Whitehaven

2026

Gunnedah Open Cuts 4.1 Mtpa Coal Haulage Increase Modifications

Modification Report

Appendix A - Road Transport Assessment

Gunnedah Open Cut Operations
2026 to 2030 Haulage Modifications

Prepared for:

Whitehaven Coal Limited

26 March 2026

The Transport Planning Partnership

Gunnedah Open Cut Operations 2026 to 2030 Haulage Modifications

Client: Whitehaven Coal Limited

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Final	26/3/2026	PJD	PJD	

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Austroads (2020), *Guide to Traffic Management Part 3: Transport Study and Analysis Methods.*

Austroads (2023), *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections.*

Department of Planning and Environment (2014), *State Significant Development Assessment Report Vickery Coal Project (SSD 5000).*

GTA Consultants (2012), *Vickery Coal Project, Gunnedah Basin, NSW Road Transport Assessment.*

GTA Consultants (2016), *Tarrawonga and Rocglen Coal Mines Temporary Road Haulage Increase Modification Road Transport Assessment.*

The Transport Planning Partnership (2023), *Tarrawonga Coal Mine Haulage Hours Modification Road Transport Assessment.*

The Transport Planning Partnership (2024), *Vickery Extension Project Modification 1 Road Transport Review.*

The Transport Planning Partnership (2025), *Whitehaven Gunnedah Open Cut Operations 2025 Haulage Modifications – Road Transport Impact Review.*

Transport for New South Wales (2024), *Guide to Transport Impact Assessment.*

Whitehaven (2024), *WHC_PLN_TAR ROC VCM_Traffic Management Plan.*

Whitehaven (2026), *Tarrawonga Mine. Website: https://whitehavencoal.com.au/our-business/our-assets/tarrawonga-mine/* (accessed March 2026)

1 Introduction

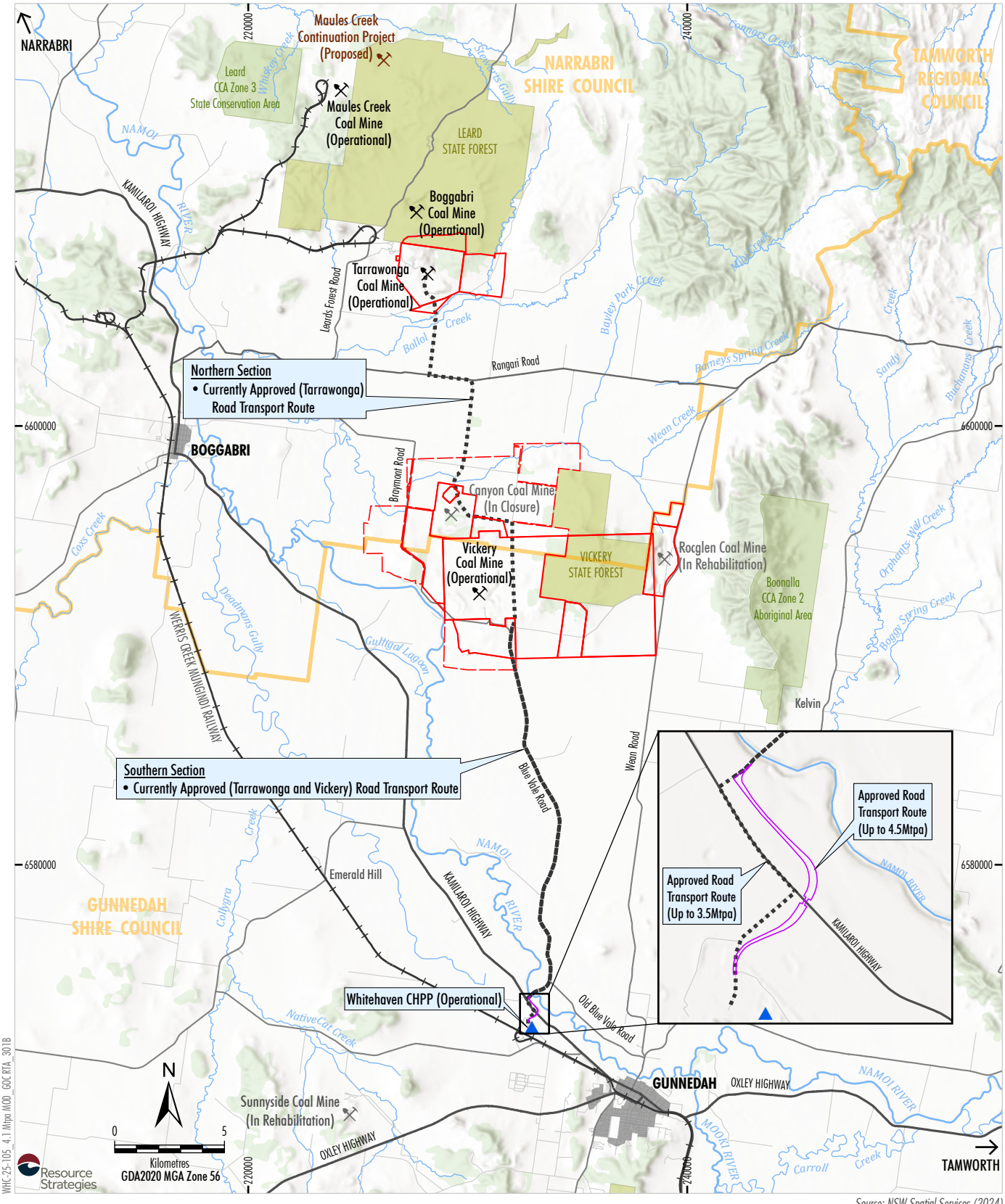
This report has been prepared by The Transport Planning Partnership (TTPP) on behalf of Whitehaven Coal Limited (Whitehaven), to present the findings of an assessment of the implications of proposed modifications to the Tarrawonga Project Approval (MP 11_0047) and Vickery Development Consent (SSD 7480), to increase the cumulative annual maximum run-of-mine (ROM) coal haulage to the Whitehaven Coal Handling and Preparation Plant (CHPP) to 4.1 million tonnes per annum (Mtpa) without constructing the Kamilaroi Highway overpass (the Modifications).

Whitehaven and its subsidiaries own and operate Tarrawonga Coal Mine (Tarrawonga), Vickery Coal Mine (Vickery), and Rocglen Coal Mine (Rocglen), located north of Gunnedah in New South Wales (NSW) and within the Gunnedah Shire Council (GSC) and Narrabri Shire Council (NSC) Local Government Areas (LGA) (Figure 1.1). Whitehaven also owns and operates the Whitehaven CHPP, located west of Gunnedah and within the GSC LGA.

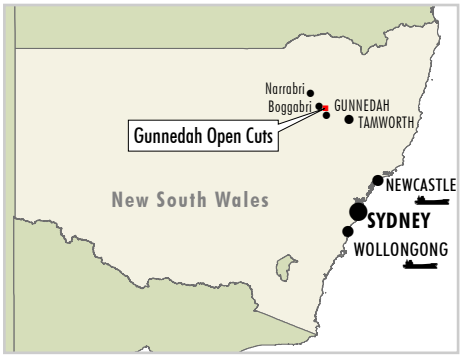
Tarrawonga, Vickery and Rocglen are collectively referred to as the Gunnedah Open Cuts (GOCs). Tarrawonga and Vickery are currently operational, however production at Rocglen ceased in 2019 and approval conditions relating to haulage limits from Rocglen have been formally removed from Project Approval MP 10_0015.

The remainder of this report is set out as follows:

- Section 2 describes the existing operating conditions at the GOCs, including its approved transport conditions and haulage vehicle trip generation assumed for approved operations;
- Section 3 provides a description of the Modifications;
- Section 4 describes the existing road transport environment in the area impacted by the Modifications;
- Section 5 assesses the impacts of the Modification on the road transport environment, including the effects on the haulage trip generation on daily and peak hourly traffic volumes, the operating characteristics of key intersections, and impacts on road safety.
- Section 6 presents the conclusions to the assessment.



Source: NSW Spatial Services (2024)



LEGEND

- Mine Site (Operational)
- Mine Site (Proposed)
- Mine Site (In Closure/Rehabilitation)
- Railway
- Major Road
- Local Road
- State Forest
- State Conservation Area, Aboriginal Area
- Local Government Boundary
- Exploration Licence Boundary (EL)
- Mining Tenement Boundary (ML, CL)
- Approved Transport Route
- Kamilaroi Highway Overpass and Private Haul Road (Not Constructed)
- Whitehaven CHPP

Whitehaven

GOC MODIFICATIONS

Regional Location - Approved Road Transport Route

Figure 1.1

2 GOC Operations

2.1 Approved ROM Coal Transport Route

The Approved ROM Coal Transport Route (Figure 1.1) includes a combination of public and private roads and provides the shortest and least trafficked route from the GOCs to the Whitehaven CHPP, and does not traverse either residential areas or permanent school zones.

The Approved ROM Coal Transport Route for haulage of up to 3.5 Mtpa of ROM coal and return of coal rejects consists of:

- Whitehaven Private Haul Road north-south between Tarrawonga and Rangari Road;
- Rangari Road (between the two sections of private haul road);
- Whitehaven Private Haul Road south of Rangari Road, which crosses Hoad Lane and passes through the former Canyon Coal Mine and east-west to Hoad Lane;
- Hoad Lane between the Whitehaven Private Haul Road and Blue Vale Road;
- Braymont Road between Vickery and Blue Vale Road;
- Blue Vale Road between Hoad Lane and Kamilaroi Highway (noting that realignment of Blue Vale Road is approved with commencement of Vickery Extension Project);
- Kamilaroi Highway between Blue Vale Road and Whitehaven CHPP access road; and
- the Whitehaven CHPP access road.

The approved but not constructed Kamilaroi Highway overpass would replace the southernmost part of the Approved ROM Coal Transport Route described above, by providing a private haul road over Kamilaroi Highway from Blue Vale Road directly to the Whitehaven CHPP access road. The indicative alignment of the Kamilaroi Highway overpass is described in Section 2.3.1 of this report.

2.2 Tarrawonga Coal Mine

Tarrawonga is an open cut coal mine located approximately 42 kilometres (km) north-northwest of Gunnedah within the NSC LGA. Mining operations at Tarrawonga are conducted in accordance with Project Approval MP 11_0047 (as modified), which was granted by the NSW Planning Assessment Commission under delegation from the then NSW Minister for Planning & Infrastructure pursuant to section 75J of the NSW *Environmental Planning and Assessment Act 1979*.

ROM coal is crushed and screened on-site, and the sized ROM coal is loaded onto trucks for transport via the Approved ROM Coal Transport Route to the Whitehaven CHPP at Gunnedah or to domestic customers. Trucks also transport coal rejects from the Whitehaven CHPP to Tarrawonga along the Approved ROM Coal Transport Route. Coal rejects are typically transported in the same fleet of trucks as ROM coal is transported, backloading the ROM coal transport trucks for their return trip from the Whitehaven CHPP to Tarrawonga, and so do not generate any additional vehicle trips.

Modification 10 to Project Approval MP 11-0047 was approved in October 2023, which extended the hours during which haulage from Tarrawonga is permitted. Modification 11 to Project Approval MP 11-0047 was approved in October 2025, which permitted a temporary increase in cumulative haulage from the GOCs to 3.8 Mtpa for the 2025 calendar year.

2.3 Vickery Coal Mine

Vickery is located in the Gunnedah Coalfield, approximately 25 km north of Gunnedah, within the GSC and NSC LGAs. Development Consent for Vickery was originally granted in October 1986. Initial mining activities were underground, and were limited to the 'Red Hill' area. From 1991 to 1998 the 'Shannon Hill', 'Blue Vale' and 'Greenwood' open cuts were developed to mine coal seams near the surface. Mining at Vickery ceased in 1998 and the site was subsequently rehabilitated.

2.3.1 Vickery Coal Project

The Vickery Coal Project was approved in September 2014 (Development Consent SSD 5000) permitting the extraction and transport of up to 4.5 Mtpa of ROM coal in any calendar year until the end of December 2044. It permits construction of the Kamilaroi Highway overpass between Blue Vale Road and the Whitehaven CHPP for use by ROM coal transport trucks. The Kamilaroi Highway overpass is an approved (but not constructed) section of private haul road over Kamilaroi Highway, providing access from Blue Vale Road directly to the Whitehaven CHPP access road.

The assessment report for the Vickery Coal Project (Department of Planning and Environment, 2014) indicates that Whitehaven upgraded the intersection of Kamilaroi Highway with Blue Vale Road during 2011 to cater for the current volume of coal haulage applicable at that time, being 3.5 Mtpa. The assessment report recommended that in response to expected growth in traffic and to overcome lack of certainty relating to the timeframe for construction and commissioning of the Kamilaroi Highway overpass, the overpass be required prior to exceeding the transport of 3.5 Mtpa from the GOCs. The selection of 3.5 Mtpa as the upper limit for Whitehaven haulage prior to commissioning of the Kamilaroi Highway overpass was not identified by assessment of forecasts of road or intersection conditions, rather it was the volume approved to be transported on the Approved ROM Coal Transport route at that time.

2.3.2 Vickery Extension Project

The Vickery Extension Project (SSD 7480) involves the development of the Vickery Coal Mine within Coal Lease 316, Mining Lease (ML) 1718 and ML 1838, and associated infrastructure including a rail spur, on-site CHPP and groundwater borefield. The Vickery Extension Project was approved by the Independent Planning Commission in 2020, and permits the extraction of up to 10 Mtpa of ROM coal with a mine life of 25 years. The rail and CHPP infrastructure for the Vickery Extension Project are not yet constructed and remain subject to a final investment decision by Whitehaven.

Whitehaven has commenced construction and early mining of the Vickery coal deposit, comprising utilisation of coal processing and washing infrastructure at the Whitehaven CHPP, as well as existing road haulage, rail and port capacity. The transport of ROM coal from Vickery commenced in April 2024. The transport of ROM coal and coal rejects is undertaken using the same fleet of vehicles used at Tarrawonga, with rejects typically backloaded in the vehicles used to transport ROM coal.

Modification 1 to SSD 7480 was approved in August 2025, and aligns the approved road haulage hours at Vickery with those approved at Tarrawonga. The following activities are also approved:

- coincidence of the Vickery rail spur and Mine Infrastructure Areas (MIA) construction activity with initial mining activity;
- construction and use of an on-site temporary concrete batching plant during the Vickery rail spur and MIA construction stage;
- construction of pipelines for water transfer points;
- disposal of waste heavy vehicle tyres in the waste rock emplacement areas;
- extraction, crushing and screening of up to 90,000 cubic metres (m^3) of gravel in any calendar year from the site for collection by customers, consistent with approved conditions for the Vickery Coal Project (SSD 5000) and Tarrawonga (MP 11_0047);
- improved landform design and an administrative change to Schedule of Lands; and
- an alternative alignment of the approved Blue Vale Road realignment.

Modification 2 to SSD 7480 was approved in October 2025, which permitted a temporary increase in cumulative haulage from the GOCs to 3.8 Mtpa for the 2025 calendar year.

2.4 Rocglen Coal Mine

Rocglen is located in the Gunnedah Coalfield, approximately 25 km north of Gunnedah, within the GSC LGA. Rocglen operated under Project Approval MP 10_0015, but ceased production in June 2019, with the last transport of ROM coal from Rocglen occurring in July 2019. Since then, work has included decommissioning of equipment, demolition of structures, removal of materials, and rehabilitation works, being followed by rehabilitation monitoring and maintenance of the site.

Modification 5 to MP 10_0015 removed haulage limit conditions relating to Rocglen, hence haulage associated with Rocglen has not been considered further in this assessment.

2.5 Whitehaven CHPP

The Whitehaven CHPP is operated in accordance with Development Consent DA 0079.2002, which was granted by GSC under the delegation from the then Minister for Urban Affairs and Planning, and most recently modified in May 2025 (Modification 2) to enable operation until 31 December 2030. DA0079.2002 permits the processing and dispatch of up to 4.1 Mtpa of ROM coal per calendar year at the Whitehaven CHPP, until 31 December 2030.

