

COMMENT	RESPONSE
NARRABRI SHIRE COUNCIL (NSC)	
Socio-Economic Assessment	
<p>Workforce assumptions</p> <p>The NSC submission stated that the region needs to be defined based on the workforce travel catchment before socio-economic impacts can be fully assessed.</p>	<p>Whitehaven considers that a regional workforce is defined as being those that reside in the Local Government Area (LGA) that the Project is located within. Given the Project is located within both the Gunnedah and Narrabri LGAs, Whitehaven considers that employees that reside within these LGAs reside “locally” for the purposes of the Socio-Economic Assessment (Appendix K of the EIS) (i.e. they are not a drive-in drive-out or fly-in fly-out workforce that would be accommodated within mining camps). This is consistent with contemporary socio-economic assessments conducted for similar mining projects.</p>
<p>The NSC submission stated that the workforce distribution profile is not appropriate.</p>	<p>Whitehaven’s stated policy is that it strives to place employees within housing in the local communities rather than mining camps. Accordingly, adopting a similar workforce distribution profile to the Tarrawonga Coal Mine is considered appropriate for the Project. Whitehaven does not propose to use the Boggabri MAC camp as a primary accommodation site for its operational workforce.</p>
<p>The NSC submission requested clarification of the “maximum” impact associated with Table 4.11.</p>	<p>Table 4.11 in Appendix K of the EIS presents the predicted population change if the entire operational workforce that is predicted to reside within the region (average operational workforce of 193, with 75% expected to reside in the region [i.e. approximately 145 people]) was assumed to migrate into the Narrabri and Gunnedah LGAs from other parts of the state/country. These predictions are conservative and it is more likely that a significant proportion of the 145 people would already reside within the Narrabri or Gunnedah LGAs. This is why Table 4.11 in Appendix K of the EIS is described as the “maximum” potential population change (as opposed to referring to the maximum operational workforce of 250 people).</p> <p>Given the above conservative estimate, and the likelihood that the operational workforce would only reach 250 for a small period of the Project, Whitehaven considers that the assessment of population change is reasonable.</p>
<p>Construction – housing impacts</p> <p>The NSC submission stated that much of the housing located within the Narrabri LGA could not be used by Project workers due to distance from the Project.</p> <p>The NSC requested an assessment of impacts on accommodation in Boggabri, including the MAC accommodation village.</p>	<p>Whitehaven disagrees with NSC’s comment based on its current workforce distribution profile which includes a number of employees who travel large distances daily (e.g. from Tamworth to Gunnedah).</p> <p>Whitehaven considers that the Socio-Economic Assessment for the Project adequately assessed the impacts of the Project on accommodation. Whitehaven is not responsible for the assessment of the MAC accommodation village as it does not form a component of the Project.</p>
<p>Operation – housing impacts</p> <p>The NSC submission requested that Whitehaven mitigate impacts to the accommodation market by offsetting housing costs through a contribution to community housing or similar.</p>	<p>Whitehaven is working with local developers to build accommodation for its operational workforce (as described in Section 4.16.3 of the EIS). Further, Whitehaven has committed to continuing the current donations policy.</p>
<p>Infrastructure impacts</p> <p>The NSC submission requested that school enrolment statistics for Boggabri be provided.</p>	<p>Given the workforce would be distributed across the Narrabri and Gunnedah LGAs (with only 24% of the workforce predicted to reside in Boggabri) it is appropriate that the Socio-Economic Assessment is considered on an LGA basis, as opposed to a locality basis.</p>

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	As described in Section 4.16.3 of the EIS, Whitehaven would continue its current donations policy which supports education, health and community causes, and would work in partnership with the NSC and GSC and the local community so that the regional benefits from the projected economic growth are maximised and the predicted impacts are minimised.
The NSC submission stated that an assessment of health services within the Narrabri LGA or at a community level has not been completed, and requested that additional information on potential impacts on health services be provided.	An assessment of impacts to health services is presented in Section 4.4.3 of the Socio-Economic Assessment (Appendix K of the EIS). It is recognised that there may be a lag between population growth and the provision of additional health services resulting in temporary health care access issues, but ultimately increased populations result in the provision of more health facilities for the community.
The NSC submission sought support for a community hub facility in Boggabri.	As described in Section 4.16.3 of the EIS, Whitehaven will continue its current donations policy which supports education, health and community causes, and would work in partnership with the NSC and GSC and the local community so that the benefits of the projected economic growth in the region are maximised and impacts minimised. Further, Whitehaven is in the process of developing a Voluntary Planning Agreement (VPA) for the Project with the NSC. Funds committed to the NSC through this VPA could be used to fund community facilities.
The NSC submission requested that Whitehaven mitigate the increased demand for waste disposal at the Narrabri LGA waste facility.	Whitehaven does not consider it its responsibility to ensure the NSC has adequate capacity to cater for waste generation within the Narrabri LGA, and accordingly, does not propose to contribute to expansion of the existing waste management facilities. Notwithstanding, Whitehaven is in the process of developing a VPA for the Project with the NSC. Funds committed to the NSC through this VPA could be used to fund expansion of the NSC's waste management facilities.
Social amenity The NSC submission stated that Whitehaven is not committing to addressing the social challenges associated with the Project.	As described in Section 4.16.3 of the EIS, Whitehaven would continue its current donations policy which supports education, health and community causes, and would work in partnership with the NSC and GSC and the local community so that the benefits of the projected economic growth in the region are maximised.
Proposed mitigation measures The NSC submission requested that training and employment programs be provided.	During the life of the Project, Whitehaven would advertise the available apprenticeship and traineeship opportunities at the Project. This would be done through mechanisms such as local advertising, Whitehaven's website, open days and information sessions, as well as through the various Council vocational guidance and local industry employment initiatives. Whitehaven is an Equal Opportunity Employer, and as such members of the local community (including Indigenous people) have every opportunity to participate in the employment opportunities offered by Whitehaven at the Project and its other operations. Whitehaven would employ local residents where they have the required skills and experience and demonstrate a cultural fit within the organisation.
The NSC submission requested financial contributions to establish additional industrial land and more substantiated commitments to the use of local suppliers.	Whitehaven does not propose to contribute to the establishment of additional industrial land given there would be negligible impacts to existing industrial land as part of the Project. As described in Table 7-2 of the EIS (Statement of Commitments), Whitehaven would purchase local non-labour inputs to production preferentially where local producers can be cost and quality competitive.
The NSC submission requested financial contributions to develop a housing strategy.	As described in Section 4.16.3 of the EIS, Whitehaven would continue its current donations policy which supports education, health and community causes, and would work in partnership with the NSC and GSC and the local community so that the regional benefits from the projected economic growth are maximised and the predicted impacts are minimised.

