0	0
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	0	0	0	0	0	0	0
	New Hope Recycled Water Pipeline to Draper Road	0	0	0	0	0	0	0
	Draper Road to Leesons Road	0	0	0	0	0	0	0
Tummalville Road	Access Track to Gore Highway	0	0	0	0	0	0	0
Turallin Road	Gore Highway to the Turallin Facility	0	0	0	0	0	0	0
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	0	0	0	0	0	0	0
	B2G-LDN153.1 to Gore Highway	0	0	0	0	0	0	0

Road name	Road section	Inland Rail package						Total Inland Rail traffic
		North Star to NSW/ QLD Border	The Project	Gowrie to Helidon	Helidon to Calvert	Calvert to Kagaru	Kagaru to Acacia Ridge/ Bromelton	
	Gore Highway to B2G-LDN150.9	0	0	0	0	0	0	0
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	0	0	0	0	0	0	0
West Street	Gore Highway to Florence Street	0	0	0	0	0	0	0
	Florence Street to Six Mile Road	0	0	0	0	0	0	0
Yarranlea Road	Gore Highway to B2G-LDN161.0	0	0	0	0	0	0	0
	B2G-LDN161.0 to Desmonds Lane	0	0	0	0	0	0	0

5.11.2.2 With and without traffic volumes

Road link volumes

The road link traffic comparison assesses the percentage increase in cumulative traffic due to the construction of the Projects. The comparison outlines the traffic volumes anticipated on the road network in each year of construction in the without and with Project scenarios. A percentage increase is then calculated using the following formula:

$$\% \text{ increase} = 1 - (t_{\text{with Project}} / t_{\text{without Project}})$$

Where:

- $t_{\text{with Project}}$ = traffic volumes 'with Project'
- $t_{\text{without Project}}$ = traffic volumes 'without Project'.

Table 5.127 and Table 5.128 outline the anticipated daily background traffic volumes and daily Project traffic volumes during the construction years for the gazettal/northbound/eastbound (G) and against gazettal/southbound/westbound (AG) directions, respectively. These tables also provide the per cent increase for all road links, with cells shaded in red where the per cent increase is larger than the 5 per cent threshold specified within the GTIA.

Table 5.127 Background and cumulative Project traffic volumes (G/NB/EB)

Road name	Road section	Background traffic daily volumes						Cumulative Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
State-Controlled Roads: Department of Transport and Main Roads																			
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	1,097	1,097	1,097	1,097	1,097	1,097	49	64	65	61	40	0	4%	6%	6%	6%	4%	0%
	Ch 0.8 km to Ch 2.0 km	1,097	1,097	1,097	1,097	1,097	1,097	49	64	65	61	40	0	4%	6%	6%	6%	4%	0%
	Ch 2.0 km to Ch 45.9 km	333	333	333	333	333	333	49	61	61	61	40	0	15%	18%	18%	18%	12%	0%
	Ch 45.9 km to Ch 88.0 km	333	333	333	333	333	333	45	56	56	56	37	0	14%	17%	17%	17%	11%	0%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	121	121	121	121	121	121	45	56	56	56	37	0	37%	46%	46%	46%	31%	0%
	Ch 1.6 km to Ch 66.8 km	121	121	121	121	121	121	42	52	52	52	35	0	35%	43%	43%	43%	29%	0%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	99	99	99	99	99	99	42	52	52	52	35	0	43%	53%	53%	53%	35%	0%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	2,604	2,692	2,783	2,877	2,974	3,075	0	3	4	4	0	0	0%	0%	0%	0%	0%	0%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	833	841	850	859	868	877	51	51	11	9	0	0	6%	6%	1%	1%	0%	0%
	Ch 96.2 km to Ch 97.5 km	833	841	850	859	868	877	77	77	85	233	0	0	9%	9%	10%	27%	0%	0%
	Ch 97.5 km to Ch 105.7 km	833	841	850	859	868	877	574	124	85	233	0	0	69%	15%	10%	27%	0%	0%
	Ch 105.7 km to Ch 107.4 km	833	841	850	859	868	877	472	328	201	267	116	0	57%	39%	24%	31%	13%	0%
	Ch 107.4 km to Ch 107.6 km	1,144	1,159	1,174	1,189	1,205	1,220	458	314	185	237	102	0	40%	27%	16%	20%	8%	0%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	681	686	692	697	702	708	458	314	185	237	102	0	67%	46%	27%	34%	15%	0%
	Ch 2.0 km to Ch 3.9 km	681	686	692	697	702	708	458	312	188	237	102	0	67%	45%	27%	34%	15%	0%
	Ch 3.9 km to Ch 10.2 km	681	686	692	697	702	708	227	300	176	186	95	0	33%	44%	25%	27%	14%	0%
	Ch 10.2 km to Ch 13.9 km	681	686	692	697	702	708	213	285	157	171	81	0	31%	42%	23%	25%	12%	0%
	Ch 13.9 km to Ch 18.5 km	681	686	692	697	702	708	231	281	153	147	74	0	34%	41%	22%	21%	11%	0%
	Ch 18.5 km to Ch 27.1 km	681	686	692	697	702	708	189	190	91	58	9	0	28%	28%	13%	8%	1%	0%
	Ch 27.1 km to Ch 29.3 km	681	686	692	697	702	708	211	197	85	61	16	0	31%	29%	12%	9%	2%	0%
	Ch 29.3 km to Ch 34.7 km	681	686	692	697	702	708	191	147	86	62	16	0	28%	21%	12%	9%	2%	0%
	Ch 34.7 km to Ch 39.6 km	681	686	692	697	702	708	191	147	86	62	16	0	28%	21%	12%	9%	2%	0%
	Ch 39.6 km to Ch 40.3 km	681	686	692	697	702	708	220	218	86	65	23	0	32%	32%	12%	9%	3%	0%
	Ch 40.3 km to Ch 40.5 km	681	686	692	697	702	708	70	68	85	64	23	0	10%	10%	12%	9%	3%	0%
	Ch 40.5 km to Ch 43.9 km	681	686	692	697	702	708	67	108	72	64	64	0	10%	16%	10%	9%	9%	0%
	Ch 43.9 km to Ch 46.3 km	681	686	692	697	702	708	24	66	30	22	22	0	4%	10%	4%	3%	3%	0%
	Ch 46.3 km to Ch 88.0 km	681	686	692	697	702	708	24	30	30	22	22	0	4%	4%	4%	3%	3%	0%
	Ch 88.0 km to Ch 88.2 km	1,685	1,689	1,694	1,699	1,703	1,708	47	63	66	53	42	0	3%	4%	4%	3%	2%	0%
	Ch 88.2 km to Ch 90.0 km	1,685	1,689	1,694	1,699	1,703	1,708	22	48	39	28	22	0	1%	3%	2%	2%	1%	0%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	61,406	64,578	67,914	71,423	75,113	78,993	196	254	255	313	220	2	0%	0%	0%	0%	0%	0%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	19,496	20,287	21,110	21,967	22,858	23,785	196	254	255	313	220	2	1%	1%	1%	1%	1%	0%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	3,262	3,377	3,496	3,619	3,746	3,878	441	581	243	246	178	0	14%	17%	7%	7%	5%	0%
	Ch 2.2 km to Ch 5.4 km	3,262	3,377	3,496	3,619	3,746	3,878	995	809	224	221	163	0	31%	24%	6%	6%	4%	0%
	Ch 5.4 km to Ch 6.7 km	3,262	3,377	3,496	3,619	3,746	3,878	981	795	210	207	148	0	30%	24%	6%	6%	4%	0%
	Ch 6.7 km to Ch 7.7 km	3,262	3,377	3,496	3,619	3,746	3,878	974	788	303	199	141	0	30%	23%	9%	6%	4%	0%
	Ch 7.7 km to Ch 11.2 km	3,262	3,377	3,496	3,619	3,746	3,878	956	754	286	182	127	0	29%	22%	8%	5%	3%	0%
	Ch 11.2 km to Ch 15.3 km	3,262	3,377	3,496	3,619	3,746	3,878	949	747	278	185	121	0	29%	22%	8%	5%	3%	0%

Road name	Road section	Background traffic daily volumes						Cumulative Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Ch 15.3 km to Ch 17.5 km	3,262	3,377	3,496	3,619	3,746	3,878	677	458	323	167	115	0	21%	14%	9%	5%	3%	0%
	Ch 17.5 km to Ch 19.0 km	3,262	3,377	3,496	3,619	3,746	3,878	670	451	316	162	109	0	21%	13%	9%	4%	3%	0%
	Ch 19.0 km to Ch 20.3 km	3,262	3,377	3,496	3,619	3,746	3,878	663	444	308	161	102	0	20%	13%	9%	4%	3%	0%
	Ch 20.3 km to Ch 21.5 km	1,715	1,770	1,826	1,884	1,943	2,005	656	437	301	154	95	0	38%	25%	17%	8%	5%	0%
	Ch 21.5 km to Ch 23.2 km	1,715	1,770	1,826	1,884	1,943	2,005	645	409	288	154	88	0	38%	23%	16%	8%	5%	0%
	Ch 23.2 km to Ch 25.0 km	1,715	1,770	1,826	1,884	1,943	2,005	370	314	309	188	111	0	22%	18%	17%	10%	6%	0%
	Ch 25.0 km to Ch 30.1 km	1,715	1,770	1,826	1,884	1,943	2,005	370	1,518	1,581	152	105	0	22%	86%	87%	8%	5%	0%
	Ch 30.1 km to Ch 38.7 km	1,715	1,770	1,826	1,884	1,943	2,005	381	166	180	187	121	0	22%	9%	10%	10%	6%	0%
	Ch 38.7 km to Ch 41.1 km	1,715	1,770	1,826	1,884	1,943	2,005	381	154	188	176	118	0	22%	9%	10%	9%	6%	0%
	Ch 41.1 km to Ch 41.7 km	1,715	1,770	1,826	1,884	1,943	2,005	381	154	188	174	116	0	22%	9%	10%	9%	6%	0%
	Ch 41.7 km to Ch 43.2 km	1,715	1,770	1,826	1,884	1,943	2,005	396	435	220	188	130	0	23%	25%	12%	10%	7%	0%
	Ch 43.2 km to Ch 44.7 km	1,715	1,770	1,826	1,884	1,943	2,005	410	443	227	203	144	0	24%	25%	12%	11%	7%	0%
	Ch 44.7 km to Ch 47.6 km	1,715	1,770	1,826	1,884	1,943	2,005	424	457	241	201	157	0	25%	26%	13%	11%	8%	0%
	Ch 47.6 km to Ch 52.2 km	1,715	1,770	1,826	1,884	1,943	2,005	438	471	255	204	171	0	26%	27%	14%	11%	9%	0%
	Ch 52.2 km to Ch 53.3 km	1,715	1,770	1,826	1,884	1,943	2,005	451	481	240	218	185	0	26%	27%	13%	12%	10%	0%
	Ch 53.3 km to Ch 60.8 km	1,715	1,770	1,826	1,884	1,943	2,005	460	496	242	239	193	0	27%	28%	13%	13%	10%	0%
	Ch 60.8 km to Ch 63.0 km	1,715	1,770	1,826	1,884	1,943	2,005	201	219	219	231	189	0	12%	12%	12%	12%	10%	0%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	1,045	1,051	1,057	1,063	1,069	1,076	306	326	334	336	294	0	29%	31%	32%	32%	28%	0%
	Ch 0.7 km to Ch 0.8 km	1,045	1,051	1,057	1,063	1,069	1,076	306	324	324	336	294	0	29%	31%	31%	32%	28%	0%
	Ch 0.8 km to Ch 1.4 km	1,045	1,051	1,057	1,063	1,069	1,076	306	325	325	336	294	0	29%	31%	31%	32%	28%	0%
	Ch 1.4 km to Ch 3.0 km	1,045	1,051	1,057	1,063	1,069	1,076	306	324	324	363	297	0	29%	31%	31%	34%	28%	0%
	Ch 3.0 km to Ch 13.0 km	1,045	1,051	1,057	1,063	1,069	1,076	74	91	91	131	65	0	7%	9%	9%	12%	6%	0%
	Ch 13.0 km to Ch 121.6 km	1,045	1,051	1,057	1,063	1,069	1,076	74	91	91	91	60	0	7%	9%	9%	9%	6%	0%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	55,729	55,729	55,729	55,729	55,729	55,729	196	254	255	313	220	2	0%	0%	0%	1%	0%	0%
	Ch 3.7 km to Ch 6.4 km	54,051	55,447	56,879	58,347	59,854	61,399	196	254	255	313	220	2	0%	0%	0%	1%	0%	0%
	Ch 6.4 km to Ch 8.3 km	70,251	73,756	77,435	81,298	85,353	89,611	196	254	255	313	220	2	0%	0%	0%	0%	0%	0%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	1,280	1,280	1,280	1,280	1,280	1,280	74	91	91	91	60	0	6%	7%	7%	7%	5%	0%
	Ch 220.1 km to Ch 222.4 km	1,289	1,289	1,289	1,289	1,289	1,289	25	34	35	31	20	0	2%	3%	3%	2%	2%	0%
	Ch 222.4 km to Ch 224.1 km	1,289	1,289	1,289	1,289	1,289	1,289	25	42	44	31	20	0	2%	3%	3%	2%	2%	0%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	19,496	20,287	21,110	21,967	22,858	23,785	196	254	255	313	220	2	1%	1%	1%	1%	1%	0%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	445	464	483	503	524	546	285	306	31	10	5	0	64%	66%	6%	2%	1%	0%
	Ch 2.5 km to Ch 3.5 km	445	464	483	503	524	546	274	342	66	53	22	0	62%	74%	14%	10%	4%	0%
	Ch 3.5 km to Ch 6.2 km	400	400	400	400	400	400	352	424	152	110	96	0	88%	106%	38%	27%	24%	0%
	Ch 6.2 km to Ch 9.0 km	400	400	400	400	400	400	345	417	319	102	89	0	86%	104%	80%	26%	22%	0%
	Ch 9.0 km to Ch 13.1 km	400	400	400	400	400	400	331	402	217	88	75	0	83%	100%	54%	22%	19%	0%
	Ch 13.1 km to Ch 14.0 km	400	400	400	400	400	400	331	397	204	92	75	0	83%	99%	51%	23%	19%	0%
	Ch 14.0 km to Ch 17.3 km	400	400	400	400	400	400	314	366	173	150	70	0	79%	92%	43%	38%	17%	0%
	Ch 17.3 km to Ch 18.1 km	400	400	400	400	400	400	314	329	464	149	69	0	79%	82%	116%	37%	17%	0%
	Ch 18.1 km to Ch 21.8 km	400	400	400	400	400	400	307	322	457	142	61	0	77%	80%	114%	36%	15%	0%
	Ch 21.8 km to Ch 28.0 km	400	400	400	400	400	400	291	306	344	125	46	0	73%	77%	86%	31%	11%	0%
	Ch 28.0 km to Ch 33.0 km	400	400	400	400	400	400	277	291	329	108	29	0	69%	73%	82%	27%	7%	0%

Road name	Road section	Background traffic daily volumes						Cumulative Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Ch 33.0 km to Ch 35.6 km	400	400	400	400	400	400	263	277	310	94	14	0	66%	69%	78%	23%	4%	0%
	Ch 35.6 km to Ch 37.7 km	400	400	400	400	400	400	254	254	11	86	7	0	63%	64%	3%	22%	2%	0%
	Ch 37.7 km to Ch 39.8 km	400	400	400	400	400	400	254	294	11	86	7	0	63%	73%	3%	22%	2%	0%
	Ch 39.8 km to Ch 41.9 km	197	203	209	215	222	229	267	307	23	100	21	0	136%	152%	11%	46%	9%	0%
	Ch 41.9 km to Ch 45.9 km	197	203	209	215	222	229	30	82	31	29	24	0	15%	40%	15%	13%	11%	0%
	Ch 45.9 km to Ch 47.6 km	197	203	209	215	222	229	37	89	38	36	31	0	19%	44%	18%	17%	14%	0%
	Ch 47.6 km to Ch 53.3 km	197	203	209	215	222	229	37	118	38	36	31	0	19%	58%	18%	17%	14%	0%
	Ch 53.3 km to Ch 55.7 km	197	203	209	215	222	229	46	136	47	86	38	0	23%	67%	23%	40%	17%	0%
	Ch 55.7 km to Ch 56.6 km	197	203	209	215	222	229	46	68	47	86	38	0	23%	33%	23%	40%	17%	0%
	Ch 56.6 km to Ch 59.2 km	197	203	209	215	222	229	122	215	147	186	138	0	62%	106%	71%	86%	62%	0%
	Ch 59.2 km to Ch 61.0 km	197	203	209	215	222	229	122	215	147	215	138	0	62%	106%	71%	100%	62%	0%
	Ch 61.0 km to Ch 65.7 km	197	203	209	215	222	229	235	328	133	201	124	0	120%	162%	64%	93%	56%	0%
	Ch 65.7 km to Ch 68.7 km	197	203	209	215	222	229	547	322	129	205	117	0	278%	159%	62%	95%	52%	0%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	134	142	151	160	170	180	14	75	76	14	14	0	11%	53%	51%	9%	8%	0%
	Ch 2.0 km to Ch 2.2 km	134	142	151	160	170	180	0	60	61	0	0	0	0%	42%	41%	0%	0%	0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	6,512	6,708	6,909	7,116	7,330	7,550	196	254	255	313	220	2	3%	4%	4%	4%	3%	0%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	6,512	6,708	6,909	7,116	7,330	7,550	196	254	255	313	220	2	3%	4%	4%	4%	3%	0%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	127	131	136	140	145	150	0	40	0	0	0	0	0%	31%	0%	0%	0%	0%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	1,836	1,836	1,836	1,836	1,836	1,836	98	99	99	98	98	0	5%	5%	5%	5%	5%	0%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	3,091	3,112	3,132	3,153	3,174	3,195	4	16	11	4	0	0	0%	1%	0%	0%	0%	0%
	Ch 6.0 km to Ch 6.4 km	1,684	1,684	1,684	1,684	1,684	1,684	4	14	11	0	0	0	0%	1%	1%	0%	0%	0%
	Ch 6.4 km to Ch 8.3 km	1,684	1,684	1,684	1,684	1,684	1,684	7	32	15	4	0	0	0%	2%	1%	0%	0%	0%
	Ch 8.3 km to Ch 9.2 km	1,684	1,684	1,684	1,684	1,684	1,684	9	32	15	85	3	0	1%	2%	1%	5%	0%	0%
	Ch 9.2 km to Ch 10.0 km	2,261	2,394	2,534	2,682	2,839	3,005	16	77	23	27	1	0	1%	3%	1%	1%	0%	0%
	Ch 10.0 km to Ch 10.1 km	2,261	2,394	2,534	2,682	2,839	3,005	37	98	45	48	22	0	2%	4%	2%	2%	1%	0%
	Ch 10.1 km to Ch 10.3 km	2,261	2,394	2,534	2,682	2,839	3,005	22	159	27	22	22	0	1%	7%	1%	1%	1%	0%
	Ch 10.3 km to Ch 12.1 km	2,261	2,394	2,534	2,682	2,839	3,005	22	160	27	36	28	0	1%	7%	1%	1%	1%	0%
	Ch 12.1 km to Ch 14.5 km	2,261	2,394	2,534	2,682	2,839	3,005	22	254	254	35	24	0	1%	11%	10%	1%	1%	0%
	Ch 14.5 km to Ch 16.3 km	1,200	1,229	1,259	1,289	1,320	1,352	17	279	279	30	10	0	1%	23%	22%	2%	1%	0%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	6,775	6,978	7,187	7,403	7,625	7,854	0	3	4	4	0	0	0%	0%	0%	0%	0%	0%
	Ch 26.9 km to Ch 27.1 km	6,775	6,978	7,187	7,403	7,625	7,854	42	45	47	47	42	0	1%	1%	1%	1%	1%	0%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	2,125	2,156	2,187	2,219	2,251	2,284	173	236	460	259	216	2	8%	11%	21%	12%	10%	0%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	2,125	2,156	2,187	2,219	2,251	2,284	173	236	460	259	216	2	8%	11%	21%	12%	10%	0%
	Ch 0.6 km to Ch 3.2 km	2,125	2,156	2,187	2,219	2,251	2,284	330	412	126	126	78	0	16%	19%	6%	6%	3%	0%
	Ch 3.2 km to Ch 4.1 km	2,125	2,156	2,187	2,219	2,251	2,284	330	412	126	126	78	0	16%	19%	6%	6%	3%	0%
	Ch 4.1 km to Ch 13.0 km	2,125	2,156	2,187	2,219	2,251	2,284	343	483	143	148	80	0	16%	22%	7%	7%	4%	0%
Toowoomba Bypass On-ramp (319B)	Warrego Highway to Toowoomba Bypass	2,125	2,156	2,187	2,219	2,251	2,284	268	295	20	8	0	0	13%	14%	1%	0%	0%	0%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	2,125	2,156	2,187	2,219	2,251	2,284	0	133	0	0	0	0	0%	6%	0%	0%	0%	0%

Road name	Road section	Background traffic daily volumes						Cumulative Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	2,125	2,156	2,187	2,219	2,251	2,284	15	72	20	28	2	0	1%	3%	1%	1%	0%	0%
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	35,886	37,242	38,650	40,111	41,627	43,200	196	254	255	313	220	2	1%	1%	1%	1%	1%	0%
	Ch 7.2 km to Ch 15.1 km	35,886	37,242	38,650	40,111	41,627	43,200	196	254	255	313	220	2	1%	1%	1%	1%	1%	0%
	Ch 15.1 km to Ch 18.9 km	17,811	18,192	18,580	18,977	19,382	19,796	196	254	255	313	220	2	1%	1%	1%	2%	1%	0%
	Ch 18.9 km to Ch 28.9 km	16,196	16,522	16,855	17,195	17,542	17,895	170	228	229	230	227	2	1%	1%	1%	1%	1%	0%
	Ch 28.9 km to Ch 36.6 km	10,701	10,701	10,701	10,701	10,701	10,701	170	228	229	230	227	2	2%	2%	2%	2%	2%	0%
	Ch 36.6 km to Ch 55.5 km	13,525	13,889	14,263	14,647	15,041	15,445	266	445	351	239	244	2	2%	3%	2%	2%	2%	0%
	Ch 55.5 km to Ch 75.4 km	13,525	13,889	14,263	14,647	15,041	15,445	266	445	351	239	244	2	2%	3%	2%	2%	2%	0%
	Ch 75.4 km to Ch 79.6 km	12,183	12,360	12,539	12,720	12,905	13,092	155	212	442	241	198	2	1%	2%	4%	2%	2%	0%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	11,477	12,728	14,116	15,654	17,360	19,253	42	45	47	47	42	0	0%	0%	0%	0%	0%	0%
	Ch 0.4 km to Ch 1.5 km	11,477	12,728	14,116	15,654	17,360	19,253	310	340	62	55	42	0	3%	3%	0%	0%	0%	0%
	Ch 1.5 km to Ch 2.4 km	11,477	12,728	14,116	15,654	17,360	19,253	291	292	40	109	31	0	3%	2%	0%	1%	0%	0%
	Ch 2.4 km to Ch 4.5 km	6,917	6,999	7,082	7,166	7,251	7,338	276	277	25	21	14	0	4%	4%	0%	0%	0%	0%
	Ch 4.5 km to Ch 5.0 km	6,917	6,999	7,082	7,166	7,251	7,338	276	277	25	21	14	0	4%	4%	0%	0%	0%	0%
	Ch 5.0 km to Ch 5.3 km	6,917	6,999	7,082	7,166	7,251	7,338	276	277	25	21	14	0	4%	4%	0%	0%	0%	0%
	Ch 5.3 km to Ch 6.2 km	6,917	6,999	7,082	7,166	7,251	7,338	276	277	45	21	14	0	4%	4%	1%	0%	0%	0%
Warrego Highway Off-ramp (18B)	Ch 4.5 km to Ch 5.0 km	99	100	102	103	104	105	276	277	45	21	14	0	278%	276%	44%	21%	14%	0%
State-Controlled Roads: Transport for New South Wales																			
Newell Highway	River Road to Queensland/NSW Border	2,562	2,645	2,731	2,820	2,912	3,007	23	26	18	8	0	0	1%	1%	1%	0%	0%	0%
Local Government Roads: Balonne Shire Council																			
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	40	40	40	41	41	41	42	52	52	52	35	0	107%	130%	129%	128%	84%	0%
Local Government Roads: Goondiwindi Regional Council																			
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	10	10	10	10	10	10	0	20	12	6	0	0	0%	203%	119%	61%	0%	0%
Bybera Road	Cunningham Highway to B2G-LDN060.4	43	43	43	44	44	44	231	43	13	51	7	0	543%	101%	30%	117%	16%	0%
	B2G-LDN060.4 to Earthworks Area 2A	43	43	43	44	44	44	188	0	0	0	0	0	441%	0%	0%	0%	0%	0%
Cemetery Road	Access Track to Moorobie Lane	112	116	119	123	127	131	0	40	0	0	0	0	0%	35%	0%	0%	0%	0%
	Cunningham Highway to GrainCorp Goondiwindi	68	68	68	69	69	69	25	31	31	31	20	0	36%	45%	45%	45%	29%	0%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	37	38	38	38	39	39	51	51	11	9	0	0	136%	135%	30%	22%	0%	0%
	Coolmunda Dam Access to Cunningham Highway	37	38	38	38	39	39	51	51	11	9	0	0	136%	135%	30%	22%	0%	0%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	60	61	61	61	62	62	15	17	19	14	14	0	24%	28%	30%	23%	23%	0%
	B2G-LDN055.4 to B2G-LDN054.2	60	61	61	61	62	62	14	17	14	14	14	0	24%	27%	24%	23%	23%	0%
	Cunningham Highway to B2G-LDN052.8	60	61	61	61	62	62	15	18	20	15	14	0	24%	29%	32%	25%	23%	0%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	24	24	24	24	24	24	284	325	15	12	7	0	1208%	1370%	61%	50%	29%	0%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	22	23	23	23	24	24	14	14	16	30	14	0	64%	63%	69%	130%	60%	0%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	11	11	12	12	13	13	32	33	34	41	22	0	288%	288%	292%	335%	175%	0%
	NS2B-LDN033.2 to NS2B-LDN035.6	11	11	12	12	13	13	12	12	19	24	7	0	111%	109%	161%	201%	58%	0%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	16	16	16	16	17	17	497	95	0	0	0	0	3109%	589%	0%	0%	0%	0%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	8	8	8	8	9	9	9	7	9	10	7	0	123%	91%	108%	123%	82%	0%

Road name	Road section	Background traffic daily volumes						Cumulative Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	13	13	14	14	15	15	0	69	0	0	0	0	0%	514%	0%	0%	0%	0%
Hunt Street	Leichhardt Highway to Boodle Street	10	10	10	10	10	10	0	20	12	6	0	0	0%	203%	119%	61%	0%	0%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	922	952	983	1,015	1,048	1,082	13	5	12	18	0	0	1%	0%	1%	2%	0%	0%
	NS2B-LDN031.0 to South Kurumbul Road	922	952	983	1,015	1,048	1,082	163	194	12	18	0	0	18%	20%	1%	2%	0%	0%
	South Kurumbul Road to Cunningham Highway	922	952	983	1,015	1,048	1,082	150	191	1	1	0	0	16%	20%	0%	0%	0%	0%
	Cunningham Highway to Eukabilla Road	879	886	892	899	906	913	45	36	31	24	22	0	5%	4%	4%	3%	2%	0%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	5	5	5	5	5	5	32	32	10	30	7	0	689%	684%	213%	625%	146%	0%
	McDougalls Road to Cunningham Highway	5	5	5	5	5	5	32	32	10	30	7	0	689%	684%	213%	625%	146%	0%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	18	18	19	20	20	21	0	40	0	0	0	0	0%	220%	0%	0%	0%	0%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	18	18	19	20	20	21	0	81	0	0	0	0	0%	440%	0%	0%	0%	0%
	Mooroobie Lane to Wondalli Kurumbul Road	18	18	19	20	20	21	0	81	0	0	0	0	0%	440%	0%	0%	0%	0%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	14	14	15	15	16	16	0	69	0	0	0	0	0%	484%	0%	0%	0%	0%
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	3	3	3	3	3	3	29	8	26	16	7	0	1135%	319%	932%	575%	251%	0%
Silo Street	Barwon Highway to GrainCorp Talwood	60	60	60	60	60	60	3	4	4	4	2	0	5%	6%	6%	6%	4%	0%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	32	33	35	36	37	38	13	3	12	17	0	0	40%	10%	33%	48%	0%	0%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	44	44	44	44	44	44	4	5	5	5	3	0	9%	11%	11%	11%	7%	0%
Springborg Road	Cunningham highway to B2G-LDN037.6	4	5	5	5	5	5	24	9	21	17	7	0	537%	193%	466%	381%	159%	0%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	4	5	5	5	5	5	150	190	0	0	0	0	3347%	4224%	0%	0%	0%	0%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	9	10	10	10	11	11	19	19	11	19	7	0	209%	203%	114%	185%	67%	0%
	B2G-LDN067.6 to Millmerran-Inglewood Road	9	10	10	10	11	11	329	104	13	19	7	0	3540%	1086%	133%	188%	70%	0%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	178	178	178	178	179	179	2	11	11	0	0	0	1%	6%	6%	0%	0%	0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	12	12	12	12	12	12	109	158	83	112	79	0	926%	1329%	695%	931%	651%	0%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	15	15	16	16	17	17	0	81	0	0	0	0	0%	527%	0%	0%	0%	0%
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	9	10	10	10	11	11	11	20	9	50	7	0	118%	202%	90%	480%	66%	0%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	10	10	10	10	10	11	0	40	0	0	0	0	0%	395%	0%	0%	0%	0%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	32	33	35	36	37	38	18	10	18	26	7	0	55%	31%	53%	73%	19%	0%
	B2G-LDN006.3 to Wondalli Kurumbul Road	32	33	35	36	37	38	14	95	26	37	14	0	45%	285%	74%	104%	39%	0%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	32	33	35	36	37	38	14	14	26	37	14	0	45%	43%	74%	104%	39%	0%
	Yelarbon Kurumbul Road to B2G-LDN020.3	32	33	35	36	37	38	44	23	51	51	22	0	135%	69%	149%	143%	59%	0%
	B2G-LDN020.3 to B2G-LDN025.9	31	31	31	32	32	32	51	30	78	61	29	0	164%	97%	249%	193%	90%	0%
	B2G-LDN025.9 to Cunningham Highway	31	31	31	32	32	32	91	128	104	85	43	0	294%	412%	332%	268%	136%	0%
Local Government Roads: Moree Plains Shire Council																			
Boggabilla Weir Access	River Road to Boggabilla Weir	11	11	11	12	12	13	31	55	46	2	0	0	295%	495%	406%	17%	0%	0%
River Road	Newell Highway to Boggabilla Weir Access	11	11	11	12	12	13	31	55	46	2	0	0	295%	495%	406%	17%	0%	0%
Local Government Roads: Toowoomba Regional Council																			
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	5,537	5,861	6,204	6,567	6,951	7,357	1	1	1	1	1	0	0%	0%	0%	0%	0%	0%

Road name	Road section	Background traffic daily volumes						Cumulative Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	3,248	3,259	3,271	3,282	3,294	3,305	98	98	98	98	98	0	3%	3%	3%	3%	3%	0%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	5,994	6,015	6,036	6,057	6,078	6,099	0	1	1	0	0	0	0%	0%	0%	0%	0%	0%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	141	146	151	157	162	168	576	310	15	4	0	0	407%	212%	10%	2%	0%	0%
	B2G-LDN188.2 to Gore Highway	141	146	151	157	162	168	590	325	30	28	15	0	418%	222%	20%	18%	9%	0%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	97	100	104	108	111	115	7	146	146	10	7	0	7%	145%	140%	9%	6%	0%
Blackwell Road	Gore Highway to Millmerran Quarry	21	22	22	22	22	22	0	0	0	42	4	0	0%	0%	0%	194%	20%	0%
	Millmerran Quarry to B2G-LDN120.2	21	22	22	22	22	22	0	0	0	87	11	0	0%	0%	0%	397%	50%	0%
	B2G-LDN120.2 to Millmerran-Inglewood Road	6	6	6	6	6	6	17	31	31	105	23	0	281%	516%	516%	1756%	388%	0%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	15	15	15	15	15	15	0	11	12	7	0	0	1%	76%	83%	45%	0%	0%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	58	59	60	62	63	65	24	54	56	25	14	0	42%	91%	92%	40%	23%	0%
	Brimblecombe Road to WL 194467R	60	61	63	66	68	70	10	39	39	10	0	0	17%	64%	62%	16%	0%	0%
Bushy Lane	B2G-LDN183.0 to Gore Highway	57	59	61	63	66	68	18	35	20	31	15	0	32%	59%	33%	49%	23%	0%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	587	612	637	664	692	721	106	116	117	132	109	0	18%	19%	18%	20%	16%	0%
	Saleyards Road to Gore Highway	1,111	1,158	1,206	1,256	1,309	1,363	106	115	116	112	106	0	10%	10%	10%	9%	8%	0%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	10	10	10	11	11	11	7	8	10	11	7	0	69%	78%	98%	103%	66%	0%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	17	17	17	17	17	17	14	16	103	15	14	0	82%	91%	594%	87%	82%	0%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	9	9	10	10	10	11	7	7	12	8	7	0	78%	76%	129%	82%	69%	0%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	11	11	11	12	12	12	15	301	63	37	14	0	139%	2745%	556%	321%	117%	0%
Draper Road	Steger Road to B2G-FBW206.9	25	25	26	26	26	27	14	14	14	14	14	0	56%	56%	55%	54%	54%	0%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	1,913	2,025	2,144	2,269	2,402	2,542	1	1	1	80	3	0	0%	0%	0%	4%	0%	0%
	Access Track to Greenwattle Street	1,913	2,025	2,144	2,269	2,402	2,542	1	1	1	1	1	0	0%	0%	0%	0%	0%	0%
Florence Street	Gore Highway to West Street	168	169	170	171	172	173	0	1	1	0	0	0	0%	1%	1%	0%	0%	0%
Forestry Road	Access Track to Millmerran-Inglewood Road	1	1	1	1	1	1	0	69	0	0	0	0	0%	5969%	0%	0%	0%	0%
	Millmerran-Inglewood Road to Earthworks Area 3B	1	1	1	1	1	1	0	69	0	0	0	0	0%	5969%	0%	0%	0%	0%
Fysh Road	B2G-LDN147.1 to Gore Highway	43	44	45	47	48	50	14	14	14	44	16	0	34%	33%	32%	95%	32%	0%
Gap Road	Gore Highway to Grevillea Street	683	705	727	750	774	799	0	1	7	2	0	0	0%	0%	1%	0%	0%	0%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	25	26	27	28	29	30	7	7	7	28	8	0	28%	28%	27%	99%	28%	0%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	15	16	16	17	17	18	14	15	24	26	14	0	91%	91%	148%	155%	81%	0%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	275	283	292	302	311	321	0	1	7	2	0	0	0%	0%	3%	1%	0%	0%
Hall Road	B2G-LDN139.0 to Gore Highway	1	1	1	1	1	1	8	21	21	24	8	0	708%	1735%	1682%	1847%	624%	0%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	25	25	25	25	25	25	0	136	292	0	0	0	0%	545%	1173%	0%	0%	0%
	B2G-LDN116.0 to Millmerran-Inglewood Road	25	25	25	25	25	25	0	136	292	12	1	0	0%	548%	1176%	49%	4%	0%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	11	12	13	13	14	15	0	0	0	79	2	0	0%	0%	0%	596%	13%	0%
Kahler Road	Murlaggan Road to B2G-LDN165.6	7	7	8	8	8	8	7	7	7	11	8	0	99%	96%	93%	138%	96%	0%
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	2,065	2,090	2,115	2,140	2,165	2,191	276	277	45	21	14	0	13%	13%	2%	1%	1%	0%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	42	42	42	42	42	42	0	136	0	0	0	0	0%	325%	0%	0%	0%	0%

