

Whitehaven ROM Coal Haulage Modification

Environmental Assessment

February 2014

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1 INTRODUCTION

This document is an Environmental Assessment (EA) for the Whitehaven Run-of-Mine (ROM) Coal Haulage Modification (the Modification), and has been prepared to support an application to modify Project Approval (11_0047) for the Tarrawonga Coal Mine.

Project Approval (11_0047) currently allows up to 2 million tonnes per annum (Mtpa) of Tarrawonga ROM coal to be transported to the Whitehaven Coal Handling and Preparation Plant (CHPP) along the Approved Whitehaven ROM Coal Road Transport Route (Approved Road Transport Route), prior to the commissioning of upgraded infrastructure at the adjacent Boggabri Coal Mine (Figure 1).

Within 3 months following the commissioning of the Boggabri CHPP and rail spur, Project Approval (11_0047) requires Tarrawonga ROM coal to be transported off-site via Boggabri infrastructure.

Up to 1.5 Mtpa of ROM coal from the Rocglen Coal Mine (Figure 1) is also approved to be transported to the Whitehaven CHPP along the Approved Road Transport Route in accordance with Project Approval (10_0015).

In addition, Whitehaven Coal Limited (Whitehaven) proposes to use the southern section of the Approved Road Transport Route to transport a total of 4.5 Mtpa of ROM coal (i.e. cumulatively with other Whitehaven coal mines) from the Vickery Coal Project (Figure 1) to the Whitehaven CHPP (subject to approval of the Vickery Coal Project [SSD-5000]).

The Vickery Coal Project also includes construction of a private haul road and Kamilaroi Highway overpass (Figure 1) between Blue Value Road and the Whitehaven CHPP, which would remove the need for ROM coal trucks to cross the Kamilaroi Highway.

Modification – Tarrawonga Coal Mine

Due to the recent downturn in coal prices, Boggabri Coal Pty Ltd (BCPL) and Whitehaven do not currently consider it to be economically viable to process and transport Tarrawonga coal via Boggabri infrastructure.

As such, the Modification would involve an increase in the road haulage of Tarrawonga ROM coal (from 2 to 3 Mtpa) along the Approved Road Transport Route for the life of the Tarrawonga Coal Mine.

However, Whitehaven would manage the use of the Approved Road Transport Route such that the cumulative ROM coal transported from all Whitehaven coal mines (i.e. the Tarrawonga Coal Mine, Rocglen Coal Mine and Vickery Coal Project) to the Whitehaven CHPP would not exceed:

- 3.5 Mtpa (i.e. the currently approved rate¹) prior to the commissioning of the proposed private haul road and Kamilaroi Highway overpass (Figure 1); and
- 4.5 Mtpa (i.e. the maximum annual rate described and assessed in the Vickery Environmental Impact Statement [EIS]) following the commissioning of the proposed private haul road and Kamilaroi Highway overpass.

Therefore, in comparison with what is currently approved, or previously assessed in the Vickery EIS, the Modification would increase the maximum annual rate of ROM coal road haulage on the northern section of the Approved Road Transport Route only (i.e. between the Tarrawonga Coal Mine and the Vickery Coal Project) (Figure 1).

All dwellings proximal to the northern section of the Approved Road Transport Route are currently owned by Whitehaven and/or BCPL, or are subject to a purchase agreement by Whitehaven (Figure 2).

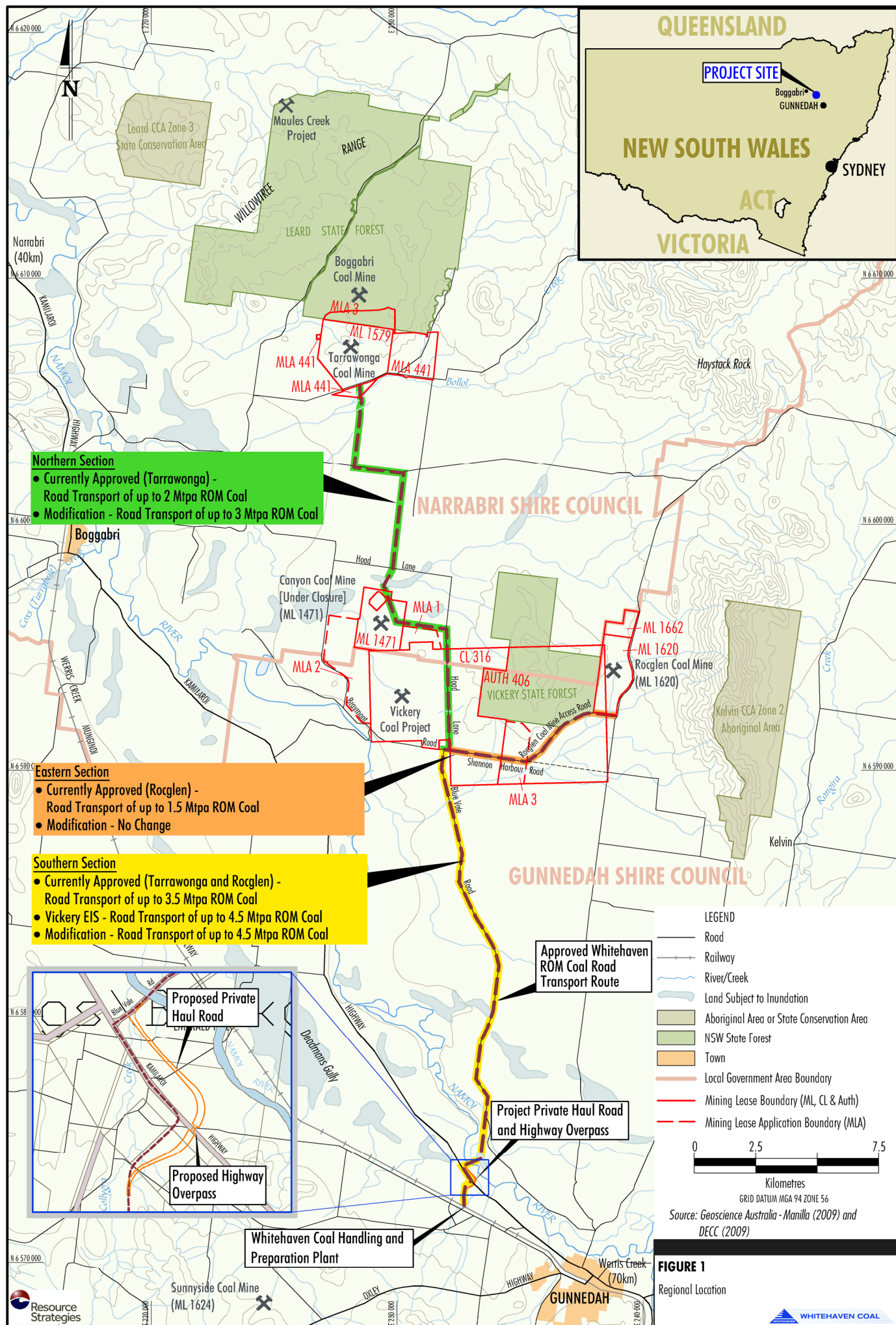
Notwithstanding the above, should financial circumstances improve, Tarrawonga ROM coal would be transported to the Boggabri Coal Mine for processing and transportation as described in the Tarrawonga EA.

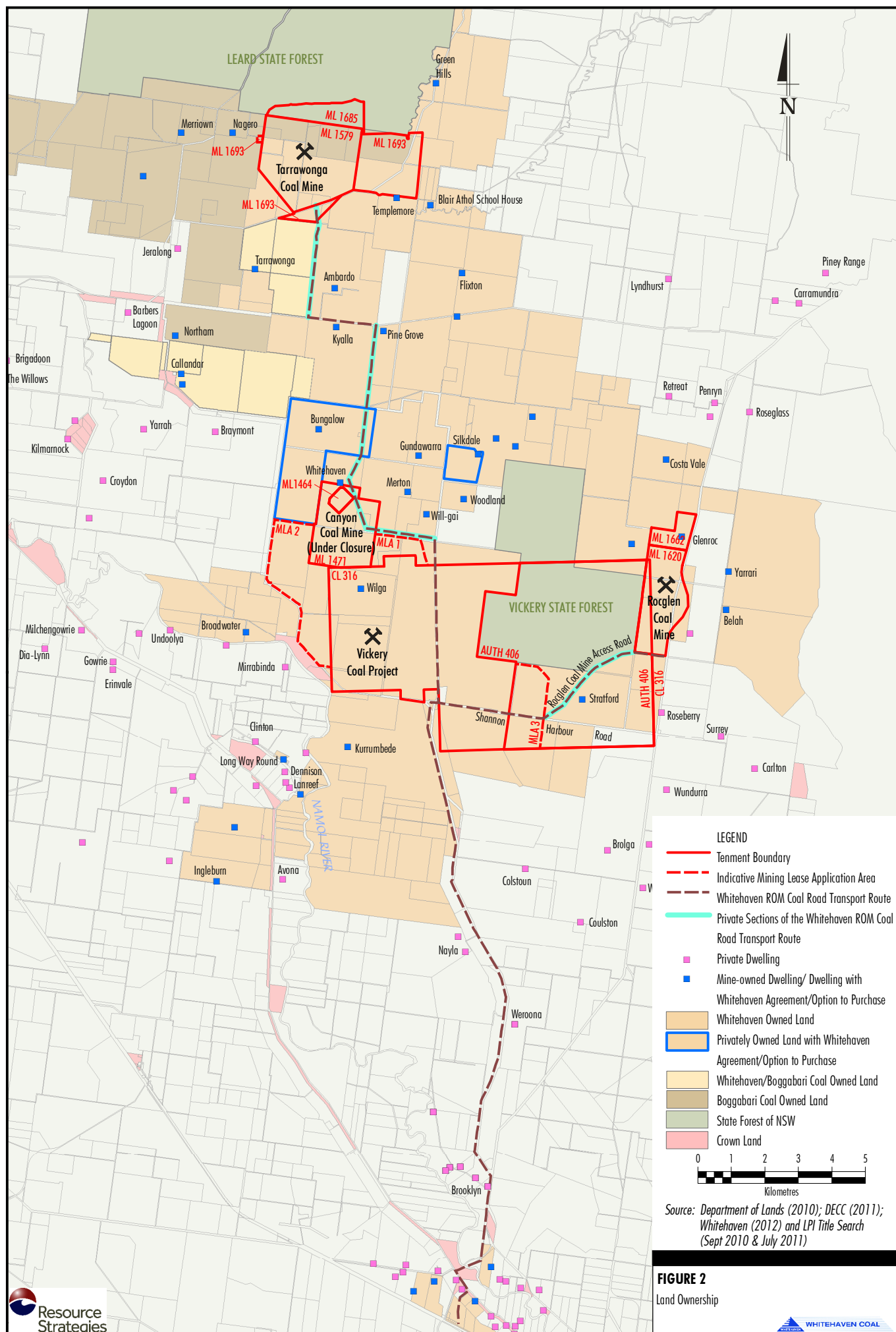
Modification – Rocglen Coal Mine

The Modification would not change the currently approved rate of ROM coal transported from the Rocglen Coal Mine to the Whitehaven CHPP (or any other approved operations at the Rocglen Coal Mine).

However, it is expected the Rocglen Project Approval (10_0015) would be modified to include a condition to reflect the commitment to manage the cumulative road haulage of ROM coal from the Tarrawonga and Rocglen Coal Mines and the Vickery Coal Project. As such, this EA also supports an application to modify Project Approval (10_0015) for the Rocglen Coal Mine.

¹ Comprising up to 2 Mtpa of Tarrawonga ROM coal and 1.5 Mtpa of Rocglen ROM coal.





2 BACKGROUND

2.1 Tarrawonga Coal Mine

The Tarrawonga Coal Mine is located approximately 42 kilometres (km) north-northwest of Gunnedah in New South Wales (NSW) (Figure 1).

The Tarrawonga Coal Mine is owned and operated by Tarrawonga Coal Pty Ltd (TCPL), which is a joint venture between Whitehaven Coal Mining Pty Ltd (a wholly owned subsidiary of Whitehaven) (70 percent [%] interest) and BCPL (30% interest).

Mining operations at the Tarrawonga Coal Mine are conducted in accordance with Project Approval (11_0047), which was granted by the NSW Planning Assessment Commission under delegation from the NSW Minister for Planning & Infrastructure pursuant to section 75J of the NSW *Environmental Planning and Assessment Act, 1979* (EP&A Act) on 22 January 2013.

In accordance with Project Approval (11_0047) the Tarrawonga Coal Mine is approved to extract up to 3 Mtpa of ROM coal until the end of December 2030.

A component of the Tarrawonga Coal Project was the construction and use of a haul road to the CHPP proposed to be constructed at the Boggabri Coal Mine (Figure 1). As described in the Tarrawonga EA, Tarrawonga coal was to be processed at the Boggabri CHPP and loaded onto trains for off-site transport via the Boggabri rail spur (Figure 1).

As such, Project Approval (11_0047) currently allows up to 2 Mtpa of Tarrawonga ROM coal to be transported to the Whitehaven CHPP along the Approved Road Transport Route prior to the commissioning of the Boggabri CHPP and rail spur.

Within 3 months following the commissioning of the Boggabri CHPP and rail spur, Project Approval (11_0047) requires Tarrawonga ROM coal to be transported off-site via the Boggabri rail spur.

2.2 Rocglen Coal Mine

The Rocglen Coal Mine is located approximately 25 km north of Gunnedah (Figure 1), and is owned and operated by Whitehaven.

Mining operations at the Rocglen Coal Mine are conducted in accordance with Project Approval (10_0015), which was granted by the Minister for Planning & Infrastructure pursuant to section 75J of the EP&A Act on 27 September 2011.

In accordance with Project Approval (10_0015) the Rocglen Coal Mine is approved to extract up to 1.5 Mtpa of ROM coal until the end of December 2022. ROM coal from the Rocglen Coal Mine is transported to the Whitehaven CHPP along the Approved Road Transport Route.

2.3 Approved Road Transport Route

The Approved Road Transport Route is shown on Figure 1, and comprises:

- northern section (between the Tarrawonga Coal Mine and Vickery Coal Project) – a combination of private roads and public roads (Rangari Road, Hoad Lane and Blue Vale Road);
- eastern section (between the Rocglen Coal Mine and Vickery Coal Project) – a combination of private roads (Rocglen Coal Mine Access Road) and public roads (Shannon Harbour Road); and
- southern section (south of the Vickery Coal Project) – Blue Vale Road and a section of the Kamlaroi Highway.

Whitehaven and BCPL have purchased, or entered into purchase agreements, with a number of properties adjacent to the Approved Road Transport Route (Figure 2).

All dwellings proximal to the northern section of the Approved Road Transport Route are currently owned by Whitehaven and/or BCPL, or are subject to a purchase agreement by Whitehaven (Figure 2).

