



F2006/01080 RJL/jd

16 September 2016

The Director Resource Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Mr Howard Reed

Dear Mr Reed,

Exhibition Wallarah 2 Coal Project – Amended Application – SSD-4974

Thank you for the opportunity to comment on the proposal for the Wallarah 2 Coal Project (W2CP).

The former Wyong Shire Council and former Gosford City Council lodged a combined objection to the proposal during the initial exhibition period in June 2013. The previous submission objected to the proposal on the grounds detailed in Section 1 of this submission.

These concerns are still considered to be relevant. Central Coast Council requests that the Planning and Assessment Commission (PAC) consider these objections as part of its assessment of the amended application.

1. Issues identified during initial public exhibition

To assist with the understanding of the potential impacts from W2CP, Pells Sullivan Meynink Engineering Consultants (PSM) was engaged to review the Environmental Impact Assessment (EIS) having regard to the implications of mining on the water catchment. In this regard, PSM has focussed their comments on the following aspects:

- impact on groundwater;
- impact on surface water;
- impact on flooding;
- impact of subsidence; and
- risk assessment and adaptive management of issues.

The former Wyong Council also engaged Earth Systems to review the EIS having regard to the potential environmental and planning issues related to the project, with the exception of those aspects reviewed by PSM. The findings and recommendations of Earth Systems are also summarised below and address the following aspects:

- structure and approach of the EIS;
- stakeholder engagement;
- water quality impacts;
- air quality impacts;

- greenhouse gas emissions;
- noise and vibration impacts;
- ecological impacts;
- traffic and transport;
- visual amenity;
- archaeology and cultural heritage;
- impacts beyond the Director General's Requirements; and
- management and monitoring.

Complete copies of both reports were submitted as part of the initial submission and form part of the Central Coast Council's submission to the amended proposal.

The following issues were identified in Council's submission during the initial public exhibition of the project.

1.1 Impact on groundwater

The EIS underestimates the potential impact on groundwater. The conclusions reached in the EIS are primarily the result of the input parameters adopted for their numerical modelling. These input parameters are primarily driven by the unsuitable method by which the makeup of the rock and its defects have been sampled and are not consistent with available data or modelling within the EIS. Further, the modelling assumes recharge of the water system based on average climatic conditions.

The EIS implies that water inflow to the mine, of up to 2.5ML/day would largely come from water stored in the ground. However, it avoids the fact that water stored in the ground comes from somewhere, and is currently in equilibrium with natural recharge. A valid way to consider this matter is encapsulated in the following quotation from Dr Rick Evans, principal hydrogeologist of Sinclair Knight Merz, viz:

"There is no free lunch here. It's very simple - every litre of water you pump out of the ground reduces river flow by the same amount".
Australian Financial Review, 24 May 2007

Other points to note are:

- It is unclear precisely what portions of which rivers will be affected by leakage losses from the near surface alluvial lands into the deeper rock mass;
- The time it will take for the impact of underground extraction to reflect in surface flows cannot be determined; and
- The EIS states that the mine will not fully recover groundwater pressures for over 500 years.

These points, combined with the uncertainty on the input parameters to the groundwater modelling suggest there is a high probability that leakage losses from the alluvial lands will impact the surface water. Given the high likelihood or even near certainty that climate impacts would be sufficiently severe at some point implies that it may affect visible flows for long periods.

On balance, the findings from the EIS are at the least a limited and probably unconservative view of potential impacts. This means that, at present, it is not known with an acceptable level of confidence what the likely impacts of the longwalls will be on groundwater resources, and on groundwater that feeds into the streams of the Dooralong and Yarramalong Valleys.

1.2 Impact on surface water

The EIS underestimates the impact on surface water. Loss of surface water from streams in either the Yarramalong and/or the Dooralong Valley will have a direct impact on the availability of water in the Wyong River downstream of the proposed mine which is used as part of the water supply to the Wyong and Gosford Local Government Areas. Further, loss of surface water will also affect businesses such as turf farming and supply of water to local bores.

The assessment of loss of surface water is entirely dependent on the inputs to groundwater modelling and the impacts on groundwater flow by the mine. The EIS concludes that there will be very little impact on leakage from the near surface alluvial lands due to the very low permeability of the rock below the alluvial lands and, that what loss does occur will be readily compensated for by surface recharge.

