



Boggabri Coal Mine Traffic Management Plan

August 2022 Revision No. 5



Revision	Revision 1	Revision 2	Revision 3	Revision 4	Revision 5
Revision Date	April 2014	October 2014	January 2015	June 2017	August 2022
Prepared by	Michael Bloem	Ben Rossiter / Michael Bloem	Michael Bloem	Ben Rossiter	Tim McDermott / Nathan Cooper
Reviewed by	Ben Rossiter / Chase Dingle	Michael Bloem / Peter Dawson	Brad Maclean	Hamish Russell	Keren Halliday
Approved by	Brad Maclean	Brad Maclean	Brad Maclean	Peter Forbes	Hamish Russell

Table of Contents

1.	Introduction.....	1
1.1	Overview	1
1.2	Background.....	1
1.3	Aims of this Traffic Management Plan	1
2.	Compliance & Stakeholders.....	2
2.1.	Legislative Requirements	2
2.1.1.	<i>Statement of commitments</i>	2
2.2.	Conditions of Approval & Statement of Commitments	2
2.3.	Stakeholder Consultation.....	4
3.	Existing traffic situation	5
3.1.	Surrounding road network	5
3.2.	Kamilaroi Highway	6
3.3.	Manilla-Boggabri Road (Rangari Road)	6
3.3.1.	<i>Manilla-Boggabri Road intersection with Leard Forest Road</i>	7
3.3.2.	<i>Goonbri Road intersection with Leard Forest Road</i>	7
4.	Public transport / pedestrians and cyclists	8
5.	Site access & traffic generation.....	9
5.1.	Site access for Operations.....	9
5.2.	Operational Traffic Volumes	9
5.3.	Other major Projects (cumulative traffic impacts).....	12
5.3.1.	<i>Maules Creek Coal Mine</i>	12
5.3.2.	<i>Tarrawonga Mine</i>	12
6.	Traffic impacts	13
6.1.	Public transport / pedestrians and cyclists	13
6.2.	Mine Commuter Traffic Management	13
6.3.	BCM Coal Road and Rail Transport	14
7.	Management measures	15
7.1.	Code of Conduct for Heavy Vehicle Drivers	15
7.2.	Dust Management Measures.....	15
8.	Monitoring and reporting	16
8.1.	Monitoring	16
8.2.	Reporting	16
9.	Training and Awareness	17
10.	Review	18
11.	Roles and responsibilities.....	19
12.	References.....	20

Appendix A - Code of Conduct for Heavy Vehicle Drivers.....	A
Appendix B – Stakeholder Consultation.....	B
Appendix C – Traffic Impacts assessed in the EA (Hansen Bailey, 2012).....	C

List of Figures

Figure 1 – Road Network and Locations of Survey Points	5
Figure 2 – BCOP Site Access.....	9

List of Tables

Table 2.1 – Traffic related Conditions of Approval.....	3
Table 2.2 - Traffic Related Statement of Commitments.....	4
Table 3.1 – Background AADT for surrounding road network	6
Table 5.1 – Estimated daily traffic volumes (2022).....	10
Table 5.2 – Estimated heavy vehicle movements (2022)	11
Table 11.1 – Roles and responsibilities.....	19

Abbreviations

Abbreviation/Acronym	Definition or Description
AADT	Average Annual Daily Traffic
BAC	Blood Alcohol Concentration
BCM	Boggabri Coal Mine
BCOP	Boggabri Coal Operations Pty Ltd
CCC	Community Consultative Committee
CEMP	Construction Environmental Management Plan
DPE	NSW Department of Planning & Environment
EA	<i>Continuation of Boggabri Coal Mine Environmental Assessment</i> (Hansen Bailey, 2010)
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
IA	Idemitsu Australia
MCCM	Maules Creek Coal Mine
Mtpa	Million tonnes per annum
NSC	Narrabri Shire Council
NSW	New South Wales
SSD	State Significant Development (previously known as a Project Approval)
TCM	Tarrawonga Coal Mine
TfNSW	Transport for New South Wales
TIA	Traffic Impact Assessment
TMP	Traffic Management Plan
VPA	Voluntary Planning Agreement
vpd	Vehicles per day
WAD	Works Authorisation Deed
Whitehaven	Whitehaven Coal Limited

1. Introduction

1.1 Overview

The Boggabri Coal Mine (BCM) is an open cut coal mine located 15 kilometres north-east of the township of Boggabri in north-western New South Wales (NSW). BCM is located within the Leard Forest Mining Precinct (Figure 1). This precinct also includes the existing Maules Creek Coal Mine (MCCM) and the Tarrawonga Coal Mine (TCM), both of which are managed by Whitehaven Coal Limited (Whitehaven).

The BCM is managed by Boggabri Coal Operations Pty Ltd (BCOP), which is a wholly owned subsidiary of Idemitsu Australia (IA). IA is a subsidiary of the Japanese company Idemitsu Kosan Co Ltd (Idemitsu Kosan). BCM is a joint venture between IA (80%), Chugoku Electric Power Australia Resources Pty Ltd (10%) and NS Boggabri Pty Limited (10%).

Environmental assessments first commenced at BCM in 1976 followed by grant of approval for the project in 1989, and the commencement of operations in 2006. In 2009, BCOP lodged a major project application under the now-repealed Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Project Approval 09_0182 (PA, now known as State Significant Development Approval (SSD) 09_0182), was granted by the then NSW Planning Assessment Commission (PAC) in June 2012. SSD 09_0182 (as modified on seven occasions to date), provides approval for the production of up to 8.6 Million tonnes per annum (Mtpa) of product coal until December 2033 and the transport of up to 10 Mtpa of product by rail (up to 8.6 Mtpa from BCM and up to 3 Mtpa from TCM (subject to agreement)).

1.2 Background

Schedule 3, Condition 60 of SSD 09_0182 requires the preparation of a Traffic Management Plan (TMP). A TMP was developed in December 2012 for initial consultation with Narrabri Shire Council (NSC), NSW Roads and Maritime Services (now Transport for New South Wales (TfNSW)) and the NSW Department of Planning and Infrastructure (now Department of Planning and Environment (DPE)). The 2012 TMP was initially approved by DPE in December 2012. The content from the TMP was then included within the Construction Environmental Management Plan (CEMP) which was approved in May 2013.

