Ralston Quarry, Mount Tenandra
Road Transport Assessment

Prepared for:

Regional Group Australia

22 July 2020

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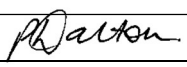
Client: Regional Group Australia

Version: Final

Date: 22 July 2020

TTPP Reference: 19374

Quality Record

Version	Date	Prepared by	Approved by	Signature
Draft	28/01/2020	Penny Dalton	Penny Dalton	
Final	22/07/2020	Penny Dalton	Penny Dalton	

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1 Introduction

This report has been prepared on behalf of Regional Group Australia (Regional Group) to present the findings of an assessment of the road transport implications of a proposed quarry development, known as Ralston Quarry (the Project), located at 4948 Tooraweenah Road, Mount Tenandra, within the Coonamble Shire Council local government area (LGA) of New South Wales (NSW) (Figure 3.1).

Approval is being sought to operate Ralston Quarry in two stages:

- Stage 1 includes the extraction and transport of up to 490,000 tonnes per annum (tpa) of hard rock material for a period of five years to supply the Inland Rail Project; and
- Stage 2 includes the extraction and transport of up to 100,000 tpa of hard rock material for a period of 20 years.

The remainder of this report is set out as follows:

- Section 2 describes the Project and its vehicular access arrangements;
- Section 3 describes the existing road transport environment, including the road network, heavy vehicle routes, traffic volumes and road crash history.
- Section 4 assesses the baseline future traffic conditions without the Project traffic, considering the effects of other major projects in the region and background traffic growth.
- Section 5 assesses the impacts of the Project on the road network, including traffic volumes, operation of the roads and intersections, road safety implications, and the design of the site access road and intersection. Measures recommended to mitigate the impacts of the Project are described.
- Section 6 presents the conclusions of the study.

2 The Project

2.1 Project Description

Regional Group is seeking approval to extract and process up to 490,000 tpa of hard rock material over a period of five years (Stage 1), then up to 100,000 tpa over a period of 20 years (Stage 2). The material would be transported from the site by road. Project loading and transportation operations would occur between 6:00 am and 6:00 pm Monday to Friday, and between 6:00 am and 1:00 pm on Saturdays. The Project would not operate on Sundays. The Project would operate 50 weeks per year. Transport of quarry products would typically use truck and dog combinations, with B-doubles and Performance Based Standards (PBS) road trains used where approved routes available. The Project would employ between five and ten people to operate the quarry during Stage 1 of the operations, and between two and four people during Stage 2.

For the purpose of this assessment, Stage 1 is anticipated to commence in 2021 and Stage 2 in 2026, noting that actual timing would be dependent upon the approvals process and construction demand in the area.

2.2 Vehicular Access

Vehicular access to the Project is proposed via existing internal farm roads from Weenya Road. Access routes used by haulage trucks to and from the site access would depend on the final destination of the quarry products. The anticipated primary road access routes in the immediate vicinity of the Project are:

- north via Weenya Road, Tooraweenah Road and Goorianawa Road; and
- south via Weenya Road and National Park Road (west).

Stage 1 of the Project would supply construction materials to the Inland Rail Project and associated road projects. For the purpose of this assessment, it is anticipated that access to the Inland Rail corridor would be available via Tooraweenah Road and/or Box Ridge Road, with trucks using the rail corridor to access any Inland Rail construction or stockpile sites. Stage 2 of the Project would provide onging aggregate supply to local road or rail projects as they arise, which may be located anywhere on local or classifed roads in the region or the rail corridors.

Each of the primary access routes for haulage trucks would be used as appropriate according to the destination of the products. Over an extended period, the haulage trips would be distributed to the various routes described above, however during any one campaign, the trucks would typically all travel to and from the same destination and so all use the same route. The Project peak traffic generation may therefore occur on any potential Project access route at a particular time, but not on all routes at the same time. Empty vehicles returning to the Project would use the same routes as the outbound laden vehicles.

The on-site workforce would be expected to be drawn from the local area around the Project, and may travel to the site each day from any of the surrounding local towns. For the purpose of this assessment, it is assumed that half of the workforce would reside to the north of the Project and half to the south of the Project.

2.3 Project Assessment Scenarios

The following scenarios have been examined in this assessment of the road transport implications of the Project:

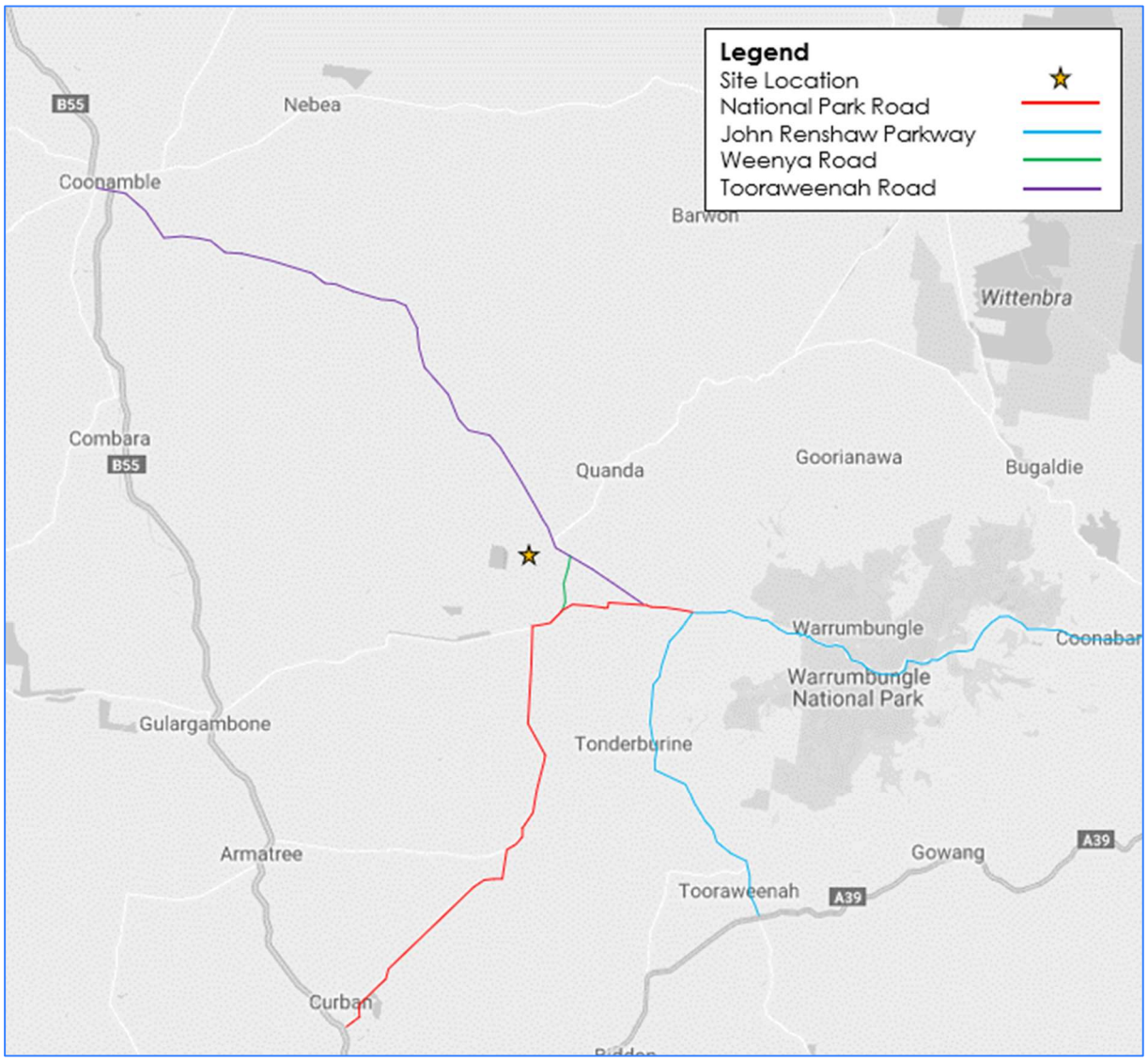
- Stage 1 Project traffic and background changes in traffic unrelated to the Project, likely to occur in 2021; and
- Stage 2 Project traffic and 10 years of background changes in traffic unrelated to the project, approximately 2030.

3 Existing Road Transport Environment

3.1 Road Network

The road network serving the site is presented in Figure 3.1 and described below.