These statements are based on two assumptions. Firstly, that average climactic conditions prevail and secondly, a favourable view of the permeability of the rock below the alluvial lands. The latter point is discussed above under the topic of groundwater modelling, but suffice to say there is considered to be a high level of uncertainty and a lack of factual evidence to confirm the parameters used.

With regard to the first point above, for the EIS to be relevant, it must also consider the variation in inputs to the surface water supply in extended dry periods. The review in the PSM report considers the flow in Jilliby Creek between 1972 and 2013 to illustrate the sensitivity of the stream flow to climate and to small variations in flow volumes, viz:

- the median flow rate in the creek is about 4.5 ML/day;
- flows of less than 1ML/day occurred for 24% of the time;
- flows of less than 0.1 ML/day occurred for 10% of time.

The predicted water inflow to the mine of up to 2.5ML/day represents more than half of the average flow for Jilliby Creek and is greater than the flows recorded for 40% of the time since 1972.

These flows are put into perspective when records of consecutive days, since 1972, where low flows are considered. The five longest periods of consecutive days when flow was less than 1 ML/day and 2 ML/day range from 112 up to 190 days. This shows that when dry periods occur, the flow in the creeks can be expected to be at a level that may be readily affected by leakage losses from the alluvial lands.

Further, a review of the climate during this period reveals that while some periods of drought did occur such as the Millennium Drought, it does not include the experience of the more intense droughts of World War 2, and the time of Federation.

1.3 Flooding

The results of the flood assessment appear reasonable given the limits of the prediction of subsidence and can be considered as "best practice".

The discussion on the impacts of the W2CP on flooding are made in relation to the 1% AEP event (1 in 100 year) and would only fully come into effect after mining has been completed. It is important to note that the assessment of flooding is dependent on the expected subsidence and so any change to mine plans, or the prediction of subsidence through any validation process will result in changes to the extent and impact of flooding.

Results of the flood modelling for the 1% AEP flood event indicate that subsidence from the current W2CP mine plan is likely to result in only relatively minor increases in the depth and extent of flooding compared to current, pre-mining estimates with a total of about 35Ha of additional land becoming affected across the whole W2CP area.

The changes to flooding extents will have an adverse effect on up to 10 properties. The impact is assessed to be up to 5% of additional land area inundated for four (4) of these Properties and up to 20% of additional land area for the remaining six (6) properties.

In terms of impacts on residential dwellings, five (5) properties that were not previously impacted by the 1 in 100 year flood level are now impacted by flood water depths of between 4cm and 1.27m above floor level. These are assessed as being Major impacts in the system of 'Flood Impact Categories' adopted by the EIS. In addition to these dwellings, a further one dwelling is Categorised as being subject to a Major Impact, in this case the expected 1 in 100 year flood level increase by up to 41cm above current pre-mining predictions.

In the moderate flood impact category, a total of eight (8) dwellings will see a rise in the currently predicted inundation levels due to the 1 %AEP event by between 3cm and 17cm. A further 3 dwellings will have the level of clearance, or freeboard between the predicted flood level and dwelling floor level reduced to values of between 4cm and 28cm.

Minor impacts are expected to occur to a total of 10 dwellings and comprise increased levels of flooding above floor level by between 1cm and 4cm and reduced levels of freeboard above flood levels.

Further to the dwellings described above, a total of 14 dwellings are expected to have no significant change in flood impacts while a total of 49 properties will see a slight reduction in flood impacts.

Other impacts of the subsidence on flooding are flood peak flows are anticipated to be slightly reduced with a minor increase in the duration of the peak, although the EIS notes these as being insignificant.

Flooding will impact a total of 30 primary and secondary access roads in the project area. Of these six (6) primary access route low points will be adversely impacted by the mine. Adverse impacts comprise increased duration of flooding of between 1hour and up to 27 hours. The latter time pertains to the crossing (D50) located toward the southern end of Jilliby Road just north of the intersection with Watagan Forest Drive.

Mitigation of the impacts of flooding can readily be undertaken by the WACJV. Detailed plans for each location and/or dwelling are not provided at this stage of the process and are only required after approval has been given.

At this time, the only indication of the extent of potential mitigation is in relation to the Major and Moderate Impact Categories.

