11 Road transport

11.1 Project changes

11.1.1 Castlereagh Highway realignment

It is now proposed to realign the Castlereagh Highway at the location of the Project rail spur underpass near Tallawang. This will be to a 100 km/hr design speed standard. This solution replaces the proposed temporary construction stage highway traffic detour, which would have required an 80 km/hr speed limit for the duration of constructing the Project rail spur.

The realignment of the Castlereagh Highway will include a 100 km/hr design speed access intersection for the rail spur and underpass bridge construction worksites.

11.1.2 Local road detours

Updated local road traffic detours for Spring Ridge Road, Dapper Road and Brooklyn Road–Corishs Lane are shown in Figure 3.15. The Spring Ridge Road and Dapper Road route diversions will now be combined. They will be completed and open to the public before the start of mining operations. The new 19 km road detour will be sealed and constructed to a 100 km/hr design speed standard.

Minor alignment changes are proposed to the Brooklyn Road–Corishs Lane detour near Suzanne Road, in response to design changes in the parallel rail spur alignment. The road detour section near Suzanne Road (Figure 3.15) includes two bridges, one (road under rail) about 1 km east of Suzanne Road and one (road over rail) about 2 km west of Suzanne Road these are to maintain access for all properties in both the eastbound and westbound directions along the Brooklyn Road–Corishs Lane route.

11.1.3 Mine access road and haul roads

The former southern section of the Spring Ridge Road detour, south-east of the Tallawonga Road intersection, will now be a dedicated mine access road, and will only be used by mine traffic. This will permit greater separation of the mine traffic from other public traffic on roads near the MIA. It will also permit a bridge crossing of Laheys Creek that is perpendicular to the creek, where the new mine access road approaches the MIA.

These design changes will only affect mine traffic and will have no effect on other public traffic, which will be using the Spring Ridge Road Diversion from the start of mine operations.

11.1.4 Construction accommodation village

The construction village has been relocated about 500 m further to the south and vehicular access to it will be relocated by the same distance (Figure 3.16). This new access will be on a straight section of Spring Ridge Road, where there is adequate provision for the required intersection turning lanes to be constructed and adequate visibility for the left and right turning traffic. The new intersection will be constructed to Austroads and Australian Standard intersection design standards and further traffic impact assessment of the proposed intersection access will not be required.

11.1.5 Assessment method

There will be no changes to the Project-generated car or heavy vehicle traffic volumes or traffic distributions as a result of Project design changes so there is no requirement for further detailed traffic impact assessment for the proposed road and intersection design changes.

For the Spring Ridge Road detour, the proposed detour distances and travel times have been reassessed using the same method as described in the EA (Appendix K, Section 4.4).

11.1.6 Environmental management

The proposed road detours, reconstruction works and other road improvements, which have been devised in consultation with the RMS and officers of the adjoining councils, are summarised in Table 11.1.

The new road and intersection designs will comply with relevant Austroads and Australian Standards. On RMS controlled assets this requirement will be enforced by the RMS, which will be overseeing the future road construction works for the Project.

Table 11.1 Summary of external road works for the project

Title	Description of work	Undertaken by
Spring Ridge Road realignment, including intersection with Golden Hwy	19 km of new road, including a channelised intersection with the Golden Highway	To be confirmed
Mine Access Road	4 km of new road to access the mine, including bridge structures over Laheys Creek and Sandy Creek.	To be confirmed
Golden Hwy and Cobbora Road Intersection	Left turn deceleration lane and basic right turn treatment	Wellington Council
Castlereagh Hwy and Laheys Creek Road Intersection	Left turn deceleration lane and basic right turn treatment	Mid-Western Regional Council
Upgrade of existing Spring Ridge Road/ Laheys Creek Road	CHC has commissioned Warrumbungle Council for an initial upgrade of the 9.7 km section of Spring Ridge Road, south of the Golden Highway. CHC is also working in consultation with the Warrumbungle and Mid-Western Regional Councils to implement a combination of targeted temporary and permanent road improvements for the remainder of the route combined with a speed limit reduction to 80 km/hr for the central section of the route north from Montaza Road to the start of the new alignment for the 19 km Spring Ridge Road and Dapper Road deviations.	Warrumbungle & Mid-Western Regional Councils.
Cobbora Road Upgrade Works	Seal three unsealed sections of Cobbora Road totalling 8 km Additional shoulder widening work and the installation of warning signage and guardrails at the northern and southern approaches to Saxa Bridge at Spicers Creek	Wellington Council

Table 11.1 Summary of external road works for the project

Title	Description of work	Undertaken by
Brooklyn Road Realignment	3km of new road to allow access to residents and accommodate the rail spur.	To be confirmed
Castlereagh Hwy permanent realignment for rail underpass	Realignment of the Castlereagh Highway at the location of the Project rail spur underpass. This will be to a 100 km/hr design speed standard.	RMS

In addition to the environmental management measures described in the EA, a workforce travel plan will be developed for the mine operations traffic. This workforce travel plan will have the stated objective of achieving an overall 55% car driver ratio (ie the proportion of the workforce that drive a vehicle to work as opposed to travelling as a passenger in any vehicle) which corresponds to 50% for the mine shift workforce and 75% for the mine management and site visitors.

These car driver ratios will be required to ensure the estimated future Project generated vehicular traffic movements correspond with those used in the road traffic impact assessment (EA, Appendix K, Sections 3.4 and 3.5).

The workforce travel plan will define and describe the measures, including incentives for car sharing and car pooling to occur, for the plan to achieve the nominated car driver ratio target of 55% for the mine operations traffic.

11.1.7 Impacts

There will be no change to the Project-generated vehicular traffic described in the EA. The road and intersection traffic impacts will be as described in the EA.

The traffic detour lengths will be as follows:

- from southern end of the Spring Ridge Road diversion to the Golden Highway via the diversion: about 19 km;
- from southern end of the Spring Ridge Road diversion to the Golden Highway via the existing alignment of Spring Ridge Road: about 16 km; and
- from the existing Spring Ridge Road intersection on the Golden Highway to the proposed new Spring Ridge Road diversion: about 4 km to the west.