Figure 3.1: Road Network



Weenya Road (Shire Road 73) is a local unsealed road, approximately 12 m wide and 4.4 km long, which provides a north-south link between Tooraweenah Road and National Park Road. Weenya Road provides access to various local farm access roads, primarily along its western frontage. The surface of Weenya Road contains some soft and sandy sections, with visible rutting. Guideposts are used on the approaches to the intersections with National Park Road and Tooraweenah Road, but not elsewhere along Weenya Road.

As it is an unsealed road, on which conditions can vary, there is no sign-posted speed limit on Weenya Road, although a comfortable travel speed for a light vehicle along the road is estimated at 80 kilometres per hour (km/h) on straight sections and 65 km/h on bends. "GIVE WAY" signs are provided for traffic in Weenya Road at its intersections with National Park Road and Tooraweenah Road, and there is an advance warning sign (W2-3) in Weenya Road at the approach to the intersection with National Park Road.

Based on its operating speed and general geometry, Weenya Road is consistent with a "Class 4A" unsealed road (ARRB, 2009), which can carry over 150 vehicles per day and can carry heavy vehicles.

Figure 3.2: Weenya Road

Photograph taken approximately 1.5 km from the intersection with Tooraweenah Road.

Tooraweenah Road forms part of a link between Mendooran and Coonamble via Tooraweenah. Between Newell Highway and John Renshaw Parkway, Tooraweenah Road is a Regional road (Main Road 205). Between Weenya Road and Coonamble, Tooraweenah Road is generally level, with no significant steep sections which would inhibit travel speeds.

Between Weenya Road and King Street at Coonamble, Tooraweenah Road is signposted with a speed derestriction sign (R4-2), which is no longer used in New South Wales. This sign was previously used to signify that the current speed limit ends and there will be no more speed limit signs, with the default speed limit of 100 km/h applying. The unsealed straight sections of Tooraweenah Road support travel speeds in the region of 100 km/h, and approximately 90 km/h on gravel lengths.

In the vicinity of the Project, Tooraweenah Road is an unsealed road which varies between approximately 6 m and 10 m wide. Signs on Tooraweenah Road include "ROAD SUBJECT TO FLOODING" (G9-21-1), "FLOODWAY" (W5-7-1), "CAUSEWAY" and "GRAVEL ROAD" (W5-19). Warning signs are used on approaches to side roads (e.g., W2-4L and W2-4R as relevant), and on horizontal curves (e.g., W1-3L and W1-3-R as relevant). Guideposts are used sparingly along unsealed lengths of Tooraweenah Road, indicating immediate dips/crests in the road or the presence of road signage. Guideposts are also used at the interfaces between the sealed and unsealed sections of the road. Some soft sections of the road have visible rutting, and some gravel sections may cause vehicles to lose traction and/or steer off-course at travel speeds over approximately 90 km/h.

Tooraweenah Road is sealed from approximately 500 m to 1.7 km west of its intersection with Mungery Road, and for approximately 300 m on each approach to its intersection with Willowdowns Road. The sealed lengths include centre linemarking. It has a sealed surface with single broken centre lines from approximately 2.4 km south of its intersection with Calga Road to Coonamble.

Figure 3.3: Tooraweenah Road Northwest of Weenya Road

Photograph taken approximately 4 km from the intersection with Weenya Road.

National Park Road is a local road which forms part of a link between Castlereagh Highway near Curban, south of the site, and Tooraweenah Road. It is sealed along most of its length, with the exception of a 7.6 km length to the east of the Project between Mena Road and John Renshaw Parkway, and a 4.5 km length to the south of the Project between 5 km south of Box Ridge Road and approximately 700 m north of the intersection with Tonderburine-Tooraweenah Road. National Park Road crosses numerous creeks and waterways at bridges, with some floodways signposted.

Near Curban, National Park Road is a sealed two-way road approximately 7 m wide, with guide posts and a posted speed limit of 100 km/h. East of Yarrandale Road, National Park Road narrows to approximately 6 m wide, with some sections between Yarrandale Road and Box Ridge Road being narrower, requiring vehicles to use the unsealed shoulder when passing, as shown in Figure 3.4. This is typically the case for approximately 1.5 km of National Park Road, south of the intersection with Box Ridge Road.

Figure 3.4: National Park Road South of Box Ridge Road

Photograph taken 200m south of intersection with Box Ridge Road.

National Park Road has crests approximately 200 m west of and 600 m east of Weenya Road, with the road sloping down from west to east. There is a dip in the unsealed part of National Park Road approximately 2.5 km west of its intersection with John Renshaw Parkway, and a 90 degree bend approximately 500 m east of its intersection with Mena Road.

Signage along National Park Road includes "SCHOOL BUS" (W6-209N), "ROAD SUBJECT TO FLOODING" (G9-21-1), and "FLOODWAY" (W5-7-1) signs. Advisory speed signs are used on some bends in National Park Road, which recommend speeds of 80 km/h. Warning signs are used on approaches to intersections (W2-3), and side roads (e.g., W2-4L and W2-4R as relevant), and "GIVE WAY" (R1-2) signs are used at some T-intersections. At its intersections with Box Ridge Road, Yarrandale Road and East Coonamble Road, National Park Road turns through 90 degrees, and does not form the major road at those T-intersections.

John Renshaw Parkway is a two-way sealed road which generally runs in a north-south direction between Newell Highway and National Park Road, and an east-west connection between National Park Road and Coonabarabran. Between Oxley Highway at

Coonabarabran and MR205, John Renshaw Parkway is a Regional road (MR4053). South of Newell Highway, it continues as Tooraweenah Road and Gentle Annie Road to Castlereagh Highway at Mendooran.

The north-south section of John Renshaw Parkway north of Newell Highway has a rolling topography. It has a posted speed limit of 100 km/h, with the exception of a 50 km/h limit and 40 km/h school zone limit through Tooraweenah. Guideposts are used along the length of John Renshaw Parkway.

Similar to National Park Road, John Renshaw Parkway passes over numerous creeks on bridges, and signage is also used to warn of approaching intersections, and curves.

Figure 3.5: John Renshaw Parkway North of Newell Highway

Photograph taken approximately 500m from intersection with Newell Highway.

Goorianawa Road (Shire Road 3) is a local road which provides part of vehicular links between Tooraweenah Road at Mount Tenandra and Baradine (via Gulargambone Road) and Bugaldie (via Bugaldie Goorianawa Road). West of the Coonamble Shire boundary at Goorianawa Gap, Goorianawa Road is unsealed. In the Warrumbungle Shire, the routes above continue as sealed roads to Baradine Road.

Figure 3.6: Goorianawa Road Northeast of Tooraweenah Road

Photograph taken approximately 20m from the intersection with Tooraweenah Road.

3.2 Intersections

The existing geometry, controls and observed sight distances at key intersections relevant to the Project are described below.

Weenya Road and National Park Road

National Park Road intersects with Weenya Road south of the site at a T-intersection at which Weenya Road forms the minor road. Weenya Road is aligned at approximately 60 degrees to National Park Road. Weenya Road is the minor road, and there is a "GIVE WAY" (R1-2) sign at the intersection, and an advance warning sign of the approaching T-intersection (W2-3) approximately 150 m from the intersection. There is no line marking at the intersection, as the surface of Weenya Road is unsealed. Sight distances along National Park Road for a driver stopped in Weenya Road exceed 200m to the west (looking to the right) and 600 m to the east (looking to the left).

National Park Road and Box Ridge Road

National Park Road intersects with Box Ridge Road at a T-intersection at which National Park Road (south) forms the minor road and National Park Road (east) and Box Ridge Road (west) form the major road. The minor leg is aligned at approximately 70 degrees to the major road. T-intersection and side road warning signs (W2-3, W2-4) are provided on each approach to the intersection, and there is a bidirectional hazard marker sight board (D4-2-3) facing the northbound minor leg traffic. There is no line marking at the intersection. Sight distances along the major road for a driver stopped on the minor leg exceed 300 m to both the east and west.

Weenya Road and Tooraweenah Road

Tooraweenah Road intersects with Weenya Road north of the site at a T-intersection at which Weenya Road forms the minor road and Tooraweenah Road forms the major road. Weenya Road is aligned at approximately 80 degrees to Tooraweenah Road. At the intersection, there is a "GIVE WAY" (R1-2) sign and a pair of unidirectional hazard markers (D4-1-1) facing Weenya Road traffic. There is no line marking at the intersection, noting the surface of Weenya Road is unsealed. Sight distances along Tooraweenah Road for a driver stopped in Weenya Road exceed 500m to both the east and west.

