



# Chapter 22

Traffic and transport



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## Chapter 22 Traffic and transport

The Secretary's environmental assessment requirements for the Narrabri Gas Project include a requirement to assess potential impacts on the efficiency and safety of the local and State road network. A detailed assessment was undertaken in response to this requirement and is provided in Appendix P. This chapter draws on the detailed assessment and provides an overall assessment of the potential impacts of the project on traffic and transport.

The key findings of the impact assessment in relation to traffic and transport were:

- the residual risks presented by the project would generally be medium to low
- the assessment of absolute peak traffic found that the road network would accommodate project traffic to an acceptable standard
- significant traffic delays are not anticipated
- the implementation of mitigation and management measures and relevant design elements would be sufficient to effectively control and minimise the potential impacts of the project with regard to traffic and transport
- the proponent will upgrade two Newell Highway intersections to ensure safe and efficient traffic conditions are maintained.

The main routes providing access to the field, Bibblewindi and Leewood are the Newell Highway, X-Line Road and Old Mill Road. Various other rural forestry roads will also provide access to locations within the field, such as Westport workers' accommodation. As part of the project, two intersections on the Newell Highway would be upgraded to provide safe and reliable access to and from Leewood, Bibblewindi and the field. A number of local roads in the township of Narrabri would provide access to the Narrabri Operations and Logistics Centre and existing workers' accommodation.

The project would generate varying amounts of traffic during construction and operation. To be conservative, the absolute peak traffic volumes expected were assessed. This absolute peak would be relatively short in duration, and would occur on relatively few occasions during the three-year peak construction period. Lower daily peaks would occur during this peak construction period when material and equipment would be brought to construction sites, or when drill rigs are moved. Traffic during operation and decommissioning is expected to be significantly lower than during the peak construction period. The assessment of absolute peak traffic found that the road network would accommodate project traffic to an acceptable standard.

The main identified road safety issues that were identified included:

- traffic entering and existing high speed roads such as Newell Highway
- traffic utilising local roads in and around Narrabri where local traffic would be encountered, including bus routes and livestock
- traffic utilising forestry roads that may have lower surface condition and sight distance.

Measures to mitigate and manage potential impacts to road network efficiency and safety would be collated and implemented in a Traffic Management Plan.

## 22.1 Methodology

The traffic and transport assessment was undertaken with reference to the *Guide to Traffic Generating Developments* (Roads and Maritime 2002). The following tasks were undertaken to assess the traffic and transport impacts of the project:

- characterisation of existing road network
- traffic counts at key intersections
- intersection modelling to determine existing or baseline level of service
- quantification of project traffic during construction and operation
- weekday morning and afternoon peak traffic modelling of intersections under the forecast peak construction traffic conditions
- midblock traffic impact assessment of roads within the study area that are expected to have an increase in traffic under construction and operational stages of the project
- assessment of potential impacts to road network safety
- development of mitigation and management measures, including intersection upgrades, to control impacts on level of service and safety on the existing road network.

Characterisation of the existing road network was undertaken primarily through a review of aerial photography and geographical information systems (GIS) mapping. Roads were characterised according to their class under the functional road hierarchy (refer to Table 22-1), and further defined with reference to the *Highway Capacity Manual* (Transportation Research Board 2000). Roads in the forested part of the project area have been denoted as forestry roads for the purpose of this assessment. Forestry roads are typically managed by the Forestry Corporation of NSW and have a capacity similar to local roads.

Table 22-1 Functional road hierarchy

Class	Description
Arterial roads	Controlled by NSW Roads and Maritime Services Typically no limit on flow <sup>a</sup>
Sub-arterial roads	Controlled by local councils or NSW Roads and Maritime Services Typical capacity of between 10,000 and 20,000 vehicles per day
Collector roads	Controlled by local councils Typical capacity of between 2,000 and 10,000 vehicles per day
Local roads <sup>b</sup>	Controlled by local councils Typical capacity of between 500 and 4,000 vehicles per day

<sup>a</sup> Hourly limit of 3,200 vehicles per hour (or 76,800 vehicles per day) for highways such as the Newell Highway or the Kamilaroi Highway as per the *Highway Capacity Manual* (TRB 2000).

<sup>b</sup> Roads in the forested part of the project area have been denoted as forestry roads for the purpose of this assessment. Forestry roads are typically managed by the Forestry Corporation of NSW and have a capacity similar to local roads.

Level of service is a standard measure for assessing traffic impacts, which takes multiple factors into account including speed, traffic volume, road geometry, delays and freedom of movement. The level of service classification ranges from a good state of operation (Level of Service A) to a state of operation approaching capacity in which significant delays may be experienced by road users (Level of Service F).

Traffic generated by the project would fluctuate over time, from construction to operation and at different times during each stage. As such, the assessment of traffic and transport impact considered a range of traffic generation scenarios during the construction, operation and decommissioning of the project. These

scenarios were an absolute peak, a typical peak (occurring around once a month), and typical daily movements. To be conservative, the absolute peak scenario was assessed to identify potential impacts.

Potential impacts were classified in accordance with the risk assessment methodology outlined in Chapter 10 (Approach to the impact assessment). The initial risk assessment has been undertaken on the basis of the project being undertaken without any additional mitigation measures above the proponent's safety systems and reflects the potential risks associated with the introduction of additional braking, and the turning of light and heavy vehicles into a high speed rural road environment and the resultant interactions with other road users.

Crash data supplied by Transport for NSW over a five-year period was used to determine the likelihood and severity of an incident and the initial risk rating is based on the assessment of this alone (within the context of the location and road type – midblock, intersection, rural or urban).