Road name	Road section	Background traffic daily volumes						Cumulative Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Millmerran-Inglewood Road to Commodore Mine	1	1	1	1	1	1	0	0	177	0	0	0	0%	0%	19200%	0%	0%	0%
Leesons Road	Warrego Highway to Steger Road	40	41	41	42	42	43	14	148	14	94	16	0	36%	361%	35%	223%	38%	0%
	Steger Road to B2G-LDN206.3	40	41	41	42	42	43	20	154	45	100	16	0	50%	376%	108%	238%	38%	0%
Linthorpe Road	Gore Highway to B2G-LDN175.5	12	12	12	13	13	14	271	453	66	31	8	0	2340%	3770%	534%	241%	61%	0%
Linthorpe Valley Road	Geitz Road to Gore Highway	55	57	59	61	64	66	7	7	7	28	8	0	13%	13%	12%	45%	13%	0%
Lochaber Road	Gore Highway to B2G-LDN172.0	194	201	208	215	223	231	7	7	10	14	8	0	4%	4%	5%	6%	3%	0%
	B2G-LDN172.0 to B2G-LDN172.6	194	201	208	215	223	231	7	7	9	7	7	0	4%	4%	4%	3%	3%	0%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	3,210	3,231	3,253	3,274	3,296	3,317	4	15	10	4	0	0	0%	0%	0%	0%	0%	0%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	21	21	21	21	21	21	15	158	113	37	16	0	74%	762%	545%	177%	76%	0%
	B2G-LDN112.1 to Millwood Road	21	21	21	21	21	21	0	136	0	0	0	0	0%	654%	0%	0%	0%	0%
	Millwood Road to Kooroongarra Road	4	4	4	4	4	4	0	136	0	0	0	0	0%	3679%	0%	0%	0%	0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	115	115	115	115	115	115	11	71	69	15	0	0	10%	62%	60%	13%	0%	0%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	227	234	241	249	257	265	310	310	14	23	15	0	137%	133%	6%	9%	6%	0%
	Kahler Road to Gore Highway	227	234	241	249	257	265	317	317	21	34	22	0	140%	136%	9%	14%	9%	0%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	722	723	723	724	725	725	7	7	13	7	7	0	1%	1%	2%	1%	1%	0%
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	2,822	2,987	3,162	3,347	3,542	3,749	8	46	12	87	2	0	0%	2%	0%	3%	0%	0%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	292	305	317	331	344	359	3	20	20	30	3	0	1%	7%	6%	9%	1%	0%
	B2G-LDN128.2 to B2G-LDN130.0	292	305	317	331	344	359	279	20	20	30	3	0	96%	7%	6%	9%	1%	0%
	B2G-LDN130.0 to Millmerran-Inglewood Road	292	305	317	331	344	359	540	264	37	44	17	0	185%	87%	12%	13%	5%	0%
Paint Mine Road	Gore Highway to B2G-LDN173.5	26	27	28	29	30	31	7	8	8	12	8	0	27%	28%	27%	39%	27%	0%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	11	11	11	11	11	11	14	15	15	47	17	0	128%	129%	137%	418%	152%	0%
Quarry Road Access	Tummalville Road to Quarry	2	2	2	2	2	2	0	164	0	38	5	0	0%	8816%	0%	1891%	239%	0%
Saleyards Road	Campbell Street to Gore Highway	200	208	217	226	235	245	0	1	1	27	3	0	0%	0%	0%	12%	1%	0%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	3	3	3	3	3	3	7	9	9	7	7	0	212%	268%	268%	212%	212%	0%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	10	10	10	10	10	10	14	16	103	15	14	0	141%	156%	1025%	151%	141%	0%
	B2G-LDN123.6 to B2G-LDN123.8	10	10	10	10	10	10	0	2	0	0	0	0	0%	15%	0%	0%	0%	0%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	158	163	168	173	179	185	0	1,550	1,550	73	6	0	0%	951%	922%	42%	4%	0%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	1,045	1,058	1,070	1,083	1,096	1,109	31	95	52	46	14	0	3%	9%	5%	4%	1%	0%
	New Hope Recycled Water Pipeline to Draper Road	1,045	1,058	1,070	1,083	1,096	1,109	20	44	44	21	14	0	2%	4%	4%	2%	1%	0%
	Draper Road to Leesons Road	1,045	1,058	1,070	1,083	1,096	1,109	6	30	30	7	0	0	1%	3%	3%	1%	0%	0%
Tummalville Road	Access Track to Gore Highway	103	106	110	113	117	120	0	164	0	38	5	0	0%	155%	0%	33%	4%	0%
Turallin Road	Gore Highway to the Turallin Facility	133	133	134	135	136	136	233	233	233	233	233	0	175%	174%	173%	172%	171%	0%
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	141	145	150	155	160	165	21	26	26	26	17	0	15%	18%	17%	17%	11%	0%
	B2G-LDN153.1 to Gore Highway	141	145	150	155	160	165	36	41	52	41	32	0	25%	28%	35%	26%	20%	0%
	Gore Highway to B2G-LDN150.9	66	68	70	73	75	77	0	0	0	8	2	0	0%	0%	0%	11%	2%	0%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	686	726	769	814	861	912	1	2	2	80	3	0	0%	0%	0%	10%	0%	0%

Road name	Road section	Background traffic daily volumes						Cumulative Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
West Street	Gore Highway to Florence Street	52	53	53	53	54	54	0	10	11	7	0	0	0%	19%	21%	13%	0%	0%
	Florence Street to Six Mile Road	15	15	15	15	15	15	0	11	12	7	0	0	1%	76%	83%	45%	0%	0%
Yarranlea Road	Gore Highway to B2G-LDN161.0	66	68	70	72	74	77	18	1,429	1,429	46	16	0	27%	2114%	2049%	65%	22%	0%
	B2G-LDN161.0 to Desmonds Lane	66	68	70	72	74	77	7	7	12	8	7	0	11%	10%	18%	11%	9%	0%

Table 5.128 Background and cumulative Project traffic volumes (AG/SB/WB)

Road name	Road section	Background traffic daily volumes						Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
State-Controlled Roads: Department of Transport and Main Roads																			
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	1,005	1,005	1,005	1,005	1,005	1,005	49	64	65	61	40	0	5%	6%	6%	6%	4%	0%
	Ch 0.8 km to Ch 2.0 km	1,005	1,005	1,005	1,005	1,005	1,005	49	64	65	61	40	0	5%	6%	6%	6%	4%	0%
	Ch 2.0 km to Ch 45.9 km	332	332	332	332	332	332	49	61	61	61	40	0	15%	18%	18%	18%	12%	0%
	Ch 45.9 km to Ch 88.0 km	332	332	332	332	332	332	45	56	56	56	37	0	14%	17%	17%	17%	11%	0%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	120	120	120	120	120	120	45	56	56	56	37	0	38%	47%	47%	47%	31%	0%
	Ch 1.6 km to Ch 66.8 km	120	120	120	120	120	120	42	52	52	52	35	0	35%	43%	43%	43%	29%	0%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	92	92	92	92	92	92	42	52	52	52	35	0	46%	57%	57%	57%	38%	0%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	2,938	3,037	3,139	3,245	3,355	3,468	0	3	4	4	0	0	0%	0%	0%	0%	0%	0%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	889	898	907	916	926	936	51	51	11	9	0	0	6%	6%	1%	1%	0%	0%
	Ch 96.2 km to Ch 97.5 km	889	898	907	916	926	936	77	77	85	233	0	0	9%	9%	9%	25%	0%	0%
	Ch 97.5 km to Ch 105.7 km	889	898	907	916	926	936	574	124	85	233	0	0	65%	14%	9%	25%	0%	0%
	Ch 105.7 km to Ch 107.4 km	889	898	907	916	926	936	472	328	201	267	116	0	53%	37%	22%	29%	13%	0%
	Ch 107.4 km to Ch 107.6 km	1,178	1,194	1,209	1,225	1,241	1,257	458	314	185	237	102	0	39%	26%	15%	19%	8%	0%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	729	735	740	746	751	757	458	314	185	237	102	0	63%	43%	25%	32%	14%	0%
	Ch 2.0 km to Ch 3.9 km	729	735	740	746	751	757	458	312	188	237	102	0	63%	42%	25%	32%	14%	0%
	Ch 3.9 km to Ch 10.2 km	729	735	740	746	751	757	227	300	176	186	95	0	31%	41%	24%	25%	13%	0%
	Ch 10.2 km to Ch 13.9 km	729	735	740	746	751	757	213	285	157	171	81	0	29%	39%	21%	23%	11%	0%
	Ch 13.9 km to Ch 18.5 km	729	735	740	746	751	757	231	281	153	147	74	0	32%	38%	21%	20%	10%	0%
	Ch 18.5 km to Ch 27.1 km	729	735	740	746	751	757	189	190	91	58	9	0	26%	26%	12%	8%	1%	0%
	Ch 27.1 km to Ch 29.3 km	729	735	740	746	751	757	211	197	85	61	16	0	29%	27%	12%	8%	2%	0%
	Ch 29.3 km to Ch 34.7 km	729	735	740	746	751	757	191	147	86	62	16	0	26%	20%	12%	8%	2%	0%
	Ch 34.7 km to Ch 39.6 km	729	735	740	746	751	757	191	147	86	62	16	0	26%	20%	12%	8%	2%	0%
	Ch 39.6 km to Ch 40.3 km	729	735	740	746	751	757	220	218	86	65	23	0	30%	30%	12%	9%	3%	0%
	Ch 40.3 km to Ch 40.5 km	729	735	740	746	751	757	70	68	85	64	23	0	10%	9%	12%	9%	3%	0%
	Ch 40.5 km to Ch 43.9 km	729	735	740	746	751	757	67	108	72	64	64	0	9%	15%	10%	9%	9%	0%
	Ch 43.9 km to Ch 46.3 km	729	735	740	746	751	757	24	66	30	22	22	0	3%	9%	4%	3%	3%	0%
	Ch 46.3 km to Ch 88.0 km	729	735	740	746	751	757	24	30	30	22	22	0	3%	4%	4%	3%	3%	0%
	Ch 88.0 km to Ch 88.2 km	1,968	1,973	1,978	1,984	1,989	1,995	47	63	66	53	42	0	2%	3%	3%	3%	2%	0%
	Ch 88.2 km to Ch 90.0 km	1,968	1,973	1,978	1,984	1,989	1,995	22	48	39	28	22	0	1%	2%	2%	1%	1%	0%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	61,911	65,110	68,473	72,011	75,731	79,643	192	250	251	309	216	2	0%	0%	0%	0%	0%	0%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	18,768	19,529	20,322	21,146	22,004	22,896	192	250	251	309	216	2	1%	1%	1%	1%	1%	0%
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	3,229	3,343	3,460	3,582	3,708	3,839	441	581	243	246	178	0	14%	17%	7%	7%	5%	0%
	Ch 2.2 km to Ch 5.4 km	3,229	3,343	3,460	3,582	3,708	3,839	995	809	224	221	163	0	31%	24%	6%	6%	4%	0%
	Ch 5.4 km to Ch 6.7 km	3,229	3,343	3,460	3,582	3,708	3,839	981	795	210	207	148	0	30%	24%	6%	6%	4%	0%
	Ch 6.7 km to Ch 7.7 km	3,229	3,343	3,460	3,582	3,708	3,839	974	788	303	199	141	0	30%	24%	9%	6%	4%	0%
	Ch 7.7 km to Ch 11.2 km	3,229	3,343	3,460	3,582	3,708	3,839	956	754	286	182	127	0	30%	23%	8%	5%	3%	0%
	Ch 11.2 km to Ch 15.3 km	3,229	3,343	3,460	3,582	3,708	3,839	949	747	278	185	121	0	29%	22%	8%	5%	3%	0%

Road name	Road section	Background traffic daily volumes						Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Ch 15.3 km to Ch 17.5 km	3,229	3,343	3,460	3,582	3,708	3,839	677	458	323	167	115	0	21%	14%	9%	5%	3%	0%
	Ch 17.5 km to Ch 19.0 km	3,229	3,343	3,460	3,582	3,708	3,839	670	451	316	162	109	0	21%	14%	9%	5%	3%	0%
	Ch 19.0 km to Ch 20.3 km	3,229	3,343	3,460	3,582	3,708	3,839	663	444	308	161	102	0	21%	13%	9%	5%	3%	0%
	Ch 20.3 km to Ch 21.5 km	1,728	1,783	1,839	1,898	1,958	2,020	656	437	301	154	95	0	38%	25%	16%	8%	5%	0%
	Ch 21.5 km to Ch 23.2 km	1,728	1,783	1,839	1,898	1,958	2,020	645	409	288	154	88	0	37%	23%	16%	8%	5%	0%
	Ch 23.2 km to Ch 25.0 km	1,728	1,783	1,839	1,898	1,958	2,020	370	314	309	188	111	0	21%	18%	17%	10%	6%	0%
	Ch 25.0 km to Ch 30.1 km	1,728	1,783	1,839	1,898	1,958	2,020	370	1,518	1,581	152	105	0	21%	85%	86%	8%	5%	0%
	Ch 30.1 km to Ch 38.7 km	1,728	1,783	1,839	1,898	1,958	2,020	381	166	180	187	121	0	22%	9%	10%	10%	6%	0%
	Ch 38.7 km to Ch 41.1 km	1,728	1,783	1,839	1,898	1,958	2,020	381	154	188	176	118	0	22%	9%	10%	9%	6%	0%
	Ch 41.1 km to Ch 41.7 km	1,728	1,783	1,839	1,898	1,958	2,020	381	154	188	174	116	0	22%	9%	10%	9%	6%	0%
	Ch 41.7 km to Ch 43.2 km	1,728	1,783	1,839	1,898	1,958	2,020	396	435	220	188	130	0	23%	24%	12%	10%	7%	0%
	Ch 43.2 km to Ch 44.7 km	1,728	1,783	1,839	1,898	1,958	2,020	410	443	227	203	144	0	24%	25%	12%	11%	7%	0%
	Ch 44.7 km to Ch 47.6 km	1,728	1,783	1,839	1,898	1,958	2,020	424	457	241	201	157	0	25%	26%	13%	11%	8%	0%
	Ch 47.6 km to Ch 52.2 km	1,728	1,783	1,839	1,898	1,958	2,020	438	471	255	204	171	0	25%	26%	14%	11%	9%	0%
	Ch 52.2 km to Ch 53.3 km	1,728	1,783	1,839	1,898	1,958	2,020	451	481	240	218	185	0	26%	27%	13%	11%	9%	0%
	Ch 53.3 km to Ch 60.8 km	1,728	1,783	1,839	1,898	1,958	2,020	460	496	242	239	193	0	27%	28%	13%	13%	10%	0%
	Ch 60.8 km to Ch 63.0 km	1,728	1,783	1,839	1,898	1,958	2,020	201	219	219	231	189	0	12%	12%	12%	12%	10%	0%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	1,068	1,075	1,081	1,087	1,094	1,100	306	326	334	336	294	0	29%	30%	31%	31%	27%	0%
	Ch 0.7 km to Ch 0.8 km	1,068	1,075	1,081	1,087	1,094	1,100	306	324	324	336	294	0	29%	30%	30%	31%	27%	0%
	Ch 0.8 km to Ch 1.4 km	1,068	1,075	1,081	1,087	1,094	1,100	306	325	325	336	294	0	29%	30%	30%	31%	27%	0%
	Ch 1.4 km to Ch 3.0 km	1,068	1,075	1,081	1,087	1,094	1,100	306	324	324	363	297	0	29%	30%	30%	33%	27%	0%
	Ch 3.0 km to Ch 13.0 km	1,068	1,075	1,081	1,087	1,094	1,100	74	91	91	131	65	0	7%	8%	8%	12%	6%	0%
	Ch 13.0 km to Ch 121.6 km	1,068	1,075	1,081	1,087	1,094	1,100	74	91	91	91	60	0	7%	8%	8%	8%	6%	0%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	56,166	56,166	56,166	56,166	56,166	56,166	192	250	251	309	216	2	0%	0%	0%	1%	0%	0%
	Ch 3.7 km to Ch 6.4 km	55,397	56,828	58,295	59,800	61,344	62,928	192	250	251	309	216	2	0%	0%	0%	1%	0%	0%
	Ch 6.4 km to Ch 8.3 km	67,523	70,891	74,428	78,141	82,039	86,131	192	250	251	309	216	2	0%	0%	0%	0%	0%	0%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	1,273	1,273	1,273	1,273	1,273	1,273	74	91	91	91	60	0	6%	7%	7%	7%	5%	0%
	Ch 220.1 km to Ch 222.4 km	1,282	1,282	1,282	1,282	1,282	1,282	25	34	35	31	20	0	2%	3%	3%	2%	2%	0%
	Ch 222.4 km to Ch 224.1 km	1,282	1,282	1,282	1,282	1,282	1,282	25	42	44	31	20	0	2%	3%	3%	2%	2%	0%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	18,768	19,529	20,322	21,146	22,004	22,896	192	250	251	309	216	2	1%	1%	1%	1%	1%	0%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	431	449	468	487	507	529	285	306	31	10	5	0	66%	68%	7%	2%	1%	0%
	Ch 2.5 km to Ch 3.5 km	431	449	468	487	507	529	274	342	66	53	22	0	64%	76%	14%	11%	4%	0%
	Ch 3.5 km to Ch 6.2 km	393	393	393	393	393	393	352	424	152	110	96	0	90%	108%	39%	28%	24%	0%
	Ch 6.2 km to Ch 9.0 km	393	393	393	393	393	393	345	417	319	102	89	0	88%	106%	81%	26%	23%	0%
	Ch 9.0 km to Ch 13.1 km	393	393	393	393	393	393	331	402	217	88	75	0	84%	102%	55%	22%	19%	0%
	Ch 13.1 km to Ch 14.0 km	393	393	393	393	393	393	331	397	204	92	75	0	84%	101%	52%	23%	19%	0%
	Ch 14.0 km to Ch 17.3 km	393	393	393	393	393	393	314	366	173	150	70	0	80%	93%	44%	38%	18%	0%
	Ch 17.3 km to Ch 18.1 km	393	393	393	393	393	393	314	329	464	149	69	0	80%	84%	118%	38%	17%	0%
	Ch 18.1 km to Ch 21.8 km	393	393	393	393	393	393	307	322	457	142	61	0	78%	82%	116%	36%	16%	0%
	Ch 21.8 km to Ch 28.0 km	393	393	393	393	393	393	291	306	344	125	46	0	74%	78%	88%	32%	12%	0%
	Ch 28.0 km to Ch 33.0 km	393	393	393	393	393	393	277	291	329	108	29	0	71%	74%	84%	28%	7%	0%

Road name	Road section	Background traffic daily volumes						Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Ch 33.0 km to Ch 35.6 km	393	393	393	393	393	393	263	277	310	94	14	0	67%	70%	79%	24%	4%	0%
	Ch 35.6 km to Ch 37.7 km	393	393	393	393	393	393	254	254	11	86	7	0	65%	65%	3%	22%	2%	0%
	Ch 37.7 km to Ch 39.8 km	393	393	393	393	393	393	254	294	11	86	7	0	65%	75%	3%	22%	2%	0%
	Ch 39.8 km to Ch 41.9 km	194	200	207	213	219	226	267	307	23	100	21	0	137%	153%	11%	47%	10%	0%
	Ch 41.9 km to Ch 45.9 km	194	200	207	213	219	226	30	82	31	29	24	0	15%	41%	15%	14%	11%	0%
	Ch 45.9 km to Ch 47.6 km	194	200	207	213	219	226	37	89	38	36	31	0	19%	44%	19%	17%	14%	0%
	Ch 47.6 km to Ch 53.3 km	194	200	207	213	219	226	37	118	38	36	31	0	19%	59%	19%	17%	14%	0%
	Ch 53.3 km to Ch 55.7 km	194	200	207	213	219	226	46	136	47	86	38	0	24%	68%	23%	40%	17%	0%
	Ch 55.7 km to Ch 56.6 km	194	200	207	213	219	226	46	68	47	86	38	0	24%	34%	23%	40%	17%	0%
	Ch 56.6 km to Ch 59.2 km	194	200	207	213	219	226	122	215	147	186	138	0	63%	107%	71%	87%	63%	0%
	Ch 59.2 km to Ch 61.0 km	194	200	207	213	219	226	122	215	147	215	138	0	63%	107%	71%	101%	63%	0%
	Ch 61.0 km to Ch 65.7 km	194	200	207	213	219	226	235	328	133	201	124	0	121%	164%	64%	94%	56%	0%
	Ch 65.7 km to Ch 68.7 km	194	200	207	213	219	226	547	322	129	205	117	0	281%	161%	62%	96%	53%	0%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	136	144	153	162	172	182	14	75	76	14	14	0	11%	52%	50%	9%	8%	0%
	Ch 2.0 km to Ch 2.2 km	136	144	153	162	172	182	0	60	61	0	0	0	0%	42%	40%	0%	0%	0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	7,245	7,462	7,686	7,916	8,154	8,399	196	254	255	313	220	2	3%	3%	3%	4%	3%	0%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	7,245	7,462	7,686	7,916	8,154	8,399	192	250	251	309	216	2	3%	3%	3%	4%	3%	0%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	128	133	137	142	147	152	0	40	0	0	0	0	0%	30%	0%	0%	0%	0%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	1,889	1,889	1,889	1,889	1,889	1,889	98	99	99	98	98	0	5%	5%	5%	5%	5%	0%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	2,672	2,690	2,708	2,725	2,743	2,761	4	16	11	4	0	0	0%	1%	0%	0%	0%	0%
	Ch 6.0 km to Ch 6.4 km	1,693	1,693	1,693	1,693	1,693	1,693	4	14	11	0	0	0	0%	1%	1%	0%	0%	0%
	Ch 6.4 km to Ch 8.3 km	1,693	1,693	1,693	1,693	1,693	1,693	7	32	15	4	0	0	0%	2%	1%	0%	0%	0%
	Ch 8.3 km to Ch 9.2 km	1,693	1,693	1,693	1,693	1,693	1,693	9	32	15	85	3	0	1%	2%	1%	5%	0%	0%
	Ch 9.2 km to Ch 10.0 km	2,256	2,388	2,528	2,675	2,832	2,998	16	77	23	27	1	0	1%	3%	1%	1%	0%	0%
	Ch 10.0 km to Ch 10.1 km	2,256	2,388	2,528	2,675	2,832	2,998	37	98	45	48	22	0	2%	4%	2%	2%	1%	0%
	Ch 10.1 km to Ch 10.3 km	2,256	2,388	2,528	2,675	2,832	2,998	37	97	43	49	23	0	2%	4%	2%	2%	1%	0%
	Ch 10.3 km to Ch 12.1 km	2,256	2,388	2,528	2,675	2,832	2,998	22	160	27	36	28	0	1%	7%	1%	1%	1%	0%
	Ch 12.1 km to Ch 14.5 km	2,256	2,388	2,528	2,675	2,832	2,998	22	254	254	35	24	0	1%	11%	10%	1%	1%	0%
	Ch 14.5 km to Ch 16.3 km	1,249	1,279	1,310	1,341	1,373	1,406	17	279	279	30	10	0	1%	22%	21%	2%	1%	0%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	6,468	6,662	6,861	7,067	7,279	7,498	0	3	4	4	0	0	0%	0%	0%	0%	0%	0%
	Ch 26.9 km to Ch 27.1 km	6,468	6,662	6,861	7,067	7,279	7,498	42	45	47	47	42	0	1%	1%	1%	1%	1%	0%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	1,196	1,213	1,231	1,249	1,267	1,285	155	212	442	241	198	2	13%	18%	36%	19%	16%	0%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	1,196	1,213	1,231	1,249	1,267	1,285	155	212	442	241	198	2	13%	18%	36%	19%	16%	0%
	Ch 0.6 km to Ch 3.2 km	1,196	1,213	1,231	1,249	1,267	1,285	330	412	126	126	78	0	28%	34%	10%	10%	6%	0%
	Ch 3.2 km to Ch 4.1 km	1,196	1,213	1,231	1,249	1,267	1,285	330	412	126	126	78	0	28%	34%	10%	10%	6%	0%
	Ch 4.1 km to Ch 13.0 km	1,196	1,213	1,231	1,249	1,267	1,285	343	483	143	148	80	0	29%	40%	12%	12%	6%	0%
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	1,196	1,213	1,231	1,249	1,267	1,285	268	295	20	8	28	0	22%	24%	2%	1%	2%	0%
Toowoomba Bypass On-ramp (319B)	Toowoomba-Cecil Plains Road to Toowoomba Bypass	1,196	1,213	1,231	1,249	1,267	1,285	0	133	0	0	28	0	0%	11%	0%	0%	2%	0%

Road name	Road section	Background traffic daily volumes						Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Toowoomba-Cecil Plains Road	1,196	1,213	1,231	1,249	1,267	1,285	15	70	18	27	2	0	1%	6%	1%	2%	0%	0%
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	36,970	38,368	39,818	41,323	42,885	44,506	196	254	255	313	220	2	1%	1%	1%	1%	1%	0%
	Ch 7.2 km to Ch 15.1 km	36,970	38,368	39,818	41,323	42,885	44,506	196	254	255	313	220	2	1%	1%	1%	1%	1%	0%
	Ch 15.1 km to Ch 18.9 km	17,066	17,430	17,802	18,182	18,570	18,967	196	254	255	313	220	2	1%	1%	1%	2%	1%	0%
	Ch 18.9 km to Ch 28.9 km	16,391	16,722	17,059	17,403	17,753	18,111	170	228	229	230	227	2	1%	1%	1%	1%	1%	0%
	Ch 28.9 km to Ch 36.6 km	10,482	10,482	10,482	10,482	10,482	10,482	170	228	229	230	227	2	2%	2%	2%	2%	2%	0%
	Ch 36.6 km to Ch 55.5 km	13,401	13,761	14,132	14,512	14,902	15,303	266	445	351	239	244	2	2%	3%	2%	2%	2%	0%
	Ch 55.5 km to Ch 75.4 km	13,401	13,761	14,132	14,512	14,902	15,303	266	445	351	239	244	2	2%	3%	2%	2%	2%	0%
	Ch 75.4 km to Ch 79.6 km	11,097	11,258	11,421	11,586	11,754	11,924	155	212	442	241	198	2	1%	2%	4%	2%	2%	0%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	11,222	12,445	13,802	15,306	16,975	18,825	42	45	47	47	42	0	0%	0%	0%	0%	0%	0%
	Ch 0.4 km to Ch 1.5 km	11,222	12,445	13,802	15,306	16,975	18,825	310	340	62	55	42	0	3%	3%	0%	0%	0%	0%
	Ch 1.5 km to Ch 2.4 km	11,222	12,445	13,802	15,306	16,975	18,825	291	292	40	109	31	0	3%	2%	0%	1%	0%	0%
	Ch 2.4 km to Ch 4.5 km	7,165	7,250	7,336	7,423	7,512	7,601	276	277	25	21	14	0	4%	4%	0%	0%	0%	0%
	Ch 4.5 km to Ch 5.0 km	7,165	7,250	7,336	7,423	7,512	7,601	276	277	25	21	14	0	4%	4%	0%	0%	0%	0%
	Ch 5.0 km to Ch 5.3 km	7,165	7,250	7,336	7,423	7,512	7,601	276	277	25	21	14	0	4%	4%	0%	0%	0%	0%
	Ch 5.3 km to Ch 6.2 km	7,165	7,250	7,336	7,423	7,512	7,601	276	277	45	21	14	0	4%	4%	1%	0%	0%	0%
State-Controlled Roads: Transport for New South Wales																			
Newell Highway	River Road to Queensland/NSW Border	2,115	2,131	2,148	2,164	2,181	2,198	23	26	18	8	0	0	1%	1%	1%	0%	0%	0%
Local Government Roads: Balonne Shire Council																			
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	34	35	35	35	36	36	42	52	52	52	35	0	123%	150%	149%	148%	97%	0%
Local Government Roads: Goondiwindi Regional Council																			
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	10	10	10	10	10	10	0	20	12	6	0	0	0%	203%	119%	61%	0%	0%
Bybera Road	Cunningham Highway to B2G-LDN060.4	42	43	43	43	44	44	231	43	13	51	7	0	546%	102%	30%	118%	16%	0%
	B2G-LDN060.4 to Earthworks Area 2A	42	42	42	42	42	42	188	0	0	0	0	0	450%	0%	0%	0%	0%	0%
Cemetery Road	Access Track to Moorroobie Lane	112	116	119	123	127	131	0	40	0	0	0	0	0%	35%	0%	0%	0%	0%
	Cunningham Highway to GrainCorp Goondiwindi	68	68	68	69	69	69	25	31	31	31	20	0	36%	45%	45%	45%	29%	0%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	37	38	38	38	39	39	51	51	11	9	0	0	136%	135%	30%	22%	0%	0%
	Coolmunda Dam Access to Cunningham Highway	37	38	38	38	39	39	51	51	11	9	0	0	136%	135%	30%	22%	0%	0%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	60	61	61	61	62	62	15	17	19	14	14	0	24%	28%	30%	23%	23%	0%
	B2G-LDN055.4 to B2G-LDN054.2	60	61	61	61	62	62	14	17	14	14	14	0	24%	27%	24%	23%	23%	0%
	Cunningham Highway to B2G-LDN052.8	60	61	61	61	62	62	15	18	20	15	14	0	24%	29%	32%	25%	23%	0%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	26	26	27	27	27	27	284	325	15	12	7	0	1088%	1235%	55%	45%	26%	0%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	22	23	23	23	24	24	14	14	16	30	14	0	64%	63%	69%	130%	60%	0%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	11	11	12	12	13	13	32	33	34	41	22	0	288%	288%	292%	335%	175%	0%
	NS2B-LDN033.2 to NS2B-LDN035.6	11	11	12	12	13	13	12	12	19	24	7	0	111%	109%	161%	201%	58%	0%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	15	15	16	16	16	16	497	95	0	0	0	0	3253%	616%	0%	0%	0%	0%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	8	8	8	8	9	9	9	7	9	10	7	0	123%	91%	108%	123%	82%	0%
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	14	15	15	16	16	17	0	69	0	0	0	0	0%	468%	0%	0%	0%	0%

Road name	Road section	Background traffic daily volumes						Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Hunt Street	Leichhardt Highway to Boodle Street	10	10	10	10	10	10	0	20	12	6	0	0	0%	203%	119%	61%	0%	0%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	865	893	922	952	983	1,015	13	5	12	18	0	0	2%	1%	1%	2%	0%	0%
	NS2B-LDN031.0 to South Kurumbul Road	865	893	922	952	983	1,015	163	194	12	18	0	0	19%	22%	1%	2%	0%	0%
	South Kurumbul Road to Cunningham Highway	32	33	33	33	33	34	150	191	1	1	0	0	461%	583%	3%	3%	0%	0%
	Cunningham Highway to Eukabilla Road	865	893	922	952	983	1,015	45	36	31	24	22	0	5%	4%	3%	3%	2%	0%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	5	5	5	5	5	5	32	32	10	30	7	0	689%	684%	213%	625%	146%	0%
	McDougalls Road to Cunningham Highway	5	5	5	5	5	5	32	32	10	30	7	0	689%	684%	213%	625%	146%	0%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	18	18	19	20	20	21	0	40	0	0	0	0	0%	220%	0%	0%	0%	0%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	18	18	19	20	20	21	0	81	0	0	0	0	0%	440%	0%	0%	0%	0%
	Mooroobie Lane to Wondalli Kurumbul Road	18	18	19	20	20	21	0	81	0	0	0	0	0%	440%	0%	0%	0%	0%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	14	14	15	15	16	16	0	69	0	0	0	0	0%	484%	0%	0%	0%	0%
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	3	3	3	3	3	3	29	8	26	16	7	0	1135%	319%	932%	575%	251%	0%
Silo Street	Barwon Highway to GrainCorp Talwood	60	60	60	60	60	60	3	4	4	4	2	0	5%	6%	6%	6%	4%	0%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	32	33	35	36	37	38	13	3	12	17	0	0	40%	10%	33%	48%	0%	0%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	43	43	43	43	43	43	4	5	5	5	3	0	9%	11%	11%	11%	7%	0%
Springborg Road	Cunningham highway to B2G-LDN037.6	4	5	5	5	5	5	24	9	21	17	7	0	537%	193%	466%	381%	159%	0%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	6	6	6	6	6	6	150	190	0	0	0	0	2677%	3379%	0%	0%	0%	0%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	9	10	10	10	11	11	19	19	11	19	7	0	209%	203%	114%	185%	67%	0%
	B2G-LDN067.6 to Millmerran-Inglewood Road	9	10	10	10	11	11	329	104	13	19	7	0	3540%	1086%	133%	188%	70%	0%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	178	178	178	178	179	179	2	11	11	0	0	0	1%	6%	6%	0%	0%	0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	12	12	12	12	12	12	109	158	83	112	79	0	926%	1329%	695%	931%	651%	0%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Mooroobie Lane	14	14	14	15	15	16	0	81	0	0	0	0	0%	575%	0%	0%	0%	0%
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	9	10	10	10	11	11	11	20	9	50	7	0	118%	202%	90%	480%	66%	0%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	10	10	10	10	10	11	0	40	0	0	0	0	0%	395%	0%	0%	0%	0%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	34	35	36	38	39	40	18	10	18	26	7	0	52%	29%	51%	69%	18%	0%
	B2G-LDN006.3 to Wondalli Kurumbul Road	34	35	36	38	39	40	14	95	26	37	14	0	42%	270%	71%	99%	37%	0%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	34	35	36	38	39	40	14	14	26	37	14	0	42%	41%	71%	99%	37%	0%
	Yelarbon Kurumbul Road to B2G-LDN020.3	34	35	36	38	39	40	44	23	51	51	22	0	128%	65%	141%	135%	56%	0%
	B2G-LDN020.3 to B2G-LDN025.9	32	33	33	33	33	34	51	30	78	61	29	0	156%	92%	236%	183%	86%	0%
	B2G-LDN025.9 to Cunningham Highway	32	33	33	33	33	34	91	128	104	85	43	0	279%	391%	315%	255%	129%	0%
Local Government Roads: Moree Plains Shire Council																			
Boggabilla Weir Access	River Road to Boggabilla Weir	11	11	11	12	12	13	31	55	46	2	0	0	295%	495%	406%	17%	0%	0%
River Road	Newell Highway to Boggabilla Weir Access	11	11	11	12	12	13	31	55	46	2	0	0	295%	495%	406%	17%	0%	0%
Local Government Roads: Toowoomba Regional Council																			
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	5,537	5,861	6,204	6,567	6,951	7,357	1	1	1	1	1	0	0%	0%	0%	0%	0%	0%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	3,248	3,259	3,271	3,282	3,294	3,305	98	98	98	98	98	0	3%	3%	3%	3%	3%	0%

Road name	Road section	Background traffic daily volumes						Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	6,673	6,697	6,720	6,743	6,767	6,791	0	1	1	0	0	0	0%	0%	0%	0%	0%	0%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	133	138	143	148	153	158	576	310	15	4	0	0	432%	225%	10%	2%	0%	0%
	B2G-LDN188.2 to Gore Highway	133	138	143	148	153	158	590	325	30	28	15	0	443%	236%	21%	19%	10%	0%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	101	104	108	112	116	120	7	146	146	10	7	0	7%	140%	135%	9%	6%	0%
Blackwell Road	Gore Highway to Millmerran Quarry	24	24	24	24	24	24	0	0	0	42	4	0	0%	0%	0%	175%	18%	0%
	Millmerran Quarry to B2G-LDN120.2	24	24	24	24	24	24	0	0	0	87	11	0	0%	0%	0%	358%	45%	0%
	B2G-LDN120.2 to Millmerran-Inglewood Road	6	6	6	6	6	6	17	31	31	105	23	0	270%	497%	497%	1691%	373%	0%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	15	15	15	15	15	15	0	11	12	7	0	0	1%	76%	83%	45%	0%	0%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	60	61	63	64	66	67	24	54	56	25	14	0	40%	88%	88%	38%	22%	0%
	Brimblecombe Road to WL 194467R	60	61	63	64	66	67	10	39	39	10	0	0	16%	64%	62%	16%	0%	0%
Bushy Lane	B2G-LDN183.0 to Gore Highway	50	52	54	56	57	59	18	35	20	31	15	0	36%	67%	38%	56%	26%	0%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	586	610	636	662	690	718	106	116	117	132	109	0	18%	19%	18%	20%	16%	0%
	Saleyards Road to Gore Highway	1,003	1,008	1,014	1,020	1,026	1,032	106	115	116	112	106	0	11%	11%	11%	11%	10%	0%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	10	10	10	11	11	11	7	8	10	11	7	0	69%	78%	98%	103%	66%	0%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	18	18	18	18	18	18	14	16	103	15	14	0	76%	85%	556%	82%	76%	0%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	8	8	8	9	9	9	7	7	12	8	7	0	89%	86%	148%	93%	79%	0%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	11	11	11	12	12	12	15	301	63	37	14	0	139%	2745%	556%	321%	117%	0%
Draper Road	Steger Road to B2G-FBW206.9	26	26	27	27	27	28	14	14	14	14	14	0	54%	53%	53%	52%	52%	0%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	1,913	2,025	2,144	2,269	2,402	2,542	1	1	1	80	3	0	0%	0%	0%	4%	0%	0%
	Access Track to Greenwattle Street	1,913	2,025	2,144	2,269	2,402	2,542	1	1	1	1	1	0	0%	0%	0%	0%	0%	0%
Florence Street	Gore Highway to West Street	168	169	170	171	172	173	0	1	1	0	0	0	0%	1%	1%	0%	0%	0%
Forestry Road	Access Track to Millmerran-Inglewood Road	1	1	1	1	1	1	0	69	0	0	0	0	0%	5969%	0%	0%	0%	0%
	Millmerran-Inglewood Road to Earthworks Area 3B	1	1	1	1	1	1	0	69	0	0	0	0	0%	5969%	0%	0%	0%	0%
Fysh Road	B2G-LDN147.1 to Gore Highway	42	43	44	46	47	49	14	14	14	44	16	0	35%	34%	33%	97%	33%	0%
Gap Road	Gore Highway to Grevillea Street	727	750	774	798	823	850	0	1	7	2	0	0	0%	0%	1%	0%	0%	0%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	24	25	26	27	28	29	7	7	7	28	8	0	29%	30%	29%	104%	29%	0%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	15	16	16	17	17	18	14	15	24	26	14	0	91%	91%	148%	155%	81%	0%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	275	283	292	302	311	321	0	1	7	2	0	0	0%	0%	3%	1%	0%	0%
Hall Road	B2G-LDN139.0 to Gore Highway	2	2	3	3	3	3	8	21	21	24	8	0	354%	868%	841%	923%	312%	0%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	27	27	27	27	27	27	0	136	292	0	0	0	0%	495%	1065%	0%	0%	0%
	B2G-LDN116.0 to Millmerran-Inglewood Road	27	27	27	27	27	27	0	136	292	12	1	0	0%	497%	1067%	45%	4%	0%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	11	12	13	13	14	15	0	0	0	79	2	0	0%	0%	0%	596%	13%	0%
Kahler Road	Murlaggan Road to B2G-LDN165.6	7	7	8	8	8	8	7	7	7	11	8	0	99%	96%	93%	138%	96%	0%
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	1,950	1,974	1,997	2,021	2,045	2,069	276	277	45	21	14	0	14%	14%	2%	1%	1%	0%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	44	44	44	44	44	44	0	136	0	0	0	0	0%	311%	0%	0%	0%	0%
	Millmerran-Inglewood Road to Commodore Mine	3	3	3	3	3	3	0	0	177	0	0	0	0%	0%	5486%	0%	0%	0%