The future travel detour distances and travel times for Spring Ridge Road traffic will not change as a result of the modified road diversions (Figure 3.15). Traffic on the Spring Ridge Road diversion will travel around the western side of the mine. The resulting additional travel detour distances and journey times for the local traffic will be 7 km per vehicle and 5 minutes per vehicle. These are the same as for the previously proposed Spring Ridge Road detour in the EA.

The longer Spring Ridge Road diversion will provide a greater length of high standard rural road, designed for 100 km/hr travel speeds. It will be sealed, including shoulders, and will not have any causeway crossings as now occurs at Laheys Creek.

The Brooklyn Road–Corishs Lane detour route includes only a relatively minor section of new road connecting the existing alignments of Brooklyn Road and Corishs Lane in the locality of Suzanne Road. The proposed traffic detour route will generally follow parallel alignments to the existing Brooklyn Road and Corishs Lane routes and there will be only minimal changes (less than 0.5 km per vehicle) to travel distances for local traffic.

11.2 Response to submissions

11.2.1 Traffic counts on the southern access road

Submission

C-2

Issue

The MWRC asks for more recent traffic counts for the access roads south of the Project.

Response

In October 2011, three 7-day tube traffic counts were made on the northern, central and southern sections of the Spring Ridge Road–Laheys Creek Road route for the traffic assessment (EA Appendix K, Table 2.1). There is no reason why the background traffic volumes using these roads should have changed greatly since October 2011. Potentially, towards the end of 2012, some traffic volumes may have increased as Project-related traffic has increased with site investigations and related work. However, any additional traffic from this source is a precursor of the actual Project-related traffic in future years and should not be included in calculations of existing background traffic.

11.2.2 Workforce location modelling

Submissions

C-3, C-4

Issue

Both the Wellington Council and Warrumbungle Shire Council comment that more workforce location modelling is required to provide a higher level of confidence in the traffic analysis.

Response

The workforce locations analysis was based on the most recent available data, which included figures on workforce skills and unemployment numbers from the Australian Bureau of Statistics. The data used is the best and most objective information available.

The proportions of the workforce that will be recruited from each LGA, or who may relocate to each LGA, will depend on numerous factors, including future training programs and competition from other projects in the area. More workforce analysis would not provide additional certainty to the workforce distribution because of the completion of the factors involved and absence of better data involved and extended timeframe.

However, records of the origin (local or in-migrant) and the residential locations of workers will be kept so that the actual and distribution patterns across the four LGAs will be known as the Project progresses.

11.2.3 Car pooling

Submissions

C1, C2, C3, C4

Issues

The four councils comment that bus transport and car pooling by workers at the Project is unrealistic and that commuter traffic has been underestimated. The MWRC notes car pooling has not been adopted by the workers for the Ulan cluster of mines and hence the traffic volumes were estimates. The MWRC requests additional detail about car trip generation for comparable projects.

Response

The proportions of car driver travel for the mine operations workers, construction workers and administrative and technical staff were initially estimated by Engenicom as 50%, 63% and 75% respectively, based on previous mine planning studies and historical workforce commuting travel patterns at coal mines in the Upper Hunter Valley. There are strong financial incentives for high car pooling to occur where employees and contractors are commuting long distances (at least one-hour travel time each way) to and from a mine.

A comparable mine in the Central West of NSW is the Cadia Valley mine 30 km south-west of Orange. The mine operates shuttle buses for its construction workforce and about 70% of the mine's operational workforce are registered to travel in a car pooling scheme. At the Cadia mine, about 70% of the total operations workforce of 1,400 have signed up as registered car poolers and the car drivers who provide their cars for the scheme have each received a $50 fuel voucher as their initial incentive to participate in the scheme. Additional requirements for the scheme are to provide a dedicated priority car park at the mine for the car pooler's vehicles and provide a vehicle or vehicles on standby to provide a 'guaranteed ride home' for any person for whom the car pooling arrangement may not work for whatever reason on any particular day. This scheme has reduced the Cadia workforce commuting car driver ratio to about 54%. This is similar to the car driver commuting ratio used for the Project road transport assessment, which for daily travel distances is generally greater than for workers at Cadia mine.

CHC will commit the necessary resources to set up and support a workplace travel plan. This will let the Project reach a 50 to 60% car driver ratio for the shift and mine management workforce.

11.2.4 Traffic volume estimates

Submissions

C-1, C-2; C3, G-10

Issues

Four submissions assert the EA has underestimated the volume of traffic (both light and heavy) for construction and operations and, as such, has not adequately addressed adverse impacts to the network. The potential underestimation of traffic along the southern route from the Mudgee/Gulgong area to the site is particularly noted.

Responses

During construction, the majority of the workforce will be based in an accommodation village near the northern end of Spring Ridge Road, about 3 km south of the Golden Highway. Of the workforce that is not based in the accommodation village, it is estimated about 10% will live in Mudgee and Gulgong as determined by the Workforce Accommodation Strategy (EA Appendix T). This is due to a combination of factors, including the competing job opportunities from other coal mines in the MWR LGA, the higher cost and lower availability of existing residential housing in Mudgee and Gulgong than Dubbo and Wellington; and the greater range of education, recreation, retail and health care services available in the major regional city of Dubbo.

The EA traffic impact assessment was made objectively and has not sought to underestimate the likely traffic impacts of the Project on roads within the MWR LGA. Following the request from the MWRC, a scenario considering the Project traffic impacts if 30% of the workforce lives in MWR LGA was included in the EA (Appendix K, Section 7.6).

The sensitivity analysis concluded that if the proportion of Project operations workforce resident in the MWR LGA increased to 30%, additional road upgrades would be required to roads within the MWR LGA, including widening the Spring Ridge Road-Laheys Creek Road route to a minimum 6 m sealed width, south of the MIA.

CHC is working with the MWR and Warrumbungle Councils to upgrade sections of Spring Ridge Road and Laheys Creek Road south of the Spring Ridge Road realignment.

A possible need for additional sealed shoulder widening to a minimum 0.5 width on sections of the Castlereagh Highway between the Laheys Creek Road intersection and Gulgong, was also identified in the EA sensitivity analysis. However, a recent site inspection by CHC showed that this work appeared to be complete. The MWRC confirmed that they upgraded the road shoulders in 2010.

11.2.5 Construction traffic estimates

Submission

NA-13

Issue

The DP&I comments that the construction heavy vehicle traffic is not well documented. Further information is requested on indicative tonnages of gravel, ballast and cement, the source of these materials, including from the local area, and the likely truck movements generated.