Tooraweenah Road and Goorianawa Road

Tooraweenah Road intersects with Goorianawa Road north of the site at a T-intersection at which Goorianawa Road forms the minor road and Tooraweenah Road forms the major road. Goorianawa Road is aligned at approximately 40 degrees to Tooraweenah Road, however flaring of Goorianawa Road allows drivers approaching the intersection to align their vehicle to maximise sight distance. Side road and T-intersection warning signs (W2-4L and W2-4R) are provided on both approaches of Tooraweenah Road. An advance warning sign for the T-intersection (W2-3) and a pair of unidirectional hazard markers (D4-1-1) are provided on Goorianawa Road. Sight distances along Tooraweenah Road for a driver stopped in Goorianawa Road exceed 500m to both the east and west.

3.3 Heavy Vehicle Routes

The Coonamble and Gilgandra LGAs are approved areas for General Mass Limit (GML) 25 m B-doubles and Type 1 A-doubles. Travel conditions apply within Gilgandra LGA, including no access permitted on urban and village streets in townships of Gilgandra, Armatree, Tooraweenah and Curban except on roads already mapped for access; travel not permitted between 7:45 am to 9:00 am and 3:30 pm to 4:45 pm on school days; and speed on gravel roads must not exceed 60 km/h.

3.4 Traffic Volumes

Transport for New South Wales (TfNSW, formerly Roads and Maritime Services) collects and publishes traffic volume data at selected locations on its roads. Available data on roads in the vicinity of the Project were reviewed and collated, and are summarised in Table 3.1.

Table 3.1: Annual Average Daily Traffic on Classified Roads (vehicles per day)

Location	Station	Year	AADT
Castlereagh Highway south of Fergusons Lane, Armatree	93135	2009	783
Castlereagh Highway north of Brownwood Drive, Gilgandra	93147	2009	985
Castlereagh Highway east of Abattoirs Road, Coonamble	96036	2008 2009	909 787
Castlereagh Highway north of King Street, Coonamble	96358	2009	2,333
Newell Highway south of Biddon Forest Road, Biddon	T0497	2015 2016 2017 2018 2019	1,941 1,796 1,819 1,788 1,772
Newell Highway north of Warrumbungles Way, Tannabar	CBBSTC	2010 2011 2012 2015 2017 2018 2019	2,751 2,591 2,571 2,880 2,865 2,797 2,796

The available AADT data shows that the volume of traffic on the classified roads has fluctuated, with no distinct overall increase or decrease evident. Peak hour volumes would typically be expected to be in the range of eight to 12 percent of the daily volumes, i.e., in the order of up to 120 vehicles per hour on Castlereagh Highway outside of Coonamble and 330 vehicles per hour on Newell Highway.

Traffic data was also sourced from Coonamble Shire Council and Gilgandra Shire Council for key routes relevant to the Project. Review of that data reveals that weekday and weekend traffic volumes on the routes are distinctly different from each other, and Table 3.2 summarises the average weekday and weekend day traffic on the routes.

Table 3.2: Average Daily Traffic (vehicles per day)

Location	Data Period	Weekdays			Weekend Days		
		Light	Heavy	Total	Light	Heavy	Total
Tooraweenah Road – Coonamble Shire Council Data							
West of "Warrena"	Nov 2011 to Dec 2011	143	69	212	108	69	177
East of SR17 Warrena Road	Feb 2007 to Apr 2007	63	46	109	31	16	47
West of Crusher	Feb 2013 to Apr 2013 Jun 2013 to Jul 2013	63 69	16 25	79 94	39 44	3 3	42 47
East of Crusher	Apr 2013 to Dec 2013	56	21	77	41	11	52
North of SR38 Calga Road	Mar 2007	52	10	62	36	4	40
West of SR16 Mungery Road	Dec 2014 to Jul 2015	38	24	62	28	10	38
Gilgandra Shire Council Data							
Box Ridge Road West of National Park Road	Apr 2015 to May 2015	35	10	45	32	6	38
Tooraweenah Road South of Newell Highway	Nov 2017 to Feb 2018 Dec 2018 to Dec 2019	51 35	26 15	77 50	39 40	17 14	56 54
National Park Road 4.2 km south of Box Ridge Rd	Jun 2018 to Sep 2018	23	21	44	21	6	27
National Park Road 1.3 km south of Yarrandale Rd	May 2017 to Nov 2017	54	33	87	40	17	57
National Park Road 1.5 km near Curban	Jun 2018 to Sep 2018	69	22	91	50	5	55
Yarrandale Road 5.6 km west of National Park Rd	May 2017 to Nov 2017 Nov 2017 to Feb 2018	62 59	11 9	73 68	51 46	4 4	55 60

The Coonamble Shire Council data indicate that the volume of traffic on Tooraweenah Road varies along its length. The most recent data near the Project (near Mungery Road) suggests that in 2015, Tooraweenah Road carried in the order of 62 vehicles per weekday, made up of approximately 60 percent light vehicles and 40 percent heavy vehicles. On the average weekday, the peak hourly traffic volume is six vehicles per hour. Considering the connectivity of the road network, it is expected that existing traffic volumes on Weenya Road are below those on Tooraweenah Road.

The peak hour traffic carried on each of the locations in Table 3.1 is typically between eight and twelve percent of the daily volumes, which is within the expected range. The highest peak hourly volume was 20 vehicles per hour recorded on Tooraweenah Road west of Warrena (2011).

3.5 Road Crash History

Road crash information was obtained from Transport for New South Wales for the most recent five-year period of completed data available, being from 1 April 2014 to 31 March 2019. The data included preliminary data (subject to change) through to 25 November 2019, however

no crashes were reported in that preliminary period. The data include those crashes which conform to the national guidelines for reporting and classifying road vehicle crashes based on the following criteria:

- The crash was reported to the police.
- The crash occurred on a road open to the public.
- The crash involved at least one moving vehicle.
- The crash involved at least one person being killed or injured or at least one motor vehicle being towed away.

The review included all roads in the area bounded by Castlereagh Highway, Newell Highway and Baradine Road. Key findings of the review of the crash history on those routes which may be used by Project heavy vehicles are summarised below.

Over the period investigated, 15 crashes were reported in the review area, one of which occurred on the routes nominated for haulage associated with the Project as follows:

- The crash occurred on Goorianawa Road at Wattle Creek Road, at 4:10 pm on 3 November 2018 in daylight, fine weather and on a dry unsealed road surface. The crash involved loss of control of a westbound four wheel drive vehicle which rolled over, resulting in a moderate injury. Neither speed nor fatigue were nominated as contributing factors, with the road noted to be rough with potholes and/or corrugations.

One of the 15 crashes occurred on a wet road surface, speed was nominated as a contributing factor in seven crashes, and fatigue was nominated as a contributing factor in two crashes (one of which also involved speed). Nine of the crashes occurred where the speed limit is 100 km/h, one occurred in an 80 km/h speed zone and the remainder occurred in 50 or 60 km/h speed zones. Seven of the crashes occurred on unsealed roads, and four occurred on curved road alignments.

Hazardous features such as loose gravel, potholes or corrugations were noted at five of the crash locations. Motorcycles were involved in two of the crashes, and one crash involved a heavy vehicle, being a large rigid truck.

Six of the 15 reported crashes occurred on that part of John Renshaw Parkway – Timor Road east of the western boundary of Warrumbungles National Park, which is not an approved heavy vehicle route and would not be used by Project-generated trucks. The remainder of crashes occurred on other local roads in the area, with not more than one crash occurring at any one location or on any one route.

The review of the road crash history of the local area does not highlight any specific locations with a significant cluster of crashes that may suggest an inherent safety issue with that location.

4 Future Road Transport Environment

Over the life of the Project, changes to traffic conditions may be expected to occur which are unrelated to the Project. Such changes may result from other major developments in the region and as a result of non-specific growth in background traffic. These are discussed in the section in order to quantify baseline future conditions expected on the road network without the Project.

4.1 Inland Rail Project

The Inland Rail route, which is about 1,700 km long, involves using the existing interstate rail line through Victoria and southern NSW, upgrading about 400 km of existing track, mainly in western NSW, and providing about 600 km of new track, mainly in northern NSW and south-east Queensland.