2.6 Approved Transport Limits

The amount of ROM coal, rejects and gravel permitted to be transported on the Approved ROM Coal Transport Route is limited by conditions applicable to the GOCs individually and cumulatively. The approved transport limits are summarised in Table 2.1. For clarity, the ROM coal transport limits contained in Table 2.1 include up to 150,000 tonnes per annum (tpa) of ROM coal that may be transported from each of Tarrawonga and Vickery to domestic markets by road.

Table 2.1: Summary of Approved Annual Road Transport Limits

Tarrawonga	Vickery	Cumulative
ROM Coal Transport – prior to Kamilaroi Highway overpass		
3.5 Mt	3.5 Mt	3.5 Mt 4.0 Mt in 2017 and 2018 3.8 Mt in 2025
ROM Coal Transport – with Kamilaroi Highway overpass		
3.5 Mt	4.5 Mt	4.5 Mt
ROM Coal Transport – with Vickery Rail Spur and CHPP commissioned		
3.5 Mt	0 Mt 150,000 tpa to domestic markets	3.5 Mt
Coal Rejects Transport (Receipt at GOCs)		
700,000 t	No conditioned limit	-
Coal Transport Hours – Monday to Friday		
4:00 am to 11:15 pm	4:00 am to 11:15 pm	-
Coal Transport Hours – Saturday		
5:00 am to 7:15 pm	5:00 am to 7:15 pm	-
Gravel Transport		
90,000 m^3 7:00 am to 6:00 pm Monday to Saturday	90,000 m^3 7:00 am to 6:00 pm Monday to Saturday	-

Notes: Annual limits at Vickery are based on financial years, annual limits at Tarrawonga are based on calendar years. Mt = million tonnes, t = tonnes

While gravel haulage from Tarrawonga and Vickery is permitted as shown in Table 2.1, Whitehaven's records indicate that no gravel has been hauled from Tarrawonga from 2014 to 2025 inclusive (Whitehaven, 2026). Crushing and transport of gravel occurred from Tarrawonga in early 2026 to provide some material to customers off site as permitted under Project Approval MP 11_0047.

2.7 Coal Haulage Fleet

Whitehaven operates a fleet of trucks used to transport ROM coal and coal rejects to and from the GOC operations, known as Gunnedah Basin Haulage (GBH). The fleet is primarily made up of A-doubles as shown in Figure 2.1, with a nominal payload capacity of 62 t.

Figure 2.1: Typical Configuration of GBH A-Doubles

In accordance with the National Heavy Vehicle Regulator (NHVR), A-doubles are classified as Type 1 road trains which are speed limited to a maximum of the lower of either 90 km/hr or the sign posted speed limit.

Figure 2.2 illustrates the signage located on the rear of the GBH trucks, which includes:

- Truck Number sign (top right);
- 'LONG VEHICLE' (mid-centre);
- 'DO NOT OVERTAKE TURNING VEHICLE' (bottom centre); and
- Red and Yellow rear marking plates (bottom left and right).

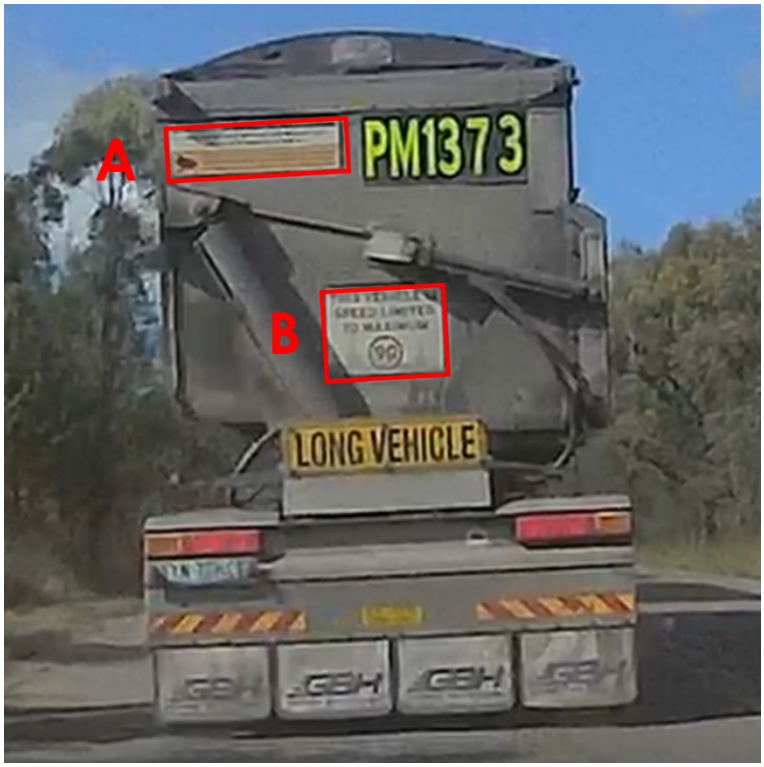
Figure 2.2: Signage on Rear of GBH A-Doubles

Some trucks also include additional rear signage (Figure 2.3) that indicates:

A. 'OVERTAKING OF THIS VEHICLE SHALL BE IN ACCORDANCE WITH NSW ROAD RULES AND/OR WHC POSITIVE COMMUNICATION REQUIREMENTS. THIS VEHICLE IS FITTED WITH CCTV CAMERA WHICH RECORDS THE ENVIRONMENT AROUND THE MACHINE INCLUDING THE BEHAVIOUR OF OTHER ROAD USERS' (top left); and

B. ‘THIS VEHICLE IS SPEED LIMITED TO MAXIMUM 90KM/H’ (mid-centre).

Figure 2.3: Additional Signage on Rear of Some GBH A-Doubles



GBH employs approximately 20 drivers each shift, who work rotating morning and afternoon shifts of eight to ten hours. Morning shift start times are staggered at 4:00 am, 5:00 am and 6:00 am, and the afternoon shifts commence at 2:00 pm. Gunnedah Basin Haulage employs approximately five additional personnel, who work a day shift between approximately 7:00 am and 5:00 pm, Monday to Friday. Between shifts, the GBH trucks are parked at a workshop located at Vickery. Maintenance of trucks also occurs at that workshop.

The loading and payload of coal within the load may vary due to variables such as coal quality and type, and operator influence. Whitehaven has recently begun implementing improvements to its ROM coal loading and haulage operations to optimise the payload of each truck. This has included:

- *monitoring of loads to detect and reduce carryback;*
- *refining the positioning of loads to enable optimal filling;*
- *the use of scales on the loader buckets to discern optimal filling volumes in situ instead of waiting to go over the weighbridge.*

2.8 Traffic Management Plan

A Traffic Management Plan (TMP) (Whitehaven, 2024) applies to Whitehaven's transport activities at Tarrawonga, Vickery and Rocglen. The TMP was prepared in consultation with NSC, GSC, Transport for New South Wales (TfNSW) and the Department of Planning, Housing and Infrastructure. It contains requirements and procedures regarding the operation of haulage trucks and their interaction with other road users.

The TMP includes specific requirements for the drivers of haulage trucks at the intersections on Kamilaroi Highway, including requirements to:

- give way to traffic as required;
- merge into traffic in a professional manner;
- travel at a maximum speed of 30 kilometres per hour (km/h) whenever the indicator is engaged;
- observe all speed limits and safety signage and adhere to road rules;
- maintain a separation distance of at least 250 metres (m) at all times when following another vehicle, except when overtaking those vehicles/machines where the rules allow; and
- not impede the flow of through traffic on Kamilaroi Highway by regulating their speed within the acceleration/merge lane when entering Kamilaroi Highway from Blue Vale Road to take into consideration any other vehicles on Kamilaroi Highway before entering the through lane, and then enter the deceleration lane into the CHPP access at the first opportunity.

Additional safety management systems have also been implemented to the GBH fleet including:

- Global Positioning System tracking (operational through CoalTrak) and engine management system to allow:
  - supervisors, driver trainer and managers to observe the drivers' behaviour;
  - monitoring of safety factors such as driver fatigue, incidents and accidents;
  - monitoring of the location of haulage trucks; and
  - implementation of alerts for speeding or harsh braking.
- Haul truck cameras (out-of-vehicle and in-vehicle) to:
  - improve driver training by allowing review and feedback on driver performance; and
  - assist in identifying the cause of incidents and accidents.
- Fatigue monitoring, which detects eye movements and behaviours associated with fatigue, to support operators with real time information about levels of alertness.

2.9 Road Maintenance

Whitehaven has entered into road maintenance agreements with GSC and NSC for the maintenance of public sections of the Approved ROM Coal Transport Route.

The road maintenance agreement with GSC requires Whitehaven to pay 95 % of the road maintenance costs incurred by GSC for Hoad Lane and Blue Vale Road. A road maintenance agreement with GSC on the back of an agreement that GSC has with TfNSW requires Whitehaven to pay 100 % of road maintenance costs incurred by GSC for the section of Kamilaroi Highway that Whitehaven uses along the Approved ROM Coal Transport Route.

Part B Condition B77 of the Vickery Extension Project consent (SSD 7480) requires Whitehaven and GSC to review and/or renew the agreement once cumulative road haulage exceeds 3.5 Mtpa. Whitehaven has commenced consultation and engagement with GSC regarding the maintenance agreement.

The road maintenance agreement with NSC requires the roads and intersection along the Approved ROM Coal Transport Route within the Narrabri LGA to be maintained in good condition at all times at Whitehaven's cost.

Whitehaven is planning to undertake a program of maintenance on the private sections of the haulage routes. The program is planned for the second half of 2026, with a focus on signage and delineation.

2.10 Complaints Registers

TTPP has reviewed Whitehaven's complaints registers to identify any incidents that have occurred that relate to its operations on the Approved ROM Coal Transport Route over the five-year period to the end of February 2026. Community complaints received by Whitehaven that relate to GOC traffic on the Approved ROM Coal Transport Route are summarised in Table 2.2.

Table 2.2: Community Traffic-Related Complaints on Approved ROM Coal Transport Route

Date	Nature of Complaint	Investigation and Action
	Tarrawonga	
19/3/2024	*Community member called the complaints line regarding a broken windscreen. A rock from a Haul truck had hit the windscreen while travelling on Blue Vale Road.*	*Whitehaven Coal has contacted the complainant and has verified the cause of the incident. This has been resolved to the satisfaction of the complainant.*
	Vickery	
28/6/2024	*Complainant advised that they had found a large lump of coal on Blue Vale Road.*	*WHC (Whitehaven) personnel met with the complainant in person and followed up by telephone. Haulage truck inspections have been increased prior to leaving site and the procedure for loading the trucks has been reviewed. Consultation with the complainant is ongoing as is monitoring of the outcomes of the procedural review.*
	CHPP	
12/7/2023	*Requesting damage to be repaired following vehicle being struck with rock from haul truck.*	*Spoke to complainant and haulage company. Contacted complainant to arrange repair of vehicle.*
25/8/2025	*Community member reported a traffic hazard regarding a GBH Coal Road Train merging onto Kamilaroi Highway.*	*No footage of incident could be found. A merging awareness toolbox slide will be rolled and a review of road signage undertaken. Complainant contacted and closed out.*

Complaints received over the five-year period to end of February 2026.
Source: Tarrawonga Coal Mine Community Complaints Register and Vickery Coal Mine Community Complaints Register, available on the Whitehaven website.

The review of community complaints suggests that issues are satisfactorily rectified where necessary.

2.11 Haulage Transport Forecasts

Conditions relating to the transport of ROM coal from the GOCs have been modified over time, including changes to haulage hours, limits on haulage from individual mines, and limits on haulage cumulative from the GOCs mines. Assessments of those changed conditions have included forecasts of average hourly and daily trips generated by ROM coal haulage, taking into consideration the fleet of trucks used for ROM coal transport and haulage hours. Forecasts have typically assumed that haulage would occur over an average 48 weeks per year.

The transport of 4.5 Mtpa of ROM coal with the Vickery Coal Project was forecast to generate 670 trips[1] per day (GTA Consultants, 2012), based on use of the previous fleet of trucks that had an average payload of 42 t (although trip generation was conservatively calculated on the basis of an average 40 t payload). That assessment assumed haulage would occur 24 hours per day, seven days per week, i.e. haulage would generate an average of 28 trips per hour.

Vickery Coal Project Development Consent SSD 5000 limited the approved haulage hours to between 6:00 am and 9:15 pm Monday to Friday, and from 7:00 am to 5:15 pm on Saturdays, and limited haulage to 3.5 Mtpa prior to construction of the Kamilaroi Highway overpass, and to 4.5 Mtpa thereafter. Based on the haulage fleet in use at that time (average payload of 42 t), and the approved haulage hours, the transport of 3.5 Mtpa prior to commissioning of the Kamilaroi Highway overpass would be expected to generate an average of (GTA Consultants, 2016):

- 40 vehicle trips per hour;
- 612 vehicle trips per weekday; and
- 412 vehicle trips per Saturday.

When Development Consent SSD 5000 was issued, it would therefore have anticipated that haulage from the GOCs would generate the above trips prior to commissioning of the Kamilaroi Highway overpass, i.e. that construction of the Kamilaroi Highway overpass would not be required to support the above haulage trips. Following commissioning of the Kamilaroi Highway overpass, Development Consent SSD 5000 anticipated that haulage of 4.5 Mtpa from the GOCs would generate an average of:

- 52 vehicle trips per hour;
- 788 vehicle trips per weekday; and
- 530 vehicle trips per Saturday.

During calendar years 2017 and 2018, the cumulative haulage limit from the GOCs was 4.0 Mtpa. Based on the haulage hours and fleet in use at that time, this was expected to generate an average of (GTA Consultants, 2016):

- 46 vehicle trips per hour;
- 700 vehicle trips per weekday; and
- 470 vehicle trips per Saturday.

Improvements in the efficiency of the haulage fleet, primarily related to payload increases and other efficiency improvements since the above assessments were prepared, have reduced the number of trips required on the Approved ROM Coal Transport Route to complete the coal transport task.

[1] Consistent with Austroads definition, a trip is a one-way movement. A truck delivering ROM coal to the Whitehaven CHPP then travelling to one of the GOCs generates two vehicle trips.

The average trips forecast to be generated by the approved temporary increase in the haulage limit to 3.8 Mtpa of ROM coal from the GOCs during the 2025 calendar year (TTPP, 2025) took into account the available number of haulage days and the currently approved haulage hours during the busiest two months for ROM coal haulage in 2025. The assessment determined that the average hourly and daily number of trips that would be generated during the busiest months in 2025 would be:

- 24 vehicle trips per hour;
- 452 vehicle trips per weekday; and
- 334 vehicle trips per Saturday.

The average trips forecast to be generated by the approved transport of 3.5 Mtpa of ROM coal from Tarrawonga and Vickery over the currently approved haulage hours (TTPP, 2023 and 2024) until 31 December 2030 are:

- 22 vehicle trips per hour;
- 420 vehicle trips per weekday; and
- 310 vehicle trips per Saturday.

Table 2.3 summarises the average daily and hourly haulage truck trip generation forecasts on the southern part of the Approved ROM Coal Transport Route for approved cumulative operating conditions at the GOCs as described above.

Table 2.3: Summary of Approved Haulage Average Trip Generation Forecasts

Cumulative Haulage from GOCs	Vehicle Trips per Hour	Vehicle Trips per Weekday	Vehicle Trips per Saturday
4.5 Mtpa after commissioning of Kamilaroi Highway overpass, anticipated when Development Consent SSD 5000 was approved	52	788	530
3.5 Mtpa prior to commissioning of Kamilaroi Highway overpass, anticipated when Development Consent SSD 5000 was approved	40	612	412
4.0 Mtpa in 2017 and 2018 calendar years	46	700	470
3.8 Mtpa in 2025 calendar year	24	452	334
3.5 Mtpa to 31 December 2030	22	420	310

3 The Modifications

The Modifications to Tarrawonga Project Approval (MP 11_0047) and Vickery Development Consent (SSD 7480) would increase the cumulative maximum ROM coal haulage from the GOCs from 3.5 Mtpa to 4.1 Mtpa, without constructing the Kamilaroi Highway overpass. The proposed increased limit is sought until 31 December 2030, which aligns with the consented life for both Tarrawonga and the Whitehaven CHPP.

The Modifications do not propose any change to the approved haulage hours or the Approved ROM Coal Transport Route. Throughout the proposed Modification period and consistent with existing approved conditions, gravel may continue to be collected from Tarrawonga and Vickery by customers, using independent contractors.