A detailed methodology is provided in Appendix P, including quantitative criteria used to assess level of service and the modelling of intersections.

## 22.2 Existing environment

### 22.2.1 Road network

As shown in Figure 22-1, key access routes for the project are:

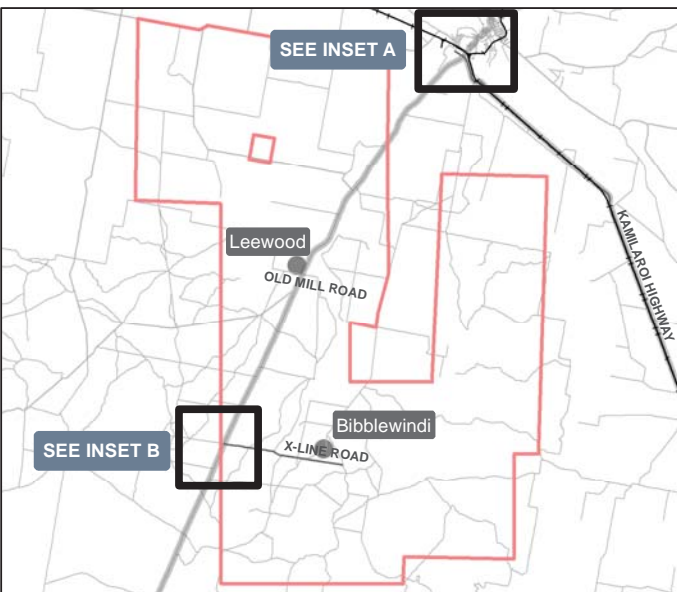
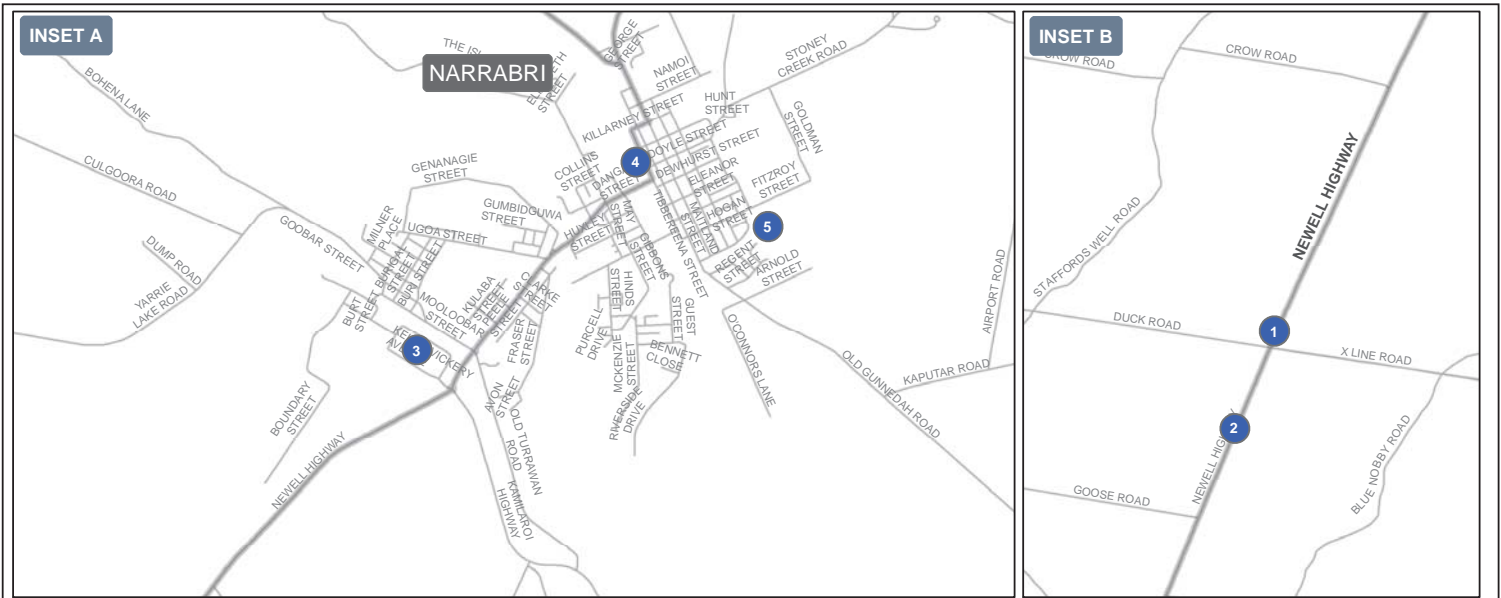
- Newell Highway
- X-Line Road
- Old Mill Road
- Yarrie Lake Road / Goobar Street / Mooloobar Street
- Old Gunnedah Road / Maitland Street / Tibbereena Street.

The Newell Highway is a national highway and a major transport corridor linking Queensland, NSW and Victoria. The highway is a two-way sealed road and is approved by NSW Roads and Maritime Services for higher mass limit road trains. It has a speed limit of 110 kilometres per hour, reducing to 50 kilometres per hour approaching Narrabri. The Newell Highway would be the main haulage route from Queensland or NSW to the Narrabri Operations and Logistics Centre and construction sites within the field, and Leewood, Bibblewindi, and the Bibblewindi to Leewood infrastructure corridor.