Response

The Project construction traffic impact assessment (EA Appendix K, Figure 4.2 and Table 4.5) has been based on an overall maximum of 100 truck deliveries per day (200 truck movements) for all the Project construction worksites combined.

The estimated quantities of the construction materials required for the rail spur construction are 392,000 tonnes (t) of ballast, 88,000 t of formation capping and 50,000 t of ballast giving a total of 530,000 t. Much of this material will be sourced on-site.

During construction the average truck will have 33 t payload capacity. Over 18 months construction (375 working days), an average of 42 truck loads per day will be generated (84 truck movements). These are included in the maximum 100 truck deliveries per day used in the EA. These truck movements may access the rail corridor from either end of the route, either via the Castlereagh Highway worksites near the eastern end of the rail spur easement or via the Project MIA and CHPP worksites at the western end of the rail spur easement. It is likely the majority of the rail spur construction truck movements will access the rail corridor from the western end.

11.2.6 Golden Highway level of service

Submission

C-1

Issue

Dubbo Council asks for further information about the changes in service level on the Golden Highway.

Response

All sections of the Golden Highway between Dubbo and the Cobbora intersection have peak hour traffic volumes below 100 vehicles (see EA Appendix K Section 2.4). This matches a Level of Service 'A', which is the highest level under the relevant RMS guidelines (RTA 2002). Future traffic levels on the highway have been forecast for both construction and operations.

During construction, the peak increase in daily traffic is forecast to be 222 vehicles. The maximum forecast daily traffic is 1,456 vehicles near Dunedoo. The specified maximum threshold for Levels of Service A and B (they are not treated separately) is 5,250 vehicles per day (RTA 2002). As the forecast total is well below the threshold, there will be no diminution, or reduction, of service level on the highway during construction.

During operations, the maximum forecast increase in daily traffic on the highway is 318 vehicles west of Sweeneys Lane (see EA, Appendix K Table 4.7). The maximum forecast total daily traffic is 1,308 vehicles at the same location (see EA Appendix K Table 4.11). Again, this is well below the threshold for service levels A and B, and so no level of service decrease will occur.

The Project's impact on the requirement for passing lanes on the Golden Highway has also been considered. It was found the forecast traffic growth will not create warrants for any new or extended passing lanes (EA Appendix K, Section 4.3).

In the urban area of Dubbo, traffic from the Project will disperse from the highway according to the residential locations of workers within the city. This distribution is not known at this time and thus it is not possible to assess any urban area traffic impacts. However, a reasonable expectation is that these impacts will be smaller than in rural locations because the Project's traffic will be a much smaller fraction of total traffic in the Dubbo city area.

11.2.7 Traffic analysis on rural roads

Submission

NA-12

Issue

Transport for NSW requests that the proponent undertakes a TRARR (Traffic analysis on Rural Roads) to assess the need for overtaking lane provision on the Golden Highway and Castlereagh Highway route.

Response

The major roads traffic impacts analysis (EA Appendix K, Table 4.1 and Table 4.7) determined that future levels of service will not be affected by Project traffic and will remain within the range of level of service A/B. Overtaking lane warrants were analysed (EA Appendix K, Section 4.3) based on the predicted future daily traffic volumes. This analysis found there will be no general need to provide overtaking lanes on these two highways.

The Golden and Castlereagh Highways have many straight sections with good visibility for safe overtaking and travel mostly through areas of flat terrain between the Project area and Dubbo, Dunedoo or Gulgong. The TRARR road performance model is a relatively complex road performance model that was developed by the Australian Road Research Board (ARRB) for assessing predicted future travel time savings from road improvements, such as overtaking lanes and major rural road infrastructure upgrade projects. It is not normally used for environmental assessment for a mining project and is not needed in the circumstances described above.

11.2.8 Traffic on other rural roads in the Wellington Council area

Submission

C-4

Issues

Wellington Council asks for further information on traffic volumes on other rural roads in its LGA that will be used to access the mine, specifically referring to: Goolma Road (MR 233), Gollan Road (RR 7512)/Ballimore Road, Tallawonga Road and Spicers Creek Road.

Response

The potential traffic usage of other rural roads in Wellington LGA was assessed in the EA and found to be close to zero during operations and minimal (a maximum of 10 to 20 vehicle movements per day) during construction. The Project construction traffic increases do not warrant any improvements to these roads as they will be temporary and mainly a result of constructing the water supply pipeline and pumping station. CHC will be making a financial contribution towards the completion of the sealing of the MR 353 route for the future Project traffic usage. It would not be reasonable for CHC to also contribute towards upgrading other roads that are forecast to experience little change in traffic to work.

11.2.9 Traffic on the Cobbora Road (north) route to Mendooran

Submission

C-3

Issue

Warrumbungle Council comments on the potential traffic usage of the Cobbora Road (north) route from Cobbora towards Mendooran during construction and operations. The council requested an assessment to determine whether road sealing or other road improvements are required.

Response

The Cobbora Road (north) route includes a 12 km unsealed section and there is a suitable alternative sealed road route to Mendooran via Dunedoo. There is only minimal increased traffic usage predicted for Cobbora Road during construction or operations. There will be no significant traffic impact requiring either road improvements or road maintenance contributions for this route.

11.2.10 Cobbora Road (MR 353) upgrade works

Submission

C-4

Issue

Wellington Council disputes that it will complete the sealing of the Cobbora Road (MR 353) where there are currently three unsealed sections (8 km in total).

Response

It is accepted the Project will generate significant traffic increases on the Cobbora Road route. In initial consultations with council staff in September 2011, it was understood the council was intending to complete the sealing of this road within the next two years as part of a Wellington to Narrabri regional road upgrade project. CHC has now agreed to fund sealing of 8 km of Cobbora Road and to upgrade the intersection of Cobbora Road and the Golden Highway to provide a left turn lane and a basic right turn treatment (see Table 11.1). CHC will also be responsible for additional shoulder widening work and installing warning signs and guardrails at the northern and southern approaches to the existing narrow bridge at Spicers Creek.