The impact of the Modifications compared with approved conditions would therefore be limited to that part of the Approved ROM Coal Transport Route on which ROM coal is transported without construction of the Kamilaroi Highway overpass. The key impacts would therefore occur at:

- Blue Vale Road between Kamilaroi Highway and the overpass connection location;
- Kamilaroi Highway between and at its intersection with Blue Vale Road and the Whitehaven CHPP access; and
- The Whitehaven CHPP access immediately south of Kamilaroi Highway.

It is assumed the increased haulage would commence upon approval to the Modifications, in 2026. This assessment focusses on the impacts of the Modifications on the safety and performance of the parts of the road network above. It considers the future traffic conditions in 2030, taking into consideration growth in traffic that may occur over time that is unrelated to Whitehaven's activities.

4 Road Transport Environment

4.1 Road Network

The public roads that make up the Approved ROM Coal Transport Route are typically two-lane, two-way sealed roads, with marked edgelines, single or double centrelines, and guide posts with reflective markers. The enforceable speed limit is typically 100 km/h on the public roads, however a speed limit of 80 km/h is signposted on Blue Vale Road and Hoad Lane on their approaches to Braymont Road, on the Private Haul Road between its two intersections with Hoad Lane, and on the Private Haul Road to the south of Goonbri Road. A speed limit of 60 km/h is signposted on Braymont Road east of and in proximity to the Vickery access. Within Tarrawonga, the signposted speed limit is 60 km/h, within Vickery, a speed limit of 20 km/h is signposted on departure from the public road (increasing to 40 km/h past the security gate), and within the Whitehaven CHPP, a speed limit of 40 km/h is signposted.

The key public road intersections and roads relevant to the Modifications are briefly described below.

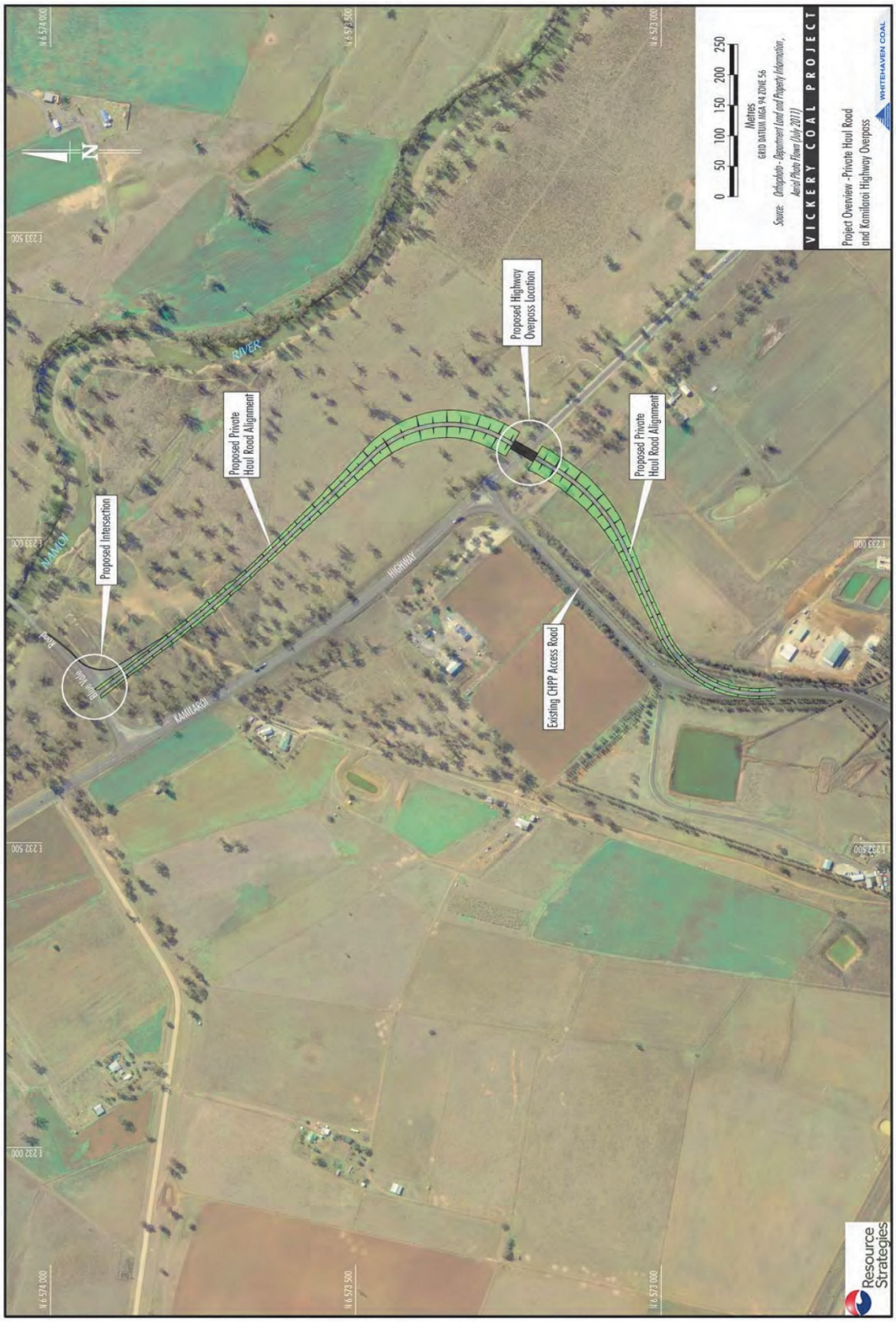
4.1.1 Kamilaroi Highway Overpass

The Kamilaroi Highway overpass is an approved but not constructed section of private haul road to be developed over the Kamilaroi Highway, that was conceptually designed to provide access from Blue Vale Road directly to the Whitehaven CHPP access road as noted in Section 2.3.1.

GTA Consultants (2012) indicates that conceptually, the Kamilaroi Highway overpass would intersect with Blue Vale Road at a new T-intersection between Kamilaroi Highway and the Namoi River, at which the overpass would be the minor road and Blue Vale Road would be the major road. As shown in Figure 4.1, the Kamilaroi Highway overpass would merge with the Whitehaven CHPP access road approximately south-west of the existing Kamilaroi Highway intersection. The Kamilaroi Highway overpass would cross over Kamilaroi Highway to the south-west of the existing intersection with the Whitehaven CHPP access.

Once constructed, the Kamilaroi Highway overpass would be used by all haulage trucks transporting ROM coal and rejects between the GOCs and the Whitehaven CHPP, and would be expected to be used by Whitehaven personnel travelling between the GOCs and Whitehaven CHPP. Personnel or other vehicles travelling to and from the Whitehaven CHPP via Kamilaroi Highway (e.g. to/from Gunnedah or Boggabri) would continue to use the existing intersection of Kamilaroi Highway with the Whitehaven CHPP access when entering or exiting the Whitehaven CHPP. Aside from those travelling to/from the Whitehaven CHPP, personnel or other vehicles travelling to and from the GOCs would continue to use Kamilaroi Highway and Blue Vale Road.

Figure 4.1: Conceptual Layout of Kamilaroi Highway Overpass



4.1.2 Blue Vale Road

Between Kamilaroi Highway and the location of the Kamilaroi Highway overpass intersection, Blue Vale Road has a single travel lane in each direction, double two-way barrier centrelines and painted edgelines. There is a narrow sealed shoulder and unsealed shoulder of varying widths.

The speed limit is 100 km/h, with a "REDUCE SPEED" sign provided for southbound traffic approaching the intersection. Northbound vehicles enter Blue Vale Road from Kamilaroi Highway, and would therefore be expected to be accelerating from their lower negotiation speed on this part of Blue Vale Road. Operating speeds on this section of Blue Vale Road would therefore be below the speed limit.

4.1.3 Kamilaroi Highway and Blue Vale Road Intersection

The geometry of the intersection of Kamilaroi Highway with Blue Vale Road includes a channelised right-turn deceleration lane in Kamilaroi Highway for northbound vehicles, left-turn slip lane and dedicated acceleration lane for southbound vehicles, and separate right-turn lane for south-eastbound vehicles turning right to Kamilaroi Highway, as shown in Figure 4.2.

Figure 4.2: Blue Vale Road Intersection with Kamilaroi Highway

4.1.4 Kamilaroi Highway

Between Blue Vale Road and the Whitehaven CHPP access, Kamilaroi Highway has a single through travel lane in each direction. The acceleration lanes on the departure side of the intersections with Blue Vale Road and the Whitehaven CHPP access merge with the through lane approximately midway between the two intersections. The merges are linemarked to give priority to the through movement along Kamilaroi Highway, requiring vehicles in the acceleration lane to select a gap in traffic in the through lane. Signposting on this section of Kamilaroi Highway includes "FORM 1 LANE" (G9-15) for both directions of travel, and a symbolic warning sign for the presence of kangaroos (W5-29) for northbound travel only. TTPP notes that G9-15 is typically used for a "zip" merge rather than a lane change merge, at which "LEFT LANE ENDS" (W4-9) signage would more commonly be used.

The merge tapers occur over a distance of approximately 120 m, which exceeds the Austroads (2023) requirements, and the shoulders on Kamilaroi Highway are widened and sealed to operate as run-out areas beyond the northbound and southbound merges from the acceleration lanes. Channelised right-turn lanes are developed on the approach side of the two intersections. Guideposts are provided on both sides of the road and at a culvert on this section.

4.1.5 Whitehaven CHPP and Kamilaroi Highway Intersection

The Whitehaven CHPP is accessed via a priority-controlled T-intersection located on Kamilaroi Highway approximately 700 m south-east of the Blue Vale Road intersection. At the intersection, a channelised right-turn deceleration lane is provided in Kamilaroi Highway for vehicles entering the Whitehaven CHPP from the north, and a left-turn slip lane and dedicated acceleration lane is provided for vehicles exiting the Whitehaven CHPP to the north. The layout of the intersection is shown in Figure 4.3.

Figure 4.3: Whitehaven CHPP Intersection with Kamilaroi Highway

4.2 Traffic Surveys

To quantify existing traffic conditions on roads and at intersections that would be impacted by the Modifications, traffic surveys were conducted in October and November 2025. The scope of surveys and their findings are presented in this section.

4.2.1 Automatic Tube Count Surveys

Automatic tube counters (ATCs) were used to collect traffic data over two weeks from Thursday 23 October 2025 to Wednesday 5 November 2025 inclusive to quantify existing traffic conditions on the public roads. The surveys were conducted following approval of the increase to the coal haulage limit to 3.8 Mtpa for the 2025 calendar year, and during typical haulage operations from the GOCs. The ATC surveys were conducted at the following locations that are relevant to the Modifications (Figure 4.4):

- Blue Vale Road east/north of Kamilaroi Highway; and
- Kamilaroi Highway between Blue Vale Road and Whitehaven CHPP access.

Figure 4.4: Traffic Survey Locations

The ATC surveys included classification of the vehicles based on the Austroads-94 Vehicle Classification System. Under that system, light vehicles (Classes 1 and 2) include motorcycles, cars, vans, 4-wheel drives, and utilities (including those towing a trailer or caravan) with a wheelbase not more than 3.2 m. Heavy rigid vehicles (Classes 3 to 6) include single unit rigid trucks and buses with two, three or four axles and up to 14.5 m long, and articulated vehicles (Classes 7 to 12) include semi-trailers and rigid trucks with trailers, B-doubles and road trains where permitted. The GBH fleet and the contractors' vehicles used for ROM coal and rejects haulage during the traffic survey are typically Class 10 and Class 11 vehicles under the Austroads-94 Vehicle Classification System.

Whitehaven's records indicate that over the survey period, haulage activity included:

- average 249 loads of ROM coal per weekday; and
- average 144 loads of ROM coal per Saturday

This would be expected to generate 498 vehicle trips per weekday, and 288 vehicle trips per Saturday on the Approved ROM Coal Transport Route.

Table 4.1 summarises the average daily traffic as surveyed in October-November 2025, including the classifications as above, with the estimated contribution of haulage trucks associated with Whitehaven's activities, based on the haulage records.

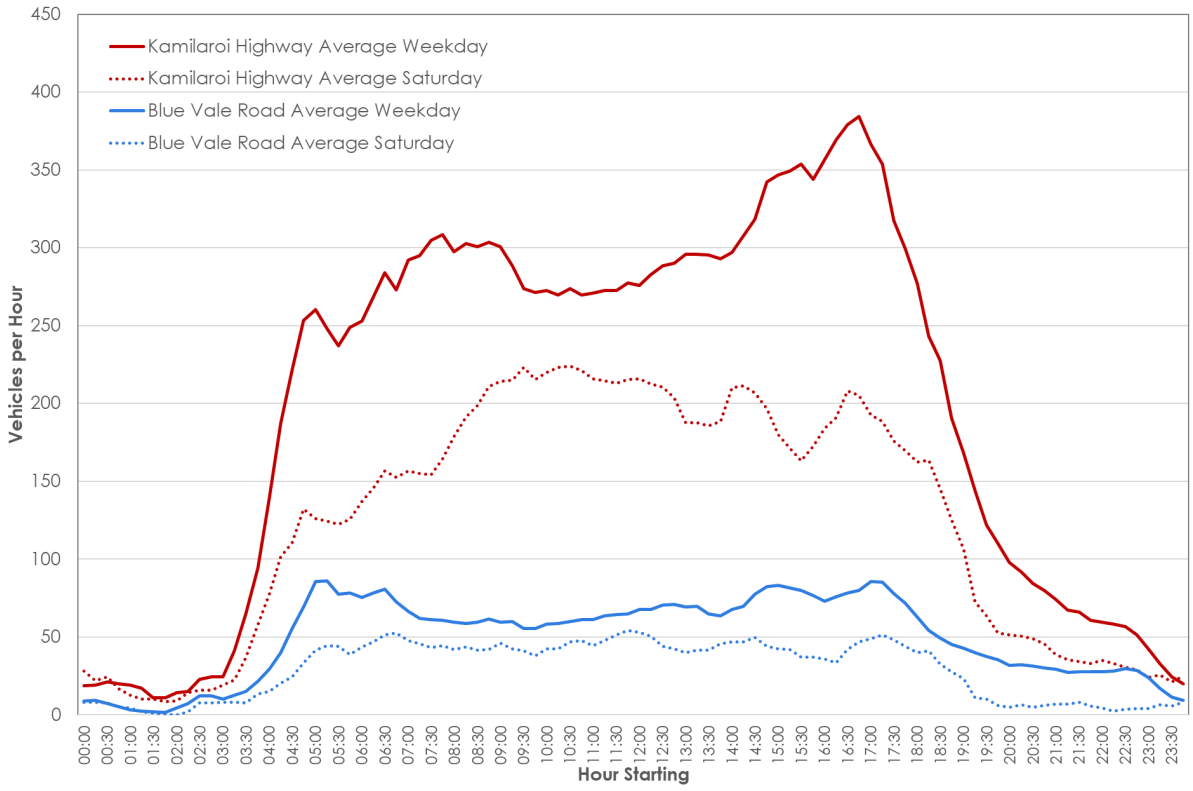
Table 4.1: Daily Two-Way Traffic Volumes 2025 (vehicles per day)

Location	Light	Rigid Heavy	Articulated		Total
			Whitehaven	Non-Whitehaven	
Average Weekday					
Blue Vale Road east of Kamilaroi Highway	556	74	498	59	1,187
Kamilaroi Highway between Blue Vale Road and CHPP	3,141	799	498	382	4,820
Average Saturday					
Blue Vale Road east of Kamilaroi Highway	332	28	288	47	695
Kamilaroi Highway between Blue Vale Road and CHPP	2,125	433	288	136	2,982

Table 4.1 confirms that weekday traffic volumes are higher than Saturday traffic volumes.

Figure 4.5 presents the distribution of hourly two-way traffic at the surveyed locations, on a rolling hourly basis at 15-minute starting times throughout the day.

Figure 4.5: Surveyed Hourly Two-Way Traffic 2025



This indicates that on the average weekday, the peak two-way traffic volume on Kamilaroi Highway in the evening is notably higher than that during the morning. Further review of the data indicates that during the morning, the peak for northbound traffic occurs between 4:45 am and 5:45 am, while the peak for southbound traffic occurs between 7:45 am and

8:45 am, resulting in a lower two-way peak volume. During the evening, the peak demands in each direction overlap with each other to a greater extent, resulting in a higher two-way peak volume.