Preliminary descriptions of possible mitigation works presented in the EIS comprise:

- raising or relocating dwellings;
- raising Sandra Street to increase the upstream flood retarding storage;
- Construction of grassed earthen levees around dwellings to provide a minimum freeboard of 0.3m; and
- Construction of new replacement dwellings.

The purchase of dwellings is mentioned as an option, but is not linked to any dwellings in the EIS, nor is any mechanism or process for such an option canvassed.

In terms of primary access points, the six (6) adversely affected locations can be raised after subsidence has occurred to mitigate the adverse effect. In some instances, the works may require new culvert works to facilitate passage of flood waters past the obstacles.

Council is concerned regarding the longer term maintenance requirements of any mitigation measures.

The discussion on potential flood mitigation measures remain at a feasibility level but are considered appropriate and to constitute "best practice" for this level of appraisal. Detailed assessment will be required if planning approval is given and this must ensure all the Director General's requirements (now known as Secretary's Environmental Assessment Requirements) are met.

1.4 Impact of subsidence

Subsidence is the prime and most readily notable impact of underground longwall mining. The extent and magnitude of subsidence has a controlling influence on potential damage to property and the extent and nature of flooding and movement of surface water.

The prime result of mining are the expected number and severity of impacts across the 245 properties within the area affected by the predicted subsidence, viz:

- 83% of properties being unaffected;
- 12% requiring very minor to minor repair;
- 5% requiring substantial to extensive repair; and
- <0.5% requiring a complete rebuild (i.e. about 1 property).

These impacts are based on predictions of subsidence comprising:

- Vertical subsidence up to 2.6m with less subsidence predicted in residential areas to the east and more subsidence within forested areas to the west.
- Tilts up to 15mm/m concentrated above the edges of the panels and over forested areas.
- Tensile strains up to 4mm/m concentrated near the edge of panels. About 99% of these strains are expected to be less than 2.5 mm/m.
- Compressive strains up to 5.5 m/m concentrated about 50m inside the panel edges. About 99% expected to be less than 3.3 mm/m.
- Far field movements up to -60 mm horizontally at a distance of around 1km from mining diminishing to less than 25 mm at a distance of 2 km.

The subsidence prediction used for W2CP was developed using three key components:

1. The predictive model developed using the empirical Incremental Profile Method (IPM) by the specialist subsidence consultant MSEC;
2. The method used to calibrate the empirical predictive model by the consultant Strata Control Technology (SCD); and
3. Chain pillar performance.

Firstly, the situation at the proposed W2CP is unique, as it will be undertaking deep mining of the Newcastle Coal Measures. The IPM had to draw experience from various mining operations in New South Wales to develop the proposed mining strategy.

From a geological perspective, the IPM drew on empirical data from the shallow underground coal mining from the Newcastle Coal fields. From an operational perspective, the experience of deep mining in the Southern Coal Fields was utilised.

As a result, the predictions of subsidence by MSEC, based on the empirical IPM approach were calibrated against computer based modelling by SCT and it is the result of this combination of empirical mining experience and computer modelling calibration that forms the prime aspect of the review herein.

In summary PSM concludes that:

- Based on their discussions with W2CP, PSM understands that something like four (4) to five (5) panels would need to be extracted before a full model calibration exercise could be undertaken to assess the validity of the subsidence prediction and modelling undertaken.
- The reliability and accuracy of the SCT method is unknown as:
 - There is a reliance on extrapolated inputs to which the method has been shown to be sensitive.
 - The model is calibrated to site-specific data, and not to a small number of measurements from other sites.
 - The sensitivity to most input parameters is not presented.
- Due to the empirical nature of the method the Incremental Profile Method (IPM) is only as reliable as the data to which is it calibrated, in this case the SCT model results. Therefore the reliability and accuracy of the IPM is in doubt.

This is to some extent recognised by Mine Subsidence Engineering Consultants (MSEC) who in the EIS state that a *“thorough calibration...will only be achieved after subsidence monitoring data is obtained and analysed”*.