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	Impacts as a result of the increased housing demand are being offset by Whitehaven through the purchase of property in Narrabri where six houses are currently being constructed for employees. Whitehaven also has an agreement with a Gunnedah developer to lease newly constructed dwellings for employees, with the option for the employees to purchase the dwellings. Whitehaven believes that these initiatives will encourage employees to settle in the local area.
Voluntary Planning Agreement	
The NSC submission requested that the details of the VPA be revised.	Whitehaven intends to discuss further with NSC the proposed VPA with a view to coming to a mutual agreement on its terms as soon possible.
Transport Assessment	
<p>Assessment of impacts</p> <p>The NSC submission recommended that the capacity of the rail networks be increased so the mines are not constrained by the inability to deliver coal.</p>	Comment noted.
<p>The NSC submission stated that the proposal to transport Project ROM coal by road to the Gunnedah CHPP is not consistent with current or future coal transport practices for mines in NSW, and is not acceptable. NSC stated that the Project should be revised to include a CHPP and rail load out facilities at the Project site, or haulage should be by private road to the Whitehaven CHPP. NSC stated that the future longer term operating cost reductions from the provision of new rail infrastructure directly servicing the mine would be economically feasible.</p>	<p>Whitehaven notes that no part of the coal transport route is located within the Narrabri LGA (i.e. it is entirely within the Gunnedah LGA). It is also noted that the GSC supports the transport of coal from the Project to the Whitehaven CHPP in Gunnedah (provided the road infrastructure is constructed to a suitable standard and renegotiation of the road maintenance agreement).</p> <p>Whitehaven is not aware of any current or proposed policy restricting the transport of coal by road. There are a number of mines that transport coal by road in NSW (including Whitehaven's existing Tarrawonga and Rocglen mines).</p> <p>The transport of coal by road for the Project allows for the beneficial use of existing infrastructure (i.e. the Whitehaven CHPP in Gunnedah, and Blue Vale Road which has been sealed and maintained for the transport of coal from the Tarrawonga and Rocglen Coal Mines to the Whitehaven CHPP). Whitehaven commissioned a study to investigate the feasibility of an overland conveyor system to transport ROM coal from the Project to the CHPP (as described in Section 6.6.2 of the EIS). The study found that the costs associated with the construction and operation of an overland conveyor system would be prohibitive, and given the existing infrastructure available (i.e. the Whitehaven haul route) and the potential impacts associated with the conveyor system, transport of ROM coal by road is considered the preferred coal transport option for the Project.</p> <p>Construction of a CHPP and rail load out facilities is not required for the Project given the existing facilities available for use at the Whitehaven CHPP in Gunnedah.</p> <p>The Road Transport Assessment (Appendix F of the EIS) concludes that the Project (including the road haulage of ROM coal) would not result in unacceptable impacts on the operation of the surrounding road system, with no significant impacts on the performance, capacity, efficiency and safety of the road network expected to arise as a result of the Project.</p> <p>Whitehaven is unaware of the economic analysis conducted by NSC, however it is not consistent with Whitehaven's economic justification for the Project.</p>

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The NSC submission claimed that the MAC accommodation camp in Boggabri would be likely to be used for the majority of the Project workforce, and that the Road Transport Assessment should be revised to account for this.	It is Whitehaven's stated policy that it strives to get its workforces domiciled in the areas in which it works. Its commitment to working with developers in the building of houses and other relationships is demonstration of this. Should any operational workforce spend time within the MAC accommodation camp, Whitehaven would not look on this as a permanent situation with a strong preference to move its workforce into permanent settlement in the regional area. Accordingly, Whitehaven considers that the workforce distribution profile used for the Road Transport Assessment (Appendix F of the EIS) is a reasonable prediction for the operational employee profile.
The NSC submission stated that the current and future proposed mixing of car and truck traffic is a significant safety concern for the light vehicle traffic which is using these roads, in particular on Blue Vale Road where significant volumes of local resident and school bus traffic also currently use the road.	The Road Transport Assessment (Appendix F of the EIS) concludes that the Project (including the road haulage of ROM coal) would not result in unacceptable impacts on the operation of the surrounding road system, with no significant impacts on the performance, capacity, efficiency and safety of the road network expected to arise as a result of the Project. Whitehaven has developed and implemented a road safety protocol that drivers for the haulage contractor are required to comply with. This protocol would be revised where necessary to incorporate the Project.
The NSC submission stated that the Road Transport Assessment does not justify whether alternative coal transport options are feasible.	A justification of alternative ROM coal transport options is presented in Section 6.6.2 of the EIS.
The NSC submission stated that the Road Transport Assessment does not assess the road safety impacts of 24 hour haulage.	The Road Transport Assessment (Appendix F of the EIS) does include assessment of the proposed 24 hour haulage. The study concludes that the Project (including the road haulage of ROM coal) would not result in unacceptable impacts on the operation of the surrounding road system, with no significant impacts on the performance, capacity, efficiency and safety of the road network expected to arise as a result of the Project.
Assessment of mitigation measures The NSC submission stated that there is inconsistency in the limit described for ROM coal transport.	The currently approved ROM coal transport rate from Whitehaven's Tarrawonga and Rocglen Coal Mines is 3.5 Mtpa (as described in Section 4.11.2 of the EIS). The approved coal processing rate of the Whitehaven CHPP is 3 Mtpa. A stream of bypass coal (i.e. not processed) is handled at the Whitehaven CHPP which does not contribute to the 3 Mtpa processing limit.
The NSC submission stated that truck movements should be limited to normal business hours.	Whitehaven currently holds approvals to transport ROM coal along the Blue Vale Road at a rate of up to 3.5 Mtpa from the Tarrawonga and Rocglen coal mines. This ROM coal haulage can take place between the hours of 7.00 am to 10.00 pm Monday to Friday and 7.00 am to 6.00 pm on Saturdays. If the 3.5 Mtpa is averaged over these approved operating hours it equates to approximately 782 t of ROM coal being transported per haulage hour, or 19 truck deliveries per hour, from the Tarrawonga and Rocglen coal mines to the Whitehaven CHPP. ROM coal transport from the Project to the Whitehaven CHPP via the Whitehaven haul route and the private haul road and Kamilaroi Highway overpass is proposed to be undertaken up to 24 hours per day, seven days per week. If the maximum Project ROM coal production rate of 4.5 Mtpa is averaged over the 24 hour trucking period it would equate to 13 truck deliveries per hour. Noise modelling of Project ROM coal road transport was conducted by Wilkinson Murray (Appendix C of the EIS). No exceedances of the relevant night-time or day RNP road noise assessment criteria were predicted at receivers for all assessed traffic scenarios, inclusive of Project and non-Project related traffic.