11.2.11 Spring Ridge Road upgrade works

Submissions

C-2, C-3, C-4

Issues

The MWR, Wellington and Warrumbungle councils request funding for an upgrade of Spring Ridge Road and the associated future maintenance costs. Wellington Council is concerned about the future maintenance costs of the 11 km section that would be relocated within its LGA. Warrumbungle Council notes it required an upgrade of Spring Ridge Road to a 9.5 m formation, 7.5 m seal width, for 8.2 km south of the Golden Highway, for the Project construction stage, particularly for access to the MIA and CHPP worksites. The MWRC requests both Laheys Creek Road and Spring Ridge Road be upgraded to a 10-m wide formation with an 8 m sealed formation before any construction work starts.

Responses

The northern section of Spring Ridge Road is in Warrumbungle LGA, but the 19.7 km Spring Ridge Road diversion will include an 8.3 km section in Wellington LGA. Therefore there will be additional road maintenance expenditure for the Wellington Council for the life of the road. The VPA negotiated with Wellington Council will include a provision to maintain the Spring Ridge Road diversion during the Project life.

Project-related truck traffic on Spring Ridge Road south of the MIA will be restricted by specifying alternative truck access routes in Project supply contracts during both construction and operations. For this reason, the requested future road maintenance funding for Spring Ridge Road, south of the MIA and CHPP worksites, Warrumbungle and MWR LGAs, is not justified for mine-related truck traffic.

The MWRC and Warrumbungle Council's request to widen Spring Ridge Road (to 7–8 m sealed width, including sealed shoulders), south of the MIA is not consistent with the future predicted daily traffic usage (EA Appendix K, Table 4.5 and Table 4.11). This is fewer than 150 vehicle movements daily during both construction and operations.

Since the exhibition of the EA, a more limited future upgrade of Spring Ridge Road, south of the MIA in the Warrumbungle LGA, is also now proposed to be implemented during mine construction. This is because the existing Spring Ridge Road south of the MIA and CHPP will be used by both mine-related and public traffic until the Spring Ridge Road detour is completed.

11.2.12 Dilapidation survey and maintenance of the Spring Ridge Road and Laheys Creek Road route

Submission

C-2

Issues

The MWRC requests further details on the strategy for the upgrading and maintenance of Laheys Creek and Spring Ridge roads. The council also requests a dilapidation report and a structural assessment for both roads to determine the upgrade required to both roads as a result of heavy vehicle movements.

Responses

A detailed visual and photographic survey of the existing width and condition of these roads was undertaken in September 2011 and is reported in the EA (in Table 2.4 and Appendix A of Appendix K).

On the central section of the Spring Ridge Road-Laheys Creek Road route, south of the proposed MIA, including most of the route within MWR LGA, the existing sealed width is about 4.5 m. At the northern and southern ends, the sealed width is wider — about 6 m — although the centre line is not generally marked.

The section of Spring Ridge Road to the north of the MIA (within Warrumbungle Shire) is proposed to be widened and reconstructed by CHC for construction access. The service levels on Spring Ridge Road south of the MIA and on Laheys Creek Road will not be changed by the additional mine traffic. This is reported in the EA (Appendix K, Table 4.5 and Table 4.11). The traffic assessment identifies that all mine-related truck traffic from the MIA, CHPP and rail spur worksites will need to be prohibited from using this route. Appropriate monitoring and enforcement measures will be specified in the traffic management plan to control all Project truck traffic delivery routes.

Since the exhibition of the EA, the future assessed need for an upgrade to the existing width and condition of the Spring Ridge Road route within the MWR LGA was reviewed. CHC is working with the MWRC to establish improvements for the route in combination with a speed limit reduction to improve road safety, as described in Table 11.1. CHC is continuing discussions with the MWRC about the necessary additional road works and their specification in a VPA.

11.2.13 Local traffic movements

Submissions

I-9, I-102, I-138

Issues

A number of submissions comment on the financial and travel hardships resulting from the Spring Ridge Road diversion, the increased traffic on the Golden Highway and other local road closures. One submission would like an alternative route, namely Avonside West Road, to be upgraded to provide access from the Cobbora village to Gulgong and Mudgee.

Responses

The Spring Ridge Road diversion will provide a suitable detour route for the local traffic that uses the northern end of Spring Ridge Road. A small number of private cars and other vehicles, which now travel between the Golden Highway near Cobbora village (east of the Spring Ridge Road intersection) and Spring Ridge Road south of the MIA, will be affected by the diversion of Spring Ridge Road to the west of the mine area.

The future additional travel time and detour distances for this traffic will be 5 minutes travel time and 7 km travel distance for each vehicle. However, the traffic potentially affected will be a maximum of 25 vehicles in each direction per day, so the number of people actually affected by the traffic detours each day will be relatively low. The traffic now travelling to and from the Dubbo direction from Spring Ridge Road will have shorter journeys via the Spring Ridge Road and Dapper Road diversion in the future than via the existing Spring Ridge Road alignment, so some local traffic will benefit from the proposed diversion.

The construction of an additional mine traffic detour to the east of the mine area, for example via an extension of Avonside West Road, is not justified for the low volumes of local traffic that may benefit from such a route. All traffic using the Spring Ridge Road diversion will benefit from the higher design standard and travel speed of the new road alignment compared with the existing Spring Ridge Road alignment.

The EA (Figure 3.14) shows proposed road closures and diversions and shows that Suzanne Road properties will continue to have access to and from Brooklyn Road and Corishs Lane, east and west, during the construction and operation of the Project rail spur. This map has been superseded by Figure 3.15 of this report, which shows minor changes to the proposed road diversion route in response to minor changes in the rail spur design. The local traffic access for all properties both eastbound and westbound along the Brooklyn Road and Corishs Lane route will be maintained throughout the Project rail spur construction and operations.

The EA traffic impact assessment has assessed the impacts of all local road detours. Many of these local roads, for example Danabar Road and the northern sections of Sandy Creek Road, only serve properties that have been bought by the mine, so the impacts of these road closures for other road users will be minimal.

11.2.14 Impact of train movements on the road system

Submissions

I-8; I-15

Issues

Two submissions comment on the impact of increased train movements on the road network particularly the increase in traffic delays at the Adamstown and Clyde Street gates by an estimated 40 minutes a day.

Responses

The road traffic delay impacts of increasing rail traffic along the Hunter Valley rail corridors due to the Project have been assessed in the Rail Traffic Assessment (EA Appendix L). These affects have been assessed both in the Newcastle area and at other level crossings near Denman, Sandy Hollow, Bylong, Ulan and Gulgong on the rail route between Cobbora and Newcastle.