PSM concluded that:

- *The use of one predictive model to calibrate another is generally unwise and not widely regarded as best practice.*
- *The IPM is stated as being conservative and likely to over predict impacts. The evidence for this conservatism and the expected magnitude with respect to W2CP are not provided. Indeed all indications are that the model development is centred around matching expected conditions and not exceeding or over-predicting them.*
- *There is a reliance on pillar compression after extraction resulting in a smoother subsidence profile. However, the basis for this assumption appears to conflict the Geological Report (Appendix G), where significant variation in both roof and floor conditions is expected across the site.*
- *The EIS acknowledges that pillar compression may not occur but does not quantify the impacts or changes in impact should this not occur.*
- *First longwall will prove that this pillar compression assumption is valid.*
- *No less than 3 longwalls (L1N to L3N) and more likely 4 to 5 longwalls are required before the pillar compression theory can be verified.*

PSM accepts that these predicted impacts are in agreement with expectations based on measured subsidence impacts elsewhere, and the Newcastle and Southern Coalfields in particular.

PSM is in general agreement that should the predicted level of subsidence occur, the type distribution and severity of impacts on houses, buildings and infrastructure is likely to be similar to that stated in the EIS.

PSM does not agree that the prediction represents a conservative estimate of subsidence impacts as all the evidence presented in the EIS suggests the prediction represents the most likely impacts.

PSM considers that the model, calibration and application of the prediction does not provide sufficient guidance as to the sensitivity and reliability of the method and may, therefore, fail the Director General's "reasonable level of confidence" test.

In general PSM did not find any omissions or evidence to suggest that subsidence due to W2CP is likely to be significantly different to that predicted by the EIS. PSM's main concern is the lack of certainty around the predictive method and the likely variation in prediction based on observed variations that are already known and potentially those unknown.

1.5 Risk assessment and adaptive management

In terms of groundwater impacts, and to a lesser extent surface subsidence, the EIS presents an abridged assessment of the potential impacts and hazards posed by the W2CP.

This situation arises as the EIS only considers risks that have been modelled by the specialist consultants and is thereby limited by the specialist assumptions and either lack of or limited sensitivity assessments. This is not considered appropriate at this stage of the assessment where transparency as to the full extent of potential impacts should be canvassed.

Further, the consequence rankings limit the risk assessment process by requiring that severe, long term and/or potentially irreversible impacts are only at the high end of the assessment scale.

In order to begin to allow the impacts of the project to be managed via adaptive management, the understanding of the impacts and risks must be robust and comprehensive, and quantitative in nature, not qualitative as set out in the EIS.

The risk assessment should consider the level of risk associated with all aspects of the W2CP, and in particular those that:

- are associated with a high level of severity in terms of consequence;
- have a high degree of uncertainty surrounding the assessment/modelling;
- have consequences that either may not/cannot be able to be remediated, mitigated or managed once they are observed; or
- represent a significant degree of community concern.

The results of a rigorous, quantitative risk assessment could then be considered with respect to acceptable levels of risk, and/or a cost/benefit assessment. The latter may result in high consequence impacts with a low risk and/or cost impact being disregarded in the final assessment of the project. However, as stated above, all risks need to be considered and presented so an informed judgement/decision can be made.

In terms of the aspects of the project covered in the PSM report, it is recommended that the following issues be subject to a detailed risk assessment process which reflects:

1. Ground Water Impacts - test the sensitivity of the baseflow water losses with respect to hydraulic conductivity, level of subsidence induced by mining and environmental factors such as drought.
2. Subsidence Impacts - test the magnitude and location of subsidence effects with respect to items such as variability of the roof conditions of the mine and strength of pillars.

If the impacts of the mine are to be managed via adaptive management then a risk assessment is essential in order for the process to be:

- correctly focused; and
- establish realistic and measurable targets.

Following this, and possibly with the assistance of a cost/benefit assessment, for an adaptive management plan to be effective it must be based on targets for monitoring and assessment that are:

- specific;
- measurable; and
- agreed between all parties.

Further, the targets must be accompanied by agreed responses to ensure any management systems is appropriate and capable of implementation.

1.6 Structure and approach of the EIS

The EIS should fully consider and assess the different phases of the mine. The EIS does not adequately assess construction impacts, focusing primarily on operations. Impacts and issues associated with air quality, water quality and transport are likely to be significantly different during construction than during operation. The EIS does not adequately consider closure planning and no assessment of potential closure impacts has been undertaken. The EIS does not demonstrate that the Project would be closed in a manner that safeguards the environment and community assets.

The Proponent's risk assessment and cost benefit analysis is based on the results of the EIS. The risks, benefits and costs associated with the Project need to be re-rated based on the knowledge gaps and uncertainties that remain and the findings of further recommended studies.