Further review and consultation in relation to the TMP occurred with the relevant regulators 2014 and into 2015 to reflect changes to impacts throughout the construction program and to ultimately align with operations. The latest revision to the TMP was undertaken in June 2017.

At the end of December 2017, BCM shifted from a contractor-operated to an owner-operated (i.e. BCOP personnel) mine utilising contractors to conduct operations under BCOP direction. The construction phase was completed in 2015. Accordingly, this TMP is solely concerned with operational traffic issues.

1.3 Aims of this Traffic Management Plan

This TMP has been developed to provide the framework for the management of traffic generated by operational activities of BCOP on public roads. All BCOP staff and contractors working at the BCM are required to operate in accordance with this TMP. The TMP does not cover the following:

- Specific government traffic control plans and traffic control procedures, and
- Traffic and plant movements of mining equipment within the mine operating areas at BCM.

Schedule 3, Condition 60 of SSD 09_0182 requires the preparation of a TMP. The specific requirements of the TMP are listed in Table 2.1.

2. Compliance & Stakeholders

2.1. Legislative Requirements

SSD 09_0182 sets out specific traffic and transport requirements discussed in Table 2.1 below.

Approvals were obtained under Section 138 of the *Roads Act 1993* from TfNSW and NSC prior to the closure, construction of roads and/or works in or over the public road corridor. The primary modification to the local road network involved the closure of a section of Leard Forest Road to the north of BCM and the creation of an alternative route via Goonbri Road to the east of BCM. BCOP will seek the separate approval from the appropriate authorities prior to closing or conducting mining operations within public roads.

BCOP entered into a Works Authorisation Deeds (WADs) with TfNSW for the following projects:

- Rail Overbridge over the Kamilaroi Highway;
- Left In / Left Out intersections with the Kamilaroi Highway; and
- Existing Road Overbridge (constructed as a component of the original BCM approval).

The construction of the Rail Overbridge and left in/left out intersections¹ with the Kamilaroi Highway were completed in January 2015, meeting the requirements of the TfNSW.

The closure of Leard Forest Road at the BCM Haul Road was completed in September 2014, coinciding with the opening of the Goonbri Road realignment.

2.1.1. Statement of commitments

In addition to the conditions of the Project Approval, Boggabri Coal commits to the operational controls of any potential environmental impacts resulting from the project. The traffic related Statement of Commitments is discussed in Table 2.2 below.

BCOP provided \$4.3 Million to NSC in 2014 as apart of its Voluntary Planning Agreement VPA agreement to upgrade the Harparary Road bridge over the Namoi River to offset the closure of Leards Forest Road. The upgraded bridge was completed and opened in January 2016.

The construction of an overpass over Therribri Road was never required due to Coal haulage never equating 5.5Mt. Coal is now transported via the Boggabri Rail Spur Line. The Therribri Rd intersection has been upgraded to give right of way to public traffic travelling along the road. No other intersection upgrades have been required as traffic now accesses BCOP via the Kamilaroi Highway Access Road.

2.2. Conditions of Approval & Statement of Commitments

SSD 09_0182 includes several conditions that directly relate to traffic management. The relevant conditions and where these conditions have been addressed within this TMP are included in Table 2.1.

¹ Left in/left out intersection was commissioned as a part of the Kamilaroi Highway Access Road

Table 2.1 – Traffic related Conditions of Approval

SSD Condition No.	Approval Condition	TMP Section Reference
<i>Schedule 3, Condition 58</i>	The Proponent shall construct, operate and maintain the bridges over the Kamilaroi Highway for the Boggabri Rail Spur Line and the haul road bridge to the satisfaction of RMS, and shall bear all costs associated with the construction and maintenance of these bridges.	Section 2.1
<i>Schedule 3, condition 58A</i>	The proponent shall design and construct the intersections with the Kamilaroi Highway for access to the haul road to the satisfaction of RMS.	Section 2.1
<i>Schedule 3, Condition 59</i>	The Proponent shall meet the requirements of RMS in respect of road access from the Kamilaroi Highway for temporary construction traffic, road intersection upgrades and maintenance of RMS roads used in respect of the Project.	Section 2.1
<i>Schedule 3, Condition 60</i>	The Proponent shall prepare and implement a TMP for the Project to the satisfaction of the Secretary. This plan must: (a) be prepared in consultation with the RMS, NSC and Gunnedah Shire Council; (b) be submitted to the Secretary for approval within 6 months of the date of this approval; (c) propose an appropriate program and schedule of works for any intersection upgrades to be undertaken or contributed to by the Proponent arising from conditions 58 and 59 of Schedule 3; (d) include: (i) a code of conduct for drivers of heavy vehicles; (ii) primary heavy vehicle access routes for construction and operational stages, including details on volumes and nature of over-size and over- mass heavy vehicles; (iii) measures to minimise traffic impacts at school bus pick up and drop off times; (iv) consideration of measures to minimise dust from unsealed roads that may be used for access to the mine site; and (v) a monitoring program to audit vehicle movements against predictions in the Environmental Assessment (EA).	a) Appendix B b) Completed (See revisions 1 to 3) c) Refer previous versions of TMP d) i. Section 7.1 and Appendix A ii. Section 5.2 and section 7.1 iii. Section 4.0 and section 6.0 iv. Section 7.2 v. Section 8.1
<i>Schedule 2, Condition 12</i>	The Proponent may transport up to 10 million tonnes of product coal via the Boggabri Rail Spur Line in any calendar year, year; comprising: (a) Up to 8.6 million tonnes of product coal from the Boggabri coal mine in any calendar year; and (b) up to 3 million tonnes of product coal from the Tarrawonga coal mine in any calendar year.	Section 6.3
<i>Schedule 2, Condition 13</i>	The Proponent may transport up to 200 tonnes of coal per year from the site by road for marketing and testing purposes. All other coal must be transported from the site via the Boggabri Rail Spur Line, except in exceptional circumstances	Section 6.3

SSD Condition No.	Approval Condition	TMP Section Reference
	as agreed with RMS and Council and approved by the Secretary.	