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	<p>Whitehaven currently has road maintenance agreements with the NSC and the Gunnedah Shire Council. It is anticipated that similar agreements would continue to be maintained over the life of the Project, based on the levels of traffic generated.</p> <p>Whitehaven would use its contractual arrangements and induction and training processes to make haulage truck drivers and other employees aware of their obligations with regard to speed limits, safety protocols and operating conditions.</p>
<p>The NSC submission stated that the proposed road realignments need to be improved to minimise the impacts on current non-mine users.</p>	<p>The proposed Blue Vale Road realignment would add approximately 5 km of travel distance and 3 to 4 minutes to typical travel times.</p> <p>The Project open cut extent has been designed to efficiently extract the coal resources within the Project mining tenements. The Blue Vale Road realignment has been designed to provide the most direct route around the open cut extent without requiring public vehicles to interact with mining operations. Incorporating bridges into the road realignment to shorten travel distances for public vehicles would present safety issues associated with public vehicles travelling through mining tenements and interacting with mining operations. This is not considered a feasible option to decrease the impacts to travel distances.</p>
<p>The NSC submission stated that the construction of the private haul road and Kamilaroi Highway overpass is not linked to the commencement of construction of the Project, and that the structure would propagate noise over greater distances.</p>	<p>It is noted that the private haul road and Kamilaroi Highway overpass is located wholly within the Gunnedah LGA.</p> <p>Whitehaven upgraded both intersections between the Kamilaroi Highway and the CHPP access road and Blue Vale Road during 2011. The design of these intersections is adequate for the number and type of vehicle movements currently approved to access the CHPP and is in accordance with the relevant operating approvals. As such, Whitehaven believes that the intersections are satisfactory, and considers that NSCs proposed requirement to construct the private haul road and Kamilaroi Highway Overpass prior to the cumulative haulage of ROM coal along the Whitehaven ROM coal road transport route (from all Whitehaven mines) exceeding the currently approved rate of 3.5 Mtpa is unwarranted.</p> <p>The Noise and Blasting Assessment (Appendix C of the EIS) predicts that when noise associated with non-Project traffic on the Kamilaroi Highway is considered cumulatively with Project ROM coal haulage trucks, the private haul road and Kamilaroi Highway overpass would result in noise levels that are less than or equivalent to noise levels associated with the existing Whitehaven haul route at all private receivers (Section 4.6.2 of the EIS).</p>
<p>Assessment of costs and benefits</p> <p>The NSC submission stated that the existing approval for the Whitehaven CHPP in Gunnedah should not be renewed following 2022.</p>	<p>The development of the Project would allow for the continued use of the existing CHPP and rail loadout infrastructure once coal from the Tarrawonga Coal Mine is handled through the Boggabri Coal Mine rail load out facility. As described in Section 6.6.2 of the EIS, establishment of a new CHPP at the Project is not a feasible option due to high capital costs; additional land disturbance and supporting infrastructure requirements; increased water demand at the Project; and potential for increased noise and air quality impacts.</p>
<p>Assessment of cumulative impacts and required road upgrades</p> <p>The NSC submission requested further assessment of impacts to roads to determine the contribution that Whitehaven will be required to pay for sealing of local roads.</p>	<p>Whitehaven considers that the Road Transport Assessment (Appendix F of the EIS) accurately predicts the number of vehicles that would use the local roads during construction and operation of the Project, and as such does not propose to conduct further assessment.</p> <p>The Road Transport Assessment (Appendix F of the EIS) concludes that the Project (including the road haulage of ROM coal) would not result in unacceptable impacts on the operation of the surrounding road system, with no significant impacts on the performance, capacity, efficiency and safety of the road network expected to arise as a result of the Project.</p>

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	<p>Accordingly, Whitehaven does not consider that sealing of local roads as requested by NSC is required.</p> <p>Notwithstanding, Whitehaven is in the process of developing a VPA for the Project with the NSC. Funds committed to the NSC through this VPA could be used to fund sealing of local roads by NSC.</p>
Agriculture and Soils Assessment	
<p>Soils and agriculture</p> <p>The NSC submission commented on the development of a Farm Management Plan.</p>	<p>As described in Section 4.3.3 of the EIS, a Farm Management Plan would be prepared by a suitably qualified person(s) to facilitate the management of agricultural land in the Project area and surrounding Whitehaven-owned land. The Farm Management Plan would include property, grazing and cropping management measures, biodiversity enhancement measures, as well as erosion, weed and pest controls.</p> <p>Management measures under the Farm Management Plan would be implemented progressively on properties under licence agreement with Whitehaven, consistent with the terms of the licence and in consultation with the licensee.</p>
<p>Rehabilitation</p> <p>The NSC submission requested that the area of land returned to agriculture post-mining be consistent with the area of agricultural land disturbed by the Project.</p>	<p>The overall rehabilitation goal for the Project mining area is to enhance the cover and connectivity of native woodland across the Project area, while retaining areas of agricultural land capable of supporting cattle grazing and cropping in rotation with sown pastures. Further, a Farm Management Plan would be prepared by a suitably qualified person(s) to facilitate the management of agricultural land in the Project area and surrounding Whitehaven-owned land.</p>
<p>The NSC submission stated that it does not support final voids being retained in the landscape.</p>	<p>Whitehaven has investigated the feasibility of backfilling the final voids to existing ground levels in a manner that would allow runoff to drain to the natural environment. The study concluded that the cost associated with rehandling waste rock from the waste rock emplacements to fill the two final voids to existing ground level would be in the order of \$1.5 billion, which would render the Project uneconomical.</p> <p>The final voids would provide access to additional open cut and/or underground coal resource adjacent to the proposed open cut extent. Any development beyond the Project extent would be subject to separate assessment and approval processes.</p>
<p>The NSC submission stated that the rehabilitated landform should be similar to the surrounding area.</p>	<p>The design angle of the batter slopes is based on the design of successful rehabilitation at other Whitehaven sites (i.e. the Canyon, Rocglen and Tarrawonga Coal Mines). It is anticipated that the final landform design (e.g. elevation, batter angles, vegetative cover) would be similar to the naturally occurring hilly landforms which occur in parts of the Vickery State Forest.</p>
<p>The NSC submission stated that progressive rehabilitation needs to be monitored and reported annually against success criteria.</p>	<p>Rehabilitation would be monitored regularly as part of the Rehabilitation Management Plan which would be developed for the Project. Whitehaven would prepare annual reviews of the environmental performance of the Project, consistent with contemporary requirements for mining projects in NSW. These annual reviews would be publically available on Whitehaven's website.</p>
<p>The NSC submission stated that the land rehabilitation measures should be developed using a range of local expertise including land owners, land managers and Landcare.</p>	<p>Whitehaven would develop a Rehabilitation Management Plan for the Project which would describe the rehabilitation management measures for the Project. The Rehabilitation Management Plan would be prepared in consultation with relevant stakeholders, to the satisfaction of the DP&I.</p>

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<p>Management of affected agricultural properties</p> <p>The NSC submission stated that it supports the development of a Farm Management Plan in principle, and requested that the Project does not exacerbate the decline in local agricultural productivity, the associated rural population and community and agricultural business.</p>	<p>The Agricultural Impact Statement (Appendix G of the EIS) predicts that the Project would not have a significant impact on agricultural productivity and associated agricultural businesses and support industries.</p>
<p>The NSC submission requested that an Integrated Land Management Plan be developed for the Project, and it cover all mine-owned or mine-impacted land within 25 km of Boggabri.</p>	<p>As described in Section 4.3.3 of the EIS, a Farm Management Plan would be prepared by a suitably qualified person(s) to facilitate the management of agricultural land in the Project area and surrounding Whitehaven-owned land. The Farm Management Plan would include property, grazing and cropping management measures, biodiversity enhancement measures, as well as erosion, weed and pest controls to be applied.</p> <p>Management measures under the Farm Management Plan would be implemented progressively on properties under licence agreement with Whitehaven, consistent with the terms of the licence and in consultation with the licensee.</p> <p>Requiring Whitehaven to extend the Farm Management Plan to cover lands not owned by Whitehaven is not considered appropriate.</p>
Air Quality	
<p>Conclusion on AQIA Adequacy</p> <p>The NSC submission stated that <i>'Although the AQIA has been conducted in a professional manner, with advanced modelling and assessment methods applied, it is concluded that the assessment does not adequately and accurately describe the air quality impacts of the project for the reasons given in previous sub-sections.'</i></p>	<p>Whitehaven considers that the Air Quality Impact Assessment (AQIA) (Appendix D of the EIS) does adequately and accurately describe potential air quality impacts associated with the Project. In addition, the EPA, in its submission to the Vickery Coal Project dated 12 April 2013, stated:</p> <p><i>The EPA has reviewed the revised AQIA and considers that it has been adequately conducted in accordance with the requirements of the Approved Methods for the modelling and Assessment of Air Pollutants in New South Wales.</i></p>
<p>Sources and emission estimates</p> <p>The NSC submission stated that the adopted silt content used in the modelling should have been higher, consistent with findings from ACARP project C200231.</p>	<p>Whitehaven considers that the silt content adopted by PAEHolmes (2012) is representative of the Project, and is consistent with adopted parameters for similar coal mining operations, including the Tarrawonga Coal Mine.</p>
<p>The NSC submission requested that particulate matter emissions from the mobile ROM coal crusher should be clarified.</p>	<p>The emissions estimation methodology for crushing coal in the mobile crusher or ROM coal crusher would be the same.</p> <p>The emissions associated with the crushing of 150,000 tonnes per year of domestic supply coal in the mobile crusher has been considered as part of the total ROM coal crushing volume, i.e. 4.5 Mtpa of coal has been modelled as being crushed at the Mine Infrastructure Area (MIA). It should be noted that up to 150,000 tonnes per year of domestic coal would be produced, however, total ROM coal production would be limited to 4.5 Mtpa regardless of the amount of domestic coal production.</p> <p>Given the mobile crusher would be located in approximately the same location as the ROM coal crusher, and the emissions estimation methodology for crushing coal in the mobile crusher or ROM coal crusher is the same, separately assessing the crushing of domestic coal in the mobile crusher would not affect the predicted air quality impacts presented in the EIS.</p>