An Environmental Management System has not been developed for the Project, nor is there a commitment to develop such a system.

The project proponent has not committed to regular independent environmental audits throughout the project life cycle. However, the project proponent has committed to developing an Annual Review Report to systematically assess performance and identify areas for improvement.

1.7 Stakeholder engagement

The Proponent has still failed to adequately engage with the community during the environmental assessment process and consequently limited consultation has been conducted. The EIS does not provide sufficient information on the concerns raised by the community during consultation.

1.8 Water quality

The EIS does not assess impacts on surface water quality associated with the construction phase of the Project, nor does it provide management and mitigation measures for any potential impacts. There is no contingency for the Project if development does impact on water quality or hydrology. The mined materials and wall rock of the deposit have not been assessed in terms of their ability to leach acid and metalliferous drainage (AMD). This is a significant oversight as AMD / saline drainage can be one of the most long-lived environmental impacts from coal mining.

The surface water monitoring program does not include a sampling point immediately downstream of the proposed Wallarah Creek tributary discharge site.

The EIS does not provide contingency for overflow of untreated mine water from the Mine Operations Dam (MOD) in the event that overflow may occur.

The baseline assessment for groundwater quality appears to have included measurement of only pH and total dissolved solids (TDS), neglecting other key analytical parameters and therefore not providing a suitable baseline.

The proposed measures for groundwater impacts are limited to repairing damaged bores from subsidence and replacing water supply if groundwater drawdown exceeds expectations. This is considered inadequate as these measures only deal with the effects of the proposed mine, not the mitigation of potential impacts. The applicant must provide specific mitigation measures to limit the potential impacts on water quality resulting from the proposal.

1.9 Air quality

The methodology for air quality impact assessment does not appear to have been undertaken in a manner consistent with applicable legislation (DECC, 2005). Some modelling appears to include only Project emissions rather than Project emissions with baseline conditions. This provides a misleading assessment of likely dust levels that will be experienced by surrounding communities. Construction impacts and impacts associated with certain climatic conditions are not clearly outlined.

Predicted Project-related emission concentrations from dispersion modelling assume Project implementation of best practices. These estimates are only relevant provided these controls are implemented. It is unclear whether the EIS commits the Project to these management and mitigation measures.

1.10 Greenhouse gas

Greenhouse gas emission mitigation strategies are very brief and do not demonstrate a sufficient level of commitment by the Proponent to reduce emissions. As such the Greenhouse Assessment does not adequately address the terms listed in the requirements issued by the Department of Planning and Infrastructure (including the supplementary requirements).

1.11 Noise and vibration

It is unclear whether the control measures identified in the Noise and Vibration specialist study are Project commitments or recommended best practices. The results of noise modelling are only valid if the recommended attenuation measures are committed to and implemented.

While noise modelling indicates that construction and operational noise will not be a major issue for the Project, modelling predicted that there may be some exceedances of Project Specific Noise Criteria (PSNC). Additional mitigation measures are not identified to prevent these exceedances.

1.12 Ecology

In general, an adequate ecological baseline (terrestrial and aquatic) has been provided, however, it lacks detail in regard to threatened species population distribution and abundance estimates. Ecological surveys should have been conducted over a broader survey area to reflect impacts associated with all project components.

Offsets required under the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act) threatened species identified within the Project Boundary were not calculated using the new EPBC Act Policy Guidelines of 2012.

1.13 Traffic and transport

A Rail Study has been conducted as part of the 2013 EIS to address the gaps in information regarding transport impacts identified in the 2010 EIS. This is a more comprehensive assessment of the transport route of the coal.

It is noted that, although the findings of the report were acceptable, the most recent amendments have superseded the Rail Study undertaken in 2013. The management of rail transport will be managed by Sydney Trains and the Hunter Valley Coal Chain Coordinator, and is therefore outside of Council's control.

1.14 Visual amenity

The visual assessment conducted as part of the 2013 EIS provided a reasonable site analysis and identification of key viewpoints, assessment of potential visual impacts and recommendations for mitigation measures to minimise impacts of the Project.

1.15 Archaeology and cultural heritage

In general, a comprehensive survey and report of the Aboriginal cultural and historic heritage of the areas surveyed within the Project Boundary has been prepared apart from some areas with accessibility restrictions.