Table 2.2 - Traffic Related Statement of Commitments

Ref	Commitment	TMP Section Reference
15	To offset the closure of a section of Leard Forest Road Boggabri Coal will upgrade Harparary Road including three culverts and a new bridge over the Namoi River as described in its VPA with NSC.	Section 2.1.1
16	Boggabri Coal will continue to investigate alternative road access options to the Maules Creek Community to mitigate the closure of a section of Leard Forest Road in consultation with the NSC and MCCC.	Section 6
17	Boggabri Coal will construct an overpass on Therribri Road across the Private Coal Haul Road should road coal haulage reach 5.5 Mtpa.	Section 2.1.1
18	Boggabri Coal will commit to a financial contribution to the upgrade of the intersections identified in the road safety audit commensurate with the impacts of the Project.	Section 2.1
19	Prior to the construction of the rail spur overpass within the easement of the Kamilaroi Highway Boggabri Coal will consult with all relevant regulatory authorities and will develop a rail construction and traffic management plan in consultation with the RMS.	Section 2.1

2.3. Stakeholder Consultation

Stakeholder consultation has been ongoing for an extensive period. Meetings have been held with the primary stakeholders, GSC, NSC and TfNSW, over the course of the Project which have included discussions in relation to traffic management. Appendix B contains a summary of the information relating to the consultation with stakeholders in relation to the preparation of this TMP. Recent consultation has highlighted the need for ongoing discussions with stakeholders regarding traffic matters.

Ongoing consultation relating to operational traffic impacts if they occur, will be undertaken by BCOP at Community Consultative Committee (CCC) meetings, held quarterly.

3. Existing traffic situation

3.1. Surrounding road network

Figure 1 below shows the access roads and surrounding road network, including the locations of the biennial traffic volume survey points.

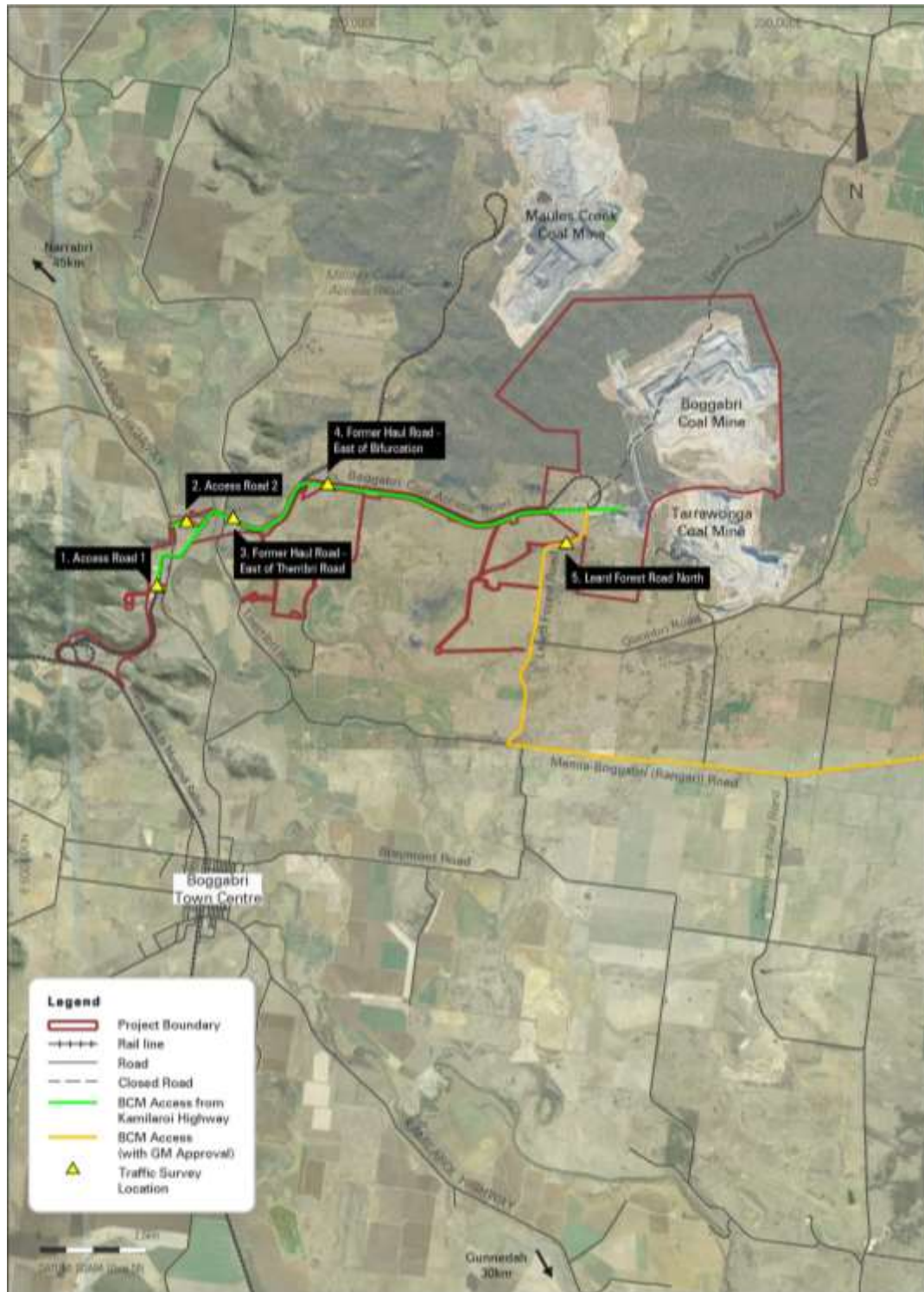


Figure 1 – Road Network and Locations of Survey Points

The following roads have been considered in this TMP:

- Kamilaroi Highway;
- Manilla-Boggabri Road and
- Leard Forest Road

Table 3.1 contains the available Average Annual Daily Traffic (AADT) traffic counts for the roads under consideration prior to the commencement of operations in 2006. The 2005 data was recorded before any mines were operational in the area. The 2010 data reflects additional traffic generated by BCM and TCM, which both commenced operations in 2006. Additional traffic counts were undertaken in April 2016 and include traffic accessing MCCM.