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The NSC submission requested that the blasting area should be reviewed and confirmed.	The emissions estimate for Project blasting has been developed based on a typical blast area of 6,000 m ² . Whitehaven considers this blast area to be representative of the Project, and is consistent with the blast area used for the purposes of air quality impact assessment in the Tarrawonga Coal Project.
The NSC submission requested that PM _{2.5} emissions for gravel crushing operations should be included.	<p>As described in Section 3.2 of Appendix D of the EIS, coarse particles (PM_{2.5-10}) are derived primarily from mechanical processes (e.g. crushing activities). Mining dust is likely to be composed of predominantly coarse particulate matter (and larger).</p> <p>Fine particles, or PM_{2.5}, are derived primarily from combustion processes (e.g. vehicle emissions).</p> <p>PAEHolmes (2012) estimated emissions from the Project using emission factors developed both locally and by the United States Environment Protection Agency (US EPA). The emission factors applied are considered by PAEHolmes (2012) to be the most reliable, contemporary methods for determining dust generation rates (Section 7 of Appendix D of the EIS).</p> <p>The US EPA specifies TSP and PM₁₀ emission factors for crushing of gravel. The US EPA does not specify a PM_{2.5} emission factor for crushing of gravel (Appendix B of Appendix D of the EIS). On this basis, PM_{2.5} emissions from crushing of gravel were considered by PAEHolmes (2012) to be negligible for the Project emissions inventories.</p> <p>Given the PM₁₀ emissions associated with gravel crushing are less than 0.015% of the total predicted PM₁₀ emissions associated with the Project, the PM_{2.5} emissions from gravel crushing are also anticipated to be insignificant in comparison to the total PM_{2.5} emissions from the Project.</p>
The NSC submission requested that diesel particulate emissions from stationary equipment should be quantified.	Given the Project would be powered by mains electricity (as opposed to generators), diesel consumption from stationary equipment is predicted to be insignificant compared to the diesel consumption associated with the mining fleet which are included in the Project emissions inventory.
The NSC submission requested an assessment of air quality impacts associated with blast fumes.	<p>As described in Section 8.21 of the AQIA (Appendix D of the EIS), blasting activities have the potential to result in fugitive fume and particulate matter emissions. Particulate matter emissions from blasting are included in dispersion modelling results and are controlled by adequate stemming of the blast.</p> <p>Imperfect blasts (e.g. when the explosive product is incorrectly formulated) may result in nitrogen oxide (NO_x) fumes. Measures to minimise or avoid imperfect blasts are described in Section 8.21 of the AQIA (Appendix D of the EIS).</p>
The NSC submission requested an assessment of wheel-generated dust emissions from the haulage of fine and coarse rejects outside of the mining area.	<p>Reject material from the Whitehaven CHPP to the Project would be backloaded into ROM coal haulage trucks.</p> <p>The AQIA considered potential emissions from ROM coal haulage trucks travelling to and from the Project to the Whitehaven CHPP.</p> <p>Dust emissions from transportation of crushed ROM coal to the Whitehaven CHPP was included up to the site boundary. The on-highway trucks used for transportation of ROM coal to the Whitehaven CHPP would be covered to minimise potential dust emissions, and would travel along sealed roads. Consequently, dust emissions would be negligible with these controls in place (PAEHolmes, 2012).</p> <p>Dust emissions at the Whitehaven CHPP are managed through the existing Environment Protection Licence for the facility.</p>

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The NSC submission recommended that the air quality impacts associated with the construction of the private haul road and Kamilaroi Highway overpass be more thoroughly addressed given its spatial separation from the Project.	Dust emissions associated with the construction of the private haul road and Kamilaroi Highway overpass were considered as part of the assessment of air quality impacts during construction activities, with management measures presented for particular construction activities (Section 8.20 of the AQIA [Appendix D of the EIS]).
Control efficiencies The NSC submission requested that further justification be provided for the 99% control efficiency for partially rehabilitated areas.	Partially rehabilitated areas are assumed to be 99% effective in terms of dust control as they are not trafficked and would therefore be subject to surface 'crusting' and progressive establishment of groundcover/grasses (PAEHolmes, 2012). The assumed control is consistent with the control efficiency for rehabilitation (i.e. surface stabilisation) listed in the <i>NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining</i> (Katestone, 2011).
The NSC submission requested that further justification be provided for the 50% control efficiency for wind erosion from topsoil stockpiles and ROM stockpiles.	The control efficiency for topsoil stockpiles of 50% has been assumed as the stockpiles would be established on a campaign basis, and once established, the topsoil stockpiles surface would not be active and the surface would be stabilised (i.e. the topsoil stockpiles are estimated to be active, and would have the potential to generate wind erosion emissions for approximately 50% of the year). The emissions estimation methodology for wind erosion of ROM coal stockpiles considers wind erosion and emissions associated with maintenance of stockpiles by a dozer. The control efficiency for ROM coal stockpiles of 50% has been assumed as watering of the areas trafficked by the stockpile dozer would occur (refer Table 6.1 of Appendix D of the EIS).
The NSC submission requested that further justification be provided for the 100% control efficiency for the crushing and screening facilities.	Whitehaven has committed to fully enclosing the crushing and screening facilities at the MIA to mitigate potential noise impacts. Accordingly, a 100% control has been applied to dust emissions from these facilities.
Best management practice The NSC submission requested that methods to achieve 80% control efficiency on unpaved haul roads should be implemented and specified in the project approval conditions.	The AQIA applied 75% control to haul roads. The EPA in its submission to the Vickery Coal Project dated 12 April 2013 recommended that, should the Project be approved, the EPL conditions for the Project include a requirement to achieve 80% control efficiency for haul roads. Whitehaven notes the EPA's comments, and would operate the Project in accordance with EPL conditions, including a requirement to achieve 80% control efficiency for haul roads. This could be achieved through increased use of water carts.
The NSC submission identified that larger sized coal and overburden trucks are available than what is proposed for the Project which could minimise diesel exhaust and wheel-generated dust emissions.	Whitehaven notes NSC's comment, and has considered truck size from an environmental and operational perspective. The Project fleet has been chosen to achieve the most efficient operation given the constraints associated with the Project.
The NSC submission recommended that measures to minimise dust emissions associated with loading ROM coal into the ROM hopper should be provided.	Loading of ROM coal into the ROM hopper accounts for only approximately 3.5% of predicted PM ₁₀ emissions associated with the Project. This was on the basis of the AQIA conservatively assuming no control of emissions associated with loading ROM coal to the ROM coal hopper, and also conservatively assuming 100% rehandle of ROM coal at the ROM coal stockpile. Notwithstanding, as the ROM coal crushing/screening facilities would be fully enclosed in a shed there would be some benefit (i.e. wind breaks) with regard to ROM coal loading to the hopper, and in addition, there would be some portion of ROM coal that would bypass the ROM coal stockpile and would be loaded directly to the hopper.