Road name	Road section	Background traffic daily volumes						Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Leesons Road	Warrego Highway to Steger Road	43	44	44	45	45	46	14	148	14	94	16	0	33%	338%	32%	209%	36%	0%
	Steger Road to B2G-LDN206.3	43	44	44	45	45	46	20	154	45	100	16	0	47%	351%	101%	222%	36%	0%
Linthorpe Road	Gore Highway to B2G-LDN175.5	22	23	23	24	25	26	271	453	66	31	8	0	1243%	2003%	284%	128%	32%	0%
Linthorpe Valley Road	Geitz Road to Gore Highway	52	54	55	57	59	61	7	7	7	28	8	0	14%	14%	13%	48%	14%	0%
Lochaber Road	Gore Highway to B2G-LDN172.0	198	205	212	219	227	235	7	7	10	14	8	0	4%	4%	5%	6%	3%	0%
	B2G-LDN172.0 to B2G-LDN172.6	198	205	212	219	227	235	7	7	9	7	7	0	4%	3%	4%	3%	3%	0%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	3,210	3,231	3,253	3,274	3,296	3,317	4	15	10	4	0	0	0%	0%	0%	0%	0%	0%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	21	21	21	21	21	21	15	158	113	37	16	0	72%	737%	527%	171%	73%	0%
	B2G-LDN112.1 to Millwood Road	21	21	21	21	21	21	0	136	0	0	0	0	0%	633%	0%	0%	0%	0%
	Millwood Road to Kooroongarra Road	1	1	1	1	1	1	0	136	0	0	0	0	0%	14718%	0%	0%	0%	0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	115	115	115	115	115	115	11	71	69	15	0	0	10%	62%	60%	13%	0%	0%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	226	233	241	248	256	264	310	310	14	23	15	0	137%	133%	6%	9%	6%	0%
	Kahler Road to Gore Highway	226	233	241	248	256	264	317	317	21	34	22	0	140%	136%	9%	14%	9%	0%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	733	734	735	735	736	737	7	7	13	7	7	0	1%	1%	2%	1%	1%	0%
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	2,527	2,557	2,588	2,619	2,650	2,681	8	46	12	87	2	0	0%	2%	0%	3%	0%	0%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	291	303	316	329	343	357	3	20	20	30	3	0	1%	7%	6%	9%	1%	0%
	B2G-LDN128.2 to B2G-LDN130.0	291	303	316	329	343	357	279	20	20	30	3	0	96%	7%	6%	9%	1%	0%
	B2G-LDN130.0 to Millmerran-Inglewood Road	291	303	316	329	343	357	540	264	37	44	17	0	185%	87%	12%	13%	5%	0%
Paint Mine Road	Gore Highway to B2G-LDN173.5	26	27	28	29	30	31	7	8	8	12	8	0	27%	28%	27%	39%	27%	0%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	12	12	12	12	12	12	14	15	15	47	17	0	116%	117%	124%	380%	138%	0%
Quarry Road Access	Tumnaville Road to Quarry	2	2	2	2	2	2	0	164	0	38	5	0	0%	8816%	0%	1891%	239%	0%
Saleyards Road	Campbell Street to Gore Highway	146	147	148	148	149	150	0	1	1	27	3	0	0%	1%	1%	18%	2%	0%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	3	3	3	3	3	3	7	9	9	7	7	0	265%	335%	335%	265%	265%	0%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	10	10	10	10	10	10	14	16	103	15	14	0	141%	156%	1025%	151%	141%	0%
	B2G-LDN123.6 to B2G-LDN123.8	10	10	10	10	10	10	0	2	0	0	0	0	0%	15%	0%	0%	0%	0%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	159	164	169	174	180	185	0	1,550	1,550	73	6	0	0%	947%	918%	42%	4%	0%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	631	639	646	654	662	670	31	95	52	46	14	0	5%	15%	8%	7%	2%	0%
	New Hope Recycled Water Pipeline to Draper Road	631	639	646	654	662	670	20	44	44	21	14	0	3%	7%	7%	3%	2%	0%
	Draper Road to Leesons Road	631	639	646	654	662	670	6	30	30	7	0	0	1%	5%	5%	1%	0%	0%
Tumnaville Road	Access Track to Gore Highway	108	111	115	118	122	126	0	164	0	38	5	0	0%	148%	0%	32%	4%	0%
Turallin Road	Gore Highway to the Turallin Facility	192	193	194	195	196	197	233	233	233	233	233	0	121%	121%	120%	119%	118%	0%
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	138	143	147	152	157	162	21	26	26	26	17	0	15%	18%	18%	17%	11%	0%
	B2G-LDN153.1 to Gore Highway	138	143	147	152	157	162	36	41	52	41	32	0	26%	29%	35%	27%	20%	0%
	Gore Highway to B2G-LDN150.9	62	63	65	68	70	72	0	0	0	8	2	0	0%	0%	0%	12%	3%	0%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	686	726	769	814	861	912	1	2	2	80	3	0	0%	0%	0%	10%	0%	0%
West Street	Gore Highway to Florence Street	52	53	53	53	54	54	0	10	11	7	0	0	0%	19%	21%	13%	0%	0%
	Florence Street to Six Mile Road	15	15	15	15	15	15	0	11	12	7	0	0	1%	76%	83%	45%	0%	0%

Road name	Road section	Background traffic daily volumes						Project traffic daily volumes						Road link % increase					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Yarranlea Road	Gore Highway to B2G-LDN161.0	57	59	60	62	64	66	18	1,429	1,429	46	16	0	31%	2440%	2365%	75%	25%	0%
	B2G-LDN161.0 to Desmonds Lane	57	59	60	62	64	66	7	7	12	8	7	0	12%	12%	21%	13%	11%	0%

The per cent comparison assessment identified 209 road sections which exceed the 5 per cent threshold in the gazetted direction, and 209 road sections which exceed the 5 per cent threshold in the against-gazetted direction. Table 5.129 provides a summary of the number of roads, number of road sections and length of roads by road authority which exceed the prescribed 5 per cent threshold.

Table 5.129 Number of roads exceeding 5 per cent base AADT by road authority

Road authority	Number of roads > 5%	Number of road sections > 5%	Length of roads > 5% (km)
DTMR	18	96	583.93
TfNSW	0	0	0
BSC	1	1	0.39
GRC	29	46	159.42
MPSC	2	2	6.73
TRC	44	64	81.03
Total	94	209	831.50

By itself, percentage comparison between traffic conditions without and with the Project does not provide an accurate overview of the Project's impact on the surrounding road network. This is because it does not reflect the magnitude of the Project construction traffic volumes on the performance of the road network. Large exceedances of the 5 per cent threshold are largely attributed to the low background traffic volumes along these road sections.

The road links which trigger the 5 per cent threshold are further assessed for road link capacity. The road link capacity assessment for cumulative impact assessment is only considering the road links which change peak impact year peak hour volumes between the Project only, and cumulative volumes. This assessment is provided in Section 5.11.2.5.

Intersection volumes

To assist in quantifying the number of intersections which may experience potential construction impacts, a preliminary assessment has been undertaken to compare base traffic flows with construction flows to determine intersections which may require further assessments as per the GTIA. A summary of the 5 per cent traffic comparison analysis is provided in Table 5.130 for intersections which have a change in peak impact year peak impact volumes between Project only, and cumulative volumes. Red text indicates where the percentage increase is larger than the 5 per cent threshold specified within the GTIA.

Table 5.130 Forecast intersection background and Project traffic volumes

Intersection	Approach	Turn	Peak impact year Background traffic volumes				Cumulative Project traffic				% increase (>5% shown in red)			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
Cunningham Highway/ Leichhardt Highway	South - Cunningham Highway	LT	57	32	61	34		4		4	0%	13%	0%	12%
		T	77	62	83	68		1	11	1	0%	2%	13%	1%
	North - Cunningham Highway	T	57	59	60	62	11	1		1	19%	2%	0%	2%
		RT	1	0	1	0		1		1	0%	100%	0%	100%
	West - Leichhardt Highway	LT	1	0	1	0		1		1	0%	100%	0%	100%
		RT	58	35	62	38		4		4	0%	11%	0%	11%
Gore Highway/ Dieckmann Road	Northeast - Gore Highway	T	86	37	93	40		7	25	7	0%	19%	27%	18%
		RT	1	0	1	0		1		1	0%	100%	0%	100%
	Northwest - Dieckmann Road	LT	1	0	1	0		1		1	0%	100%	0%	100%
		RT	1	0	1	0		24	8	24	0%	2400%	800%	2400%
	Southwest - Gore Highway	LT	1	0	1	0	8	24		24	800%	2400%	0%	2400%
		T	97	37	106	41	25	7		7	26%	19%	0%	17%
Leichhardt Highway/ Hunt Street	South - Hunt Street	LT	1	0	1	0					0%	0%	0%	0%
		T	1	0	1	0					0%	0%	0%	0%
		RT	1	0	1	0		2		2	0%	200%	0%	200%
	East - Leichhardt Highway	LT	1	0	1	0		2		2	0%	200%	0%	200%
		T	57	32	61	34		2		2	0%	6%	0%	6%
		RT	1	0	1	0					0%	0%	0%	0%
	North - Access Road	LT	1	0	1	0					0%	0%	0%	0%
		T	1	0	1	0					0%	0%	0%	0%
		RT	1	0	1	0					0%	0%	0%	0%

Intersection	Approach	Turn	Peak impact year Background traffic volumes				Cumulative Project traffic				% increase (>5% shown in red)			
			AM peak		PM peak		AM peak		PM peak		AM peak		PM peak	
			LV	HV	LV	HV	LV	HV	LV	HV	LV	HV	LV	HV
	West - Leichhardt Highway	LT	1	0	1	0					0%	0%	0%	0%
		T	58	35	62	38		2		2	0%	6%	0%	5%
		RT	1	0	1	0					0%	0%	0%	0%
Newell Highway/River Road	South - Newell Highway	T	162	76	143	67					0%	0%	0%	0%
		RT	1	0	1	0		3		3	0%	300%	0%	300%
	East - River Road South	LT	1	0	1	0		3		3	0%	300%	0%	300%
		RT	1	0	1	0		2		2	0%	200%	0%	200%
	North - Newell Highway	LT	1	0	1	0		2		2	0%	200%	0%	200%
		T	161	79	158	78					0%	0%	0%	0%
Hunt Street/Boodle Street	South - Boodle Street	LT	1	0	1	0		2		2	0%	200%	0%	200%
		RT	1	0	1	0					0%	0%	0%	0%
	East - Hunt Street	LT	1	0	1	0					0%	0%	0%	0%
		T	1	0	1	0					0%	0%	0%	0%
River Road/River Road	West - Hunt Street	T	1	0	1	0					0%	0%	0%	0%
		RT	1	0	1	0		2		2	0%	200%	0%	200%
	South - River Road	LT	1	0	1	0					0%	0%	0%	0%
		RT	1	0	1	0		5		5	0%	500%	0%	500%
	East - River Road	LT	1	0	1	0		5		5	0%	500%	0%	500%
		T	1	0	1	0					0%	0%	0%	0%
	West - Unnamed Road	T	1	0	1	0					0%	0%	0%	0%
		RT	1	0	1	0					0%	0%	0%	0%

Table note:

RT = right turn, LT = left turn, T = through movement

All intersections where the Project traffic exceeds 5 per cent of the base traffic for any movement in the peak periods require quantifying the impacts on intersection delays as per the GTIA requirement. A detailed intersection delay assessment is in Section 5.11.2.4.

5.11.2.3 Road safety impact assessment and mitigation

The road safety impact assessment for the cumulative impact has been undertaken as per the methodology within Section 5.2.1. The same methodology will be applied to the road links with the cumulative impact considered in 'With Project' traffic volumes.

The cumulative safety issues along the Project construction traffic routes have been assessed and provided below. Table 5.131 indicates the risk rating categories, as previously discussed in Section 5.2.1.

Table 5.131 Risk rating

Risk Likelihood	Consequence				
	Not significant	Minor	Moderate	Major	Extreme
Almost certain	Medium	Medium	High	High	High
Likely	Medium	Medium	Medium	High	High
Moderate	Low	Medium	Medium	Medium	High
Unlikely	Low	Low	Medium	Medium	Medium
Rare	Low	Low	Low	Medium	Medium

Intersection assessment results

The results of the road safety impact assessment risk assessment for 116 intersections impacted by primary construction routes are shown in Table 5.12. For individual intersection assessments and detailed mitigation measures (Appendix AN).

It should be noted that the construction routes assumed as a part of this assessment are routes which the construction contractor may use. However, the determination of the final construction and HV routes will be subject to consultation between DTMR, the relevant LGA and the construction contractor.

Once construction routes are finalised, the above analysis should be undertaken again as a part of the Detailed Design and Construction Works stage at which point specific mitigations measures should be applied on a case-by-case basis. The measures developed at this stage should be specific and measurable to ensure compliance by construction vehicle operators.

Following the GTIA process, any existing intersections that receive a High Risk rating, or any 'with Project' intersections that receive a High Risk rating must have the impacts mitigated to reduce the risk to at Medium Risk. There are two intersections that receive a risk rating of High which are further explained below:

- Gore Highway/Gilgai Lane
 - Figure 5.4 shows the existing intersection, from a site visit (ground-truthing) in December 2022
 - Left image – view of Gilgai Lane from the Gore Highway. Culvert headwall visible on approach to intersection
 - Right image – Gore Highway on approach to Gilgai Lane. Limited warning/signage visible. Power poles on shoulder on approach to Gilgai Lane

- One rear end crash was recorded in the last five-year period. The rear end crash consisted of a multi-vehicle crash during clear daylight hours and resulted in a fatality. The Project traffic may exacerbate the rear end crash, which increased the with Project risk likelihood to Moderate. The proposed mitigation measures include HV truck turning signage in combination with possible temporary speed reduction signage through the intersection for the duration of construction. The provision of a CHR(s) turn lane might also mitigate for rear end crashes. This will be determined and finalised during Construction Works stage as per contractor required assessments when preparing appropriate TMP and TGS in accordance with the *Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads*’ and DTMR’s specification ‘MRTS02 – Provision for traffic’ requirements.



Figure 5.22 Gore Highway/Gilgai Lane site visit photos

■ Greenwattle Street/Alderley Street

- Figure 5.5 shows the existing intersection, from a site visit (ground-truthing) in December 2022
 - Left image – view from Greenwattle Street of Alderley Street intersection (facing south)
 - Right image – view from Greenwattle Street of Alderley Street intersection (facing north)
- This intersection analysis has been completed using assumed traffic volumes, generated from the methodology described in Section 2.4.1. The analysis for the existing scenario indicates the intersection is well over capacity and has unsafe levels of delay and queueing for existing peak hour traffic demands. There is a high crash risk for vehicles performing right turn manoeuvres from Alderley Street. The Project traffic may exacerbate the rear end crash rate as well, which increases the with Project risk likelihood to Likely. The proposed mitigation measures include signalisation of the intersection to remove the crash risk, address delay and queueing issues. The treatment will be determined and finalised during Construction Works stage when traffic volume assumptions can be confirmed and as per contractor required assessments when preparing appropriate TMP and TGS in accordance with the *Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads*’ and DTMR’s specification ‘MRTS02 – Provision for traffic’ requirements.



Figure 5.23 Greenwattle Street/Alderley Street site visit photos

To show the reduction in risk likelihood/consequence attributable to Detailed Design and Construction Works stage processes, the mostly non-infrastructure-based mitigation measures described in Section 5.2.2 have been incorporated into the assessment summarised in Table 5.132.

Table 5.132 Safety risk assessment: Intersections impacted by primary construction routes requiring mitigation (without and with Project)

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
State-Controlled Roads: Department of Transport and Main Roads										
Barwon Highway/Barwon Highway	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Barwon Highway/Carnarvon Highway	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Barwon Highway/Leichhardt Highway	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Barwon Highway/Silo Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Barwon Highway/South Toobeah Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Barwon Highway/Town Common Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Carnarvon Highway/Noondoo Thallon Road	Unlikely	Hospitalisation	Medium	Unlikely	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Bybera Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Cemetery Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Coolmunda Dam Access	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Cremascos Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/East Sawmill Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Elizabeth Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Fosters Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Inglewood Quarry Access Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Kildonan Road	Moderate	Hospitalisation	Medium	Unlikely	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Leichhardt Highway	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/McDougalls Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Millmerran-Inglewood Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Springborg Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Texas-Yelarbon Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Cunningham Highway/Whetstone Access Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Woodcocks Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Yelarbon-Keetah Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Cunningham Highway/Yelarbon Kurumbul Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Fysh Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Alderley Street	Moderate	Medical Treatment	Medium	Moderate	Medical Treatment	Medium		Unlikely	Medical Treatment	Medium
Gore Highway/Athol School Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Biddeston Southbrook Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Blackwell Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Bushy Lane	Unlikely	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Campbell Street	Unlikely	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Dieckmann Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Florence Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Gilgai Lane	Unlikely	Fatality	Medium	Moderate	Fatality	High	Required	Unlikely	Fatality	Medium
Gore Highway/Hall Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Linthorpe Road	Unlikely	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Linthorpe Valley Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Lochaber Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Millmerran-Inglewood Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Gore Highway/Millmerran-Leyburn Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Murlaggan Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Oakey-Pittsworth Road	Unlikely	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Paint Mine Road	Unlikely	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Saleyards Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Gore Highway/Scrubby Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Tumaville Road/Yarranlea Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Turallin Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Ware Street (N)	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/Ware Street (S)	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gore Highway/West Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Leichhardt Highway/Hunt Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Blackwell Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Campbell Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Commodore Peak Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Forestry Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Grays Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Heckendorf Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Koorongarra Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Millwood Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Millmerran-Inglewood Road/Moffatt Reserve Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Owens Scrub Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Paton Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Thornton Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millmerran-Inglewood Road/Wongavale Yugalbar Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Texas-Yelarbon Road/Access Track	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Toowoomba-Cecil Plains Road/Brimblecombe Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Toowoomba-Cecil Plains Road/Charlton Connection Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Toowoomba-Cecil Plains Road/McDougall Street	Unlikely	Hospitalisation	Medium	Unlikely	Medical Treatment	Medium		Unlikely	Medical Treatment	Medium
Toowoomba-Cecil Plains Road/Omara Road	Unlikely	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Toowoomba-Cecil Plains Road/Toowoomba Bypass NB Ramps	Unlikely	Hospitalisation	Medium	Unlikely	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Toowoomba-Cecil Plains Road/Toowoomba Bypass SB Ramps	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Toowoomba-Cecil Plains Road/Access Track	Moderate	Hospitalisation	Medium	Unlikely	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Toowoomba-Cecil Plains Road/Wellcamp Westbrook Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Warrego Highway/Chamberlain Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Warrego Highway/Leesons Road	Rare	Hospitalisation	Medium	Unlikely	Medical treatment	Medium		Unlikely	Medical treatment	Medium
Warrego Highway/Omara Road/Steger Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Warrego Highway/Toowoomba Bypass NB Ramps	Moderate	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Warrego Highway/Toowoomba Bypass SB Ramps	Moderate	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Warrego Highway Off-ramp/Kingsthorpe Overpass	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
State-Controlled Road: Transport for New South Wales										
Newell Highway/River Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Local Government Road: Goondiwindi Regional Council										
Cemetery Road/Access Track	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Coolmunda Dam Access/Coolmunda Dam Access	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Hunt Street/Boodle Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Kildonan Road/Eukabilla Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Kildonan Road/South Kurumbul Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
McDougalls Road/Access Track	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Mooroobie Lane/Cemetery Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Mooroobie Lane/Mooroobie Lane	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Mosquito Creek Road/Grays Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Suttons Road/Access Track	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Wondalli Kurumbul Road/Mooroobie Lane	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Yelarbon Kurumbul Road/Queen Street South	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Yelarbon Kurumbul Road/South Kurumbul Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Yelarbon Kurumbul Road/Wondalli Kurumbul Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Local Government Road: Moree Plains Shire Council										
River Road/River Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Local Government Road: Toowoomba Regional Council										
Campbell Street/Saleyards Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Moderate	Hospitalisation	Medium
Commodore Peak Road/Scragg Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Drayton Wellcamp Road/Boundary Street South	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Forestry Road/Access Track	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Gap Road/Grevillea Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Greenwattle Street/Alderley Street	Moderate	Hospitalisation	Medium	Likely	Hospitalisation	High	Required	Unlikely	Hospitalisation	Medium

Intersection	Without Project			With Project			Mitigation required?	With Project – with mitigation		
	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Kingsthorpe Haden Road/Kingsthorpe Overpass	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Kooroongarra Road/Millwood Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Leesons Road/Steger Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Linthorpe Valley Road/Geitz Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Millwood Road/Millwood Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Murlaggan Road/Kahler Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Six Mile Road/Bligh Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Steger Road/Draper Road	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Tumnaville Road/Quarry Road Access	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Wellcamp Westbrook Road/Drayton Wellcamp Road	Unlikely	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
West Street/Florence Street	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium
Yarranlea Road/Desmonds Lane	Rare	Hospitalisation	Medium	Moderate	Hospitalisation	Medium		Unlikely	Hospitalisation	Medium

Road link assessment results

The results of the road safety impact assessment risk assessment for intersections impacted by primary construction routes are shown in Table 5.133. For individual intersection assessments and detailed mitigation measures, refer to Appendix AO.

It should be noted that the construction routes assumed as a part of this assessment are routes which the construction contractor may use. However, the determination of the final construction and HV routes will be subject to consultation between DTMR, the relevant LGA and the construction contractor.

Once construction routes are finalised, the above analysis should be undertaken again as a part of the Detailed Design and Construction Works stage at which point specific mitigations measures should be applied on a case-by-case basis. The measures developed at this stage should be specific and measurable to ensure compliance by construction vehicle operators.

Following the GTIA process, any existing road links that receive a High risk rating, or any 'with Project' road links that receive a High Risk rating must have the impacts mitigated to reduce the risk to at Medium Risk. There are four links that receive a risk rating of High during the assessment. The assessment process for each of the links is explained further below, including a summary of all Low, Medium and High risks identified for each link.

- Gore Highway (28A), Ch 44.7 km to Ch 47.6 km
 - The road segment is a formed sealed road with a 10 m wide carriageway and narrow shoulder. The road has a narrow shoulder which may have an impact on available vehicle recovery area and associated rear end crashes and off carriageway crashes. Casualty crash risks are higher on undivided roads, with no median for head-on crashes, however, the existing traffic volume does not warrant WCLT. Project traffic volumes are minor and are not expected to worsen the existing safety conditions, however, may increase the risk likelihood to moderate. There is no impact to the Medium risk level, and therefore no mitigations required.
 - All accesses and intersections along the section would have sufficient gap acceptance to turn into or across the main road to maintain a five second headway gap acceptance. Existing risk likelihood is considered rare and sufficient gap acceptance will prevail even with the impact of the Project and therefore there is no increase in risk likelihood, no change to the Medium risk level and therefore no mitigation required.
 - Project traffic is not expected to exacerbate single vehicle crashes and no change in severity or risk likelihood expected due to project traffic, as the existing horizontal alignment of road is appropriate to accommodate required design speed. There is no impact to the Medium risk level, and therefore no mitigations required for the following crashes:
 - One (1) single vehicle off path on straight while making a left turn during clear daylight conditions which resulted in hospitalisation
 - One (1) single vehicle out of control on straight crash and hitting an object during darkness which resulted in hospitalisation
 - One (1) multi-vehicle rear-end crash in the same direction of travel resulting in a fatality, occurred from a vehicle decelerating and needing to turn left into side road and other vehicle traversing straight. Crash occurred during dry and clear daylight conditions. Crash may be the result of inadequate following distance. Project traffic may increase such crash types at side road intersections where separate left turn lanes are not provided (low volume roads) and consequently the risk likelihood may increase to moderate, and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.

- One (1) vehicle leaving driveway onto main road crash during dusk conditions which resulted in minor injury. Project traffic may increase such crash types at side road driveways where vehicles would enter the major road due to increase in traffic volume. The risk likelihood may increase to moderate and therefore the risk level increases to Medium with Project traffic. To reduce the risk to Low again, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- In summary, Gore Highway (28A), Ch 44.7 km to Ch 47.6 km road link safety assessment results in no infrastructure upgrade related mitigation measures required, however, standard mitigations measures discussed in Section 5.2.2 are applicable.
- Gore Highway (28A), Ch 52.2 km to Ch 53.3 km
 - The road segment is a formed sealed road with a 10 m wide carriageway and narrow shoulder. The road has a narrow shoulder which may have an impact on available vehicle recovery area and associated rear end crashes and off carriageway crashes. Casualty crash risks are higher on undivided roads, with no median for head-on crashes, however, the existing traffic volume does not warrant WCLT. Project traffic volumes and OSOM vehicles may increase the possibility of crashes, increasing the risk likelihood to moderate. There is no impact to the Medium risk level, and therefore no mitigations required.
 - All accesses and intersections along the section would have sufficient gap acceptance to turn into or across the main road to maintain a five second headway gap acceptance. Existing risk likelihood is considered rare and sufficient gap acceptance will prevail even with the impact of the Project and therefore there is no increase in risk likelihood, no change to the Medium risk level and therefore no mitigation required.
 - One (1) multi-vehicle head-on crash in opposite directions of travel which resulted in a fatality. Crash occurred during clear daylight on a straight section of road where sufficient sight distance prevails. Likely cause may be inadequate visibility or overtaking from a closely spaced headway. Project traffic may increase such crash types where additional HV volumes on the road may increase the need for overtaking, which may increase the risk likelihood to Moderate and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
 - One (1) single vehicle off path on curve which resulted in vehicle overturning and hospitalisation. Crash occurred in darkness. Project traffic is not expected to exacerbate such single vehicle crashes. Existing horizontal alignment of road is appropriate to accommodate required design speed. No change in severity or risk likelihood expected due to project traffic. There is no impact to the Medium risk level, and therefore no mitigations required.
 - In summary, Gore Highway (28A), Ch 52.2 km to Ch 53.3 km road link safety assessment results in no infrastructure upgrade related mitigation measures required, however, standard mitigations measures discussed in Section 5.2.2 are applicable.
- Gore Highway (28A), Ch 53.3 km to Ch 60.8 km
 - The road segment is a formed sealed road with a 10 m wide carriageway and narrow shoulder. The road has a narrow shoulder which may have an impact on available vehicle recovery area and associated rear end crashes and off carriageway crashes. Casualty crash risks are higher on undivided roads, with no median for head-on crashes, however, the existing traffic volume does not warrant WCLT. Project traffic volumes and OSOM vehicles may increase the possibility of crashes, increasing the risk likelihood to moderate. There is no impact to the Medium risk level, and therefore no mitigations required.
 - All accesses and intersections along the section would have sufficient gap acceptance to turn into or across the main road to maintain a five second headway gap acceptance. Existing risk likelihood is considered rare and sufficient gap acceptance will prevail even with the impact of the Project and therefore there is no increase in risk likelihood, no change to the Medium risk level and therefore no mitigation required.

- Multi-vehicle head-on crash in opposite directions of travel which resulted in a fatality. Crash occurred during clear daylight on a straight section of road where sufficient sight distance prevails. Likely cause may be inadequate visibility/overtaking from closely spaced headway. Project traffic volumes and OSOM vehicles may increase the possibility of crashes, increasing the risk likelihood to moderate and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- One (1) single vehicle off path on straight which resulted in vehicle overturning and hospitalisation. Crash occurred in darkness. Project traffic is not expected to exacerbate such single vehicle crashes. Existing horizontal alignment of road is appropriate to accommodate required design speed. No change in severity or risk likelihood expected due to project traffic. There is no impact to the Medium risk level, and therefore no mitigations required.
- In summary, Gore Highway (28A), Ch 52.2 km to Ch 53.3 km road link safety assessment results in no infrastructure upgrade related mitigation measures required, however, standard mitigations measures discussed in Section 5.2.2 are applicable.

■ Toowoomba - Athol Road (316), Ch 2.1 km to Ch 16.8 km

- The road segment is a formed sealed road with a variation of carriageway width, designed to standards with the average being 9 m wide. The road has a narrow shoulder which may have an impact on available vehicle recovery area and associated rear end crashes and off carriageway crashes. Casualty crash risks are higher on undivided roads, with no median for head-on crashes, however, the existing traffic volume does not warrant WCLT. Project traffic volumes are minor and are not expected to worsen the existing safety conditions, however, may increase the risk likelihood to moderate. There is no impact to the Medium risk level, and therefore no mitigations required.
- All accesses and intersections along the section would have sufficient gap acceptance to turn into or across the main road to maintain a five second headway gap acceptance. Existing risk likelihood is considered rare and sufficient gap acceptance will prevail even with the impact of the Project and therefore there is no increase in risk likelihood, no change to the Medium risk level and therefore no mitigation required.
- Five (5) Multi-vehicle (intersecting from adjacent approach) crashes have occurred on the road link. The crashes included three medical treatment and two hospitalisations. Existing sight distances are considered sufficient along the road link to observe approaching vehicles before making turn movements. Project traffic may increase such crash types at side road intersections where LVs may take gaps in the traffic stream at less than required headway gap acceptance standards (driver behaviour), and consequently the risk likelihood may increase to likely, and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- One (1) multi-vehicle head-on crash in opposite directions of travel which resulted in hospitalisation. Crash occurred during clear daylight on a straight section of road where sufficient sight distance prevails with solid barrier line marking. Likely cause may be inadequate visibility or opposing traffic lane encroachment. Project traffic may increase such crash types where additional HV volumes on the road may increase the need for overtaking however, WCLT is not warranted. Consequently, the risk likelihood may increase to moderate with Project traffic. There is no impact to the Medium risk level, and therefore no mitigations required.
- Three (3) multi-vehicle (opposing vehicles turning) crashes have occurred on the road link. The crashes included one medical treatment and two hospitalisations. Existing sight distances are considered sufficient along the road link to observe approaching vehicles before making turn movements. Project traffic may increase such crash types at side road intersections where LVs may take gaps in the traffic stream at less than required headway gap acceptance standards (driver behaviour). The risk likelihood may increase to likely and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.

- Seven (7) rear-end crashes occurred on the road link mainly as a result of numerous driveways accessing the road link and vehicles slowing down/stopping to access the driveways and through movement vehicles colliding with stopped vehicles. This mainly occurs along one lane per direction sections. Project traffic may exacerbate rear-end crashes due to slower moving vehicles requiring longer stopping distances and faster reaction times when travelling behind LVs wanting to enter driveways/accesses, and consequently the risk likelihood may increase to likely and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- Project traffic is not expected to exacerbate single vehicle crashes and no change in severity or risk likelihood expected due to project traffic, as the existing horizontal alignment of road is appropriate to accommodate required design speed. There is no impact to the Medium risk level, and therefore no mitigations required for the following crashes:
 - Two (2) single vehicle out of control on straight crashes resulting in vehicle hitting an object with hospitalisation and medical treatment as consequence. Possibility of cause being driver behaviour/fatigue/speeding.
 - Two (2) single vehicle out of control on curve crashes resulting in hospitalisation and medical treatment as consequence. Possibility of cause being driver behaviour/fatigue/speeding.
 - Three (3) single vehicle off carriageway on curve crashes resulting in vehicle hitting an object with hospitalisation and medical treatment as consequence. Possibility of cause being driver behaviour/fatigue/speeding.
- There were also two (2) other related crashes such as vehicle leaving driveway with hospitalisation and medical treatment as result. Such crashes may be exacerbated as a result of the Project due to slower moving vehicles requiring longer stopping distances and faster reaction times when vehicles leave driveways at less than required gap acceptance standards (five seconds). The risk likelihood may increase to moderate with Project traffic. There is no impact to the Medium risk level, and therefore no mitigations required.
- In summary, Toowoomba - Athol Road (316), Ch 2.1 km to Ch 16.8 km road link safety assessment results in no infrastructure upgrade related mitigation measures required, however, standard mitigations measures discussed in Section 5.2.2 are applicable.

To show the reduction in risk likelihood/consequence attributable to Detailed Design and Construction Works stage processes, the mostly non-infrastructure-based mitigation measures described in Section 5.2.2 have been incorporated into the assessment summarised in Table 5.133.