2.3.1 Existing Road Maintenance Agreements

The Approved Road Transport Route lies within the Gunnedah and Narrabri local government areas (LGAs) (Figure 1).

In accordance with Condition 55, Schedule 3 of Project Approval (11_0047), Whitehaven/TCPL has entered into road maintenance agreements with the Gunnedah and Narrabri Shire Councils for the maintenance of public sections of the Approved Road Transport Route within the Gunnedah and Narrabri LGAs, respectively.

The road maintenance agreement with the Narrabri Shire Council requires the roads and intersections along the Approved Road Transport Route within the Narrabri LGA to be maintained in good condition at all times at Whitehaven/TCPL's cost.

The road maintenance agreement with the Gunnedah Shire Council requires Whitehaven/TCPL to pay 95% of road maintenance costs incurred by the Gunnedah Shire Council for Hoad Lane and Blue Vale Road.

2.3.2 Approved ROM Coal Haulage Rate

Whitehaven is currently approved to transport a total of up to 3.5 Mtpa of ROM coal to the Whitehaven CHPP along the Approved Road Transport Route, consisting up to 2 Mtpa from the Tarrawonga Coal Mine and 1.5 Mtpa from the Rocglen Coal Mine.

2.3.3 Approved ROM Coal Haulage Hours

ROM coal is currently approved to be transported along the Approved Road Transport Route between:

- 7.00 am to 10.00 pm Monday to Friday; and
- 7.00 am to 6.00 pm Saturday.

2.4 Vickery Coal Project

Whitehaven lodged an application (SSD-5000) for approval of the Vickery Coal Project (Figure 1) on 17 December 2012.

The NSW Department of Planning and Infrastructure (DP&I) is currently assessing the Vickery Coal Project.

The Vickery Coal Project would involve the development of an open cut coal mine producing up to 4.5 Mtpa ROM coal for a period of approximately 30 years, and would be located approximately 25 km north of Gunnedah (Figure 1).

Up to 4.5 Mtpa ROM coal from the Vickery Coal Project would be transported along the southern section of the Approved Road Transport Route to the Whitehaven CHPP (Figure 1).

The Vickery Coal Project also includes construction of an approximately 1 km long section of private haul road (including an overpass over the Kamilaroi Highway) between Blue Vale Road and the Whitehaven CHPP (Figure 1). This would remove the need for coal trucks to cross the Kamilaroi Highway.

The private haul road and Kamilaroi Highway overpass would be constructed prior to the cumulative road haulage of ROM coal along the Approved Road Transport Route (i.e. from the Tarrawonga Coal Mine, Rocglen Coal Mine and Vickery Coal Project) exceeding the currently approved road haulage rate of 3.5 Mtpa.

It is understood that the conditions of any Development Consent for the Vickery Coal Project would limit ROM coal haulage along the Approved Road Transport Route to:

- 6.00 am to 10.00 pm Monday to Friday; and
- 7.00 am to 6.00 pm Saturday.

3 MODIFICATION OVERVIEW

3.1 Increase in Tarrawonga ROM Coal Haulage

Due to the recent downturn in coal prices, BCPL and Whitehaven do not currently consider it to be economically viable to process and transport Tarrawonga coal via Boggabri infrastructure.

Accordingly, TCPL is seeking to modify Project Approval (11_0047) to authorise the transportation of up to 3 Mtpa of Tarrawonga ROM coal to the Whitehaven CHPP via the Approved Road Transport Route for the life of the Tarrawonga Coal Mine (i.e. until December 2030).

Notwithstanding, should financial circumstances improve, Tarrawonga ROM coal would be transported to the Boggabri Coal Mine for processing and transportation as described in the Tarrawonga EA.

3.2 ROM Coal Haulage Hours

It is proposed that for the Modification, the Tarrawonga ROM coal haulage transportation hours would be updated to be consistent with those expected for the Vickery Coal Project, which are as follows (Section 2.4):

- 6.00 am to 10.00 pm Monday to Friday; and
- 7.00 am to 6.00 pm Saturday.

In comparison with what is currently approved or previously assessed in the Vickery EIS, this would result in an additional hour of ROM coal haulage along the northern section of the Approved Road Transport Route (i.e. between 6.00 am and 7.00 am) on weekdays. However, there are currently no privately-owned dwellings along the northern section of the Approved Road Transport Route (Figure 2).

There would be no change to the currently approved Tarrawonga ROM coal haulage hours on Saturdays (i.e. 7.00 am to 6.00 pm), and no ROM coal haulage would occur on Sundays or public holidays.

3.3 Management of Cumulative ROM Coal Haulage

Notwithstanding the proposed increase in Tarrawonga ROM coal haulage, Whitehaven would manage the use of the Approved Road Transport Route such that the cumulative ROM coal transported from Whitehaven coal mines (i.e. the Tarrawonga Coal Mine, Rocglen Coal Mine and the Vickery Coal Project) to the Whitehaven CHPP would not exceed:

- 3.5 Mtpa (i.e. the currently approved rate) prior to the commissioning of the private haul road and Kamilaroi Highway overpass².
- 4.5 Mtpa (i.e. the maximum rate described and assessed in the Vickery EIS) following the commissioning of the private haul road and Kamilaroi Highway overpass.

That is, cumulative ROM coal haulage along the southern section of the Approved Road Transport Route would not exceed the maximum annual rate described and assessed in the Vickery EIS.

Notwithstanding, the Vickery EIS assessed the transport of up to 4.5 Mtpa of Vickery ROM coal on a 24 hour per day, 7 day per week basis. For the Modification, the cumulative ROM coal transported to the Whitehaven CHPP would be limited to those described in Section 3.2 to avoid ROM coal haulage during the night-time period (i.e. 10.00 pm to 6.00 am).

It is expected that both the Tarrawonga Project Approval (11_0047) and Rocglen Project Approval (10_0015) would be modified to include a condition to reflect the commitment to manage the cumulative road haulage of ROM coal from Whitehaven mines to the Whitehaven CHPP. It is also expected that any Development Consent for the Vickery Coal Project would include a consistent condition of approval.

In accordance with Development Consent (DA 0079.2002), the Whitehaven CHPP is currently approved to process up to 3 Mtpa of ROM coal, and the rail loadout facility at the Whitehaven CHPP is approved to handle up to 4.1 Mtpa of product coal. As a result of these existing constraints, not more than approximately 4.5 Mtpa of ROM coal could be received and processed/handled at the Whitehaven CHPP without infrastructure upgrades and additional environmental approvals.

Therefore, Whitehaven considers the commitment to limit the cumulative transport of ROM coal to the Whitehaven CHPP to 4.5 Mtpa to be reasonable for the Modification.

3.4 Other Project Components

3.4.1 Tarrawonga Coal Mine

There would be **no change** to the following key components of the currently approved Tarrawonga Coal Mine due to the Modification:

- mining operations (i.e. open cut coal mining and waste rock emplacement);
- maximum annual ROM coal production rate;
- mine life;
- mining tenements;
- surface development extent;
- water supply or management;
- peak number of employees;
- deliveries and consumables;
- the construction of Goonbri Road realignments and associated mine access road intersection prior to any project works occurring within 25 metres (m) of the existing Goonbri Road alignment, or on the southern/eastern side of the existing road alignment;
- use of an existing on-site mobile crusher for coal crushing and screening of up to 150,000 tonnes of domestic specification coal per annum for direct collection by customers at the mine site; and
- use an existing on-site mobile crusher to produce up to approximately 90,000 cubic metres (m³) of gravel materials per annum for direct collection by customers at the mine site.

3.4.2 Rocglen Coal Mine

The Modification would not change any component of the currently approved Rocglen Coal Mine operations, including the transport of up to 1.5 Mtpa of ROM coal transport to the Whitehaven CHPP.

Notwithstanding, the amount of Rocglen ROM coal transported to the Whitehaven CHPP would be managed in consideration of the amount of ROM coal transported from the Tarrawonga Coal Mine and/or the Vickery Coal Project (Section 3.3).

² The construction of the private haul road and Kamilaroi Highway overpass would be subject to approval of the Vickery Coal Project, and other relevant approvals.

3.5 Consultation

Consultation with the DP&I regarding the Modification was undertaken in December 2013.

The Vickery EIS described the cumulative transport of up to 4.5 Mtpa of ROM coal along the Approved Road Transport Route to the Whitehaven CHPP, which would not change for the Modification.

The Vickery EIS was placed on public exhibition by the DP&I between 5 March and 14 April 2013. As such, stakeholders and other interested parties have had the opportunity to review and provide comments on the proposed cumulative transport of up to 4.5 Mtpa of ROM coal along the Approved Road Transport Route to the Whitehaven CHPP during public consultation for the Vickery EIS.

4 ENVIRONMENTAL REVIEW

The Modification EA considers relevant potential impacts associated with the following proposed changes to currently approved/previously assessed operations:

- the increase in the road haulage of Tarrawonga ROM coal (from 2 to 3 Mtpa) on the northern section of the Approved Road Transport Route; and
- ROM coal haulage of up to 4.5 Mtpa on the southern section of the Approved Road Transport Route during the hours described in Section 3.2 (i.e. rather than 24 hours per day, 7 days week as described in the Vickery EIS).

Potential impacts associated with mining operations at the Tarrawonga Coal Mine were described and assessed in the Tarrawonga EA, and subsequently approved subject to the Tarrawonga Coal Mine operating in accordance with the conditions of Project Approval (11_0047).

As there would be no change to the currently approved mining operations at the Tarrawonga Coal Mine (Section 3.4) no further assessment relevant to mining operations at the Tarrawonga Coal Mine is required for the Modification.

The Modification would not change the currently approved Rocglen ROM coal haulage rate of 1.5 Mtpa, and therefore, no assessment of potential impacts on the eastern section of the Approved Road Transport Route is required.

A summary of the assessment of relevant potential impacts associated with the Modification is provided below.

4.1 Road Transport

A Road Transport Assessment Review was undertaken by GTA Consultants (2014) for the Modification and is presented as Appendix A to the EA.

4.1.1 Background

Tarrawonga Coal Mine

An assessment of potential road transport impacts was undertaken for the Tarrawonga EA by Halcrow (2011).

The assessment considered the haulage of up to 2 Mtpa of Tarrawonga ROM coal to the Whitehaven CHPP in Year 1 of the Tarrawonga Coal Mine. Following Year 1, it was assumed that up to 3 Mtpa of Tarrawonga ROM coal would be directly hauled to the Boggabri Coal Mine (Appendix A).

The assessment also considered other road traffic generated by the Tarrawonga Coal Mine, including employee movements, deliveries and the collection of domestic specification coal/gravel by customers.

No significant impacts on the performance, capacity, efficiency and safety of the local road network were predicted by Halcrow (2011), and no specific monitoring or mitigation measures were considered warranted.

Notwithstanding, in accordance with Project Approval (11_0047) the following management and monitoring measures relevant to road transport are undertaken for the Tarrawonga Coal Mine:

- trucks travelling to and from the site do not exceed 40 kilometres per hour in the vicinity of the school bus operating on Hoad Lane;
- Whitehaven has implemented a protocol whereby all ROM coal haulage truck drivers maintain positive communication between themselves and the bus drivers via UHF radio;
- all oversized vehicles have the relevant permits, licences and escorts, as required by the government agencies;
- all oversize vehicles loads are appropriately secured and covered; and
- road maintenance agreements have been implemented with the Gunnedah and Narrabri Shire Councils (as described in Section 2.3.1).

Vickery Coal Project

An assessment of potential road transport impacts was undertaken for the Vickery EIS by GTA Consultants (2012).

The assessment considered the potential impacts of the haulage of up to 4.5 Mtpa of ROM coal along the southern section of the Approved Road Transport Route (i.e. between Vickery and the Whitehaven CHPP) as well as other road traffic generated by the Vickery Coal Project.

In addition, the assessment considered the potential cumulative impacts associated with traffic expected to be generated by the following relevant sources:

- Tarrawonga Coal Mine;
- Rocglen Coal Mine;
- Boggabri Coal Mine;
- Maules Creek Coal Mine; and
- background traffic growth associated with other (non-mining) sources.

No significant impacts on the performance, capacity, efficiency and safety of the road network were expected by GTA Consultants (2012) to arise as a result of the Vickery Coal Project, including in consideration of expected cumulative impacts with other traffic sources. Therefore, no specific traffic monitoring or mitigation measures were considered to be warranted (GTA Consultants, 2012).

Whitehaven anticipates that road maintenance agreements similar to those currently held with the Gunnedah and Narrabri Shire Councils (Section 2.3) would be maintained over the life of the Vickery Coal Project (should it be approved).

4.1.2 Environmental Review

Northern Section of the Approved Road Transport Route

The increase in road haulage of Tarrawonga ROM coal (from 2 to 3 Mtpa) is predicted to increase average weekday ROM coal haulage truck movements on the northern section of the Approved Road Transport Route from approximately 348 to 520 vehicle movements per day (Appendix A).

GTA Consultants (2014) concludes the increased road haulage of Tarrawonga ROM coal for the Modification would result in no significant impacts on the performance, efficiency and safety of the road network relevant to the northern section of the Approved Road Transport Route, given the following:

- There would be no change to the Level of Service of the northern section of the Approved Road Transport Route, as the peak hourly volume of traffic associated with the Modification would remain significantly below the volume associated with a Level of Service A (i.e. the best traffic conditions).
- While there would be a small increase in the potential interaction between school buses and ROM coal haulage trucks, the increase is considered by GTA Consultants (2014) to be sufficiently small such that no additional measures or protocols (i.e. in addition to the existing measures and protocols described in Section 4.1.1) are considered warranted.

Southern Section of the Approved Road Transport Route – No Highway Overpass

Prior to the commissioning of the private haul road and Kamilaroi Highway overpass, Whitehaven would manage the use of the Approved Road Transport Route such that the cumulative ROM coal transported from Whitehaven coal mines would not exceed the currently approved rate of 3.5 Mtpa of ROM coal.

Therefore, no additional road transport impacts are predicted on the southern section of the Approved Road Transport Route prior to the commissioning of the private haul road and Kamilaroi Highway overpass (i.e. in comparison to those currently approved for the Tarrawonga Coal Mine and Rocglen Coal Mine) (Appendix A).

Southern Section of the Approved Road Transport Route – With Highway Overpass

Following the commissioning of the private haul road and Kamilaroi Highway overpass, Whitehaven would manage the use of the Approved Road Transport Route such that the cumulative ROM coal transported from Whitehaven coal mines would not exceed 4.5 Mtpa ROM coal.

As such, the Modification would not change the maximum annual ROM coal haulage rate of 4.5 Mtpa assessed in the Vickery EIS on the southern section of the Approved Road Transport Route.