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The NSC submission recommended that measures to reduce diesel combustion emissions from the Project should be proposed.	<p>The Project would be powered using mains electricity supply as opposed to generators which would decrease reliance on diesel consumption in generators.</p> <p>As described in Section 9.5 of the AQIA, diesel consumption in mining fleet would be minimised by maximising efficiency through regular maintenance scheduling and, where possible, minimising the gradient and length of loaded haul runs for the operating dump trucks. This would be achieved by appropriate mine scheduling and planning.</p> <p>Further, Whitehaven participates in the Energy Efficiency Opportunities program initiated by the Federal Government in an effort to reduce energy usage of all types, including diesel fuel.</p>
The NSC submission requested further information on the real time air quality monitoring and management.	The real-time air quality monitoring and pro-active management system is described in Section 4.7.3 of the EIS. Further detail regarding its implementation would be presented in an Air Quality and Greenhouse Gas Management Plan to be prepared in accordance with the conditions of any Development Consent for the Project, should it be approved.
<p>Baseline characterisation and modelling approach</p> <p>The NSC submission recommended that longer-term meteorological data from the Gunnedah Automatic Weather Station be used to discuss inter-annual trends in airflow trends in airflow patterns.</p>	<p>The NSW Approved methods require the use of site specific meteorological data for a 12 month period. As described above, the EPA in its submission to the Project considered that the AQIA had been adequately conducted in accordance with the requirements of the Approved Methods.</p> <p>A period from March 2011 to February 2012 was chosen as the modelling year, to incorporate as much data as possible from the Vickery South Coal Exploration Project AWS (i.e. the closest AWS to the Project, located approximately 3.5 km south).</p> <p>The Vickery South Coal Exploration Project AWS was considered by PAEHolmes (2012) to be most representative of the Project area, as the Rocglen AWS (located approximately 8 km to the north-east of the Project) is located within a north-south aligned valley and meteorological conditions are heavily influenced by local scale topography, and therefore, are not considered to be representative of the Project area.</p> <p>A comparison between the meteorological data collected AWS at Gunnedah Airport (located approximately 19 km south of the Project) and the Vickery South Coal Exploration Project AWS was also made. Similar patterns occur at the Vickery South Coal Exploration Project AWS when compared to the BoM Gunnedah Airport AWS.</p> <p>Notwithstanding, the CALMET meteorological model used for the AQIA was developed as a 90 x 90 km grid centred on the Project, and used observed hourly data from the Vickery South Coal Exploration Project AWS, Rocglen Coal Mine AWS and the BoM site located at Tamworth Airport.</p>
The NSC submission requested further information regarding dust impacts during high winds.	<p>Windroses showing wind speed and strength from the Vickery South Coal Exploration Project AWS are provided in the AQIA.</p> <p>The modelling of emission sources considered the effect of wind by varying wind-dependant emissions sources on an hourly time-step. That is, wind-dependant emissions (e.g. wind erosion) were simulated to increase proportional to wind speed in the modelling conducted for the AQIA.</p>
The NSC submission requested that atmospheric stability class and mixing depth be described.	While these parameters are not presented in the AQIA, the CALPUFF/CALMET modelling conducted for the AQIA simulates the effect of atmospheric stability class and mixing depth on the dispersion of dust emissions.
The NSC submission requested that the particle size distribution be clarified.	PAEHolmes (2012) estimated emissions from the Project using emission factors developed both locally and by the United States Environment Protection Agency (US EPA). The emission factors applied are considered by PAEHolmes (2012) to be the most reliable, contemporary methods for determining dust generation rates (Section 7 of Appendix D of the EIS).

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	<p>For a particular emission source (e.g. haul roads) the ratio of TSP/PM₁₀/PM_{2.5} is specified by the emission factor methodology. This ratio is specific to each emission source (e.g. the ratio for haul roads may be different to wind erosion).</p> <p>The particle size distribution described in Section 7.1 of the AQIA is applied to TSP emissions in the dispersion model to estimate the deposition of dust associated with the various particle sizes from the plume (i.e. to simulate that larger particles in the PM₁₀₋₃₀ range would deposit, or fall out of the plume, faster than smaller particles in the PM_{2.5-10} range).</p> <p>This particle size distribution is considered to be the average for all emissions of TSP (i.e. it is not source specific).</p>
<p>Cumulative air quality impacts</p> <p>The NSC submission requested that the implications of a higher baseline PM₁₀ concentration occurring during drier or windier years be addressed.</p>	<p>PAEHolmes (2012) considered an annual average background PM₁₀ concentration of 12 µg/m³ to be representative of the Project area, based on average data collected between 2010 and 2012 from monitoring conducted at Rocglen, Tarrawonga, Boggabri, Maules Creek and the Vickery South Exploration Project.</p> <p>The maximum predicted annual average PM₁₀ concentration from the Project only at any private receiver was 7 µg/m³. With a background of 12 µg/m³, the maximum predicted cumulative annual average PM₁₀ concentration is 19 µg/m³.</p> <p>For the Project to result in an exceedance of the EPA criteria for annual average PM₁₀ of 30 µg/m³ at a private receiver, the background would have to be 24 µg/m³ (i.e. double the background level adopted in the AQIA).</p> <p>As such, it is considered that the Project could operate during years with background levels significantly elevated above those assessed in the AQIA (i.e. during drier years) without causing exceedances of the annual average criteria at any private receivers. Notwithstanding, additional mitigation measures would be implemented during adverse conditions, as required, such that compliance with relevant air quality criteria is achieved.</p>
<p>The NSC submission questioned why PM_{2.5} data was not used in the assessment given it is monitored at the Tarrawonga and Rocglen coal mines.</p>	<p>As per the footnote to Table 4-2 of the AQIA, PM_{2.5} monitoring from Tarrawonga and Rocglen was unavailable at the time of assessment. It should be noted that Tarrawonga and Rocglen TEOM's do not monitor for PM_{2.5}, they only monitor PM₁₀. A monitor has been installed between the Project and the Tarrawonga Coal Mine which does monitor PM_{2.5} however this monitor was not in place at the time of the assessment.</p>
<p>The NSC submission stated that the cumulative PM₁₀ 24-hour cumulative assessment did not account for the Tarrawonga Coal Project, Boggabri Coal Project and Rocglen Extension Project for the majority of the Project-related receivers.</p>	<p>The Rocglen Coal Mine is located within a small valley between the Vickery State Forest and the Kelvin State Forest. The air quality assessment for the Rocglen Extension Project indicated that majority of the emissions from the operations would be contained within the valley. As such, cumulative 24-hour PM₁₀ impacts associated with Rocglen were not considered.</p> <p>As described in the AQIA, there is low potential for significant dust contributions from the Project, Tarrawonga Coal Project and Boggabri Coal Project at the same time on a given day at receivers between the three mines. This is because of the distance between the mines and the orientation of the receivers relative to prevailing winds. However, the potential for an increase in days of elevated dust concentrations over an annual period (i.e. temporal impacts) has been investigated.</p> <p>Notwithstanding, a statistical assessment of potential PM₁₀ 24-hour cumulative impacts from the Project, Tarrawonga Coal Project and Boggabri Coal Project was conducted.</p> <p>The receivers selected to be assessed for cumulative PM₁₀ 24-hour impacts were identified as the receivers that would experience the highest potential cumulative air quality impacts based on their proximity to the Project and other mining operations.</p>