Table 5.133 Safety risk assessment: project primary construction routes (without and with Project)

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
State-Controlled Roads: Department of Transport Main Roads											
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 0.8 km to Ch 2.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 2.0 km to Ch 45.9 km	Moderate	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium
	Ch 45.9 km to Ch 88.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 1.6 km to Ch 66.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway (17C)	Ch 105.7 km to Ch 107.4 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 107.4 km to Ch 107.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 94.4 km to Ch 96.2 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 96.2 km to Ch 97.5 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 97.5 km to Ch 105.7 km	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 10.2 km to Ch 13.9 km	Unlikely	Extreme	Medium	Unlikely	Extreme	Medium		Unlikely	Extreme	Medium
	Ch 13.9 km to Ch 18.5 km	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 18.5 km to Ch 27.1 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 2.0 km to Ch 3.9 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 27.1 km to Ch 29.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 29.3 km to Ch 34.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 3.9 km to Ch 10.2 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
Ch 34.7 km to Ch 39.6 km	Rare	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium	

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Ch 39.6 km to Ch 40.3 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 40.3 km to Ch 40.5 km	Rare	Major	Medium	Unlikely	Major	Medium		Rare	Major	Medium
	Ch 40.5 km to Ch 43.9 km	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 40.5 km to Ch 43.9 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 43.9 km to Ch 46.3 km	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 43.9 km to Ch 46.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 11.2 km to Ch 15.3 km	Unlikely	Extreme	Medium	Moderate	Extreme	High	Required	Unlikely	Extreme	Medium
	Ch 15.3 km to Ch 17.5 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 17.5 km to Ch 19.0 km	Rare	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 19.0 km to Ch 20.3 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 2.2 km to Ch 5.4 km	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 20.3 km to Ch 21.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 21.5 km to Ch 23.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 23.2 km to Ch 25.0 km	Rare	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 25.0 km to Ch 30.1 km	Rare	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 30.1 km to Ch 38.7 km	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 38.7 km to Ch 41.1 km	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 41.1 km to Ch 41.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 41.7 km to Ch 43.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 43.2 km to Ch 44.7 km	Rare	Major	Medium	Rare	Major	Medium		Unlikely	Major	Medium
	Ch 44.7 km to Ch 47.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 47.6 km to Ch 52.2 km	Unlikely	Major	Medium	Rare	Major	Medium		Unlikely	Major	Medium
	Ch 5.4 km to Ch 6.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 52.2 km to Ch 53.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Ch 53.3 km to Ch 60.8 km	Unlikely	Extreme	Medium	Rare	Extreme	High	Required	Unlikely	Moderate	Medium
	Ch 6.7 km to Ch 7.7 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Ch 60.8 km to Ch 63.0 km	Rare	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 7.7 km to Ch 11.2 km	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 0.7 km to Ch 0.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 0.8 km to Ch 1.4 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 1.4 km to Ch 3.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 13.0 km to Ch 121.6 km	Unlikely	Extreme	Medium	Unlikely	Extreme	High	Required	Unlikely	Extreme	Medium
	Ch 3.0 km to Ch 13.0 km	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	Unlikely	Moderate	Medium	Unlikely	Moderate	Medium		Unlikely	Moderate	Medium
Millmerran - Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 2.0 km to Ch 2.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 13.1 km to Ch 14.0 km	Rare	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	Ch 14.0 km to Ch 17.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 17.3 km to Ch 18.1 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 18.1 km to Ch 21.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 2.5 km to Ch 3.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 21.8 km to Ch 28.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 28.0 km to Ch 33.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 3.5 km to Ch 6.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 33.0 km to Ch 35.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 35.6 km to Ch 37.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 37.7 km to Ch 39.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Ch 39.8 km to Ch 41.9 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 41.9 km to Ch 45.9 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 45.9 km to Ch 47.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 47.6 km to Ch 53.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 53.3 km to Ch 55.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 55.7 km to Ch 56.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 56.6 km to Ch 59.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 59.2 km to Ch 61.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 6.2 km to Ch 9.0 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 61.0 km to Ch 65.7 km	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
	Ch 65.7 km to Ch 68.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 9.0 km to Ch 13.1 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba - Athol Road (316)	Ch 2.1 km to Ch 16.8 km	Moderate	Major	Medium	Likely	Major	High	Required	Moderate	Major	Medium
Toowoomba-Cecil Plains Road (324)	Ch 10.3 km to Ch 12.1 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 12.1 km to Ch 14.5 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 14.5 km to Ch 16.3 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 8.3 km to Ch 9.2 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Toowoomba Second Range Crossing (319A)	Ch 0.0 km to Ch 26.8 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba Second Range	Ch 0.0 km to Ch 0.6 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Ch 0.6 km to Ch 3.2 km	Rare	Major	Medium	Moderate	Major	Medium		Moderate	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Crossing (319B)	Ch 3.2 km to Ch 4.1 km	Rare	Major	Medium	Rare	Major	Medium		Unlikely	Major	Medium
	Ch 4.1 km to Ch 13.0 km	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Major	Medium
Toowoomba Second Range Crossing Off-Ramp	Ch 0 to Ch 0.6	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba Second Range Crossing On-Ramp	Ch 3.7 km to Ch 3.2 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Toowoomba Second Range Crossing Off-Ramp	Ch 4.1 km to Ch 3.7 km	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Local Government Roads: Balonne Shire Council											
Noondoo Thallon Road (3514)	Ch 0.0 km to Ch 0.4 km	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Local Government Roads: Goondiwindi Regional Council											
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Bybera Road	Cunningham Highway to B2G-LDN060.4	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN060.4 to Earthworks Area 2A	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Cemetery Road	Cunningham Highway to GrainCorp Goondiwindi	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Unnamed Road to Moorroobie Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Coolmunda Dam Access to Cunningham Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Cremascos Road	Cunningham Highway to B2G-LDN052.8	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN052.8 to B2G-LDN055.4	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN055.4 to B2G-LDN054.2	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	NS2B-LDN033.2 to NS2B-LDN035.6	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Grays Road	Millmerran - Inglewood Road to Mosquito Creek Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Hunt Street	Leichhardt Highway to Boodle Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Kildonan Road	NS2B-LDN031.0 to South Kurumbul Road	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
	South Kurumbul Road to Cunningham Highway	Unlikely	Moderate	Medium	Moderate	Moderate	Medium		Unlikely	Moderate	Medium
McDougalls Road	B2G-LDN049.8 to McDougalls Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	McDougalls Road to Cunningham Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Queen Street South	Yelarbon Kurumbul to B2G-LDN016.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Silo Street	Barwon Highway to GrainCorp Talwood	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Springborg Road	Cunningham Highway to B2G-LDN037.6	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN067.6 to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorroobie Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Wongavale Yugilbar Road	Millmerran - Inglewood Road to B2G-LDN081.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN006.3 to Wondalli Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Yelarbon Kurumbul Road to B2G-LDN020.3	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN020.3 to B2G-LDN025.9	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN025.9 to Cunningham Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Local Government Roads: Moree Plains Shire Council											
Boggabilla Weir Access	River Road to Boggabilla Weir	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
River Road	Newell Highway to Boggabilla Weir Access	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Local Government Roads: Toowoomba Regional Council											
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN188.2 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Blackwell Road	Gore Highway to Millmerran Quarry	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Millmerran Quarry to B2G-LDN120.2	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	B2G-LDN120.2 to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Bligh Street	Six Mile Road to Boral Concrete Millmerran	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Brimblecombe Road	Toowoomba - Cecil Plains Road to Brimblecombe Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Brimblecombe Road to WL 194467R	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Bushy Lane	B2G-LDN183.0 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Campbell Street	Millmerran - Inglewood Road to Saleyards Road	Rare	Major	Medium	Rare	Major	Medium		Unlikely	Major	Medium
	Saleyards Road to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Chamberlain Road	Warrego Highway to B2G-LDN204.2	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Commodore Peak Road	Scragg Road to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Dieckmann Road	B2G-LDN150.5 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Draper Road	Steger Road to B2G-FBW206.9	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Forestry Road	Unnamed Road to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Millmerran - Inglewood Road to Earthworks Area 3B	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
Fysh Road	B2G-LDN147.1 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Gilgai Lane	B2G-LDN144.6 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Hall Road	B2G-LDN139.0 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN116.0 to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Kahler Road	Murlaggan Road to B2G-LDN165.6	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Kingsthorpe Overpass	Warrego Highway Off Ramp to Kingsthorpe Haden Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Millmerran - Inglewood Road to Commodore Mine	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Leesons Road	Warrego Highway to Steger Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Steger Road to B2G-LDN206.3	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Linthorpe Road	Gore Highway to B2G-LDN175.5	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Linthorpe Valley Road	Geitz Road to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Lochaber Road	Gore Highway to B2G-LDN172.0	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Millwood Road	Millmerran - Inglewood Road to B2G-LDN112.1	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN112.1 to Millwood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Millwood Road to Kooroongarra Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Moffatt Reserve Road	Millmerran - Inglewood Road to Millmerran Power Station	Unlikely	Major	Medium	Unlikely	Major	Medium		Unlikely	Major	Medium
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Mooroobie Lane to Wondalli Kurumbul Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Murlaggan Road	B2G-LDN164.3 to Kahler Road	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	Kahler Road to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	B2G-LDN128.2 to B2G-LDN130.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	B2G-LDN130.0 to Millmerran - Inglewood Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Paint Mine Road	Gore Highway to B2G-LDN173.5	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Paton Road	Millmerran - Inglewood Road to B2G-LDN104.5	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Quarry Road Access	Tummalville Road to Quarry Road Quarry	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Saleyards Road	Campbell Street to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Schwarten Road	Millmerran - Inglewood Road to B2G-LDN126.9	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Scragg Road	Commodore Peak Road to B2G-LDN123.6	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
	B2G-LDN123.6 to B2G-LDN123.8	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	New Hope Recycled Water Pipeline to Draper Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Tummalville Road	Unnamed Road to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Rare	Major	Medium
Turallin Road	Gore Highway to Millmerran Construction Camp	Unlikely	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN153.1 to Gore Highway	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Road name	Road section	Without Project			With Project			Mitigation required?	With Project – with mitigation		
		Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating		Likelihood	Consequence	Risk rating
	Gore Highway to B2G-LDN150.9	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba - Cecil Plains Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
West Street	Gore Highway to Florence Street	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	Florence Street to Six Mile Road	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
Yarranlea Road	Gore Highway to B2G-LDN161.0	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium
	B2G-LDN161.0 to Desmonds Lane	Rare	Major	Medium	Moderate	Major	Medium		Unlikely	Major	Medium

Cumulative Construction Works stage road-rail interface assessment results

The existing safety issues along construction traffic routes and road-rail interface locations has been assessed and provided in Section 2.6. These existing safety issues, namely the number of reported crashes and crash severities for each construction traffic route and road-rail interface location have been used to inform the consequence classifications provided in the sections below.

The results of the cumulative road safety impact assessment risk assessment for Construction Works stage road-rail interfaces impacted by primary construction routes are shown in Table 5.134. There are two road-rail interfaces that receive a risk rating of High. These is the same interface as identified in the 'Project only' assessment and is further explained below:

- 310-12-E-1 Suttons Road, passive level crossing
 - Figure 5.24 shows images of the existing level crossing
 - Left photo: View of the existing level crossing from Suttons Road, approaching from the north
 - Right photo: View of the existing passive level crossing from Suttons Road, approaching from the west
 - Vehicle queueing related crashes or collision with trains may be exacerbated by the Project at the existing passive level crossing based on the existing road alignment, unsealed pavement, and insufficient sight distance available to approaching vehicles. However, sufficient stacking distance is available to accommodate for the largest design vehicle 36.5 m Road Train. As per AS1742.7 a distance comprising the design vehicle plus a safety factor of five metres (5 m) stopped at the intersection without fouling the tracks is required. Stacking of >200 m is available. Existing stacking is sufficient which would have no impact on crashes with railway train or vehicle from opposing direction crashes. Due to the existing geometry and sight lines crashes may change to likely.
 - The proposed upgraded treatment of the crossing will be a passive control crossing with formalising of the approach roads to required geometrical standards. The crossing will also be temporarily closed during the construction stage to upgrade the crossing to the required standards of AS1742.7. The upgraded crossing will allow for sufficient safety features. In addition, road safety audits will also be required to be undertaken based on the design and based on as-constructed conditions.



Figure 5.24 310-12-E-1: Suttons Road images

Table 5.134 Cumulative impact - Safety risk assessment: road-rail interface (without and with Project)

Interface ID	Road name	Proposed treatment	Without Project			With Cumulative impact			With Cumulative impact -with mitigations		
			Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating
State Government: Department of Transport and Main Roads (DTMR)											
310-24-P-2	Millmerran-Inglewood Road	Active level crossing	Proposed Crossing			Moderate	Major	Medium	Rare	Major	Medium
310-40-E-2	Millmerran-Leyburn Road	Active level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
Local Government: Goondiwindi Regional Council (GRC)											
270-12-P-1	Kildonan Road	Active level crossing (incorporates stock route crossing)	Proposed Crossing			Rare	Not Significant	Medium	Rare	Not Significant	Low
310-4-E-2	South Kurumbul Road	Active level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
310-7-E-1	Unnamed Road	Passive level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
310-10-P-1	Unnamed Road	Passive level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-12-E-1	Suttons Road	Passive level crossing	Rare	Major	Medium	Likely	Major	High	Unlikely	Major	Medium
310-14-E-0	Springborg Road	Passive level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
310-16-P-1a	Whetstone Access Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-18-P-8	Cremascos Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-21-P-9	Lovells Crossing Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-22-P-9	Thornton Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-25-P-3	Grays Road	Passive level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low

Interface ID	Road name	Proposed treatment	Without Project			With Cumulative impact			With Cumulative impact -with mitigations		
			Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating	Likelihood	Consequence	Risk rating
310-26-P-2	Wongavale Yugalbar Road	Passive level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-28-P-3	Unnamed Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
Non-Inland Rail crossing	Coolmunda Dam Access	Active level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium
Local Government Roads: Toowoomba Regional Council (TRC)											
310-30-P-2	Unnamed Road	Passive level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-31-P-7	Kooroongarra Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-32-P-4	Paton Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-33-P-1	Nicol Creek Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-34-P-1	Millwood Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-36-P-1	Blackwell Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-42-E-0a	Harris Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-43-E-3	Elsden Road	Active level crossing	Rare	Not Significant	Low	Rare	Not Significant	Low	Rare	Not Significant	Low
310-43-P-8a	Mann Silo Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-45-E-1	Longhurst Road	Active level crossing	Rare	Not Significant	Low	Rare	Not Significant	Low	Rare	Not Significant	Low
310-48-P-1	Tip Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-50-P-11	Linthorpe Valley Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-57-P-4	Leesons Road	Active level crossing	Proposed Crossing			Rare	Not Significant	Low	Rare	Not Significant	Low
310-16-P-1a	Whetstone Access Road	Active level crossing	Rare	Major	Medium	Moderate	Major	Medium	Rare	Major	Medium

Mitigation measures

The mitigation measures for the risks identified are consistent with those highlighted in Section 5.2. However, if the construction dates for any of the Inland Rail Projects changes, then this assessment should be updated to identify any potential additional cumulative impacts.

5.11.2.4 Intersection impact assessment and mitigation

The intersections that will be impacted by the cumulative Inland Rail construction traffic above and beyond the impacts expected by 'Project only' construction traffic have been assessed by comparing the base traffic flows with the cumulative flow. These intersections have been assessed to determine which may require upgraded turning treatments to accommodate assumed cumulative construction flows. This assessment has been undertaken as per the methodology outlined in Section 5.4.1.1. SIDRA Analysis has been undertaken for all intersections that have been impacted by the cumulative volumes. Methodology is outlined in Section 2.5.1.

Intersection information

Details for each of the intersection impacted by additional cumulative construction traffic is provided in Table 5.135. The table summarises:

- Intersection name (with first street name indicating major road name)
- Construction activities through intersection
- Peak impact month
- Turn movements from major road to be assessed.

Table 5.135 Proposed cumulative construction vehicles movements at intersections

Major road	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
State-Controlled Roads: Department of Transport and Main Roads			
Cunningham Highway/Leichhardt Highway	Workforce, rail-to-road diversion, in situ concrete, precast concrete,	2025	Right, Left
Gore Highway/Dieckmann Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, rail-to-road diversion, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Leichhardt Highway/Hunt Street	Rail-to-road diversion, in situ concrete,	2024	Right, Left
State-Controlled Roads: Transport for New South Wales			
Newell Highway/River Road	Water	2024	Right, Left
Local Government Roads: Goondiwindi Regional Council			
Hunt Street/Boodle Street	In situ concrete	2024	Right
Local Government Roads: Moree Plains Shire Council			
River Road/River Road	Water	2024	Left

Turn warrants assessment

The turn warrants assessment for intersections is provided in Table 5.136 and Table 5.137 for right and left turning treatments, respectfully. It provides a summary of the peak hour volumes for the major road and minor road turning movements without and with Project traffic, existing turn treatments, minimum turn treatment requirements without and with the Project and indicates whether the existing treatment are insufficient and therefore mitigations are required. The turn treatment requirements should be reconsidered in detailed design following finalisation of routes and volumes in order to ensure appropriate intersection treatments are known.

For a number of the below assessments, it is noted that treatments may be warranted under existing conditions based on the adopted traffic flows. When an upgrade to an intersection is warranted under existing conditions, ARTC would be required to provide mitigations for the Project related impacts, regardless of the intersection design or age. Ongoing consultation between the construction contractor, ARTC, DTMR and local governments will be required during the Detailed Design and Construction Works stage of the Project to determine:

- 1) The required upgrades to intersections on the final construction routes to accommodate the final construction vehicle numbers
- 2) The responsibility for upgrading this intersection to accommodate the construction traffic.

Intersection turn warrant graphs and calculations are provided in Appendix BH.

Table 5.136 Turn warrants assessment for right turning treatments at intersections (cumulative)

Intersection name	Major road peak hour volume in peak impact year (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required?
	Without Project	With Project (cumulative)	Without Project	With Project (cumulative)		Without Project	With Project (cumulative)	
State-Controlled Roads: Department of Transport and Main Roads								
Cunningham Highway/Leichhardt Highway	256	273	89	90	CHR	CHR	CHR	No
Gore Highway/Dieckmann Road	258	329	1	2	None	BAR	BAR	Yes
Leichhardt Highway/Hunt Street (North)	183	187	1	1	CHR	BAR	BAR	No
Leichhardt Highway/Hunt Street (South)	183	189	1	1	CHR	BAR	BAR	No
State-Controlled Roads: Transport for New South Wales								
Newell Highway/River Road	479	481	1	4	BAR	BAR	BAR	No
Local Government Roads: Goondiwindi Regional Council								
Hunt Street/Boodle Street	3	3	1	3	None	BAR	BAR	Yes
Local Government Roads: Moree Plains Shire Council								
River Road/River Road	3	8	1	1	None	BAR	BAR	Yes

Table 5.137 Turn warrants assessment for left turning treatments at intersections

Intersection name	Major road peak hour volume in peak impact year (Q _M)		Peak hour right turn volume into minor road (Q _R)		Existing turn treatments	Minimum right turn treatment requirements		Mitigations required?
	Without Project	With Project (cumulative)	Without Project	With Project (cumulative)		Without Project	With Project (cumulative)	
State-Controlled Roads: Department of Transport and Main Roads								
Cunningham Highway/Leichhardt Highway	139	140	89	93	CHL	AUL(s)	AUL(s)	No
Gore Highway/Dieckmann Road	134	166	1	33	None	BAL	AUL(s)	Yes
Leichhardt Highway/Hunt Street (North)	93	95	1	1	AUL	BAL	BAL	No
Leichhardt Highway/Hunt Street (South)	89	91	1	3	AUL	BAL	BAL	No
State-Controlled Roads: Transport for New South Wales								
Newell Highway/River Road	240	240	1	3	BAL	BAL	BAL	No
Local Government Roads: Goondiwindi Regional Council								
Hunt Street/Boodle Street	1	1	1	1	None	BAL	BAL	Yes
Local Government Roads: Moree Plains Shire Council								
River Road/River Road	1	1	1	6	None	BAL	BAL	Yes

The results in Table 5.137 indicate the same turn warrant treatments required as those highlighted in the 'Project only' assessment in Section 5.4.2.

Delay assessment

The intersection delay assessment for the cumulative impact has been undertaken as per the methodology within Section 5.4.1.3. Table 5.138 provides the intersection results summary for the cumulative impact assessment where the anticipated aggregated vehicle minutes delay exceeds 5 per cent. Table 5.139 lists the intersection with less than 5 per cent aggregated minutes delay caused by cumulative traffic. Detailed output tables and SIDRA output summaries are included in Appendix BI.

The overall vehicle minutes delay net increase for the intersections included in the cumulative impact assessment area equates to 21 per cent, which is above the GTIA definition of significantly worsening of 5 per cent. Therefore, mitigation of capacity issues causing delay is required to return the intersection to pre-Project levels. Red text indicates where the percentage increase is larger than the 5 per cent threshold specified within the GTIA.

Table 5.138 SIDRA intersection results summary (>5% vehicle minutes delay)

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Vehicle minutes delay (net) %
			DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)	
Cunningham Highway/Leichhardt Highway	AM	Without Project	0.176	4	W-RT	14	B	7	8%
		With Project	0.193	4	W-RT	15	B	7	
	PM	Without Project	0.199	4	W-RT	15	B	7	8%
		With Project	0.217	5	W-RT	15	C	8	
Gore Highway / Dieckmann Road	AM	Without Project	0.082	0	NW-RT	8	A	0	2052%
		With Project	0.127	2	NW-RT	13	B	2	
	PM	Without Project	0.090	0	NW-RT	9	A	0	2075%
		With Project	0.118	2	NW-RT	12	B	2	
Leichhardt Highway/ Hunt Street	AM	Without Project	0.059	0	S-RT	8	A	0	65%
		With Project	0.061	1	S-RT	11	B	0	
	PM	Without Project	0.064	0	S-RT	8	A	0	67%
		With Project	0.066	1	S-RT	11	B	0	
Hunt Street/ Boodle Street	AM	Without Project	0.001	4	S-LT	6	A	0	121%
		With Project	0.003	5	S-LT	6	A	0	
	PM	Without Project	0.001	4	S-LT	6	A	0	122%
		With Project	0.003	5	S-LT	6	A	0	
River Road/ River Road	AM	Without Project	0.002	4	S-LT	6	A	0	259%
		With Project	0.006	6	S-RT	7	A	0	
	PM	Without Project	0.002	4	S-LT	6	A	0	259%
		With Project	0.006	6	S-RT	7	A	0	

Table 5.139 SIDRA intersection results summary (<5% vehicle minutes delay)

Intersection name	Peak period	Analysis scenario	Intersection		Worst movement				Vehicle minutes delay (net) %
			DoS	Average delay (s)	Movement	Delay (s)	LoS	95% back of queue length (m)	
Newell Highway/ River Road	AM	Without Project	0.214	6	S-RT	9	A	8	3%
		With Project	0.216	6	S-RT	13	B	8	
	PM	Without Project	0.207	6	S-RT	9	A	8	4%
		With Project	0.210	6	S-RT	12	B	8	

The above results indicate that six intersections have increased the 'vehicle minutes delay' due to cumulative traffic. The additional impact to all of these intersections is less than two per cent beyond that outlined in Section 5.4.5.

Mitigation measures

Given the above results, the same mitigation measures from 'Project only' apply to the cumulative impact assessment as presented in Section 5.4.6. Table 5.31 lists the typical infrastructure-based mitigation measures applicable to capacity issues. Table 5.32 lists the additional mitigation measures for the intersections along OSOM routes.

Table 5.33 summarises the mitigation measures applicable to intersections that exceed 5 per cent net vehicle minutes delay, and also exceed acceptable operational capacity limits.

The overall vehicle minutes delay net increase for the cumulative impact assessment area equates to 6.1 per cent, which is just above the GTIA definition of significantly worsening of 5 per cent. Therefore, mitigation of capacity issues causing delay is required to return the intersection to pre-Project levels.

As all intersections within the cumulative impact assessment are operating within acceptable operational capacity limits, it is expected that the non-infrastructure measures outlined in Section 5.4.6.1 will reduce the impact assessment area aggregate vehicle minutes delay to under 5 per cent, in line with GTIA requirements, and no infrastructure-based mitigation measures will be required.

Subject to construction contract arrangements, investigate opportunities to nominate laydown locations that can be shared between the Project and other Inland Rail Projects. This would enable optimisation of the number of delivery movements and routes to/from the construction sites for both projects.

5.11.2.5 Road link capacity assessment and mitigation

This section examines the cumulative impact of all Inland Rail Projects on the Project TIA road network. Project related traffic consists of traffic generated by construction activities and operational activities.

The road link capacity assessment for the cumulative impact has been undertaken as per the methodology within Section 5.5.1. This methodology is based on the framework laid out in Part C of the GTIA. The same methodology has been applied to the road links with the cumulative impact considered in 'With Project' traffic volumes using the decision tree outlined in Figure 5.10.

Road link capacity assessment

Table 5.140 provides a summary of all 26 road links which are impacted by cumulative traffic from other Inland Rail Projects, and their required road link capacity assessment as explained below:

- <5 per cent: Road link 5 per cent volume threshold has not been triggered
- V/C ratio: road link triggers 5 per cent threshold, however, is either unsealed or has no line marking and is therefore assessed via v/c ratio
- HCS Highway: road link is a two-way two-lane road which triggers 5 per cent threshold and is therefore assessed using the HCS highway facility method
- HCS Motorway: road link is a two-way multi-lane road which triggers 5 per cent threshold and is therefore assessed using the HCS multilane motorway method.

Table 5.140 Cumulative road link capacity assessment summary

Road name	Road extents*	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
State-Controlled Roads: Department of Transport Main Roads					
Cunningham Highway (17D)	Ch 88.2 km to Ch 90.0 km	✓			
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	✓			
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	✓			
Gore Highway (28A)	Ch 25.0 km to Ch 30.1 km			✓	
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	✓			
	Ch 3.7 km to Ch 6.4 km	✓			
	Ch 6.4 km to Ch 8.3 km	✓			
Leichhardt Highway (26C)	Ch 222.4 km to Ch 224.1 km	✓			
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	✓			
Millmerran-Inglewood Road (337)	Ch 3.5 km to Ch 6.2 km			✓	
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	✓			
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	✓			
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km				✓
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km			✓	
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	✓			
	Ch 7.2 km to Ch 15.1 km	✓			
	Ch 15.1 km to Ch 18.9 km	✓			
	Ch 18.9 km to Ch 28.9 km	✓			
	Ch 28.9 km to Ch 36.6 km	✓			
	Ch 36.6 km to Ch 55.5 km	✓			
	Ch 55.5 km to Ch 75.4 km	✓			
	Ch 75.4 km to Ch 79.6 km	✓			
Local Government Roads: Goondiwindi Regional Council					
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street		✓		

Road name	Road extents*	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
Hunt Street	Leichhardt Highway to Boodle Street		✓		
Local Government Roads: Moree Plains Shire Council					
Boggabilla Weir Access	River Road to Boggabilla Weir	✓			
River Road	Newell Highway to Boggabilla Weir Access		✓		

Table note:

* Road extents at Chainage locations (Ch) are measured at km points along the Project alignment

The table indicates a total of:

- 19 road links not triggering the 5 per cent threshold
- 3 road links requiring a volume/capacity check
- 3 road links requiring a HCS highway facility analysis
- 1 road link requiring a HCS multilane facility analysis.

Volume/capacity ratio

The volume/capacity (V/C) ratio results are summarised in Table 5.141 and Table 5.142 for the gazetted/northbound/eastbound directions and against-gazetted/southbound/westbound directions, respectively. Full calculations are in Appendix BJ. The table summarises for each road link:

- Road classification
- Correlated road capacity in passenger-car equivalents per hour (PCE/h)
- Peak impact year
- Without Project traffic volumes in PCE/h
- With Project traffic volumes in PCE/h
- V/C ratio
- Whether further investigation or mitigations measures are required.

The V/C ratio assessment has only been undertaken for roads identified in Table 5.140 as required.

Table 5.141 Cumulative volume/capacity ratio results G/NB/EB

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Background traffic (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	Narrow Seal (>4.5 m)	2000	2025	1	1	0.0	No
Hunt Street	Leichhardt Highway to Boodle Street	Narrow Seal (>4.5 m)	2000	2025	1	1	0.0	No
Local Government Roads: Moree Plains Shire Council								
River Road	Newell Highway to Boggabilla Weir Access	Narrow Seal (>4.5 m)	2000	2024	1	6	0.0	No

Table 5.142 Cumulative volume/capacity ratio results AG/SB/WB

Road name	Road section	Classification	Capacity allowance (PCE/h)	Peak impact year	Background traffic (PCE/h)	With Project traffic volumes (PCE/h)	V/C ratio	Mitigation required?
Local Government Roads: Goondiwindi Regional Council								
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	Narrow Seal (>4.5 m)	2000	2025	1	1	0.00	No
Hunt Street	Leichhardt Highway to Boodle Street	Narrow Seal (>4.5 m)	2000	2025	1	1	0.00	No
Local Government Roads: Moree Plains Shire Council (MPSC)								
River Road	Newell Highway to Boggabilla Weir Access	Narrow Seal (>4.5 m)	2000	2024	1	6	0.00	No

The volume/capacity ratio assessment indicates that none of the road links assessed require further assessment or mitigations as they all remain well below a v/c ratio of 0.5. The highest v/c ratio noted was 0.01 which indicates all roads will continue to operate with significant capacity with the Inland Rail project.

HCS highway facility Level of Service

The following section summarises the results of the HCS highway facility analyses carried out to determine the with Project and without Project traffic LOS during the peak impact year.

As per the GTIA, the assessment of road link capacity is based on the incremental worsening of LOS. The LOS analysis was undertaken for the construction route sections which exceeds the 5 per cent threshold, as well as all construction route sections of which traffic volumes were assumed. All road segments have been analysed based on their operations, using thresholds defined in Section 5.5.1.3 for all road types. The LOS without and with the Project related traffic has been summarised in Table 5.143 and Table 5.144 for the gazetted/northbound/eastbound directions and against-gazetted/southbound/westbound directions, respectively.

The complete HCS output summaries for the cumulative impact assessment are provided in Appendix BK.

Table 5.143 Highway Capacity Software highway facility cumulative Level of Service results G/NB/EB

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
State-Controlled Roads: Department of Transport and Main Roads									
Gore Highway (28A)	Ch 25.0 km to Ch 30.1 km	2026	146	175	A	290	348	A	No
Millmerran-Inglewood Road (337)	Ch 14.0 km to Ch 17.3 km	2025	34	27	A	67	52	A	No

Table 5.144 Highway Capacity Software highway facility cumulative Level of Service results AG/SB/WB

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
State-Controlled Roads: Department of Transport and Main Roads									
Millmerran-Inglewood Road (337)	Ch 3.5 km to Ch 6.2 km	2025	40	26	A	138	90	A	No
Toowoomba Bypass Off-ramp (319B)	Toowoomba Bypass to Warrego Highway	2025	103	14	A	140	20	A	No

The results of the LOS comparison indicate that the cumulative Inland Rail project construction traffic will not cause an incremental change to LOS along construction traffic routes in either direction, above and beyond those changed within the B2G-only assessment.

HCS Multilane Motorway Level of Service

The following section summarises the results of the HCS multilane motorway analyses carried out to determine the with Project and without Project traffic LOS for various construction route road sections during the peak impact year.

As per the GTIA, the assessment of road link capacity is based on the incremental worsening of LOS. The LOS analysis was undertaken for the construction route sections which exceeds the 5 per cent threshold, as well as all construction route sections of which traffic volumes were assumed. All road segments have been analysed based on their operations, using thresholds defined in Section 5.5.1.3 for all road types. The LOS without and with the Project related traffic has been summarised in Table 5.145 and Table 5.146 for the gazetted/northbound/eastbound directions and against-gazetted/southbound/westbound directions, respectively.

The complete HCS output summaries are provided in Appendix BK.

Table 5.145 Highway Capacity Software multilane motorway facility Level of Service results G/NB/EB

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
State-Controlled Roads: Department of Transport and Main Roads									
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	2025	160	1.7	A	226	2.4	A	No

Table 5.146 Highway Capacity Software multilane motorway facility Level of Service results AG/SB/WB

Road name	Road section	Peak impact year	Without Project			With Project			Mitigation required?
			Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	Demand flow rate (veh/h)	Follower density (follower/km/ln)	LOS	
State-Controlled Roads: Department of Transport and Main Roads									
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	2025	97	1.1	A	159	1.7	A	No

Mitigation measures

No further mitigation measures are required above and beyond those detailed for the 'Project only' road link capacity assessment outlined in Section 5.5.6.

5.11.2.6 Pavement impact assessment and mitigation

The pavement impact assessment has been undertaken for the cumulative Inland Rail project to identify the likely magnitude of pavement impacts on the road network due to the additional HV movements during construction. Where the pavement loadings of the additional Project related traffic equals or exceeds 5 per cent of the background loadings, the pavement is considered to be significantly impacted.

A more detailed analysis was completed for the DTMR road links where the 5 per cent SAR threshold was exceeded in order to develop a preliminary estimate of monetary contributions to offset the impacts to the pavement. The calculation of contributions was only limited to DTMR roads, as local council was unable to provide suitable marginal cost rates for road rehabilitation.

The methodology used for the pavement impact assessment is outlined in Section 5.6.1.

Five per cent SAR comparison

The pavement analysis provides a 5 per cent comparison of the background traffic SAR and the cumulative Project generated SAR for each SCR link that is proposed to be used by construction traffic. The outputs of this analysis are presented in Table 5.147 and Table 5.148. Cells are shaded in red where the percentage increase is larger than the 5 per cent threshold specified within the GTIA.