Consent has been issued for the Parkes to Narromine component, which involves upgrading the existing rail line between Parkes and Narromine, with new passing loops, some track realignment and replacement of culverts, together with a new north to west connection between Inland Rail and the Broken Hill line. GHD (2017) indicates that construction work for the Parkes to Narromine Inland Rail is expected to occur between 6:00 am and 6:00 pm, seven days a week, and 24 hours per day during rail possessions.

Secretary's Environment Assessment Requirements have been issued for the Narromine to Narrabri component of the Inland Rail project, which passes through the region of the Project, and the EIS has not yet been issued. The Scoping report (GHD, 2018) indicates that the Narromine to Narrabri proposal is for about 300 km of single track rail line on a new direct route between Narromine and Narrabri.

GHD (2018) indicates that the preferred corridor for the Inland Rail between Narromine and Narrabri travels on the eastern side of Narromine, crossing the Country Regional Network (CRN) Main Western Line, Mitchell Highway and Macquarie River by a viaduct that would be grade separated. It then continues in a northerly direction along Eumungerie Road and Gilmours Road before crossing the Oxley Highway and heading north-east. It crosses the existing CRN Dubbo Coonamble rail line at Curban, then travels in a northeasterly direction, crossing the Castlereagh River south-east of Curban and heading north about 14.5 km after crossing the CRN Dubbo Coonamble rail line.

It heads north following cadastral boundaries and road reserves where possible, before crossing Box Ridge Road about 25 km north-east of Gulargambone. It then heads north past the Project site on the western side of Weenya Road, and along the general alignment of Goorianawa Road, following cadastral boundaries and crossing the disused Wallerawang Gwabegar rail line north of Baradine, then heads north-east through extensive areas of state forest and then parallel to the Newell Highway to join the existing Werris Creek Mungindi rail line to the north of Narrabri.

As details of the Inland Rail Project in the immediate vicinity of the Project are not yet known, detailed forecasts of the impacts of the Inland Rail Project on the roads in the region cannot be developed with any degree of certainty. Broadly, the impacts of the Inland Rail Project would be greatest during its construction stage, when additional vehicle movements can be expected as a result of the construction workforce moving to and from specific construction activity areas, and heavy vehicles delivering materials and removing spoil. Where the existing rail corridor is to be upgraded for the Inland Rail Project, some material may be delivered by rail, however this would not occur in the immediate vicinity of the Project, where the Inland Rail Project would be within a new rail corridor.

Assuming that construction hours for the Narromine to Narrabri work would be similar to that of the Parkes to Narromine section, as described by GHD (2017), it is anticipated that discrete construction activity areas would be used, each up to 5 km long and with one or two access points, with each section taking eight to ten weeks to construct, although this would vary for new rail corridors rather than upgrades of the existing corridor.

The average workforce anticipated for that Parkes to Narromine section is 150 people, who would be transported to the construction activity sites using a mix of buses and private vehicles. Total traffic generation for that section is expected to be in the order of 400 vehicle trips per day, of which, 230 trips would be made by heavy vehicles. In peak hours at the start and end of shifts, total traffic generation is expected to be in the order of 114 vehicle trips per hour, of which, 39 trips (34 percent) would be made by heavy vehicles. If the Project proceeds, it would contribute a proportion of those anticipated heavy vehicle trips, which might otherwise be generated elsewhere in the region.

4.2 Background Traffic Growth

Changes in background traffic conditions which are unrelated to a specific development or change to the road network may occur, as a result of non-specific changes in local driver behaviour or travel characteristics. The review of historic traffic data (Section 3.4) does not provide a clear indication of past growth to suggest how traffic volumes may be expected to grow in the future, thus for the purpose of this assessment, growth in background traffic in the region has been estimated to occur at a rate of approximately 1 percent per annum. This future traffic growth is assumed to occur regardless of the Project traffic.

4.3 Baseline Future Traffic Volumes

The impacts of the background traffic growth have been determined as described above and the resulting daily traffic volumes are summarised below for the future assessment years, being 2021 for Stage 1 of the Project and 2030 for Stage 2 of the Project. In the absence of detailed forecasts of traffic generation and timing of the Narromine to Narrabri section of the Inland Rail Project, and the Project's potential contribution to the Inland Rail project construction traffic, the volumes in Table 4.2 do not include any allowance for Inland Rail construction traffic, which would coincide with Stage 1 of the Project if approved.

Based on the surveyed volumes and the year in which the surveys were conducted by Coonamble and Gilgandra Shire Councils (Table 3.2), estimates of future traffic volumes in 2021 and 2030 have been calculated and are presented in Table 4.2. These assume that the future proportion of heavy vehicles remains the same as that surveyed at each location.

Table 4.1: Baseline Future Average Weekday Daily Traffic (vehicles per day)

Location	Surveyed[A]			Baseline 2021			Baseline 2030		
	Light	Heavy	Light	Light	Heavy	Total	Light	Heavy	Total
Tooraweenah Road West of "Warrena"	143	69	212	158	76	234	173	83	256
Tooraweenah Road East of SR17 Warrena Road	63	46	109	72	53	125	79	58	137
Tooraweenah Road West of Crusher	69	25	94	75	27	102	81	30	111
Tooraweenah Road East of Crusher	56	21	77	60	23	83	66	25	91
Tooraweenah Road North of SR38 Calga Road	52	10	62	60	11	71	65	13	78
Tooraweenah Road West of SR16 Mungery Road	38	24	62	40	26	66	44	28	72
Box Ridge Road West of National Park Road	35	10	45	37	11	48	40	12	52
Tooraweenah Road South of Newell Highway	51	26	77	52	27	79	58	29	87
National Park Road 4.2 km south of Box Ridge Rd	23	21	44	24	21	45	26	24	50
National Park Road 1.3 km south of Yarrandale Rd	54	33	87	56	35	91	61	38	99
National Park Road 1.5 km near Curban	69	22	91	71	23	94	78	25	103
Yarrandale Road 5.6 km west of National Park Rd	62	11	73	65	11	76	70	13	83

[A] *Refer to Table 3.2 for timing of surveyed traffic volumes.*

4.4 Road Network Performance

Austroads (2020a) provides guidelines for the capacity and performance of two lane, two-way rural roads, which in turn, refers to the *Highway Capacity Manual* (HCM) (Transportation Research Board, 2016). The capacity of a road is defined as the maximum hourly rate at which vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under the prevailing roadway, traffic and control conditions. The capacity of a single traffic lane will be affected by factors such as the pavement width and restricted lateral clearances, the presence of heavy vehicles and grades. Level of Service (LOS) is defined as a qualitative measure describing the operational conditions within a traffic stream as perceived by drivers and/or passengers.

LOS A provides the best traffic conditions, with no restriction on desired travel speed or overtaking. LOS B to D describes progressively worse traffic conditions. LOS E occurs when traffic conditions are at or close to capacity, and there is virtually no freedom to select desired speeds or to manoeuvre in the traffic stream. The service flow rate for LOS E is taken as the capacity of a lane or roadway. In rural situations, LOS C is generally considered to be acceptable. At LOS C, most vehicles are travelling in platoons, and travel speeds are curtailed. At LOS D, platooning increases significantly, and the demand for passing is high, but the capacity to do so is low.

The LOS experienced by drivers on two-way rural roads is dependent on the drivers' expectations regarding the road, and three classes of road are defined in the HCM. The roads in the region of the Project are considered to be typically Class II roads, on which drivers do not necessarily expect to travel at high speeds. The Level of Service for Class II roads is defined in terms of Percent Time Spent Following (PTSF), which is a measure of the level of opportunities to overtake, and is estimated from the demand traffic volumes, the directional distribution of that traffic, and the percentage of no-passing zones. The LOS criteria for Class II two lane roads are as shown in Table 4.2.

Table 4.2: Level of Service Criteria for Class II Two Lane Roads

Level of Service	Percent Time Spent Following
A	≤ 40
B	> 40 – 55
C	> 55 – 70
D	> 70 – 85
E	≥ 85
F	Demand exceeds capacity

As a guide, the HCM method has been applied to a theoretical two-lane two-way road with 3.0 m wide travel lanes and 0.5 m wide shoulders with a speed limit of 100 km/h, carrying equal volumes in each direction, 40 percent heavy vehicles, and with restrictions on overtaking for 20 percent of the route. The resulting LOS at varying traffic demand levels are summarised in Table 4.3.