Table 3.1 – Background AADT for surrounding road network

	2005	Sept 2010 ²	Nov 2010 ³	Apr 2016	Adopted Background Traffic
Kamilaroi Highway	1,832	2,185	2,028	NA	2,185
Manilla-Boggabri Road	175	459	369	362	459
Leard Forest Road	-	-	311	521	311

The traffic counts shown in Table 3.1 were undertaken at the following locations:

- Kamilaroi Highway – south of Manilla-Boggabri Road,
- Manilla-Boggabri Road – east of Kamilaroi Highway, and
- Leard Forest Road – north of Goonbri Road.

To assess the current operational traffic movement data on the surrounding road network, traffic count surveys have been undertaken annually in the following five locations since 2018, excluding 2020 due to COVID-19 impacts and restrictions, as illustrated in Figure 1:

1. Access Road 1 - between the Kamilaroi Highway and the Kamilaroi Highway Access Road;
2. Access Road 2 - between the Kamilaroi Highway and the Kamilaroi Highway Access Road;
3. Former Haul Road – East of Therribri Road;
4. Former Haul Road – East of Bifurcation; and
5. Leard Forest Road – North.

3.2. Kamilaroi Highway

The Kamilaroi Highway is a State Highway (SH29) linking the Upper Hunter and North West Regions of NSW. Closer to the BCM, it connects the towns of Narrabri and Gunnedah. The Highway is a two lane, two way sealed road, with an estimated AADT of 2,185 (as per Table 3.1) and a posted speed limit of 100km/hr. The Kamilaroi Highway is the primary arterial road to access private roads to BCM.

3.3. Manilla-Boggabri Road (Rangari Road)

Manilla-Boggabri Road links the Kamilaroi Highway and the town of Manilla. The road standard varies from a two lane two way sealed road to a narrow gravel road 7km past the intersection with Leard Forest Road. An AADT of 175 vehicles per day (vpd) measured in 2005 had increased significantly to 459 vpd by 2010 due to vehicle movements from of both BCM and TCM.

² Source: Maules Creek Coal Project - Traffic and Transport Assessment

³ Source: Tarrawonga Coal Project – Road Transport Assessment

As anticipated, significant increases in traffic resulted during the BCM and MCCM construction phases but traffic has now decreased to 362 vpd (April 2016).

3.3.1. Manilla-Boggabri Road intersection with Leard Forest Road

Leard Forest Road forms a T-intersection with Manilla-Boggabri Road approximately 7.8km west of the Kamilaroi Highway. It is controlled with Give Way signage and a sight screen. There are no auxiliary or channelised lanes for turning traffic. Leard Forest Road is a two lane, two way, minor local road with very low traffic volumes, other than from mine related traffic. It is sealed from Manilla-Boggabri Road to the Mine Access Road. Upgrades to Goonbri Road provide for traffic to access Harparary Road and have allowed Leard Forest Road to be closed from BCM through to the Northern Lease Boundary.

3.3.2. Goonbri Road intersection with Leard Forest Road

Goonbri Road is a two lane, two way, minor local road with very low traffic volumes and has a T intersection with Leard Forest Road. The intersection is controlled by a Give Way sign and hold line. There are no auxiliary or channelised lanes.

4. Public transport / pedestrians and cyclists

There are no scheduled public bus services operating on any of the surrounding local road network, except for school bus services. As the primary access to BCOP is via the Kamilaroi Highway Access Road there is no interaction expected with local buses on surrounding local road network.

There are school bus services along the Kamilaroi Highway, however, they currently operate under high traffic volumes, and as such, the interaction with traffic from BCM is negligible and operators should be cognisant of the need to drive to Highway traffic conditions. School bus pickup and drop-off times all occur outside of BCM shift changeover times. BCOP will consult with school bus services operating within the vicinity of BCM to monitor any interactions and change in routes/stops.

Cyclists have not been observed to be active on the road network, although the occasional cyclist is likely on the Kamilaroi Highway. Similarly, pedestrians have not been observed. There are no organised cycling activities, such as races, sports training or recreational group rides known to currently occur on the surrounding public road network.

5. Site access & traffic generation

5.1. Site access for Operations

The current access to BCM is via the Kamilaroi Highway and the Kamilaroi Highway Access Roads. All employees and contractors are required to travel to site via the Kamilaroi Highway Access Roads from the Kamilaroi Highway utilising the left in left out configuration from either Access Road 1 and/or Access Road 2. The Kamilaroi Highway Access Roads are also the primary access for heavy vehicles to site. Leard Forest Road via Manilla-Boggabri (or Rangari) Road may only be used by employees or contractors who have written consent from the BCOP Mine Manager to utilise this access route. This is to allow local residents to the East of the mine access to site and is authorised on a case-by-case basis. Figure 2 illustrates the approved access routes for BCOP employees and contractors at BCM.