Table 5.147 Without Project and with Project standard axle repetitions G/NB/EB

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
State-Controlled Roads: Department of Transport and Main Roads																			
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	349,294	355,984	362,803	369,753	376,836	384,054	1,714	5,550	5,682	5,045	952	0	0%	2%	2%	1%	0%	0%
	Ch 0.8 km to Ch 2.0 km	349,294	355,984	362,803	369,753	376,836	384,054	1,714	5,550	5,682	5,045	952	0	0%	2%	2%	1%	0%	0%
	Ch 2.0 km to Ch 45.9 km	101,509	101,957	102,407	102,859	103,313	103,769	1,642	5,045	5,045	5,045	952	0	2%	5%	5%	5%	1%	0%
	Ch 45.9 km to Ch 88.0 km	101,509	101,957	102,407	102,859	103,313	103,769	1,514	4,650	4,650	4,650	878	0	1%	5%	5%	5%	1%	0%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	32,703	32,703	32,703	32,703	32,703	32,703	1,514	4,650	4,650	4,650	878	0	5%	14%	14%	14%	3%	0%
	Ch 1.6 km to Ch 66.8 km	32,703	32,703	32,703	32,703	32,703	32,703	1,413	4,343	4,343	4,343	819	0	4%	13%	13%	13%	3%	0%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	38,540	38,540	38,540	38,540	38,540	38,540	16,796	51,622	51,622	51,622	9,740	0	44%	134%	134%	134%	25%	0%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	926,788	964,167	1,003,054	1,043,509	1,085,595	1,129,379	0	1,523	1,082	1,980	0	0	0%	0%	0%	0%	0%	0%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	442,215	451,839	461,672	471,718	481,984	492,472	23,402	34,776	12,863	10,378	25	0	5%	8%	3%	2%	0%	0%
	Ch 96.2 km to Ch 97.5 km	442,215	451,839	461,672	471,718	481,984	492,472	59,530	45,615	46,675	120,556	25	0	13%	10%	10%	26%	0%	0%
	Ch 97.5 km to Ch 105.7 km	442,215	451,839	461,672	471,718	481,984	492,472	104,621	71,976	46,675	120,556	25	0	24%	16%	10%	26%	0%	0%
	Ch 105.7 km to Ch 107.4 km	442,215	451,839	461,672	471,718	481,984	492,472	163,549	103,059	48,109	94,246	740	0	37%	23%	10%	20%	0%	0%
	Ch 107.4 km to Ch 107.6 km	1,010,468	1,067,642	1,128,051	1,191,878	1,259,317	1,330,571	163,525	102,916	47,842	87,304	740	0	16%	10%	4%	7%	0%	0%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	450,079	465,961	482,403	499,426	517,049	535,294	163,525	102,916	47,842	87,304	740	0	36%	22%	10%	17%	0%	0%
	Ch 2.0 km to Ch 3.9 km	450,079	465,961	482,403	499,426	517,049	535,294	163,557	103,230	51,607	87,681	740	0	36%	22%	11%	18%	0%	0%
	Ch 3.9 km to Ch 10.2 km	450,079	465,961	482,403	499,426	517,049	535,294	144,925	90,022	44,881	66,736	734	0	32%	19%	9%	13%	0%	0%
	Ch 10.2 km to Ch 13.9 km	450,079	465,961	482,403	499,426	517,049	535,294	144,683	88,454	40,594	66,183	642	0	32%	19%	8%	13%	0%	0%
	Ch 13.9 km to Ch 18.5 km	450,079	465,961	482,403	499,426	517,049	535,294	145,935	89,319	40,944	55,353	642	0	32%	19%	8%	11%	0%	0%
	Ch 18.5 km to Ch 27.1 km	450,079	465,961	482,403	499,426	517,049	535,294	111,016	78,784	40,802	45,386	643	0	25%	17%	8%	9%	0%	0%
	Ch 27.1 km to Ch 29.3 km	450,079	465,961	482,403	499,426	517,049	535,294	111,215	78,321	35,076	39,931	552	0	25%	17%	7%	8%	0%	0%
	Ch 29.3 km to Ch 34.7 km	450,079	465,961	482,403	499,426	517,049	535,294	119,353	78,831	41,697	44,774	565	0	27%	17%	9%	9%	0%	0%
	Ch 34.7 km to Ch 39.6 km	450,079	465,961	482,403	499,426	517,049	535,294	119,353	95,616	41,697	44,774	565	0	27%	21%	9%	9%	0%	0%
	Ch 39.6 km to Ch 40.3 km	450,079	465,961	482,403	499,426	517,049	535,294	96,534	124,990	38,568	40,290	565	0	21%	27%	8%	8%	0%	0%
	Ch 40.3 km to Ch 40.5 km	450,079	465,961	482,403	499,426	517,049	535,294	13,509	24,324	37,845	39,568	565	0	3%	5%	8%	8%	0%	0%
	Ch 40.5 km to Ch 43.9 km	450,079	465,961	482,403	499,426	517,049	535,294	1,567	4,468	3,633	1,100	275	0	0%	1%	1%	0%	0%	0%
	Ch 43.9 km to Ch 46.3 km	450,079	465,961	482,403	499,426	517,049	535,294	622	4,468	3,633	1,100	275	0	0%	1%	1%	0%	0%	0%
	Ch 46.3 km to Ch 88.0 km	450,079	465,961	482,403	499,426	517,049	535,294	622	3,056	3,633	1,100	275	0	0%	1%	1%	0%	0%	0%
	Ch 88.0 km to Ch 88.2 km	1,157,873	1,196,598	1,236,618	1,277,976	1,320,718	1,364,889	1,379	15,529	22,600	5,312	755	0	0%	1%	2%	0%	0%	0%
	Ch 88.2 km to Ch 90.0 km	1,157,873	1,196,598	1,236,618	1,277,976	1,320,718	1,364,889	550	12,984	20,056	2,767	275	0	0%	1%	2%	0%	0%	0%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	18,796,287	21,823,127	25,337,392	29,417,572	34,154,800	39,654,883	38,079	117,594	120,152	147,293	28,300	126	0%	1%	0%	1%	0%	0%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	864,644	864,644	864,644	864,644	864,644	864,644	38,079	117,594	120,152	147,293	28,300	126	4%	14%	14%	17%	3%	0%
	Ch 0.0 km to Ch 2.2 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	27,412	170,340	57,858	54,988	4,767	0	3%	18%	6%	5%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Gore Highway (28A)	Ch 2.2 km to Ch 5.4 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	48,660	163,541	48,511	45,674	4,262	0	5%	17%	5%	4%	0%	0%
	Ch 5.4 km to Ch 6.7 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	48,660	163,425	48,410	42,747	3,972	0	5%	17%	5%	4%	0%	0%
	Ch 6.7 km to Ch 7.7 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	48,660	182,675	67,719	42,867	3,972	0	5%	19%	7%	4%	0%	0%
	Ch 7.7 km to Ch 11.2 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	46,461	159,368	60,862	38,500	3,904	0	5%	17%	6%	4%	0%	0%
	Ch 11.2 km to Ch 15.3 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	46,461	159,193	60,809	39,150	3,940	0	5%	17%	6%	4%	0%	0%
	Ch 15.3 km to Ch 17.5 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	38,118	206,622	78,613	29,967	3,869	0	4%	22%	8%	3%	0%	0%
	Ch 17.5 km to Ch 19.0 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	38,118	206,386	78,542	30,181	3,906	0	4%	22%	8%	3%	0%	0%
	Ch 19.0 km to Ch 20.3 km	896,653	943,565	992,932	1,044,881	1,099,549	1,157,077	38,118	206,262	77,784	30,430	3,925	0	4%	22%	8%	3%	0%	0%
	Ch 20.3 km to Ch 21.5 km	572,705	584,439	596,414	608,634	621,105	633,831	38,118	206,262	77,884	30,430	3,925	0	7%	35%	13%	5%	1%	0%
	Ch 21.5 km to Ch 23.2 km	572,705	584,439	596,414	608,634	621,105	633,831	35,781	181,190	71,957	25,723	3,858	0	6%	31%	12%	4%	1%	0%
	Ch 23.2 km to Ch 25.0 km	572,705	584,439	596,414	608,634	621,105	633,831	21,982	167,431	71,724	26,202	3,904	0	4%	29%	12%	4%	1%	0%
	Ch 25.0 km to Ch 30.1 km	572,705	584,439	596,414	608,634	621,105	633,831	21,982	343,708	248,000	23,433	3,683	0	4%	59%	42%	4%	1%	0%
	Ch 30.1 km to Ch 38.7 km	572,705	584,439	596,414	608,634	621,105	633,831	19,966	35,712	47,604	35,189	4,869	0	3%	6%	8%	6%	1%	0%
	Ch 38.7 km to Ch 41.1 km	572,705	584,439	596,414	608,634	621,105	633,831	19,074	33,294	46,374	32,644	4,367	0	3%	6%	8%	5%	1%	0%
	Ch 41.1 km to Ch 41.7 km	572,705	584,439	596,414	608,634	621,105	633,831	19,074	33,294	46,374	26,662	3,590	0	3%	6%	8%	4%	1%	0%
	Ch 41.7 km to Ch 43.2 km	572,705	584,439	596,414	608,634	621,105	633,831	19,116	50,856	73,628	34,315	3,591	0	3%	9%	12%	6%	1%	0%
	Ch 43.2 km to Ch 44.7 km	572,705	584,439	596,414	608,634	621,105	633,831	19,116	47,880	65,330	34,315	3,591	0	3%	8%	11%	6%	1%	0%
	Ch 44.7 km to Ch 47.6 km	572,705	584,439	596,414	608,634	621,105	633,831	18,933	47,450	64,923	22,878	2,991	0	3%	8%	11%	4%	0%	0%
	Ch 47.6 km to Ch 52.2 km	572,705	584,439	596,414	608,634	621,105	633,831	18,933	47,231	55,078	16,924	2,991	0	3%	8%	9%	3%	0%	0%
	Ch 52.2 km to Ch 53.3 km	572,705	584,439	596,414	608,634	621,105	633,831	18,749	36,546	29,264	16,557	2,900	0	3%	6%	5%	3%	0%	0%
	Ch 53.3 km to Ch 60.8 km	572,705	584,439	596,414	608,634	621,105	633,831	18,833	36,604	22,373	15,457	2,946	0	3%	6%	4%	3%	0%	0%
	Ch 60.8 km to Ch 63.0 km	572,705	584,439	596,414	608,634	621,105	633,831	3,416	7,737	7,674	8,256	1,478	0	1%	1%	1%	1%	0%	0%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	488,030	495,567	503,221	510,993	518,885	526,899	3,417	8,166	8,517	8,456	1,478	0	1%	2%	2%	2%	0%	0%
	Ch 0.7 km to Ch 0.8 km	488,030	495,567	503,221	510,993	518,885	526,899	3,416	7,589	7,589	8,256	1,478	0	1%	2%	2%	2%	0%	0%
	Ch 0.8 km to Ch 1.4 km	488,030	495,567	503,221	510,993	518,885	526,899	3,416	8,557	8,205	8,256	1,478	0	1%	2%	2%	2%	0%	0%
	Ch 1.4 km to Ch 3.0 km	488,030	495,567	503,221	510,993	518,885	526,899	3,416	7,589	7,589	9,405	1,587	0	1%	2%	2%	2%	0%	0%
	Ch 3.0 km to Ch 13.0 km	488,030	495,567	503,221	510,993	518,885	526,899	2,471	7,589	7,589	9,405	1,587	0	1%	2%	2%	2%	0%	0%
	Ch 13.0 km to Ch 121.6 km	488,030	495,567	503,221	510,993	518,885	526,899	2,471	7,589	7,589	7,589	1,432	0	1%	2%	2%	1%	0%	0%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	7,304,575	7,304,575	7,304,575	7,304,575	7,304,575	7,304,575	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	0%	0%
	Ch 3.7 km to Ch 6.4 km	7,230,222	7,447,129	7,670,542	7,900,659	8,137,678	8,381,809	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	0%	0%
	Ch 6.4 km to Ch 8.3 km	8,209,949	8,456,248	8,709,935	8,971,233	9,240,370	9,517,581	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	0%	0%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	600,793	608,229	615,757	623,379	631,094	638,905	2,471	7,589	7,589	7,589	1,432	0	0%	1%	1%	1%	0%	0%
	Ch 220.1 km to Ch 222.4 km	604,981	612,469	620,050	627,724	635,493	643,359	1,468	7,040	8,210	2,545	480	0	0%	1%	1%	0%	0%	0%
	Ch 222.4 km to Ch 224.1 km	604,981	612,469	620,050	627,724	635,493	643,359	1,468	15,874	21,161	4,212	480	0	0%	3%	3%	1%	0%	0%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	864,644	864,644	864,644	864,644	864,644	864,644	38,079	117,594	120,152	147,293	28,300	126	4%	14%	14%	17%	3%	0%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	164,469	177,285	191,100	205,991	222,043	239,346	15,417	28,867	14,699	7,201	1,469	0	9%	16%	8%	3%	1%	0%
	Ch 2.5 km to Ch 3.5 km	164,469	177,285	191,100	205,991	222,043	239,346	108,346	132,806	15,755	8,673	1,578	0	66%	75%	8%	4%	1%	0%
	Ch 3.5 km to Ch 6.2 km	147,411	152,996	158,793	164,810	171,055	177,537	108,358	136,739	22,885	8,805	1,469	0	74%	89%	14%	5%	1%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Ch 6.2 km to Ch 9.0 km	147,411	152,996	158,793	164,810	171,055	177,537	108,175	136,093	25,364	8,438	1,378	0	73%	89%	16%	5%	1%	0%
	Ch 9.0 km to Ch 13.1 km	147,411	152,996	158,793	164,810	171,055	177,537	108,175	135,465	23,301	8,462	1,378	0	73%	89%	15%	5%	1%	0%
	Ch 13.1 km to Ch 14.0 km	147,411	152,996	158,793	164,810	171,055	177,537	111,079	162,476	36,886	15,651	1,396	0	75%	106%	23%	9%	1%	0%
	Ch 14.0 km to Ch 17.3 km	147,411	152,996	158,793	164,810	171,055	177,537	109,580	149,252	28,374	59,789	5,176	0	74%	98%	18%	36%	3%	0%
	Ch 17.3 km to Ch 18.1 km	147,411	152,996	158,793	164,810	171,055	177,537	109,580	142,255	108,790	53,283	4,723	0	74%	93%	69%	32%	3%	0%
	Ch 18.1 km to Ch 21.8 km	147,411	152,996	158,793	164,810	171,055	177,537	109,397	141,888	108,091	52,794	4,631	0	74%	93%	68%	32%	3%	0%
	Ch 21.8 km to Ch 28.0 km	147,411	152,996	158,793	164,810	171,055	177,537	108,673	128,854	100,122	42,179	3,983	0	74%	84%	63%	26%	2%	0%
	Ch 28.0 km to Ch 33.0 km	147,411	152,996	158,793	164,810	171,055	177,537	108,490	128,343	99,103	27,274	2,758	0	74%	84%	62%	17%	2%	0%
	Ch 33.0 km to Ch 35.6 km	147,411	152,996	158,793	164,810	171,055	177,537	108,297	125,867	96,265	26,907	2,666	0	73%	82%	61%	16%	2%	0%
	Ch 35.6 km to Ch 37.7 km	147,411	152,996	158,793	164,810	171,055	177,537	107,254	114,084	11,414	24,061	2,659	0	73%	75%	7%	15%	2%	0%
	Ch 37.7 km to Ch 39.8 km	147,411	152,996	158,793	164,810	171,055	177,537	107,254	114,546	11,414	24,061	2,659	0	73%	75%	7%	15%	2%	0%
	Ch 39.8 km to Ch 41.9 km	89,427	94,212	99,253	104,564	110,159	116,054	107,058	114,022	9,596	23,694	2,567	0	120%	121%	10%	23%	2%	0%
	Ch 41.9 km to Ch 45.9 km	89,427	94,212	99,253	104,564	110,159	116,054	4,772	12,643	9,844	4,836	1,009	0	5%	13%	10%	5%	1%	0%
	Ch 45.9 km to Ch 47.6 km	89,427	94,212	99,253	104,564	110,159	116,054	4,579	12,259	9,389	4,469	918	0	5%	13%	9%	4%	1%	0%
	Ch 47.6 km to Ch 53.3 km	89,427	94,212	99,253	104,564	110,159	116,054	4,579	13,655	9,389	4,469	918	0	5%	14%	9%	4%	1%	0%
	Ch 53.3 km to Ch 55.7 km	89,427	94,212	99,253	104,564	110,159	116,054	4,561	13,391	9,587	5,594	918	0	5%	14%	10%	5%	1%	0%
	Ch 55.7 km to Ch 56.6 km	89,427	94,212	99,253	104,564	110,159	116,054	4,561	11,533	9,587	5,594	918	0	5%	12%	10%	5%	1%	0%
	Ch 56.6 km to Ch 59.2 km	89,427	94,212	99,253	104,564	110,159	116,054	3,616	11,533	9,587	5,594	918	0	4%	12%	10%	5%	1%	0%
	Ch 59.2 km to Ch 61.0 km	89,427	94,212	99,253	104,564	110,159	116,054	3,597	11,314	9,587	6,265	918	0	4%	12%	10%	6%	1%	0%
	Ch 61.0 km to Ch 65.7 km	89,427	94,212	99,253	104,564	110,159	116,054	109,254	81,520	9,221	5,899	827	0	122%	87%	9%	6%	1%	0%
	Ch 65.7 km to Ch 68.7 km	89,427	94,212	99,253	104,564	110,159	116,054	113,274	83,713	8,954	6,167	736	0	127%	89%	9%	6%	1%	0%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	31,992	34,004	36,142	38,415	40,830	43,398	183	11,389	27,778	367	92	0	1%	33%	77%	1%	0%	0%
	Ch 2.0 km to Ch 2.2 km	31,992	34,004	36,142	38,415	40,830	43,398	0	10,527	25,733	0	0	0	0%	31%	71%	0%	0%	0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	3,204,643	3,300,783	3,399,806	3,501,800	3,606,854	3,715,060	38,079	117,594	120,152	147,293	28,300	126	1%	4%	4%	4%	1%	0%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	3,204,643	3,300,783	3,399,806	3,501,800	3,606,854	3,715,060	38,079	117,594	120,152	147,293	28,300	126	1%	4%	4%	4%	1%	0%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	35,223	36,574	37,976	39,432	40,944	42,514	0	1,412	0	0	0	0	0%	4%	0%	0%	0%	0%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	235,889	235,889	235,889	235,889	235,889	235,889	4,402	9,195	9,146	8,803	2,201	0	2%	4%	4%	4%	1%	0%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	1,130,482	1,131,624	1,132,766	1,133,910	1,135,054	1,136,200	813	14,787	9,469	1,980	0	0	0%	1%	1%	0%	0%	0%
	Ch 6.0 km to Ch 6.4 km	281,465	281,465	281,465	281,465	281,465	281,465	813	13,503	8,387	0	0	0	0%	5%	3%	0%	0%	0%
	Ch 6.4 km to Ch 8.3 km	281,465	281,465	281,465	281,465	281,465	281,465	2,646	34,191	13,855	4,960	6	0	1%	12%	5%	2%	0%	0%
	Ch 8.3 km to Ch 9.2 km	281,465	281,465	281,465	281,465	281,465	281,465	3,379	34,046	13,011	21,439	1,155	0	1%	12%	5%	8%	0%	0%
	Ch 9.2 km to Ch 10.0 km	410,439	436,594	464,416	494,010	525,491	558,978	7,256	82,967	24,909	20,399	200	0	2%	19%	5%	4%	0%	0%
	Ch 10.0 km to Ch 10.1 km	410,439	436,594	464,416	494,010	525,491	558,978	7,256	82,967	24,909	20,399	200	0	2%	19%	5%	4%	0%	0%
	Ch 10.1 km to Ch 10.3 km	410,439	436,594	464,416	494,010	525,491	558,978	367	4,089	3,487	734	183	0	0%	1%	1%	0%	0%	0%
	Ch 10.3 km to Ch 12.1 km	410,439	436,594	464,416	494,010	525,491	558,978	367	4,164	3,880	1,363	2,118	0	0%	1%	1%	0%	0%	0%
	Ch 12.1 km to Ch 14.5 km	410,439	436,594	464,416	494,010	525,491	558,978	367	34,381	63,121	9,177	1,195	0	0%	8%	14%	2%	0%	0%
	Ch 14.5 km to Ch 16.3 km	346,156	367,506	390,174	414,240	439,790	466,917	5,635	85,653	83,819	20,859	1,108	0	2%	23%	21%	5%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	1,489,220	1,533,896	1,579,913	1,627,311	1,676,130	1,726,414	0	473	122	223	0	0	0%	0%	0%	0%	0%	0%
	Ch 26.9 km to Ch 27.1 km	1,489,220	1,533,896	1,579,913	1,627,311	1,676,130	1,726,414	0	1,523	1,082	1,980	0	0	0%	0%	0%	0%	0%	0%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	1,416,037	6,156	12,901	60,000	71,664	36,010	2,570	0%	1%	5%	5%	3%	0%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	1,416,037	6,156	12,901	60,000	71,664	36,010	2,570	0%	1%	5%	5%	3%	0%
	Ch 0.6 km to Ch 3.2 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	1,416,037	16,121	80,603	24,700	19,043	1,851	0	1%	6%	2%	1%	0%	0%
	Ch 3.2 km to Ch 4.1 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	1,416,037	16,121	79,057	24,700	19,043	1,851	0	1%	6%	2%	1%	0%	0%
	Ch 4.1 km to Ch 13.0 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	1,416,037	23,010	159,534	46,401	46,185	2,566	0	2%	12%	4%	3%	0%	0%
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	1,416,037	10,107	70,837	14,933	9,277	9	0	1%	5%	1%	1%	0%	0%
	Ch 7.2 km to Ch 15.1 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	1,416,037	0	1,546	0	0	0	0	0%	0%	0%	0%	0%	0%
	Ch 15.1 km to Ch 18.9 km	1,267,617	1,296,001	1,325,021	1,354,690	1,385,024	1,416,037	6,889	80,477	21,701	27,142	715	0	1%	6%	2%	2%	0%	0%
	Ch 18.9 km to Ch 28.9 km	5,642,693	5,872,254	6,111,155	6,359,775	6,618,509	6,887,769	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	0%	0%
	Ch 28.9 km to Ch 36.6 km	5,642,693	5,872,254	6,111,155	6,359,775	6,618,509	6,887,769	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	0%	0%
	Ch 36.6 km to Ch 55.5 km	4,110,619	4,230,067	4,352,987	4,479,478	4,609,645	4,743,595	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	1%	0%
	Ch 55.5 km to Ch 75.4 km	3,246,055	3,246,055	3,246,055	3,246,055	3,246,055	3,246,055	7,012	19,334	23,415	125,316	70,248	2,841	0%	1%	1%	4%	2%	0%
	Ch 75.4 km to Ch 79.6 km	7,327,528	9,046,920	11,169,764	13,790,731	17,026,702	21,021,988	7,012	19,334	23,415	125,316	70,248	2,841	0%	0%	0%	1%	0%	0%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	3,037,489	3,138,631	3,243,141	3,351,130	3,462,716	3,578,017	28,218	330,628	82,764	126,326	70,577	2,570	1%	11%	3%	4%	2%	0%
	Ch 0.4 km to Ch 1.5 km	3,037,489	3,138,631	3,243,141	3,351,130	3,462,716	3,578,017	28,218	330,628	82,764	126,326	70,577	2,570	1%	11%	3%	4%	2%	0%
	Ch 1.5 km to Ch 2.4 km	2,764,871	2,826,781	2,890,077	2,954,791	3,020,953	3,088,597	6,156	12,901	60,000	71,664	36,010	2,570	0%	0%	2%	2%	1%	0%
	Ch 2.4 km to Ch 4.5 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	2,102,339	0	1,523	1,082	1,980	0	0	0%	0%	0%	0%	0%	0%
	Ch 4.5 km to Ch 5.0 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	2,102,339	72,614	349,320	2,748	3,342	1	0	4%	19%	0%	0%	0%	0%
	Ch 5.0 km to Ch 5.3 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	2,102,339	73,351	347,766	10,472	19,899	969	0	4%	19%	1%	1%	0%	0%
	Ch 5.3 km to Ch 6.2 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	2,528,105	73,168	328,514	10,105	4,520	96	0	4%	16%	0%	0%	0%	0%
State-Controlled Roads: Transport for New South Wales																			
Newell Highway	River Road to Queensland/NSW Border	1,970,221	2,255,126	2,581,231	2,954,492	3,381,730	3,870,748	8,161	11,689	6,558	2,568	6	0	0%	1%	0%	0%	0%	0%
Local Government Roads: Balonne Shire Council																			
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	15,184	15,184	15,184	15,184	15,184	15,184	16,796	51,622	51,622	51,622	9,740	0	9%	29%	29%	29%	5%	0%
Local Government Roads: Goondiwindi Regional Council																			
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	2,336	2,336	2,336	2,336	2,336	2,336	0	8,834	12,950	1,667	0	0	0%	378%	554%	71%	0%	0%
Bybera Road	Cunningham Highway to B2G-LDN060.4	3,749	3,881	4,018	4,160	4,307	4,459	18,632	13,208	6,727	20,945	6	0	497%	340%	167%	503%	0%	0%
	B2G-LDN060.4 to Earthworks Area 2A	3,749	3,881	4,018	4,160	4,307	4,459	2,187	0	0	0	0	0	58%	0%	0%	0%	0%	0%
Cemetery Road	Access Track to Moorobie Lane	113,136	129,496	148,222	169,655	194,189	222,269	0	22,100	0	0	0	0	0%	17%	0%	0%	0%	0%
	Cunningham Highway to GrainCorp Goondiwindi	19,922	20,588	21,277	21,988	22,724	23,484	828	2,545	2,545	2,545	480	0	4%	12%	12%	12%	2%	0%
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	12,051	12,313	12,581	12,855	13,134	13,420	23,402	34,776	12,863	10,378	25	0	194%	282%	102%	81%	0%	0%
	Coolmunda Dam Access to Cunningham Highway	12,051	12,313	12,581	12,855	13,134	13,420	23,402	34,776	12,863	10,378	25	0	194%	282%	102%	81%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	28,064	29,055	30,080	31,141	32,240	33,378	242	1,195	2,999	367	92	0	1%	4%	10%	1%	0%	0%
	B2G-LDN055.4 to B2G-LDN054.2	28,064	29,055	30,080	31,141	32,240	33,378	59	828	265	0	0	0	0%	3%	1%	0%	0%	0%
	Cunningham Highway to B2G-LDN052.8	28,064	29,055	30,080	31,141	32,240	33,378	242	1,568	4,286	553	92	0	1%	5%	14%	2%	0%	0%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	2,904	3,006	3,112	3,222	3,336	3,454	112,930	79,354	3,129	4,484	0	0	3889%	2640%	101%	139%	0%	0%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	4,195	4,432	4,683	4,948	5,228	5,523	67	400	460	6,942	0	0	2%	9%	10%	140%	0%	0%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	4,620	5,288	6,052	6,928	7,929	9,076	5,633	8,396	9,065	13,334	275	0	122%	159%	150%	192%	3%	0%
	NS2B-LDN033.2 to NS2B-LDN035.6	4,620	5,288	6,052	6,928	7,929	9,076	2,725	3,419	4,338	11,050	92	0	59%	65%	72%	160%	1%	0%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	1,124	1,148	1,173	1,199	1,225	1,251	29,609	2,218	0	0	0	0	2635%	193%	0%	0%	0%	0%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	5,212	5,966	6,829	7,816	8,947	10,241	59	14	69	234	0	0	1%	0%	1%	3%	0%	0%
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	863	909	957	1,009	1,063	1,119	0	1,857	0	0	0	0	0%	204%	0%	0%	0%	0%
Hunt Street	Leichhardt Highway to Boodle Street	2,336	2,336	2,336	2,336	2,336	2,336	0	994	1,457	187	0	0	0%	43%	62%	8%	0%	0%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	138,785	158,855	181,826	208,119	238,214	272,661	3,078	4,978	2,600	1,697	6	0	2%	3%	1%	1%	0%	0%
	NS2B-LDN031.0 to South Kurumbul Road	138,785	158,855	181,826	208,119	238,214	272,661	10,062	12,602	2,388	1,697	6	0	7%	8%	1%	1%	0%	0%
	South Kurumbul Road to Cunningham Highway	138,785	158,855	181,826	208,119	238,214	272,661	6,985	8,527	478	163	0	0	5%	5%	0%	0%	0%	0%
	Cunningham Highway to Eukabilla Road	107,771	108,701	109,640	110,587	111,542	112,505	8,711	12,664	8,307	3,481	281	0	8%	12%	8%	3%	0%	0%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	1,154	1,194	1,236	1,280	1,325	1,372	1,275	998	451	1,351	1	0	111%	84%	36%	106%	0%	0%
	McDougalls Road to Cunningham Highway	1,154	1,194	1,236	1,280	1,325	1,372	1,275	998	451	1,351	1	0	111%	84%	36%	106%	0%	0%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	16,562	18,957	21,699	24,837	28,428	32,539	0	22,100	0	0	0	0	0%	117%	0%	0%	0%	0%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	16,562	18,957	21,699	24,837	28,428	32,539	0	38,884	0	0	0	0	0%	205%	0%	0%	0%	0%
	Mooroobie Lane to Wondalli Kurumbul Road	16,562	18,957	21,699	24,837	28,428	32,539	0	38,884	0	0	0	0	0%	205%	0%	0%	0%	0%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	2,835	2,987	3,147	3,315	3,492	3,679	0	22,079	0	0	0	0	0%	739%	0%	0%	0%	0%
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	1,026	1,174	1,344	1,538	1,761	2,015	5,408	1,856	8,839	8,225	99	0	527%	158%	658%	535%	6%	0%
Silo Street	Barwon Highway to GrainCorp Talwood	19,664	19,664	19,664	19,664	19,664	19,664	101	307	307	307	58	0	1%	2%	2%	2%	0%	0%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	27,375	31,334	35,865	41,051	46,987	53,782	3,078	4,075	1,910	1,534	6	0	11%	13%	5%	4%	0%	0%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	13,940	14,002	14,063	14,126	14,188	14,251	1,531	4,687	4,687	4,687	882	0	11%	33%	33%	33%	6%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Springborg Road	Cunningham highway to B2G-LDN037.6	738	764	791	819	848	878	4,293	1,995	6,785	7,192	98	0	582%	261%	858%	878%	12%	0%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	3,628	3,756	3,889	4,026	4,168	4,315	6,985	8,408	0	0	0	0	193%	224%	0%	0%	0%	0%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	597	629	663	698	736	775	622	510	332	635	1	0	104%	81%	50%	91%	0%	0%
	B2G-LDN067.6 to Millmerran-Inglewood Road	597	629	663	698	736	775	4,251	2,769	746	673	10	0	712%	440%	113%	96%	1%	0%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	58,937	58,937	58,937	58,937	58,937	58,937	640	4,495	5,666	0	0	0	1%	8%	10%	0%	0%	0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	2,590	2,681	2,776	2,873	2,975	3,080	4,405	2,158	565	4,346	1	0	170%	81%	20%	151%	0%	0%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorobie Lane	2,407	2,755	3,153	3,609	4,131	4,728	0	3,271	0	0	0	0	0%	119%	0%	0%	0%	0%
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	2,407	2,536	2,672	2,815	2,966	3,124	920	10,675	1,783	12,905	6	0	38%	421%	67%	458%	0%	0%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	2,504	2,592	2,684	2,778	2,876	2,978	0	1,412	0	0	0	0	0%	54%	0%	0%	0%	0%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	7,099	8,126	9,301	10,645	12,185	13,947	2,550	3,947	1,837	1,633	5	0	36%	49%	20%	15%	0%	0%
	B2G-LDN006.3 to Wondalli Kurumbul Road	7,099	8,126	9,301	10,645	12,185	13,947	22	3,319	689	1,547	9	0	0%	41%	7%	15%	0%	0%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	7,099	8,126	9,301	10,645	12,185	13,947	22	48	689	1,547	9	0	0%	1%	7%	15%	0%	0%
	Yelarbon Kurumbul Road to B2G-LDN020.3	7,099	8,126	9,301	10,645	12,185	13,947	623	251	1,474	2,279	20	0	9%	3%	16%	21%	0%	0%
	B2G-LDN020.3 to B2G-LDN025.9	5,808	6,013	6,225	6,444	6,672	6,907	623	251	2,162	2,581	20	0	11%	4%	35%	40%	0%	0%
	B2G-LDN025.9 to Cunningham Highway	5,808	6,013	6,225	6,444	6,672	6,907	1,372	3,547	3,595	3,411	30	0	24%	59%	58%	53%	0%	0%
Local Government Roads: Moree Plains Shire Council																			
Boggabilla Weir Access	River Road to Boggabilla Weir	3,060	3,503	4,010	4,589	5,253	6,013	1,171	7,200	1,668	266	1	0	38%	206%	42%	6%	0%	0%
River Road	Newell Highway to Boggabilla Weir Access	3,060	3,503	4,010	4,589	5,253	6,013	1,171	7,200	1,668	266	1	0	38%	206%	42%	6%	0%	0%
Local Government Roads: Toowoomba Regional Council																			
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	754,352	802,423	853,557	907,950	965,809	1,027,355	76	152	152	152	38	0	0%	0%	0%	0%	0%	0%
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	484,879	493,479	502,231	511,139	520,205	529,431	4,402	8,803	8,803	8,803	2,201	0	1%	2%	2%	2%	0%	0%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	1,231,310	1,253,149	1,275,375	1,297,995	1,321,017	1,344,447	0	44	39	0	0	0	0%	0%	0%	0%	0%	0%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	23,062	24,269	25,538	26,874	28,281	29,760	23,678	15,947	945	498	1	0	103%	66%	4%	2%	0%	0%
	B2G-LDN188.2 to Gore Highway	23,062	24,269	25,538	26,874	28,281	29,760	23,697	16,137	1,038	1,111	44	0	103%	66%	4%	4%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	8,923	9,390	9,881	10,398	10,942	11,514	0	1,619	2,148	464	0	0	0%	17%	22%	4%	0%	0%
Blackwell Road	Gore Highway to Millmerran Quarry	555	563	572	581	590	599	0	0	0	1,816	155	0	0%	0%	0%	313%	26%	0%
	Millmerran Quarry to B2G-LDN120.2	555	563	572	581	590	599	0	0	0	55,029	4,542	0	0%	0%	0%	9472%	770%	0%
	B2G-LDN120.2 to Millmerran-Inglewood Road	580	602	624	648	673	698	167	1,472	948	48,667	3,788	0	29%	245%	152%	7509%	563%	0%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	2,913	2,958	3,003	3,050	3,097	3,145	1	686	997	200	0	0	0%	23%	33%	7%	0%	0%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	26,419	28,048	29,778	31,615	33,565	35,635	792	6,365	4,619	1,711	92	0	3%	23%	16%	5%	0%	0%
	Brimblecombe Road to WL 194467R	26,419	28,048	29,778	31,615	33,565	35,635	608	5,784	2,541	1,344	1	0	2%	21%	9%	4%	0%	0%
Bushy Lane	B2G-LDN183.0 to Gore Highway	2,745	2,889	3,040	3,199	3,367	3,543	244	2,631	772	981	38	0	9%	91%	25%	31%	1%	0%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	107,853	116,258	125,317	135,082	145,609	156,955	1	539	912	1,349	109	0	0%	0%	1%	1%	0%	0%
	Saleyards Road to Gore Highway	129,737	139,846	150,744	162,491	175,153	188,801	1	430	843	200	0	0	0%	0%	1%	0%	0%	0%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	2,596	2,737	2,886	3,042	3,208	3,382	0	778	871	1,695	0	0	0%	28%	30%	56%	0%	0%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	1,449	1,504	1,561	1,620	1,682	1,745	0	104	24,520	24	0	0	0%	7%	1571%	1%	0%	0%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	269	274	280	285	291	297	0	0	982	696	0	0	0%	0%	351%	244%	0%	0%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	2,433	2,483	2,533	2,585	2,638	2,692	42	19,314	35,763	9,407	1	0	2%	778%	1412%	364%	0%	0%
Draper Road	Steger Road to B2G-FBW206.9	2,694	2,840	2,994	3,156	3,328	3,508	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	350,488	372,823	396,581	421,853	448,736	477,331	76	152	152	1,415	104	0	0%	0%	0%	0%	0%	0%
	Access Track to Greenwattle Street	350,488	372,823	396,581	421,853	448,736	477,331	76	152	152	152	38	0	0%	0%	0%	0%	0%	0%
Florence Street	Gore Highway to West Street	7,987	8,111	8,236	8,363	8,492	8,624	0	109	69	0	0	0	0%	1%	1%	0%	0%	0%
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	0	22,541	0	0	0	0	0%	>5%, unable to be quantified	0%	0%	0%	0%
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	0	22,079	0	0	0	0	0%	>5%, unable to be quantified	0%	0%	0%	0%
Fysh Road	B2G-LDN147.1 to Gore Highway	8,118	8,285	8,455	8,628	8,805	8,985	19	50	46	1,002	52	0	0%	1%	1%	12%	1%	0%
Gap Road	Gore Highway to Grevillea Street	83,137	84,841	86,579	88,353	90,163	92,011	0	116	280	40	0	0	0%	0%	0%	0%	0%	0%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	5,400	5,682	5,980	6,292	6,622	6,968	0	35	11	650	35	0	0%	1%	0%	10%	1%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Gilgai Lane	B2G-LDN144.6 to Gore Highway	4,139	4,224	4,310	4,398	4,489	4,581	0	53	1,125	1,799	0	0	0%	1%	26%	41%	0%	0%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	78,542	80,151	81,793	83,469	85,180	86,925	0	1,031	2,491	352	0	0	0%	1%	3%	0%	0%	0%
Hall Road	B2G-LDN139.0 to Gore Highway	663	677	691	705	719	734	83	783	1,814	1,603	47	0	13%	116%	263%	227%	7%	0%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	8,405	8,724	9,054	9,397	9,753	10,123	0	75,184	80,901	0	0	0	0%	862%	894%	0%	0%	0%
	B2G-LDN116.0 to Millmerran-Inglewood Road	8,405	8,724	9,054	9,397	9,753	10,123	0	75,257	80,954	679	38	0	0%	863%	894%	7%	0%	0%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry	2,643	2,812	2,991	3,181	3,384	3,600	0	0	0	1,263	66	0	0%	0%	0%	40%	2%	0%
Kahler Road	Murlaggan Road to B2G-LDN165.6	239	244	249	254	259	264	0	0	0	2,432	291	0	0%	0%	0%	958%	112%	0%
Kingsthorpe Haden Overpass	Warrego Highway Off-ramp to Kingsthorpe Haden Road	171,402	180,704	190,510	200,849	211,749	223,240	72,274	325,846	5,049	2,075	10	0	42%	180%	3%	1%	0%	0%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	12,463	12,935	13,425	13,934	14,462	15,010	0	75,184	0	0	0	0	0%	581%	0%	0%	0%	0%
	Millmerran-Inglewood Road to Commodore Mine	290	301	312	324	336	349	0	0	49,039	0	0	0	0%	0%	15707%	0%	0%	0%
Leesons Road	Warrego Highway to Steger Road	6,338	6,682	7,045	7,427	7,830	8,255	183	19,252	367	15,379	873	0	3%	288%	5%	207%	11%	0%
	Steger Road to B2G-LDN206.3	6,338	6,682	7,045	7,427	7,830	8,255	3,501	29,881	35,070	22,750	877	0	55%	447%	498%	306%	11%	0%
Linthorpe Road	Gore Highway to B2G-LDN175.5	1,922	2,022	2,128	2,240	2,357	2,480	8,344	59,721	8,313	12,727	405	0	434%	2953%	391%	568%	17%	0%
Linthorpe Valley Road	Geitz Road to Gore Highway	16,559	17,426	18,338	19,297	20,307	21,369	0	35	11	650	35	0	0%	0%	0%	3%	0%	0%
Lochaber Road	Gore Highway to B2G-LDN172.0	13,727	14,446	15,201	15,997	16,834	17,714	0	168	1,316	2,966	223	0	0%	1%	9%	19%	1%	0%
	B2G-LDN172.0 to B2G-LDN172.6	13,727	14,446	15,201	15,997	16,834	17,714	0	0	460	0	0	0	0%	0%	3%	0%	0%	0%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	713,322	714,043	714,763	715,485	716,207	716,931	813	13,175	7,158	1,980	0	0	0%	2%	1%	0%	0%	0%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	6,376	6,618	6,869	7,129	7,399	7,679	723	13,034	7,969	10,614	649	0	11%	197%	116%	149%	9%	0%
	B2G-LDN112.1 to Millwood Road	6,376	6,618	6,869	7,129	7,399	7,679	0	6,325	0	0	0	0	0%	96%	0%	0%	0%	0%
	Millwood Road to Kooroongarra Road	290	301	312	324	336	349	0	6,325	0	0	0	0	0%	2103%	0%	0%	0%	0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	52,279	54,260	56,315	58,449	60,664	62,963	695	6,565	4,583	1,686	5	0	1%	12%	8%	3%	0%	0%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	17,557	17,917	18,284	18,658	19,041	19,431	164,027	164,039	4	314	22	0	934%	916%	0%	2%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Kahler Road to Gore Highway	17,557	17,917	18,284	18,658	19,041	19,431	164,027	164,039	4	518	46	0	934%	916%	0%	3%	0%	0%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	181,457	189,300	197,483	206,020	214,926	224,216	0	0	589	0	0	0	0%	0%	0%	0%	0%	0%
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	591,641	629,343	669,448	712,108	757,487	805,758	840	6,609	2,670	17,386	966	0	0%	1%	0%	2%	0%	0%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	45,330	48,862	52,670	56,774	61,198	65,967	208	1,733	1,176	1,609	110	0	0%	4%	2%	3%	0%	0%
	B2G-LDN128.2 to B2G-LDN130.0	45,330	48,862	52,670	56,774	61,198	65,967	114,963	1,733	1,252	1,792	110	0	254%	4%	2%	3%	0%	0%
	B2G-LDN130.0 to Millmerran-Inglewood Road	45,330	48,862	52,670	56,774	61,198	65,967	217,338	104,315	1,391	1,792	110	0	479%	213%	3%	3%	0%	0%
Paint Mine Road	Gore Highway to B2G-LDN173.5	5,610	5,903	6,212	6,537	6,879	7,239	0	522	157	2,544	442	0	0%	9%	3%	39%	6%	0%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	12,323	12,790	13,275	13,778	14,300	14,841	183	511	1,018	14,905	1,225	0	1%	4%	8%	108%	9%	0%
Quarry Road Access	Tummalville Road to Quarry	775	790	807	823	840	857	0	91,130	0	2,401	171	0	0%	11529%	0%	292%	20%	0%
Saleyards Road	Campbell Street to Gore Highway	95,294	102,720	110,724	119,352	128,653	138,678	0	109	69	1,148	109	0	0%	0%	0%	1%	0%	0%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0	0	183	705	1,821	367	92	0	>5%, unable to be quantified	>5%, unable to be quantified	>5%, unable to be quantified	>5%, unable to be quantified	>5%, unable to be quantified	0%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	2,516	2,612	2,711	2,813	2,920	3,031	0	627	2,063	215	0	0	0%	24%	76%	8%	0%	0%
	B2G-LDN123.6 to B2G-LDN123.8	2,516	2,612	2,711	2,813	2,920	3,031	0	627	0	0	0	0	0%	24%	0%	0%	0%	0%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	72,035	73,511	75,017	76,554	78,123	79,724	0	197,146	197,146	32,914	2,635	0	0%	268%	263%	43%	3%	0%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	236,987	249,848	263,407	277,702	292,772	308,660	1,015	10,515	4,041	2,850	3	0	0%	4%	2%	1%	0%	0%
	New Hope Recycled Water Pipeline to Draper Road	236,987	249,848	263,407	277,702	292,772	308,660	3,317	10,630	34,704	7,372	4	0	1%	4%	13%	3%	0%	0%
	Draper Road to Leeson's Road	236,987	249,848	263,407	277,702	292,772	308,660	3,317	10,630	34,704	7,372	4	0	1%	4%	13%	3%	0%	0%
Tummalville Road	Access Track to Gore Highway	24,528	25,031	25,544	26,067	26,601	27,146	0	7,666	0	28,545	2,033	0	0%	31%	0%	110%	8%	0%
Turallin Road	Gore Highway to the Turallin Facility	20,460	20,776	21,097	21,423	21,754	22,090	945	0	0	0	0	0	5%	0%	0%	0%	0%	0%
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	35,175	35,895	36,631	37,381	38,147	38,929	8,417	25,880	25,880	25,880	4,883	0	24%	72%	71%	69%	13%	0%
	B2G-LDN153.1 to Gore Highway	35,175	35,895	36,631	37,381	38,147	38,929	8,436	26,233	27,289	25,918	4,892	0	24%	73%	74%	69%	13%	0%
	Gore Highway to B2G-LDN150.9	17,521	17,880	18,247	18,621	19,002	19,392	0	0	0	5,982	777	0	0%	0%	0%	32%	4%	0%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	199,141	211,831	225,330	239,689	254,963	271,211	734	2,611	3,107	16,479	1,148	0	0%	1%	1%	7%	0%	0%
West Street	Gore Highway to Florence Street	29,999	30,463	30,933	31,411	31,896	32,389	1	577	928	200	0	0	0%	2%	3%	1%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Florence Street to Six Mile Road	2,913	2,958	3,003	3,050	3,097	3,145	1	686	997	200	0	0	0%	23%	33%	7%	0%	0%
Yarranlea Road	Gore Highway to B2G-LDN161.0	21,623	22,066	22,519	22,980	23,451	23,931	2,016	216,867	202,023	16,789	847	0	9%	983%	897%	73%	4%	0%
	B2G-LDN161.0 to Desmonds Lane	21,623	22,066	22,519	22,980	23,451	23,931	0	0	982	696	0	0	0%	0%	4%	3%	0%	0%