Table 4.3: Level of Service for Varying Two-Way Traffic Demands

Two Way Volume (vehicles per hour)	Percent Time Spent Following	Level of Service
100	21.7	A
200	28.8	A
300	38.2	A
400	45.5	B
500	51.4	B
600	56.1	C
700	60.2	C

These results suggest that a road with these characteristics can be expected to carry over 500 vehicles per hour (two way) while maintaining a Level of Service B and over 700 vehicles per hour while maintaining a Level of Service C.

Considering the above, and that the highest peak hour volume recorded on the roads serving the Project was 20 vehicles per hour on Tooraweenah Road, it follows that the level of service currently experienced during peak hours is currently A. Similarly, considering the estimated future baseline volumes (Table 4.1), it can be expected that with background growth in traffic to 2030, drivers would continue to experience Level of Service A during peak hours on the roads serving the Project. Drivers experience negligible restriction to their freedom to choose their travel speed or to overtake.

4.5 Intersection Operation

At unsignalised intersections with minor roads, where there are relatively low volumes of through and turning vehicles, capacity considerations are usually not significant, and detailed analysis of capacity is not warranted. As a guide, at volumes below the following combinations of maximum hourly volumes at a cross intersection with a two lane two-way road, capacity analysis is not warranted:

- major road 400 vehicles per hour, minor road 250 vehicles per hour;
- major road 500 vehicles per hour, minor road 200 vehicles per hour; and
- major road 650 vehicles per hour, minor road 100 vehicles per hour.

Comparing the existing and baseline future daily traffic volumes on the roads serving the Project (Table 3.2 and Table 4.1), and considering that peak hourly volumes are typically between eight and twelve percent of daily volumes, it is evident that the peak hourly volumes are well below the threshold volumes for analysis. As such, there is no capacity concerns regarding the operation of intersections both under existing conditions and with background growth in traffic to 2030. Drivers would experience only short delays at the intersections.

5 Impacts of the Project

5.1 Trip Generation

The Project proposes an annual production rate of up to 490,000 tpa of hard rock material (Stage 1) and up to 100,000 tpa of hard rock material (Stage 2), to be processed on site and transported by road. Based on the Project operating hours, haulage would take place 12 hours per weekday and 7 hours per Saturday over 50 weeks per year.

A mix of vehicle types would be used for product haulage, typically truck and trailer combinations, and B-doubles and Type 1 A-double road trains where approved routes are available. The payload capacity of these vehicles varies, and for the purpose of this assessment, an average payload of 38 t has been assumed, which is typical of the truck and trailer combinations.

The Project workforce would travel to and from the site each day by private vehicle.

5.1.1 Stage 1 Trip Generation

Haulage of 490,000 t of material per year for Stage 1 would require approximately 12,900 laden truck loads per year. Assuming continuous operation throughout the 50 operating weeks per year, this would be equivalent to an average of approximately 46 laden truck loads per operating weekday, and four laden truck loads per hour. The laden truck departures would be matched by an equivalent number of empty truck arrivals.

As haulage would occur on a campaign basis to meet fluctuating demands of the infrastructure projects being supplied, the number of trips on any particular day would vary from the averages above. During Stage 1 of the Project, the peak daily haulage to address short term demands for construction materials for the Inland Rail Project or other time-critical works would be in the order of 5,000 t on any one day. Haulage of 5,000 t would require approximately 132 laden truck loads, equivalent to an average of eight to 11 laden loads per hour over a weekday. Peak operating days such as these would be offset by periods of lower activity, such as during lower construction activity or wet weather.

As a robust assessment of the potential impacts of the Project, the implications of the maximum haulage of 5,000 t per day during Stage 1 have been considered, generating 132 laden truck departures on a weekday. The laden truck departures would be matched by an equivalent number of empty truck arrivals. Departures of trucks from the Project would be managed to minimise the potential for convoys or queues forming on the public roads, with a minimum five minute headway to be imposed between departing trucks. This headway restriction would limit the trip generation to a maximum of 12 laden truck departures in any one hour. With the return of empty trucks, the Project would generate a maximum of 24 heavy vehicle trips during the peak hour on the busiest days during Stage 1.

Without allowing for any car sharing, the 10 workers expected for Stage 1 of the Project would generate up to 20 light vehicle trips per day, being 10 arrivals in the morning and 10 departures in the evening. The workforce would tend to arrive prior to the start of haulage and leave following completion of haulage, and so would not travel at the same time as the haulage trucks.

The traffic generation of Stage 1 of the Project assumed for the purpose of this assessment of "busy day" conditions is therefore:

- 20 light vehicle trips per day; and
- 264 heavy vehicle trips per day (maximum 24 heavy vehicle trips per hour).

By comparison, during Stage 1, the average weekday daily traffic generation would be:

- 20 light vehicle trips per day; and
- 92 heavy vehicle trips per day (maximum 24 heavy vehicle trips per hour).

5.1.2 Stage 2 Trip Generation

Haulage of 100,000 t of material per year for Stage 2 would require approximately 2,630 laden truck loads per year. Assuming continuous operation throughout the 50 operating weeks per year, this would be equivalent to an average of approximately nine to ten laden truck loads per operating weekday, and less than one laden truck load per hour. The laden truck departures would be matched by an equivalent number of empty truck arrivals.

During Stage 2 of the Project, haulage would occur on a campaign basis to meet fluctuating demands of the infrastructure and maintenance projects being supplied, so the number of trips on any particular day would vary from the averages above. For the purpose of this assessment, a "busy" day scenario has been considered for Stage 2, in which up to 20 laden truck trips depart from the Project. This represents double the average daily haulage conditions, and the laden truck departures would be matched by an equivalent number of empty truck arrivals. The "busy" operating days such as these would be offset by periods of lower activity, such as lower construction activity or wet weather.

Without allowing for any car sharing, the maximum four workers expected for Stage 2 of the Project would generate up to eight light vehicle trips per day, being four arrivals in the morning and four departures in the evening. The workforce would tend to arrive prior to the start of haulage and leave following completion of haulage, and so would not travel at the same time as the haulage trucks.

The traffic generation of Stage 2 of the Project assumed for the purpose of this assessment of "busy day" conditions is therefore:

- 8 light vehicle trips per day; and
- 40 heavy vehicle trips per day.

By comparison, during Stage 2, the average weekday daily traffic generation would be:

- 8 light vehicle trips per day; and
- 20 heavy vehicle trips per day.

5.2 Future Traffic Volumes

5.2.1 Stage 1

The Stage 1 traffic generation would coincide with construction activity for the Inland Rail Project, discussed in Section 4.1. The Stage 1 Project traffic would form part of the Inland Rail construction traffic activity, with the Project-generated heavy vehicles operating directly between the Project and the discrete Inland Rail construction activity areas. Depending on the location of Inland Rail construction activity and/or stockpiles, the Project-generated traffic would travel either to the north via Weenya Road, Tooraweenah Road and Goorianawa Road, or to the south via Weenya Road and National Park Road.

Assuming that the Project workforce would all travel from Coonamble, and that the "busy day" Project heavy vehicles travel to and from the south, Table 5.1 summarises forecast "busy day" future daily traffic volumes in 2021 with Stage 1 of the Project.

Table 5.1: Future Stage 1 "Busy Day" Weekday Daily Traffic (vehicles per day)

Location	Baseline 2021			Busy Day Project Traffic			Total Busy Day		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
Tooraweenah Road West of "Warrena"	158	76	234	20	0	20	178	76	254
Tooraweenah Road East of SR17 Warrena Road	72	53	125	20	0	20	92	53	145
Tooraweenah Road West of Crusher	75	27	102	20	0	20	95	27	122
Tooraweenah Road East of Crusher	60	23	83	20	0	20	80	23	103
Tooraweenah Road North of SR38 Calga Road	60	11	71	20	0	20	80	11	91
Tooraweenah Road West of SR16 Mungery Road	40	26	66	20	0	20	60	26	86
Box Ridge Road West of National Park Road	37	11	48	0	264	264	37	275	312
National Park Road 4.2 km south of Box Ridge Rd	24	21	45	0	264	264	24	285	309
National Park Road 1.3 km south of Yarrandale Rd	56	35	91	0	264	264	56	299	355
National Park Road 1.5 km near Curban	71	23	94	0	264	264	71	287	358

Assumes the Project workers reside in Coonamble and heavy vehicles travel to/from south only.

Should the Project heavy vehicle traffic travel to the north via Tooraweenah Road and Goorianawa Road, it is expected that the background traffic volumes on those roads would

be similar to (or less than) that on Tooraweenah Road near Mungery Road as shown in Table 5.1.