No significant impacts on the performance, capacity, efficiency and safety of the road network were expected by GTA Consultants (2012) to arise as a result of the Vickery Coal Project, including in consideration of expected cumulative impacts with other traffic sources such as the Tarrawonga Coal Mine and Rocglen Coal Mine (Section 4.1.1).

Notwithstanding, for the Modification ROM coal haulage of up to 4.5 Mtpa on the southern section of the Approved Road Transport Route would occur during the hours described in Section 3.2, rather than 24 hours per day, 7 days week as described in the Vickery EIS.

It is predicted this would result in an increase (i.e. in comparison to what was assessed in the Vickery EIS) in average weekday ROM coal haulage truck movements from approximately 670 to 780 vehicle movements per day.

GTA Consultants (2014) concludes the increased average weekday ROM coal haulage truck movements for the Modification would result in no significant impacts on the performance, efficiency and safety of the road network relevant to the southern section of the Approved Road Transport Route, given the following:

- The construction of the private haul road and Kamilaroi Highway overpass would mean that ROM coal trucks would no longer use the intersections between the Approved Road Transport Route and the Kamilaroi Highway, which would reduce potential interactions with other traffic.
- There would be no change to the Level of Service of the southern section of the Approved Road Transport Route, as the peak hourly volume of traffic associated with the Modification would remain significantly below the volume associated with a Level of Service A.
- While there would be a small increase in the potential interaction between school buses and ROM coal haulage trucks, the increase is considered by GTA Consultants (2014) to be sufficiently small such that no additional measures or protocols (i.e. in addition to the existing measures and protocols described in Section 4.1.1) are considered warranted.

4.1.3 Mitigation, Monitoring and Management

GTA Consultants (2014) concludes that, in consideration of the commitment to manage the cumulative ROM coal haulage from Whitehaven coal mines to the Whitehaven CHPP (Section 3.3), the Modification would result in no significant impacts on the performance, efficiency and safety of the road network.

Therefore, no additional specific traffic monitoring or mitigation measures are considered to be warranted (Appendix A).

Whitehaven/TCPL would continue to implement the existing traffic management measures and protocols currently in place for the Tarrawonga Coal Mine for the Modification, as well as relevant measures required in accordance with any Development Consent for the Vickery Coal Project.

The existing road maintenance agreements with the Gunnedah and Narrabri Shire Councils would continue for the Modification.

In addition, it is expected that both the Tarrawonga Project Approval (11_0047) and Rocglen Project Approval (10_0015) would be modified to include a condition to reflect the commitment to manage the cumulative road haulage of ROM coal from the Tarrawonga and Rocglen Coal Mines and the Vickery Coal Project to the Whitehaven CHPP. It is also expected that any Development Consent for the Vickery Coal Project would include a consistent condition of approval.

4.2 Road Traffic Noise

A Road Traffic Noise Assessment Review was undertaken by Wilkinson Murray (2014) for the Modification and is presented as Appendix B to the EA.

4.2.1 Background

Tarrawonga Coal Mine

An assessment of potential road traffic noise impacts on public roads was conducted by Wilkinson Murray (2011) for the Tarrawonga EA.

Potential road traffic noise impacts were assessed against the criteria specified in the NSW *Environmental Criteria for Road Traffic Noise* (ECRTN) (EPA, 1999) (which has now been replaced by the NSW *Road Noise Policy* [RNP] [DECCW, 2011]).

No exceedances of the relevant road traffic noise criteria were predicted at the closest privately-owned receiver locations along the Approved Road Transport Route, including during Year 1 of the Tarrawonga Coal Mine (i.e. when 2 Mtpa of ROM coal was assessed as being transported to the Whitehaven CHPP).

Project Approval (11_0047) contains road traffic noise criteria, which require that noise generated by the Tarrawonga Coal Mine on public roads does not exceed the following criteria at existing residences on privately-owned land:

- day – 60 dBA $L_{Aeq(15\text{hour})}$;
- evening – 60 dBA $L_{Aeq(1\text{hour})}$; and
- night – 55 dBA $L_{Aeq(1\text{hour})}$.

Vickery Coal Project

An assessment of potential road traffic noise impacts on public roads was conducted by Wilkinson Murray (2012) for the Vickery EIS.

The assessment considered the potential impacts of the haulage of up to 4.5 Mtpa of ROM coal along the southern section of the Approved Road Transport Route (i.e. between Vickery and the Whitehaven CHPP), as well as other road traffic generated by the Vickery Coal Project and other sources (such as the Tarrawonga Coal Mine and Rocglen Coal Mine).

The predicted noise levels at the two privately-owned receivers closest to Blue Vale Road along the Approved Road Transport Route were predicted to be below the relevant RNP road traffic noise criteria.

Wilkinson Murray (2012) also undertook an assessment of the potential noise impacts associated with the private haul road and Kamilaroi Highway overpass noise levels against the existing noise levels associated with the Kamilaroi Highway.

Combined noise from all traffic was predicted to meet the RNP road noise criterion of 60 dBA $L_{Aeq(15\text{hour})}$ for the day time period, and noise from the private haul road and Kamilaroi Highway overpass alone was predicted to meet the RNP criterion for a new arterial road of 55 dBA $L_{Aeq(15\text{hour})}$.

Rocglen Coal Project

Project Approval (10_0045) contains road traffic noise criteria, which require that noise generated by the Rocglen Coal Mine and Tarrawonga Coal Mine on public roads does not exceed the following criteria at existing residences on privately-owned land:

- day – 55 dBA $L_{Aeq(1\text{hour})}$;
- evening – 55 dBA $L_{Aeq(1\text{hour})}$; and
- night – 50 dBA $L_{Aeq(1\text{hour})}$.

It is noted the road traffic noise criteria in the Rocglen Project Approval (10_0045) (dated September 2011) are inconsistent with the road traffic noise criteria in the more contemporary Tarrawonga Project Approval (11_0047) (dated September 2011), and are also inconsistent with the relevant RNP criteria.

Existing Compliance

Cumulative road traffic noise monitoring is conducted in accordance with the existing Road Traffic Noise Management Plan for the Rocglen Coal Mine.

Based on monitoring conducted in 2012 and 2013 (i.e. since Tarrawonga Project Approval [11_0047] was granted), no exceedances of the Tarrawonga road traffic noise criteria have been reported (inclusive of cumulative road traffic from the Rocglen Coal Mine on the southern section of the Approved Road Transport Route).

Notwithstanding, it is noted that monitoring conducted in June 2013 recorded a road traffic noise level of 57 dBA $L_{Aeq(1\text{hour})}$ during the day at the “Brooklyn” dwelling located adjacent to the southern section of the Approved Road Transport Route (Figure 2).

This represents an 2 dB exceedance of the existing Rocglen criteria of 55 dBA $L_{Aeq(1\text{hour})}$ for the day time period. However, as noted in the RNP, 2 dB represents a minor impact that is considered barely perceptible to the average person.

In addition, as described above, the Rocglen road traffic noise criterion for the day time period (55 dBA $L_{Aeq(1\text{hour})}$) is inconsistent with the more contemporary Tarrawonga criterion for the day time period (60 dBA $L_{Aeq(15\text{hour})}$). It is expected that the Rocglen road traffic noise criteria would be updated for the Modification to be consistent with the Tarrawonga road traffic noise criteria and the RNP.

4.2.2 Environmental Review

Road Traffic Noise Criteria

For the Modification, ROM coal haulage would occur between the hours of (Section 3.2):

- 6.00 am to 10.00 pm Monday to Friday; and
- 7.00 am to 6.00 pm Saturday.

It is noted that the 'shoulder' period of 6.00 to 7.00 am forms part of the night-time period (10.00 pm to 7.00 am) as defined in the RNP. However, Section 2.5.5 of the RNP recognises that it may be reasonable to vary the standard time period applied to the day (7.00 am to 10.00 pm) and night (10.00 pm to 7.00 am), and that appropriate noise levels for 'shoulder' periods may be negotiated with the determining or regulatory authority.

Based on consultation with the DP&I in December 2013 (Section 3.5), potential road traffic noise impacts associated with the Modification have been assessed against the relevant criteria for the day time period only (i.e. the 'shoulder' period 6.00 to 7.00 am is considered to be part of the day time period).

While ROM coal haulage would occur over a 16 hour period (6.00 am to 10.00 pm) on weekdays, Wilkinson Murray (2014) conservatively assumed that all ROM coal haulage would occur over a 15 hour period, with the resulting potential road traffic noise impacts compared against the relevant criteria of 60 dBA $L_{Aeq(15\text{hour})}$ for the day time period.

Northern Section of the Approved Road Transport Route

Wilkinson Murray (2014) predicted potential road traffic noise impacts associated with the transport of 3 Mtpa of Tarrawonga ROM coal along the northern section of the Approved Road Transport Route.

Since the Tarrawonga EA and Vickery EIS, Whitehaven and BCPL have purchased, or Whitehaven has entered into purchase agreements, with a number of properties proximal to the northern section of the Approval Road Transport Route (Section 2.3) (Figure 2).

The closest privately-owned receivers, the "Braymont" and "Jeralong" dwellings (Figure 2), are located over 4 km away from the northern section of the Approved Road Transport Route.

By comparison, the Tarrawonga EA assessed potential road traffic noise impacts at the "Kyalla" dwelling (Figure 2), which is located approximately 180 m from the Approved Road Transport Route, with no exceedances of the relevant road traffic noise criteria predicted at "Kyalla", including during the transport of 2 Mtpa of Tarrawonga ROM coal.

No exceedances of the relevant day time road traffic noise criteria were predicted at any privately-owned receivers along the northern section of the Approved Road Transport Route due to the Modification (Appendix B).

There would be no ROM coal haulage during the night-time period for the Modification, and therefore, no exceedance of the night-time road traffic noise criteria is expected (Appendix B).

Southern Section of the Approved Road Transport Route

Wilkinson Murray (2014) predicted potential road traffic noise impacts associated with the cumulative transport of 4.5 Mtpa of ROM coal along the southern section of the Approved Road Transport Route.

The closest privately-owned receivers to the southern section of the Approved Road Transport Route are the "Brooklyn" and "Weroona" dwellings (Figure 2).

It was predicted that there would be no exceedance of the relevant road traffic noise criteria at either the "Brooklyn" or "Weroona" dwellings during the day time period (Appendix B).

The maximum total road traffic noise levels (i.e. including the cumulative haulage of 4.5 Mtpa of ROM coal, other cumulative mine-related traffic and non-mining traffic) are presented in Table 1.

Table 1
Maximum Predicted Road Traffic Noise Levels

| Receiver | Maximum Predicted Noise Level ¹ | Criteria |
|----------|--|---------------------------------|
| Brooklyn | 55 dBA $L_{Aeq(15\text{hour})}$ | 60 dBA $L_{Aeq(15\text{hour})}$ |
| Weroona | 46 dBA $L_{Aeq(15\text{hour})}$ | 60 dBA $L_{Aeq(15\text{hour})}$ |

Source: After Appendix B.

¹ Includes road traffic noise associated with: cumulative haulage of 4.5 Mtpa of ROM coal from the Tarrawonga Coal Mine, Rocglen Coal Mine and Vickery Coal Project; other cumulative mine-related traffic; and non-mining traffic.

There would be no ROM coal haulage during the night-time period for the Modification, and therefore, no exceedance of the night-time road traffic noise criteria is expected (Appendix B).

As the relevant road traffic noise criteria are predicted to be met at the two closest receivers, then the criteria would be anticipated to be met at all other receivers (Figure 2) along the southern section of the Approved Road Transport Route.

Private Sections of Approved Road Transport Route

Potential noise impacts associated with ROM coal haulage on the private sections of the northern section of the Approved Road Transport Route have been assessed by Wilkinson Murray (2014) against the criteria for industrial noise in the NSW Industrial Noise Policy (INP) for the Modification.

Potential noise levels associated with ROM coal haulage trucks on the private sections of the Approved Road Transport Route are predicted to be negligible (i.e. 10 dBA $L_{Aeq}(15 \text{ minute})$ or less) at the closest privately-owned receivers, the “Braymont” and “Jeralong” dwellings, which are located over 4 km away (Appendix B).

As such, the Modification is predicted to result in no change to currently approved or previously assessed operational or cumulative noise levels at all privately-owned receivers (Appendix B).

Private Haul Road and Kamilaroi Overpass

Wilkinson Murray (2014) has undertaken an assessment of the potential noise impacts associated with ROM coal haulage trucks using the private haul road and Kamilaroi Highway overpass.

No exceedances of the relevant RNP road noise assessment criteria for the day time period were predicted at any of the privately-owned receivers surrounding the private haul road and Kamilaroi Highway overpass (Figure 2) due to the Modification (Appendix B).

4.2.3 Mitigation, Monitoring and Management

Road traffic noise monitoring would continue to be conducted in accordance with the existing Road Traffic Noise Management Plan, which would be reviewed and updated for the Modification.

4.3 Air Quality

The Air Quality and Greenhouse Gas Assessment prepared for the Vickery EIS (PAEHolmes, 2012) considered potential dust emissions associated with ROM coal transport along the Approved Road Transport Route.

It was concluded that, as the on-highway trucks used for transportation of ROM coal to the Whitehaven CHPP would be covered to minimise potential dust emissions, and the trucks would travel along sealed roads, dust emissions would be negligible (PAEHolmes, 2012).

These control measures would continue for the Modification. Therefore, the PAEHolmes (2012) conclusion that ROM coal transport along the Approved Road Transport Route would result in negligible dust emissions is relevant for the Modification.

5 LEGISLATIVE FRAMEWORK

The legislative framework relevant to the Modification is described below.

5.1 Section 75W of the Environment Planning and Assessment Act, 1979

The Tarrawonga Project Approval (11_0047) and Rocglen Project Approval (10_0015) were granted under Part 3A of the EP&A Act.

Therefore, the Tarrawonga and Rocglen Coal Mines both constitute a “transitional Part 3A project” pursuant to the savings and transitional provisions in Schedule 6A of the EP&A Act.

Clause 3 of Schedule 6A provides that Part 3A of the EP&A Act continues to apply to and in respect of “transitional Part 3A projects” following its repeal. That is, Part 3A of the EP&A Act continues to apply, notwithstanding its repeal.³

Approval for the proposed changes is sought as modifications to the Tarrawonga Project Approval (11_0047) and Rocglen Project Approval (10_0015) under section 75W of the EP&A Act.

³ Part 3A of the EP&A Act (as in force immediately before its repeal) continues to apply for the Tarrawonga and Rocglen Coal Mines. The references to clauses of Part 3A in this document are, therefore, as if Part 3A of the EP&A Act is still in force.

Section 75W of the EP&A Act relevantly provides:

75W Modification of Minister's approval

(1) In this section:

Minister's approval means an approval to carry out a project under this Part, and includes an approval of a concept plan.

modification of approval means changing the terms of a Minister's approval, including:

- a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and
- b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.