COMMENT	RESPONSE
<p>The NSC submission requested that a cumulative assessment of 24-hour PM_{2.5} concentrations be conducted.</p> <p>The NSC submission requested that cumulative impacts associated with approved projects should be accounted for within the assessment of cumulative annual average PM_{2.5} concentrations.</p>	<p>There are currently no EPA criteria relevant to PM_{2.5}. Notwithstanding, potential PM_{2.5} impacts from the Project have been assessed in the AQIA against advisory reporting standards.</p>
<p>The NSC submission suggested that a Monte Carlo simulation could have been used in regard to uncertainties raised by the NSC in regard to PM₁₀ baseline data and the predictions of other projects.</p>	<p>As described above, Monte Carlo simulation was used to assess potential cumulative 24-hour PM₁₀ impacts associated with the Project, the Tarrawonga and Boggabri Coal Mines and background sources at select receivers.</p> <p>The receivers selected to be assessed for cumulative PM₁₀ 24-hour impacts were identified as the receivers that would experience the highest potential cumulative air quality impacts based on their proximity to the Project and other mining operations.</p> <p>Three monitoring sites were chosen as 'background' for the Monte Carlo simulation, these include the Vickery South Coal Exploration Project HVAS, the Rocglen Roseberry HVAS and the Maules Creek TEOM. These sites were considered to be less heavily influenced by local mining, and therefore, were considered to be representative of background levels.</p>
<p>The NSC submission raised concern regarding potential cumulative impacts associated with the Vickery South Project.</p>	<p>Whitehaven is currently reviewing the exploration data and conducting feasibility studies to determine the development potential of the Vickery South Project. As only exploration activities are currently proposed to be conducted within EL 7407, no cumulative impacts associated with the Vickery South Project have been identified for the Project.</p> <p>Any proposal to develop the Vickery South coal resource would be subject to separate assessment and approval processes.</p>
<p>The NSC submission requested additional management measures be adopted.</p>	<p>Best practice air quality mitigation measures to be implemented for the Project were developed with reference to the recommendations of the <i>NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining</i> (Katestone Environmental, 2011).</p> <p>Best practice air quality mitigation measures to be implemented would include:</p> <ul style="list-style-type: none"> • use of water carts/trucks to control emissions from haul roads; • use of additional water application (i.e. level 2 watering on haul roads); • use of large vehicles (reducing the number of trips required to haul coal or waste rock on-site); • progressive rehabilitation of disturbed areas; • watering of areas trafficked by bulldozers; • minimisation of travel speed and distance travelled by bulldozers; • delay of blasts during unfavourable weather conditions;

COMMENT	RESPONSE
	<ul style="list-style-type: none"> • minimisation of blast area; • use of water sprays or curtains for drilling operations; • minimisation of drop heights for dumping of overburden and ROM coal; and • enclosure of the crushing/screening facility. <p>In addition, a real-time air quality monitoring system would be used to manage potential impacts from the Project consistent with relevant air quality criteria specified in any Development Consent for the project.</p> <p>The real-time air quality monitoring system would consist of a network of real-time dust monitors in the vicinity of the Project which would continuously log short-term particulate concentrations and report the data to a web based recording system.</p> <p>When specified short-term trigger levels are reached or exceeded, a message would be delivered to a Whitehaven representative, alerting them to the elevated short-term dust levels. The Project meteorological station would report wind conditions at the time, allowing personnel to evaluate the likely origin of the elevated dust levels enabling appropriate mitigation and response measures to be implemented.</p> <p>An additional component of the dust management system would be a meteorological forecasting system to predict what the meteorological conditions would be, enabling short-term mine planning to be conducted in consideration of potential upcoming weather conditions with the potential to exacerbate air quality impacts (e.g. increasing the levels of controls or limiting mining activities in certain areas).</p> <p>The real-time air quality monitoring would complement the existing and proposed monitoring systems for other mining operations in the area (e.g. the Tarrawonga, Rocglen and Boggabri Coal Mines and the Maules Creek Coal Project).</p>
<p>Local and regional costs and benefits</p> <p>The NSC submission recommended that potential social and economic impacts could be reduced by ensuring cumulative impacts are within ambient air quality and land acquisition criteria and maximising management at the Project to negate the need to implement air quality mitigation measures at receivers.</p>	<p>Proposed air quality mitigation and management measures for the Project, designed to limit potential impacts from the Project to private receivers, are described above.</p> <p>These mitigation and management commitments would be implemented to manage potential impacts from the Project consistent with relevant air quality criteria specified in any Development Consent for the Project.</p>
<p>Regional coordination to manage cumulative impacts</p> <p>The NSC submission identified a range of measures to manage cumulative air quality impacts in the region.</p>	<p>It is noted that each project approved to operate in the region has specific air quality assessment criteria and management requirements in its Project Approval/Development Consent.</p> <p>This includes (e.g. for both the Tarrawonga and Boggabri Coal Mines) the requirement for a precinct-wide real-time air quality monitoring system and meteorological forecasting system to manage potential cumulative impacts.</p> <p>The real-time air quality monitoring system proposed for the Project would complement the existing and proposed monitoring systems for other mining operations in the area (e.g. the Tarrawonga, Rocglen and Boggabri Coal Mines and the Maules Creek Coal Project).</p>

COMMENT	RESPONSE
<p>Health effects of particulate matter emissions from mining</p> <p>The NSC submission considered that ambient air quality standards issued for PM₁₀ and PM_{2.5} will offer, as a minimum, equivalent protection for communities exposed to coal mining related particulate matter emissions.</p>	<p>Comment noted.</p>
Water Management	
<p>Assessment of impacts</p> <p>The NSC submission requested that impacts to the Boggabri town bore be clarified.</p>	<p>The Boggabri town bore was not identified in the groundwater assessment, however it is located well beyond the predicted extent of the 1 metre (m) drawdown contour, and as such, is not expected to be impacted by the Project.</p>
<p>The NSC submission identified the following issues that it considered were not addressed in the EIS:</p> <ul style="list-style-type: none"> • The changing flood regime and potential flooding impacts around the proposed Kamilaroi Highway overpass. • The possible drawdown of a privately owned bore. • The possible creation of acid rock drainage. • The possibility of contaminated discharges. 	<p>The potential flooding impacts associated with the construction of the private haul road and Kamilaroi Highway overpass are presented in Section 4.5.2 of the EIS and the Surface Water Assessment (Appendix B of the EIS). Further information on potential flooding impacts is also provided in response to the Office of Environment and Heritage's (OEH) submission on the EIS (Response to Submissions [Part A]).</p> <p>Whitehaven considers that the flood assessment conducted as part of the EIS is adequate to predict potential flooding impacts in the vicinity of the overpass. However, Whitehaven also acknowledges that further detailed design is required, and several other approvals and licences need to be obtained before construction can commence.</p> <p>As described in Section 4.5.3 of the EIS, the detailed design of the private haul road and Kamilaroi Highway overpass would be conducted in consultation with NSW Roads and Maritime Services (RMS), GSC, Office of Water (NOW) and the OEH Inland Flood Unit. The detailed design would include consideration of design details that would assist with minimising flood impacts (e.g. culvert sizing and placement within the road infrastructure, potential provision of a causeway, height of the road above the surrounding topography and width of the gap where the overpass crosses the Kamilaroi Highway).</p> <p>The privately owned bore that was predicted to experience groundwater drawdown of more than 1 m is located on a property (Silkdale) that has subsequently been purchased by Whitehaven. Accordingly, no privately owned bores are predicted to experience material impacts as a result of the Project.</p> <p>The Geochemistry Assessment (Appendix L of the EIS) comprehensively describes the management of potentially acid forming material.</p> <p>The Geochemistry Assessment (Appendix L of the EIS) recommends that surface water storages be monitored for arsenic, selenium and molybdenum. This recommendation was included as part of the proposed surface water monitoring program, as described in Section 12.2 of the Surface Water Assessment (Appendix B of the EIS). The monitoring data would be reviewed to determine whether potential contaminants were present at sufficient concentrations to potentially adversely impact the quality of water in the receiving environment.</p>