Table 4.2 summarises the peak hourly two-way traffic volumes surveyed on the average weekday and Saturday.

Table 4.2: Peak Hourly Two-Way Traffic Volumes 2025 (vehicles per hour)

Location	Peak Hour	Light	Rigid Heavy	Articulated	Total
Average Weekday					
Blue Vale Road east of Kamilaroi Highway	5:15 am to 6:15 am 5:00 pm to 6:00 pm	62 48	4 5	20 33	86 86
Kamilaroi Highway between Blue Vale Road and CHPP	7:45 am to 8:45 am 4:45 pm to 5:45 pm	201 283	56 58	51 43	308 384
Average Saturday					
Blue Vale Road east of Kamilaroi Highway	6:45 am to 7:45 am 12:00 pm to 1:00 pm	21 16	2 3	30 34	53 53
Kamilaroi Highway between Blue Vale Road and CHPP	10:30 am to 11:30 am 12:00 pm to 1:00 pm	159 149	28 26	37 41	224 216

Table 4.2 confirms that weekday traffic peak hourly volumes are higher than Saturday peak hourly volumes. Weekday conditions are therefore considered the more critical with regard to the operation of the road network, as existing demands take up more of the available capacity on weekdays.

Whitehaven's records do not allow the level of haulage activity to be accurately quantified at the survey locations on an hourly basis throughout the day. Over the survey period, considering the daily haulage activity and the approved haulage hours, the average hourly haulage activity is estimated at:

- 13 loads of ROM coal per hour on weekdays (generating 26 trips per hour); and
- 10 loads of ROM coal per hour on Saturday (generating 20 trips per hour).

Comparison with Table 4.2 shows that on Blue Vale Road during the average weekday morning peak hour, there were 20 articulated vehicle trips, six fewer articulated vehicles than would be expected to be generated by Whitehaven's haulage activity in an average hour on a weekday.

4.2.2 Intersection Turning Movements

Surveys of vehicle turning movements at key intersections were undertaken over a 24-hour period on Thursday 23 October 2025, at the following intersections relevant to the Modifications (Figure 4.4):

- Blue Vale Road and Kamilaroi Highway; and
- Kamilaroi Highway and the Whitehaven CHPP access.

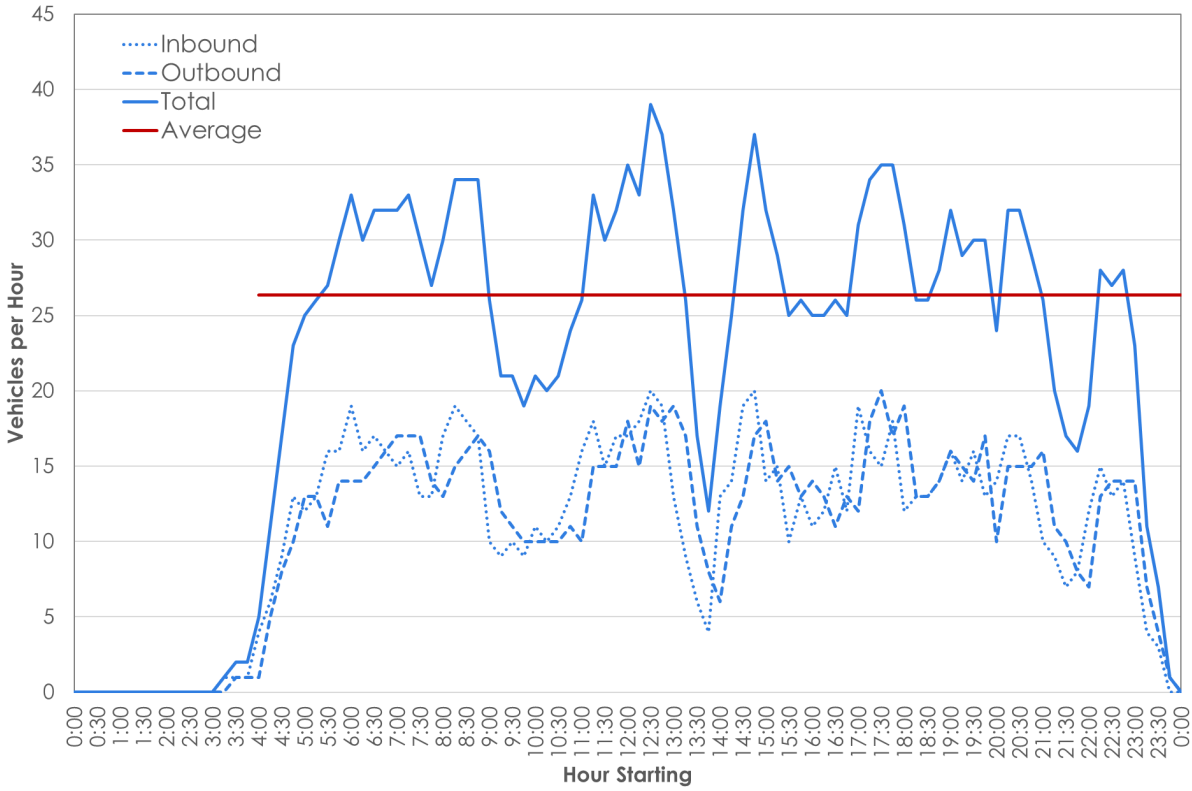
Whitehaven's transportation records indicate that on 23 October 2025 (the day that the intersection surveys were conducted), a total of 259 loads of ROM coal were transported from the GOC to the Whitehaven CHPP. With the return of trucks that are unladen or transporting rejects, this would be expected to generate 518 vehicle trips over the day. This is greater than the average of 452 vehicle trips per weekday anticipated by the haulage trip forecasts (Section 2.11) for the busiest months at the approved maximum haulage of 3.8 Mtpa applicable at the time of the surveys. The intersection survey day is therefore considered to be an above average haulage day for overall haulage of 3.8 Mtpa.

During the survey, both GBH trucks (based at Vickery) and contractors' trucks (typically based on sites in and around Gunnedah) were in use. The survey classified vehicles as light, rigid heavy, articulated heavy (excluding coal haulage trucks), and haulage-type trucks. With regard to haulage-type trucks quantified during the survey, these were identified to the extent possible, and included GBH trucks as well as A-doubles and similar haulage-type trucks not directly associated with Whitehaven's haulage activities, e.g. haulage-type trucks on Kamilaroi Highway that neither entered nor exited the Whitehaven CHPP, and trips generated by contractors' trucks that may travel from Gunnedah and surrounds at the start of the day and return to Gunnedah and surrounds at the end of the day. The exact number of such trips cannot be accurately determined, however review of Whitehaven's haulage records indicates that on 23 October 2025:

- 10 contractor haulage truck commenced their haulage activity at Tarrawonga or Vickery, and so may have travelled from the contractors' stabling facility past the Whitehaven CHPP access before starting work;
- 6 contractor haulage truck commenced their haulage activity at the Whitehaven CHPP, as so may have entered the Whitehaven CHPP from the contractors' stabling facility prior to starting work;
- 1 contractor haulage truck completed their haulage task transporting rejects to the GOCs, and so may have travelled past the Whitehaven CHPP to return to the contractors' stabling facility at the end of the day; and
- 15 contractor vehicles completed their haulage task transporting ROM coal to the Whitehaven CHPP, and so would be expected to have departed the Whitehaven CHPP to return to the contractors' stabling facility at the end of the day.

Figure 4.6 presents the surveyed distribution of haulage-type trucks using the Whitehaven CHPP access road throughout the day on a rolling hourly basis at 15-minute starting periods, noting as above that not all trips may be directly related to transport of ROM coal or rejects. The surveys indicate that throughout the haulage hours, there was an average of just over 26 vehicle trips per hour, and a peak of 39 trips in one hour, which occurred in the middle of the day towards the end of the day shift and prior to the start of the afternoon shift. The peak number of trips on the Whitehaven CHPP access road was therefore approximately 150 % of the average hourly trips.

Figure 4.6: Hourly Haulage-Type Trucks at Whitehaven CHPP 23 October 2025



Noting the principal impacts of the Modifications would occur at the intersections of Kamilaroi Highway with Blue Vale Road and with the Whitehaven CHPP access road, the morning and evening peak hour demands recorded at those two intersections are presented in Figure 4.7 and Figure 4.8 respectively. The peak hours are the hours before and after midday during which the highest number of vehicle movements were recorded at each intersection.

Figure 4.7: Kamilaroi Highway Intersections AM Peak Hour 2025 (vehicles per hour)

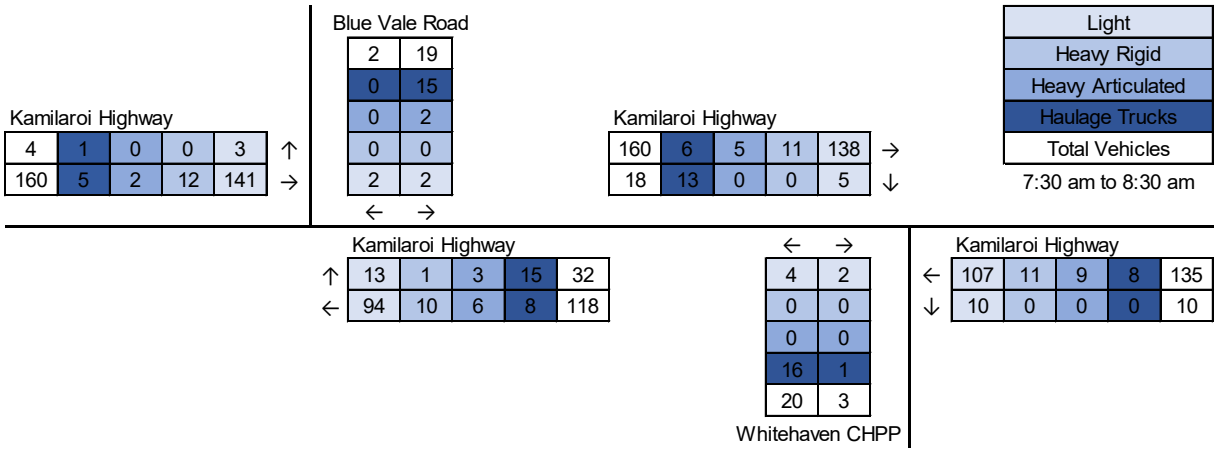
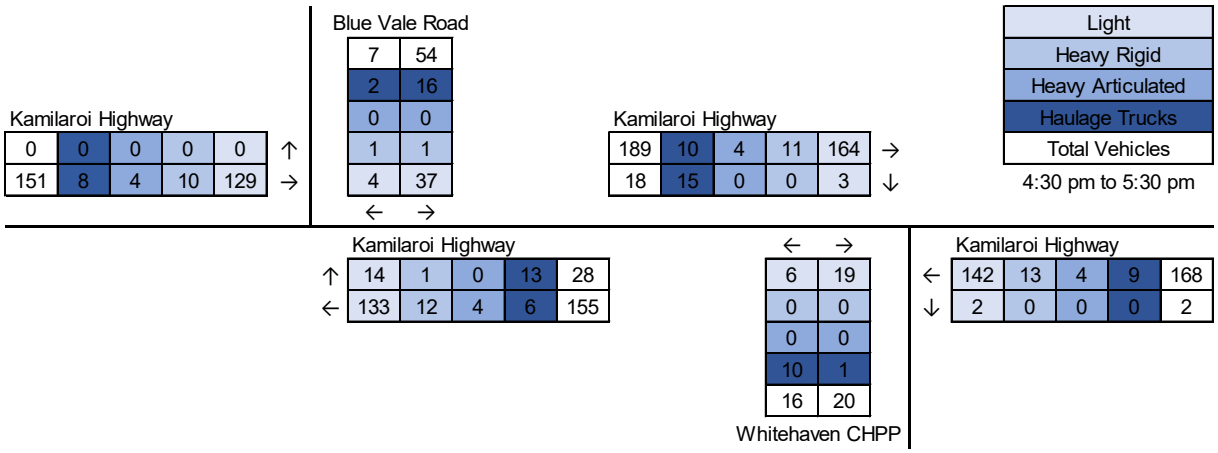


Figure 4.8: Kamilaroi Highway Intersections PM Peak Hour 2025 (vehicles per hour)



While the Whitehaven records do not identify the number of loads of ROM coal transported during the peak hours, the results of the surveys suggest that during the surveyed peak hours, ROM coal haulage generated approximately:

- 29 haulage truck trips during the morning peak hour; and
- 25 haulage truck trips during the evening peak hour.

The surveyed trips during the peak hours were therefore greater than the average 24 trips per hour (Section 2.11) forecast during the busiest months at the maximum haulage of 3.8 Mtpa applicable at the time of the surveys.

4.3 Road Crash History

Crash data was obtained from the NSW Centre for Road Safety for the most recently available five-year period from 1 January 2020 to 31 December 2024. The records 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; and
- the crash involved at least one person being killed or injured or at least one motor vehicle being towed away.

Crash data was reviewed for the part of the Approved ROM Coal Transport Route of relevance to the Modifications. The locations of the reported crashes over that period are illustrated on Figure 4.9, and Table 4.3 summarises details of those crashes.

Figure 4.9: Reported Road Crashes 2020 to 2024 Inclusive

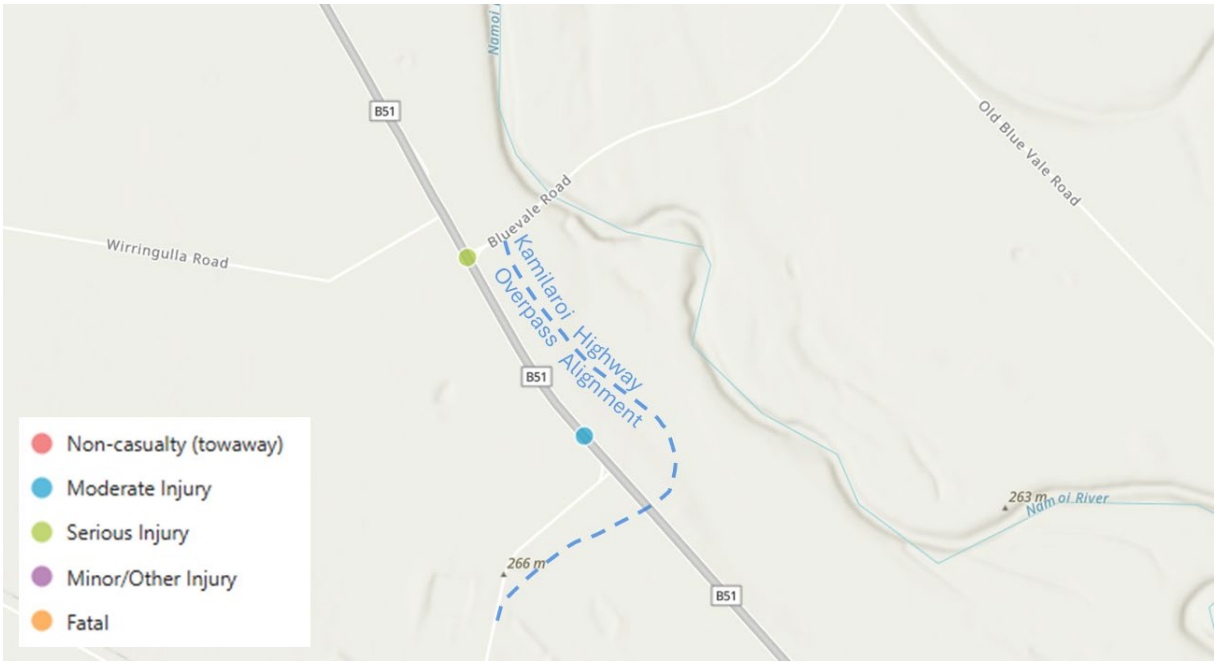


Table 4.3: Reported Crashes 2020 to 2024 on Approved ROM Coal Transport Route South

Crash ID	Description	Features
1242406	August 2020 A northbound light truck turning right from Kamilaroi Highway to Blue Vale Road struck a southbound car on Kamilaroi Highway, and a westbound articulated truck waiting to turn right from Blue Vale Road.	Daylight 12pm-2pm Dry road surface Fine weather 1 person serious injury 1 person moderate injury
1251387	December 2020 An eastbound light truck on Kamilaroi Highway left the carriageway to the right on a left hand bend and struck a drain/culvert 600 m east of Blue Vale Road.	Daylight 4pm-6pm Wet/flooded road surface Overcast weather 1 person moderate injury

The results demonstrate that two crashes occurred over five years on that part of the Approved ROM Coal Transport Route that would be impacted by the Modifications. Table 4.3 does not highlight any specific location with a clustering of crashes that may suggest an inherent concern with the road layout. No heavy vehicle crashes occurred on the Approved ROM Coal Transport Route, noting the westbound articulated truck involved in the crash at the intersection of Kamilaroi Highway and Blue Vale Road was not directly involved in the initial crash (Crash ID 1242406).