- (2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.
- (3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.
- (4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.

...

5.2 Other Legislation

5.2.1 Tarrawonga Coal Mine

State Environmental Planning Policies

Under section 75R(2)(b) of the EP&A Act, State Environmental Planning Policies (SEPPs) apply to projects to which Part 3A applies.

Given this, various SEPPs potentially of relevance to the Tarrawonga Coal Mine were described in the Tarrawonga EA, including:

- Major Development SEPP;
- *State Environmental Planning Policy No. 33 – Hazardous and Offensive Development*;
- *State Environmental Planning Policy No. 44 – Koala Habitat Protection*;
- *State Environmental Planning Policy No. 55 – Remediation of Land*;
- *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007*; and
- *State Environmental Planning Policy (Infrastructure) 2007*.

No change is required to the location of the development, land uses, materials handled or the development of infrastructure at the Tarrawonga Coal Mine due to the Modification.

While there would be an increase in ROM coal transported to the Whitehaven CHPP due to the Modification (up to a total of 3 Mtpa), ROM coal is currently approved to be transported at a rate of 2 Mtpa along the Approved Road Transport Route in accordance with the conditions of Project Approval (11_0047).

On this basis, consideration of additional SEPPs (i.e. in addition to those considered in the Tarrawonga EA) is not required for the Modification.

Local Environmental Plans

The Approved Road Transport Route lies within the Narrabri and Gunnedah Shire Council LGAs. Given this, the Tarrawonga EA considered the Gunnedah Local Environmental Plan (LEP) and Narrabri LEP.

Project Approval (11_0047) currently allows ROM coal to be transported along the Approved Road Transport Route within the Narrabri and Gunnedah Shire Council LGAs, subject to Whitehaven/TCPL entering into road maintenance agreements with the Gunnedah and Narrabri Shire Councils.

Whitehaven/TCPL implements road maintenance agreements with the Gunnedah and Narrabri Shire Councils (Section 2.3.1), and these agreements would continue for the Modification.

On this basis, further consideration of LEPs is not required for the Modification.

5.2.2 Rocglen Coal Mine

The Modification would not change the approved operations of the Rocglen Coal Mine.

Therefore, no further consideration of relevant SEPPs or LEPs is required for the Modification.

6 REFERENCES

- Department of Environment, Climate Change and Water (2011) *NSW Road Noise Policy*.
- Environment Protection Agency (1999) *Environmental Criteria for Road Traffic Noise*.
- GTA Consultants (2012) *Vickery Coal Project Gunnedah Basin, NSW, Road Transport Assessment*. Report prepared for Whitehaven Coal Limited.
- GTA Consultants (2014) *Whitehaven ROM Coal Haulage Modification – Road Transport Assessment Review*. Letter prepared for Whitehaven Coal Limited.
- Halcrow (2011) *Tarrawonga Coal Project Road Transport Assessment*. Report prepared for Tarrawonga Coal Pty Ltd.
- PAEHolmes (2012) *Vickery Coal Project Air Quality and Greenhouse Gas Assessment*. Report prepared for Whitehaven Coal Limited.
- Tarrawonga Coal Pty Ltd (2012) *Tarrawonga Coal Project Environmental Assessment*.
- Whitehaven Coal Limited (2013) *Vickery Coal Project Environmental Impact Statement*.
- Wilkinson Murray (2011) *Tarrawonga Coal Project Environmental Assessment Noise and Blasting Impact Assessment*. Report prepared for Tarrawonga Coal Pty Ltd.
- Wilkinson Murray (2012) *Vickery Coal Project Environmental Impact Statement Noise and Blasting Impact Assessment*. Report prepared for Whitehaven Coal Limited.
- Wilkinson Murray (2014) *Whitehaven ROM Coal Haulage Modification – Road Traffic Noise Assessment Review*. Letter prepared for Whitehaven Coal Limited.

APPENDIX A
ROAD TRANSPORT ASSESSMENT REVIEW

Our Ref: 14S9026000

9 January 2014

Whitehaven Coal Limited
PO Box 600
GUNNEDAH NSW 2380

Attention: Mr. Danny Young

Dear Danny,

RE: WHITEHAVEN ROAD HAULAGE MODIFICATION – ROAD TRANSPORT ASSESSMENT REVIEW

This letter sets out GTA Consultants' review assessment of the road transport implications of a proposed Modification to the road haulage operations at the Tarrawonga Coal Mine (Tarrawonga) along the Approved Whitehaven ROM Coal Road Transport Route (Approved Road Transport Route).

This review draws on information and data presented in *Tarrawonga Coal Project Road Transport Assessment* (Halcrow, 2011), and *Vickery Coal Project Gunnedah Basin, NSW Road Transport Assessment* (GTA Consultants, 2012).

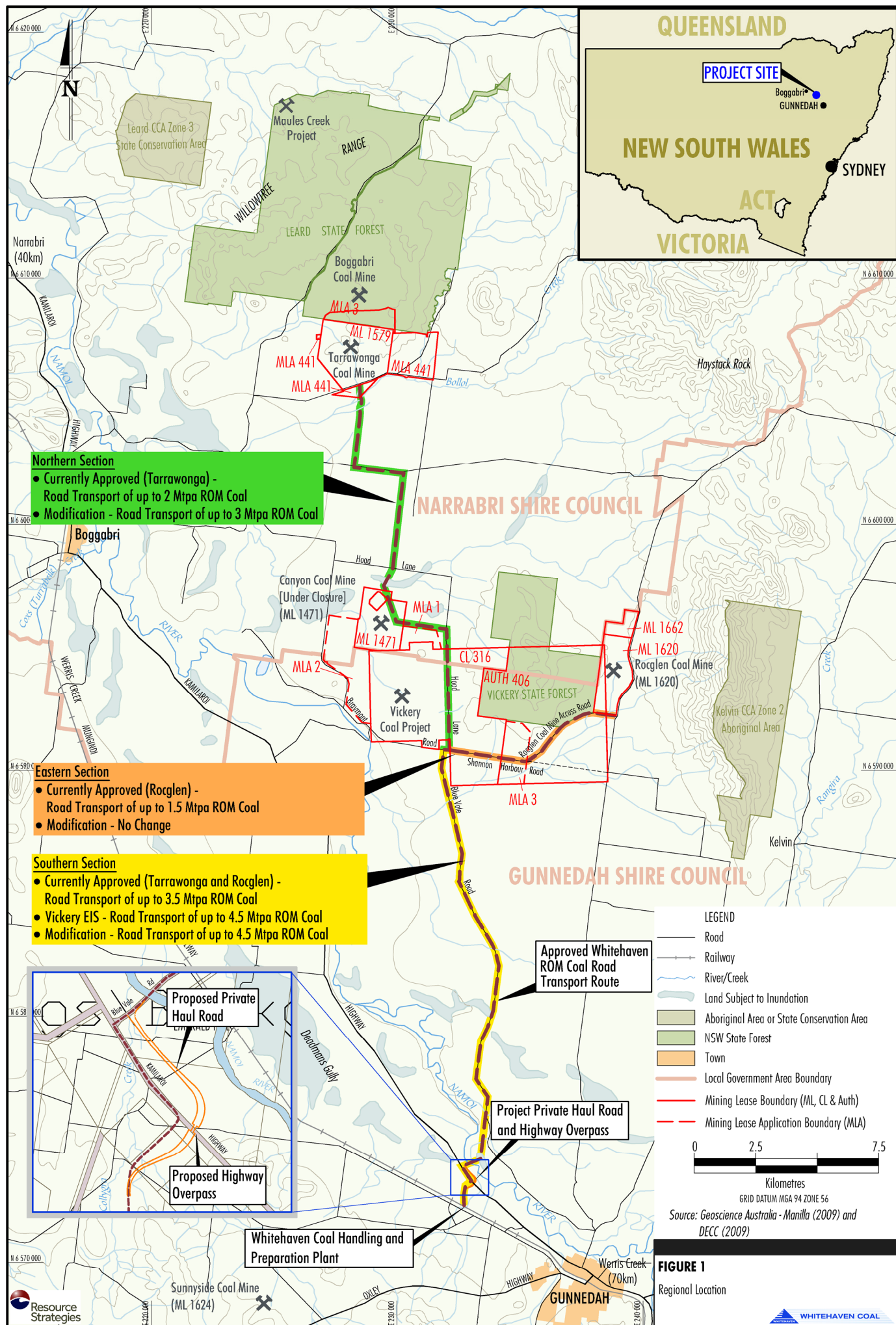
Existing Situation

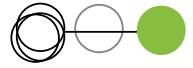
Whitehaven Coal Limited's (Whitehaven) operations within the Gunnedah Basin include Tarrawonga, the Rocglen Coal Mine (Rocglen) and a Coal Handling and Preparation Plant and rail loader near Gunnedah (Whitehaven CHPP). Construction has also commenced at Whitehaven's Maules Creek Project, and approval is being sought for the Vickery Coal Project (Vickery).

Tarrawonga is located approximately 15 kilometres (km) north-east of Boggabri and 42km north-northwest of Gunnedah in New South Wales (Figure 1). Rocglen is located approximately 22 km north of Gunnedah (Figure 1). The CHPP is located on the north-western outskirts of Gunnedah (Figure 1). Vickery is located approximately 22 km north-north-west of Gunnedah and 6 km west of Rocglen (Figure 1).

Approved Road Transport Route

The current Project Approvals for Tarrawonga (11_0047) and Rocglen (10_0015) permit road transport of up to a combined total of 3.5 million tonnes per annum (Mtpa) of Run-of-Mine (ROM) coal from Tarrawonga (2 Mtpa) and Rocglen (1.5 Mtpa) to the Whitehaven CHPP using the Approved Road Transport Route (Figure 1).





The Approved Road Transport Route includes a combination of public and private roads and provides the shortest and least trafficked route from Tarrawonga/Rocglen to the Whitehaven CHPP. It is not used by Whitehaven's other operational mines, however, the southern section is proposed to be used by the Vickery Coal Project.

In accordance with the requirements of the Tarrawonga Project Approval 11_0047, Whitehaven has entered into road maintenance agreements with the Narrabri Shire Council and Gunnedah Shire Council in relation to the Approved Road Transport Route. The road maintenance agreement with Narrabri Shire Council requires the roads and intersections along the Approved Road Transport Route within the Narrabri local government area to be maintained in good condition at all times at Whitehaven's cost. The road maintenance agreement with Gunnedah Shire Council requires Whitehaven to pay 95 percent of road maintenance costs incurred by the Gunnedah Shire Council for Hoad Lane and Blue Vale Road.

Tarrawonga

The current Project Approval for Tarrawonga (11_0047) permits extraction of up to 3.0 Mtpa ROM coal from Tarrawonga, and transport of up to 2.0 Mtpa ROM coal from Tarrawonga to the Whitehaven CHPP, using the Approved Road Transport Route until three months after commissioning of the Boggabri Rail Spur Line and Boggabri CHPP.

For the period starting three months after commissioning of the Boggabri Rail Spur Line and Boggabri CHPP, Tarrawonga is required to transport up to 3.0 Mtpa ROM coal from the Tarrawonga Coal Mine directly to the Boggabri Coal Mine facilities, for subsequent despatch via the Boggabri rail spur.

The assessment of the road transport implications of the currently approved operations at Tarrawonga (Halcrow, 2011) anticipated that the haulage of up to 2.0 Mtpa ROM coal from Tarrawonga to the Whitehaven CHPP along the Approved Road Transport Route would occur only until such time as suitable approvals and upgrades were in place to allow the aforementioned transfer of ROM coal to the Boggabri Coal Mine. The assessment assumed that the transfer would occur after Year 1 of the Tarrawonga Project. Thereafter, the Approved Road Transport Route would be used only by trucks associated with coal haulage from Rocglen.

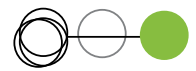
The Tarrawonga road transport assessment concluded that *"no significant impacts on the performance, capacity, efficiency and safety of the road network are expected to arise as a result of the Project and no specific management or mitigation measures are considered to be warranted."*

Rocglen

The Project Approval for Rocglen (10_0045) permits transport of up to 1.5 Mtpa ROM coal from Rocglen to the Whitehaven CHPP along the Approved Road Transport Route. The Rocglen haulage trucks use the Rocglen Coal Mine Access Road and a section of Shannon Harbour Road to travel from Rocglen to the southern section of the Approved Road Transport Route (Figure 1), the use of which is shared with Tarrawonga haulage trucks.

Vickery Coal Project

The road transport assessment undertaken for the Vickery Coal Project application (GTA Consultants, 2012) assessed the implications of the haulage of up to a cumulative total of 4.5 Mtpa of ROM coal (i.e., from Vickery and Whitehaven's other coal mines) to the Whitehaven



CHPP along the southern section of the Approved Road Transport Route, which includes Blue Vale Road. The Vickery EIS assessed Vickery's ROM coal road transport (up to 4.5 Mtpa) occurring up to 24 hours a day, seven days a week.

The Vickery EIS also considered the construction of a private haul road and overpass over the Kamilaroi highway, which would remove the need for ROM coal haulage trucks from Whitehaven's coal mines to use the Kamilaroi Highway to enter the Whitehaven CHPP. The private haul road and Kamilaroi highway overpass would be constructed prior to the cumulative transport of ROM coal from Whitehaven's coal mines exceeding the currently approved rate of 3.5 Mtpa.

The Vickery application is currently under assessment by the NSW Department of Planning & Infrastructure.

The Vickery road transport assessment concluded that *"no significant impacts on the performance, capacity, efficiency and safety of the road network are expected to arise as a result of [Vickery]"*.

Estimate of Currently Approved ROM Coal Haulage Movements

In summary, the current Tarrawonga and Rocglen approvals permit the transport of up to (Figure 1):

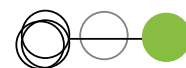
- 2.0 Mtpa ROM coal on the northern section of the Approved Road Transport Route (between Tarrawonga and Shannon Harbour Road);
- 1.5 Mtpa ROM coal on the eastern section of the Approved Road Transport Route (Rocglen Coal Mine Access Road and Shannon Harbour Road from Rocglen to Blue Vale Road); and
- 3.5 Mtpa of ROM coal on the southern section of the Approved Road Transport Route (between Shannon Harbour Road and the Whitehaven CHPP).

ROM coal is despatched from Tarrawonga and Rocglen between 7.00am and 9.15pm Monday to Friday, and 7.00am and 5.15pm Saturdays, excluding public holidays. Coal is transported using trucks with a capacity of 42 tonnes. On this basis, the average weekday truck trip generated by the transport of ROM coal from Tarrawonga and Rocglen as approved has been estimated, noting that the departure trip by a loaded truck would be matched by the return of an empty vehicle.