COMMENT	RESPONSE
<p>Assessment of mitigation measures</p> <p>The NSC submission requested that the project approval conditions require the development and implementation of a comprehensive Water Management Plan (WMP).</p>	<p>Whitehaven anticipates the Development Consent for the Project would include a requirement to develop and implement a WMP for the Project.</p>
<p>The NSC submission requested assurance that the quality and supply of groundwater and surface water resources will be maintained and that further consideration be given to the request for a second town bore.</p>	<p>As described in the EIS, no material impacts to the quality and supply of groundwater resources used by private receivers (including the Boggabri town bore) are predicted. Accordingly, Whitehaven does not consider it is appropriate to contribute to the construction of a second town bore. Notwithstanding, Whitehaven is in the process of developing a VPA for the Project with the NSC. Funds committed to the NSC through this VPA could be used to develop water management infrastructure for Boggabri.</p>
Noise Assessment	
<p>Assessment of impacts</p> <p>The NSC submission requested an assessment of noise impacts over all privately owned land (as opposed to only privately owned land without dwellings).</p>	<p>An assessment of noise impacts over all privately owned land was conducted and is described in Section 4.6.2 of the EIS. It was predicted that greater than 25% of property 127 would be affected by Project noise in excess of 40 dBA $L_{Aeq,15\text{ minute}}$. Potential noise impacts have also been assessed at dwellings located on this property (i.e. receivers 127a, 127b and 127c). This is in addition to the assessment of potential impacts on private vacant land.</p>
<p>The NSC submission stated that there is little comment on how the 10th percentile $L_{Aeq,15\text{ minute}}$ was converted to $L_{Aeq,9\text{ hour}}$ for comparison with the INP amenity criteria and addition to other mining operations.</p>	<p>$L_{Aeq,9\text{ hour}}$ noise levels were calculated by modelling of noise sources over the averaging period for relevant meteorological conditions. That is, these noise levels were determined by re-modelling and not a conversion of the $L_{Aeq,15\text{ minute}}$ noise levels.</p>
<p>The NSC submission stated there is notable variance (up to four years) between the operational years selected for the cumulative noise assessment and there is the potential for greater variance depending on the project approval conditions. NSC requested a more detailed cumulative noise assessment be prepared.</p>	<p>The cumulative noise assessment presented in the EIS is reflective of the most accurate information available for the other mining projects in the area at the time.</p>
<p>The NSC submission requested a low frequency noise assessment or justification as to why such an assessment was not provided.</p>	<p>Section 5.4 of the Noise and Blasting Assessment (Appendix C of the EIS) describes that no low frequency or tonal impacts are predicted at the receivers near the Project, and as such, no modifying factor adjustments to the SWL for the plant are considered to be required.</p>
<p>The NSC submission stated that the SWL used in the sleep disturbance assessment (i.e. L_{Amax}) are lower than other contemporary noise assessments.</p>	<p>The SWL used for the sleep disturbance assessment were considered by Wilkinson Murray (2012) to be reflective of the equipment proposed for the Project.</p> <p>These SWLs are consistent with those used for the Tarrawonga Coal Project, which uses similar equipment to that proposed for the Project.</p>
<p>The NSC submission stated that the assessment has been carried out based on DP&I and EPA practice, and that further assessment may be required for a PAC determination.</p>	<p>Comment noted.</p>
<p>Assessment of mitigation measures</p> <p>The NSC submission stated that the mitigation and management measures for the Project have been comprehensive and applied for the most part in a reasonable and feasible manner as required by the INP.</p>	<p>Comment noted.</p>

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The NSC submission requested that a proactive noise management system be implemented to minimise noise impacts to receivers to the north of the Project.	As noted by the NSC, the proactive noise management system targeted compliance with the PSNL at private receivers to the south-west of the Project. Two privately-owned receivers (89a and 112) and one approved dwelling location (89b) located to the north/north-west of the Project were predicted to exceed the PSNL. These properties (112 and 89) are now under contract for purchase by Whitehaven.
The NSC submission stated that the proactive noise management system would require implementation a large proportion of the time, and requested that it be implemented during the worst adverse meteorological conditions whereas common meteorological conditions (including adverse conditions) should be managed by design and engineering controls rather than active management.	A key feature of the proactive noise management system is that mine operators would relocate the waste emplacement fleet operating on the Western Emplacement to the north-easternmost portion of the Western Emplacement during unfavourable meteorological conditions. This relocation of equipment has been incorporated into the mine plan for the Project. Accordingly, the night-time waste rock emplacement shown on Figures 2-4 and 2-5 (Years 2 and 7 of the Projects, respectively).
The NSC submission requested that the Blasting Management Plan include coordination of blasting between all mines in the region.	Whitehaven would seek to coordinate blasts between its mines in the region to minimise impacts to private receivers where practicable. This would be described in a Blasting Management Plan for the Project.
Aboriginal Heritage Assessment	
Assessment of impacts The NSC submission stated that consultation with the Aboriginal community should continue during the Project.	Whitehaven would continue to consult with the Aboriginal community during the Project, including during development of the Heritage Management Plan, as described in Section 4.13.3 of the EIS.
The NSC submission stated that the assessment did not adequately assess the results of one previous test excavation in the Project area.	Whitehaven would conduct subsurface investigations within the Project area (including the private haul road and Kamilaroi Overpass) as part of the Heritage Management Plan. The Heritage Management Plan would describe the subsurface investigations, and would be prepared in consultation with the Aboriginal community and OEH.
The NSC submission stated that the survey coverage (e.g. transect widths) is not adequately described.	It is noted that the OEH submission on the EIS commented that the survey method had adequately examined the mine easement for Aboriginal surface sites using a stratified sampling approach supported by field inspection. OEH also commented that all surface areas of proposed impact had been adequately observed and recorded and an understanding of Aboriginal surface sites is clear relative to the mine proposal and its proposed infrastructure.
The NSC submission requested additional information regarding cumulative impacts to the cultural resource of the Narrabri LGA.	As described in Section 11.5 of the Aboriginal Cultural Heritage Assessment (Appendix I of the EIS), it is considered that the Project would not substantially increase cumulative impacts to Aboriginal heritage in the region.
The NSC submission requested further justification as to why impacts to Aboriginal heritage sites could not be minimised by varying the Project layout.	As described in Section 6 of the EIS, the Project has been designed to maximise the recovery of coal resources within the mining tenements, but includes due consideration of environmental factors (including Aboriginal heritage) and adjustments to minimise impacts where practicable.
Assessment of mitigation measures The NSC submission requested justification as to why subsurface excavation is not proposed.	Whitehaven would conduct subsurface investigations within the Project area (including the private haul road and Kamilaroi Overpass) as part of the Heritage Management Plan. The Heritage Management Plan would describe the subsurface investigations, and would be prepared in consultation with the Aboriginal community and OEH.
NSC requested mapping of archaeologically significant areas.	Aboriginal heritage sites identified during the surveys are shown on Figures 4 and 5 of the Aboriginal Cultural Heritage Assessment (Appendix I of the EIS) and Figures 4-36 and 4-37 of the EIS.