4.4 Future Traffic Growth

An allowance of 1 % per annum compound growth above surveyed volumes in 2025 has been applied to account for growth in traffic that may occur between 2025 and 2030.

5 Impacts of the Modifications

5.1 Coal Haulage Trip Generation

Taking into account the approved haulage hours, the average hourly and daily number of trips that would be generated by the transport of 4.1 Mtpa of ROM coal from the GOCs with the Modification would be:

- 26 vehicle trips per hour;
- 492 vehicle trips per weekday; and
- 364 vehicle trips per Saturday.

This assumes that the average payload of the Whitehaven-owned GBH fleet and any contractor fleet is 60.6 t based on current operating conditions, and that haulage occurs over an average of 48 weeks per year, consistent with previous assessments.

Table 5.1 compares the average hourly and daily trip generation of cumulative haulage activity associated with the GOCs as anticipated at the time that Development Consent SSD 5000 was granted, under current and recent operating conditions, and with the Modifications.

Table 5.1: Average Haulage Trip Generation Comparison

Cumulative Haulage	Vehicle Trips per Hour	Vehicle Trips per Weekday	Vehicle Trips per Saturday
4.5 Mtpa after commissioning of Kamilaroi Highway overpass, anticipated when Development Consent SSD 5000 was approved	52	788	530
3.5 Mtpa prior to commissioning of Kamilaroi Highway overpass, anticipated when Development Consent SSD 5000 was approved	40	612	412
4.0 Mtpa in 2017 and 2018 calendar years	46	700	470
3.8 Mtpa in 2025 calendar year, with current haulage hours and current fleet	24	452	334
3.5 Mtpa to 31 December 2030, with current haulage hours and current fleet	22	420	310
ATC survey October-November 2025	-	498	288
Intersection survey 23 October 2025	26	518	-
Modifications 4.1 Mtpa to 31 December 2030, with approved haulage hours and current fleet	**26**	**492**	**364**

Table 5.1 indicates that with the Modifications, haulage activity would generate an average of 26 vehicle trips per hour during the approved haulage hours, equivalent to an average of:

- 14 fewer vehicle trips per hour than was anticipated when the upper limit of 3.5 Mtpa was imposed on haulage from the GOCs prior to commissioning of the Kamilaroi Highway overpass by Development Consent SSD 5000; and
- four additional vehicle trips per hour above the upper limit of 3.5 Mtpa from the GOCs without the Kamilaroi Highway overpass using the current truck fleet and approved haulage hours.

As observed during the intersection traffic survey (Section 4.2), the number of trips made by haulage trucks during any one hour varies from the average, with a peak of 150 % of the average hourly number of loads recorded during one hour. Similarly, the number of haulage trips per day varies from the average. Review of Whitehaven's haulage records for the 12-month period from 1 July 2024 to 30 June 2025 indicates that the daily number of loads of coal transported to the Whitehaven CHPP varied from the average as follows:

- weekday 85th percentile daily loads equivalent to 126 % of average weekday loads;
- weekday maximum daily loads equivalent to 158 % of average weekday loads;
- Saturday 85th percentile daily loads equivalent to 134 % of average Saturday loads; and
- Saturday maximum daily loads equivalent to 150 % of average Saturday load.

Applying these observed relationships to the forecast average trips with the Modifications, Table 5.2 summarises the variations in trip generation that would occur with the Modifications and with approved conditions.

Table 5.2: Haulage Trip Generation Variations

Cumulative Haulage	Vehicle Trips per Hour	Vehicle Trips per Weekday	Vehicle Trips per Saturday
3.5 Mtpa prior to commissioning of Kamilaroi Highway overpass, anticipated when SSD 5000 was approved			
Average Day	40	612	412
85th Percentile Day	50	772	554
Maximum Day	60	968	618
Modifications 4.1 Mtpa to 31 December 2030, with approved haulage hours and current fleet			
Average Day	26	492	364
85th Percentile Day	34	622	490
Maximum Day	40	778	546

Trips rounded up to next even number so that the number of inbound trips matches the number of outbound trips.

For the purpose of this review, TTPP has considered the average and maximum haulage activity levels, noting that as demonstrated above, adoption of the maximum level of haulage activity to assess the road network conditions will represent conditions that are well above the conditions that would occur on most days throughout the year.

5.2 Daily Traffic Volumes

Table 5.3 presents the estimated two-way weekday and Saturday daily traffic in 2030 on the relevant part of the Approved ROM Coal Transport Route with the average and maximum daily haulage truck trip generation as anticipated when Development Consent SSD 5000 was granted, and with the Modifications (Table 5.2). These forecasts are based on the surveyed daily traffic volumes in 2025 (Table 4.1) with an allowance of 1 % per annum growth over all non-Whitehaven haulage vehicles over the five-year period from when the survey was conducted in 2025 to the final year of the proposed Modifications in 2030.

Table 5.3: Forecast Average Daily Two-Way Traffic 2030 (vehicles per day)

	Light	Rigid Heavy	Non-Whitehaven Articulated	Whitehaven		Total	
				Average Haulage	Maximum Haulage	Average Haulage	Maximum Haulage
Weekday – Without Kamilaroi Highway Overpass as Anticipated when SSD 5000 was Approved							
Blue Vale Road east of Kamilaroi Highway	584	78	62	612	968	1,336	1,692
Kamilaroi Highway between Blue Vale Road and CHPP	3,301	840	401	612	968	5,154	5,510
Weekday – With Modifications							
Blue Vale Road east of Kamilaroi Highway	584	78	62	492	778	1,216	1,502
Kamilaroi Highway between Blue Vale Road and CHPP	3,301	840	401	492	778	5,034	5,320
Saturday – Without Kamilaroi Highway Overpass as Anticipated when SSD 5000 was Approved							
Blue Vale Road east of Kamilaroi Highway	349	28	49	412	618	838	1,044
Kamilaroi Highway between Blue Vale Road and CHPP	2,233	455	143	412	618	3,243	3,449
Saturday – With Modifications							
Blue Vale Road east of Kamilaroi Highway	349	28	49	364	546	790	972
Kamilaroi Highway between Blue Vale Road and CHPP	2,233	455	143	364	546	3,195	3,377

The forecasts in Table 5.3 confirm that forecast daily traffic volumes in 2030 with the Modifications would be lower than would occur with the GOCs maximum haulage activity anticipated when Development Consent SSD 5000 was granted.

The forecast future daily traffic volumes are well within the capacity of the roads, and no issues are raised with regard to the operation of those roads under the forecast demands.

5.3 Peak Hourly Traffic Volumes

Table 5.4 and Table 5.5 present the estimated two-way weekday and Saturday peak hourly traffic in 2030 on the relevant part of the Approved ROM Coal Transport Route with the average and maximum daily haulage truck trip generation as anticipated when Development Consent SSD 5000 was granted, and with the Modifications (Table 5.2). These forecasts are based on the surveyed peak hourly traffic volumes in 2025 (Table 4.2) with an allowance of 1 % per annum growth over all non-Whitehaven haulage vehicles over the period from 2025 to 2030. With the exception of Blue Vale Road in the morning peak hour, they assume that during the peak hours captured in the 2025 ATC surveys, Whitehaven generated 26 and 20 haulage truck trips on weekdays and Saturdays respectively, being the average hourly generation expected for the daily haulage that occurred at that time. On Blue Vale Road during the morning peak hour, it has been assumed that the 20 articulated vehicles captured during the average weekday were all attributable to Whitehaven's haulage activities.

Table 5.4: Forecast AM Peak Hourly Two-Way Traffic 2030 (vehicles per hour)

	Light	Rigid Heavy	Non-Whitehaven Articulated	Whitehaven		Total	
				Average Haulage	Maximum Haulage	Average Haulage	Maximum Haulage
Weekday – Without Kamilaroi Highway Overpass as Anticipated when SSD 5000 was Approved							
Blue Vale Road east of Kamilaroi Highway	65	4	0	40	60	109	129
Kamilaroi Highway between Blue Vale Road and CHPP	211	59	33	40	60	343	363
Weekday – With Modifications							
Blue Vale Road east of Kamilaroi Highway	65	4	0	26	40	95	109
Kamilaroi Highway between Blue Vale Road and CHPP	2131	59	33	26	40	329	343
Saturday – Without Kamilaroi Highway Overpass as Anticipated when SSD 5000 was Approved							
Blue Vale Road east of Kamilaroi Highway	22	2	11	40	60	75	95
Kamilaroi Highway between Blue Vale Road and CHPP	167	29	18	40	60	254	274
Saturday – With Modifications							
Blue Vale Road east of Kamilaroi Highway	22	2	11	26	40	61	75
Kamilaroi Highway between Blue Vale Road and CHPP	167	29	18	26	40	240	254

Refer to Table 4.2 for time of peak hour at each location.

Table 5.5: Forecast PM Peak Hourly Two-Way Traffic 2030 (vehicles per hour)

	Light	Rigid Heavy	Non-Whitehaven Articulated	Whitehaven		Total	
				Average Haulage	Maximum Haulage	Average Haulage	Maximum Haulage
Weekday – Without Kamilaroi Highway Overpass as Anticipated when SSD 5000 was Approved							
Blue Vale Road east of Kamilaroi Highway	50	5	7	40	60	102	122
Kamilaroi Highway between Blue Vale Road and CHPP	297	61	24	40	60	422	442
Weekday – With Modifications							
Blue Vale Road east of Kamilaroi Highway	50	5	7	26	40	88	102
Kamilaroi Highway between Blue Vale Road and CHPP	297	61	24	26	40	408	422
Saturday – Without Kamilaroi Highway Overpass as Anticipated when SSD 5000 was Approved							
Blue Vale Road east of Kamilaroi Highway	17	3	15	40	60	75	95
Kamilaroi Highway between Blue Vale Road and CHPP	157	27	22	40	60	246	266
Saturday – With Modifications							
Blue Vale Road east of Kamilaroi Highway	17	3	15	26	40	61	75
Kamilaroi Highway between Blue Vale Road and CHPP	157	27	22	26	40	232	246

Refer to Table 4.2 for time of peak hour at each location.

The results in Table 5.4 and Table 5.5 indicate that the forecast peak hourly traffic during a maximum haulage hour with the Modifications would be equivalent to the forecast peak hourly traffic during an average haulage hour anticipated when Development Consent SSD 5000 was granted.

Noting that the theoretical capacity of a two-lane road is 1,700 passenger car units per hour in each direction of travel (Austroads, 2020), the forecast future peak hourly traffic volumes are well within the capacity of the roads, and no issues are raised with regard to the capacity of Blue Vale Road and Kamilaroi Highway under the forecast demands with the Modifications.

5.4 Intersection Operating Conditions

Intersections are the critical locations in the road network that dictate capacity, due to the need for opposing movements to occupy the same road space. The operating characteristics of the intersections during the weekday peak hours identified in the intersection turning movement surveys have been assessed using SIDRA INTERSECTION 10, an analysis program which determines characteristics of intersection operating conditions including the degree of saturation, average delays, and levels of service.

The degree of saturation, or x-value, is the ratio of the arrival rate of vehicles to the capacity. The average delay, expressed in seconds per vehicle, is measured over all movements at signalised intersections, and over the movement with the highest average delay at roundabout and priority intersections. Average vehicle delay is the commonly used measure of intersection performance defined by TfNSW (2024). Table 5.6 shows the criteria adopted by TfNSW for assessing the level of service at intersections.

Table 5.6: Intersection Level of Service Criteria

Level of Service (LoS)	Average Delay per vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays	At capacity, requires other control mode
F	Greater than 70	Extra capacity required	Extreme delay, major treatment required

Adapted from TfNSW (2024)

To account for the hour-to-hour variations in haulage, the analyses of the operation of the intersections have conservatively assumed that during the background peak hours at the intersections of Kamilaroi Highway with Blue Vale Road and the Whitehaven CHPP access, a peak of 20 inbound and 20 outbound haulage trips would be generated by Whitehaven's haulage activity, consistent with the surveyed variation in trips made between the Whitehaven CHPP and Blue Vale Road during the intersection survey.

Table 5.7 presents a summary of the operating characteristics of the intersections during the peak hours as surveyed during 2025, and with the Modifications. Outputs are presented in Appendix B. The surveyed intersections are under priority control, thus the reported average delay is for the movement with the highest average delay per vehicle.

Table 5.7: Peak Hour Intersection Operating Conditions

Intersection	AM Peak Hour			PM Peak Hour		
	X-Value	Average Delay[A]	LoS	X-Value	Average Delay[A]	LoS
2030 with Maximum Haulage Anticipated when Development Consent SSD 5000 was Approved (60 trips per hour)						
Blue Vale Road and Kamilaroi Highway	0.109	12.8 left turn from Blue Vale Road	A	0.103	29.1 right turn from Blue Vale Road	C
Whitehaven CHPP access and Kamilaroi Highway	0.136	23.4 right turn from CHPP	B	0.146	15.0 right turn from CHPP	B
2030 with Modifications Maximum Haulage (40 trips per hour)						
Blue Vale Road and Kamilaroi Highway	0.109	12.6 right turn to Blue Vale Road	A	0.103	27.5 right turn from Blue Vale Road	B
Whitehaven CHPP access and Kamilaroi Highway	0.136	21.9 right turn from CHPP	B	0.146	14.4 right turn from CHPP	A

[A] *Seconds per vehicle for the movement with highest average delay per vehicle, movement as stated.*

The results in Table 5.7 indicate that with the cumulative effects of background growth and haulage of ROM coal from the GOCs to the Whitehaven CHPP and the return of the haulage trucks, the intersections of Kamilaroi Highway with the Whitehaven CHPP access and with Blue Vale Road would operate at good levels of service, with acceptable delays to those vehicles that would experience the highest average delay per vehicle. With the Modifications, the average delays experienced by those vehicles would be below that forecast with the maximum haulage as anticipated when Development Consent SSD 5000 was granted.

The results do not highlight any concerns with the operation of the intersections on Kamilaroi Highway, again noting that the assessment considers the effects of maximum haulage forecasts associated with the GOCs, that would occur very infrequently.

The SIDRA INTERSECTION results also demonstrate that during the peak hours, vehicles travelling on Kamilaroi Highway would experience average delays of 0.1 seconds per vehicle with either the maximum haulage forecast anticipated when Development Consent SSD 5000 was approved, or the maximum haulage anticipated with the Modifications (refer to "T1" vehicle turn movements in Appendix B). The Modifications would therefore have negligible effect on the conditions experienced by through traffic on Kamilaroi Highway.

5.5 Impact on Road Safety

The review of the road crash history (Section 4.3) and Whitehaven's incident and complaints records (Section 2.10) does not identify any safety issues relating to the haulage of ROM coal from the GOCs to the Whitehaven CHPP that may be exacerbated by the increase in its maximum annual haulage.

The layout of the intersections of Kamilaroi Highway with the Whitehaven CHPP and Blue Vale Road are appropriate for their use by coal haulage trucks, with no safety concerns noted with regard to sight distances for drivers on any of the intersection approaches, or the path of the coal trucks when turning into and out of the minor roads.

The merges from the acceleration lanes to the through lanes on Kamilaroi Highway appropriately require the coal haulage trucks to give way to through traffic on Kamilaroi Highway. As noted (Section 4.1.4), use of the G9-15 sign at the merge is atypical for a priority merge, however this is not considered to be a notable safety concern, as the linemarking on the pavement clearly defines the merge priority.