Since the exhibition of the EA, additional traffic delay mitigation measures have now been identified, including real-time provision of advice to motorists of the remaining duration of level crossing delays when a freight train is passing the two level crossings in Newcastle, and temporary changes to the phase timing of the nearby traffic signals to help disperse the queued traffic at these level crossings after a freight train has passed.

These traffic delay mitigation measures are proposed to be implemented by the NSW government transport agencies, independently of the Cobbora project. However, they will reduce the traffic delay impacts of additional coal trains at the Adamstown and Clyde Street level crossings in Newcastle (see EA Section 12.1.3).

At the other level crossings assessed, the traffic delay effects of the increased train movements have been quantified and the corresponding impacts are not enough to require additional mitigation measures for traffic delays at level crossings at these locations.

11.2.15 Road underpass

Submission

NA-2

Issue

The OEH comments the location of the road underpass under the rail spur is unclear and asks whether it will allow access to Goodiman SCA. The underpass must be large enough to allow access for heavy equipment (eg graders on low loaders, heavy combination vehicles and Category 1 fire fighting tankers). A low level rail crossing would be preferable for these types of vehicles. The OEH recommends amending Figure 3.14 to indicate the location of the proposed underpass for access to Goodiman SCA, and to consider the suitability of the underpass for heavy plant and vehicles.

Response

The underpass on the west side of Goodiman SCA will have a clearance of 5.5 m and will allow heavy equipment (eg a grader on a low loader) to access the SCA (see Figure 3.15).

11.2.16 Impacts on road traffic in the Mudgee region

Submissions

I-135, G-10

Issues

Two submissions cite concerns about the impact of mine traffic on the Mudgee region, particularly the historic streets of Gulgong and the tourism industry.

Response

The Project's workforce accommodation, employee transport and mine supply requirements are mainly intended to be met by businesses in the townships to the north and west of the mine area, eg Dubbo, Wellington and Dunedoo. Thus it is likely there will be only relatively minor mine employee-and supplier-related traffic movements occurring in the townships to the south-east of the mine, such as at Gulgong and Mudgee.

11.2.17 Service industry travel patterns

Submissions

C-1, C-2

Issues

The Dubbo Council and the MWRC consider the impact of changed travel patterns of workers already living in the area has not been adequately assessed. This relates specifically to the industries that are likely to service the mine. The MWRC is particularly concerned that travel from Mudgee and Gulgong will be higher than forecast and that a higher number of Cobbora mine workers will live in these towns due to the higher level of services already present there.

Responses

The traffic impact assessment has considered the existing traffic levels on roads in the area (EA Appendix K, Table 2.1), which include any vehicle movements in the study area from other mining projects.

Mudgee and Gulgong contain organisations and suppliers that could service the Cobbora mine. However, this does not mean that they will service the Cobbora mine. From the early stages of Project planning, the physical access constraints at Cobbora imposed by the current road access from the south via Laheys Creek Road and Spring Ridge Road have been considered. As a higher standard of road access is available to the Project area via the Golden Highway route from the east and the west, the Project planning team has developed future workforce recruitment and training strategies and supplier relationships with organisations in the towns to the west and south-west of the Project area (eg Dubbo and Wellington), which will thus minimise the Project workforce recruitment and supplier relationships in Mudgee and Gulgong.

This will minimise the extent to which Laheys Creek and Spring Ridge Roads, south of the mine area, will need to be upgraded. Future monitoring of traffic on this route will continue to confirm any need for upgrading works. Since the exhibition of the EA, a future upgrade of Spring Ridge Road, south of the mine area, within the Warrumbungle and MWRC LGAs, is now proposed for the Project traffic during mine construction and operations as described in Table 11.1.

11.2.18 Cumulative impact

Submissions

C-2, C-3

Issue

The MWRC and Warrumbungle Council comment that the traffic impact assessment did not take into account the activity of local mining-related industries that are likely to service the Project.

Response

The existing mining activities and related industries within MWR and Warrumbungle LGAs generate traffic movements mainly on the roads to the east of Mudgee, Gulgong and Dunedoo (eg on Cope Road, to the east of Gulgong and on Ulan Road, which links Mudgee, Ulan and Casillis) and not generally on the roads to west of the these townships. However, any traffic from existing mines would have been included in the baseline traffic counts.

The future area of influence of the additional vehicle traffic generated by the Project will generally be on the roads to the west of Mudgee, Gulgong and Dunedoo, as shown by the traffic distribution maps in the EA (Appendix K, Figure 4.2 and Figure 4.3). As such, the roads affected by the Project traffic will not generally be the same roads that are now affected by other mines and related industry traffic to the east of these townships.

11.2.19 Traffic management plan

Submission

NA-12

Issue

Transport for NSW requests a traffic management plan (TMP) be prepared for the Project, before construction work begins. It stats the TMP should be prepared in consultation with RMS and the affected councils and submitted for their approval. The TMP should address the matters raised in Section 12.4 of the EA and any findings and/or commitments made in the TMP must be implemented.

Response

A TMP is being prepared. The draft plan will be submitted for the RMS and the affected councils to review. Works and mitigation measures in the TMP will be implemented at the appropriate times for their use by the Project construction and/or operations traffic.

11.2.20 Road safety audits

Submission

NA-13

Issue

The DP&I notes the RMS requires road safety audits for all the proposed Project road and intersection works as part of the works authorisation deed (WAD) process.

Response

On assets controlled by the RMS, road safety audits are required at two stages of the road design and construction process, namely Stage 3 Detailed Design and Stage 4 Pre-Opening. For all proposed road works on RMS controlled roads and other roads, road safety audits will be carried out by an accredited road safety auditor and any corrective actions implemented and closed out, before the relevant road authority accepts the completed works.

11.2.21 Heavy vehicle access routes

Submissions

C-2, C-3

Issues

Both the MWRC and the Warrumbungle Council comment on the ability of the proponent to control truck traffic movements (including oversize vehicles) along the preferred route through Dunedoo via the Golden Highway. Warrumbungle Council is concerned heavy vehicles will continue to use the Laheys Creek–Spring Ridge Road route and that as a result this route will require upgrading. The MWRC requested that alternative oversize vehicle traffic detour routes be investigated. Both councils comment that the reliance on signs to control traffic movement is unlawful, unrealistic and cannot be enforced.