X-Line Road is a rural forestry road, connecting with the Newell Highway at a priority-controlled intersection around 35 kilometres south of Narrabri. X-Line Road is generally unsealed and unmarked. Some sections of X-Line Road (and other rural forestry roads) have been upgraded as part of ongoing gas exploration in the project area. X-Line Road is paved for 30 metres from its intersection with the Newell Highway. The road provides access to the gas field and Bibblewindi from the Newell Highway.

Old Mill Road is a rural forestry road that connects with the Newell Highway at a priority-controlled intersection around 20 kilometres south of Narrabri. Old Mill Road is unsealed and unmarked. The road provides access to Leewood from the Newell Highway.





Narrabri Gas Project  
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### Road network in and around the project area

Figure 22-1

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55

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Other forestry roads in the project area, in addition to X-Line Road and Old Mill Road, would provide access within the field. Westport Road in particular is a rural forestry road that would provide access to Westport workers' accommodation if required, although vehicles would be directed to use X-Line Road as a preference. These roads are typically unsealed, unmarked and generally have very low numbers of existing users. Similarly, within the northern part of the project area, local and farm roads would provide access within the field.

Yarrie Lake Road is a rural collector road providing a route between Wee Waa and Narrabri as an alternative to the Kamilaroi Highway. Yarrie Lake Road is a two-way sealed road and is unmarked. The road has a speed limit of 80 kilometres per hour, reducing to 50 kilometres per hour approaching Narrabri, where the road converts to the collector road named Goobar Street, before connecting with the local road, Mooloobar Street (both of which are two-way sealed roads). Yarrie Lake Road, Goobar Street and Mooloobar Street provide access to the existing Narrabri Operations and Logistics Centre, then to the Newell Highway. Yarrie Lake Road would also provide access to the northern part of the gas field.

Old Gunnedah Road is a rural collector road connecting Narrabri to the settlement of Turrawan, which is also accessible via the Kamilaroi Highway. Old Gunnedah Road is a two-way sealed road with a speed limit of 80 kilometres per hour, reducing to 50 kilometres per hour approaching Narrabri. Old Gunnedah Road converts to Maitland Street approaching Narrabri, before connecting with Tibbereena Street; which is two-way sealed collector road in the Narrabri urban area, with a speed limit of 50 kilometres per hour. Old Gunnedah Road, Maitland Street and Tibbereena Street collectively provide access to existing camp accommodation in Narrabri from the Newell Highway.

## 22.2.2 Traffic volumes

Traffic volumes were quantified using previously reported data (GTA Consultants 2013). During the preparation of that assessment, it was agreed with NSW Roads and Maritime Services that 1,860 vehicles per day (and 169 in peak hour) was an appropriate background traffic level against which to assess traffic impacts on the Newell Highway.

Average daily traffic count data provided by NSW Roads and Maritime Services indicate that approximately 73 per cent of vehicles travelling on the Newell Highway were light vehicles, with the remainder comprising heavy vehicles (including approximately 17 per cent being B-doubles or other vehicles with greater than five axles). The proportion of heavy vehicles would fluctuate as a function of agricultural cycles in the region, such as harvesting season.

Classified peak-hour intersection surveys were undertaken for the project to supplement the data agreed with NSW Roads and Maritime Services. The surveys were undertaken at the following intersections:

- Newell Highway and Tibbereena Street priority-controlled intersection
- Newell Highway, Mooloobar Street and Old Turrawan Road roundabout
- Newell Highway and Kamilaroi Highway roundabout.

The results of the intersection surveys are summarised in Table 22-2.

Intersection modelling indicated that the surveyed intersections were in a good state of operation, with an average wait time of less than 10 seconds (Level of Service A).

Table 22-2 Peak-hour traffic volumes (two-way)

Road	Morning peak <sup>a</sup>		Afternoon peak <sup>b</sup>	
	Vehicles per hour	Heavy vehicles	Vehicles per hour	Heavy vehicles
Newell Highway (west of Tibbereena Street)	847	12%	990	10%
Newell Highway (south of Tibbereena Street)	1,060	11%	1,156	6%
Newell Highway (north of Mooloolbar Street)	583	17%	519	17%
Newell Highway (south of Mooloolbar Street)	420	17%	401	21%
Newell Highway (south of Kamilaroi Highway)	107	26%	131	50%
Kamilaroi Highway (east of Newell Highway)	145	14%	155	15%
Mooloolbar Street (west of Newell Highway)	169	14%	162	6%
Tibbereena Street (east of Newell Highway)	411	3%	470	9%
Old Turrawan Road (east of Newell Highway)	180	10%	58	7%

<sup>a</sup> Morning peak occurs between 8 am and 9 am

<sup>b</sup> Afternoon peak occurs between 5 pm and 6pm

### 22.2.3 Crash statistics

The crash statistics show there were 46 crashes in the vicinity of the project area between January 2009 and November 2013. The majority of crashes (26) occurred at the Newell Highway intersections throughout the township of Narrabri, with the rest occurring elsewhere on the Newell Highway and, to a lesser degree, other roads in Narrabri, including Maitland Street and Tibbereena Street.

No crashes were recorded within the project area itself, including on the Newell Highway, however it is noted that no data were available for forestry roads including X-Line Road and Old Mill Road. About four per cent of crashes caused fatalities and about half the crashes caused injuries. Approximately 25 per cent of the crashes on the Newell Highway occurred at night.

### 22.2.4 Public transport

Bus routes identified in the vicinity of the project area are listed in Table 22-3. In addition to these, 12 school bus routes operate in and around the township of Narrabri. Within the project area, or on roads likely to be used to access the project area, school bus routes operate on the Newell Highway, the Kamilaroi Highway, Yarrie Lake Road, Old Gunnedah Road and Maitland Street.

