

# Austar Coal Mine, Stage 3 - Surface Infrastructure Site Traffic Management Plan

December 2009

---

**Austar Coal Mine Pty Ltd**

---



*Parsons Brinckerhoff Australia Pty Limited  
ABN 80 078 004 798*

*Level 27, Ernst & Young Centre  
680 George Street  
SYDNEY NSW 2000  
GPO Box 5394  
SYDNEY NSW 2001  
Australia*

*Telephone +61 2 9272 5100  
Facsimile +61 2 9272 5101  
Email [sydney@pb.com.au](mailto:sydney@pb.com.au)*

*Certified to ISO 9001, ISO 14001, AS/NZS 4801*

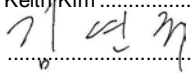


Revision	Details	Date	Amended By
	Original	6/11/09	
A	Original	16/11/09	B Hubbard
B	Incorporating client and Cessnock City Council comments	11/12/09	B Hubbard

©Parsons Brinckerhoff Australia Pty Limited (PB) [2010].

Copyright in the drawings, information and data recorded in this document (the information) is the property of PB. This document and the information are solely for the use of the authorised recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that for which it was supplied by PB. PB makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.


Author: Keith Kim .....

Signed:  .....

Reviewer: Ben Hubbard .....

Signed:  .....

Approved by: Zoran Bakovic .....

Signed:  .....

Date: 11 December 2009.....

Distribution: 1 copy client, 1 copy file.....

Please note that when viewed electronically this document may contain pages that have been intentionally left blank. These blank pages may occur because in consideration of the environment and for your convenience, this document has been set up so that it can be printed correctly in double-sided format.

# Contents

	<b>Page number</b>
<b>Glossary</b>	<b>iii</b>
<b>Executive summary</b>	<b>iv</b>
<b>1. Introduction</b>	<b>1</b>
1.1 Site location	2
1.2 Existing road network	3
1.3 TMP requirements checklist	4
<b>2. Work program</b>	<b>5</b>
2.1 Access road	5
2.2 Ventilation shaft construction	6
2.3 Intersection upgrade	6
2.4 Surface infrastructure support buildings	6
<b>3. Plant and equipment</b>	<b>7</b>
<b>4. Heavy vehicles</b>	<b>8</b>
4.1 Oversized vehicles	8
<b>5. Traffic issues register</b>	<b>9</b>
<b>6. Stakeholder communications</b>	<b>11</b>
<b>7. Occupational health and safety</b>	<b>12</b>
<b>8. Traffic control resources</b>	<b>13</b>
<b>9. Approval</b>	<b>14</b>
<b>10. Command</b>	<b>15</b>
<b>11. Reference</b>	<b>16</b>

## List of tables

	<b>Page number</b>	
Table 1-1	Traffic volume on surrounding road network	3
Table 1-2	TMP checklist	4
Table 2-1	Construction schedule	5
Table 4-1	Proposed heavy vehicle routes	8
Table 5-1	Traffic issues register	9
Table 6-1	Stakeholder communication	11

## List of figures

	<b>Page number</b>	
Figure 1-1	Locality plan	2

## Appendices

Appendix A	Heavy vehicle routes
Appendix B	Traffic Control Plan
Appendix C	Extract from the Roads Design Guide, RTA, 1999, showing a type BAL intersection

# Glossary

Austar	Austar Coal Mining Pty Ltd
BAL	Basic Left-turn
LTCC	Long-wall Top Coal Carving
Mt	Million Tonnes
SIS	Surface Infrastructure Site
TIA	Traffic Impact Assessment
TMP	Traffic Management Plan
RTA	Roads and Traffic Authority of NSW
TCP	Traffic Control Plan

# Executive summary

PB have been commissioned by Austar Coal Mining Pty Ltd (Austar) to prepare a Traffic Management Plan (TMP) for the construction of Stage 3 – Surface Infrastructure Site.