Table 5.148 Without Project and with Project standard axle repetitions AG/SB/WB

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
State-Controlled Roads: Department of Transport and Main Roads																			
Barwon Highway (31A)	Ch 0.0 km to Ch 0.8 km	263,701	268,752	273,900	279,147	284,494	289,944	20,163	64,458	65,629	59,963	11,315	0	8%	24%	24%	21%	4%	0%
	Ch 0.8 km to Ch 2.0 km	263,701	268,752	273,900	279,147	284,494	289,944	20,163	64,458	65,629	59,963	11,315	0	8%	24%	24%	21%	4%	0%
	Ch 2.0 km to Ch 45.9 km	102,671	103,124	103,579	104,036	104,496	104,957	19,524	59,963	59,963	59,963	11,315	0	19%	58%	58%	58%	11%	0%
	Ch 45.9 km to Ch 88.0 km	102,671	103,124	103,579	104,036	104,496	104,957	17,993	55,276	55,276	55,276	10,433	0	18%	54%	53%	53%	10%	0%
Barwon Highway (31B)	Ch 0.0 km to Ch 1.6 km	39,707	39,707	39,707	39,707	39,707	39,707	17,993	55,276	55,276	55,276	10,433	0	45%	139%	139%	139%	26%	0%
	Ch 1.6 km to Ch 66.8 km	39,707	39,707	39,707	39,707	39,707	39,707	16,796	51,622	51,622	51,622	9,740	0	42%	130%	130%	130%	25%	0%
Carnarvon Highway (24A)	Ch 40.5 km to Ch 73.5 km	35,041	35,041	35,041	35,041	35,041	35,041	1,413	4,343	4,343	4,343	819	0	4%	12%	12%	12%	2%	0%
Charlton Connection Road (320)	Ch 0.0 km to Ch 1.6 km	980,128	1,019,658	1,060,783	1,103,566	1,148,075	1,194,379	0	473	122	223	0	0	0%	0%	0%	0%	0%	0%
Cunningham Highway (17C)	Ch 94.4 km to Ch 96.2 km	513,782	524,963	536,387	548,060	559,987	572,173	2,611	3,879	1,435	1,158	3	0	1%	1%	0%	0%	0%	0%
	Ch 96.2 km to Ch 97.5 km	513,782	524,963	536,387	548,060	559,987	572,173	5,650	4,791	4,279	10,427	3	0	1%	1%	1%	2%	0%	0%
	Ch 97.5 km to Ch 105.7 km	513,782	524,963	536,387	548,060	559,987	572,173	35,259	7,009	4,279	10,427	3	0	7%	1%	1%	2%	0%	0%
	Ch 105.7 km to Ch 107.4 km	513,782	524,963	536,387	548,060	559,987	572,173	40,327	14,016	8,525	10,423	77	0	8%	3%	2%	2%	0%	0%
	Ch 107.4 km to Ch 107.6 km	722,797	763,694	806,905	852,561	900,800	951,769	40,363	14,229	8,667	9,839	77	0	6%	2%	1%	1%	0%	0%
Cunningham Highway (17D)	Ch 0.0 km to Ch 2.0 km	468,182	484,703	501,806	519,514	537,845	556,824	40,363	14,229	8,667	9,839	77	0	9%	3%	2%	2%	0%	0%
	Ch 2.0 km to Ch 3.9 km	468,182	484,703	501,806	519,514	537,845	556,824	40,065	10,242	7,050	9,881	77	0	9%	2%	1%	2%	0%	0%
	Ch 3.9 km to Ch 10.2 km	468,182	484,703	501,806	519,514	537,845	556,824	12,231	8,770	6,301	7,936	76	0	3%	2%	1%	2%	0%	0%
	Ch 10.2 km to Ch 13.9 km	468,182	484,703	501,806	519,514	537,845	556,824	12,206	8,600	5,623	7,877	66	0	3%	2%	1%	2%	0%	0%
	Ch 13.9 km to Ch 18.5 km	468,182	484,703	501,806	519,514	537,845	556,824	23,614	17,423	9,567	10,573	71	0	5%	4%	2%	2%	0%	0%
	Ch 18.5 km to Ch 27.1 km	468,182	484,703	501,806	519,514	537,845	556,824	32,672	26,801	13,966	11,385	77	0	7%	6%	3%	2%	0%	0%
	Ch 27.1 km to Ch 29.3 km	468,182	484,703	501,806	519,514	537,845	556,824	36,687	28,115	14,421	12,467	73	0	8%	6%	3%	2%	0%	0%
	Ch 29.3 km to Ch 34.7 km	468,182	484,703	501,806	519,514	537,845	556,824	10,553	8,639	6,191	4,072	59	0	2%	2%	1%	1%	0%	0%
	Ch 34.7 km to Ch 39.6 km	468,182	484,703	501,806	519,514	537,845	556,824	10,553	10,051	6,191	4,072	59	0	2%	2%	1%	1%	0%	0%
	Ch 39.6 km to Ch 40.3 km	468,182	484,703	501,806	519,514	537,845	556,824	8,723	12,852	5,928	3,688	59	0	2%	3%	1%	1%	0%	0%
	Ch 40.3 km to Ch 40.5 km	468,182	484,703	501,806	519,514	537,845	556,824	1,738	4,325	5,450	3,525	59	0	0%	1%	1%	1%	0%	0%
	Ch 40.5 km to Ch 43.9 km	468,182	484,703	501,806	519,514	537,845	556,824	776	21,099	3,726	114	28	0	0%	4%	1%	0%	0%	0%
	Ch 43.9 km to Ch 46.3 km	468,182	484,703	501,806	519,514	537,845	556,824	697	21,099	3,726	114	28	0	0%	4%	1%	0%	0%	0%
	Ch 46.3 km to Ch 88.0 km	468,182	484,703	501,806	519,514	537,845	556,824	697	4,315	3,726	114	28	0	0%	1%	1%	0%	0%	0%
	Ch 88.0 km to Ch 88.2 km	1,197,779	1,237,839	1,279,238	1,322,022	1,366,237	1,411,930	9,904	32,659	33,872	30,548	5,730	0	1%	3%	3%	2%	0%	0%
	Ch 88.2 km to Ch 90.0 km	1,197,779	1,237,839	1,279,238	1,322,022	1,366,237	1,411,930	57	2,413	3,626	301	28	0	0%	0%	0%	0%	0%	0%
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	24,762,058	28,749,591	33,379,251	38,754,444	44,995,225	52,240,985	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	0%	0%	0%
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	341,669	341,669	341,669	341,669	341,669	341,669	6,524	16,502	20,973	55,370	23,324	2,841	2%	5%	6%	16%	7%	1%
	Ch 0.0 km to Ch 2.2 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	111,857	456,576	123,101	121,186	22,188	0	12%	47%	12%	11%	2%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Gore Highway (28A)	Ch 2.2 km to Ch 5.4 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	390,394	618,361	122,063	121,030	22,144	0	43%	64%	12%	11%	2%	0%
	Ch 5.4 km to Ch 6.7 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	390,394	618,348	122,052	120,784	22,119	0	43%	64%	12%	11%	2%	0%
	Ch 6.7 km to Ch 7.7 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	390,394	619,968	124,199	121,248	22,119	0	43%	64%	12%	11%	2%	0%
	Ch 7.7 km to Ch 11.2 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	390,150	617,653	123,522	126,033	22,445	0	43%	64%	12%	12%	2%	0%
	Ch 11.2 km to Ch 15.3 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	390,150	617,772	123,558	133,761	22,864	0	43%	64%	12%	13%	2%	0%
	Ch 15.3 km to Ch 17.5 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	317,734	298,721	125,865	135,977	23,162	0	35%	31%	12%	13%	2%	0%
	Ch 17.5 km to Ch 19.0 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	317,734	298,951	125,934	138,522	23,604	0	35%	31%	12%	13%	2%	0%
	Ch 19.0 km to Ch 20.3 km	916,568	964,522	1,014,986	1,068,089	1,123,971	1,182,776	317,734	298,977	126,312	141,488	23,828	0	35%	31%	12%	13%	2%	0%
	Ch 20.3 km to Ch 21.5 km	531,303	542,189	553,298	564,635	576,204	588,010	317,734	298,977	126,900	141,488	23,828	0	60%	55%	23%	25%	4%	0%
	Ch 21.5 km to Ch 23.2 km	531,303	542,189	553,298	564,635	576,204	588,010	317,475	296,203	126,248	145,844	24,176	0	60%	55%	23%	26%	4%	0%
	Ch 23.2 km to Ch 25.0 km	531,303	542,189	553,298	564,635	576,204	588,010	153,448	131,398	123,833	151,655	24,724	0	29%	24%	22%	27%	4%	0%
	Ch 25.0 km to Ch 30.1 km	531,303	542,189	553,298	564,635	576,204	588,010	153,448	146,228	138,663	118,741	22,089	0	29%	27%	25%	21%	4%	0%
	Ch 30.1 km to Ch 38.7 km	531,303	542,189	553,298	564,635	576,204	588,010	153,225	119,736	123,029	119,587	22,187	0	29%	22%	22%	21%	4%	0%
	Ch 38.7 km to Ch 41.1 km	531,303	542,189	553,298	564,635	576,204	588,010	144,789	96,462	107,719	93,669	17,295	0	27%	18%	19%	17%	3%	0%
	Ch 41.1 km to Ch 41.7 km	531,303	542,189	553,298	564,635	576,204	588,010	144,789	96,462	107,719	93,166	17,230	0	27%	18%	19%	17%	3%	0%
	Ch 41.7 km to Ch 43.2 km	531,303	542,189	553,298	564,635	576,204	588,010	145,166	251,635	110,890	96,395	17,237	0	27%	46%	20%	17%	3%	0%
	Ch 43.2 km to Ch 44.7 km	531,303	542,189	553,298	564,635	576,204	588,010	145,166	251,458	108,753	96,395	17,237	0	27%	46%	20%	17%	3%	0%
	Ch 44.7 km to Ch 47.6 km	531,303	542,189	553,298	564,635	576,204	588,010	145,147	251,461	108,740	95,694	17,185	0	27%	46%	20%	17%	3%	0%
	Ch 47.6 km to Ch 52.2 km	531,303	542,189	553,298	564,635	576,204	588,010	145,147	251,679	107,788	94,551	17,185	0	27%	46%	19%	17%	3%	0%
	Ch 52.2 km to Ch 53.3 km	531,303	542,189	553,298	564,635	576,204	588,010	145,128	251,326	106,760	94,513	17,176	0	27%	46%	19%	17%	3%	0%
	Ch 53.3 km to Ch 60.8 km	531,303	542,189	553,298	564,635	576,204	588,010	145,874	257,621	109,504	103,354	17,731	0	27%	48%	20%	18%	3%	0%
	Ch 60.8 km to Ch 63.0 km	531,303	542,189	553,298	564,635	576,204	588,010	29,450	91,522	90,968	98,140	17,565	0	6%	17%	16%	17%	3%	0%
Gore Highway (28B)	Ch 0.0 km to Ch 0.7 km	505,390	513,196	521,122	529,170	537,343	545,642	29,462	95,341	98,462	99,921	17,565	0	6%	19%	19%	19%	3%	0%
	Ch 0.7 km to Ch 0.8 km	505,390	513,196	521,122	529,170	537,343	545,642	29,450	90,210	90,210	98,140	17,565	0	6%	18%	17%	19%	3%	0%
	Ch 0.8 km to Ch 1.4 km	505,390	513,196	521,122	529,170	537,343	545,642	29,450	90,319	90,279	98,140	17,565	0	6%	18%	17%	19%	3%	0%
	Ch 1.4 km to Ch 3.0 km	505,390	513,196	521,122	529,170	537,343	545,642	29,450	90,210	90,210	111,792	18,861	0	6%	18%	17%	21%	4%	0%
	Ch 3.0 km to Ch 13.0 km	505,390	513,196	521,122	529,170	537,343	545,642	29,371	90,210	90,210	111,792	18,861	0	6%	18%	17%	21%	4%	0%
	Ch 13.0 km to Ch 121.6 km	505,390	513,196	521,122	529,170	537,343	545,642	29,371	90,210	90,210	90,210	17,016	0	6%	18%	17%	17%	3%	0%
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	6,098,648	6,098,648	6,098,648	6,098,648	6,098,648	6,098,648	38,079	117,594	120,152	147,293	28,300	126	1%	2%	2%	2%	0%	0%
	Ch 3.7 km to Ch 6.4 km	6,138,767	6,322,930	6,512,618	6,707,997	6,909,237	7,116,514	38,079	117,594	120,152	147,293	28,300	126	1%	2%	2%	2%	0%	0%
	Ch 6.4 km to Ch 8.3 km	6,537,118	6,733,231	6,935,228	7,143,285	7,357,583	7,578,311	38,079	117,594	120,152	147,293	28,300	126	1%	2%	2%	2%	0%	0%
Leichhardt Highway (26C)	Ch 205.2 km to Ch 220.1 km	570,833	577,898	585,051	592,292	599,623	607,044	29,371	90,210	90,210	90,210	17,016	0	5%	16%	15%	15%	3%	0%
	Ch 220.1 km to Ch 222.4 km	574,812	581,927	589,129	596,421	603,803	611,276	9,919	30,752	30,884	30,246	5,702	0	2%	5%	5%	5%	1%	0%
	Ch 222.4 km to Ch 224.1 km	574,812	581,927	589,129	596,421	603,803	611,276	9,919	31,745	32,340	30,434	5,702	0	2%	5%	5%	5%	1%	0%
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	341,669	341,669	341,669	341,669	341,669	341,669	6,524	16,502	20,973	55,370	23,324	2,841	2%	5%	6%	16%	7%	1%
Millmerran-Inglewood Road (337)	Ch 0.0 km to Ch 2.5 km	223,197	240,590	259,338	279,547	301,330	324,811	116,424	166,099	18,536	5,214	166	0	52%	69%	7%	2%	0%	0%
	Ch 2.5 km to Ch 3.5 km	223,197	240,590	259,338	279,547	301,330	324,811	12,148	190,898	29,840	23,310	1,468	0	5%	79%	12%	8%	0%	0%
	Ch 3.5 km to Ch 6.2 km	142,597	148,000	153,608	159,428	165,469	171,739	12,149	190,582	29,772	9,358	172	0	9%	129%	19%	6%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Ch 6.2 km to Ch 9.0 km	142,597	148,000	153,608	159,428	165,469	171,739	12,130	190,565	78,707	9,321	163	0	9%	129%	51%	6%	0%	0%
	Ch 9.0 km to Ch 13.1 km	142,597	148,000	153,608	159,428	165,469	171,739	12,130	190,461	54,187	9,536	163	0	9%	129%	35%	6%	0%	0%
	Ch 13.1 km to Ch 14.0 km	142,597	148,000	153,608	159,428	165,469	171,739	9,503	165,184	31,270	3,297	145	0	7%	112%	20%	2%	0%	0%
	Ch 14.0 km to Ch 17.3 km	142,597	148,000	153,608	159,428	165,469	171,739	9,336	163,712	30,323	6,899	462	0	7%	111%	20%	4%	0%	0%
	Ch 17.3 km to Ch 18.1 km	142,597	148,000	153,608	159,428	165,469	171,739	9,336	88,455	37,076	6,220	424	0	7%	60%	24%	4%	0%	0%
	Ch 18.1 km to Ch 21.8 km	142,597	148,000	153,608	159,428	165,469	171,739	9,317	88,417	37,000	6,134	415	0	7%	60%	24%	4%	0%	0%
	Ch 21.8 km to Ch 28.0 km	142,597	148,000	153,608	159,428	165,469	171,739	9,236	12,486	11,822	5,197	360	0	6%	8%	8%	3%	0%	0%
	Ch 28.0 km to Ch 33.0 km	142,597	148,000	153,608	159,428	165,469	171,739	9,217	12,433	11,667	3,936	255	0	6%	8%	8%	2%	0%	0%
	Ch 33.0 km to Ch 35.6 km	142,597	148,000	153,608	159,428	165,469	171,739	9,197	12,159	11,049	3,898	246	0	6%	8%	7%	2%	0%	0%
	Ch 35.6 km to Ch 37.7 km	142,597	148,000	153,608	159,428	165,469	171,739	9,081	10,846	3,802	4,404	245	0	6%	7%	2%	3%	0%	0%
	Ch 37.7 km to Ch 39.8 km	142,597	148,000	153,608	159,428	165,469	171,739	9,081	16,339	3,802	4,404	245	0	6%	11%	2%	3%	0%	0%
	Ch 39.8 km to Ch 41.9 km	78,826	83,044	87,487	92,168	97,100	102,296	9,065	16,340	3,511	4,366	235	0	12%	20%	4%	5%	0%	0%
	Ch 41.9 km to Ch 45.9 km	78,826	83,044	87,487	92,168	97,100	102,296	1,342	17,773	5,738	4,728	109	0	2%	21%	7%	5%	0%	0%
	Ch 45.9 km to Ch 47.6 km	78,826	83,044	87,487	92,168	97,100	102,296	1,344	18,815	5,826	4,690	100	0	2%	23%	7%	5%	0%	0%
	Ch 47.6 km to Ch 53.3 km	78,826	83,044	87,487	92,168	97,100	102,296	1,344	35,400	5,826	4,690	100	0	2%	43%	7%	5%	0%	0%
	Ch 53.3 km to Ch 55.7 km	78,826	83,044	87,487	92,168	97,100	102,296	2,143	44,628	7,609	17,595	106	0	3%	54%	9%	19%	0%	0%
	Ch 55.7 km to Ch 56.6 km	78,826	83,044	87,487	92,168	97,100	102,296	2,143	22,549	7,609	17,595	106	0	3%	27%	9%	19%	0%	0%
	Ch 56.6 km to Ch 59.2 km	78,826	83,044	87,487	92,168	97,100	102,296	2,064	22,549	7,609	17,595	106	0	3%	27%	9%	19%	0%	0%
	Ch 59.2 km to Ch 61.0 km	78,826	83,044	87,487	92,168	97,100	102,296	2,089	22,852	7,609	25,580	106	0	3%	28%	9%	28%	0%	0%
	Ch 61.0 km to Ch 65.7 km	78,826	83,044	87,487	92,168	97,100	102,296	10,974	28,871	7,571	25,542	97	0	14%	35%	9%	28%	0%	0%
	Ch 65.7 km to Ch 68.7 km	78,826	83,044	87,487	92,168	97,100	102,296	59,415	59,638	11,765	32,474	95	0	75%	72%	13%	35%	0%	0%
Millmerran-Leyburn Road (335)	Ch 0.0 km to Ch 2.0 km	41,660	44,279	47,063	50,023	53,168	56,512	19	1,057	2,991	38	9	0	0%	2%	6%	0%	0%	0%
	Ch 2.0 km to Ch 2.2 km	41,660	44,279	47,063	50,023	53,168	56,512	0	965	2,767	0	0	0	0%	2%	6%	0%	0%	0%
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	3,577,632	3,684,961	3,795,510	3,909,376	4,026,657	4,147,456	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	1%	1%	1%	0%
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	3,577,632	3,684,961	3,795,510	3,909,376	4,026,657	4,147,456	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	1%	1%	1%	0%
Texas-Yelarbon Road (2322)	Ch 53.3 km to Ch 54.6 km	36,912	38,327	39,797	41,323	42,907	44,553	0	16,784	0	0	0	0	0%	44%	0%	0%	0%	0%
Toowoomba-Athol Road (316)	Ch 2.1 km to Ch 16.8 km	280,427	280,427	280,427	280,427	280,427	280,427	455	955	949	911	228	0	0%	0%	0%	0%	0%	0%
Toowoomba-Cecil Plains Road (324)	Ch 2.0 km to Ch 6.0 km	925,870	926,805	927,741	928,677	929,615	930,553	84	2,526	2,411	223	0	0	0%	0%	0%	0%	0%	0%
	Ch 6.0 km to Ch 6.4 km	496,333	496,333	496,333	496,333	496,333	496,333	84	2,390	2,289	0	0	0	0%	0%	0%	0%	0%	0%
	Ch 6.4 km to Ch 8.3 km	496,333	496,333	496,333	496,333	496,333	496,333	289	4,698	2,899	553	1	0	0%	1%	1%	0%	0%	0%
	Ch 8.3 km to Ch 9.2 km	496,333	496,333	496,333	496,333	496,333	496,333	364	3,706	1,411	1,968	104	0	0%	1%	0%	0%	0%	0%
	Ch 9.2 km to Ch 10.0 km	509,141	541,586	576,099	612,811	651,862	693,402	800	9,169	2,744	2,270	21	0	0%	2%	0%	0%	0%	0%
	Ch 10.0 km to Ch 10.1 km	509,141	541,586	576,099	612,811	651,862	693,402	800	9,169	2,744	2,270	21	0	0%	2%	0%	0%	0%	0%
	Ch 10.1 km to Ch 10.3 km	509,141	541,586	576,099	612,811	651,862	693,402	800	9,069	2,793	9,650	719	0	0%	2%	0%	2%	0%	0%
	Ch 10.3 km to Ch 12.1 km	509,141	541,586	576,099	612,811	651,862	693,402	38	18,706	660	7,552	23,013	0	0%	3%	0%	1%	4%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Ch 12.1 km to Ch 14.5 km	509,141	541,586	576,099	612,811	651,862	693,402	38	3,000	5,644	786	104	0	0%	1%	1%	0%	0%	0%
	Ch 14.5 km to Ch 16.3 km	332,768	353,293	375,084	398,220	422,782	448,859	627	8,724	7,833	2,092	95	0	0%	2%	2%	1%	0%	0%
Toowoomba Connection Road (315)	Ch 26.3 km to Ch 26.9 km	1,163,338	1,198,239	1,234,186	1,271,211	1,309,348	1,348,628	0	1,523	1,082	1,980	0	0	0%	0%	0%	0%	0%	0%
	Ch 26.9 km to Ch 27.1 km	1,163,338	1,198,239	1,234,186	1,271,211	1,309,348	1,348,628	0	473	122	223	22,295	0	0%	0%	0%	0%	2%	0%
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	1,160,453	38,281	121,888	204,076	183,355	67,754	98	4%	11%	19%	17%	6%	0%
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	1,160,453	38,281	121,888	204,076	183,355	67,754	98	4%	11%	19%	17%	6%	0%
	Ch 0.6 km to Ch 3.2 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	1,160,453	110,640	463,887	117,756	117,452	44,195	0	11%	44%	11%	11%	4%	0%
	Ch 3.2 km to Ch 4.1 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	1,160,453	110,640	445,509	117,756	117,452	21,900	0	11%	42%	11%	11%	2%	0%
	Ch 4.1 km to Ch 13.0 km	1,038,822	1,062,083	1,085,865	1,110,179	1,135,038	1,160,453	111,402	454,478	120,512	120,275	21,960	0	11%	43%	11%	11%	2%	0%
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	5,642,693	5,872,254	6,111,155	6,359,775	6,618,509	6,887,769	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	0%	0%
	Ch 7.2 km to Ch 15.1 km	5,642,693	5,872,254	6,111,155	6,359,775	6,618,509	6,887,769	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	0%	0%
	Ch 15.1 km to Ch 18.9 km	4,110,619	4,230,067	4,352,987	4,479,478	4,609,645	4,743,595	6,524	16,502	20,973	55,370	23,324	2,841	0%	0%	0%	1%	1%	0%
	Ch 18.9 km to Ch 28.9 km	3,246,055	3,246,055	3,246,055	3,246,055	3,246,055	3,246,055	7,012	19,334	23,415	125,316	70,248	2,841	0%	1%	1%	4%	2%	0%
	Ch 28.9 km to Ch 36.6 km	7,327,528	9,046,920	11,169,764	13,790,731	17,026,702	21,021,988	7,012	19,334	23,415	125,316	70,248	2,841	0%	0%	0%	1%	0%	0%
	Ch 36.6 km to Ch 55.5 km	3,037,489	3,138,631	3,243,141	3,351,130	3,462,716	3,578,017	28,218	330,628	82,764	126,326	70,577	2,570	1%	11%	3%	4%	2%	0%
	Ch 55.5 km to Ch 75.4 km	3,037,489	3,138,631	3,243,141	3,351,130	3,462,716	3,578,017	28,218	330,628	82,764	126,326	70,577	2,570	1%	11%	3%	4%	2%	0%
	Ch 75.4 km to Ch 79.6 km	2,764,871	2,826,781	2,890,077	2,954,791	3,020,953	3,088,597	6,156	12,901	60,000	71,664	36,010	2,570	0%	0%	2%	2%	1%	0%
Warrego Highway (18B)	Ch 0.0 km to Ch 0.4 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	2,102,339	0	1,523	1,082	1,980	0	0	0%	0%	0%	0%	0%	0%
	Ch 0.4 km to Ch 1.5 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	2,102,339	72,614	349,320	2,748	3,342	1	0	4%	19%	0%	0%	0%	0%
	Ch 1.5 km to Ch 2.4 km	1,773,443	1,834,824	1,898,329	1,964,032	2,032,009	2,102,339	73,351	347,766	10,472	19,899	969	0	4%	19%	1%	1%	0%	0%
	Ch 2.4 km to Ch 4.5 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	2,528,105	73,168	328,514	10,105	4,520	96	0	4%	16%	0%	0%	0%	0%
	Ch 4.5 km to Ch 5.0 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	2,528,105	73,168	328,514	10,105	4,520	96	0	4%	16%	0%	0%	0%	0%
	Ch 5.0 km to Ch 5.3 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	2,528,105	6,181	28,429	1,899	2,075	10	0	0%	1%	0%	0%	0%	0%
	Ch 5.3 km to Ch 6.2 km	1,941,057	2,046,396	2,157,451	2,274,534	2,397,970	2,528,105	72,274	325,846	5,049	2,075	10	0	4%	16%	0%	0%	0%	0%
State-Controlled Roads: Transport for New South Wales																			
Newell Highway	River Road to Queensland/NSW Border	819,932	827,012	834,154	841,357	848,623	855,951	910	11,002	15,601	1,933	1	0	0%	1%	2%	0%	0%	0%
Local Government Roads: Balonne Shire Council																			
Noondoo Thallon Road	GrainCorp Thallon to Carnarvon Highway	9,343	9,343	9,343	9,343	9,343	9,343	16,796	51,622	51,622	51,622	9,740	0	180%	553%	553%	553%	104%	0%
Local Government Roads: Goondiwindi Regional Council																			
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street	2,336	2,336	2,336	2,336	2,336	2,336	0	994	1,457	187	0	0	0%	43%	62%	8%	0%	0%
Bybera Road	Cunningham Highway to B2G-LDN060.4	3,749	3,881	4,018	4,160	4,307	4,459	27,834	1,471	749	1,946	1	0	742%	38%	19%	47%	0%	0%
	B2G-LDN060.4 to Earthworks Area 2A	3,749	3,881	4,018	4,160	4,307	4,459	26,000	0	0	0	0	0	694%	0%	0%	0%	0%	0%
Cemetery Road	Access Track to Moorooobie Lane	113,136	129,496	148,222	169,655	194,189	222,269	0	1,859	0	0	0	0	0%	1%	0%	0%	0%	0%
	Cunningham Highway to GrainCorp Goondiwindi	19,922	20,588	21,277	21,988	22,724	23,484	9,847	30,246	30,246	30,246	5,702	0	49%	147%	142%	138%	25%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Coolmunda Dam Access	Inglewood Legacy Bore/Coolmunda Dam to Coolmunda Dam Access	12,051	12,313	12,581	12,855	13,134	13,420	2,611	3,879	1,435	1,158	3	0	22%	32%	11%	9%	0%	0%
	Coolmunda Dam Access to Cunningham Highway	12,051	12,313	12,581	12,855	13,134	13,420	2,611	3,879	1,435	1,158	3	0	22%	32%	11%	9%	0%	0%
Cremascos Road	B2G-LDN052.8 to B2G-LDN055.4	28,064	29,055	30,080	31,141	32,240	33,378	25	128	433	38	9	0	0%	0%	1%	0%	0%	0%
	B2G-LDN055.4 to B2G-LDN054.2	28,064	29,055	30,080	31,141	32,240	33,378	6	90	28	0	0	0	0%	0%	0%	0%	0%	0%
	Cunningham Highway to B2G-LDN052.8	28,064	29,055	30,080	31,141	32,240	33,378	25	170	678	59	9	0	0%	1%	2%	0%	0%	0%
East Sawmill Road	Cunningham Highway to B2G-LDN030.0	4,065	4,209	4,357	4,511	4,670	4,835	91,941	105,927	263	384	0	0	2262%	2517%	6%	9%	0%	0%
Elizabeth Street	Cunningham Highway to B2G-LDN065.8	6,363	6,723	7,104	7,506	7,930	8,379	7	43	50	584	0	0	0%	1%	1%	8%	0%	0%
Eukabilla Road	Kildonan Road to NS2B-LDN033.2	4,620	5,288	6,052	6,928	7,929	9,076	624	924	921	1,291	28	0	14%	17%	15%	19%	0%	0%
	NS2B-LDN033.2 to NS2B-LDN035.6	4,620	5,288	6,052	6,928	7,929	9,076	302	377	398	960	9	0	7%	7%	7%	14%	0%	0%
Fosters Road	Cunningham Highway to Borrow Site #9 (Fosters Road)	1,124	1,148	1,173	1,199	1,225	1,251	45,091	26,362	0	0	0	0	4013%	2296%	0%	0%	0%	0%
Georges Lane	B2G-LDN000.9 to Yelarbon Kurumbul Road	5,212	5,966	6,829	7,816	8,947	10,241	528	128	778	2,742	1	0	10%	2%	11%	35%	0%	0%
Grays Road	Millmerran-Inglewood Road to Mosquito Creek Road	2,087	2,199	2,317	2,441	2,571	2,709	0	22,079	0	0	0	0	0%	1004%	0%	0%	0%	0%
Hunt Street	Leichhardt Highway to Boodle Street	2,336	2,336	2,336	2,336	2,336	2,336	0	8,834	12,950	1,667	0	0	0%	378%	554%	71%	0%	0%
Kildonan Road	Eukabilla Road to NS2B-LDN031.0	123,877	141,791	162,295	185,763	212,626	243,373	343	1,192	3,358	10,638	1	0	0%	1%	2%	6%	0%	0%
	NS2B-LDN031.0 to South Kurumbul Road	123,877	141,791	162,295	185,763	212,626	243,373	83,368	101,120	3,945	10,638	1	0	67%	71%	2%	6%	0%	0%
	South Kurumbul Road to Cunningham Highway	5,517	5,712	5,914	6,122	6,338	6,562	83,025	100,666	723	722	0	0	1505%	1762%	12%	12%	0%	0%
	Cunningham Highway to Eukabilla Road	123,877	141,791	162,295	185,763	212,626	243,373	967	1,406	921	379	29	0	1%	1%	1%	0%	0%	0%
McDougalls Road	B2G-LDN049.8 to McDougalls Road	1,442	1,493	1,545	1,600	1,656	1,715	11,431	8,957	4,045	14,877	5	0	793%	600%	262%	930%	0%	0%
	McDougalls Road to Cunningham Highway	1,442	1,493	1,545	1,600	1,656	1,715	11,431	8,957	4,045	14,877	5	0	793%	600%	262%	930%	0%	0%
Mooroobie Lane	Cemetery Road to Borrow Site #2 (Mooroobie Lane)	16,562	18,957	21,699	24,837	28,428	32,539	0	1,859	0	0	0	0	0%	10%	0%	0%	0%	0%
	Borrow Site #2 (Mooroobie Lane) to Mooroobie Lane	16,562	18,957	21,699	24,837	28,428	32,539	0	3,271	0	0	0	0	0%	17%	0%	0%	0%	0%
	Mooroobie Lane to Wondalli Kurumbul Road	16,562	18,957	21,699	24,837	28,428	32,539	0	3,271	0	0	0	0	0%	17%	0%	0%	0%	0%
Mosquito Creek Road	Borrow Site #10 (Mosquito Road) to Grays Road	2,835	2,987	3,147	3,315	3,492	3,679	0	1,857	0	0	0	0	0%	62%	0%	0%	0%	0%
Queen Street South	Yelarbon Kurumbul Road to B2G-LDN016.0	1,026	1,174	1,344	1,538	1,761	2,015	602	203	785	731	10	0	59%	17%	58%	48%	1%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Silo Street	Barwon Highway to GrainCorp Talwood	15,291	15,291	15,291	15,291	15,291	15,291	1,197	3,654	3,654	3,654	693	0	8%	24%	24%	24%	5%	0%
South Kurumbul Road	Kildonan Road to Yelarbon Kurumbul Road	25,971	29,727	34,026	38,946	44,578	51,024	343	455	3,222	9,916	1	0	1%	2%	9%	25%	0%	0%
South Toobeah Road	GrainCorp Toobeah to Barwon Highway	13,940	14,002	14,063	14,126	14,188	14,251	129	394	394	394	74	0	1%	3%	3%	3%	1%	0%
Springborg Road	Cunningham highway to B2G-LDN037.6	738	764	791	819	848	878	477	218	604	655	10	0	65%	29%	76%	80%	1%	0%
Suttons Road	B2G-LDN030.0 to Access Track (Off Suttons Road)	5,688	5,889	6,097	6,312	6,535	6,765	83,025	99,948	0	0	0	0	1460%	1697%	0%	0%	0%	0%
Thornton Road	B2G-LDN069.0 to B2G-LDN067.6	597	629	663	698	736	775	5,578	4,578	2,978	6,970	8	0	934%	728%	449%	998%	1%	0%
	B2G-LDN067.6 to Millmerran-Inglewood Road	597	629	663	698	736	775	48,672	31,343	5,207	7,337	99	0	8150%	4981%	786%	1051%	14%	0%
Town Common Road	Boral Concrete Goondiwindi to Barwon Highway	58,937	58,937	58,937	58,937	58,937	58,937	72	506	637	0	0	0	0%	1%	1%	0%	0%	0%
Whetstone Access	B2G-LDN044.5 to Cunningham Highway	6,312	6,535	6,765	7,004	7,251	7,507	48,383	22,072	5,106	15,125	5	0	767%	338%	75%	216%	0%	0%
Wondalli Kurumbul Road	Yelarbon Kurumbul Road to Moorroobie Lane	1,445	1,654	1,893	2,166	2,480	2,838	0	38,884	0	0	0	0	0%	2352%	0%	0%	0%	0%
Wongavale Yugalbar Road	Millmerran-Inglewood Road to B2G-LDN081.0	2,407	2,536	2,672	2,815	2,966	3,124	102	1,182	199	1,124	1	0	4%	47%	7%	40%	0%	0%
Woodcocks Road	Cunningham Highway to Borrow Site #4 (Woodcocks Road)	2,504	2,592	2,684	2,778	2,876	2,978	0	16,784	0	0	0	0	0%	648%	0%	0%	0%	0%
Yelarbon Kurumbul Road	South Kurumbul Road to B2G-LDN006.3	6,744	7,719	8,836	10,113	11,576	13,250	284	440	3,858	12,523	1	0	4%	6%	44%	124%	0%	0%
	B2G-LDN006.3 to Wondalli Kurumbul Road	6,744	7,719	8,836	10,113	11,576	13,250	208	39,342	8,111	18,311	92	0	3%	510%	92%	181%	1%	0%
	Wondalli Kurumbul Road to Yelarbon Kurumbul Road	6,744	7,719	8,836	10,113	11,576	13,250	208	458	8,111	18,311	92	0	3%	6%	92%	181%	1%	0%
	Yelarbon Kurumbul Road to B2G-LDN020.3	6,744	7,719	8,836	10,113	11,576	13,250	5,617	2,314	16,950	26,535	191	0	83%	30%	192%	262%	2%	0%
	B2G-LDN020.3 to B2G-LDN025.9	5,517	5,712	5,914	6,122	6,338	6,562	5,617	2,314	25,117	30,131	191	0	102%	41%	425%	492%	3%	0%
	B2G-LDN025.9 to Cunningham Highway	5,517	5,712	5,914	6,122	6,338	6,562	12,352	40,178	36,082	38,468	290	0	224%	703%	610%	628%	5%	0%
Local Government Roads: Moree Plains Shire Council																			
Boggabilla Weir Access	River Road to Boggabilla Weir	3,060	3,503	4,010	4,589	5,253	6,013	10,495	64,539	14,955	2,386	8	0	343%	1842%	373%	52%	0%	0%
River Road	Newell Highway to Boggabilla Weir Access	3,060	3,503	4,010	4,589	5,253	6,013	10,495	64,539	14,955	2,386	8	0	343%	1842%	373%	52%	0%	0%
Local Government Roads: Toowoomba Regional Council																			
Alderley Street	Greenwattle Street to Toowoomba Workforce Origin 2	754,352	802,423	853,557	907,950	965,809	1,027,355	734	1,467	1,467	1,467	367	0	0%	0%	0%	0%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Toowoomba Workforce Origin B to Toowoomba-Athol Road	484,879	493,479	502,231	511,139	520,205	529,431	455	911	911	911	228	0	0%	0%	0%	0%	0%	0%
	Toowoomba-Athol Road to Boral/Wagner Concrete Facility	2,325,007	2,366,244	2,408,212	2,450,925	2,494,395	2,538,636	0	392	343	0	0	0	0%	0%	0%	0%	0%	0%
Athol School Road	B2G-LDN187.8 to B2G-LDN188.2	18,395	19,357	20,370	21,436	22,557	23,737	280,802	183,282	8,473	4,463	5	0	1527%	947%	42%	21%	0%	0%
	B2G-LDN188.2 to Gore Highway	18,395	19,357	20,370	21,436	22,557	23,737	280,986	184,721	9,346	10,269	505	0	1528%	954%	46%	48%	2%	0%
Biddeston Southbrook Road	Gore Highway to B2G-LDN183.8	12,011	12,640	13,301	13,997	14,729	15,500	0	19,250	19,309	119	0	0	0%	152%	145%	1%	0%	0%
Blackwell Road	Gore Highway to Millmerran Quarry	832	845	858	871	885	899	0	0	0	21,582	1,844	0	0%	0%	0%	2477%	208%	0%
	Millmerran Quarry to B2G-LDN120.2	832	845	858	871	885	899	0	0	0	4,629	382	0	0%	0%	0%	531%	43%	0%
	B2G-LDN120.2 to Millmerran-Inglewood Road	290	301	312	324	336	349	1,499	13,224	8,512	8,130	325	0	517%	4396%	2727%	2509%	97%	0%
Bligh Street	Six Mile Road to Boral Concrete Millmerran	2,913	2,958	3,003	3,050	3,097	3,145	12	6,100	8,869	1,780	0	0	0%	206%	295%	58%	0%	0%
Brimblecombe Road	Toowoomba-Cecil Plains Road to Brimblecombe Road	16,162	17,159	18,217	19,341	20,534	21,800	5,471	51,913	23,128	12,087	15	0	34%	303%	127%	62%	0%	0%
	Brimblecombe Road to WL 194467R	16,162	17,159	18,217	19,341	20,534	21,800	5,452	51,853	22,776	12,049	5	0	34%	302%	125%	62%	0%	0%
Bushy Lane	B2G-LDN183.0 to Gore Highway	2,745	2,889	3,040	3,199	3,367	3,543	2,199	23,623	6,952	10,133	432	0	80%	818%	229%	317%	13%	0%
Campbell Street	Millmerran-Inglewood Road to Saleyards Road	107,853	116,258	125,317	135,082	145,609	156,955	12	4,788	8,111	15,432	1,296	0	0%	4%	6%	11%	1%	0%
	Saleyards Road to Gore Highway	115,688	117,474	119,289	121,131	123,002	124,902	12	3,820	7,494	1,780	0	0	0%	3%	6%	1%	0%	0%
Chamberlain Road	Warrego Highway to B2G-LDN204.2	2,596	2,737	2,886	3,042	3,208	3,382	0	82	98	336	0	0	0%	3%	3%	11%	0%	0%
Commodore Peak Road	Scragg Road to Millmerran-Inglewood Road	2,319	2,406	2,498	2,592	2,691	2,792	0	627	2,063	215	0	0	0%	26%	83%	8%	0%	0%
Desmonds Lane	Yarranlea Road to B2G-LDN163.3	244	249	254	259	265	270	0	0	166	78	0	0	0%	0%	65%	30%	0%	0%
Dieckmann Road	B2G-LDN150.5 to Gore Highway	2,433	2,483	2,533	2,585	2,638	2,692	377	156,925	11,680	4,984	8	0	15%	6321%	461%	193%	0%	0%
Draper Road	Steger Road to B2G-FBW206.9	2,811	2,963	3,124	3,294	3,472	3,661	0	0	0	0	0	0	0%	0%	0%	0%	0%	0%
Drayton Wellcamp Road	Wellcamp Westbrook Road to Access Track	350,488	372,823	396,581	421,853	448,736	477,331	734	1,467	1,467	16,479	1,148	0	0%	0%	0%	4%	0%	0%
	Access Track to Greenwattle Street	350,488	372,823	396,581	421,853	448,736	477,331	734	1,467	1,467	1,467	367	0	0%	0%	0%	0%	0%	0%
Florence Street	Gore Highway to West Street	7,987	8,111	8,236	8,363	8,492	8,624	0	968	616	0	0	0	0%	12%	7%	0%	0%	0%
Forestry Road	Access Track to Millmerran-Inglewood Road	0	0	0	0	0	0	0	7,351	0	0	0	0	0%	>5%, unable to be quantified	0%	0%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	Millmerran-Inglewood Road to Earthworks Area 3B	0	0	0	0	0	0	0	1,857	0	0	0	0	0%	>5%, unable to be quantified	0%	0%	0%	0%
Fysh Road	B2G-LDN147.1 to Gore Highway	10,679	10,897	11,121	11,349	11,581	11,818	183	482	440	11,737	600	0	2%	4%	4%	103%	5%	0%
Gap Road	Gore Highway to Grevillea Street	98,887	100,913	102,981	105,091	107,244	109,441	0	1,031	2,491	352	0	0	0%	1%	2%	0%	0%	0%
Geitz Road	B2G-LDN179.0 to Linthorpe Valley Road	5,400	5,682	5,980	6,292	6,622	6,968	0	329	99	7,728	419	0	0%	6%	2%	123%	6%	0%
Gilgai Lane	B2G-LDN144.6 to Gore Highway	7,588	7,743	7,902	8,064	8,229	8,398	0	491	10,017	6,610	0	0	0%	6%	127%	82%	0%	0%
Grevillea Street	Boral Concrete Pittsworth to Gap Road	78,542	80,151	81,793	83,469	85,180	86,925	0	116	280	40	0	0	0%	0%	0%	0%	0%	0%
Hall Road	B2G-LDN139.0 to Gore Highway	1,592	1,624	1,658	1,692	1,726	1,762	745	7,019	11,448	11,544	555	0	47%	432%	691%	682%	32%	0%
Heckendorf Road	Borrow Site #14 (Heckendorf Road) to B2G-LDN116.0	7,246	7,520	7,805	8,101	8,408	8,727	0	6,325	6,806	0	0	0	0%	84%	87%	0%	0%	0%
	B2G-LDN116.0 to Millmerran-Inglewood Road	7,246	7,520	7,805	8,101	8,408	8,727	0	6,997	7,290	6,506	453	0	0%	93%	93%	80%	5%	0%
Holcim Australia Toowoomba Access	Drayton Wellcamp Road to Holcim Australia Toowoomba Quarry Access	2,643	2,812	2,991	3,181	3,384	3,600	0	0	0	15,012	781	0	0%	0%	0%	472%	23%	0%
Kahler Road	Murlaggan Road to B2G-LDN165.6	239	244	249	254	259	264	0	0	0	205	24	0	0%	0%	0%	81%	9%	0%
Kingsthorpe Haden Road	Kingsthorpe Haden Overpass to Warrego Highway	161,757	170,536	179,790	189,547	199,834	210,679	72,274	325,846	5,049	2,075	10	0	45%	191%	3%	1%	0%	0%
Kooroongarra Road	Borrow Site #13 (Kooroongarra Road) to Millwood Road	13,042	13,536	14,049	14,582	15,134	15,708	0	6,325	0	0	0	0	0%	47%	0%	0%	0%	0%
	Millmerran-Inglewood Road to Commodore Mine	290	301	312	324	336	349	0	0	4,126	0	0	0	0%	0%	1321%	0%	0%	0%
Leesons Road	Warrego Highway to Steger Road	5,236	5,520	5,819	6,135	6,468	6,819	19	1,639	38	1,301	75	0	0%	30%	1%	21%	1%	0%
	Steger Road to B2G-LDN206.3	5,236	5,520	5,819	6,135	6,468	6,819	389	2,825	3,909	2,123	76	0	7%	51%	67%	35%	1%	0%
Linthorpe Road	Gore Highway to B2G-LDN175.5	3,295	3,467	3,648	3,839	4,040	4,251	72,416	426,201	23,809	1,327	36	0	2198%	12293%	653%	35%	1%	0%
Linthorpe Valley Road	Geitz Road to Gore Highway	18,704	19,683	20,713	21,796	22,937	24,137	0	329	99	7,728	419	0	0%	2%	0%	35%	2%	0%
Lochaber Road	Gore Highway to B2G-LDN172.0	15,787	16,612	17,482	18,396	19,359	20,372	0	18	180	250	19	0	0%	0%	1%	1%	0%	0%
	B2G-LDN172.0 to B2G-LDN172.6	15,787	16,612	17,482	18,396	19,359	20,372	0	0	85	0	0	0	0%	0%	0%	0%	0%	0%
McDougall Street	Humes Precast Toowoomba to Toowoomba-Cecil Plains Road	713,322	714,043	714,763	715,485	716,207	716,931	84	1,383	771	223	0	0	0%	0%	0%	0%	0%	0%
Millwood Road	Millmerran-Inglewood Road to B2G-LDN112.1	4,058	4,211	4,371	4,537	4,708	4,887	81	75,931	25,178	937	55	0	2%	1803%	576%	21%	1%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
	B2G-LDN112.1 to Millwood Road	4,058	4,211	4,371	4,537	4,708	4,887	0	75,184	0	0	0	0	0%	1785%	0%	0%	0%	0%
	Millwood Road to Kooroongarra Road	0	0	0	0	0	0	0	75,184	0	0	0	0	0%	>5%, unable to be quantified	0%	0%	0%	0%
Moffatt Reserve Road	Millmerran-Inglewood Road to Millmerran Power Station	52,279	54,260	56,315	58,449	60,664	62,963	6,226	58,853	41,085	15,113	41	0	12%	108%	73%	26%	0%	0%
Murlaggan Road	B2G-LDN164.3 to Kahler Road	15,233	15,545	15,864	16,189	16,521	16,859	13,799	13,907	32	3,731	258	0	91%	89%	0%	23%	2%	0%
	Kahler Road to Gore Highway	15,233	15,545	15,864	16,189	16,521	16,859	13,799	13,907	32	6,163	549	0	91%	89%	0%	38%	3%	0%
Oakey-Pittsworth Road	Gore Highway to B2G-LDN171.0	170,664	178,041	185,737	193,766	202,142	210,880	0	0	100	0	0	0	0%	0%	0%	0%	0%	0%
O'Mara Road	Toowoomba-Cecil Plains Road to Warrego Highway	447,795	472,096	497,716	524,727	553,203	583,225	4,281	49,730	12,708	16,045	95	0	1%	11%	3%	3%	0%	0%
Owens Scrub Road	B2G-LDN129.5 to B2G-LDN128.2	51,895	55,939	60,298	64,996	70,061	75,520	1,866	15,538	10,539	17,779	1,302	0	4%	28%	17%	27%	2%	0%
	B2G-LDN128.2 to B2G-LDN130.0	51,895	55,939	60,298	64,996	70,061	75,520	11,520	15,538	11,214	18,416	1,302	0	22%	28%	19%	28%	2%	0%
	B2G-LDN130.0 to Millmerran-Inglewood Road	51,895	55,939	60,298	64,996	70,061	75,520	20,133	25,175	11,640	18,416	1,302	0	39%	45%	19%	28%	2%	0%
Paint Mine Road	Gore Highway to B2G-LDN173.5	2,640	2,778	2,923	3,076	3,237	3,407	0	56	17	214	37	0	0%	2%	1%	7%	1%	0%
Paton Road	Millmerran-Inglewood Road to B2G-LDN104.5	13,013	13,506	14,018	14,549	15,100	15,673	19	53	155	1,261	105	0	0%	0%	1%	9%	1%	0%
Quarry Road Access	Tumnaville Road to Quarry	775	790	807	823	840	857	0	7,666	0	28,545	2,033	0	0%	970%	0%	3468%	242%	0%
Saleyards Road	Campbell Street to Gore Highway	55,677	56,537	57,410	58,297	59,197	60,112	0	968	616	13,651	1,296	0	0%	2%	1%	23%	2%	0%
Schwarten Road	Millmerran-Inglewood Road to B2G-LDN126.9	0	0	0	0	0	0	19	75	279	38	9	0	>5%, unable to be quantified	>5%, unable to be quantified	>5%, unable to be quantified	>5%, unable to be quantified	>5%, unable to be quantified	0%
Scragg Road	Commodore Peak Road to B2G-LDN123.6	2,516	2,612	2,711	2,813	2,920	3,031	0	104	24,520	24	0	0	0%	4%	905%	1%	0%	0%
	B2G-LDN123.6 to B2G-LDN123.8	2,516	2,612	2,711	2,813	2,920	3,031	0	104	0	0	0	0	0%	4%	0%	0%	0%	0%
Scrubby Road	Bland Quarry Pittsworth to Gore Highway	72,035	73,511	75,017	76,554	78,123	79,724	0	35,699	35,699	2,769	222	0	0%	49%	48%	4%	0%	0%
Steger Road	Warrego Highway to New Hope Recycled Water Pipeline	216,870	228,640	241,048	254,129	267,920	282,460	9,100	94,259	36,221	25,549	23	0	4%	41%	15%	10%	0%	0%
	New Hope Recycled Water Pipeline to Draper Road	216,870	228,640	241,048	254,129	267,920	282,460	370	1,186	3,871	822	0	0	0%	1%	2%	0%	0%	0%
	Draper Road to Leeson's Road	216,870	228,640	241,048	254,129	267,920	282,460	370	1,186	3,871	822	0	0	0%	1%	2%	0%	0%	0%
Tumnaville Road	Access Track to Gore Highway	25,496	26,019	26,552	27,096	27,651	28,218	0	91,130	0	2,401	171	0	0%	350%	0%	9%	1%	0%
Turallin Road	Gore Highway to the Turallin Facility	44,389	45,074	45,770	46,477	47,195	47,924	80	0	0	0	0	0	0%	0%	0%	0%	0%	0%