Table 22-3 Public transport services

Route	Frequency	
	Weekdays	Saturday
Narrabri West	2 per day	1 per day
Narrabri Town Loop	1 per day	1 per day
Narrabri Town West	5 per day	1 per day
Narrabri to Gunnedah	1 per day	-
Gunnedah to Narrabri	1 per day	-
Narrabri to Wee Waa	3 per week	-
Melbourne to Brisbane (via Narrabri)	1 per day	-

## 22.3 Potential impacts – construction

Construction of the project would involve a range of activities that would generate traffic including construction material delivery, worker transportation, drill rig mobilisation and waste management.

The majority of construction traffic would be generated during the peak construction period (about three years). The drilling of wells and construction of well pads, access tracks and gas and water gathering lines would continue beyond this phase but would be transient, intermittent and generate relatively small volumes of traffic.

Construction traffic would mainly be generated to and from the two major construction sites, being Bibblewindi and Leewood (also serving as a logistics hub and providing access to the Bibblewindi to Leewood infrastructure corridor), while the Narrabri Operations and Logistics Centre would serve as a logistics hub for cement storage, drilling fluid recycling and deliveries. Construction traffic would also be generated to and from other construction sites, such as the gas and water gathering lines, Leewood to Wilga Park underground power line and Westport workers' accommodation. However, construction at these sites would be relatively short-term.

Construction movements to and from well pads would occur progressively over the life of the project. Following the peak construction period, traffic generation associated with drilling would typically occur on forestry roads, with peaks occurring infrequently. During well construction, more numerous movements would occur over one to two days when the rig is mobilised and equipment brought to site.

Drill rigs would move between well pads on average every 25 to 30 days, with a maximum of two drill rigs moving between pad locations at a given time. During the drilling activity, traffic volumes would be low and would typically include workers and the occasional water or drilling fluid deliveries.

The construction of the field also has the potential to impact the Newell Highway or other roads where crossings are necessary to connect well pads to Bibblewindi or Leewood, via gas and watering gathering lines. Potential impacts would be avoided in the first instance through detailed design of the project. Where crossings are required, they would be co-located to minimise disruption. Regardless, crossings would be constructed by directional drilling with a sufficient offset from the road corridor to make potential impacts negligible.

### 22.3.1 Road network efficiency

A peak traffic generation scenario has been developed to conservatively test the ability of the road network to accommodate construction traffic. The scenario includes:

- construction activity at the major construction sites, being Bibblewindi and Leewood
- construction activity at six well pads
- mobilisation of two drill rigs within the gas field
- worker mobilisation associated with shift changeover.

This combination of factors would create an absolute peak in traffic generation that would be relatively short in duration, and would occur on a few occasions during the peak construction phase. Traffic generation at other times during the peak construction phase would be lower, making the assessment conservative.

The forecast daily and peak-hour peak traffic generation is quantified in Table 22-4 and Table 22-5 respectively. Daily and peak traffic volumes on all roads assessed to be utilised by the project would be consistent with their functional class and associated flow volumes (refer to Table 22-1), and would therefore be acceptable.

The more substantial increases in daily and / or peak-hour traffic, as a percentage, would occur on X-Line Road, Old Mill Road and Yarrie Lake Road, and to a lesser extent Old Gunnedah Road and Mooloobar Street. These percentage increases are a function of the low existing traffic volumes on these roads, rather than a major material increase in traffic, and are therefore not considered to constitute a significant material impact on the operation of the roads. As shown in Table 22-4 and Table 22-5, the forecast actual increases in daily and peak-hour traffic on these roads are moderate and consistent with their functional class and associated flow volumes.

Increases in daily and peak-hour traffic would also occur on parts of the Newell Highway and, to a lesser degree, on the Kamilaroi Highway. Again, the predicted traffic on these roads would be consistent with their functional class and associated daily flow volumes (refer to Table 22-1). Peak-hour traffic on both highways would remain well within the capacity of a highway, defined in the *Highway Capacity Manual* (TRB 2000) of 3,200 vehicles per hour. Impacts on daily and peak hour traffic were therefore assessed as being acceptable as per the guidelines within the *Highway Capacity Manual* (TRB 2000).

There is expected to be an increase in traffic on other local and forestry roads in the project area, which would be intermittent depending on the location of construction and drilling activities. Given the existing low traffic volumes along these routes, and the low additional traffic associated with the construction and drilling activities, the proposal is expected to result in minor traffic impacts on these roads.

Estimated traffic at key intersections during morning and afternoon peak hours are shown in Figure 22-2 and Figure 22-3 respectively. Intersection modelling indicated that these key intersections would remain in a good state of operation (Level of Service A). It is noted that a lower standard (Level of Service D) is generally an acceptable operating condition along urban roads.

In summary, the conservative assessment of absolute peak traffic indicated that traffic on all roads would be within their functional class and flow volume, while the level of service of key intersections would be unaffected. Therefore, it is concluded that the project would have low to negligible impacts on road network efficiency, and significant traffic delays are not anticipated.