Considering peak hourly traffic, the Project-generated light traffic would generate up to 10 vehicle trips per hour. Assuming that the workers reside in Coonamble, these trips would occur on Tooraweenah Road and Weenya Road. The workforce would travel in the early morning and late afternoon, and so would not tend to contribute to the background peak hourly traffic, which occurs in the middle of the day. The Project light vehicles would also not tend to travel at the same time as the Project heavy vehicles.

The Project-generated heavy vehicle traffic would be spread throughout the day, with a maximum of 24 heavy vehicle trips in any one hour. Considering the baseline volumes, if Project heavy vehicles travel to and from the south only, peak hourly volumes on Weenya Road – National Park Road would remain below 35 vehicles per hour. If Project heavy vehicles travel to and from the north only, the peak hourly volumes on Weenya Road – Tooraweenah Road – Goorianawa Road would also remain below 35 vehicles per hour.

5.2.2 Stage 2

Assuming that the Project workforce would all travel from Coonamble, and that the "busy day" Project heavy vehicles travel to and from the south, Table 5.2 summarises forecast "busy day" future daily traffic volumes in 2030 with Stage 2 of the Project.

Table 5.2: Future Stage 2 "Busy Day" Weekday Daily Traffic (vehicles per day)

Location	Baseline 2021			Busy Day Project Traffic			Total Busy Day		
	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total
Tooraweenah Road West of "Warrena"	158	76	234	8	0	8	166	76	242
Tooraweenah Road East of SR17 Warrena Road	72	53	125	8	0	8	80	53	133
Tooraweenah Road West of Crusher	75	27	102	8	0	8	83	27	110
Tooraweenah Road East of Crusher	60	23	83	8	0	8	68	23	91
Tooraweenah Road North of SR38 Calga Road	60	11	71	8	0	8	68	11	79
Tooraweenah Road West of SR16 Mungery Road	40	26	66	8	0	8	48	26	74
Box Ridge Road West of National Park Road	37	11	48	0	40	40	37	51	88
National Park Road 4.2 km south of Box Ridge Rd	24	21	45	0	40	40	24	61	85
National Park Road 1.3 km south of Yarrandale Rd	56	35	91	0	40	40	56	75	131
National Park Road 1.5 km near Curban	71	23	94	0	40	40	71	63	134

Assumes the Project workers reside in Coonamble and heavy vehicles travel to/from south only.

Should the Project heavy vehicle traffic travel to the north via Tooraweenah Road and Goorianawa Road, it is expected that the background traffic volumes on those roads would be similar to (or less than) that on Tooraweenah Road near Mungery Road as shown in Table 5.1.

Considering peak hourly traffic, the Project-generated light traffic would generate up to four vehicle trips per hour. Assuming that the workers reside in Coonamble, these trips would occur on Tooraweenah Road and Weenya Road. The workforce would travel in the early morning and late afternoon, and so would not tend to contribute to the background peak hourly traffic, which occurs in the middle of the day. The Project light vehicles would also not tend to travel at the same time as the Project heavy vehicles.

The Project-generated heavy vehicle traffic would be spread throughout the day, with an average of four heavy vehicle trips in any one hour on a busy day. Considering the baseline volumes, peak hourly volumes on the roads serving the Project would generally remain below 20 vehicles per hour.

5.3 Road Network Performance

Considering that the future peak hour volumes in Stages 1 and 2 of the Project are expected to remain below 35 vehicles per hour, drivers on the roads serving the Project would continue to experience Level of Service A (refer to Table 4.3) during peak hours. Drivers would experience negligible restriction to their freedom to choose their travel speed or to overtake.

5.4 Future Intersection Operation

On a busy day during Stage 1, the Project would contribute up to 24 heavy vehicle trips per hour, of which 12 vehicles would be outbound from the Project and 12 vehicles would be inbound to the Project. The Project would therefore contribute up to 12 additional heavy vehicles on any through or turning movement at intersections. Comparing the traffic volumes on the roads serving the Project with the threshold volumes relating to intersection capacity, it is evident that with the additional peak hourly traffic generated by the Project on a busy day during Stage 1, future peak hourly volumes would remain well below the threshold volumes for analysis (Section 4.5), and as such, there is no capacity concerns regarding the future operation of the intersections with the Project-generated traffic.

During Stage 2, the Project's contribution to peak hourly traffic at intersections would be below that of Stage 1, and thus it follows that there would also be no capacity concerns regarding the operation of intersections during Stage 2.

5.5 Site Access

Vehicular access to the Project would be provided from Weenya Road via existing internal farm roads, intesecting with Weenya Road approximately 1.7 km south of the intersection with Tooraweenah Road. The design and location of the site access are discussed below.

5.5.1 Sight Distance

Austroads (2017b) indicates that desirably, sight distances at property accesses should comply with the sight distance requirements for intersections, however acknowledges that these criteria often cannot be obtained at accesses with tighter horizontal or vertical alignments or vegetation.

Safe Intersection Sight Distance (SISD) is the minimum sight distance which should be provided on the major road at any intersection, and is measured from a driver's eye height of (car 1.1 m, truck 2.4 m) to an object height of 1.25 m and assumes the driver on a minor road is situated 7.0 m (minimum 5.0 m) from the potential conflict point on the major road. SISD allows for an observation time of 3 seconds (s) for a driver on the priority legs of the intersection to observe a problem ahead plus the Stopping Sight Distance (SSD). Stopping Sight Distance (SSD) is the distance required to enable a normally alert driver, travelling at the design speed on wet pavement, to perceive, react and brake to a stop before reaching a hazard on the road ahead. It is generally measured between the driver's eye height (car 1.1 m and truck 2.4 m) and a 0.2 m high object on the road, representing a hazard that cannot be driven over, requiring the vehicle to stop to avoid a collision.

SISD enables approaching drivers to see an articulated vehicle which has properly commenced a manoeuvre from a leg without priority, but its length creates an obstruction. At intersections with no right turn lane provided, the SISD should be applied to ensure visibility is provided between vehicles approaching on the major road and vehicles turning right from the major road, and between vehicles turning right from the major road and oncoming major road vehicles at all types of right turn treatments.

Assuming a typical travel speed on Weenya Road of 80 km/h, Austroads (2017b) indicates that the desirable minimum SISD on a sealed road is 181 m for the general minimum driver reaction time of 2.0 s. ARRB (2009) indicates that the minimum Stopping Sight Distance on a level unsealed road with a 80 km/h travel speed is 150 m. With an additional 3 s observation time, the SISD for an unsealed road would be 217 m.

Observations on-site indicate that sight distances along Weenya Road in the region of the proposed site access intersection (observed between 1.0 km and 2.3 km from Tooraweenah Road) exceed 300 m in both directions, thus the Austroads SISD requirements would be met at the access location. Figure 5.1 and Figure 5.2 give an indication of the sight distances in each direction along Weenya Road from a point approximately 1.5 km from the intersection with Tooraweenah Road.

Figure 5.1: Weenya Road Sight Distance (facing south)

Figure 5.2: Weenya Road Sight Distance (facing north)

5.5.2 Intersection Geometry

The minimum layout for a rural road access intersection such as that proposed for the Project on Weenya Road should be designed for the largest vehicles likely to use the access. Austroads (2017a) presents rural access layouts suitable for use by articulated vehicles, and notes that a where there is a high demand for articulated vehicles, such as expected at the Project, a road intersection layout should be adopted. Considering the low volume of passing traffic and the travel speeds of vehicles, provision of additional lanes for acceleration/deceleration or storage as may be required for a road intersection is not warranted on operational or safety grounds by the forecast traffic volumes.

The site access intersection would therefore be designed in accordance with Austroads (2017a) to accommodate the swept path of the largest vehicles expected to use the intersection, being B-doubles and road trains. Austroads (2020b) sets out warrants for rural intersection treatments, which are based on the number of turning and through vehicle movements at the intersection. The forecast peak hourly traffic volumes at the intersection would warrant the minimum preferred treatment. The general minimum preferred treatment at rural road intersections are Basic Auxiliary Left (BAL) and Basic Auxiliary Right (BAR) treatments in Weenya Road. These treatments assist through vehicles to pass vehicles which are turning into the access road, and would be taken into consideration as part of the site access road design at its intersection with Weenya Road.

Truck drivers would be required to maintain communication when departing from or approaching the site access, with priority given to approaching trucks to manage any need for inbound and outbound trucks to pass on the internal access road.