Road name	Road section	Background yearly SAR						Project yearly SAR						% SAR comparison					
		2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029	2024	2025	2026	2027	2028	2029
Ware Street	GrainCorp Brookstead to B2G-LDN153.1	33,594	34,282	34,985	35,701	36,433	37,179	708	2,177	2,177	2,177	411	0	2%	6%	6%	6%	1%	0%
	B2G-LDN153.1 to Gore Highway	33,594	34,282	34,985	35,701	36,433	37,179	891	5,377	13,210	2,544	502	0	3%	16%	38%	7%	1%	0%
	Gore Highway to B2G-LDN150.9	14,360	14,654	14,954	15,261	15,573	15,892	0	0	0	503	65	0	0%	0%	0%	3%	0%	0%
Wellcamp Westbrook Road	Drayton Wellcamp Road to Toowoomba-Cecil Plains Road	199,141	211,831	225,330	239,689	254,963	271,211	76	1,763	2,463	1,415	104	0	0%	1%	1%	1%	0%	0%
West Street	Gore Highway to Florence Street	29,999	30,463	30,933	31,411	31,896	32,389	12	5,132	8,253	1,780	0	0	0%	17%	27%	6%	0%	0%
	Florence Street to Six Mile Road	2,913	2,958	3,003	3,050	3,097	3,145	12	6,100	8,869	1,780	0	0	0%	206%	295%	58%	0%	0%
Yarranlea Road	Gore Highway to B2G-LDN161.0	14,200	14,491	14,788	15,091	15,401	15,716	223	18,826	17,261	1,556	73	0	2%	130%	117%	10%	0%	0%
	B2G-LDN161.0 to Desmonds Lane	14,200	14,491	14,788	15,091	15,401	15,716	0	0	166	78	0	0	0%	0%	1%	1%	0%	0%

The analysis indicates that the majority of SCR road segments would have minimal pavement impact given the duration of construction activities and pavement loading. However, it was found that the 5 per cent threshold would be exceeded for several road sections, as outlined in Table 5.149.

Table 5.149 Number of roads exceeding 5 per cent base standard axle repetitions by road authority

Road authority	Number of roads > 5%	Number of road links > 5%	Length of roads > 5% (km)
DTMR	88	20	602.2
TfNSW	0	0	0.0
BSC	1	1	0.4
GRC	40	27	137.1
MPSC	2	2	6.7
TRC	55	40	74.5
Total	186	90	820.9

It should be noted that some of the percentages are relatively high due to very low background traffic volumes along the particular road sections. Detailed analysis outputs and results of these road segments are provided in Appendix BL.

Detailed pavement design life assessments will be carried out prior to the commencement of construction, in consultation with DTMR, once specific construction routes are agreed in the Detailed Design stage of the Project. Further detailed assessment will assist in identifying if contributions may be required towards the maintenance costs for the affected road sections as a result of additional pavement loading. This will form part of the draft Outline Environmental Management Plan and subsequent EMPs to be developed prior to construction. This will assist further discussions with DTMR to identify if contributions may be required towards the maintenance costs for the affected road sections as a result of additional pavement loading.

Contributions

The 5 per cent comparison assessment concluded that 88 DTMR roads exceed the 5 per cent threshold in at least one year of construction. Since the 5 per cent threshold has been reached, contributions for these sections of the SCR network may be required. Contribution amounts for the SCR network have been calculated and provided in a technical memo to the OCG.

Mitigation measures

No further mitigation measures are required above and beyond those detailed for the Project road link capacity assessment outlined in Section 5.6.3.

5.12 Additional mitigations

To further manage and mitigate Project risks, mitigation measures have been proposed for implementation in future stages of Project delivery, as presented in the following sections. These proposed mitigation measures have been identified to address Project specific issues and opportunities, including legislative requirements and accepted government plans, policy and practices.

Within the following sections, mitigations are broken down by the relevant area, Project stage, aspect to be managed and the proposed mitigation measure.

The measures identified within this section will be implemented to mitigate Project impacts, however, the appointed construction contractor will further develop specific mitigation measures, on top of those outlined below, based on the confirmed alignment and finalised construction methodology, routes and vehicles. These measures will be developed in consultation with ARTC, DTMR and local governments.

5.12.1 Mitigations incorporated into revised reference design

Development of the revised reference design for the Project has progressed in parallel with the impact assessment process. As a consequence, 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 design, or otherwise implemented during the revised reference design stage for the Project, are summarised in Table 5.150.

Table 5.150 Initial mitigation measures of relevance to traffic

Aspect	Initial mitigation measures
Traffic	■ The Project has been aligned to be co-located with existing rail and road infrastructure where possible, in an effort to minimise the number of new road network intersections. ■ The revised reference design has been developed to minimise the potential for permanent alterations to the public road network or create a permanent change to existing traffic patterns, configurations and distributions. ■ The horizontal and vertical alignment has been established to optimise the earthworks required and achieve as close to a net-balance as is possible. By minimising the material deficit for construction of the Project, the volume of material required to be imported has been reduced. Less imported material equates to fewer construction truck movements on public roads. ■ Where practical, traffic will be constrained to constructed access tracks/construction footprint, which has been identified to provide the shortest journey time between origin and destination, thereby restricting fuel consumption and vehicular emissions. These routes have been assessed as part of the TIA. The construction footprint for the Project has been defined to provide sufficient space for the Project, including road modifications, to be safely and efficiently constructed, with a need for temporary side-tracks to be provided ■ The temporary footprint for the Project has been defined to provide sufficient space for the Project, including road modifications, to be safely and efficiently constructed. ■ The laydown areas include parking facilities, with the design also including parking facilities with sufficient capacity to meet the requirements requested by the Queensland Fire and Emergency Service.
Rail incidents as a result of development of the Project	■ The Project alignment has been designed to minimise the likelihood of rail incidents for the types of trains projected to use the Inland Rail network. This has been achieved by adhering to the minimum design requirements of the Basis of Design, which are provided within EIS Chapter 5: Project Description, and are summarised below: – Design speed of 115 km/h – Maximum grade of 1:80, with 1:100 the target – Maximum curve radius of 800 m, with 1,200 m target – Train lengths of 1,800 m. ■ The revised reference design includes mixed gauge turnouts at locations where the Project interfaces with existing rail networks or infrastructure, to enable QR rollingstock to join and exit the Inland Rail network.
Road-rail interfaces	■ Grade separated crossings of existing public roads have been adopted over level crossings, where possible and feasible. The specific design treatment at each road-rail interface has been selected based on a combination of factors, which include: – Topography – Road classification – Rail geometry – Road geometry – Community and stakeholder feedback through consultation. Further details on the public road-rail interface treatment process can be found in Appendix BT. ■ Where grade separation has not been feasible, the design has been developed in accordance with the <i>ARTC Engineering Code of Practice – Level Crossings</i> (available on the ARTC extranet). Level crossings have been subject to safe design studies and risk assessments in accordance with ALCAM to identify and reduce the potential risks associated with these crossings, so far as is reasonably practicable, in accordance with the <i>ONRSR Guideline</i> (ONRSR, 2016b) (further details provided in Appendix BT).

Aspect	Initial mitigation measures
	- Additional physical controls at level crossings such as boom gates and warning lights are provided in accordance with the <i>Guide to Development in a Transport Environment: Rail</i> (DTMR 2015a), <i>Manual of Uniform Traffic Control Devices Part 7: Railway Crossings</i> (DTMR, 2019b) and <i>ARTC Engineering Code of Practice – Level Crossings</i>. - The revised reference design for the Project has been developed to remove any short stacking issues from the Project alignment through the diversion of the Project alignment or adjacent roads to accommodate the required design vehicle.
Airport operation and infrastructure	The Project alignment is approximately 1 km from the Toowoomba Wellcamp Airport. The Project has been positioned to ensure that double-stacked freight trains will not extend vertically into the obstacle limitation surface for this airport.
Access	ARTC have consulted with TRC, GRC and QFES through the impact assessment and design development process and considered potential impacts to other stakeholders. As a result, the revised reference design for the Project has, where possible and feasible, maintained connectivity across the Project footprint for public roads.
Stock routes	Where stock routes have been intersected by the Project, an allowance for the continuity of movement of stock along the same route has been made in the revised reference design. In some instances, such as Yelarbon (811GWND) and the southern end of Millmerran-Inglewood Road (820GWD), this has involved allowance for a localised realignment of the current stock route.
Bridges	- Maintenance access to the deck level of all new bridge structures has been incorporated into the design. - Bridge clearances have been established in consultation with the owners of existing assets over which the bridge structures span (i.e. DTMR, local councils and private landowners).

5.12.2 Incident management

All Rail Transport Operators (both Rolling Stock Operators (RSO) and RIMs) are required under the RSNL to establish, as part of their Safety Management System, an emergency management plan. The RSNL and RSNL National Regulations set out requirements for

- Matters that the plan must address
- Consultation required when preparing the Emergency Management Plan
- Keeping, maintaining and testing the emergency plan.

The RIM takes the leading role in coordinating with other parties accessing their rail infrastructure and the emergency services, along with any relevant utilities providers. The RIM/Road Manager incident management hierarchy will be developed during the Construction Works stage.

In the case of contractors or principal contractors undertaking railway operations on the RIM's behalf, the RIM's procurement process sets out requirements for emergency management, and/or emergency management planning. The RIM's contractor management processes include obligations on the RIM's project managers to ensure that emergency management arrangements are in place prior to commencement of the works.

Where ARTC is the RIM, ARTC Emergency Management Procedure RLS-GL-003 (attached) applies. This includes situations where there has been an incident at the road-rail interface. Depending on the nature and magnitude of the incident, Emergency Services organisations may attend the incident and may take charge of the incident site. If Emergency Services take charge, the RIM and the involved RSO work with these services and as directed by them (Section 4.5).

The ONRSR and Australian Transport Safety Bureau (ATSB) may or may not deploy to an incident site.

When an immediately notifiable incident occurs:

- The ONRSR assesses the incident against publicly available criteria and may:
 - Investigate the incident, or
 - Direct the terms of reference of an investigation by the relevant Rail Transport Operator/s and/or

- Monitor the relevant RTO's compliance with their Safety Management System and RSNL in relation to the response to, and investigation of, the incident.
- The ATSB assesses the incident to determine whether or not to investigate based on the potential of an investigation to identify systemic issues, and if so, the level of investigation that will be conducted.

If they do deploy, ONRSR and the ATSB do not direct the incident response or recovery. Notwithstanding that both agencies have powers that enable them to enter premises, secure rolling stock or the perimeter of the incident site and undertake activities necessary for their function, when deploying to an emergency, site access and the securing of the site or evidence is affected through the person in control of the incident site and the established protocols for coordination of the response. This is essential to ensure the safety of officers given that significant safety hazards may be present.

Once the rescue phase has concluded and the site has been made safe, ONRSR or ATSB proceed with their on-site investigations. If necessary, they may exercise their powers in relation the seizure of evidence. When they have finished on-site investigations, ONRSR and ATSB inform the RIM's representative, effectively releasing the site for recovery and restoration of services.

The relevant road authority is responsible for any necessary restoration of road infrastructure.

5.12.3 Road use management during construction

To facilitate road use during construction a RUMP, CEMP and TMP will be prepared prior to construction commencing. These will be developed in consultation with DTMR, emergency services (including Queensland Police Service), the relevant LGA and, where relevant, QR. These plans are summarised below.

5.12.3.1 Road Use Management Plan

A RUMP is described in the GTIA as '*a document that describes how the road impacts of development traffic will be managed by non-infrastructure means*'

In addition to identifying impact mitigation measures in a TIA for all applications, major developments must generally submit a road-use management plan (RUMP). The purpose of the RUMP is to detail how road impacts of project traffic, particularly from HV use, will be avoided, or managed during the life of the Project using road-use management strategies that are verifiable.

Specifically, the RUMP should:

- Summarise updated project traffic information on which the updated road impact assessment and proposed mitigation strategies are based
- Briefly list roles and responsibilities for RUMP implementation, and
- Detail finalised impact mitigation strategies, focusing on controls-based or road-use management strategies. Road use management strategies include:
 - Use of variable message signs
 - Use of shuttle buses to transport workers
 - Avoiding peak hour traffic, especially near schools/bus routes
 - Fatigue management strategies.

The construction contractor will use *DTMR Guideline for Preparing a Road Use Management Plan* and the *Traffic and Road Use Management Manual* for guidance and as a source of reference for preparing a RUMP. The RUMP will be developed in consultation with the relevant department officers prior to construction commencing, to ensure management measures to minimise the potential impacts on the transport network are implemented and mechanisms are in place to manage these impacts into the future.

5.12.3.2 Construction Environmental Management Plan and Traffic Management Plan

A CEMP will be prepared prior to construction commencing by the construction contractor. The CEMP will include a TMP, attached as an appendix to the CEMP, which will outline:

- Traffic demand
- Routing
- Controls
- Special vehicle requirements
- How works to accommodate these are integrated into the operation of the road network
- Identification and consideration of all foreseeable risks.

The TMP will reflect the finalised TIA, undertaken once a construction contractor has been appointed and construction routes are finalised. It will be developed in consultation with DTMR, the relevant LGA, Department of Education, affected stakeholders and an accredited road safety auditor. The plan will also consider communications received and will be aligned with the Construction Community and Stakeholder Management Plan.

The TMP will identify the impacts that construction traffic is likely to have on the transport infrastructure and detail ameliorative measures required to mitigate all identified impacts of the Project. This may include potential temporary or permanent intersection works.

The TMP will detail measures to:

- Safely manage traffic when undertaking works in the road reserve
- Minimise traffic delays resulting from the development/construction
- Manage construction vehicles entering and exiting the site
- Maintain satisfactory property access
- Minimise disruption to adjacent properties
- Minimise disturbance to the environment
- Meet the requirements of legislation and codes of practice regarding traffic management
- Cater for special events, e.g. Millmerran Camp Oven Festival and regional cycling events.

The TMP will take into consideration:

- Final designated construction routes
- Approaches to seasonality and stock routes
- Areas of significant pedestrian and cyclist activity
- Areas of significant fauna activity (including koala habitat) and will work directly with the environmental team to ensure impacts to animals from Project generated traffic are mitigated against.
- Standard hours of work and deliveries
- Specific hours of deliveries impacted by local land uses (e.g. school zones)
- Bus service operators (e.g. public transport, school buses, long distance services)
- Emergency services
 - Including identifying secondary, alternative construction routes, in the event of the primary route is blocked off by an emergency.
- Staff transport
- Staff parking, with the provision of on-site tool storage where practicable.

The TMP will detail the most effective methods for truck vehicle movements to and from the site to ensure efficiency, safety and limited disruption to all road users. It will be prepared prior to construction in accordance with the latest edition of the *Manual of Uniform Traffic Control Devices: Part 3 - Works on Roads* (DTMR 2019a) and *Manual of Uniform Traffic Control Devices Part 7: Railway Crossings* (DTMR, 2019b) and *Technical Standard MRTS02 - Provision for traffic* (DTMR 2019c) prior to the commencement of construction.

The agreed processes for road controlling authorities to review and have input into the TMP will be contained within a Third-Party Agreement that will exist between ARTC and relevant local councils. ARTC commits to consult with local governments, TransLink and other relevant public transport authorities regarding the preparation of the TMP.

Works identified within the TMP may require the preparation of Traffic Control Plans (TCPs), also referred to as Traffic Guidance Schemes. Specific TCPs are required for each separate element of the works identified to be undertaken within the Traffic Management Plan. TCPs detail the traffic control signs, devices and measures to be applied at work sites to warn traffic and guide it through or past a work area or temporary hazard. This includes plan diagrams that illustrate the arrangement of signage and devices used to manage traffic. Further works will include highlighting the temporary signage, markings, speed zones, barriers and works with the aim to:

- Warn drivers of the changes to the usual conditions
- Inform drivers about the changing conditions
- Guide drivers through the work sites
- Ensure safety of workers and external road users.

Specific TCPs are required for each separate element of the works identified to be undertaken within the TMP. A Form M994 will be completed and signed by a certified Level 3 Traffic Management Operator should any Regulatory Traffic Signs/Devices associated with any SCR be required.

Temporary road works, including diversion and signage, will be in accordance with relevant council standards, *Manual of Uniform Traffic Control Devices: Part 3 - Works on Roads* (DTMR 2019a) and the *Traffic and Road Use Management Manual: Volume 7 Road Works* (DTMR 2012).

5.12.3.3 Traffic management strategies on links

Traffic management strategies to be introduced in order to mitigate impacts along road links would include:

- TIA to be updated and finalised by the construction contractor to reflect the detailed design, construction method (including material sources and quantities) and the finalised construction traffic routes
- Travel demand management campaign to inform the public on works and its effect on network operations
- Appropriate operational controls, such as advisory signage regarding the presence of construction vehicles, should be detailed within the RUMP and employed along construction routes where relevant during construction
- TMP to be prepared in consultation with the construction contractor, DTMR, relevant council and an accredited road safety auditor. TMP would address managing hours of work and deliveries, staff transport and staff parking, with the provision of on-site equipment storage where practicable
- Ongoing consultation with relevant local governments, State authorities, police, emergency services and affected property owners/occupiers
- All OSOM and RAV vehicles will comply with relevant guidelines as set out by DTMR and the NHVR in terms of transport safety
- Logistic pinch points will be investigated further in the Detailed Design stage.

5.12.4 Consultation mitigation measures

Mitigation in the form of consultation has been integrated into the above sections, however, specific consultation mitigations and their relevant outcomes are provided in Table 5.151.

Table 5.151 Consultation mitigation measures

Stage	Mitigation	Mitigation outcome
Detailed Design, Early Works and Pre-construction Activities and Construction Works	Continued consultation will be necessary with the community (including schools, businesses and other service providers) to advise of construction activities and timings in order to best avoid and mitigate any impacts.	Ensure community awareness of Project progress and impacts.
	The detailed design and construction method for the Project will be developed in consultation with relevant councils, DTMR and emergency service providers (e.g. QFES, QAS and QPS).	Ensure emergency services can continue to access the community through construction.
	Continued consultation will be necessary with QR to confirm: - Interconnectivity and interoperability details of the Inland Rail network with the existing railway network - Construction approach for the Project within existing rail corridor. The agreed construction approach in these locations will require a wayleave agreement, or similar, between ARTC and QR.	Consultation with QR throughout construction will ensure smooth integration of assets, and limited impact on existing QR operations.
	Continued consultation with Toowoomba Wellcamp Airport will be required to ensure that the detailed design and construction methodology for the Project does not impact on the current and planned future operations of the airport.	Consultation with Toowoomba Wellcamp Airport will ensure there is no impact on the current or future planned operations of the airport.

5.13 Additional considerations

5.13.1 Wildlife impacts

The Construction Traffic Management Plan will take into consideration areas of significant fauna activity (including koala habitat) and will be reflected in the Construction Environmental Management Plan to ensure impacts to animals from Project generated traffic are mitigated against.

Appendix M provides information relating to recommended fauna crossings. Table 2.1 of Appendix M outlines possible locations and design types for potential fauna movement opportunities. Additional areas that may assist fauna movement (e.g. rail-over-road crossings) will be explored through the detail design stage in consultation with relevant stakeholders and landholders and will be incorporated into the design where feasible and appropriate.

6 Conclusions and recommendations

6.1 Summary of impacts and mitigation measures proposed

This TIA has been prepared to address Section 11.107 to 11.116 of the ToR. In doing so, the assessment has evaluated a comprehensive range of issues encompassing potential impacts of the Construction Works and Operations stages of the Project on the surrounding transport infrastructure and its users. The TIA has also examined the potential traffic and pavement impacts from the movement of materials, workforce and equipment during construction of the Project on the surrounding road network.

The key findings from the traffic and pavement impact assessments as well as the potential impacts to traffic and transport associated with the Project in the Construction Works and Operations stages are summarised in the section below.

6.1.1 Traffic impact – road safety

6.1.1.1 Intersections

The results of the road safety impact risk assessment for 116 intersections impacted by primary construction routes are shown in Table 5.12. There are two intersections that receive a risk rating of High risk in the risk assessment. These intersections, the risks and mitigations are discussed below.

- Gore Highway/Gilgai Lane
 - One rear end crash was recorded in the last five-year period. The rear end crash consisted of a multi-vehicle crash during clear daylight hours and resulted in a fatality. The Project traffic may exacerbate the rear end crash, which increased the with Project risk likelihood to Moderate. The proposed mitigation measures include HV truck turning signage in combination with possible temporary speed reduction signage through the intersection for the duration of construction. The provision of a CHR(s) turn lane might also mitigate for rear end crashes. This will be determined and finalised during construction stage as per contractor required assessments when preparing appropriate TMP and TGS in accordance with the *Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads* and DTMR's specification 'MRTS02 – Provision for traffic') requirements.
- Greenwattle Street/Alderley Street
 - The analysis for the existing scenario indicates the intersection is well over capacity and has unsafe levels of delay and queueing for existing peak hour traffic demands. There is a high crash risk for vehicles performing right turn manoeuvres from Alderley Street. The Project traffic may exacerbate the rear end crash rate as well, which increases the risk likelihood for the with Project scenario from Moderate to Likely. The proposed mitigation measures include signalisation of the intersection to remove the crash risk, address delay and queueing issues. The treatment will be determined and finalised during construction stage when traffic volume assumptions can be confirmed and as per contractor required assessments when preparing appropriate TMP and TGS in accordance with the *Manual of Uniform Traffic Control Devices: Part 3 – Works on Roads* and DTMR's specification 'MRTS02 – Provision for traffic') requirements.

All other intersections received a Medium risk rating, or better, and will be subject to the mitigations outlined in Section 5.2.3.1.

6.1.1.2 Road link

The results of the road safety impact risk assessment for intersections impacted by primary construction routes are shown in Table 5.12. For individual intersection assessments and detailed mitigation measures (Appendix AO). There are four road links that receive a risk rating of High which are further explained below:

- Gore Highway (28A), Ch 44.7 km to Ch 47.6 km
 - One (1) multi-vehicle rear-end crash in the same direction of travel resulting in a fatality, occurred from a vehicle decelerating and needing to turn left into side road and other vehicle traversing straight. Crash occurred during dry and clear daylight conditions. Crash may be the result of inadequate following distance. Project traffic may increase such crash types at side road intersections where separate left turn lanes are not provided (low volume roads) and consequently the risk likelihood may increase to moderate, and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
 - One (1) vehicle leaving driveway onto main road crash during dusk conditions which resulted in minor injury. Project traffic may increase such crash types at side road driveways where vehicles would enter the major road due to increase in traffic volume. The risk likelihood may increase to moderate and therefore the risk level increases to Medium with Project traffic. To reduce the risk to Low again, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- Gore Highway (28A), Ch 52.2 km to Ch 53.3 km
 - One (1) multi-vehicle head-on crash in opposite directions of travel which resulted in a fatality. Crash occurred during clear daylight on a straight section of road where sufficient sight distance prevails. Likely cause may be inadequate visibility or overtaking from a closely spaced headway. Project traffic may increase such crash types where additional HV volumes on the road may increase the need for overtaking, which may increase the risk likelihood to Moderate and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- Gore Highway (28A), Ch 53.3 km to Ch 60.8 km
 - Multi-vehicle head-on crash in opposite directions of travel which resulted in a fatality. Crash occurred during clear daylight on a straight section of road where sufficient sight distance prevails. Likely cause may be inadequate visibility/overtaking from closely spaced headway. Project traffic volumes and OSOM vehicles may increase the possibility of crashes, increasing the risk likelihood to moderate and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
- Toowoomba – Athol Road (316), Ch 2.1 km to Ch 16.8 km
 - Five (5) Multi-vehicle (intersecting from adjacent approach) crashes have occurred on the road link. The crashes included three medical treatment and two hospitalisations. Existing sight distances are considered sufficient along the road link to observe approaching vehicles before making turn movements. Project traffic may increase such crash types at side road intersections where LVs may take gaps in the traffic stream at less than required headway gap acceptance standards (driver behaviour), and consequently the risk likelihood may increase to likely, and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.
 - Three (3) multi-vehicle (opposing vehicles turning) crashes have occurred on the road link. The crashes included one medical treatment and two hospitalisations. Existing sight distances are considered sufficient along the road link to observe approaching vehicles before making turn movements. Project traffic may increase such crash types at side road intersections where LVs may take gaps in the traffic stream at less than required headway gap acceptance standards (driver behaviour). The risk likelihood may increase to likely and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.

- Seven (7) rear-end crashes occurred on the road link mainly as a result of numerous driveways accessing the road link and vehicles slowing down/stopping to access the driveways and through movement vehicles colliding with stopped vehicles. This mainly occurs along one lane per direction sections. Project traffic may exacerbate rear-end crashes due to slower moving vehicles requiring longer stopping distances and faster reaction times when travelling behind LVs wanting to enter driveways/accesses, and consequently the risk likelihood may increase to likely and therefore the risk level increases to High with Project traffic. To reduce the risk to Medium, the standard mitigation measures discussed in Section 5.2.2 are applicable.

In summary, the road link safety assessment for the four road links results in no requirements for infrastructure upgrade related mitigation measures, however, standard mitigations measures discussed in Section 5.2.2 are applicable.