Table 22-4 Daily traffic volumes (two-way), existing and during peak traffic generation

Road	Vehicles per day (existing)	Vehicle per day (project)	Vehicles per day (total)	Increase	Vehicles per day (capacity) <sup>a</sup>
Newell Highway south of Mooloobar Street	7,520	479	7,999	6%	76,800
Newell Highway 20 km south of Narrabri	1,860	479	2,320	26%	76,800
Newell Highway north of Francis Street	3,107	64	3,171	2%	76,800
Newell Highway north of Killarney Street	10,279	64	10,343	1%	76,800
Kamilaroi Highway east of Newell Highway	1,559	70	1,629	4%	76,800
Tibbereena Street north of Dewhurst Street	4,729	243	4,972	5%	2,000 - 10,000
X-Line Road <sup>b</sup>	300 <sup>a</sup>	228	528	76%	500 - 4,000
Old Mill Road <sup>b</sup>	300 <sup>a</sup>	279	579	93%	500 - 4,000
Yarrie Lake Road east of Bohena Creek	495	160	655	32%	2,000 - 10,000
Mooloobar Street west of Buri Street	1,182	160	1,342	14%	2,000 - 10,000
Old Gunnedah Road south of Regent Street	2,819	243	3,062	9%	2,000 - 10,000

<sup>a</sup> As per functional road hierarchy (refer to Section 22.1)

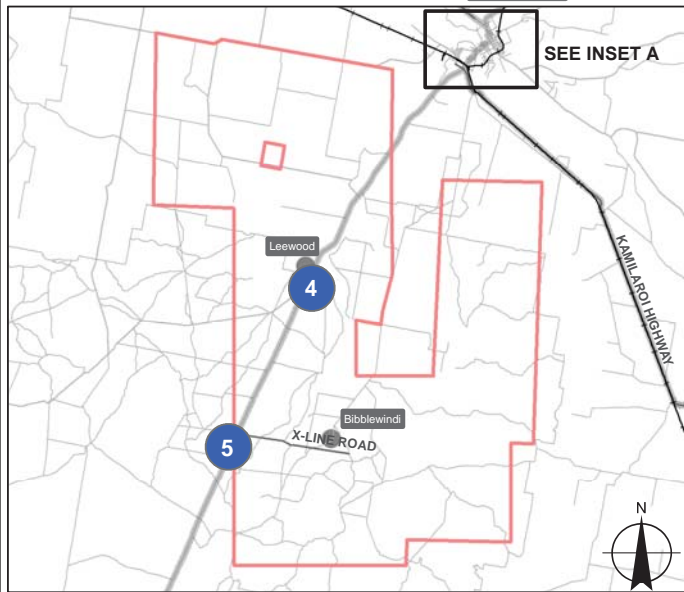
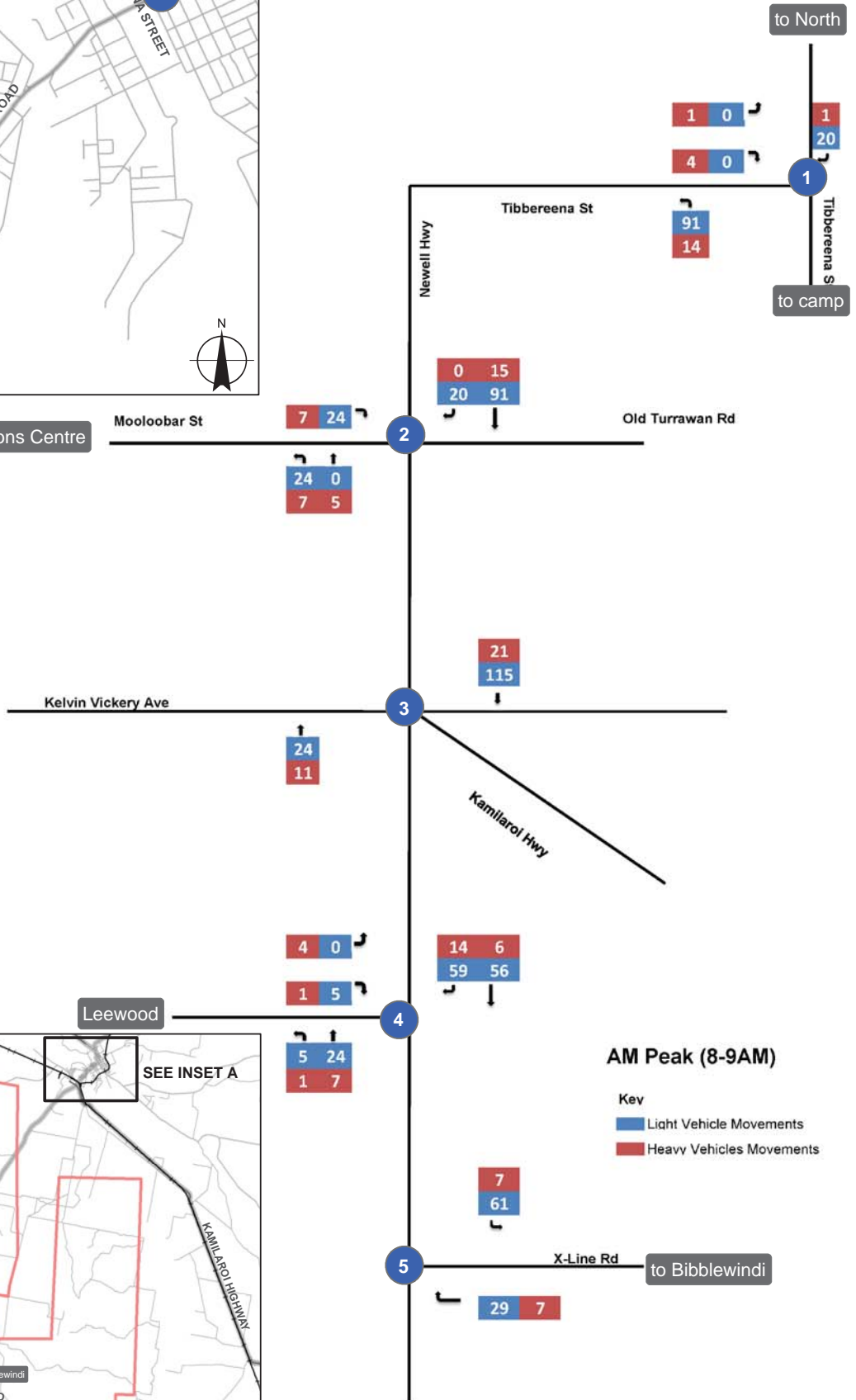
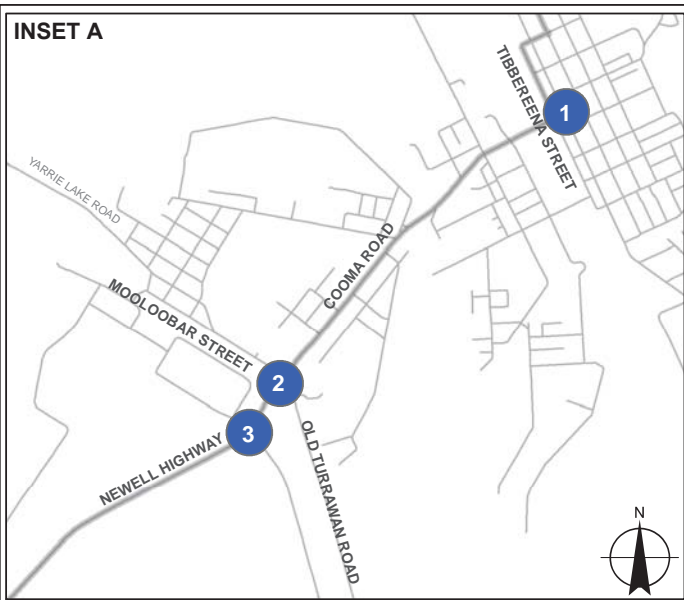
<sup>b</sup> X-Line Road and Old Mill Road are rural forestry roads with limited traffic – assumed at 300 vehicles per day