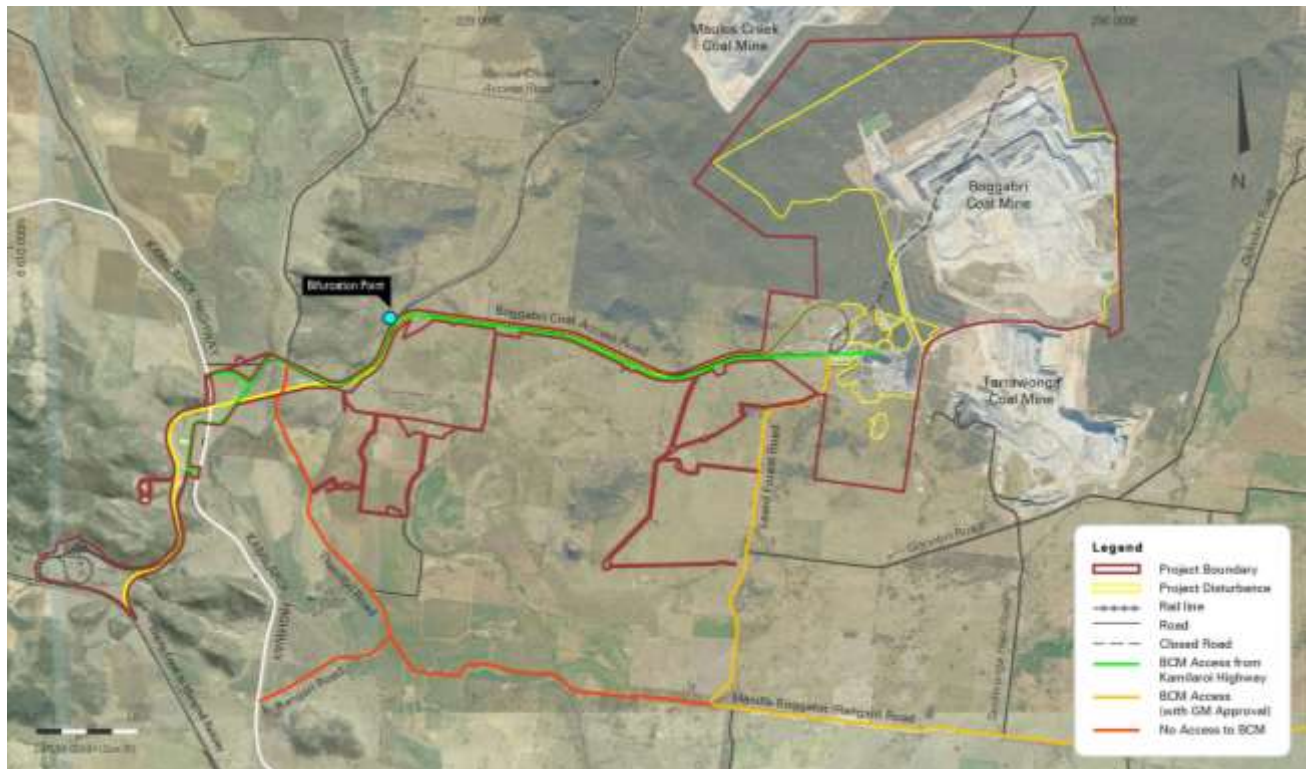


Figure 2 – BCOP Site Access

5.2. Operational Traffic Volumes

Operational traffic volumes generated by BCM were forecast within the Project Traffic Impact Assessment (TIA) - Parsons Brinckerhoff 2010 as part of the *Continuation of Boggabri Coal Mine Environmental Assessment (EA)* (Hansen Bailey, 2010).

Further to the assessment completed within the Boggabri EA, a traffic impact assessment was completed by Constructive Solutions (2013) in support of Modification 3 to SSD 09_0182 which resulted in changes to the approved access for operational traffic to the mine via the Kamilaroi Highway Access Roads and the BCM Mine Access Road. The traffic assessment considered the potential impacts of utilising the two Kamilaroi Highway Access Roads, which were proposed to provide safe left-turn access and egress from the Kamilaroi Highway onto the BCM Mine Access Road while preventing right turn movements across the existing through lanes. Given the design of the Kamilaroi Highway Access Road intersections, Constructive Solutions (2013) concluded that there will be an “*improved traffic interaction*” with the Kamilaroi Highway “*in comparison with the existing Manilla Road intersection with the Kamilaroi Highway*” (as originally approved) and the “*effective capacity of these intersections will exceed the approved capacity required by the mine, even during shift changes which would result in concentrated vehicle movements over a short periods of time*”.

The assumed traffic volumes for the BCM as forecast within the Boggabri EA have been updated based on 2022 staff numbers and are shown in Table 5.1. Traffic volumes forecast within the BCOP Environmental Assessment (Hansen Bailey, 2010) are in Appendix C.

Table 5.1 – Estimated daily traffic volumes (2022)

Description	Total Number of Staff (2022)	% of Staff	Trip General rate per day	Vehicles per staff member	Total Vehicle trips per day
BCOP Staff	81	0.11	1.8	0.83	121
CHPP	26	0.03	1.8	0.83	38.8
Mining Operations	364	0.48	1.8	0.83	543.8
Maintenance	201	0.26	1.8	0.83	300.3
Operational Contractors	90	0.12	1.8	0.83	134.4
Total	762	100			1138

The Boggabri EA did not consider operational heavy vehicle movements in traffic volumes. Estimated heavy vehicle movements based on operational requirements for BCM are presented in Table 5.2.

Table 5.2 – Estimated heavy vehicle movements (2022)

Product	Number	Frequency	Average Heavy Vehicles movements per day
Diesel fuel	4 x b-doubles	Daily	6.0
Stemming	6 x b-double	Daily	12.0
Blasting – fuel to blasting reload	1 x b-double	Weekly	0.3
Ammonium Nitrate	80 – 90 b-doubles	Monthly	6.0
Emulsion product	6 – 10 b-doubles	Monthly	0.7
Explosive equipment (detonators etc)	2 x b-doubles	Weekly	0.6
Blasting – general deliveries	1 to 2 x semi-trailers	Weekly	0.6
Mining - general deliveries	3 x semi-trailers	Daily	6.0
Bulk oil deliveries	1 x b-double	Weekly	0.3
Waste oil removal	1 x b-double	Fortnightly	0.1
Regulated waste servicing	1 x b-double	Fortnightly	0.1
Rubbish collections	5 x rigid truck	Weekly	1.4
Septic & waste servicing	6 x rigid trucks	Weekly	1.7
Oversize Overmass transport	2x b-double	Monthly	0.1
Estimated total heavy vehicle movements (rounded)			36.0

As of June 2022, BCM employed a total of 762 operational employees. In consideration of the additional 259 employees from those previously considered within the Boggabri EA TIA, BCMs employees are expected to result in a total of 1,138 vpd as a result of peak operational activity.