6.1.1.3 Construction road-rail interface

The results of the road safety impact risk assessment for road-rail interfaces impacted by primary construction routes are shown in Table 5.14. There is one road-rail interfaces that receive a risk rating of High in the risk assessment. The risks and mitigations for this road-rail interface are discussed below.

- 310-12-E-1 Suttons Road, passive level crossing
 - Vehicle queueing related crashes or collision with trains may be exacerbated by the Project at the existing passive level crossing based on the existing road alignment, unsealed pavement, and insufficient sight distance available to approaching vehicles. However, sufficient stacking distance is available to accommodate for the largest design vehicle 36.5 m Road Train. As per AS1742.7 a distance comprising the design vehicle plus a safety factor of 5 m stopped at the intersection without fouling the tracks is required. Stacking of >200 m is available. Existing stacking is sufficient which would have no impact on crashes with railway train or vehicle from opposing direction crashes. Due to the existing geometry and sight lines crashes may change to likely
 - The proposed upgraded treatment of the crossing will be a passive control crossing with formalising of the approach roads to required geometrical standards and sight distance requirements. The crossing will also be temporarily closed during the construction stage to upgrade the crossing to the required standards of AS1742.7. The upgraded crossing will allow for sufficient safety features. In addition, road safety audits will also be required to be undertaken based on the design and based on as-constructed conditions.

All other road-rail interfaces received a Medium risk rating, or better, and will be subject to the mitigations outlined in Section 5.2.3.3

6.1.1.4 Operational road-rail interface

The results of the road safety impact risk assessment for road-rail interfaces impacted by operational traffic are shown in Table 5.14. The assessment identified no road-rail interfaces with a risk rating of High in the risk assessment. All road-rail interfaces received a Medium risk rating, or better, and will be subject to the mitigations outlined in Section 5.2.3.4.

6.1.2 Traffic impact – accesses

6.1.2.1 Turn warrants

A turn warrants impact assessment has been conducted at all access locations to laydown areas in order to identify the required turning treatments to accommodate Project traffic flows. This operational assessment has reviewed the existing turn warrant treatments against Austroads requirements to determine which intersections warrant impact mitigation.

The potential upgraded turning treatments outlined in this methodology are warranted only temporarily for construction traffic based on the current assumed traffic routes. Road use management strategies may be introduced in the RUMP and/or the Traffic Management Plan in order to temporarily mitigate construction related traffic impacts at laydown area accesses.

Where turning lanes are implemented (temporarily or permanently), these will be designed consistent with the requirements of *Austrroads Guide to Road Design Part 4A* and accommodate sufficient storage for the largest proposed construction vehicle (currently listed as a 26.0 m B-double, but to be confirmed with the Construction contractor).

6.1.2.2 Sight distance

An assessment has been conducted to determine the required safe intersection sight distance (SISD) at each laydown area access location, in order to consider appropriate design of these accesses in detailed design.

6.1.3 Traffic impact – intersections

6.1.3.1 Turn warrants

A turn warrants impact assessment has been conducted at all access locations to laydown areas in order to identify the required turning treatments to accommodate Project traffic flows. This operational assessment has reviewed the existing turn warrant treatments against Austrroads requirements to determine which intersections warrant impact mitigation.

Based on the above, Table 6.1 summarises the number of intersections expected to require upgrades to right turn lane provisions.

Table 6.1 Number of intersections requiring right turn treatments

Authority	Number of intersections requiring treatment prior to the Project	Number of intersections requiring treatment due to the Project	Total number of intersections requiring turn treatments
DTMR	16*	10*	25
GRC	8	0	8
TRC	13	0	13
MPSC	1	0	1
Total	38*	10*	47

Table note:

* One intersection warrants a treatment upgrade prior to the Project, and a further upgrade due to the Project

The following 10 intersections have additional right turn warrant requirements triggered as a result of the construction traffic:

- Cunningham Highway/Bybera Road
- Gore Highway/Fysh Road
- Gore Highway/Bushy Lane West (West)
- Gore Highway/Gilgai Lane
- Gore Highway/Linthorpe Road
- Gore Highway/Linthorpe Valley Road
- Gore Highway/Scrubby Road
- Gore Highway/Tummanville Road/Yarranlea Road (North)

- Toowoomba-Cecil Plains Road/Airport Quarry Wellcamp Access Road
- Toowoomba-Cecil Plains Road/Brimblecombe Road.

Thirty-seven (37) other intersections identified currently warrant upgrades to the left turn treatments. However, these are required regardless of the addition of construction related activities.

Table 6.2 summarises the number of intersections expected to require upgrades to left turn lane provisions.

Table 6.2 Number of intersections requiring left turn treatments

Authority	Number of intersections requiring treatment prior to the Project	Number of intersections requiring treatment due to the Project	Total number of intersections requiring turn treatments
DTMR	15*	4*	16
GRC	9	0	9
TRC	10	0	10
MPSC	1	0	1
Total	35*	4*	36

Table note:

* Three intersections warrant a treatment upgrade prior to the Project, and a further upgrade due to the Project

The following four intersections have additional left turn warrant requirements triggered as a result of the construction traffic:

- Gore Highway/Biddeston Southbrook Road
- Gore Highway/Dieckmann Road
- Gore Highway/Linthorpe Road
- Warrego Highway/Chamberlain Road.

Thirty-two (32) other intersections identified currently warrant upgrades to the left turn treatments. However, these are required regardless of the addition of construction related activities.

Mitigation measures are outlined in Section 5.4.6.4. The mitigation measures suggested may not be required once the construction routes have been finalised. Given that a number of intersection warrants are required regardless of the temporary Project traffic, mitigation measures to improve safety issues resulting from inadequate turn lane availability will need to be agreed with the relevant road authority.

6.1.3.2 Sight distance

An assessment has been conducted to determine the required safe intersection sight distance (SISD) at each intersection, including required inputs relating to the road seal, major road speed limit and longitudinal grade used in the calculation of minimum SISD.

The mitigation measures suggested in Section 5.4.6.3 may not be required once the construction routes have been finalised. Given that construction traffic is temporary, mitigation measures to improve sight distance will need to be agreed with the relevant road authority.

6.1.3.3 Delay

Each intersection used by construction traffic has undergone SIDRA analysis to assess the peak period operational performance for the 'without Project' and 'with Project' scenarios.

The overall vehicle minutes delay net increase for the impact assessment area equates to 5.98 per cent, which is just above the GTIA definition of significantly worsening of 5 per cent. Therefore, mitigation of capacity issues causing delay is required to return the intersection to pre-Project levels.

The number of intersections expected to experience a net increase in delay greater than 5 per cent based on the current construction routes and volumes.

Table 6.3 Number of intersections experiencing greater than 5 per cent increase in delay

Authority	Number of intersections
DTMR	76
GRC	14
TRC	17
MPSC	1
Total	108

Non-infrastructure and infrastructure-based mitigation measures for delay impacts are outlined in Sections 5.4.6.1 and 5.4.6.2, respectively. It is expected that these non-infrastructure measures will reduce the impact assessment area aggregate vehicle minutes delay to under 5 per cent, in line with GTIA requirements and no infrastructure-based mitigation measures will be required.

6.1.4 Traffic impact – road links

6.1.4.1 Level of Service

Table 6.4 provides a summary of the number of roads, number of road sections and length of roads by road authority which exceed the prescribed 5 per cent threshold for construction traffic compared with background traffic.

Table 6.4 Number of roads exceeding 5 per cent base AADT by road authority

Road authority	Number of roads > 5%	Number of road sections > 5%	Length of roads > 5% (km)
DTMR	18	96	583.61
TfNSW	0	0	0.00
BSC	1	1	0.39
GRC	29	46	159.42
MPSC	2	2	6.73
TRC	44	65	81.44

The results of the LOS comparison indicates that the Project-related traffic may cause an incremental change in LOS on seven road links in the gazetted/northbound/eastbound directions and eight in the against-gazetted/southbound/westbound directions. Table 6.5 and Table 6.6 provide an overview of all road links which change in LOS between without and with Project traffic for the gazetted/northbound/eastbound directions and against-gazetted/southbound/westbound directions, respectfully. The table provides further context regarding daily traffic volumes on each road link without and with Project traffic, as well as the LOS in each scenario where this has changed due to the Project. Apart from those road links listed below, the road network is anticipated to continue to operate with no net worsening as a result of the Project.

Table 6.5 Summary of road links with incremental Level of Service change G/NB/EB

Road name	Road section	Peak impact year daily traffic volumes		LOS	
		Without Project	With Project	Without Project	With Project
Gore Highway (28A)	Ch 2.2 km to Ch 5.4 km	264	352	A	B
	Ch 5.4 km to Ch 6.7 km	264	351	A	B
	Ch 6.7 km to Ch 7.7 km	264	350	A	B

Road name	Road section	Peak impact year daily traffic volumes		LOS	
		Without Project	With Project	Without Project	With Project
	Ch 7.7 km to Ch 11.2 km	264	349	A	B
	Ch 11.2 km to Ch 15.3 km	264	348	A	B
	Ch 15.3 km to Ch 17.5 km	264	324	A	B
	Ch 19.0 km to Ch 20.3 km	264	323	A	B

Table 6.6 Summary of road links with incremental Level of Service change AG/SB/WB

Road name	Road section	Peak impact year daily traffic volumes		LOS	
		Without Project	With Project	Without Project	With Project
Gore Highway (28A)	Ch 0.0 km to Ch 2.2 km	284	376	A	B
	Ch 2.2 km to Ch 5.4 km	275	397	A	B
	Ch 5.4 km to Ch 6.7 km	275	390	A	B
	Ch 6.7 km to Ch 7.7 km	275	386	A	B
	Ch 7.7 km to Ch 11.2 km	275	378	A	B
	Ch 11.2 km to Ch 15.3 km	275	375	A	B
	Ch 15.3 km to Ch 17.5 km	275	347	A	B
	Ch 19.0 km to Ch 20.3 km	275	340	A	B

Although there is a change in operational LOS for the road sections above, the expected operational LOS B is considered acceptable given the short duration of the construction activities. In addition, the operational performance of the road would return to base conditions after construction is complete.

Based on the LOS comparison, it is not expected that the Project would generate the need to upgrade the road network for these temporary construction activities. Regardless, as per the earlier assessments, it is important that the routes are reviewed in the preparation of a Traffic Management Plan from a physical and safety perspective prior to the commencement of construction activities to ensure they are suitable. This will include joint visual inspection of all routes by the contractor, the asset owner and an accredited road safety auditor to agree on routes and any works required to ensure the routes are suitable for the level of construction activity proposed.

6.1.5 Traffic impacts – pavements

The pavement impact assessment indicates that the majority of SCR road segments would have minimal pavement impact given the duration of construction activities and pavement loading. However, it was found that the 5 per cent threshold would be exceeded for several road sections, as outlined in Table 6.7.

Table 6.7 Number of roads exceeding 5 per cent base standard axle repetitions by road authority

Road authority	Number of roads > 5%	Number of road links > 5%	Length of roads > 5% (km)
DTMR	12	81	531.2
TfNSW	0	0	0
BSC	1	1	0.4
GRC	26	39	136.8
MPSC	2	2	6.7
TRC	42	59	76.9

It should be noted that some of the percentages are relatively high due to very low background traffic volumes along the particular road sections. Detailed analysis outputs and results of these road segments are provided in Appendix BA.

Detailed pavement design life assessments will be carried out prior to the commencement of construction, in consultation with DTMR, once specific construction routes are agreed in the Detailed Design stage of the Project. Further detailed assessment will assist in identifying if contributions may be required towards the maintenance costs for the affected road sections as a result of additional pavement loading. This will form part of the draft Outline Environmental Management Plan and subsequent EMPs to be developed prior to construction. This will assist further discussions with DTMR to identify if contributions may be required towards the maintenance costs for the affected road sections as a result of additional pavement loading.

The 5 per cent comparison assessment concluded that 12 DTMR roads exceed the 5 per cent threshold in at least one year of construction. Since the 5 per cent threshold has been reached, contributions for these sections of the SCR network may be required. Contribution amounts for the SCR network have been calculated and provided in a technical memo to the OCG.

No estimate was undertaken for local government roads as marginal cost information is not available for these roads.

6.1.6 Traffic impacts – transport infrastructure

6.1.6.1 Heavy vehicle movement

Where HVs routes and restrictions are defined, the Project construction vehicles comply with these requirements, with the exception of OSOM vehicles. These are generally SCRs. There are a number of roads used by construction vehicles which are not defined under the Queensland HV routes and restrictions information. Routes unclassified for HV use are generally local government roads which usually have no requirement for B-double, higher mass limit or road train-sized vehicles. These roads may not typically be designed for such large vehicle types, the construction vehicles could impact on the pavement or road formation or be unsuitable for the road geometry.

Mitigations for impacts to these roads due to the use of HVs are outlined in Table 5.65, including:

- Road safety audits need be carried out at design stage and post-construction stage where such road upgrade works are required to ensure the design vehicle can be accommodated
- All conflict points impacting vehicle turn path to be relocated/removed. Further road widening works of kerb turnouts or carriageway of minor road to accommodate vehicle swept path would be reviewed in detailed design stage
- All Oversize Overmass and Restricted Access Vehicles will comply with the *Guideline for Excess Dimension Vehicles in Queensland* (DTMR, 2013) in terms of transport safety.

Mitigations discussed and outlined in the pavement impact assessment in Section 5.6 and for OSOM vehicles in Section 5.8.4.3 also apply.

6.1.6.2 Oversize overmass movement

Swept path analysis has been undertaken at a total of 35 identified pinch point locations. These locations were identified through a desktop study of the proposed routes of OSOM movements. The pinch point locations and information is provided in Table 5.64. The assessment has identified a number of pinch points requiring upgrade (temporary or permanent) to accommodate the movement of OSOM vehicles. Specific mitigation measures for each pinch point are outlined in Section 5.7.3. The key mitigations identified are summarised below:

- Temporary removal of signage, fencing, guard rail and guide posts
- Removal of vegetation

- Widening of intersection pavement (either permanent, or using gravel)
- Locate, identify and flag overhead power poles
- Assessment of structural adequacy of bridges/culverts
- Use of pilot vehicles and police escorts to warn other road users
- Use of traffic control
- Travel outside of peak times (preferably evenings) to minimise vehicle conflict
- Erect temporary lighting
- Erect temporary signage as required.

Once the construction contractor has prepared further plans and chosen their preferred design vehicle, these swept path assessments shall be revisited to determine any temporary or permanent changes to the existing layout which may be required to accommodate construction traffic movements, such as road upgrades, localised lane widening, geometric improvements or removal of signage and lighting. ARTC commits that these mitigations will be further discussed and agreed with the relevant road authorities.

6.1.7 Traffic impacts – road-rail interface

6.1.7.1 Construction

During construction, it is anticipated that most existing rail crossings will be non-operational. As such, only two level crossings were identified as having impacts. The assessment findings of the public level crossings are outlined below

- Cunningham Highway (Whetstone) active level crossing: train crossings limited to those for delivery of the Project's construction materials. Vehicle volumes expected to increase from 681 veh/day/direction to 912 veh/day/direction (38.2 per cent increase) in the peak impact year
- Coolmunda Dam Access Road (Coolmunda) passive level crossing: vehicle increase from 37 veh/day/direction to 88 veh/day/direction (136.6 per cent increase) in the peak impact year. Volumes remain low therefore limited impact expected.

Traffic management strategies to be introduced in order to mitigate road-rail interface impacts would include:

- Road safety audits will be undertaken at the level crossings pre and post construction, as well as post opening in accordance with the Austroads guidelines
- Physical controls such as boom barrier gates and/or warning lights will be incorporated into the design at active level crossing locations in accordance with the *Guide to Development in a Transport Environment: Rail* (DTMR 2015a), *Manual of Uniform Traffic Control Devices Part 7: Railway Crossings* (DTMR, 2019b) and *ARTC Engineering Code of Practice – Level Crossings*
- Railway safety messages will be provided to the community through awareness activities, community engagement activities, and campaigns to increase public awareness regarding the Project.

6.1.7.2 Operation

The operational performance of the proposed public level rail crossings in the TIA study area was assessed to provide an understanding of the impacts on performance and safety during operation stages. The rail crossing impact assessment focuses on vehicle delay and queueing analysis, demonstrating how the Project generated traffic impacts vehicle delay and queueing at the rail crossing.

Two future year scenarios were analysed; 2028 (day one rail operations) and 2040 (peak Project operation). For each year, both AM and PM peak hour analysis was conducted based on the estimated number of train movements, forecast background traffic and any diversions to the surrounding road network as a consequence of the Project.

The results indicate a delay of 1.30 to 3.02 minutes depending on the road-rail interface location and based on a train speed of 115 km/h. All road-rail interfaces have been found to have sufficient storage based on the adopted design vehicles.

6.1.7.3 Road diversions

A road diversion assessment (provided in Section 5.9.4) has been undertaken at a number of locations where the rail alignment and road-rail interface crossing type has led to a requirement for redirection of traffic to an alternative route. Within the TIA study area, seven diversion locations have been identified. These are summarised below:

- Athol School Road, Athol
- Biddeston Southbrook Road, Southbrook
- Lochaber Road, Pittsworth
- Oakey Pittsworth Road, Pittsworth
- Tip Road, Pittsworth
- Ware Street, Brookstead
- Fysh Road, Pampas.

At each of these diversion locations, an assessment has been undertaken to summarise the:

- Existing situation, including the road network and active and public transport provisions
- Required site distance length
- Traffic information and rerouting assumptions
- Capacity (SIDRA) and turn warrants assessment without and with Project
- Recommendations.

For the above intersections that have been analysed, all intersections are found to be performing at a satisfactory level post-diversion. The impact on public transport and active modes are also expected to be negligible, if any.

6.1.8 Traffic impacts – active travel

Some of the proposed construction routes are aligned through areas of moderate to high pedestrian activity through the areas surrounding the towns of Yelarbon, Inglewood, Millmerran, Brookstead, Pittsworth and Toowoomba. Significant increases in HV movements through these locations may adversely impact pedestrian movements. However, whilst increased HV movements through these locations may adversely impact pedestrian movements, the majority of these routes currently facilitate a high proportion of HV movements. Haulage contractors should be made aware of these areas of high pedestrian activity as a part of the TMP, discussed in Section 5.12.3.

ARTC has committed to maintaining connectivity of existing on and off-road pedestrian/shared user facilities, where the need for that facility remains in a Third-Party Agreement with relevant local councils. Consultation will continue with local councils regarding pedestrian crossing options during detailed design. Once agreed, changes to active transport networks will be communicated to active transport users through regular Project channels.

Provision has been made where there is the need or future need for pedestrians and cyclist transport (e.g. Yelarbon pedestrian crossing). In all road over rail interfaces assessed, there is no existing desire line or future need, and the provision of separate pedestrian and non-vehicular access is not economically justified in accordance with Austroads Guide to Road Design Part 6A - Section C1.2.2.

6.1.9 Traffic impacts – emergency services

The Project has the potential to result in the following impact on emergency service vehicles during construction:

- Increased journey times on road linkages utilised by construction traffic
- Increased waiting time at intersections utilised by construction traffic
- Temporarily altered driving conditions in proximity to construction areas, such as reduced speed limits, mobile traffic lights and lane reconfigurations
- Reduced connectivity across the Project alignment, impacting accessibility during flooding and fires.

Such impacts have potential to result in increased response times for emergency services.

During both construction and operation, response times for emergency services may be delayed if they encounter significant roadworks or passing trains at level crossings. As part of the on-going process, ARTC is consulting and working with the relevant emergency service agencies (e.g. QFES, QAS and QPS) to develop protocols and joint working arrangements to address potential impacts on emergency services and service response times during construction and operation and ensure that access is retained as required. QAS, QPS and QFES have acknowledged the potential impact to their services during construction and operations and are supportive of the Project's proposed approach. The QFES, QAS and QPS will all be consulted to identify suitable emergency access locations to the rail corridor in response to emergencies along the rail track.

Consultation with the community and relevant government agencies (including emergency services) will continue through the detailed design and construction planning process to ensure that safety concerns and issues are addressed.

The Construction Traffic Management Plan will identify and include secondary/alternative construction routes which can be used by construction traffic in the event that a primary construction route is blocked by an accident or emergency situation. Where a suitable secondary route is not identified, the movement of construction vehicles will stop until suitable alternative routes are identified and agreed with the relevant road authority.

6.1.10 Traffic impacts – bus routes

The school bus services detailed below are likely to be impacted by the proposed rail alignment. The potential impacts to school bus services due to the upgrade of existing, or introduction of new road-rail intersection for the Project are discussed in Table 5.116.

It is no longer proposed to use the Yelarbon rest area as a laydown area for Project construction activities, therefore mitigating impacts associated with student bus transfers at this location.

During the Construction Works stage, it is suggested that the construction contractor collaborates with Brookstead State School, as well as other key stakeholders in the area (such as DTMR and Toowoomba Regional Council Council), to address and mitigate any construction impacts, particularly concerning the operation and access to the school zone, including the operations of the S118 service. Specific mitigations will be further examined and determined during the Detailed Design and Construction Works stages and will be documented as part of the Traffic Management Plan.

It is expected that other school bus services would not be substantially impacted from an operational and service reliability perspective as a result of the Project generated traffic during the Construction Works stage. However, the Contractor will work with stakeholders to avoid impacts on school bus services and school zones, during the preparation of the Outline EMP and TMP, as discussed in Section 5.12.3.

Given that the above school bus routes do not tend to have designated bus stops, apart from the termini, prior to the Construction Works stage of the Project, suitable mitigation measures for all of the affected services, including the location of bus stops, should be identified in consultation with bus operators, local councils, impacted schools, Department of Education and the local community and be documented in the TMP to ensure school bus safety and understand any impacts to journey times, if any.

6.1.11 Cumulative traffic impacts

A qualitative cumulative assessment was undertaken with the projects identified in EIS Chapter 23: Cumulative Impact as having potential to contribute to cumulative impacts in combination with the Project.

For the purpose of traffic, transport and access, projects that will have a temporal overlap in construction or expansion activities and may result in traffic usage of the same road network as the Project are considered to have potential to result in cumulative impacts. Only 13 of the initial the identified projects in Table 5.119 meet these criteria, including the five other Inland Rail Projects. The projects considered applicable to the traffic and transport cumulative impact assessment are:

- New Acland Coal Mine Stage 3
- Australia Pacific LNG Project
- InterLinkSQ
- Asterion Medicinal Cannabis Facility
- Commodore Mine and Millmerran Power Station
- Wyemo Piggery
- MacIntyre Wind Farm
- Goondiwindi Abattoir
- North Star to Border (Inland Rail)
- Gowrie to Helidon (Inland Rail)
- Helidon to Calvert (Inland Rail)
- Calvert to Kagaru (Inland Rail)
- Kagaru to Acacia Ridge and Bromelton (Inland Rail).

InterLinkSQ, the Commodore Mine and Millmerran Power Station, and other Inland Rail Projects were found to have Medium Impact significance. Mitigation measures have been outlined for InterLinkSQ and the Commodore Mine and Millmerran Power Station. Quantitative assessments were undertaken to quantify the impacts of the Inland Rail Projects.

The quantitative cumulative impact assessment has been undertaken considering the complete Inland Rail construction from North Star to Border to Kagaru to Acacia Ridge/Bromelton. The study area considers the overlap of other Inland Rail packages with the Project's proposed construction routes across the complete construction timeframe over the six packages.

6.1.11.1 Cumulative safety assessment

The road safety impact assessment for the cumulative impact has been undertaken for the road links with the cumulative impact considered in 'With Project' traffic volumes.

Cumulative intersection safety

The same two intersections triggered High Risk requirements in the cumulative assessment, as were triggered in the 'Project only' assessment. These being:

- Gore Highway/Gilgai Lane
- Greenwattle Street/Alderley Street.

Therefore, the mitigations applied within the 'Project only' assessment apply for cumulative impacts, based on the current assumed construction routes and timings.

Cumulative road link safety

The same four road links triggered High Risk and requiring mitigation in the cumulative assessment, as were triggered in the 'Project only' assessment. These being:

- Gore Highway (28A), Ch 44.7 km to Ch 47.6 km
- Gore Highway (28A), Ch 52.2 km to Ch 53.3 km
- Gore Highway (28A), Ch 53.3 km to Ch 60.8 km
- Toowoomba - Athol Road (316), Ch 2.1 km to Ch 16.8 km.

Therefore, the mitigations applied within the 'Project only' assessment apply for cumulative impacts, based on the current assumed construction routes and timings.

Cumulative road-rail interface – construction

The same construction traffic route road-rail interface (310-12-E-1, Suttons Road, passive level crossing) triggered High risk and requires mitigation in the cumulative assessment, as were triggered in the 'Project only' assessment.

Therefore, the mitigations applied within the 'Project only' assessment apply for cumulative impacts, based on the current assumed construction routes and timings.

6.1.11.2 Cumulative intersection assessment

Five additional intersections were identified to have additional construction traffic as a result of the additional Inland Rail Projects. These intersections are shown in Table 6.8.

Table 6.8 Proposed cumulative construction vehicles movements at intersections

Major road	Construction routes using intersection	Peak impact year	Construction vehicle turn from major road
State-Controlled Roads: Department of Transport and Main Roads			
Cunningham Highway/Leichhardt Highway	Workforce, rail-to-road diversion, in situ concrete, precast concrete,	2025	Right, Left
Gore Highway/Dieckmann Road	Workforce, non-resident workforce accommodation facility, cut-to-fill, fill, rail-to-road diversion, in situ concrete, plant and tools, precast concrete, quarry materials, rail components, sleepers, water	2025	Right, Left
Leichhardt Highway/Hunt Street	Rail-to-road diversion, in situ concrete,	2024	Right, Left
State-Controlled Roads: Transport for New South Wales			
Newell Highway/River Road	Water	2024	Right, Left
Local Government Roads: Goondiwindi Regional Council			
Hunt Street/Boodle Street	In situ concrete	2024	Right
Local Government Roads: Moree Plains Shire Council			
River Road/River Road	Water	2024	Left

The cumulative turn warrant assessment concluded that the same turn warrant treatments required as those highlighted in the 'Project only' assessment.

The cumulative intersection delay assessment indicated that six intersections have increased the 'vehicle minutes delay' due to cumulative traffic. The additional impact to all of these intersections is less than two per cent beyond that outlined in the 'Project only' scenario.

As all intersections within the cumulative impact assessment are operating within acceptable operational capacity limits, it is expected that the non-infrastructure measures outlined in Section 5.4.6.1 will reduce the impact assessment area aggregate vehicle minutes delay to under 5 per cent, in line with GTIA requirements, and no infrastructure-based mitigation measures will be required.

6.1.11.3 Cumulative road link assessment

Twenty-six additional road links were identified to have additional construction traffic as a result of the additional Inland Rail Projects. These road links are shown in Table 6.9.

Table 6.9 Cumulative road link capacity assessment summary

Road name	Road extents*	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
State-Controlled Roads: Department of Transport Main Roads					
Cunningham Highway (17D)	Ch 88.2 km to Ch 90.0 km	✓			
Gateway Motorway (N239)	Ch 0.0 km to Ch 15.0 km	✓			
Gateway Motorway Extension (N332)	Ch 0.0 km to Ch 10.0 km	✓			
Gore Highway (28A)	Ch 25.0 km to Ch 30.1 km			✓	
Ipswich Motorway (17A)	Ch 0.0 km to Ch 3.7 km	✓			
	Ch 3.7 km to Ch 6.4 km	✓			
	Ch 6.4 km to Ch 8.3 km	✓			
Leichhardt Highway (26C)	Ch 222.4 km to Ch 224.1 km	✓			
Logan Motorway (210A)	Ch 0.0 km to Ch 14.5 km	✓			
Millmerran-Inglewood Road (337)	Ch 3.5 km to Ch 6.2 km			✓	
Port Drive (NA24)	Ch 0.0 km to Ch 5.0 km	✓			
Port of Brisbane Motorway (U27)	Ch 0.0 km to Ch 6.0 km	✓			
Toowoomba Bypass (319A)	Ch 0.0 km to Ch 26.8 km				✓
Toowoomba Bypass (319B)	Ch 0.0 km to Ch 0.6 km			✓	
Warrego Highway (18A)	Ch 0.0 km to Ch 7.2 km	✓			
	Ch 7.2 km to Ch 15.1 km	✓			
	Ch 15.1 km to Ch 18.9 km	✓			
	Ch 18.9 km to Ch 28.9 km	✓			
	Ch 28.9 km to Ch 36.6 km	✓			
	Ch 36.6 km to Ch 55.5 km	✓			
	Ch 55.5 km to Ch 75.4 km	✓			
	Ch 75.4 km to Ch 79.6 km	✓			
Local Government Roads: Goondiwindi Regional Council					
Boodle Street	Holcim Concrete Goondiwindi to Hunt Street		✓		
Hunt Street	Leichhardt Highway to Boodle Street		✓		

Road name	Road extents*	Road link assessment required			
		<5%	V/C ratio	HCS highway	HCS motorway
Local Government Roads: Moree Plains Shire Council					
Boggabilla Weir Access	River Road to Boggabilla Weir	✓			
River Road	Newell Highway to Boggabilla Weir Access		✓		

Table note:

* Road extents at Chainage locations (Ch) are measured at km points along the Project alignment

The table indicates a total of:

- Nineteen (19) road links not triggering the 5 per cent threshold
- Three (3) road links requiring a volume/capacity check
- Three (3) road links requiring a HCS highway facility analysis
- One (1) road link requiring a HCS multilane facility analysis.

The volume/capacity ratio assessment indicates that none of the road links assessed require further assessment or mitigations as they all remain well below a v/c ratio of 0.5. The highest v/c ratio noted was 0.01 which indicates all roads will continue to operate with significant capacity with the Inland Rail project.

The results of the LOS comparison in the HCS analyses indicate that the cumulative Inland Rail project construction traffic will not cause an incremental change to LOS along construction traffic routes in either direction, above and beyond those changed within the 'Project only' assessment.

6.1.11.4 Cumulative pavement assessment

The 5 per cent comparison assessment concluded that 88 DTMR roads exceed the 5 per cent threshold in at least one year of construction as a result of the additional Inland Rail Projects. These intersections are shown in Table 6.10.

Table 6.10 Number of roads exceeding 5 per cent base standard axle repetitions by road authority – cumulative assessment

Road authority	Number of roads > 5%	Number of road links > 5%	Length of roads > 5% (km)
DTMR	88	20	602.2
TfNSW	0	0	0.0
BSC	1	1	0.4
GRC	40	27	137.1
MPSC	2	2	6.7
TRC	55	40	74.5
Total	186	90	820.9

It should be noted that some of the percentages are relatively high due to very low background traffic volumes along the particular road sections. Detailed analysis outputs and results of these road segments are provided in Appendix BL.

The 5 per cent comparison assessment concluded that 88 DTMR roads exceed the 5 per cent threshold in at least one year of construction. Since the 5 per cent threshold has been reached, contributions for these sections of the SCR network may be required. Contribution amounts for the SCR network have been calculated and provided in a technical memo to the OCG.

6.2 Summary of commitments

Table 6.11 outlines a summary of commitments by ARTC and the construction contractor outlined within the TIA.

Table 6.11 Summary of commitments

Number	Commitment
1	Consult with DTMR, councils, the Contractor, and where relevant QR, in determination of final construction and HV routes.
2	Update all documentation and reports to ensure the report aligns with final construction traffic volumes, turning movements, routes and vehicle types.
3	Undertake updated pavement marginal cost contribution calculation for SCR once pavement impacts are finalised.
4	Undertake further assessment regarding water demand planning, including detailed contingency options in the event that protracted dry seasonal conditions prevail and water supply options become unavailable.
5	Refine assessments based on detailed construction staging when this information is available.
6	Consult closely with transport authorities to develop mitigation measures to address Project impacts.
7	Conduct road dilapidation surveys prior to construction.
8	Conduct pavement condition assessments prior and post construction activities as well as at ongoing intervals during construction, with intervals agreed with Council prior to commencement of construction.
9	Consult with relevant stakeholders during the detailed design stage on mitigation measures to ensure structural capacities are maintained and agreement on the minimum design life of returned works (to be included in a Third Party Agreement) as well as agreed contribution towards the consumption of pavement design life by construction related vehicles.
10	Analyse community complaints and suggested improvements to traffic management plans, including level crossing near-miss information.
11	Consult with councils regarding TMP preparation.
12	Consult with DTMR, councils and impacted property owners with regards to network connectivity and legal property access to properties prior to the commencement of any construction activities.
13	Continue to consult with emergency services regarding delays, accessibility, road closures and detours.
14	Undertake updated ALCAM assessment during detailed design for public level crossing treatments.
15	Maintain safety treatments for passive and active level crossings (including sight lines) by conducting routine inspections of crossing infrastructure.
16	Maintain existing school and public bus stops during construction or agree alternative with public transport authority.
17	Undertake impact assessment of non-resident workforce accommodation facility at Millmerran
18	Consult with relevant local council authorities and transport operators to confirm public transport and active transport routes along the finalised construction routes.
19	Consult bus operators, local councils, impacted schools, Department of Education and the local community about affected school bus services in order to provide suitable mitigation measures and make all stakeholders away of proposed changes to routes.
20	Draft and finalise a Road use Management Plan for construction activities. The RUMP will be developed in consultation with the relevant department officers prior to construction commencing.
21	Draft and finalise a Traffic Management Plan in accordance with the current edition of the <i>Manual of Uniform Traffic Control Devices</i> and Technical Standard MRTS02 - Provision for traffic prior to the commencement of construction.
22	Draft and finalise a Construction Environmental Management Plan, including TMP
23	If required and necessary for the Project, all RAV and OSOM vehicles requiring transportation of special equipment will apply for the necessary permits from DTMR, QR and relevant authorities as well as the Heavy Vehicle National Regulator.
24	Site access locations requiring access directly on/off a SCR will be negotiated with and approved by DTMR.
25	Any identified intersection upgrades will be developed in consultation with DTMR and local governments.

Number	Commitment
26	Ensure confirmed road alterations and resulting diverted traffic is accommodated sufficiently and the operations of existing intersections and road links are not worsened.
27	Consult with QR regarding delivery of rail via the QR network in order to agree on routes to be used, size and frequency of locomotives and scheduling of deliveries with consideration for monthly variances in background network usage.
28	Road safety audits will be undertaken for changes to access configurations, nearby intersections, bus stop locations, cycling facilities, footpaths proposed by the Project will require a Road Safety Audit as per the requirements of the GTIA.
29	Consult, discuss and agree on approach with road authorities where assessments flag existing issues to determine appropriate mitigation measures provided by the Project.

6.3 Certification statement and authorisation

Certification of Traffic Impact Assessment Report

Registered Professional Engineer Queensland

for

Project title:	Inland Rail – Border to Gowrie revised draft EIS
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As a professional engineer registered by the Board of Professional Engineers of Queensland pursuant to the Professional Engineers Act 2002 as competent in my areas of nominated expertise, I understand and recognise:

- The significant role of engineering as a profession, and that
- The community has a legitimate expectation that my certification affixed to this engineering work can be trusted, and that
- I am responsible for ensuring its preparation has satisfied all necessary standards, conduct and contemporary practice.

As the responsible Registered Professional Engineer Queensland (RPEQ), I certify:

- I am satisfied that all submitted components comprising this traffic impact assessment, listed in the following table, have been completed in accordance with the Guide to Traffic Impact Assessment published by the Queensland Department of Transport and Main Roads and using sound engineering principles, and
- where specialised areas of work have not been under my direct supervision, I have reviewed the outcomes of the work and consider the work and its outcomes as suitable for the purposes of this traffic impact assessment, and that
- the outcomes of this traffic impact assessment are a true reflection of results of assessment, and that
- I believe the strategies recommended for mitigating impacts by this traffic impact assessment, embrace contemporary practice initiatives and will deliver the desired outcomes.

Name:	Shalendra Ram	RPEQ No:	10199
RPEQ competencies:	Civil Engineering		
Signature		Date:	24/02/2023
Postal address	8/540 Wickham St, Fortitude Valley Queensland 4006		
Email:	shalendra.ram@aecom.com		

Traffic impact assessment components to which this certification applies	✓
<i>1. Introduction</i>	✓
Background	✓
Scope and study area	✓
Pre-lodgement meeting notes	✓
<i>2. Existing Conditions</i>	✓
Land use and zoning	✓
Adjacent land uses/approvals	✓
Surrounding road network details	✓
Traffic volumes	✓
Intersection and network performance	✓
Road safety issues	✓
Site access	✓
Public transport (if applicable)	✓
Active transport (if applicable)	✓
Parking (if applicable)	✓
Pavement (if applicable)	✓
Transport infrastructure (if applicable)	✓
<i>3. Proposed Development Details</i>	✓
Development site plan	✓
Operational details (including year of opening of each stage and any relevant catchment/market analysis)	✓
Proposed access and parking	✓
<i>4. Development Traffic</i>	✓
Traffic generation (by development stage if relevant and considering light and heavy vehicle trips)	✓
Trip distribution	✓
Development traffic volumes on the network	✓
<i>5. Impact Assessment and Mitigation</i>	✓
With and without development traffic volumes	✓
Construction traffic impact assessment and mitigation (if applicable)	✓
Road safety impact assessment and mitigation	✓
Access and frontage impact assessment and mitigation	✓
Intersection delay impact assessment and mitigation	✓
Road link capacity assessment and mitigation	✓
Pavement impact assessment and mitigation	✓
Transport infrastructure impact assessment and mitigation	✓
Other impacts assessment relevant to the specific development type/location (if applicable)	✓
<i>6. Conclusions and Recommendations</i>	✓
Summary of impacts and mitigation measures proposed	✓
Certification statement and authorisation	✓

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