Table 22-5 Peak-hour traffic volumes (two-way), existing and during peak traffic generation

Road	Morning peak			Afternoon peak				Capacity	
	Vehicles per hour (existing)	Vehicles per hour (project)	Increase	Vehicles per hour (total)	Vehicles per hour (existing)	Vehicles per hour (project)	Increase	Vehicles per hour (total)	Vehicles per hour (total)
Newell Highway (west of Tibbereena Street)	847	24	3%	871	990	24	2%	1,014	3,200
Newell Highway (south of Tibbereena Street)	1,060	133	13%	1,193	1,156	133	12%	1,289	3,200
Newell Highway (north of Mooloobar Street)	583	133	23%	716	519	131	25%	650	3,200
Newell Highway (south of Mooloobar Street)	420	171	41%	591	401	164	41%	565	3,200
Newell Highway (south of Kamilaroi Highway)	107	171	159%	278	131	164	125%	295	3,200
Kamilaroi Highway (east of Newell Highway)	145	22	15%	167	155	22	14%	177	3,200
X-Line Road <sup>b</sup>	30c	100	333%	130	30	100	333%	130	1,800
Old Mill Road <sup>a</sup>	30c	88	292%	118	30	88	292%	118	1,800
Yarrie Lake Road (east of Bohena Creek) <sup>d</sup>	50	81	164%	131	50	73	147%	123	1,800
Mooloobar Street (west of Newell Highway)	169	81	48%	250	162	73	45%	235	1,800
Old Gunnedah Road (south of Regent Street) <sup>c</sup>	282	109	39%	391	282	109	39%	391	1,800
Tibbereena Street (east of Newell Highway)	411	109	27%	520	470	109	23%	579	1,800
Old Turrawan Road (east of Newell Highway)	180	0	0%	180	58	0	0%	58	1,800

<sup>a</sup> As per Guide to Traffic Management Part 3: Traffic Studies and Analysis (Austroads 2013)

<sup>b</sup> X-Line Road and Old Mill Road are rural forestry roads that generate low traffic – assumed at 300 vehicles per day, 10 per cent of which is assumed peak-hour traffic