COMMENT	RESPONSE
<p>Assessment of costs and benefits</p> <p>The NSC submission requested that the Heritage Management Plan include initiatives for the Aboriginal community that go beyond salvage fieldwork and that promote intergenerational equity.</p>	<p>Whitehaven is an Equal Opportunity Employer, and as such members of the Indigenous community have every opportunity to participate in the employment opportunities offered by Whitehaven at the Project and its other operations.</p>
Historic Heritage Assessment	
<p>Assessment of impacts</p> <p>The NSC submission requested that the survey methodology be explained further.</p>	<p>As described in Section 1.4 of the Non-Aboriginal Heritage Assessment (Appendix J of the EIS), historical and archival research was carried out, drawing particularly on the resources of the National Library of Australia and web-based sources including the maps of the NSW Department of Lands and library collections nationally via the Trove search engine.</p> <p>Heritage registers and databases were interrogated to identify any heritage places already identified in or near the Project area.</p> <p>The Project area and adjacent land was inspected on the ground, targeting buildings and disturbed land. All areas subject to proposed development were traversed.</p>
<p>The NSC submission stated information on the likelihood of potential subsurface remains should be provided.</p>	<p>The historical and archival research did not indicate the potential for subsurface remains, and as such, subsurface investigations were not considered necessary as part of the assessment, and are not proposed during the mine life.</p>
<p>Assessment of mitigation measures</p> <p>The NSC submission requested that Whitehaven assist in the undertaking and provide minor donations to the Boggabri Historical Society and the Gunnedah Rural Museum to accommodate the retrieval, cataloguing and management of historic items.</p>	<p>Whitehaven would assist where appropriate with the retrieval, cataloguing and management of historic items.</p>
<p>The NSC submission requested that Whitehaven undertake photographic archival recording of heritage items.</p>	<p>Given the identified heritage items that would be impacted do not have heritage significance, Whitehaven does not propose to undertake detailed photographic archival recording of the heritage items. Notwithstanding, Whitehaven will endeavour to accommodate the Boggabri Historical Society and the Gunnedah Rural Museum's requests should either of these groups wish to conduct detailed photographic archival recording.</p>
<p>The NSC submission requested that the Heritage Management Plan set out the procedure for the discovery of unexpected finds.</p>	<p>The Heritage Management Plan would set out the procedure for the discovery of unexpected finds.</p>
Ecological Assessment	
<p>Assessment of impacts</p> <p>The NSC submission stated that the Poplar Box Grassy Woodland recorded in the Project area should be assessed against the final determination for Inland Grey Box Woodland EEC.</p>	<p>Niche Environment and Heritage (Appendix E of the EIS) determined the Poplar Box Grassy Woodland community to be Vegetation Type: Poplar Box grassy woodland on alluvial heavy clay soils in the Brigalow Belt South Bioregion (Benson 101). This vegetation type is not an EEC according to the OEH Vegetation Type database.</p>
<p>The NSC submission stated that the offset area does not provide a 'like for like' offset for the Project, however the offset would provide suitable or known habitat for all the threatened fauna species recorded in the Project area and match the broad fauna habitat sites.</p>	<p>Comment noted.</p>

COMMENT	RESPONSE
The NSC submission acknowledged that the offset package will adequately compensate for the Project impacts.	Comment noted.
The NSC submission requested further justification on the absence of Inland Grey Box Woodland EEC in the Project area.	Niche Environment and Heritage (Appendix E of the EIS) determined the Poplar Box Grassy Woodland community to be Vegetation Type: Poplar Box grassy woodland on alluvial heavy clay soils in the Brigalow Belt South Bioregion (Benson 101). This vegetation type is not an EEC according to the OEH Vegetation Type database.
The NSC submission requested that the Offset Management Plan include the details of the legal mechanisms to protect the biodiversity offsets in perpetuity, the long-term responsibility for the management of these areas, and funding for this management.	The Offset Management Plan would include the information requested by NSC.
Assessment of costs and benefits The NSC submission stated that the Project is located in an already disturbed area which largely contains degraded and regenerating vegetation. The submission also stated that the proposed offset areas are contained in an area that is largely unsuitable for agriculture and provides habitat for most of the threatened species to be impacted by the Project.	Comment noted.
Cumulative Impacts	
The NSC submission requested that a program to increase the capacity of waste management facilities needs to be funded by the current and approved mine operators.	As earlier described, Whitehaven does not propose to contribute to expansion of the existing waste management facilities. Notwithstanding, Whitehaven is in the process of developing a VPA for the Project with the NSC. Funds committed to the NSC through this VPA could be used to fund expansion of the NSC's waste management facilities.
The NSC submission requested that the current and approved mine operators fund a NSC Mines Liaison Officer.	Whitehaven would regularly liaise with both the NSC and GSC during construction and operation, however does not propose to fund a NSC Mines Liaison Officer.
The NSC submission requested that an ombudsman, or similar, to provide oversight of the mines activities and commitments, particularly those activities outside the mining leases that are currently overseen by the Division of Resources and Energy and the Department of Planning and Infrastructure.	Comment noted.
The NSC submission requested that a regional plan be developed by the State Government to consider the impacts of ongoing mining development in the Gunnedah Basin.	Whitehaven notes that the EIS was developed in consideration of the <i>New England North West Strategic Regional Land Use Plan</i> .

COMMENT	RESPONSE
Transport for NSW	
Transport assessment	
<p>The Transport for NSW submission stated that details of mine to port movements are not explained, in particular regarding the specific train path availability negotiated with ARTC for the life of the Project.</p>	<p>As identified by Transport for NSW, the Project would not change the current number of rail movements associated with the Whitehaven CHPP. Whitehaven intends to continue to use the existing train paths allocated for the Whitehaven CHPP for the life of the Project, and believes it has sufficient capacity to meet its needs and also believes it has means to gain additional capacity should it need to do so.</p> <p>If upgrades and/or construction of new infrastructure is required to allow for additional pathing, Whitehaven would negotiate the capital arrangements with ARTC to ensure capacity is available for the life of the Project.</p>
<p>The Transport for NSW submission requested that the conditions of consent include a requirement to ensure the Project will support the rail and port accessibility requirement of other industries during seasonal peaks.</p>	<p>Whitehaven does not consider that a Development Consent condition of this nature is appropriate. Whitehaven has commercial arrangements in place with both its below rail (tracks etc.) and port capacity providers for its requirements into the foreseeable future. Any increase in needs will be dealt with under the commercial terms of these arrangements to ensure capacity requirements are in place. Whitehaven considers it has adequate port and rail capacity secured for the Project, and has means to gain additional capacity should it need to do so.</p>
<p>The Transport for NSW submission stated that the project is in addition to the existing haulage requirements of the current rail network.</p>	<p>As described above, Whitehaven intends to continue to use the existing train paths allocated for the Whitehaven CHPP for the life of the Project, and believes it has sufficient capacity to meet its needs and also believes it has means to gain additional capacity should it need to do so.</p>