Whitehaven's behavioural expectations for its drivers when travelling on Kamilaroi Highway and merging so as not to impede traffic on Kamilaroi Highway (Whitehaven, 2024), and the safety measures implemented by Whitehaven (e.g. haul truck cameras, GPS tracking and fatigue monitoring) are considered to be appropriate.

As demonstrated in Section 5.4, the intersections would continue to operate with only short delays and spare capacity, so no concerns are raised with regard to safety of those intersections under future traffic demands.

No safety concerns are raised with respect to the use of the Approved ROM Coal Transport Route between the location of the Kamilaroi Highway overpass intersection on Blue Vale Road and the Whitehaven CHPP by Whitehaven's coal haulage trucks without construction of the Kamilaroi Highway overpass, and with haulage of up to 4.1 Mtpa of ROM coal.

Notwithstanding, the Traffic Management Plan would be reviewed and, if necessary, revised by Whitehaven to include the Modifications (subject to any modified Development Consent conditions).

5.6 Road Maintenance

Whitehaven will continue to engage with GSC regarding the Modifications including the review of the existing road maintenance agreement in accordance with Condition B77, Part B of SSD 7480. Whitehaven has been engaging with GSC regarding the Modifications and ongoing management and maintenance measures associated with its haulage activities and council infrastructure.

The Modifications would not impact Whitehaven's use of that part of the Approved ROM Coal Transport Route within the Narrabri LGA, so would have no implications for the road maintenance agreement with NSC.

6 Conclusions

This assessment has considered the impacts of the Modifications to increase the cumulative maximum amount of ROM coal transported from the GOCs to the Whitehaven CHPP until 31 December 2030 from 3.5 Mtpa to 4.1 Mtpa, without construction of the Kamilaroi Highway overpass.

The assessment has found that with the Modifications:

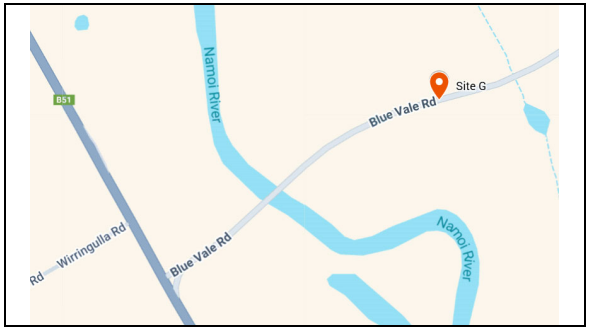
- the forecast future traffic volumes would be well within the capacity of the roads, and no concerns are raised with regard to the operation of those roads under those forecast demands;
- the intersections of Kamilaroi Highway with the Whitehaven CHPP access and with Blue Vale Road would continue to operate at good levels of service, with short delays to drivers and spare capacity; and
- no safety concerns are raised with respect to the use of the roads or intersections by traffic associated with the transport of ROM coal from the GOCs to the Whitehaven CHPP, with haulage truck drivers continuing to be subject to the behavioural requirements set out in the TMP, including specific requirements regarding interaction with other vehicles on Kamilaroi Highway.

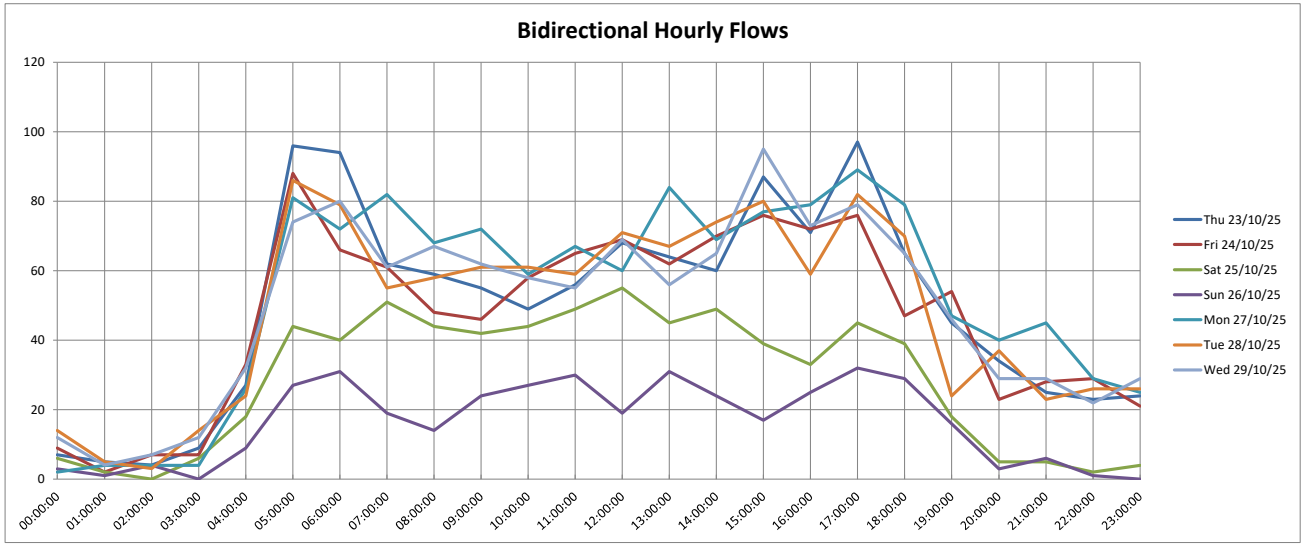
The Modifications would result in minimal impact with respect to level of service, network performance and road safety.

Appendix A

Traffic Surveys

Client	TTPP
360TS Project No.	25137
Location	Gunnedah
Road Name	Blue Vale Road
Description	east of Kamilaroi Hwy
Coordinates	-30.93492, 150.20809
PSL (kph)	100
Start Day/Date	Thu 23/10/25
End Day/Date	Wed 29/10/25





Datetime	Thu 23/10/25	Fri 24/10/25	Sat 25/10/25	Sun 26/10/25	Mon 27/10/25	Tue 28/10/25	Wed 29/10/25	Virtual Week	Virtual Weekday	Virtual Weekend
0:00	7	9	6	3	2	14	12	8	9	5
1:00	5	2	2	1	4	5	4	3	4	2
2:00	4	7	0	4	4	3	7	4	5	2
3:00	9	7	6	0	4	14	12	7	9	3
4:00	27	33	18	9	26	24	32	24	28	14
5:00	96	88	44	27	81	86	74	71	85	36
6:00	94	66	40	31	72	79	80	66	78	36
7:00	62	61	51	19	82	55	61	56	64	35
8:00	59	48	44	14	68	58	67	51	60	29
9:00	55	46	42	24	72	61	62	52	59	33
10:00	49	58	44	27	59	61	58	51	57	36
11:00	56	65	49	30	67	59	55	54	60	40
12:00	68	69	55	19	60	71	69	59	67	37
13:00	64	62	45	31	84	67	56	58	67	38
14:00	60	70	49	24	69	74	65	59	68	37
15:00	87	76	39	17	77	80	95	67	83	28
16:00	71	72	33	25	79	59	73	59	71	29
17:00	97	76	45	32	89	82	79	71	85	39
18:00	65	47	39	29	79	70	65	56	65	34
19:00	45	54	18	16	47	24	46	36	43	17
20:00	34	23	5	3	40	37	29	24	33	4
21:00	25	28	5	6	45	23	29	23	30	6
22:00	23	29	2	1	29	26	22	19	26	2
23:00	24	21	4	0	25	26	29	18	25	2
TOTAL	**1186**	**1117**	**685**	**392**	**1264**	**1158**	**1181**	**998**	**1181**	**544**

Weekly Data Summary

Daily Average (veh)	**998**
Weekday Average (veh)	**1181**
Weekend Average (veh)	**544**

Busiest Day	**Mon 27/10/25**
Busiest Day Volume (veh)	**1264**
Busiest Hour (starting on...)	**Thu 2025-10-23 17:15:00**
Busiest Hour Volume (veh)	**95**

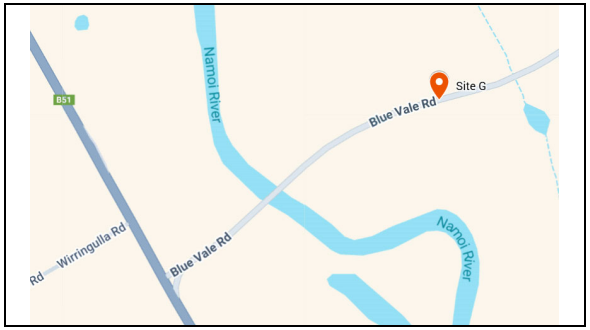
Virtual Weekday AM Peak Hour	**5:00**
Virtual Weekday PM Peak Hour	**17:00**
Virtual Weekend AM Peak Hour	**11:00**
Virtual Weekend PM Peak Hour	**17:00**

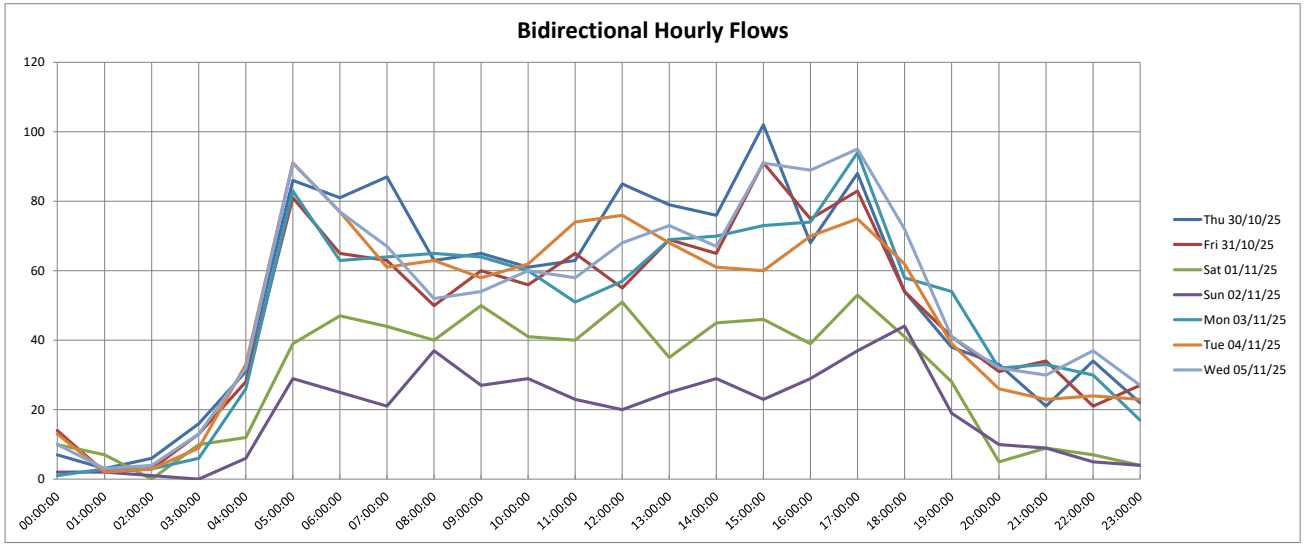
Light Vehicle %	**49.6%**
Heavy Rigid Vehicle %	**5.9%**
Heavy Articulated Vehicle %	**44.5%**

Average Speed (km/h)	**83.0**
Maximum Speed (km/h)	**129.9**
85th Percentile Speed (km/h)	**96.2**

Southbound %	**50.2%**
Northbound %	**49.8%**

Client	TTPP
360TS Project No.	25137
Location	Gunnedah
Road Name	Blue Vale Road
Description	east of Kamilaroi Hwy
Coordinates	-30.93492, 150.20809
PSL (kph)	100
Start Day/Date	Thu 30/10/25
End Day/Date	Wed 05/11/25





Datetime	Thu 30/10/25	Fri 31/10/25	Sat 01/11/25	Sun 02/11/25	Mon 03/11/25	Tue 04/11/25	Wed 05/11/25	Virtual Week	Virtual Weekday	Virtual Weekend
0:00	7	14	10	2	1	13	10	8	9	6
1:00	3	2	7	2	3	2	3	3	3	5
2:00	6	3	0	1	3	3	4	3	4	1
3:00	16	13	10	0	6	9	13	10	11	5
4:00	31	28	12	6	26	33	32	24	30	9
5:00	86	81	39	29	83	91	91	71	86	34
6:00	81	65	47	25	63	77	77	62	73	36
7:00	87	63	44	21	64	61	67	58	68	33
8:00	63	50	40	37	65	63	52	53	59	39
9:00	65	60	50	27	64	58	54	54	60	39
10:00	61	56	41	29	60	62	60	53	60	35
11:00	63	65	40	23	51	74	58	53	62	32
12:00	85	55	51	20	57	76	68	59	68	36
13:00	79	69	35	25	69	68	73	60	72	30
14:00	76	65	45	29	70	61	67	59	68	37
15:00	102	91	46	23	73	60	91	69	83	35
16:00	68	75	39	29	74	70	89	63	75	34
17:00	88	83	53	37	94	75	95	75	87	45
18:00	54	54	41	44	58	62	72	55	60	43
19:00	38	41	28	19	54	39	41	37	43	24
20:00	33	31	5	10	32	26	32	24	31	8
21:00	21	34	9	9	33	23	30	23	28	9
22:00	34	21	7	5	30	24	37	23	29	6
23:00	22	27	4	4	17	23	27	18	23	4
TOTAL	**1269**	**1146**	**703**	**456**	**1150**	**1153**	**1243**	**1017**	**1192**	**585**

Weekly Data Summary

Daily Average (veh)	**1017**
Weekday Average (veh)	**1192**
Weekend Average (veh)	**585**

Busiest Day	**Thu 30/10/25**
Busiest Day Volume (veh)	**1269**
Busiest Hour (starting on...)	**Thu 2025-10-30 15:00:00**
Busiest Hour Volume (veh)	**95**

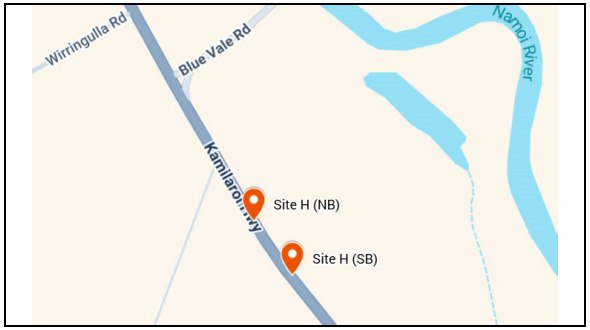
Virtual Weekday AM Peak Hour	**5:00**
Virtual Weekday PM Peak Hour	**17:00**
Virtual Weekend AM Peak Hour	**8:00**
Virtual Weekend PM Peak Hour	**17:00**

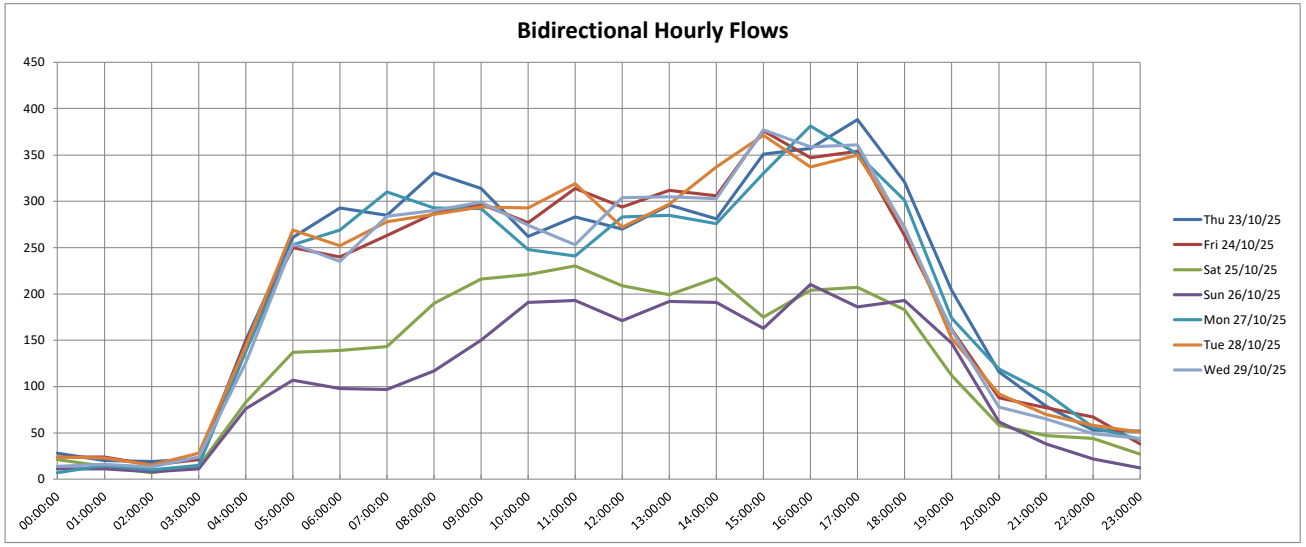
Light Vehicle %	**47.3%**
Heavy Rigid Vehicle %	**6.3%**
Heavy Articulated Vehicle %	**46.4%**