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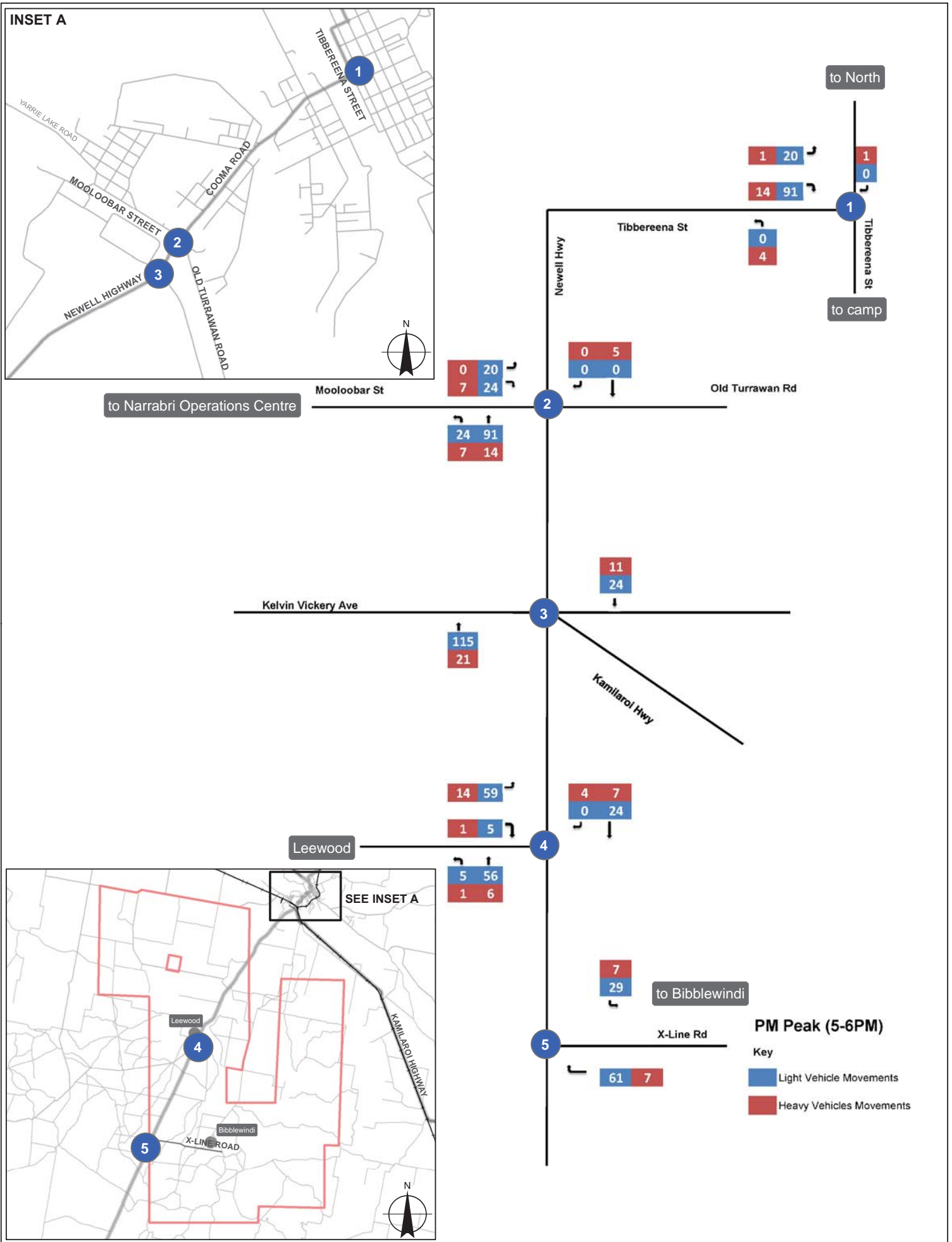
Job Number | 21-22463  
Revision | A  
Date | 23 Apr 2015

Peak hour traffic (morning)  
at key intersections

Figure 22-2

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55





Not to scale



Narrabri Gas Project  
Environmental Impact Statement

Job Number | 21-22463  
Revision | A  
Date | 23 Apr 2015

Peak hour traffic (afternoon)  
at key intersections

Figure 22-3

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 55

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## 22.3.2 Road network safety and condition

The project would have acceptable impacts on mid-block capacity along the Newell Highway, the Kamilaroi Highway and local roads within the study area referencing TRB (2000), while intersections within the study area would continue to operate satisfactorily. Therefore, the traffic generation from the project would be unlikely to result in increased safety risk as measured by crash statistics along these roads, or significantly impact safety on the existing road network. Refer to Appendix P for crash statistics.

Two intersections on the Newell Highway are planned to be upgraded to provide access to Leewood (via Old Mill Road) and Bibblewindi (via X-Line Road). A channelised right-turn would be constructed at the intersection of the Newell Highway and Old Mill Road to provide access to and from Leewood and the field, while a channelised left-turn treatment would be constructed at the intersection of the Newell Highway and X-Line Road to provide access to and from Bibblewindi and the gas field. These intersection upgrades would improve safety by allowing traffic accessing Old Mill Road and X-Line Road using the proposed turn bays, removing turning traffic from the southbound through lane on the highway.

Construction traffic, particularly heavy vehicles, could pose a safety hazard to users of the existing road network in and around the project area. This would particularly be the case where construction traffic enters or exits the high-speed environments of:

- the Newell and Kamilaroi Highways
- local roads where local traffic, bus stops or livestock may be encountered
- forestry roads that are unsealed and may have poorer site distance in some sections.

Safety hazards may also be increased during fog or night time conditions. It is considered that these risks would be suitably managed with the implementation of the Traffic Management Plan for the project, driver behaviour management and consultation with relevant traffic management authorities at appropriate times throughout the construction schedule to ensure that coordinated piloting of oversized vehicles was effected to reduce risk.

Traffic generated by the project may affect road condition, which can have safety implications as well as accelerate the rate of ongoing maintenance and renewals incurred by the relevant road authorities. In addition to implementing the proposed intersection upgrades, the proponent would monitor road conditions during the normal course of its activities and would notify the relevant road authorities if deterioration is observed. For Narrabri Shire Council, there would be potential for ongoing maintenance and renewals to be funded (in part) through the regional community benefit fund (refer to Chapter 27 - Economics). For the Forestry Corporation of NSW, maintenance would be in accordance with the agreed Occupation Permit held by the proponent.

The proportional increase in traffic generated by the project on major roads like the Newell Highway is not expected to significantly impact on the safety or condition of these roads, which are designed to carry heavy vehicles.