Austar has been granted approval by the Minister for Planning to expand their existing mining activity. The expansion of the coal mine requires that a ventilation shaft to be constructed in the land off Quorrobolong Road along with an access road and the surface infrastructure support buildings.

This Traffic Management Plan (TMP) is for the construction of the:

- access road
- ventilation shaft
- intersection upgrade at the site access
- construction of the surface support infrastructure.

The TMP provides key information to assist with the safe construction of the project while minimising the impacts on traffic and transport.

Traffic and Transport impacts are expected to be minimal because the current traffic volumes and the proposed construction traffic volumes are low. Impacts could include:

- additional number of heavy vehicles using Quorrobolong Road
- dust and gravel being tracked onto Quorrobolong Road
- introduction of the partial road closure and the 60 km/hr speed limit zone on Quorrobolong Road for the construction of the mine access.

# 1. Introduction

Austar is an aggregation of the former Pelton, Ellalong Cessnock No.1 and Bellbird South Collieries, located in Paxton, NSW. The company introduced an enhanced form of the conventional retreat long-wall coal mining, called Long-wall Top Coal Carving (LTCC), to the Australian Coal Mining industry in 2006.

In September 2009, the Minister for Planning gave approval for the Stage 3 modification of the Austar mining operations. The Stage 3 project would open up an additional area of the Greta Coal Seam at depth of approximately 450 to 740 m and would allow the extraction of approximately 45.3 million tonnes (Mt) of coal over a 21 year period with approximately 3.6 Mt extracted each year. The Stage 3 of the project includes the building of a surface infrastructure site (SIS) off Quorrobolong Road, south of Kitchener.

This Traffic Management Plan (TMP) is for the construction of the SIS, located off Quorrobolong Road, which will consist of:

- an access road connected to Quorrobolong Road with a RTA type BAL intersection
- an upcast and downcast ventilation shaft
- main ventilation fan
- bath house, workshops, stores and offices
- electricity substation and distribution lines
- service boreholes
- an upgrade of Quorrobolong Road/SIS access road intersection to an RTA type AU after commencement of construction of the mine shaft but before construction of the SIS.

## 1.1 Site location

The SIS is located off Quorrobolong Road, to the south of the town centre of Kitchener. The site location and road network are shown on Figure 1-1.



Source: [www.map.google.com.au](http://www.map.google.com.au)

Figure 1-1 Locality plan

## 1.2 Existing road network

As a part of a Traffic Impact Assessment (TIA) for the Stage 3 Extension Environmental Assessment, the existing road network was examined in order to identify the potential traffic issues in a relation to the shaft construction.

**Quorrobolong Road** is a two-lane, two-way rural road. The pavement is generally in good condition. At the proposed access point to the shaft construction site, the road seal width is approximately 6 m, with the shoulder width generally 1.2 m over the culverts. 19 m B-doubles are permitted to travel on Quorrobolong Road. The speed limit on this road is 100 km/h.

**Sandy Creek Road** is a two-lane, two-way rural road. The pavement is generally in good condition and has centre and edge line marking. A load limit of 20 tonnes applies to one lane wooden Wallis Creek Foresters Bridge, located approximately 8 km east of Sandy Creek Road/Quorrobolong Road intersection. The speed limit on this road is 100 km/h.

**Wollombi Road (MR181A)** is a two-lane, two-way road. Wollombi Road adjoins to Maitland Road at the Wollombi Road/Maitland Road/Vincent Road intersection in the Cessnock town centre. Wollombi Road provides street parking and bicycles lanes in the town centre. The speed limit within the town centre is 60 km/h. 25/26 m B-doubles are permitted on this road with the 4.6 m vertical clearance limit.

**Aberdare Road (MR220)** is a sub-arterial road. Aberdare Road has a posted speed limit of 60 km/h. 19 m B-doubles are permitted on this road.

**Maitland Road (MR588)** is a two-way, two-lane arterial road. Maitland road provides the main arterial link between the Cessnock town centre and Kurri Kurri. The 4.6 m vertical clearance limit applies on this road.