5.6 Road Safety Implications

The review of the road crash history of the road network serving the Project (Section 3.5) did not identify any causation factors associated with the existing road network that may be exacerbated by increased traffic demands.

It is expected that a Code of Conduct will be developed and implemented for drivers of all Project-generated heavy vehicles, which will enhance the safe interaction of the Project heavy vehicles with other road users.

5.7 Mitigation Measures

The assessment results above demonstrate that subject to adequate design of the access road intersection with Weenya Road, no measures would be required to provide additional capacity to accommodate the Project traffic. Existing approved heavy vehicles routes are of an adequate standard to accommodate the Project heavy vehicles, noting that the Project proposes use of existing approved heavy vehicle routes, and so would not introduce heavy vehicles to any roads not currently used by heavy vehicles.

It is recommended that a Traffic Management Plan (TMP) be developed for the heavy vehicle transport associated with the Project. Under the TMP, drivers of Project haulage trucks would be subject to operational protocols relating to driver behaviour and interaction with other roads users. The TMP would form part of the employee contract or transport contractual arrangements, and would be prepared in consultation with Coonamble Shire Council and Gilgandra Shire Council prior to commencement of the operation of the Project.

It is noted that during Stage 1 of the Project, it is expected that the movement of trucks to and from the Inland Rail Project would be governed by a TMP specific to the Inland Rail activity. This is likely to outline specific details regarding the management of the Project heavy vehicles, access points for the Inland Rail Project, travel requirements, and would address any relevant consent conditions for the Inland Rail Project. Where relevant, the Project TMP would be consistent with the Inland Rail Project TMP.

The Project TMP would address such matters as:

- compliance with access routes;
- road rules, laws and regulations, including the use of mobile phones;
- respecting the rights of other road users and displaying courtesy to other motorists;
- maintaining a minimum five minute headway between departures of laden trucks;
- maintaining safe following distances between vehicles, and increasing separation in poor weather;
- vehicle condition and maintenance;
- medical fitness of the driver;
- covering of loads;
- reporting of any unsafe driving practices or incidents;
- maintaining communication with other drivers to minimise the potential for delays to traffic on the public road near the site access; and
- driver behaviour expectations at any specific locations or situations on the public road network including near schools.

6 Conclusions

This study has found that, based on a maximum haulage of 132 laden truck departures per day during Stage 1 and 20 laden truck departures per day during Stage 2, and a minimum five minute headway between laden truck departures, the Project would be accommodated on the surrounding road network with acceptable impacts on the capacity, efficiency and safety of the road network. A Project TMP would be developed and implemented including operational protocols relating to driver behaviour and interaction with other haulage trucks, school buses and other roads users. The intersection of the Project access roadway and Weenya Road would be designed in accordance with Austroads requirements for a rural property access for articulated vehicles.

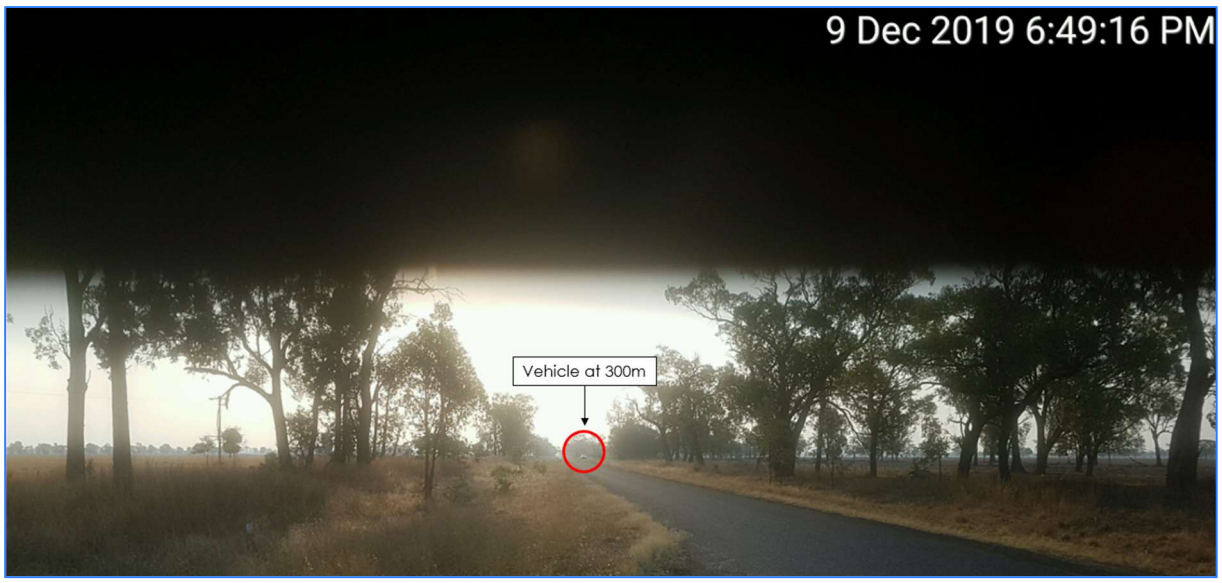
Appendix A

Photographs

Photograph A 1: Weenya Road looking west along National Park Road

Photograph A 2: Weenya Road looking east along National Park Road

Photograph A 3: National Park Road looking west along Box Ridge Road



Photograph A 4: National Park Road looking east along National Park Road

Photograph A 5: Weenya Road looking east along Tooraweenah Road

Sight distance exceeds 500m due to flat nature of Tooraweenah Road.

Photograph A 6: Weenya Road looking west along Tooraweenah Road

Sight distance exceeds 500m due to flat nature of Tooraweenah Road.

Photograph A 7: Goorianawa Road looking east along Tooraweenah Road

Sight distance exceeds 500m due to flat nature of Tooraweenah Road.

Photograph A 8: Goorianawa Road looking west along Tooraweenah Road

Sight distance exceeds 500m due to flat nature of Tooraweenah Road.

Appendix B

Road Crash Data

Detailed Crash Report

NSW GOVERNMENT Transport for NSW
Centre for Road Safety

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	S	F
Western Region																										
Coonamble LGA																										
Black Hollow																										
Goorianawa Rd																										
1186047	P	03/11/2018	Sat	16:10		at	WATTLE CREEK RD	TJN	STR	Fine	Dry	100	1	4WD	F23	W in GOORIANAWA RD	50	Proceeding in lane	MC	0	0	1	0	0		
E70203939								RUM:	74	On road-out of cont.																
Coonamble																										
Warrena Rd																										
1192301	P	09/12/2018	Sun	18:30	5 km	S	TOORAWEENAH RD	2WY	STR	Fine	Dry	60	1	TKU	M26	N in WARRENA RD	80	Proceeding in lane	SC	0	1	0	1	0	S	
E69926021								RUM:	71	Off rd left => obj				Fence												
Gulargambone																										
Armitree St																										
1088300	P	22/07/2015	Wed	08:55		at	KIRBAN ST	XJN	STR	Fine	Dry	50	2	CAR	F51	S in KIRBAN ST	60	Proceeding in lane	SC	0	1	0	0	0	S	
E57233910								RUM:	10	Cross traffic				TRK	F46	W in ARMITREE ST	60	Proceeding in lane								
Magometon																										
Calga Rd																										
1047062	P	14/11/2014	Fri	23:00	4.35 km	E	TOORAWEENAH RD	2WY	CRV	Fine	Wet	100	1	4WD	M43	W in CALGA RD	60	Proceeding in lane	FC	1	0	0	0	0	S	
E55757115								RUM:	86	Off left/left bend																
Warrumbungle																										
John Renshaw Pkwy																										
1058020	P	07/02/2015	Sat	09:30	270 m	W	CAMP WAMBELONG OT	2WY	CRV	Fine	Dry	60	1	CAR	F20	W in JOHN RENSHAW PKWY	60	Proceeding in lane	OC	0	0	0	1	0	S	
E57133903								RUM:	81	Off left/rt bnd=>obj				Other fixed object												
1128652	P	26/01/2017	Thu	12:45	3 km	W	SIDING SPRINGS RD	2WY	CRV	Fine	Dry	60	1	M/C	M42	E in JOHN RENSHAW PKWY	40	Proceeding in lane	SC	0	1	0	0	0	S	
E63638126								RUM:	88	Out of cont on bend																
Gilgandra LGA																										
Armatree																										
Yarrandale Rd																										
1096158	P	09/02/2016	Tue	19:30	500 m	W	NATIONAL PARK RD	2WY	STR	Fine	Dry	100	1	TRK	M20	W in YARRANDALE RD	90	Proceeding in lane	SC	0	1	0	0	0		
E59946117								RUM:	71	Off rd left => obj				Tree/bush												
Gilgandra																										
East Coonamble Rd																										
1122700	P	27/12/2016	Tue	14:48	2 km	N	AVONDALE RD	2WY	STR	Fine	Dry	100	1	TRK	M26	N in EAST COONAMBLE RD	100	Proceeding in lane	FC	1	1	0	1	0		
E275792294								RUM:	70	Off road to left																
Tonderburine																										