Table 1 summarises the average weekday daily haulage truck trips generated by Whitehaven as currently approved, as calculated using the transport characteristics described above. It is noted that the assessment for Tarrawonga (Halcrow, 2011) estimated the number of haulage truck trips based on a review of historic trip/tonnage rates, which results in a slightly lower number of trips to fulfil the transport task. Adopting the higher rate for this assessment is therefore considered to conservatively overestimate the number of trips required.

Table 1 demonstrates that in the short term, coal haulage from Tarrawonga may generate up to an average of 348 truck trips per weekday and coal haulage from Rocglen may generate up to 260 truck trips per weekday, and together they generate up to an average of 608 truck trips per weekday.

This haulage is currently approved to occur only until such time as the suitable approvals and upgrades were in place to allow the transfer of Tarrawonga's ROM coal to the Boggabri Coal Mine. After that time, only Rocglen would continue to use the haul route, generating up to an



average 260 truck trips per day between Rocglen and the Whitehaven CHPP along the Approved Road Transport Route.

Table 1: Weekday Average Whitehaven ROM Coal Haulage Truck Trips As Approved (vehicles/day) (No Transport of Tarrawonga Coal via Boggabri Infrastructure)

| Location on Approved Road Transport Route | Tarrawonga 2.0 Mtpa ROM Coal | Rocglen 1.5 Mtpa ROM Coal | Total 3.5 Mtpa ROM Coal |
|---|---------------------------------|------------------------------|----------------------------|
| Northern Section | | | |
| Tarrawonga Access Road | 348 | 0 | 348 |
| Haul Route South of Goonbri Road | 348 | 0 | 348 |
| Eastern Section | | | |
| Rocglen Access Road and Shannon Harbour Road east of Blue Vale Rd | 0 | 260 | 260 |
| Southern Section | | | |
| Blue Vale Rd south of Shannon Harbour Rd | 348 | 260 | 608 |
| Blue Vale Rd northeast of Kamilaroi Hwy | 348 | 260 | 608 |
| Kamilaroi Hwy between Blue Vale Rd and CHPP | 348 | 260 | 608 |
| CHPP Access Rd | 348 | 260 | 608 |

It is noted that the approved levels of ROM coal transport from Tarrawonga includes up to 150,000 tonnes for direct distribution to domestic markets, transported using the Approved Road Transport Route to the Kamilaroi Highway. This equates to an average of 13 truck loads per day, generating 26 truck trips on the haulage route. Such trips would use the Approved Road Transport Route but would not enter the Whitehaven CHPP, and so would not use the proposed private haul road and Kamilaroi Highway overpass once constructed. As the number of these trips is small in the context of the overall coal haulage task, they have been ignored for the purpose of this review assessment, and all coal haulage trucks generated by Tarrawonga are assumed to travel directly between Tarrawonga and the Whitehaven CHPP. This assumption will have negligible impact on the conclusions of the review.

The Modification

ROM Coal Haulage Rate

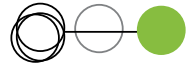
It is no longer considered by Whitehaven to be economically viable to process and transport Tarrawonga ROM coal via Boggabri infrastructure. As a result, the Modification proposes the continued transport of Tarrawonga ROM coal at a rate of up to 3.0 Mtpa along the Approved Road Transport Route to the Whitehaven CHPP.

However, consistent with the Vickery EIS, Whitehaven would manage the use of the Approved Road Transport Route such the cumulative ROM coal transported from all Whitehaven coal mines (i.e. Tarrawonga, Rocglen and Vickery) to the Whitehaven CHPP would not exceed:

- 3.5 Mtpa (the currently approved rate) prior to the commissioning of the proposed private haul road and Kamilaroi Highway overpass; and
- 4.5 Mtpa (the maximum annual rate assessed in the Vickery EIS) following the commissioning of the proposed private haul road and Kamilaroi Highway overpass.

Thus with the Modification, the following maximum transport rates would occur along the Approved Road Transport Route:

- Northern section – up to 3.0 Mtpa of Tarrawonga ROM coal (increase from currently approved rate of up to 2.0 Mtpa);



- Eastern section – up to 1.5 Mtpa of Rocglen ROM coal (no change to currently approved);
- Southern section:
 - up to 3.5 Mtpa of ROM coal from Tarrawonga, Rocglen and Vickery (no change to currently approved) prior to the commissioning of the proposed private haul road and Kamilaroi Highway overpass; and
 - up to 4.5 Mtpa of ROM coal from Tarrawonga, Rocglen and Vickery (no change to maximum annual haulage rate assessed in the Vickery EIS) following the commissioning of the proposed private haul road and Kamilaroi Highway overpass.

Notwithstanding the above, should financial circumstances improve, Tarrawonga ROM coal would be transported to the Boggabri Coal Mine for processing and transportation as described in the Tarrawonga EA.

ROM Coal Haulage Hours

It is proposed that for the Modification ROM coal from the Tarrawonga Coal Mine would be despatched between:

- 6.00am and 9.15pm Monday to Friday, i.e., one additional hour between 6.00am and 7.00am in comparison to the currently approved hours; and
- 7.00am and 5.15pm Saturdays, i.e., no change to currently approved hours.

Consistent with the current approval, there would be no ROM coal haulage on Sundays or public holidays.

Allowing time for departing trucks to reach their destination, haulage trucks would be on the Approved Road Transport Route for the Modification between 6.00am and 10.00pm Monday to Friday and 7.00am to 6.00pm on Saturdays.

It is noted that the Vickery EIS assessed the transport of up to 4.5 Mtpa along the southern section of the Approved Road Transport Route on a 24 hours per day, 7 days per week basis. However, for the Modification, the transport of up to cumulative total of 4.5 Mtpa would occur only between the hours described above.

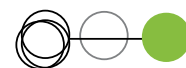
Other Vehicle Movements

The Modification would not change the peak number of employees at the Tarrawonga Coal Mine, nor the number of visitors and deliveries to the Tarrawonga Coal Mine.

Therefore, with the exception of ROM coal haulage movements described above, no material change in vehicle movements is expected due to the Modification in comparison to what has been described and assessed in both the Tarrawonga EA and Vickery EIS.

Traffic Generation Implications of the Modification

The impacts of the Modification would occur only on the Approved Road Transport Route, not on the other roads in the region which are used by other mine-related traffic, e.g. employees, visitors. This assessment therefore considers the implications of the Modification along the Approved Road Transport Route only.



Based on the aforementioned coal haulage characteristics, the number of ROM coal haulage truck trips expected to be generated by the Modification has been estimated and is described below.

Table 2 summarises the daily haulage truck trips expected to be generated by Whitehaven along the Approved Road Transport Route for the Modification, and provides a comparison to those currently approved (as presented in Table 1).

Table 2: Approved and Modification Weekday Average ROM Coal Haulage Trips (vehicles/day)

| Location on Approved Road Transport Route | Approved Haulage (up to 3.5 Mtpa) ^A | Modification Haulage | |
|---|---|---|--|
| | | Without Overpass (up to 3.5 Mtpa) ^B | With Overpass (up to 4.5 Mtpa) ^B |
| Northern Section | | | |
| Tarrawonga Access Road | 348 | 520 | 520 |
| Haul Route South of Goonbri Road | 348 | 520 | 520 |
| Eastern Section | | | |
| Rocglen Access Road and Shannon Harbour Road east of Blue Vale Rd | 260 | 260 | 260 |
| Southern Section | | | |
| Blue Vale Rd south of Shannon Harbour Rd | 608 | 608 | 780 |
| Blue Vale Rd northeast of Kamilaroi Hwy | 608 | 608 | 0 |
| Kamilaroi Hwy between Blue Vale Rd and CHPP | 608 | 608 | 0 |
| CHPP Access Rd | 608 | 608 | 0 |
| Private Haul Road and Highway Overpass | 0 | 0 | 780 |

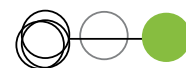
A Maximum approved rates Tarrawonga 2.0 Mtpa and Rocglen 1.5 Mtpa

B Maximum rates cumulatively for Whitehaven operations (Tarrawonga, Rocglen, Vickery)

Table 2 shows that the Modification would not have any impact on truck trips on the eastern section of the Approved Road Transport Route (Rocglen Coal Mine Access Road and Shannon Harbour Road), which is used by coal haulage trucks to and from Rocglen, therefore the assessment which follows does not consider Shannon Harbour Road or the Rocglen Coal Mine Access Road any further.

The key impacts of the Modification compared with the approved conditions are therefore summarised below:

- Increase in weekday average truck trips from 348 trucks per weekday to up to 520 trucks per weekday on the northern section of the Approved Road Transport Route (between Tarrawonga and Shannon Harbour Road). This increase is associated with the proposed increase in Tarrawonga ROM coal transport from 2.0 Mtpa to up to 3.0 Mtpa.
- Increase in weekday average truck trips from 608 trucks per weekday to up to 780 trucks per weekday on the Approved Road Transport Route south of Shannon Harbour Road with the proposed private haul road and highway overpass. This increase would be associated with the cumulative increase in ROM coal haulage from 3.5 Mtpa to 4.5 Mtpa.
- Decrease in weekday average truck trips from 608 trucks to 0 trucks per weekday on the existing Approved Road Transport Route between the Whitehaven CHPP and the intersection of Blue Vale Road, including Blue Vale Road and the Kamilaroi Highway. This decrease would occur following the commissioning of the proposed private haul road and Kamilaroi Highway overpass.



Road Transport Environment without Modification

Surveys of traffic volumes were undertaken in the region as part of the assessment of the Tarrawonga and Vickery Projects, and the results presented in Halcrow (2011) and GTA Consultants (2012). Using those surveyed traffic volumes, future traffic volumes were estimated on the Approved Road Transport Route as part of the assessments for Tarrawonga and Vickery, which took into account the expected traffic increases as a result of growth in background (non-mining) traffic and as a result of the movement of vehicles associated with Tarrawonga and other mining developments in the region, specifically Maules Creek and Boggabri Coal Mines.

Table 3 summarises the expected increases in traffic not associated with the haulage of ROM coal. These increases are those expected to occur above surveyed levels as a result of the combined effects of non-specific background growth, the Maules Creek and Boggabri projects (combined as “Non-TCM” traffic in Table 3), Tarrawonga (as currently approved) and Vickery. Such traffic includes the movement of employees, deliveries, visitors, and gravel sales from Tarrawonga. The future year scenarios assume Tarrawonga and Vickery are both fully operational, with construction work completed.

Table 3: Average Weekday Background Traffic Excluding Whitehaven Coal Haulage (vehicles/day)

| Location on Approved Road Transport Route | Non-TCM ^A | Tarrawonga ^B | Vickery ^C | Total |
|---|----------------------|-------------------------|----------------------|-------|
| Year 2016 | | | | |
| Tarrawonga Access Road | 0 | 108 | 0 | 108 |
| Haul Route South of Goonbri Road | 0 | 100 | 0 | 100 |
| Blue Vale Rd south of Shannon Harbour Rd | 4 | 42 | 404 | 450 |
| Blue Vale Rd northeast of Kamilaroi Hwy | 1,101 | 42 | 404 | 1,547 |
| Kamilaroi Hwy between Blue Vale Rd and CHPP | 2,876 | 42 | 404 | 3,322 |
| CHPP Access Rd | 383 | 0 | 0 | 383 |
| Year 2029 | | | | |
| Tarrawonga Access Road | 0 | 108 | 0 | 108 |
| Haul Route South of Goonbri Road | 0 | 100 | 0 | 100 |
| Blue Vale Rd south of Shannon Harbour Rd | 4 | 42 | 404 | 450 |
| Blue Vale Rd northeast of Kamilaroi Hwy | 1,235 | 42 | 404 | 1,681 |
| Kamilaroi Hwy between Blue Vale Rd and CHPP | 3,228 | 42 | 404 | 3,674 |
| CHPP Access Rd | 430 | 0 | 0 | 430 |

A Halcrow, 2011, Table 4.1, includes Maules Creek and Boggabri Mine projects traffic increases and non-specific growth

B Halcrow, 2011 Table 4.4

C GTA Consultants, 2012, Page B-3, without highway overpass

These forecasts did not separately consider the traffic generation of Rocglen at the time of the surveys in 2010. The “Non-TCM” traffic in Table 3 therefore includes surveyed coal haulage trucks associated with Rocglen, with minor increases over time consistent with the non-specific background traffic growth. The assessment which follows assumes that the haulage of up to 1.5 Mtpa of ROM coal from Rocglen is in addition to the background traffic calculated in Table 3, and therefore will overestimate the future transport task on the southern section of the Approved Road Transport Route from Shannon Harbour Road to the Whitehaven CHPP.

Table 4 summarises the expected two way daily volumes combining the background traffic with the Whitehaven haulage truck trips as approved, assuming that these rates of haulage continue to 2029.

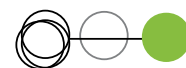


Table 4: Future Average Weekday Traffic with Approved Haulage – No Overpass (vehicles/day)

| Location on Approved Road Transport Route | Background | | Whitehaven ROM Coal (up to 3.5 Mtpa) | Total | |
|---|------------|-------|---|-------|-------|
| | 2016 | 2029 | | 2016 | 2029 |
| Northern Section | | | | | |
| Tarrawonga Access Road | 108 | 108 | 348 | 456 | 456 |
| Haul Route South of Goonbri Road | 100 | 100 | 348 | 448 | 448 |
| Southern Section | | | | | |
| Blue Vale Rd south of Shannon Harbour Rd | 450 | 450 | 608 | 1,058 | 1,058 |
| Blue Vale Rd northeast of Kamilaroi Hwy | 1,547 | 1,681 | 608 | 2,155 | 2,289 |
| Kamilaroi Hwy between Blue Vale Rd and CHPP | 3,322 | 3,674 | 608 | 3,930 | 4,282 |
| CHPP Access Rd | 383 | 430 | 608 | 991 | 1,038 |

Assumes no transport of Tarrawonga ROM coal offsite via Boggabri infrastructure

Road Transport Environment with Modification

Prior to Commission of Private Haul Road and Kamilaroi Highway Overpass

As noted above, prior to the commissioning of the private haul road and Kamilaroi Highway overpass, the cumulative ROM coal transported from Whitehaven coal mines would not exceed 3.5 Mtpa (i.e. the currently approved rate) for the Modification.

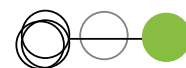
Combining the background non-coal haulage trips (Table 3) and the Whitehaven coal haulage trips associated with the Modification (Table 2), Table 5 summarises the expected two way daily volumes associated with the Modification prior to construction of the private haul road and Kamilaroi Highway overpass. As noted above, this is considered to overestimate the future traffic, as the coal haulage trips from Rocglen surveyed in 2010 are potentially double-counted.