**Vincent Street (MR220)** is an urban road that extends between Wollombi Road in the north and Quorrobolong Road in the south. It is typically a two-lane urban road. 19 m B-doubles are permitted to travel on this Road.

Table 1-1 shows traffic volume on the surrounding road network.

**Table 1-1 Traffic volume on surrounding road network**

Road	AADT	%HV	AM Peak (8:00–9:00 am)		PM Peak (4:00–5:00 pm)	
			Both direction	%HV	Both direction	%HV
Wollombi Road	18201	5%	719	9%	811	4%
Vincent Road	8116	9%	435	16%	744	6%
Aberdare Street	10372	6%	682	10%	905	6%
Quorrobolong Road	664	6%	56	9%	49	6%
Sandy Creek Road	1238	6%	85	9%	100	8%

Source: Traffic Impact Assessment (GHD, 2008)

### 1.3 TMP requirements checklist

Table 1-2 provides a checklist of items that the RTA require to be included within a TMP and where these items are included in this report.

**Table 1-2 TMP checklist**

<b>TMP Item</b>	<b>Reference</b>
A. Description or detailed plan of proposed measures	Section 1 and 2
B. Identification and assessment of impact of proposed measures	Section 5
C. Measures to ameliorate the impact of re-assigned traffic	Section 5
D. Assessment of public transport services affected	Section 5
E. Details of provision made for emergency vehicles, heavy vehicles, cyclists and pedestrians	Section 4, Section 5
F. Assessment of effect on existing and future developments with transport implications in the vicinity of the proposed measures	Section 5
G. Assessment of the effects of proposed measures on traffic movements in adjoining Council's areas	Not applicable
H. Public consultation process	Section 6

## 2. Work program

Table 2-1 shows a broad overview of the proposed SIS construction and the mine mobilisation programme. This programme will be updated with the details as the construction programme is developed.

**Table 2-1 Construction schedule**

Activity	Start date	End date
Construction of access road and BAL intersection	December 2009	January 2010
Ventilation shaft construction	December 2009	June 2011
Access intersection upgrade to Type AU	December 2010	Jan 2011
Construction of SIS	December 2010	December 2011
Mine mobilisation	2012	

### 2.1 Access road

An access road is proposed to be constructed between the SIS and Quorrobolong Road. The access road will be constructed by:

- excavating the ground to remove organic material to a depth where the road formation level will have an acceptable strength
- formation of the road using an accept fill, compaction and surfacing
- surfacing of a 20 m section of the SIS access road to reduce gravel spreading from the site onto Quorrobolong Road
- construction of the drainage and installation of the street furniture such as signing.

The low volume of vehicles expected to use the access road during the construction of the ventilation shaft would not warrant a type AU intersection so a type BAL intersection will be constructed in the interim. Appendix C shows the general layout of a BAL intersection extracted from Section 4 - Intersections at Grade of the RTA Road Design Guide 1999. The intersection would be constructed to accord with the specification set out in Cessnock Council's document *Engineering Requirements for Development* – Chapter 4. A detailed design of the BAL intersection will be submitted to Council for approval prior to any intersection work being undertaken.

The Quorrobolong Road/SIS access road intersection will be upgraded to a type AUR intersection, in accord with the requirements of Planning Approval, prior to the construction of the surface infrastructure support buildings (provisionally December 2010). A detailed design for the AUR upgrade will be submitted to the Council for approval prior to any intersection upgrade work being undertaken.

## 2.2 Ventilation shaft construction

The ventilation shaft will be constructed by sinking a pilot borehole which will then be reamed out to the required size, lined with steel/concrete composite lining and grouting poured in place to stabilise the shaft. The ventilation shaft construction will also include construction of a concrete slab at the head of the shaft and several temporary construction buildings.