Detailed Crash Report

Crash No.	Data Source	Date	Day of Week	Time	Distance		ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash-Detailed	Killed	Seriously Inj.	Moderately Inj.	Minor/Other Inj.	Uncateg'd Inj.	Factors	
																									S	F
John Renshaw Pkwy																										
1142486	P	30/06/2017	Fri	09:00	1.25 km	E	WHITEGUM TRK	2WY	CRV	Fine	Dry	50	1	CAR	M31	W in JOHN RENSHAW PKWY	80	Proceeding in lane	MC	0	0	1	0	0	S	
E65306071								RUM	83	Off rt/rt bnd=>obj				S/Barrier - Guardrail												
Tooraweenah																										
John Renshaw Pkwy																										
1125484	P	05/11/2016	Sat	02:30	430 m	S	MURRAY ST	2WY	STR	Fine	Dry	100	1	CAR	M21	S in JOHN RENSHAW PKWY	100	Proceeding in lane	SC	0	1	0	0	0		
E65370788								RUM	71	Off rd left => obj				Tree/bush												
Warrumbungle LGA																										
Barwon																										
Munns Rd																										
1121408	P	15/10/2016	Sat	15:00	8 km	W	GULARGAMBONE BARADIN	2WY	STR	Fine	Dry	100	1	M/C	M57	W in MUNNS RD	Unk	Proceeding in lane	SC	0	1	0	0	0		
E62347436								RUM	74	On road-out of cont.																
Bugaldie																										
Guinema Rd																										
1056380	S	24/01/2015	Sat	19:50	2 km	W	BARADINE RD	2WY	STR	Fine	Dry	100	1	TRK	F19	W in GUINEMA RD	Unk	Proceeding in lane	NC	0	0	0	0	0		
E58694980								RUM	71	Off rd left => obj				Tree/bush												
Coonabarabran																										
Timor Rd																										
1171427	S	17/05/2018	Thu	14:40		at	BLACKBURN RD	TJN	STR	Fine	Dry	100	2	LOR	M52	W in TIMOR RD	Unk	Other forward	MC	0	0	1	0	0		
E68111466								RUM	29	Other opposing				TKU	M58	E in TIMOR RD	Unk	Proceeding in lane								
1116385	P	05/10/2016	Wed	13:10		at	NUMBER 492 HN	2WY	STR	Fine	Dry	100	1	TRK	M80	W in TIMOR RD	70	Proceeding in lane	SC	0	1	0	0	0		F
E62931977								RUM	73	Off rd rght => obj				Utility pole												
1195985	P	06/02/2019	Wed	10:30	460 m	E	TIBUC RD	2WY	STR	Fine	Dry	80	2	CAR	F78	E in TIMOR RD	80	Incorrect side	SC	0	1	1	0	0	S	F
E252786298								RUM	20	Head on				TKU	M37	W in TIMOR RD	100	Proceeding in lane								

Report Totals: Crashes: 15 Fatal Crashes(FC): 2 Serious Injury Crashes(SC): 8 Moderate Injury Crashes(MC): 3 Minor/Other Injury Crashes(OC): 1 Uncategorised Injury Crashes(UC): 0 Non-Casualty Crashes(NC): 1

Killed(K): 2 Seriously Injured(S): 9 Moderately Injured(M): 4 Minor/Other Injured(O): 3 Uncategorised Injured(U): 0

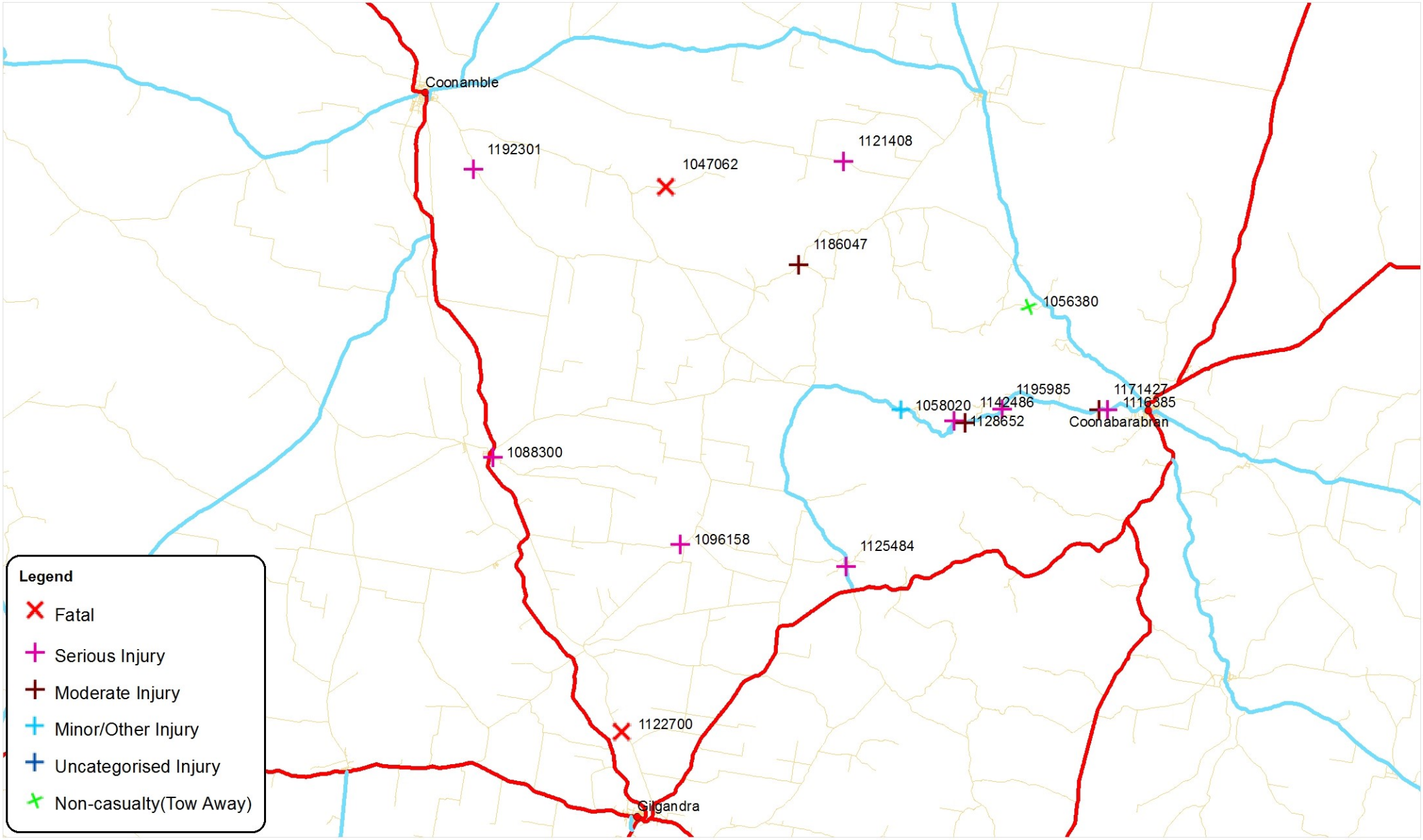
Crashid dataset Crash area bounded by Castlereagh Hwy, Newell Highway and Barradine Rd. 01.04.2014 to 25.11.2019

Note: *Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.*

Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data.
Reporting yrs 1996-2004 & 2019 Q2 onwards contain uncategorised inj crashes.

Crashes within area bounded by Castlereagh Highway, Newell Highway and Baradine Rd - 01.04.2014 to 31.03.2019 (plus preliminary to 25.11.2019)

Crashlink



Transport Roads & Maritime Services

Map Produced on 25/11/2019 4:52:51 PM.

Scale at A3 sheet 1:595,673

0 4 8 16 24 32

Kilometres

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