Table 5: Future Average Weekday Traffic with Modification – No Overpass (vehicles/day)

| Location on Approved Road Transport Route | Background | | Whitehaven ROM Coal (up to 3.5 Mtpa) | Total and Change from Approved | |
|---|------------|-------|---|--------------------------------|---------------|
| | 2016 | 2029 | | 2016 | 2029 |
| Northern Section | | | | | |
| Tarrawonga Access Road | 108 | 108 | 520 | 628 (+172) | 628 (+172) |
| Haul Route South of Goonbri Road | 100 | 100 | 520 | 620 (+172) | 620 (+172) |
| Southern Section | | | | | |
| Blue Vale Rd south of Shannon Harbour Rd | 450 | 450 | 608 | 1,058 (0) | 1,058 (0) |
| Blue Vale Rd northeast of Kamilaroi Hwy | 1,547 | 1,681 | 608 | 2,155 (0) | 2,289 (0) |
| Kamilaroi Hwy between Blue Vale Rd and CHPP | 3,322 | 3,674 | 608 | 3,930 (0) | 4,282 (0) |
| CHPP Access Rd | 383 | 430 | 608 | 991 (0) | 1,038 (0) |

Note: Values in parentheses represent change in total traffic due to the Modification compared with the approved Whitehaven Operations (Table 4)

Comparison of the results in Table 4 and Table 5 indicates the Modification would increase total average weekday truck numbers only on the northern section of the Approved Road Transport Route (i.e. in comparison to the approved Whitehaven operations).



Following Commission of Private Haul Road and Kamilaroi Highway Overpass

As noted above, following the commissioning of the private haul road and Kamilaroi Highway overpass, the cumulative ROM coal transported from Whitehaven coal mines would not exceed 4.5 Mtpa (i.e. the maximum annual rate assessed in the Vickery EIS) for the Modification.

Table 6 presents the expected two way daily volumes with the Modification after construction of the private haul road and Kamilaroi Highway overpass, by combining the background non-coal haulage trips (Table 3) with the Modification coal haulage trips (Table 2). As noted above, this is considered to overestimate the future traffic.

Table 6: Future Average Weekday Traffic with Modification – With Overpass (vehicles/day)

| Location on Approved Road Transport Route | Background | | Whitehaven ROM Coal (up to 4.5 Mtpa) | Total and Change from Approved | |
|---|------------|-------|---|--------------------------------|-----------------|
| | 2016 | 2029 | | 2016 | 2029 |
| Northern Section | | | | | |
| Tarrawonga Access Road | 108 | 108 | 520 | 628 (+172) | 628 (+172) |
| Haul Route South of Goonbri Road | 100 | 100 | 520 | 620 (+172) | 620 (+172) |
| Southern Section | | | | | |
| Blue Vale Rd south of Shannon Harbour Rd | 450 | 450 | 780 | 1,230 (+172) | 1,230 (+172) |
| Blue Vale Rd northeast of Kamilaroi Hwy | 1,547 | 1,681 | 0 | 1,547 (-608) | 1,681 (-608) |
| Kamilaroi Hwy between Blue Vale Rd and CHPP | 3,322 | 3,674 | 0 | 3,322 (-608) | 3,674 (-608) |
| CHPP Access Rd | 383 | 430 | 0 | 383 (-608) | 430 (-608) |
| Private Haul Road and Highway Overpass | 0 | 0 | 780 | 780 (+780) | 780 (+780) |

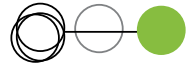
Note: Values in parentheses represent change in total traffic due to the Modification compared with the approved Whitehaven Operations (Table 4)

Comparison of the results in Table 4 and Table 6 indicates that the Modification would increase total average weekday traffic by approximately 172 vehicles per day on the northern section of the Approved Road Transport Route, and on Blue Vale Road to the south of Shannon Harbour Road in comparison to the approved Whitehaven operations.

However, total average weekday traffic numbers are expected to decrease by approximately 608 vehicles in comparison to the currently approved Whitehaven operations on the southernmost section of Blue Value Road and the Kamilaroi Highway due to the use of the private haul road and Kamilaroi Highway overpass.

Impacts of Modification

The Austroads (2013) *Guide to Traffic Management Part 3: Traffic Studies and Analysis* provides guidelines for the capacity and Levels of Service (LOS) of two lane, two way rural roads, which in turn, refers to the Highway Capacity Manual (Transportation Research Board, 2010). As noted in the Tarrawonga assessment report (Halcrow, 2011), the LOS is a qualitative measure describing the operational conditions along a traffic stream as perceived by drivers and/or passengers. LOS A provides the best traffic conditions, with no restriction on desired travel speed or overtaking. LOS B to D describes progressively worse traffic conditions. LOS E occurs when traffic conditions



are at or close to capacity, and there is virtually no freedom to select desired speeds or to manoeuvre in the traffic stream. The service flow rate for LOS E is taken as the capacity of a lane or roadway.

Class I are roads on which motorists expect to travel at relatively high speeds. They most often serve long-distance trips or provide connecting links between facilities that serve long-distance trips. Class II roads are those on which motorists do not necessarily expect to travel at high speeds, and may function as access routes to Class I facilities, serve as scenic or recreational routes or pass through rugged terrain. Class III roads serve moderately developed areas, and may be portions of a Class I or Class II highway that pass through small towns or developed recreational areas, where local traffic mixes with through traffic. The Approved Road Transport Route would generally be considered a Class II road, for which LOS is determined based on Percent-Time-Spent-Following (PTSF). The short section of Kamilaroi Highway between Blue Vale Road and the Whitehaven CHPP may be considered as a Class I road due to its arterial nature. LOS for Class I roads is determined based on a combination of PTSF and Average Travel Speed.

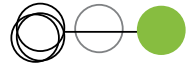
The Highway Capacity Manual presents detailed methods of calculating PTSF, however also presents a basic relationship between traffic flow and PTSF for base conditions on a two way road. This indicates that based on PTSF thresholds for Class II roads, Level of Service A would occur for a two way peak hourly volume of around 650 passenger car units per hour (pc/h), and Level of Service B would occur up to a two way peak hourly volume of about 1,000 pc/h. Based on PTSF thresholds for Class I roads, Level of Service A would occur for a two way peak hourly volume of around 550 pc/h, and Level of Service B would occur up to a two way peak hourly volume of about 900 pc/h.

The original traffic survey results demonstrate that the peak hourly traffic volumes on the Approved Road Transport Route were between 7.5 percent and 11.5 percent of the total daily volume (Table 3.2, Halcrow, 2011). The coal haulage trips would generally be spread evenly throughout the day, so on average, approximately 7 percent or less of coal haulage trips may occur in any one hour. Assuming as a robust comparison, that the overall future peak hourly volume is 10 percent of the daily totals presented in Tables 5 and 6, and allowing for the higher passenger-car-equivalent factor for the haulage trucks and other heavy vehicles on the route, the peak hourly volume with the Modification would remain significantly below 650 passenger car units per hour along the Approved Road Transport Route and may reach approximately 550 pc/h on Kamilaroi Highway without the overpass or remain well below 550 pc/h with the overpass. Thus the Level of Service along the route would be good based on this basic relationship comparison.

The resulting volumes would be sufficiently low that a more detailed assessment of the capacity and Levels of Service along the route, which would take into account the various factors which can influence the behaviour of the traffic stream, is not considered to be warranted.

The operation of the intersections of Kamilaroi Highway with Blue Vale Road and with the Whitehaven CHPP access road would not be impacted by the Modification, as the number of trucks passing through these intersections would not increase above the currently approved levels as a result of the Modification. Use of these intersections would be avoided altogether following commissioning of the private haul road and Kamilaroi Highway overpass.

A school bus route, Blue Vale to Gunnedah, operates along and across the Approved Road Transport Route. This bus route operates between 7.50am and 8.40am, and between 3.20pm and 3.58pm on school days. The Modification would result in a small increase in average hourly truck trips during the periods that school buses operate on the Approved Road Transport Route.



During an average hour, the Modification would result in an average of an additional 11 to 12 trucks travelling on the Approved Road Transport Route in one hour to the north of Shannon Harbour Road irrespective of the private haul road and highway overpass, and by the same amount to the south of Shannon Harbour Road once the private haul road and highway overpass are constructed. This is equivalent to approximately one additional truck in either direction every five minutes. On average this would be equivalent to one additional southbound truck every ten minutes and one additional northbound truck every ten minutes. One school bus operates southbound in the morning and one northbound in the afternoon. The increase in potential interaction between school buses and coal haulage trucks is considered to be sufficiently small that no additional measures would be warranted to reduce risk beyond the existing protocols for Whitehaven's truck drivers.

The existing road maintenance agreements with Narrabri Shire Council and Gunnedah Shire Council cover the maintenance of roads used by Whitehaven in association with their mines and facilities in the region. With the Modification, Whitehaven coal haulage trucks would continue to use the same routes covered by the existing maintenance agreements (with the exception of the southernmost part of the route once the private haul road and highway overpass are constructed). The existing maintenance agreements are therefore considered to remain an appropriate method of ensuring that the roads are maintained to the standard required for safe operation. Minor amendment to the agreement with Gunnedah Shire Council may be required should the Vickery Coal Project be approved.

Conclusions

This review of the proposed Modification to coal haulage associated with Whitehaven's Tarrawonga Coal Mine has found that the Modification would result in no significant impacts on the performance, efficiency and safety of the road network and no additional management or mitigation measures are considered to be warranted.

Yours sincerely

GTA CONSULTANTS

Penny Dalton
Associate

APPENDIX B

ROAD TRAFFIC NOISE ASSESSMENT REVIEW

27 February 2014

WM Project Number: 09341-V2

Our Ref: RS080114RH_Ltr-emi

Danny Young
Whitehaven Coal Limited
PO Box 600
Gunnedah NSW 2380

Dear Danny

Re: Whitehaven ROM Coal Haulage Modification - Road Traffic Noise Review

INTRODUCTION

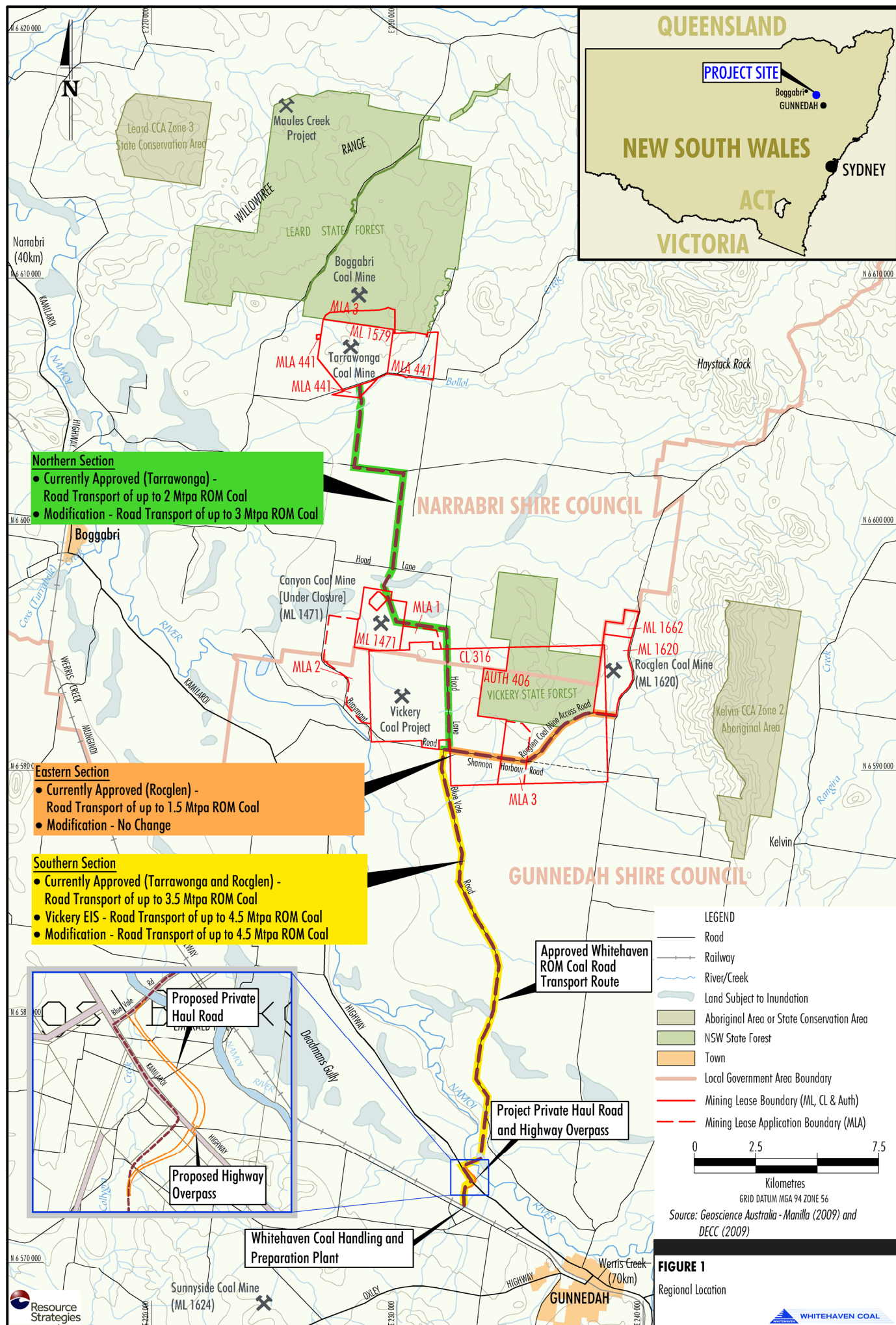
Background

Whitehaven Coal Limited (Whitehaven) is proposing to modify the run-of-mine (ROM) coal truck haulage rate for the Tarrawonga Coal Mine (TCM) on the Approved Whitehaven ROM Coal Road Transport Route (Approved Road Transport Route) between the TCM complex and the Whitehaven Coal Handling and Preparation Plant (CHPP).

The Approved Road Transport Route (**Figure 1**) is currently approved to transport up to 3.5 million tonnes per annum (Mtpa) of ROM coal from the TCM (2 Mtpa) and Rocglen Coal Mine (RCM) (1.5 Mtpa) to the CHPP between the hours of:

- 7.00 am to 10.00 pm Monday to Friday; and
- 7.00 am to 6.00 pm Saturday.

In addition, Whitehaven proposes to use the Approved Road Transport Route to transport up to a cumulative total of 4.5 Mtpa of ROM coal from the proposed Vickery Coal Project (VCP) (which is currently being assessed by the Department of Planning and Infrastructure [DP&I]) on a 24 hour per day, 7 day per week basis. The VCP also proposes to construct a private haul road and overpass over the Kamilaroi highway (**Figure 1**) prior to the cumulative ROM coal transported from Whitehaven coal mines to the CHPP along the Approved Road Transport Route exceeding the currently approved rate of 3.5 Mtpa. The private haul road and overpass over the Kamilaroi highway would avoid ROM coal haulage trucks having to use the Kamilaroi highway to enter the CHPP.