To construct the ventilation shaft, the following truck movements are expected:

- 40 semi-trailers over a week period to deliver the temporary site buildings and drilling equipment
- 1 semi trailer per day delivering steel linings for the duration of the ventilation shaft construction
- 2 concrete trucks per day for the duration of steel/ concrete composite liner construction
- 8 water bowsers per day for the duration of the ventilation shaft construction
- 10 concrete trucks per day for the duration of the grouting in of the shaft liner.

## 2.3 Intersection upgrade

The Quorrobolong Road/mine access road intersection is proposed to be upgraded from a type BA to a type AUR intersection prior to the construction of SIS buildings. The upgrade would require the widening of Quorrobolong Road on both sides and minor improvements to the drainage. This work would require lane occupancy licences and the introduction of a speed limit for the work zone.

A further TCP will be prepared for the upgrade work to this intersection once a detailed design has been undertaken and the construction phasing of intersection upgrade works has been determined. The objective of the upgrade works phasing will be to maintain traffic movements past the site access and avoid a closure to traffic if this is practical.

## 2.4 Surface infrastructure support buildings

The details of construction of the surface infrastructure support buildings are yet to be finalised. However, the volume of the site traffic is expected to be low and can be managed by adhering to the heavy vehicle management measures provided in this TMP.

### 3. Plant and equipment

The construction of the access road, the construction of a type BA Quorrobolong Road/site access road intersection and its upgrade to an AUR intersection, before the construction of the surface infrastructure site, are the only activities that will require plant and equipment on Quorrobolong Road.

To construct the interim type BA intersection and the site access road, the following plant and requirement will be needed on the site:

- bulldozer
- grader
- water bowsers
- delivery trucks
- road roller
- pavement sealing plant (chip seal)
- temporary traffic management signs and barrier.

To construct the upgrade to a type AUR intersection, the following additional plant will be required:

- profiler
- pavement sealing plant
- line marking truck.

## 4. Heavy vehicles

Heavy vehicles will be needed for the construction of the access road and the SIS.

The Traffic Impact Assessment (TIA) prepared by GHD in July 2008, as a part of Stage 3 extension Environmental Assessment, recommends that:

- heavy vehicles should avoid the AM and PM peak hours
- heavy vehicles should use the routes described in Table 4-1. These use the heavy vehicle routes preferred by the RTA.

**Table 4-1 Proposed heavy vehicle routes**

Direction (from)	Proposed heavy vehicle route
North	New England Highway – Wine County Drive – Allandale Road – Wollombi Road – Vincent Road – Quorrobolong Road
West	Great North Road – Wollombi Road – Vincent Road – Quorrobolong Road
North-East	New England Road – Cessnock Road – Main Road – Lang Street – Mitchell Avenue – Cessnock Road – Maitland Road – Vincent Street – Quorrobolong Road
East	Sydney Newcastle Freeway – John Renshaw Drive – Tarro Street – Victoria Street - Mitchell Avenue – Cessnock Road – Maitland Road – Vincent Street – Quorrobolong Road
East (Alternative)	Sydney Newcastle Freeway – George Booth Drive - John Renshaw Drive – Tarro Street – Victoria Street - Mitchell Avenue – Cessnock Road – Maitland Road – Vincent Street – Quorrobolong Road
South-East	Sydney Newcastle Freeway – Freemans Drive – Lake Road – Caledonia Street – Cessnock Street – Aberdare Street – Vincent Street – Quorrobolong Road

### 4.1 Oversized vehicles

Where practical, the use of oversized vehicles will be avoided and minimised. This will be achieved by dividing loads. If it is not practical to divide loads and an oversized vehicle is needed an Oversized Vehicle Plan will be prepared, in consultation with the RTA Transport Management Centre and the Police.

The RTA, Council and the Police will need to be consulted regarding the timing and routes used by all oversized vehicles.

## 5. Traffic issues register

Traffic issues, during the construction period are specified in Table 5-1 which also includes: affected stakeholders, the responsible party and control measures.