Responses

The proportions of Project heavy vehicle traffic travelling from either the Mudgee or Gulgong directions are estimated to be relatively low (about 10–15% of total heavy vehicles). The contracts between the mine and its suppliers will specify the truck routes that can be used during construction and operations. For mine suppliers based in and around Mudgee and Gulgong, the supply contracts will specify that all truck deliveries, and the empty truck returning movements, are to be on the Castlereagh Highway route via Dunedoo.

The proposed signs to control construction and operations stage truck traffic travelling to and from the Project via the southern access routes will be the most visible aspect of the proposed Project controls on supplier delivery truck routes.

Additionally, all trucks entering the accommodation village, MIA, CHPP and rail spur worksites that have travelled from locations south or east of Dunedoo or Gulgong, will be required to keep records and provide evidence (either from route check-in stations or from GPS devices carried in the trucks) they have travelled via approved delivery routes for all their journeys to and from the mine. Random audits will be undertaken of the supplier truck movement records to confirm the approved transport routes have been used. Truck route check-in stations may also be used (eg at the northern end of Spring Ridge Road and on the Golden Highway east of Dunedoo) to confirm suppliers comply with approved delivery routes. These monitoring measures will provide verifiable records of the routes used by all truck deliveries to and from the mine. The contracts between the mine and its suppliers will include appropriate compensatory payments for haulage contractors, where applicable, to reimburse costs from the additional distance travelled.

11.2.22 Golden Highway access via Dunedoo

Submission

C-2

Issue

Warrumbungle Council requests further information on the proposed Project truck movements using the Golden Highway access through Dunedoo including wide loads, and has requested a ‘daylight hours’ restriction on mine-related truck traffic travelling via the main street section of the Golden Highway route through Dunedoo.

Response

The Golden Highway route through Dunedoo is relatively wide, lightly trafficked and has a large truck stopping area. There is no reason to impose a daylight hours restriction on mine-related truck traffic or other wide loads travelling though Dunedoo. The existing Golden Highway route through Dunedoo is not considered to present any unacceptable constraint to the occasional movement of oversize vehicles along the Golden Highway for mine-related equipment or materials deliveries.

11.2.23 Oversize vehicle movements

Submission

NA-12

Issue

Transport for NSW requests more detailed consideration and analysis of the potential impacts of oversize vehicle movements on the major road network and at intersections and mitigation measures to offset these impacts.

Response

The occurrence of larger vehicle movements, including oversize vehicle movements carrying mine trucks and related equipment, is a frequent and regular occurrence on the major road network in the Hunter Valley and along the Golden Highway east of Dunedoo, which is used for road deliveries of mining equipment and materials to the existing cluster of mines near Ulan. Safe operational procedures, such as the use of pilot vehicles for oversize loads, are well established on these roads and most of the other traffic travelling on these roads already regularly encounters such loads. During Project construction oversize vehicle movements on the Golden Highway will extend further west from the Ulan Road junction, more regularly than is now the case. However, the additional length of the Golden Highway that will be affected, in comparison to the overall highway route length from Newcastle to Dubbo, is relatively minor and should not require any additional road improvements for oversize vehicle movements.

11.2.24 Social impacts of increased traffic and road changes

Submissions

G-10, I-135, I-70, I-48

Issues

A number of submissions comment on the social impact of the road changes, including increased traffic, associated visual and noise pollution and that the cost of road improvements will be borne by the community. One submission states that VPAs will not cover the additional impost on ratepayers to maintain roads heavily used by mine traffic.

Responses

Mining is a key component of the NSW economy and mining projects contribute financially to the local, regional and national economies. The cost of the identified road upgrades required as a result of the Project is included in the Project economic assessment (EA Appendix R).

Financial contributions by CHC to councils to provide for additional road maintenance as a result of additional heavy vehicle road movements on local roads are being discussed. The contributions will be based on ongoing monitoring of each council's road use by the Project traffic.

11.2.25 Financial contribution to road upgrades

Submissions

C-1, C-2, C-3, C-4

Issues

The four councils request that CHC makes a contribution to each affected council for future road upgrades and road maintenance costs to address all the Project's impacts.

Wellington Council makes the following specific financial requests for its VPA, that CHC:

a) funds and undertakes upgrading sealing works for the 8 km section of Cobbora Road that is currently unsealed so that it complies with Austroads – Guide for Road Design and Austroads Guide to Bridge Technology;

b) funds and undertakes upgrading works for the intersection of Cobbora Road and the Golden Highway;

c) funds and constructs a widening of both the narrow Spicers Creek Bridge and its approaches on Cobbora Road and installs guardrails on the approaches, given the high number of heavy vehicles predicted to use the road, rendering it unsafe in its current condition;

d) funds and undertakes pavement deflection testing and a road safety audit to determine the adequacy or otherwise of other sections of Cobbora Road;

e) funds and undertakes the Spring Ridge Road rebuilding and highway intersection works, with the plans subject to prior approval from Council;

f) funds ongoing repair and maintenance costs of Cobbora Road for the 21 year operations life of the mine; and

g) provides financial contributions for the repair and maintenance of other rural roads, consistent with usage generated by the Project.

Responses

CHC will make a fair and equitable financial contribution to each of the councils for infrastructure and service impacts, by implementing the proposed road works for the Project as summarised in Table 11.1. The financial contributions for these works are being negotiated with each of the affected councils.

In response to the Wellington Council submission the following clarifications are made:

a) CHC will provide funding for the 8 km sealing of Cobbora Road.

b) The extent of the required works has been agreed with the RMS and will be funded by CHC.

c) The bridge is wide enough for most vehicles to pass at reasonable speeds. Appropriate safety signs, road shoulder sealing and guardrail will be provided for large vehicles to safely wait and give way at either end of the bridge when another large vehicle is already on the bridge. No widening of the bridge is proposed.

d) The recent five-year accident history of the road has been reviewed and indicates there are no major safety issues with the road. The road alignment is straight and has good visibility for most of its length. No pavement deflection testing has been undertaken as part of the EA investigations. A future pavement deflection testing program for this route may be supported by CHC to determine the existing structural condition of all sections of the road (after the sealing is completed). This will be included in the consideration of defining future road maintenance contributions.

e) Upgrade works will be agreed with the RMS in consultation with the council and will be funded by CHC.

f) The Project will be responsible for a proportion of the future truck traffic usage of the road, which may vary considerably in future years for varying sections of the road. An appropriate proportional contribution to the future road maintenance cost will be determined in consultation with Wellington Council, based on the mine-related truck traffic in comparison to other truck traffic using the route.

g) With the exception of the relocated section of Spring Ridge Road and Cobbora Road, the Project is not predicted to generate any significant ongoing daily traffic usage or truck traffic usage of any other road within Wellington LGA for which any maintenance contribution should be payable.