The Modification

Northern Section of the Approved Road Transport Route

The Modification involves an increase in TCM ROM coal haulage rate on the Approved Road Transport Route from the currently approved 2Mtpa to 3Mtpa.

This would result in an increase in ROM coal haulage vehicle movements on the northern section of the Approved Road Transport Route (between the TCM and VCP) in comparison to what is currently approved for the TCM.

In addition, it proposed that ROM coal haulage would occur between the hours of:

- 6.00 am to 10.00 pm Monday to Friday; and
- 7.00 am to 6.00 pm Saturday.

Southern Section of the Approved Road Transport Route

Notwithstanding the proposed increase in ROM coal haulage from the TCM, Whitehaven would manage the use of the Approved Road Transport Route such that the total cumulative annual ROM coal haulage from all Whitehaven mines (i.e. TCM, RCM and VCP) would not exceed:

- 3.5 Mtpa prior to the commissioning of the private haul road and Kamilaroi Highway overpass; and
- 4.5 Mtpa following the commissioning of the private haul road and Kamilaroi Highway overpass.

This is consistent with the maximum annual ROM coal haulage rate on the southern section of the Approved Road Transport Route described and assessed in the Vickery EIS.

However, rather than ROM coal haulage occurring 24 hours per day, 7 days per week (as per the Vickery EIS) it proposed that ROM coal haulage would only occur between the hours of:

- 6.00 am to 10.00 pm Monday to Friday; and
- 7.00 am to 6.00 pm Saturday.

Therefore, there would be an increase in the ROM coal haulage rate between 6.00am and 10.00pm on the southern section of the Approved ROM Coal Road Transport Route (between VCP and the CHPP) in comparison to what was described and assessed in the Vickery EIS.

ASSESSMENT OF MODIFICATION

For the Modification, ROM coal haulage along the Approved Road Transport Route would occur between the hours of:

- 6.00 am to 10.00 pm Monday to Friday; and
- 7.00 am to 6.00 pm Saturdays.

It is noted that the 'shoulder' period 6.00 to 7.00am forms part of the night-time period (10.00 pm to 7.00 am) as defined in the Road Noise Policy (RNP). However, Section 2.5.5 of the RNP recognises that it may be reasonable to vary the standard time period applied to the day (7.00 am to 10.00 pm) and night (10.00 pm to 7.00 am), and that appropriate noise levels for 'shoulder' periods may be negotiated with the determining or regulatory authority.

Following consultation conducted by Whitehaven with the DP&I for the Modification in December 2013 (Section 3.5 of the EA), potential road traffic noise impacts associated with the Modification have been assessed against the relevant criteria for the day time period only (i.e. the 'shoulder' period 6.00 to 7.00 am is considered to be part of the day time period).

While ROM coal haulage would occur over a 16 hour period (6.00 am to 10.00 pm) on weekdays, it has been conservatively assumed that all ROM coal haulage would occur over a 15 hour period, with the resulting potential road traffic noise impacts compared against the relevant criteria of 60dBA $L_{Aeq(15\text{hour})}$ as defined in the RNP for the day time period.

Northern Section of Approved Road Transport Route between TCM and VCP

Previous Assessment – Tarrawonga EA

The Tarrawonga Coal Mine EA noise assessment report (*Tarrawonga Coal Project, Environmental Assessment, Noise and Blasting Impact Assessment*, Nov. 2011, WM) assessed haulage traffic noise levels on public road sections along the Approved Road Transport Route.

The EA noise report assessed noise levels at the Kyalla Residence (**Figure 2**) which was at the time of the assessment the closest residential receiver (i.e. 180m from the Approved Road Transport Route).

The Tarrawonga EA assessed the transportation of 2 Mtpa of ROM coal along the Approved Road Transport Route during Project Year 1 only, as following Year 1 it was assumed that ROM coal (up to 3 Mtpa) would be hauled directly to the adjacent Boggabri Coal Mine for processing and transport via upgraded Boggabri infrastructure.

The resultant daytime noise levels from the Tarrawonga EA noise assessment at the Kyalla Residence for Year 1, and the relevant traffic noise criterion at the time of the assessment (i.e. as per the *Environmental Criteria for Road Traffic Noise* [ECRTN]), have been reproduced in **Table 1**. As shown, it was predicted that road traffic noise would comply with the ECRTN criteria of 60dBA $L_{Aeq,1\text{ hour}}$ for the daytime period during Project Year 1 (i.e. for the transportation 2 Mtpa of ROM coal along the Approved Road Transport Route) at the Kyalla Residence (which is now owned by Whitehaven and Boggabri Coal).

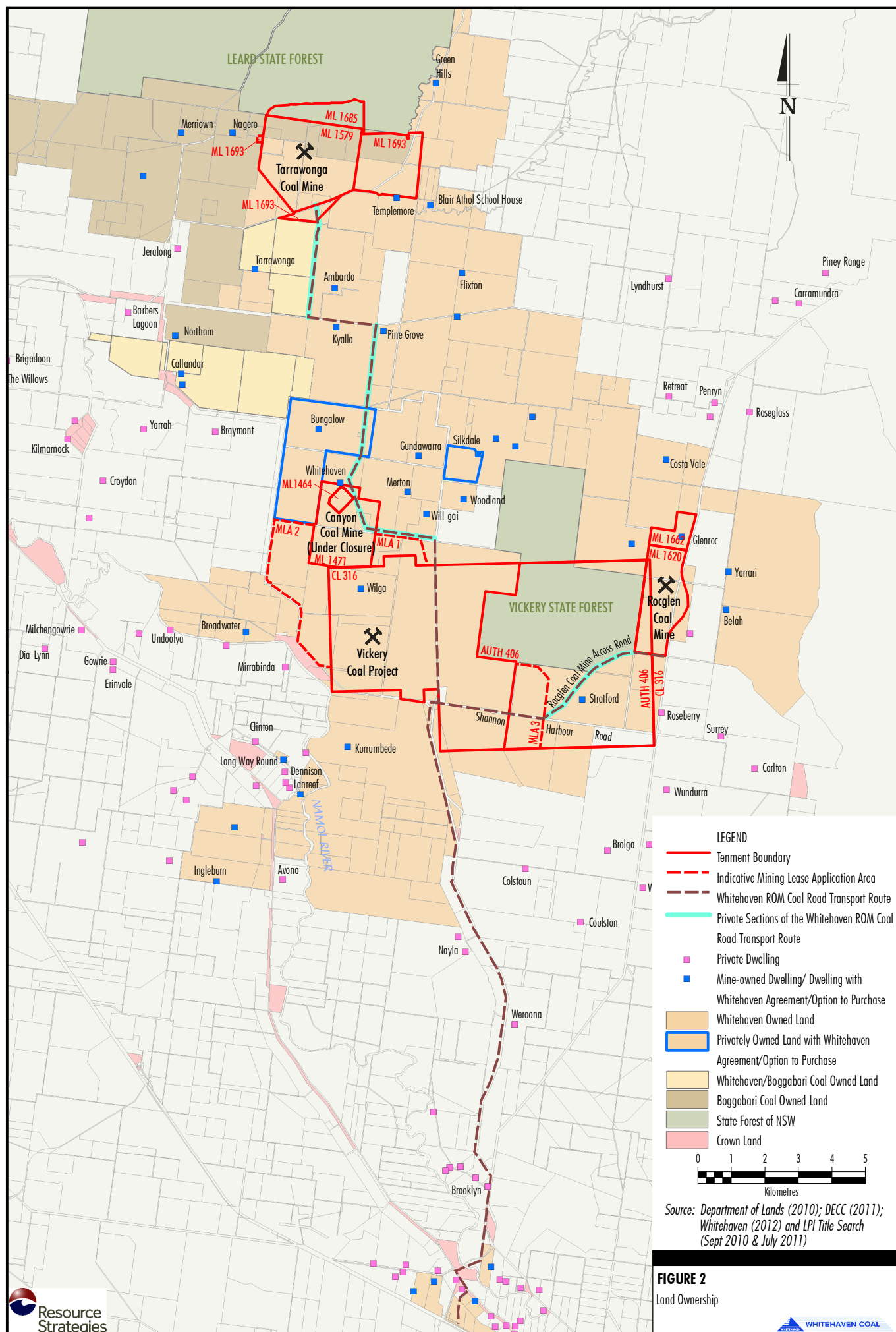


Table 1 **Calculated Daytime Traffic Noise Levels at the Kyalla Residence –
Tarrawonga EA (ROM Coal Transport of 2 Mtpa)**

| | Tarrawonga EA |
|-----------------------------|--|
| | Year 1 (2 Mtpa ROM coal transport) |
| | Daytime (dBA $L_{Aeq,1\text{ hour}}$) |
| Non – Project Traffic Noise | 0 |
| Project Traffic Noise | 49 |
| Total | 49 |
| Daytime Criterion | 60 |
| Compliance | Yes |

The relevant road traffic noise criteria specified in the Tarrawonga Project Approval (11_0047) is 60dBA $L_{Aeq(Period)}$ for the daytime and evening, consistent with the *Road Noise Policy*, which has replaced the ECRTN. This criteria in Project Approval (11_0047) is less stringent than the ECRTB criteria of 60dBA $L_{Aeq,1\text{ hour}}$ used in the Tarrawonga EA.

Modification Assessment

The Modification involves an increase in TCM ROM coal haulage rate on the Approved Road Transport Route from the currently approved 2Mtpa to 3Mtpa, as it is no longer considered economically viable to process and transport TCM ROM coal via Boggabri infrastructure.

Since the Tarrawonga EA, Whitehaven has purchased, or has entered into purchase agreements, with a number of properties proximal to the Approved Road Transport Route (**Figure 2**), including the Kyalla Residence (which is now owned by Whitehaven and Boggabri Coal).

As a result, the closest privately-owned residential receivers to the northern section of the Approved Road Transport Route are currently the Braymont and Jeralong Residences, which are located over 4.0km away from the Approved Road Transport Route (**Figure 1**) (by comparison, the Kyalla Residence is located approximately 180m away).

Noise calculations in the Tarrawonga EA demonstrated compliance with the ECRTN criteria of 60dBA $L_{Aeq,1\text{ hour}}$ at the Kyalla Residence, with noise levels found to be approximately 11dB lower than the daytime criteria for the transport of 2 Mtpa of ROM coal along the Approved Road Transport Route.

An increase in ROM coal transport from 2Mtpa to 3Mtpa would result in an increase in noise levels of less than 2dB (i.e. based on the increase in the overall increase in the sound power level of trucks required to transport 3 Mtpa of ROM coal). As such, noise levels would comply with the more stringent road noise criteria of 60dBA $L_{Aeq,1\text{ hour}}$ at the Kyalla Residence for a ROM coal haulage rate of 3 Mtpa.

Therefore, compliance with the Project Approval (11_0047) road noise criteria of 60dBA $L_{Aeq(Period)}$ would be also expected at the Braymont and Jeralong Residences, which are located over 4.0km away from the Approved Road Transport Route.

Southern Section of Approved Road Transport Route between VCP and CHPP

Previous Assessment – Vickery EIS

The Vickery EIS noise assessment report (*Vickery Coal Project, Environmental Impact Statement, Noise and Blasting Impact Assessment*, Nov. 2012, WM) assessed road traffic noise levels at the Weroona and Brooklyn Residences (**Figure 2**), which represent the closest residential receivers to the southern section of the Approved Road Transport Route. A ROM coal haulage rate of 4.5 Mtpa was assumed for the Vickery EIS.

The maximum predicted road traffic noise levels at both the Weroona and Brooklyn Residences for the Vickery EIS, together with the relevant daytime traffic noise criterion, are summarised in **Table 2**. As shown, it was predicted that road traffic noise associated with the transportation of 4.5 Mtpa of ROM coal (on a 24 hour per day, seven day per week basis) would comply with the criteria of 60dBA $L_{Aeq,15\text{ hour}}$ for the daytime at both residences.

In addition, the Vickery EIS predicted there would be no exceedance of the night-time road traffic noise criteria of 55dBA $L_{Aeq,9\text{ hour}}$ at either the Weroona or Brooklyn Residences.

It should be noted that predicted levels at both residences as assessed in the Vickery EIS noise assessment were calibrated with the measured levels during compliance traffic noise monitoring conducted in September 2012 (Spectrum Acoustics).

Table 2 **Calculated Traffic Noise Levels at the Weroona and Brooklyn Residences – Vickery EIS (ROM Coal Transport of 4.5 Mtpa 24 hours per day, 7 days per week)**

| | Maximum Predicted Noise Level (Year 7/17) | |
|-----------------------------|---|--------------------|
| | Day (dBA $L_{Aeq,15\text{ hr}}$) | |
| | Weroona Residence | Brooklyn Residence |
| Non – Project Traffic Noise | 30 | 51 |
| Project Traffic Noise | 44 | 51 |
| Total | 44 | 54 |
| Daytime Criterion | 60 | 60 |
| Compliance | Yes | Yes |

Modification Assessment

For the purpose of this Modification assessment, truck movements between 6.00am and 7.00am were conservatively assessed as part of the daytime 15 hour traffic noise assessment (i.e. all truck movements required for the transport of 4.5 Mtpa of ROM are assumed to take place within a 15 hour period as opposed to a 16 hour period).

Road noise predictions at the Brooklyn and Weroona Residences for the Modification, together with the relevant daytime traffic noise criterion of 60dBA $L_{Aeq,15\text{ hour}}$, are summarised in **Table 3**.

The predictions in Table 3 are based on traffic scenarios presented in the Vickery EIS (with updates to ROM coal haulages hours for the Modification), and consider:

- Cumulative ROM coal haulage of 4.5 Mtpa;
- Cumulative employee movements and deliveries associated with the TCM, RCM and VCP;
- Relevant road traffic generated by other mining projects, such as the Boggabri Coal Mine and Maules Creek Coal Mine; and
- Other (non-mining) background traffic.

Table 3 Calculated Traffic Noise Levels at the Weroona and Brooklyn Residences – The Modification (ROM Coal Transport of 4.5 Mtpa during daytime hours only)

| | Maximum Predicted Noise Level for the Modification | |
|-----------------------------|--|--------------------|
| | Day (dBA L _{Aeq,15hr}) | |
| | Weroona Residence | Brooklyn Residence |
| Non – Project Traffic Noise | 30 | 51 |
| Project Traffic Noise | 46 | 53 |
| Total | 46 | 55 |
| Daytime Criterion | 60 | 60 |
| Compliance | Yes | Yes |

Based on the results summarised in **Table 3**, it was found that noise levels associated with the Modification are expected to comply with the relevant traffic noise criteria at the Brooklyn and Weroona Residences, which are the closest privately-owned receivers to the southern section of the Approved Road Transport Route. Therefore, compliance with the relevant traffic noise criteria is expected at all private dwellings along the southern section of the Approved Road Transport Route.