**Table 5-1 Traffic issues register**

Traffic issues	Community stakeholders affected	Responsible party	Mitigation measures
Additional number of heavy vehicles on the surrounding road network.	Cessnock City Council Roads and Traffic Authority of NSW NSW Police Local residents and businesses School bus operators Emergency services NSW Fire Brigade	Shaft Construction Project Manager	The additional volume of heavy vehicles will be managed by restricting the use of these vehicles to outside the peak traffic hours.
Reduced road width on Quorrobolong Road in order to provide sufficient safety work zone during the construction of the access road and the construction of the interim type BAL intersection.  Reduced road width on Quorrobolong Road and lane closures to allow the safe construction of the upgrading of the intersection to a type AUR intersection.	Cessnock City Council Roads and Traffic Authority of NSW NSW Police Local residents and businesses School bus operators Emergency services NSW Fire Brigade	Shaft Construction Project Manager	Any partial road closure will be in accordance with the RTA approved TCP. Where practical, two directional traffic movements will be maintained.  Dialogue with the key stakeholders will be maintained so that all parties are informed of progress and any activity affecting traffic and transport on Quorrobolong Road.
Site vehicles tracking dust and gravel onto Quorrobolong Road from the site access road.	Cessnock City Council	Shaft Construction Project Manager	The entry into the site will be inspected regularly and if gravel has been tracked on to the road this will be swept up.

Traffic issues	Community stakeholders affected	Responsible party	Mitigation measures
Use of Quorrobolong Road by oversized vehicles.	Cessnock City Council Roads and Traffic Authority of NSW NSW Police	Shaft Construction Project Manager	All deliveries by oversized vehicles will need to be managed and will require coordination and consultations with the RTA, Police and Council.
Pedestrians and cyclists.	Road users	Shaft Construction Project Manager	Any work zone on the public road will be implemented with due consideration for pedestrians and cyclists Where necessary directional signing will be installed to direct pedestrian and cyclists away from the work zone.
Buses and other public transport.	Road users	Shaft Construction Project Manager	No public bus services regularly use Quorrobolong Road.  Only the school bus service does use Quorrobolong. The operators of the school bus have been informed of the proposed works and will be kept informed of progress.

## 6. Stakeholder communications

Consultation with the Council, the Roads and Transport Authority, Police and the operator of the local school bus service which uses Quorrobolong Road has been undertaken and dialogue with these parties will continue for the duration of the project.

If an accident occurred, on or adjacent to the public road, affecting operation and use of the road, the stakeholders listed in Table 6-1 are to be informed.

**Table 6-1 Stakeholder communication**

<b>Stakeholder</b>	<b>Contact number</b>
Cessnock City Council	(02) 4993 4261
Roads and Traffic Authority of NSW - Mr Geoff Warnick	(02) 4924 0267
RTA - Transport Management Centre	(02) 9213 2701
NSW Police (Cessnock Station) - Sgt Paterson	(02) 4934 0200
School bus operator (Rover Coaches) - Mr Ashley Fallen	(02) 4990 1699

## 7. Occupational health and safety

The road works construction site is to be managed under the appointed Civil contractor's Occupational Health and Safety (OH&S) Management System.

The SIS construction site is to be managed under Austar Coal Mine's Occupational Health and Safety (OH&S) Management System.

## 8. Traffic control resources

Traffic control will be required for the BAL type intersection of the site access road and Quorrobolong Road and for the construction of a RTA type AUR intersection prior to the construction of the SIS buildings.

A prequalified traffic control company or staffs will need to be engaged to provide traffic control services which would include the installation of all signs and barriers. These traffic controllers are required to ensure a safe work site on the public road.

In accordance with Cessnock City Council requirements a Variable Message Sign (VMS) will be placed on each approach to the work site to inform motorists of the changed traffic conditions, as an additional advanced warning device.

Typical traffic control plans suitable for the connection of the access road and the intersection upgrade are included in the Appendix B. Site specific TCP's will be submitted for approval by Council prior to works commencing.

## 9. Approval

This TMP requires approval of Cessnock City Council prior to commencement of the construction works on the site.