Table 5.2 estimates approximately 36 heavy vehicle movements per day using the Kamilaroi Highway Access Road to enter and exit BCM. All heavy vehicles are required to comply with the 'Code of Conduct for Heavy Vehicle Drivers' (Section 7.1). OSOM (Oversize Overmass) vehicles are managed by a unique 'Traffic Alert' for each movement to and from site.

Recent traffic survey data obtained from June 2022 has indicated that with the current employment levels (i.e. approximately 762 staff), an average of 754 vpd (including an average of 28.3 heavy vehicles) were recorded travelling to and from the BCM site. This highlights that the forecasts in Table 5.1 and Table 5.2 are generally conservative estimates for peak operational activities at the BCM.

Given the primary access to the BCM being via the Kamilaroi Highway intersection which have been designed with left in / left out arrangement with separate deceleration and acceleration lanes for both the northbound and southbound traffic, the maximum predicted traffic flows at these intersections during the morning and afternoon peak hour periods is considered to be efficient and remain well within the design capacity for these intersections. Accordingly, it can be concluded that delays at these intersections are similarly low such that there is unlikely to be any noticeable or detrimental delays experienced at these Kamilaroi Highway intersections.

5.3. Other major Projects (cumulative traffic impacts)

This TMP considers the cumulative impact of BCM traffic coupled with existing and new traffic that may be generated by other mines using the surrounding road network to assess, and if required, manage the cumulative traffic impacts.

The two major projects that are likely to generate additional traffic in the vicinity of BCOP are the MCCM and the Tarrawonga Mine. Details of the traffic associated with each mine site are provided below where data has been made available.

5.3.1. Maules Creek Coal Mine

MCCM is an adjacent coal mine that has shared rail & access road infrastructure with BCOP.

MCCM access their site via the same Kamilaroi Highway Access Road as BCOP until the 'Bifurcation point' (Figure 1) which they continue northwards onto their own site access road.

During the operational phase, MCCM have presumed that there will be up to 650 employees corresponding with a peak production rate of 13 Mtpa. The mine is proposed to operate for 24 hours per day, seven days per week (Whitehaven Coal Pty Ltd, 2020).

5.3.2. Tarrawonga Mine

TCM utilise a private haul road which links the mine entry with Hoad Lane and Blue Vale Road. Due to this private haul road, there will be minimal cumulative traffic impacts from interaction with TCM.

6. Traffic impacts

Access to BCM from the Kamilaroi Highway is via the Kamilaroi Highway Access Road (i.e. former Haul Road) that runs between the mine site and the former rail loadout facility. There are two short access roads that link the Kamilaroi Highway with the Kamilaroi Highway Access Road which are generally referred to as Access Road 1 and Access Road 2 (refer to Figure 1). Both access roads intersect with the Kamilaroi Highway with a left in/left out configuration only. Due to the mine access being via the privately owned Kamilaroi Highway Access Road and Access Road 1 and Access Road 2, there is expected to be little effect on the local road network.

Access to BCM by employees and contractors is also possible via the Leard Forest Road. However as described in Section 5.1, approval from the BCOP Mine Manager is required prior to employees using this route.

The Kamilaroi Highway Access Road intersects Therribri Road at grade east of the river crossing. Traffic travelling on The Kamilaroi Highway Access Road are controlled by Stop signs and hold lines to give right of way to vehicles on Therribri Road.

Rail Overpass Bridge

The Rail Overpass Bridge was subject to the conditions of a Works Authorisation Deed (WAD) with TfNSW with all conditions of the WAD completed. Completion of the Rail Overpass Bridge ensures there are no traffic impacts associated with its use.

Closure of Leard Forest Road and extension of Goonbri Road

A section of Leard Forest Road was closed (refer to Figure 1) after the completion of the Goonbri Road Upgrade on the 24th September 2014, in accordance with the Leard Forest Road Closure Strategy (LFRCS). The closure of a section of Leard Forest Road has been undertaken to the satisfaction of NSC. The construction of Goonbri Road was also subject to NSC requirements, which were met prior to opening the road. The completed upgrades to Goonbri Road have provided an alternative local road to Maules Creek, following the closure of the section of Leard Forest Road within the BCM.

The section of Leard Forest Road from Rangari Road to the BCM Mine Access Road has remained open to the public (as a public road). However, employee access to the BCM via the Leard Forest Road site is restricted to those whom have been authorised by the BCM Mine Manager to utilise this local road. Employee access to the BCM via Leard Forest Road is monitored and inappropriate use by employees or contractors will result in disciplinary action. Site access routes to the BCM are regularly communicated to the BCM workforce during the site specific inductions, tool box talks and other safety briefings.

Road Signage

Road signage detailing nominated access routes has been installed. BCOP has undertaken consultation with NSC about appropriate locations of signs to encourage use of the primary access route. BCOP will seek Council and/or TfNSW approval before installing any signs on public roads.

6.1. Public transport / pedestrians and cyclists

As previously stated, there is limited pedestrian and cyclist activity on the road network affected. Therefore, no management or mitigation for pedestrians or cyclists is proposed.

BCOP has commissioned the Kamilaroi Highway Access Road, which has limited the potential interaction between traffic generated by BCOP and the existing school bus routes.

6.2. Mine Commuter Traffic Management

Risks to the workforce commuting to BCM may include (but are not limited to): fatigue (i.e. shift work, tasks and long journeys to and from the site), wildlife, types of vehicles used and driving under the influence of drugs or alcohol.

The risk from fatigue is managed through the implementation of the management measures outlined in the BCOP Fitness to Work Standard and the BCOP Fatigue Management Procedure. The BCOP Fatigue Management Procedure manages the risk of fatigue by establishing the maximum work roster period, maximum

consecutive work roster days and minimum days off. The procedure also provides a response protocol where a worker can identify fatigue risks.

The risk of driving under the influence of drugs and alcohol is managed through the implementation of the measures in the BCOP Alcohol and Drug Procedure. All workers are subject to random drug and alcohol testing while working for or on behalf of BCOP and are subjected to testing following an incident. If an employee tests positive for drugs or alcohol, they are not allowed to drive home and alternative arrangements are made.