## 22.3.3 Public transport and parking

The potential impact of the construction of the project on the identified public transport services, regional bus services and school bus services is considered to be minimal. Public transport services are relatively low in volume and frequency, so the potential for project traffic to interact with these services is limited and would be readily controlled in accordance with the Traffic Management Plan. Management options include scheduling and routing deliveries (trucks and oversize vehicles) to avoid public transport services.

Given the importance of the continued safety of public transport services, the proponent would continue to consult with service operators, including schools, to ensure potential impacts are minimised.

Parking for all vehicles during the construction of the project would be provided at construction sites. Therefore, impacts on existing parking resources are not anticipated.

## 22.4 Potential impacts – operation

Operation of the project would involve a range of activities that would generate traffic including salt transportation, worker transportation and waste management. Drilling of wells and construction of well pads, access tracks and gas and water gathering lines would continue during operation but would be transient, intermittent and generate relatively small volumes of traffic.

Similar to construction, a traffic generation scenario to describe operation traffic was conservatively estimated. The scenario indicated that traffic during operation would be significantly less than during construction (refer to Section 22.3.1). Given that traffic volumes generated during construction would be accommodated on the road network without significantly impacting road network efficiency or safety, traffic during operation would also be accommodated to an acceptable standard (TRB 2000) and would not be a significant safety hazard.

## 22.5 Potential impacts – decommissioning

Traffic generated during decommissioning would mainly comprise transport of workers to and from the decommissioning sites and the haulage of waste materials to offsite locations for reuse, recycling or disposal. Decommissioning of field infrastructure would occur over the life of the project, while decommissioning of major facilities would occur toward the end of the project. The volume of traffic generated during decommissioning would be significantly less than during the peak construction period (refer to Section 22.3.1). Given that traffic volumes generated during construction would be accommodated on the road network without significantly impacting road network efficiency or safety, traffic during operation would also be accommodate to an acceptable standard and would not be a significant safety hazard.

## 22.6 Risk assessment

A range of mitigation and management measures are proposed to control potential impacts of the project with regard to traffic and transport. Table 22-6 demonstrates the effectiveness of these mitigation measures in reducing the level of environmental risk posed by the project.

The main measure that is proposed is the implementation of a Traffic Management Plan. This Plan would reduce the magnitude of impacts on road network efficiency and safety through measure such as:

- consultation with relevant authorities, including
  - NSW Roads and Maritime Services
  - Narrabri Shire Council
  - Forestry Corporation of NSW
- reviewing access routes and speed restrictions
- appropriate signage and traffic control
- community information and alternate routes.

The contents of the Traffic Management Plan are described in more detail in Appendix P.

Table 22-6 Environmental risk assessment

Potential Impact	Phase	Pre mitigated risk			Mitigation and management measures	Residual risk		
		Likelihood	Consequence	Risk		Likelihood	Consequence	Risk
Vehicles entering / exiting from high speed rural (110 km/h limit) environment (left and right turns to / from access roads)	Construction	Occasional	Serious	High	A Traffic Management Plan will be implemented. Driving from dusk through to dawn will be minimised, due to high faunal activity.	Improbable	Serious	Medium <sup>a</sup>
	Operation	Occasional	Serious	High		Improbable	Serious	Medium <sup>a</sup>
	Decommissioning	Occasional	Serious	High		Improbable	Serious	Medium <sup>a</sup>
Large vehicles using urban roads (50 km/h limit) environment	Construction	Occasional	Serious	High	The intersections of Old Mill Road and X-Line Road with the Newell Highway will be upgraded.	Occasional	Minor	Medium
	Operation	Occasional	Serious	High		Improbable	Minor	Low
	Decommissioning	Occasional	Serious	High		Improbable	Minor	Low
Road surface / geometry unsuitable for planned use	Construction	Occasional	Serious	High		Improbable	Limited	Low
	Operation	Occasional	Serious	High		Improbable	Limited	Low
	Decommissioning	Occasional	Serious	High		Improbable	Limited	Low
Livestock / animal interactions	Construction	Occasional	Serious	High		Occasional	Limited	Low
	Operation	Occasional	Serious	High		Occasional	Limited	Low
	Decommissioning	Occasional	Serious	High		Occasional	Limited	Low
Night / fog driving	Construction	Occasional	Serious	High		Occasional	Limited	Low
	Operation	Occasional	Serious	High		Occasional	Limited	Low
	Decommissioning	Occasional	Serious	High		Occasional	Limited	Low

<sup>a</sup> The proposed mitigation and management measures, applied in accordance with the AustRoads guide, reduce the risk to as low as reasonably practical.

## 22.7 Conclusion

The implementation of mitigation and management measures and relevant design elements would be sufficient to effectively control potential impacts of the project with regard to traffic and transport. As such, the residual risks presented by the project would generally be low to medium.

The potential impacts on road network efficiency and safety would be managed through the Traffic Management Plan and the Newell Highway intersection upgrades. Traffic and transport conditions would be monitored as part of the Traffic Management Plan and any emergent issues addressed in consultation with the relevant road authorities, if necessary.

The residual risks are shown in Table 22-7. They assume that the Traffic Management Plan for the project is effectively implemented.

Table 22-7 Traffic and transport residual risks

Potential impact	Construction	Operation	Decommissioning
Vehicles entering / exiting from high speed rural (110 km/h limit) environment (left and right turns to / from access roads)	Medium	Medium	Medium
Large vehicles using urban roads (50 km/h limit) environment	Medium	Low	Low
Road surface / geometry unsuitable for planned use	Low	Low	Low
Livestock / animal interactions	Low	Low	Low
Night / fog driving	Low	Low	Low