11.2.26 Pavement design standards

Submission

NA-12

Issue

Transport for NSW (including the RMS) comments that no pavement design standards or road design speed standards have been proposed for the new road links.

Response

The new road pavement design standards will follow current practice, which is to design road pavements for a 20-year future axle loading level. This will be calculated based on the predicted annual heavy vehicle traffic usage over the initial 20-year design life of the road. The Spring Ridge Road diversion will be designed to a 100 km/hr speed standard as it is the major local road route through the Project area. A lesser standard (80 km/hr) will be used for the local road diversions on the Brooklyn Road–Corishs Lane route. All road diversions will be constructed in accordance with the appropriate Austroads and Australian Standards guidelines.

11.2.27 Construction requirements

Submission

NA-12

Issues

Transport for NSW specifies a number of construction requirements for the Project, including:

- obtaining a Road Occupancy Licence before any works start within 3 m of the travel lanes on the Castlereagh and Golden Highways;
- entering into a Rail Interface Agreement with the RMS to operate the private rail line that will pass beneath the Castlereagh Highway;
- conducting pre-construction road safety audits at each location on state roads where construction work is to be undertaken for the Project; the audits are to be in accordance with Austroads Guide to Road Safety Part 6: Road Safety Audit (2009). CHC is to be responsible for mitigating deficiencies in accordance with the audit report; and
- upgrading rural school bus stops on both classified and local roads affected by the Project to provide safe 'pull-over' area for buses and safe pick up and drop off for school students before construction work starts.

Response

The requested requirements are normal for construction works on major roads and are accepted by CHC.

11.2.28 Security deposit

Submission

NA-12

Issue

Transport for NSW notes that security deposits are required for maintenance and the possible future removal of the rail underpass beneath the Castlereagh Highway when the mine is decommissioned.

Response

The requested security deposits will be negotiated between the CHC and RMS.

11.2.29 Intersection improvements

Submission

NA-12

Issues

Transport for NSW proposes the following intersection improvements:

- intersection upgrade 1: a left turn lane and BAR (widened sealed shoulder) right turn facility at the Cobbora Road–Golden Highway intersection, with agreement for the future monitoring of traffic at this intersection by CHC and provision for further upgrading of the BAR right turn facility if required;

- intersection upgrade 2: a channelised right turn (CHR) and channelised left turn (CHL) treatment at the new Golden Highway–Spring Ridge Road diversion intersection; and

- intersection upgrade 3: a left turn lane and BAR (widened sealed shoulder) right turn facility at the Laheys Creek Road and Castlereagh Highway intersection, with agreement for the future monitoring of traffic at this intersection by CHC and provision for further upgrading of the BAR right turn facility if required.

Transport for NSW also comments that intersection improvements and other works on state roads, including the proposed rail underpass of the Castlereagh Highway, are to be undertaken by CHC under a formal agreement in the form of a works authorisation deed (WAD) between CHC and the RMS. The works will be administered by the RMS, including all design, construction, alteration, maintenance and demolition/removal works.

Responses

Intersection upgrade 1 will be undertaken to the extent of the left turn lane and the BAR right turn sealed shoulder treatment. The intersection will be monitored to establish if any further upgrading is required. This is not expected as the Project will not generate right turning traffic movements from the Golden Highway eastbound to Cobbora Road (MR 353) southbound.

Intersection upgrade 2 will be undertaken.

Intersection upgrade 3 will be undertaken. The intersection will be monitored and further upgraded if required. This is unlikely as the Project will not generate any right turning traffic movements from the Castlereagh Highway southbound to Laheys Creek Road westbound.

CHC has started working with the RMS to obtain WADs for the works on state roads.

11.2.30 Intersection of Spring Ridge Road and the construction village

Submission

C-3

Issue

Warrumbungle Council comments that no detailed design of the intersection from Spring Ridge Road to the Construction Accommodation Village has been prepared.

Response

No detailed design for this intersection was available to be included in the EA (Appendix K, Table 4.6). When the detailed design is prepared for the construction accommodation village, intersection design works will be included and will show an improved intersection at this location. Additional left and right turning traffic lanes will be provided, as required according to the Austroads Intersection Design Standard (Austroads 2010).The design of the Spring Ridge Road intersection is further detailed in Sections 11.2.11 and 11.2.12.

11.2.31 Intersection of Spring Ridge Road and Danabar Road

Submission

C-3

Issue

Warrumbungle Council comments that no detailed design of the intersection from Spring Ridge Road to Danabar Road has been prepared.

Response

Danabar Road has low traffic use (less than 10 vehicle movements daily). During construction, an additional 60 vehicle movements a day are predicted. This additional traffic use does not require an improved Spring Ridge Road–Danabar Road intersection. In view of the limited future life of the two roads at this intersection, which are both due to be closed and removed when the mine construction is completed, no improved intersection is proposed at this location.

11.2.32 Intersection of Spring Ridge Road with the MIA and CHPP access roads

Submission

C-3

Issue

Warrumbungle Council comments that no detailed design of the access intersection from Spring Ridge Road to the MIA or the access intersection from Spring Ridge Road to the Coal Handling and Preparation Plant (CHPP) has been prepared.

Response

Improvements are now proposed for these intersections for the duration of the Project construction access. The intersections are included in the proposed initial upgrade of 9.7 km of Spring Ridge Road within the Warrumbungle LGA, which Warrumbungle Council has been commissioned by CHC to undertake, Table 11.1.

11.2.33 Spring Ridge Road asset value

Submission

C-3

Issue

Warrumbungle Council requests reimbursement for the current asset value of the section of Spring Ridge Road to be closed. The council considers the current alignment and roadway of Spring Ridge Road to have an asset value of $1.4 million.