Employees are required to use the mine access roads from the Kamilaroi Highway, which are sealed and are regularly inspected and maintained to a high standard to ensure safe access to the site. The Kamilaroi Highway Access roads and BCM Mine Access Road are appropriately guide posted and have warning signage erected, where appropriate, to identify potential traffic risks (e.g. flooding, wildlife, powerlines etc.).

Section 7.1 outlines the Code of Conduct for Heavy Vehicle Drivers whom transport materials to the site and are required to comply with regulatory requirements along with the BCOP specific requirements.

As discussed within Section 9, BCOP conveys information in relation to driver safety awareness to all employees and contractors through inclusion within the Site Induction presentation and within tool box talks and safety briefings as required.

6.3. BCM Coal Road and Rail Transport

BCOP is permitted to transport up to 200 tonnes of coal per year from the BCM by road for marketing and testing purposes. All other coal must be transported from the site via the Boggabri Rail Spur Line, except in exceptional circumstances as agreed with TfNSW and NSC and approved by the Secretary of DPE in accordance with Schedule 2, Condition 13 of SSD 09_0182.

BCOP have approval to transport up to 10 Mt of product coal via the Boggabri Rail Spur Line in any calendar year, comprising of up to:

- 8.6 Mt of product coal from BCM in any calendar year; and
- 3 Mt of product coal from TCM in any calendar year.

No agreement is currently in place with Whitehaven regarding the transport of TCM product coal via the Boggabri Rail Spur Line.

In accordance with Schedule 3, Conditions 63 and 64 of SSD 09_0182, BCOP is required to consult with the Gunnedah Shire Council regarding mitigating impacts of coal rail transportation on road safety and congestion in the Gunnedah Local Government Area. Following extensive consultation with the Gunnedah Shire Council and other miners within the region, a rail overpass within Gunnedah was constructed. This was completed in November 2020. The rail overpass aimed to improve local traffic efficiency, road safety, road transport productivity and reliability. With an unrestricted higher mass limit (HML) freight route, connecting the Oxley and Kamilaroi highways, it replaces the 'New Street' level crossing. This allows for uninterrupted flow of traffic for heavy vehicles through Gunnedah.

Noise associated with Road and Rail Transport are expected to remain within the currently approved operational noise levels. The Kamilaroi Highway Access Road has a speed limit of 80km/h and includes speed advisory signs on road curves. The separate acceleration and deceleration lanes upon entry to Access Road 1 & Access Road 2 contain design elements with the objective to decrease noise.

7. Management measures

7.1. Code of Conduct for Heavy Vehicle Drivers

The *Code of Conduct for Heavy Vehicle Drivers* will apply to all heavy vehicle delivery drivers engaged by BCOP, while they are using the approved access road. The *Code of Conduct for Heavy Vehicle Drivers* will be communicated drivers as outlined in Section 9. A copy of the *Code of Conduct for Heavy Vehicle Drivers* is attached in Appendix A.

Section 5.1 describes the access arrangements for all BCOP employee's and contractors, including heavy vehicles. The current access to BCM is available for operations via the Kamilaroi Highway and the Kamilaroi Highway Access Road. The Kamilaroi Highway is approved for use by heavy vehicles up to 25/26 metre B-double.

7.2. Dust Management Measures

All primary roads in regular use by BCOP to access the BCM are sealed. Consequently, no specific measures are included for dust management within this TMP.

8. Monitoring and reporting

8.1. Monitoring

BCOP will monitor the vehicle movements and compare these against predicted in the EA by conducting traffic volume surveys of the roads described in Section 3.1 on a every two years. Figure 1 illustrates the traffic survey locations that are monitored. Traffic incidents, monitoring of road conditions and roadkill observations are recorded within weekly inspections and incident reports, where relevant.

Following consultation with NSC, it is understood members of the public are concerned over the increase in rubbish along the verges of roads used to access the BCM. In light of this concern, BCOP will regularly conduct inspections of the local roads in close proximity to the BCM. If substantial rubbish is identified on the key roads utilised by BCOP employees, BCOP will arrange for roadside rubbish to be collected.

Where traffic volume monitoring identify significant discrepancies in the traffic volumes on a given road, amendments to the TMP shall be considered.

8.2. Reporting

The Annual Review summarises the environmental performance of the mine for the previous calendar year. In accordance with BCOP's mining leases (CL368) and Schedule 5, Condition 4 of SSD 09_0182, the Annual Review will compare the traffic monitoring information collected in accordance with Section 8.1 and report on the results against the traffic predictions provided in the EA (Appendix C).

If substantial rubbish is identified during BCOP roadside inspections details of these inspections and any rubbish collection that took place will also be reported within the Annual Review.

9. Training and Awareness

The *Code of Conduct for Drivers of Heavy Vehicles* will be provided to heavy vehicle delivery drivers engaged by BCOP, to inform the drivers of their requirements. A record shall be kept and maintained by BCOP of the personnel informed of the Code's requirements.

The BCM access arrangements are conveyed to all employees and contractors through inclusion within the Site Induction presentation and within tool box talks as required. Environmental awareness training with BCM employees and contractors regarding traffic, transport and roadside littering issues will be conducted as required.

10. Review

Review of the TMP will be undertaken in accordance Schedule 5, Condition 5 of SSD 09_0182 within 3 months of the submitting the following:

- Annual Review under Schedule 5, Condition 4 of SSD 09_0182;
- Incident report under Schedule 5, Condition 8 of SSD 09_0182;
- Audit under Schedule 5, Condition 10 of SSD 09_0182; and
- A modification to SSD 09_0182.

Where this review results in revisions to the TMP, then within 4 weeks of the completion of the revision, unless the Secretary agrees otherwise, the revised document will be submitted to the Secretary for approval.