An application for the 60 km/h speed limit, for the work zone, will be lodged with Cessnock City Council, which acts as the Road and Traffic Authority of NSW's delegate for road works speed zones, prior to road works commencing.

An application for use of a Variable Message Sign (VMS) will be made to the RTA prior to establishing the VMS on site.

## 10. Command

The project Construction Manager has yet to be appointed by Austar. The Construction Manager will be the person responsible for the overall management of the SIS project, including work on the public road. The name of the Construction Manager will be provided as part of the ongoing monitoring protocol with Council.

All enquiries, prior to a Construction Manager being appointed, can be directed to Mr Gary Mulhearn on 02 4993 7200.

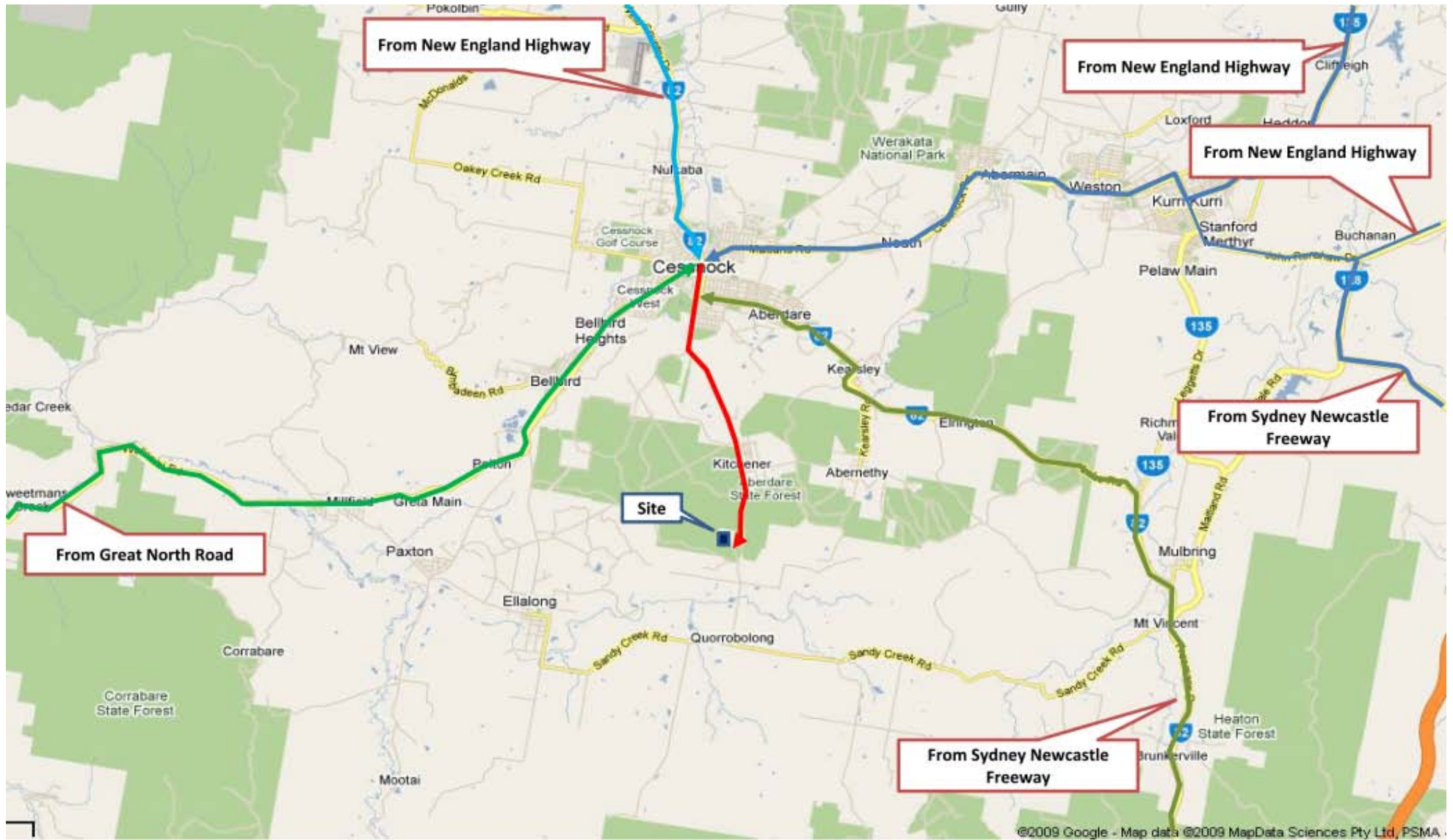
## 11. Reference

- Austar Coal Mine (2009) – Stage 3 Surface Infrastructure Site – Shaft Construction Environmental Management Plan
- Australian Standard (2009) – (AS 1742.3) Manual of Uniform Control Devices Part 3: Traffic control devices for works on roads
- GHD (2008) – Traffic Impact Assessment
- Roads and Traffic Authority of NSW (2001) - Procedures for use in the Preparation of a Traffic Management Plan
- Roads and Traffic Authority of NSW (2006) – Traffic Control at Work Sites

## **Appendix A**

---

Heavy vehicle routes



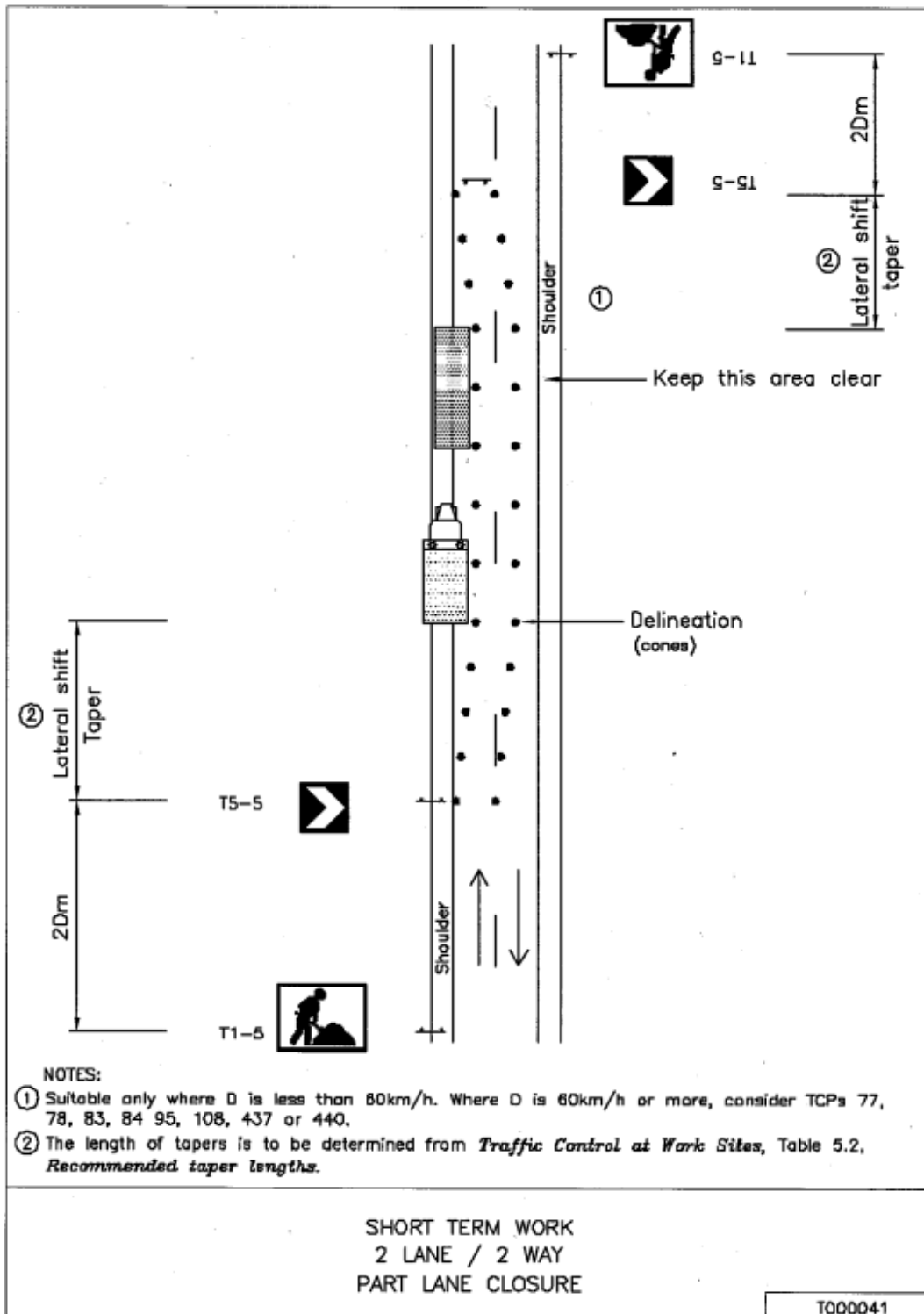
Plan showing Heavy Vehicle Routes to the Surface Infrastructure Site