Response

During construction and before the northern section of Spring Ridge Road is closed, it will be fully resealed and widened at CHC's cost. The future closure of the road will actually result in a net financial benefit to the council as it will no longer be incurring any maintenance expenditure for the road. It is therefore not proposed to reimburse the council for the existing asset value of the road. However, the land value of the road corridor reservation will be reimbursed as part of the formal procedure for the road closure.

11.2.34 Spring Ridge Road and Sandy Creek Road intersection closures

Submission

C-3

Issues

Warrumbungle Council questions the process for the closing and removing the existing Spring Ridge Road-Golden Highway intersection and the remnant section of Spring Ridge Road south of the highway easement fence at the Golden Highway boundary. The council also requests further information on the closure and removal of the existing intersection of Sandy Creek Road, with the Golden Highway and the removal and restoration of the remnant section of Sandy Creek Road, south of the highway easement fence at the Golden Highway boundary.

Responses

All signs and line-marking at the intersection will be removed when the existing alignment of Spring Ridge Road is closed. It is neither necessary nor proposed to remove the widened section of the roadway of the Golden Highway at Spring Ridge Road. The future boundary of the Golden Highway road corridor easement and the adjoining land will be appropriated fenced and secured, including a gate in the future fence line, where it crosses the remnant roadway section of Spring Ridge Road. A short remnant section of Spring Ridge will need to be retained, with gated access, to permit future maintenance and related access to the public land, between the Golden Highway road corridor and the active mine areas.

Similarly to the provisions to remove the existing intersection of Spring Ridge Road, all intersection signs and additional intersection line-marking at the intersection with the highway will be removed. As there is effectively no existing highway widening at the intersection of the Golden Highway with Sandy Creek Road no removal of any sections of roadway is required. The future boundary of the Golden Highway road corridor easement and the adjoining land will be appropriated fenced and secured, including a gate in the future fence line, where it crosses the remnant roadway section of Sandy Creek Road. A short remnant roadway section of Sandy Creek Road will need to be retained, with gated access, to permit future maintenance and related access to the public land, between the Golden Highway road corridor and the active mine areas

11.2.35 Sandy Creek bridge design

Submission

C-3

Issue

Warrumbungle Council requests that the design of the future bridge on the Spring Ridge Road diversion over Sandy Creek should allow the floodwaters for a 100-year flood to pass under the bridge.

Response

The Spring Ridge Road diversion bridge over Sandy Creek will be designed to allow free flow in a 100-year flood.

11.2.36 Haul road crossings

Submission

NA-13

Issue

The DP&I requests more information on possible haul road crossings (via bridge) over Laheys Creek and Spring Ridge roads, including proposed design and the consideration of potential impacts.

Response

Two haul road crossings over the existing alignment of Spring Ridge Road will connect the Mining Area B to the CHPP and to BOOP-E out-of-pit waste rock emplacements. The design of these crossings has now been simplified as the relevant section of Spring Ridge Road, north of the intersection with the Laheys Creek Road (Brooklyn Road) route will not be a public road once the Spring Ridge Road diversion is opened.

The haul road will use precast Super-T girder bridge sections wide enough to allow two haul trucks to pass. Bridge piles will be bored to minimise disturbance in the riparian zone of Laheys Creek.

11.2.37 Ash waste

Submission

I-48

Issue

One submission comments on the large quantities of waste ash and coal to be transported by road.

Response

Coal will be transported by rail. Coal will be washed in the CHPP so that it will meet the product coal specifications (eg allowable ash content) of the power station customers. Tailings (ie ash) from the CHPP will be disposed of on-site in emplacements.

11.2.38 Traffic health impacts

Submission

I-101

Issue

Increased truck movements will lead to health problems in the affected communities from extra noise and dust.

Response

Increased truck movements during the project construction stage, will mainly occur on the major highway routes, eg the Golden Highway and the Castlereagh Highway and other rural roads will not generally affect residential areas.

Responses on the impacts of rail transport on air quality and noise are provided in Chapters 13 and 15 of this RTS respectively.

11.2.39 Road underpass

Submission

NA-2

Issue

The OEH comments that the location of the road underpass under the rail spur is unclear and will it allow access to Goodiman SCA? The underpass must be large enough to allow access for heavy equipment (eg graders on low loaders, heavy combination vehicles and Category 1 fire fighting tankers). A low level rail crossing would be preferable for these types of vehicles. OEH recommends amending Figure 3.14 to indicate the location of the proposed underpass for access to Goodiman SCA, and to consider the suitability of the underpass for heavy plant and vehicles.

Response

The underpass will be on the west side of Goodiman SCA (Figure 3.15). It will have a clearance of 5.5 m and will allow heavy equipment, eg a grader on a low loader (Section 3.9.5).

11.3 Conclusion

The Project changes do not affect traffic numbers and therefore impacts on road traffic operations, road detours and levels of service will be as presented in the EA.

The resulting travel detour distances and travel times will not change as a result of the modified road diversions. Traffic on the Spring Ridge Road diversion will travel around the western side of the mine. Local traffic using Spring Ridge Road, which is travelling to and from the east when it reaches the Golden Highway (ie towards and from Dunedoo), will have additional travel detour distances and journey times of about 7 km per vehicle and 5 minutes per vehicle. However, the diversion will provide a greater length of high standard rural road designed for 100 km/hr travel speeds, which will be fully sealed and will not have any causeway crossings as at Laheys Creek currently.

The Brooklyn Road–Corishs Lane traffic detour route includes only a relatively minor section of new road connecting the existing alignments of Brooklyn Road and Corishs Lane in the locality of Suzanne Road. The proposed traffic detour route will generally follow the same east-west direction as the existing Brooklyn Road route and there will be only minimal changes (less than 0.5 km per vehicle) to travel distances for the local traffic using the road detour.

The proposed construction and intersection works have been further reviewed and clarified, including additional confirmation of construction funding, management and the related deeds and procedures required for these works to be constructed with the concurrence of the RMS and the affected councils. A traffic management plan will be prepared in consultation with the RMS and the affected councils and submitted for their review before construction work starts on the site.

CHC will commit the necessary resources to set up and support a workplace travel plan. This will let the Project reach a 50 to 60% car driver ratio for the shift and mine management workforce.

CHC is negotiating financial contributions with each of the four affected councils in relation to infrastructure and service impacts.