Average Speed (km/h)	**82.4**
Maximum Speed (km/h)	**145.6**
85th Percentile Speed (km/h)	**96.0**

Southbound %	**50.9%**
Northbound %	**49.1%**

Client	TTPP
360TS Project No.	25137
Location	Gunnedah
Road Name	Kalimaroi Highway
Description	south of Blue Vale Road
Coordinates	-30.94075, 150.20344
PSL (kph)	100
Start Day/Date	Thu 23/10/25
End Day/Date	Wed 29/10/25





Datetime	Thu 23/10/25	Fri 24/10/25	Sat 25/10/25	Sun 26/10/25	Mon 27/10/25	Tue 28/10/25	Wed 29/10/25	Virtual Week	Virtual Weekday	Virtual Weekend
0:00	28	24	21	11	7	24	14	18	19	16
1:00	20	24	14	11	15	23	16	18	20	13
2:00	19	15	7	8	10	15	13	12	14	8
3:00	22	21	14	11	15	28	24	19	22	13
4:00	150	148	83	76	138	144	126	124	141	80
5:00	261	250	137	107	253	269	254	219	257	122
6:00	293	240	139	98	269	252	235	218	258	119
7:00	285	263	143	97	310	278	284	237	284	120
8:00	331	287	190	117	293	286	290	256	297	154
9:00	314	297	216	150	292	294	299	266	299	183
10:00	262	277	221	191	248	293	274	252	271	206
11:00	283	314	230	193	241	319	253	262	282	212
12:00	270	294	209	171	283	272	304	258	285	190
13:00	296	312	199	192	285	297	305	269	299	196
14:00	281	306	217	191	276	337	303	273	301	204
15:00	351	376	175	163	330	371	377	306	361	169
16:00	357	347	204	210	381	337	359	314	356	207
17:00	388	354	207	186	351	350	361	314	361	197
18:00	321	263	183	193	301	272	271	258	286	188
19:00	204	162	112	147	174	152	161	159	171	130
20:00	116	88	58	62	119	92	78	88	99	60
21:00	79	77	47	38	93	70	65	67	77	43
22:00	53	67	44	22	56	58	49	50	57	33
23:00	52	38	27	12	43	51	44	38	46	20
TOTAL	**5036**	**4844**	**3097**	**2657**	**4783**	**4884**	**4759**	**4294**	**4863**	**2883**

Weekly Data Summary

Daily Average (veh)	**4294**
Weekday Average (veh)	**4863**
Weekend Average (veh)	**2883**

Busiest Day	**Thu 23/10/25**
Busiest Day Volume (veh)	**5036**
Busiest Hour (starting on...)	**Wed 2025-10-29 16:30:00**
Busiest Hour Volume (veh)	**403**

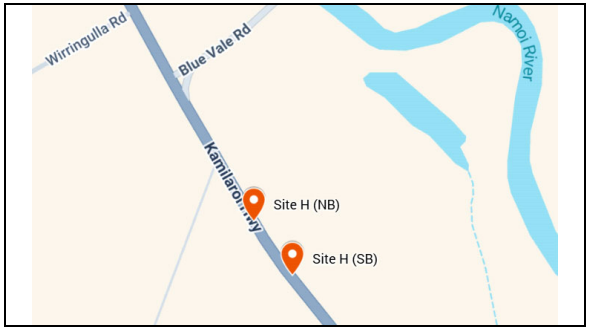
Virtual Weekday AM Peak Hour	**9:00**
Virtual Weekday PM Peak Hour	**15:00**
Virtual Weekend AM Peak Hour	**11:00**
Virtual Weekend PM Peak Hour	**16:00**

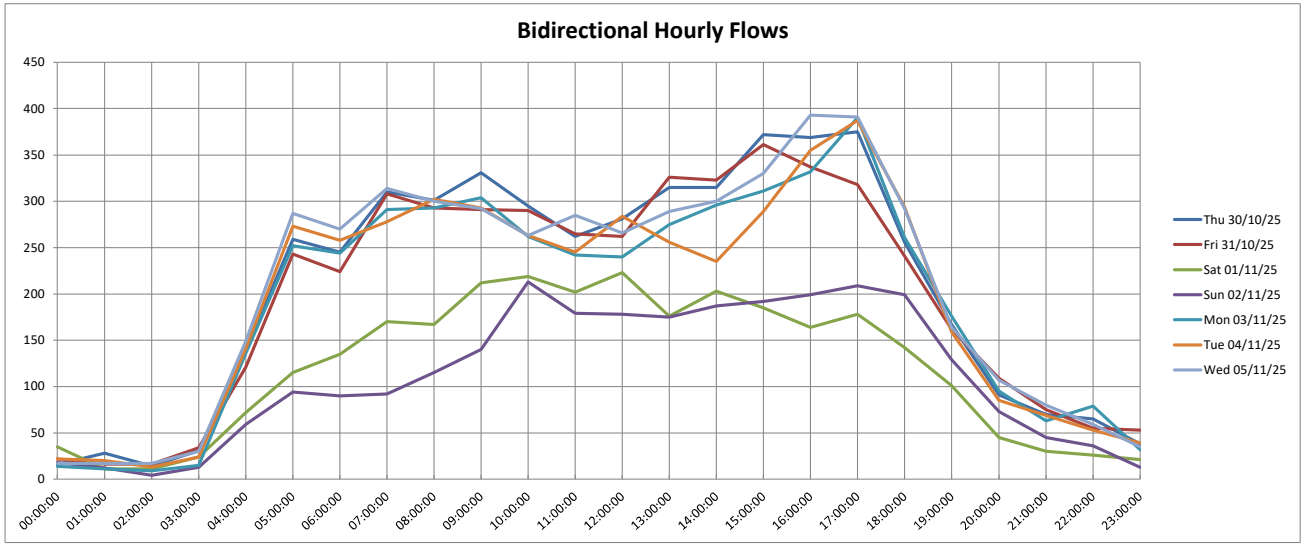
Light Vehicle %	**67.9%**
Heavy Rigid Vehicle %	**16.0%**
Heavy Articulated Vehicle %	**16.1%**

Average Speed (km/h)	**91.3**
Maximum Speed (km/h)	**151.3**
85th Percentile Speed (km/h)	**103.6**

Southbound %	**49.8%**
Northbound %	**50.2%**

Client	TTPP
360TS Project No.	25137
Location	Gunnedah
Road Name	Kalimaroi Highway
Description	south of Blue Vale Road
Coordinates	-30.94075, 150.20344
PSL (kph)	100
Start Day/Date	Thu 30/10/25
End Day/Date	Wed 05/11/25





Datetime	Thu 30/10/25	Fri 31/10/25	Sat 01/11/25	Sun 02/11/25	Mon 03/11/25	Tue 04/11/25	Wed 05/11/25	Virtual Week	Virtual Weekday	Virtual Weekend
0:00	16	22	35	18	14	22	17	21	18	27
1:00	28	16	11	12	11	20	17	16	18	12
2:00	14	16	11	4	9	13	17	12	14	8
3:00	31	34	24	13	15	24	30	24	27	19
4:00	139	121	72	59	136	141	149	117	137	66
5:00	259	243	115	94	252	273	287	218	263	105
6:00	245	224	135	90	244	258	270	209	248	113
7:00	310	308	170	92	291	278	314	252	300	131
8:00	301	293	167	115	293	302	300	253	298	141
9:00	331	291	212	140	304	293	292	266	302	176
10:00	295	290	219	213	262	263	263	258	275	216
11:00	262	265	202	179	242	245	285	240	260	191
12:00	281	262	223	178	240	284	266	248	267	201
13:00	315	326	176	175	275	256	289	259	292	176
14:00	315	323	203	187	296	235	300	266	294	195
15:00	372	361	185	192	311	289	330	291	333	189
16:00	369	337	164	199	332	355	393	307	357	182
17:00	375	318	178	209	390	387	391	321	372	194
18:00	256	241	142	199	261	294	292	241	269	171
19:00	167	162	101	129	176	159	164	151	166	115
20:00	91	109	45	73	95	85	107	86	97	59
21:00	70	75	30	45	63	69	80	62	71	38
22:00	65	55	26	36	79	53	59	53	62	31
23:00	38	53	21	13	32	39	35	33	39	17
TOTAL	4945	4745	2867	2664	4623	4637	4947	4204	4779	2773

Weekly Data Summary

Daily Average (veh)	4204
Weekday Average (veh)	4779
Weekend Average (veh)	2773

Busiest Day	Wed 05/11/25
Busiest Day Volume (veh)	4947
Busiest Hour (starting on...)	Wed 2025-11-05 16:45:00
Busiest Hour Volume (veh)	412

Virtual Weekday AM Peak Hour	9:00
Virtual Weekday PM Peak Hour	17:00
Virtual Weekend AM Peak Hour	10:00
Virtual Weekend PM Peak Hour	12:00

Light Vehicle %	65.6%
Heavy Rigid Vehicle %	16.3%
Heavy Articulated Vehicle %	18.1%

Average Speed (km/h)	91.2
Maximum Speed (km/h)	146.7
85th Percentile Speed (km/h)	103.7

Southbound %	50.0%
Northbound %	50.0%

360 TRAFFIC • SURVEYS

Client	TTPP
Project No.	25173
Location	Gunnedah
Intersection	Kamilaroi Hwy / Blue Vale Rd
Coordinates	-30.93833, 150.20198
Day/Date	Thursday, 23 October 2025
Weather	Fine
Control	Priority

Client	TTPP
Project No.	25173
Location	Gunnedah
Intersection	Kamilaroi Hwy / Blue Vale Rd
Coordinates	-30.93833, 150.20198
Day/Date	Thursday, 23 October 2025
Weather	Fine
Control	Priority


N
Displayed Volume
Light
Displayed Volume
Heavy Rigid
Kamilaroi Hwy
Peds
0 0 0
AM PM SP
Total Northbd
SP 1,800 143
PM 148 13
AM 111 11
Total Southbd
1,856 132 SP
167 11 PM
143 11 AM
0 0 | 45 3 | 1811 129 | 0 0
0 0 | 3 0 | 164 11 | 0 0
0 0 | 5 0 | 138 11 | 0 0
U-turn
Gunnedah CHPP Access Rd
Total Eastbd
SP 150 9
PM 25 0
AM 6 0
37 2 | 6 0 | 4 0
0 0 | 0 0 | 0 0
113 6 | 19 0 | 2 0
0 1 | 0 0 | 0 0
U-turn
Peds
0 AM
0 PM
0 SP
Total Westbd
151 9 SP
5 0 PM
15 0 AM
DISPLAYED VOLUMES
AM Peak Hour (AM) 7:30 to 8:30
PM Peak Hour (PM) 16:30 to 17:30
Specified Period (SP) 0:00 to 23:45
AM 0 0
PM 0 0
SP 0 0
Total Eastbd
0 0 | 0 0 | 0 0
0 0 | 0 0 | 0 0
0 0 | 0 0 | 0 0
U-turn
AM 0
PM 0
SP 0
Peds
0
0 0 AM
0 0 PM
0 0 SP
Total Westbd
AM 117 11
PM 144 13
SP 1,869 146
Total Northbd
10 0 | 107 11 | 0 0 | 0 0
2 0 | 142 13 | 0 0 | 0 0
106 5 | 1763 141 | 0 0 | 0 0
U-turn
AM 140 11
PM 183 11
SP 1,924 135
Total Southbd
AM PM SP
0 0 0
Peds
Kamilaroi Hwy
Client TTPP
Project No. 25173
Location Gunnedah
Intersection Kamilaroi Hwy / Gunnedah CHPP Access Rd
Coordinates -30.94367, 150.20605
Day/Date Thursday, 23 October 2025
Weather Fine
Control Priority


N
Displayed Volume
Heavy Artic
Displayed Volume
B Double
Kamilaroi Hwy
Peds
0 0 0
AM PM SP
Total Northbd
Total Southbd
SP 108 419
PM 4 19
AM 9 24
117 432 SP
4 25 PM
5 19 AM
0 0 | 0 257 | 117 175 | 0 0
0 0 | 0 15 | 4 10 | 0 0
0 0 | 0 13 | 5 6 | 0 0
U-turn
Gunnedah CHPP Access Rd
Total Eastbd
SP 1 262
PM 0 11
AM 0 17
1 251 | 0 10 | 0 16
0 0 | 0 0 | 0 0
0 11 | 0 1 | 0 1
0 0 | 0 0 | 0 0
Peds
0 AM
0 PM
0 SP
DISPLAYED VOLUMES
AM Peak Hour (AM) 7:30 to 8:30
PM Peak Hour (PM) 16:30 to 17:30
Specified Period (SP) 0:00 to 23:45
AM 0 0
PM 0 0
SP 0 0 Total Eastbd
0 0 | 0 0 | 0 0
0 0 | 0 0 | 0 0
0 0 | 0 0 | 0 0
U-turn
AM 0
PM 0
SP 0
Peds
0
Total Westbd
0 264 SP
0 15 PM
0 13 AM
0 0 AM
0 0 PM
0 0 SP Total Westbd
U-turn
AM 9 8
PM 4 9
SP 107 175
0 0 | 9 8 | 0 0 | 0 0
0 0 | 4 9 | 0 0 | 0 0
0 7 | 107 168 | 0 0 | 0 0
Total Northbd
Total Southbd
5 7 AM
4 11 PM
117 186 SP
AM 0 0
PM 0 0
SP 0 0
Peds
Kamilaroi Hwy
Client TTPP
Project No. 25173
Location Gunnedah
Intersection Kamilaroi Hwy / Gunnedah CHPP Access Rd
Coordinates -30.94367, 150.20605
Day/Date Thursday, 23 October 2025
Weather Fine
Control Priority
360 TRAFFIC SURVEYS