## **Appendix B**

---

Traffic control plan

TCPs, attached in this Appendix B, are extracted from Traffic Control at Work Sites (RTA, 2006)



**TCP 41**



## **Appendix C**

---

Extract from the Roads Design  
Guide, RTA, 1999, showing a type  
BAL intersection

# Lane width on through road 3.0 to 3.5

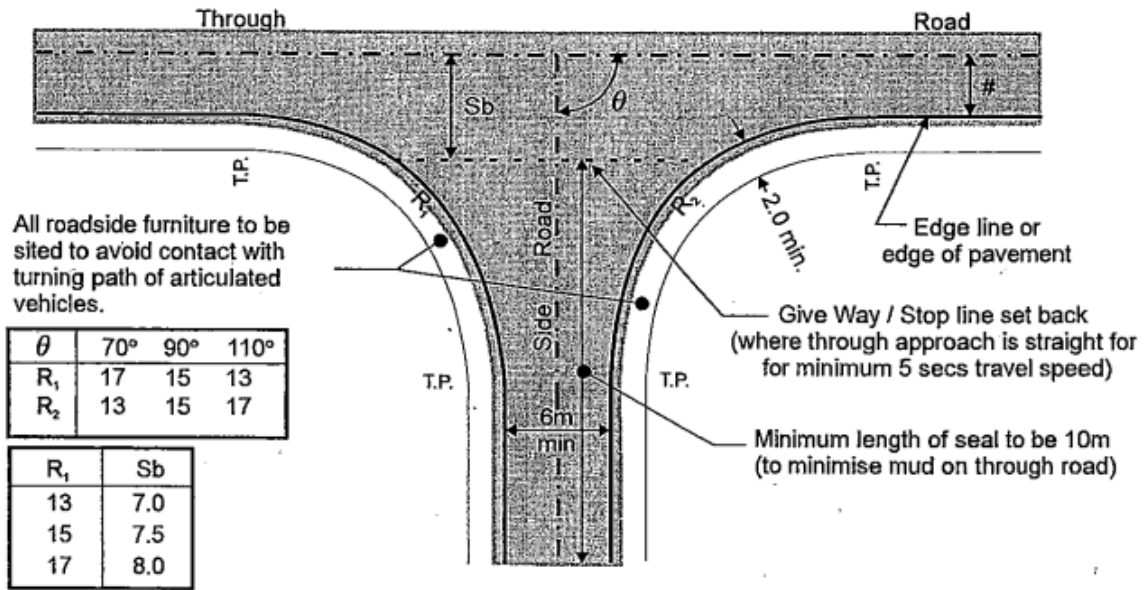


Figure 4.8.34 - Details of Type "BAL" Layout for Rural Sites where Side Road AADT < 50.