11. Roles and responsibilities

Table 11.1 – Roles and responsibilities

Role	Responsibilities
BCOP General Manager	• Provide sufficient resources to ensure the effective implementation of this management TMP.
BCOP Health, Safety, Environment and Community Manager	• Inform personnel of the usage of the vehicle primary access routes; • Negotiate with affected parties to resolve ongoing complaints; and • All employees and contractors are to understand their responsibilities with respect to traffic management and safe driving.
BCOP Environment Superintendent	• Provide TMP to relevant personnel as necessary; • Monitoring is to be undertaken according to the requirements of this TMP; • Communicate traffic awareness amongst mine personnel and contractors via inductions or where required, Tool Box Talks; • Respond to community complaints; • Liaise with regulatory authorities regarding traffic management; • Schedule additional traffic monitoring if required; and • Review and where required revise this TMP.

12. References

Internal

- BCOP Fitness to Work Standard (BMS-SMS-STD-009).
- BCOP Alcohol and Drug Procedure (BMS-SMS-PRO-016).
- BCOP Fatigue Management Procedure (BMS-SMS-PRO-045).

External

- Constructive Solutions Pty Ltd. 2013 *Goonbri Road Upgrade (Leard Forest Road Realignment) – Report to Narrabri Shire Council*. Tamworth.
- Constructive Solutions Pty Ltd. 2013 *Idemitsu Boggabri Coal Expansion Project 75W Modification – Traffic Assessment Boggabri NSW*. Tamworth.
- Constructive Solutions Pty Ltd. 2018 *Traffic Audit of Mine Access Routes*. Tamworth.
- Constructive Solutions Pty Ltd. 2019 *Traffic Audit of Mine Access Routes*. Tamworth.
- Halcrow Pacific Pty Ltd. 2011. *Tarrawonga Coal Project Environment Assessment – Road Transport Assessment*. Sydney.
- Hansen Bailey, (2010), *Continuation of Boggabri Coal Mine Environmental Assessment*. Singleton, NSW.
- Hyder Consulting Pty Ltd. 2010. *Traffic and Transport Impact - Aston Resources Maules Creek Coal Project*. Sydney.
- Parson Brinkerhoff. 2010. *Continuation of Boggabri Coal – Traffic Impact Assessment*. Sydney
- Road and Martine Services, Road and Martine Services Heavy Vehicles Home Page. Available from: <http://www.rms.nsw.gov.au/business-industry/heavy-vehicles> [9 June 2021].
- Road and Martine Services. *Traffic Volume Data for Western Region*
- Whitehaven Coal Pty Ltd. April 2013. *Maules Creek Coal Project Traffic Management Plan*.
- Whitehaven Coal Pty Ltd. 2016. *Maules Creek Coal Mine Employee Transport Modification Environmental Assessment*.
- Whitehaven Coal Pty Ltd. 2020. *Maules Creek Coal Mine Landform Modification*.

Appendix A - Code of Conduct for Heavy Vehicle Drivers

The *Code of Conduct for Heavy Vehicle Drivers* provided below applies to all heavy vehicle delivery drivers while using the approved access road:

- Use the approved access road to enter the site.
- Comply with the National Heavy Vehicle Fatigue Management Regulations.
- All occupants must be seated and wearing a seat belt at all times when the vehicle is in motion.
- No person is to commence work whilst under the influence of alcohol or prohibited drugs.
- Drivers shall at all times obey the road traffic rules and signage.
- Any heavy vehicles following another vehicle on access roads where possible shall maintain separation distance of at least 50 metres where safe to do so.
- During periods of low visibility drive with headlight on and dim high beams to coming traffic as per NSW road regulations.
- Drive under power lines at designated crossings when the height of the vehicle complies with the height restriction sign.
- Park the vehicle so it is fundamentally stable (vehicle will remain in a stationary position without aids).
- All hot or suspected hot tyres (smoking tyres) shall be considered an explosion risk and the vehicle should be isolated.

Appendix B – Stakeholder Consultation

The below table summarises stakeholder consultation that has been undertaken since the TMP was first developed. Further details can be found in earlier reviews of the TMP.

DATE	KEY STAKEHOLDERS ⁴				KEY PURPOSE
	RMS (now TfNSW)	NSC	GSC	DPIE (now DPE)	
June 2011	✓				Initial discussions re constraints and access options
June 2012	✓				Accesses of Kamilaroi and access for rail overbridge construction
November 2012		✓			Update and presentation of Concept Designs
January 2013		✓			Update and presentation of Concept Designs – Leard Forest and Therribri Roads and Kamilaroi overpass and temporary intersections
March 2013		✓			Leard Forest Road Closure Strategy
June 2013		✓			TMP submitted
June 2013	✓				Kamilaroi Intersections
August 2013	✓				Use of temporary Kamilaroi Intersections for fuel deliveries
September 2013			✓		Following receipt of draft TMP, advised that impact on Gunnedah Shire road network was minimal and a meeting was not required
November 2016	✓	✓	✓	✓	Rev 4 draft TMP revised for operational traffic arrangement provided for comments. RMS commented requesting inclusion of the risk of mine commuter traffic movements and management measures employed to manage safe commuter trips. These are addressed in Section 6.2.
August 2021	✓	✓	✓	✓	Rev 5 draft TMP revised in accordance with Schedule 5 Condition 5 of SSD 09_0182 following the completion of an Independent Environmental Audit (IEA). It includes details on the finalisation of the design and construction of the rail overpass in Gunnedah and travel requirements for employees.

⁴ TfNSW – Transport for NSW Western Region, NSC – Narrabri Shire Council, GSC – Gunnedah Shire Council, DPE – Department of Planning and Environment.

Appendix C – Traffic Impacts assessed in the EA (Hansen Bailey, 2012)

	Number of staff	% of total staff	Trip generation rate per day	Vehicles per staff member	Total vehicle trips per day
Operational					
Professional, supervisory and office staff	49	14	1.8 ³	0.83 ⁴	73
Mining operations	194	55	1.8	0.83	290
Maintenance	81	23	1.8	0.83	121
Coal preparation	29	8	1.8	0.83	43
Total	353	100			527
Construction					
Professional and office staff	29	19	1.8	0.83	43
Technical and trades	45	30	1.8	0.83	67
Operators and labourers	76	51	1.8	0.83	114
Total	150	100			224
Grand total	503				751