Since the Modification would result in no ROM coal haulage during the night - and thus, less acoustic impact at night compared to what was assessed in the Vickery EIS - the night time traffic noise assessment between VCP and the CHPP is no longer required as compliance with the night-time road noise criteria would occur.

Private Sections of Approved Road Transport Route between TCM and VCP

The northern section of the Approved Road Transport Route includes private sections of haul road owned by Whitehaven (**Figure 2**). Potential noise impacts associated with ROM coal haulage on the private sections of the Approved Road Transport Route have been assessed against the criteria for industrial noise in the *Industrial Noise Policy (INP)* for the Modification.

Previous Assessment – Tarrawonga EA

Assessment of noise impacts against the INP industrial noise criteria associated with the private sections of the Approved Road Transport Route was not required for the Tarrawonga EA, as ROM coal was proposed to be hauled directly to the adjacent Boggabri Coal Mine via internal haul roads. As such, the haulage of ROM coal to the Boggabri Coal Mine was included in the operational noise modelling conducted for the Tarrawonga EA.

Modification Assessment

Noise levels associated with ROM coal haulage on the private sections of Approval Road Transport Route have been calculated using the Environmental Noise Model (ENM) prediction model. Consistent with the Tarrawonga EA, statistical occurrences of meteorological conditions have been used to calculate a 10th percentile exceedance noise level (i.e. the level that is exceeded 10% of the time). The approach of using the 10th percentile calculated noise level as a measure of noise impacts has been considered acceptable by the NSW Environment Protection Agency for the Tarrawonga Coal Project and other similar mining project assessments.

Noise levels associated with the road haulage of 3Mtpa ROM coal were predicted at the two closest privately-owned receivers, the Braymont and Jeralong Residences, which are located over 4.0km away from the Approved Road Transport Route (**Figure 2**). The sound power level (SWL) of the ROM coal haulage trucks used for the assessment was consistent with those adopted for the Vickery EIS.

A summary of the predicted noise levels is provided in **Table 4**. As shown in **Table 4**, noise associated with the ROM coal haulage trucks on the private sections of the Approved Road Transport Route is predicted to be negligible. Accordingly, due to the Modification there would be:

- Jeralong Residence – no change to the currently approved operational or cumulative noise levels (as per the Tarrawonga Project Approval [11_0047]).
- Braymont Residence – no change to the approved operational noise levels (as per the Tarrawonga Project Approval [11_0047]) or cumulative noise levels predicted in the Vickery EIS.

Table 4 Predicted $L_{Aeq,15 \text{ minute}}$ 10th Percentile Operational and Cumulative $L_{Aeq,period}$ Noise Levels at the Closest Receivers to Private Sections of the Approved Road Transport Route

| Receiver | Modification Only | | | Tarrawonga Operational Including the Modification ¹ | | | Cumulative ^{2,3} |
|-----------------------|--------------------------------|---------|--------------------|--|-----------|-----------|---------------------------|
| | $dBA L_{Aeq, 15\text{minute}}$ | | | $dBA L_{Aeq, 15\text{minute}}$ | | | $dBA L_{Aeq,period}$ |
| | Day | Evening | Night ⁴ | Day | Evening | Night | Night |
| Jeralong ⁵ | 4 | 9 | 10 | 33 | 40 | 42 | 41 |
| | Change due to the Modification | | | No change | No change | No change | No change |
| Braymont | 3 | 5 | 7 | 20 | 30 | 30 | <35 |
| | Change due to the Modification | | | No change | No change | No change | No change |

¹ Approved Tarrawonga operational noise levels as per the Tarrawonga EA.

² Night time cumulative noise levels for the Jeralong receiver as per the Tarrawonga EA, which includes noise associated with Tarrawonga, the Boggabri Coal Project and the Maules Creek Coal Project.

³ Night time cumulative noise levels for the Braymont receiver as per the Vickery EIS, which includes noise associated with Tarrawonga, the Vickery Coal Project and Boggabri Coal Project.

⁴ Noise levels for the night have been predicted to account for the proposed ROM coal haulage between 6.00am to 7.00am.

⁵ The Jeralong receiver has existing acquisition upon request rights in the Tarrawonga Project Approval (11_0047).

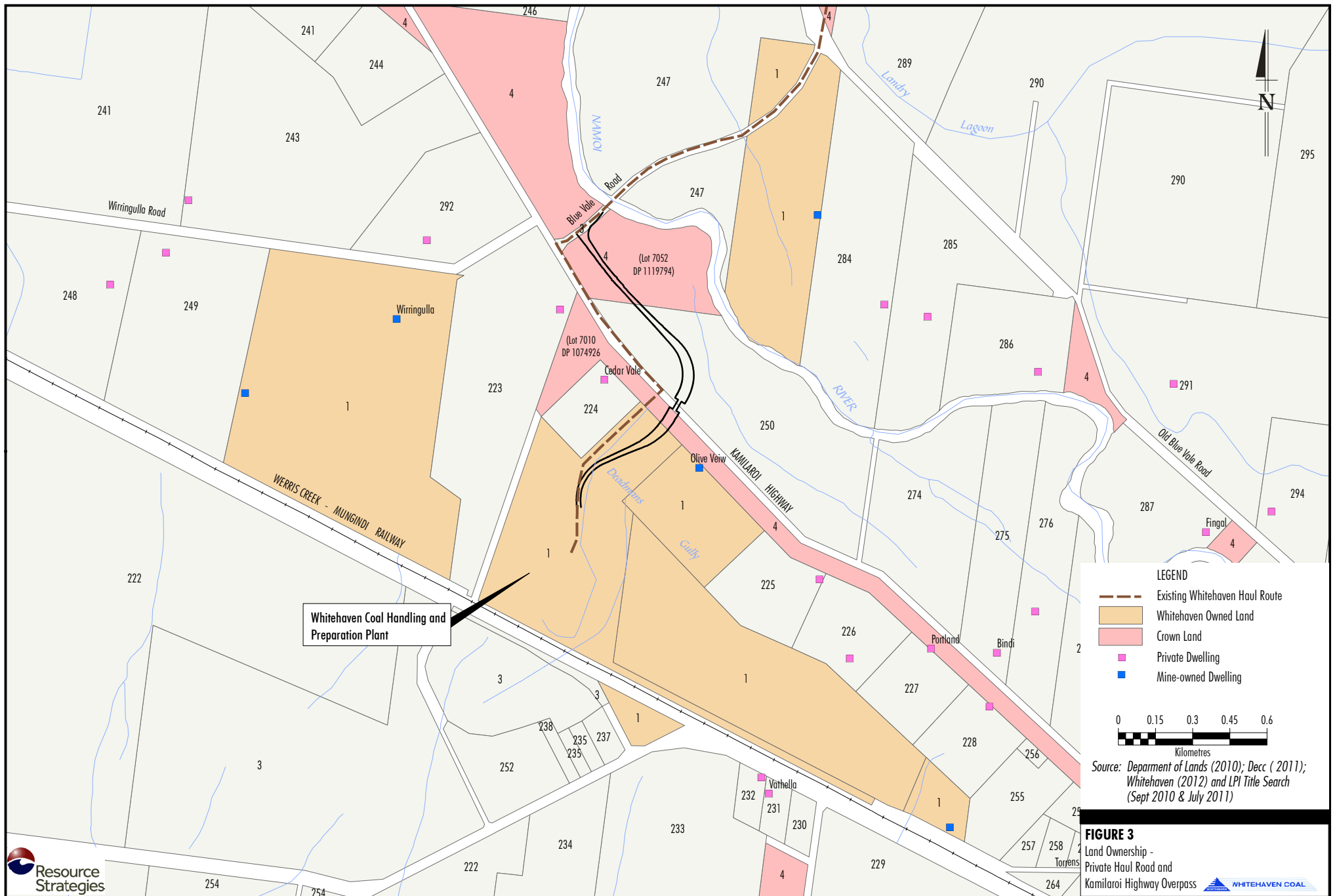
Private Overpass and Kamilaroi Highway

Previous Assessment – Vickery EIS

The Vickery EIS assessed potential traffic noise impacts associated with ROM coal haulage trucks using the private haul road and Kamilaroi Highway overpass at the closest privately owned receivers (**Figure 3**).

Modification Assessment

Since the road is technically a Private Haul Road, it would normally be assessed against the criteria for industrial noise in the INP. However, because the private haul road and Kamilaroi Highway overpass is being constructed to improve safety and in its absence the trucks would have to use the existing Kamilaroi Highway, which is adjacent, it was considered appropriate in the Vickery EIS to assess the total traffic noise at the surrounding receivers against the criteria specified in the RNP. That is, noise from the private haul road and Kamilaroi Highway overpass alone should achieve the criteria for a new arterial road (55dBA $L_{Aeq,15hr}$ in the daytime) and the combined noise from all traffic (i.e. traffic on Blue Vale Road, the Kamilaroi Highway and the private haul road and Kamilaroi Highway Overpass) should meet the RNP road traffic noise criteria of 60dBA $L_{Aeq,15hr}$ in the daytime.



Source: Department of Lands (2010); Decc (2011);
Whitehaven (2012) and LPI Title Search
(Sept 2010 & July 2011)

FIGURE 3

Land Ownership -
Private Haul Road and
Kamilaroi Highway Overpass



The predicted noise levels from the Vickery EIS are summarised in **Table 5**. As shown, the combined noise from all traffic was predicted to meet the 60dBA $L_{Aeq,15hr}$ daytime road noise criterion. Noise from the private haul road and Kamilaroi Highway overpass alone was predicted to meet the 55dBA $L_{Aeq,15hr}$ daytime criterion for a new arterial road.

In addition, the Vickery EIS predicted there would be no exceedance of the relevant night-time road traffic noise criteria at any privately-owned residence due to noise from the private haul road and Kamilaroi Highway overpass alone, or in combination with other traffic.

Table 5 **Calculated Traffic Noise Levels at the Closest Receivers to Private Haul Road and Kamilaroi Highway Overpass – Vickery EIS (ROM Coal Transport of 4.5 Mtpa 24 hours per day, 7 days per week)**

| Rec ID | Vickery EIS | | | | | |
|--------------------------|--------------------|-----------|-----------|--------------------|-----------|-----------|
| | Year 7 | | | Year 17 | | |
| | Day $L_{Aeq,15hr}$ | | | Day $L_{Aeq,15hr}$ | | |
| | Non-Project | Project | Total | Non-Project | Project | Total |
| 223 | 55 | 48 | 56 | 56 | 48 | 56 |
| 224 | 54 | 48 | 55 | 54 | 48 | 55 |
| 225 | 54 | 44 | 54 | 54 | 44 | 54 |
| 284 | 44 | 40 | 46 | 44 | 40 | 46 |
| 285 | 43 | 39 | 45 | 44 | 39 | 45 |
| 286 | 42 | 37 | 43 | 42 | 37 | 43 |
| 292 | 48 | 40 | 48 | 48 | 40 | 49 |
| Daytime Criterion | N/A | 55 | 60 | N/A | 55 | 60 |

Modification Assessment

As above, for the purpose of this Modification assessment, all truck movements required for the transport of 4.5 Mtpa of ROM are conservatively assumed to take place over a 15 hour period, as opposed to a 16 hour period.

The predicted noise levels for the Modification are summarised in **Table 6**.

As shown, the combined noise from all traffic (i.e. traffic on Blue Vale Road, the Kamilaroi Highway and the Highway Overpass) is predicted to meet the 60dBA $L_{Aeq,15hr}$ daytime road noise criterion. It should be noted that the adopted background traffic levels for the Modification assessment are consistent with those for Year 17 of the Vickery EIS (i.e. the maximum background levels adopted for the Vickery EIS assessment).

In addition, noise from the private haul road and Kamilaroi Highway overpass alone is predicted to meet the 55dBA $L_{Aeq,15hr}$ daytime criterion for a new arterial road.

Since the Modification would result in no ROM coal haulage during the night - and thus, less acoustic impact at night in comparison to the Vickery EIS - the night time traffic noise assessment of the private haul road and Kamilaroi Highway overpass is no longer required as compliance with the night-time road noise criteria would occur.

Table 6 **Calculated Traffic Noise Levels at the Closest Receivers to Private Haul Road and Kamilaroi Highway Overpass – The Modification (ROM Coal Transport of 4.5 Mtpa during daytime hours only)**

| Rec ID | Maximum Predicted Noise Level for the Modification | | |
|--------------------------|--|-----------------------|-----------|
| | Day $L_{Aeq,15hr}$ | | |
| | Background | Modification ROM coal | Total |
| 223 | 56 | 49 | 57 |
| 224 | 54 | 50 | 55 |
| 225 | 54 | 45 | 55 |
| 284 | 44 | 42 | 46 |
| 285 | 44 | 41 | 46 |
| 286 | 42 | 38 | 43 |
| 292 | 48 | 42 | 49 |
| Daytime Criterion | N/A | 55 | 60 |

CONCLUSION

Whitehaven is proposing to modify ROM coal truck haulage rate for TCM on the Approved ROM Coal Road Transport Route between the TCM complex and the Whitehaven CHPP.

However, Whitehaven would manage the use of the Approved Road Transport Route such that the total cumulative annual ROM coal haulage from all Whitehaven mines (i.e. TCM, RCM and VCP) would not exceed:

- 3.5 Mtpa prior to the commissioning of the private haul road and Kamilaroi Highway overpass; and
- 4.5 Mtpa following the commissioning of the private haul road and Kamilaroi Highway overpass.

This Road Traffic Noise Assessment Review has assessed potential road traffic noise impacts due to the following changes associated with the Modification (i.e. in comparison with those currently approved, or previously assessed for the VCP):

- An increase in TCM ROM coal haulage rate on the Approved Road Transport Route from the currently approved 2Mtpa to 3Mtpa.

- An increase in the cumulative ROM coal haulage from all Whitehaven coal mines of up to 4.5 Mtpa between 6.00am and 10.00pm on the Approved Road Transport Route between VCP and the CHPP (i.e. in comparison to the Vickery EIS, which assessed 4.5 Mtpa of ROM coal haulage occurring 24 hours per day, seven days per week).

It is predicted that road traffic noise levels associated with the Modification would comply with the relevant traffic noise criteria at all private dwellings along the Approved Road Transport Route.

Noise associated with the ROM coal haulage trucks on the private sections is predicted to be negligible and no change is expected to the currently approved (Tarrawonga Project Approval [11_0047]) or previously assessed (Vickery EIS) operational or cumulative noise levels.

I trust this information is sufficient.

Yours faithfully

WILKINSON MURRAY



Roman Haverkamp

Senior Engineer

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