Appendix B

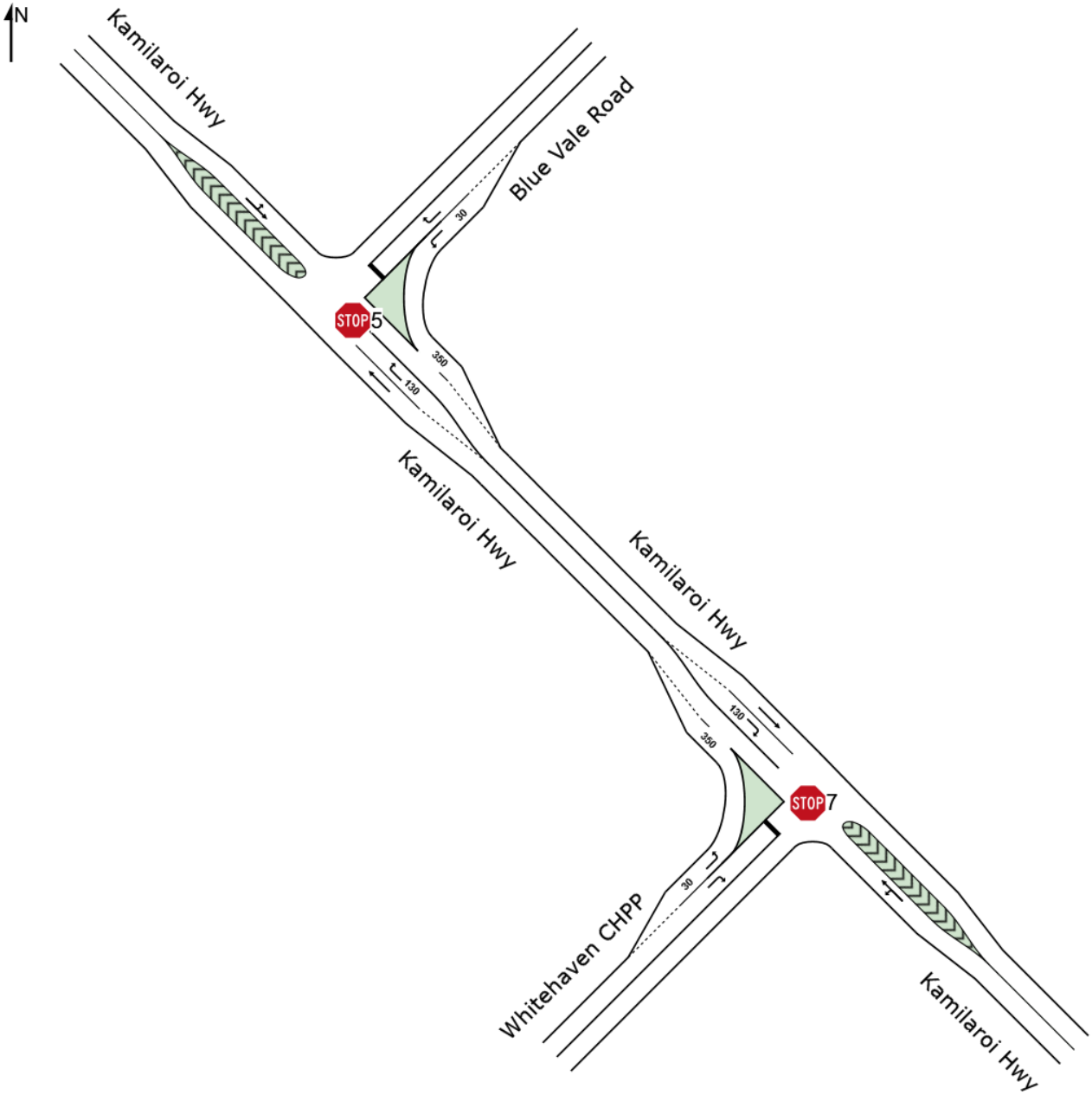
SIDRA Outputs

NETWORK LAYOUT

Network: [3] 2030-AM-Mod (2030 with Mod)

2030 with Maximum Modifications Haulage
AM Peak Hour
7:30 am to 8:30 am
Network Category: (None)
Network Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



SITES IN NETWORK		
Site ID	**CCG ID**	**Site Name**
STOP 5	NA	BVR-2030-AM-Mod
STOP 7	NA	WHC-2030-AM-Mod

MOVEMENT SUMMARY

Site: [6] BVR-2030-AM-App (2030 GOCs Mod)
Network: [5] 2030-AM-App (2030 App)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

Blue Vale Road and Kamilaroi Highway
2030 with SSD5000 Maximum Hourly Haulage
AM Peak Hour 7:30am-8:30am
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Kamilaroi Hwy															
11	T1	All MCs	133	21.4	133	21.4	0.085	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	98.5
12	R2	All MCs	53	72.0	53	72.0	0.090	11.6	LOS A	0.4	10.8	0.46	0.66	0.46	49.5
Approach			185	35.8	185	35.8	0.090	3.4	NA	0.4	10.8	0.13	0.20	0.13	76.8
NorthEast: Blue Vale Road															
1	L2	All MCs	40	92.1	40	92.1	0.053	12.8	LOS A	0.0	0.0	0.00	0.59	0.00	65.2
3	R2	All MCs	3	0.0	3	0.0	0.005	12.6	LOS A	0.0	0.1	0.50	0.83	0.50	69.0
Approach			43	85.4	43	85.4	0.053	12.8	LOS A	0.0	0.1	0.04	0.61	0.04	65.7
NorthWest: Kamilaroi Hwy															
4	L2	All MCs	6	33.3	6	33.3	0.109	8.8	LOS A	0.0	0.0	0.00	0.03	0.00	71.0
5	T1	All MCs	180	12.9	180	12.9	0.109	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	98.2
Approach			186	13.6	186	13.6	0.109	0.4	NA	0.0	0.0	0.00	0.03	0.00	95.8
All Vehicles			415	31.0	415	31.0	0.109	3.0	NA	0.4	10.8	0.06	0.17	0.06	80.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Organisation: TTPP - THE TRANSPORT PLANNING PARTNERSHIP | Licence: NETWORK / 1PC | Processed: Thursday, 19 February 2026 6:58:57 PM
Project: C:\Users\Penny.Dalton\OneDrive - TTPP\Projects - 25213 Whitehaven Haulage Modification\07 Modelling Files\Model \25213_260216_GOCs Haulage Mod.sipx

MOVEMENT SUMMARY

Site: [8] WHC-2030-AM-App (2030 GOCs Mod)
Network: [5] 2030-AM-App (2030 App)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

Whitehaven CHPP Access and Kamilaroi Highway
2030 with SSD5000 Maximum Hourly Haulage
AM Peak Hour 7:30am-8:30am
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Kamilaroi Hwy															
4	L2	All MCs	12	0.0	12	0.0	0.136	7.8	LOS A	0.0	0.0	0.00	0.05	0.00	86.1
5	T1	All MCs	215	15.2	215	15.2	0.136	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	96.5
Approach			226	14.4	226	14.4	0.136	0.5	NA	0.0	0.0	0.00	0.05	0.00	95.4
NorthWest: Kamilaroi Hwy															
11	T1	All MCs	180	14.6	180	14.6	0.107	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	99.1
12	R2	All MCs	38	83.3	38	83.3	0.085	13.1	LOS A	0.4	12.1	0.53	0.70	0.53	44.9
Approach			218	26.6	218	26.6	0.107	2.3	NA	0.4	12.1	0.09	0.13	0.09	81.8
SouthWest: Whitehaven CHPP															
1	L2	All MCs	37	85.7	37	85.7	0.047	6.1	LOS A	0.0	0.0	0.00	0.32	0.00	37.7
3	R2	All MCs	4	25.0	4	25.0	0.021	23.4	LOS B	0.0	0.7	0.63	0.96	0.63	37.2
Approach			41	79.5	41	79.5	0.047	7.9	LOS A	0.0	0.7	0.06	0.39	0.06	37.6
All Vehicles			485	25.4	485	25.4	0.136	2.0	NA	0.4	12.1	0.05	0.12	0.05	79.8

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [10] BVR-2030-PM-App (2030 GOCs Mod)
Network: [6] 2030-PM-App (2030 App)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

Blue Vale Road and Kamilaroi Highway
2030 with SSD5000 Maximum Hourly Haulage
PM Peak Hour 4:30pm-5:30pm
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Kamilaroi Hwy															
11	T1	All MCs	174	15.2	174	15.2	0.103	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	99.1
12	R2	All MCs	53	70.0	53	70.0	0.088	11.4	LOS A	0.2	4.4	0.45	0.65	0.45	50.0
Approach			226	27.9	226	27.9	0.103	2.7	NA	0.2	4.4	0.10	0.16	0.10	80.6
NorthEast: Blue Vale Road															
1	L2	All MCs	76	45.8	76	45.8	0.070	10.9	LOS A	0.0	0.0	0.00	0.61	0.00	67.0
3	R2	All MCs	11	50.0	11	50.0	0.055	29.1	LOS C	0.1	1.0	0.65	1.02	0.65	44.9
Approach			86	46.3	86	46.3	0.070	13.1	LOS A	0.1	1.0	0.08	0.66	0.08	60.7
NorthWest: Kamilaroi Hwy															
4	L2	All MCs	1	0.0	1	0.0	0.103	7.8	LOS A	0.0	0.0	0.00	0.02	0.00	86.9
5	T1	All MCs	169	15.5	169	15.5	0.103	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	98.7
Approach			171	15.4	171	15.4	0.103	0.1	NA	0.0	0.0	0.00	0.02	0.00	98.5
All Vehicles			483	26.8	483	26.8	0.103	3.7	NA	0.2	4.4	0.06	0.20	0.06	80.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [12] WHC-2030-PM-App (2030 GOCs Mod)
Network: [6] 2030-PM-App (2030 App)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

Whitehaven CHPP Access and Kamilaroi Highway
2030 with SSD5000 Maximum Hourly Haulage
PM Peak Hour 4:30pm-5:30pm
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Kamilaroi Hwy															
4	L2	All MCs	3	0.0	3	0.0	0.146	7.8	LOS A	0.0	0.0	0.00	0.02	0.00	86.9
5	T1	All MCs	247	12.3	247	12.3	0.146	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	98.6
Approach			251	12.2	251	12.2	0.146	0.2	NA	0.0	0.0	0.00	0.02	0.00	98.3
NorthWest: Kamilaroi Hwy															
11	T1	All MCs	212	13.9	212	13.9	0.126	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	99.0
12	R2	All MCs	36	88.2	36	88.2	0.089	13.9	LOS A	0.1	5.3	0.56	0.73	0.56	43.9
Approach			247	24.7	247	24.7	0.126	2.1	NA	0.1	5.3	0.08	0.12	0.08	83.8
SouthWest: Whitehaven CHPP															
1	L2	All MCs	39	81.1	39	81.1	0.048	6.3	LOS A	0.0	0.0	0.00	0.32	0.00	37.7
3	R2	All MCs	22	4.8	22	4.8	0.063	15.0	LOS B	0.1	0.6	0.59	0.97	0.59	43.2
Approach			61	53.4	61	53.4	0.063	9.5	LOS A	0.1	0.6	0.21	0.56	0.21	40.4
All Vehicles			559	22.2	559	22.2	0.146	2.0	NA	0.1	5.3	0.06	0.12	0.06	79.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [5] BVR-2030-AM-Mod (2030 GOCs Mod)
Network: [3] 2030-AM-Mod (2030 with Mod)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

Blue Vale Road and Kamilaroi Highway
2030 with Modifications Maximum Hourly Haulage
AM Peak Hour 7:30am-8:30am
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Kamilaroi Hwy															
11	T1	All MCs	133	21.4	133	21.4	0.085	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	98.5
12	R2	All MCs	42	65.0	42	65.0	0.066	11.4	LOS A	0.3	7.1	0.44	0.65	0.44	51.8
Approach			175	31.9	175	31.9	0.085	2.8	NA	0.3	7.1	0.11	0.17	0.11	80.9
NorthEast: Blue Vale Road															
1	L2	All MCs	29	89.3	29	89.3	0.038	12.6	LOS A	0.0	0.0	0.00	0.59	0.00	65.3
3	R2	All MCs	3	0.0	3	0.0	0.005	12.4	LOS A	0.0	0.1	0.49	0.83	0.49	69.3
Approach			33	80.6	33	80.6	0.038	12.6	LOS A	0.0	0.1	0.05	0.61	0.05	66.0
NorthWest: Kamilaroi Hwy															
4	L2	All MCs	6	33.3	6	33.3	0.109	8.8	LOS A	0.0	0.0	0.00	0.03	0.00	71.0
5	T1	All MCs	180	12.9	180	12.9	0.109	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	98.2
Approach			186	13.6	186	13.6	0.109	0.4	NA	0.0	0.0	0.00	0.03	0.00	95.8
All Vehicles			394	27.3	394	27.3	0.109	2.5	NA	0.3	7.1	0.05	0.14	0.05	83.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [7] WHC-2030-AM-Mod (2030 GOCs Mod)
Network: [3] 2030-AM-Mod (2030 with Mod)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

Whitehaven CHPP Access and Kamilaroi Highway
2030 with Modifications Maximum Hourly Haulage
AM Peak Hour 7:30am-8:30am
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Kamilaroi Hwy															
4	L2	All MCs	12	0.0	12	0.0	0.136	7.8	LOS A	0.0	0.0	0.00	0.05	0.00	86.1
5	T1	All MCs	215	15.2	215	15.2	0.136	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	96.5
Approach			226	14.4	226	14.4	0.136	0.5	NA	0.0	0.0	0.00	0.05	0.00	95.4
NorthWest: Kamilaroi Hwy															
11	T1	All MCs	180	14.6	180	14.6	0.107	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	99.1
12	R2	All MCs	27	76.9	27	76.9	0.058	12.7	LOS A	0.2	7.6	0.52	0.68	0.52	45.7
Approach			207	22.8	207	22.8	0.107	1.8	NA	0.2	7.6	0.07	0.10	0.07	85.8
SouthWest: Whitehaven CHPP															
1	L2	All MCs	26	80.0	26	80.0	0.032	5.8	LOS A	0.0	0.0	0.00	0.32	0.00	37.7
3	R2	All MCs	4	25.0	4	25.0	0.020	21.9	LOS B	0.0	0.7	0.61	0.95	0.61	37.8
Approach			31	72.4	31	72.4	0.032	8.1	LOS A	0.0	0.7	0.08	0.41	0.08	37.7
All Vehicles			464	22.0	464	22.0	0.136	1.6	NA	0.2	7.6	0.04	0.10	0.04	83.5

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [9] BVR-2030-PM-Mod (2030 GOCs Mod)
Network: [4] 2030-PM-Mod (2030 with Mod)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

Blue Vale Road and Kamilaroi Highway
2030 with Modifications Maximum Hourly Haulage
PM Peak Hour 4:30pm-5:30pm
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Kamilaroi Hwy															
11	T1	All MCs	174	15.2	174	15.2	0.103	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	99.1
12	R2	All MCs	42	62.5	42	62.5	0.065	11.1	LOS A	0.1	2.9	0.43	0.64	0.43	52.4
Approach			216	24.4	216	24.4	0.103	2.2	NA	0.1	2.9	0.08	0.13	0.08	84.4
NorthEast: Blue Vale Road															
1	L2	All MCs	65	37.1	65	37.1	0.055	10.5	LOS A	0.0	0.0	0.00	0.62	0.00	67.4
3	R2	All MCs	11	50.0	11	50.0	0.051	27.5	LOS B	0.1	1.0	0.63	1.01	0.63	45.8
Approach			76	38.9	76	38.9	0.055	12.9	LOS A	0.1	1.0	0.09	0.67	0.09	60.6
NorthWest: Kamilaroi Hwy															
4	L2	All MCs	1	0.0	1	0.0	0.103	7.8	LOS A	0.0	0.0	0.00	0.02	0.00	86.9
5	T1	All MCs	169	15.5	169	15.5	0.103	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	98.7
Approach			171	15.4	171	15.4	0.103	0.1	NA	0.0	0.0	0.00	0.02	0.00	98.5
All Vehicles			462	23.5	462	23.5	0.103	3.2	NA	0.1	2.9	0.05	0.18	0.05	83.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [11] WHC-2030-PM-Mod (2030 GOCs Mod)
Network: [4] 2030-PM-Mod (2030 with Mod)
Output produced by SIDRA INTERSECTION Version: 10.0.9.250

Whitehaven CHPP Access and Kamilaroi Highway
2030 with Modifications Maximum Hourly Haulage
PM Peak Hour 4:30pm-5:30pm
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	Aver. Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
SouthEast: Kamilaroi Hwy															
4	L2	All MCs	3	0.0	3	0.0	0.146	7.8	LOS A	0.0	0.0	0.00	0.02	0.00	86.9
5	T1	All MCs	247	12.3	247	12.3	0.146	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	98.6
Approach			251	12.2	251	12.2	0.146	0.2	NA	0.0	0.0	0.00	0.02	0.00	98.3
NorthWest: Kamilaroi Hwy															
11	T1	All MCs	212	13.9	212	13.9	0.126	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	99.0
12	R2	All MCs	25	83.3	25	83.3	0.060	13.6	LOS A	0.1	3.3	0.54	0.71	0.54	44.6
Approach			237	21.3	237	21.3	0.126	1.5	NA	0.1	3.3	0.06	0.09	0.06	87.6
SouthWest: Whitehaven CHPP															
1	L2	All MCs	28	74.1	28	74.1	0.033	6.0	LOS A	0.0	0.0	0.00	0.32	0.00	37.7
3	R2	All MCs	22	4.8	22	4.8	0.059	14.4	LOS A	0.1	0.6	0.58	0.96	0.58	43.5
Approach			51	43.8	51	43.8	0.059	9.7	LOS A	0.1	0.6	0.25	0.60	0.25	41.0
All Vehicles			538	19.2	538	19.2	0.146	1.7	NA	0.1	3.3	0.05	0.10	0.05	82.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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