1.16 Community health and safety

Uncertainties and knowledge gaps identified in this report including air and water quality impacts indicate that the assessment of community health and safety impacts and risks and their necessary management and mitigation measures are unlikely to be sufficiently comprehensive.

1.17 Impacts beyond Director General's Requirements

Contingency plans for potential disasters, whether naturally occurring or human induced, have not been included in the EIS. This is an oversight and should be rectified prior to the further assessment and determination of the application.

The Buttonderry Waste Management Facility is mentioned in the EIS in respect to visual amenity, however, the potential environmental risks (gas and leachate leakage) associated with the proximity of this facility to the project are not discussed.

1.18 Management and monitoring

The EIS is not accompanied by management and monitoring plans. It is understood that these have not yet been prepared. Good industry international practice and / or best practice requires an Environmental Management and Monitoring Plan to be prepared as part of the EIS process. Ideally this should be accompanied by a budget indicating that the Project is sufficiently resourced to undertake this work. It is not possible to fully assess the impacts of the Project without an adequately articulated management and monitoring plan.

Notwithstanding the above it is understood that the latest guidelines provide for Management Plans to be prepared much later in the process.

In recent years a trend has developed for adopting 'Adaptive Management' to deal with uncertainties in respect to future impacts on groundwater and surface water systems from mining operations. This developed to the point that adaptive management involved changing the targets that were established in environmental impact statements in response to what actually occurred in the field. This was done in conjunction with the establishment of groundwater monitoring systems and the visual and flow monitoring in creeks and rivers.

The unacceptability of this approach was determined by the Land and Environment Court in a recent case (2013) in regard to the proposed expansion of Berrima Colliery. The judges found as follows with respect to Adaptive Management:

Adaptive management regime

The intention of the Water Management Plan is to provide an adaptive management regime, under which management actions would be modified in response to the results of the monitoring program. Preston CJ held that,

"in adaptive management, the goal to be achieved is set, so there is no uncertainty as to the outcome and conditions requiring adaptive management do not lack certainty, but rather they establish a regime which would permit changes, within defined parameters, to the way the outcome is achieved."

It follows that it is necessary for there to be precise limits imposed on the cumulative operations of the colliery.

The judges went on to quote Judge Preston in a previous case in relation to the need for implementation of the precautionary principle when there is uncertainty in respect to future environmental impacts. They stated:

Preston CJ held in *Telstra* at [150], the following, in regard to the precautionary principle and the shifting of the evidentiary burden of proof:

'If each of the two conditions precedent or thresholds are satisfied - that is, there is a threat of serious or irreversible environmental damage and there is the requisite degree of scientific uncertainty- the precautionary principle will be activated. At this point, there is a shifting of an evidentiary burden of proof. A decision-maker must assume that the threat of serious or irreversible environmental damage is no longer uncertain but is a reality. The burden of showing that this threat does not in fact exist or is negligible effectively reverts to the proponent of the economic or other development plan, programme or project.'

We are satisfied that the precautionary principle is activated as the risk of significant environmental harm currently remains uncertain.

The judges determined that the proposed expansion of Berrima Colliery should not proceed on the basis of Adaptive Management as was proposed by the colliery owners.

Council considers that the legal findings summarised above should be taken into account in respect to the proposed W2CP, because future impacts on groundwater and surface waters are likely to be substantial to both town water supplies in drought periods, and to agriculture and flora & fauna under even average climatic conditions. Furthermore, there are substantial uncertainties in respect to a number of these impacts, making it possible, and even probable that the impacts will be greater than assessed by the EIS.

2. Issues identified with the amended proposal

The amendments primarily relate to the replacement of the originally proposed rail loop, within the Tooheys Road facility, by a conveyor system and coal load out facility along a new rail spur to be located along the Main Northern Rail Line (MNRL).

The amendments also include the realignment of the proposed sewer connection to the Charmhaven Sewerage Treatment Plant (CSTP).

Central Coast Council has reviewed the amended information. The issues identified are as follow:

2.1 Insufficient information provided

The amended information prepared by the proponent does not provide sufficient information to undertake a comprehensive impact assessment.

The omissions and limitations include:

Strategic Planning Proposals

A planning proposal (RZ/14/2014) was lodged over the adjacent land to the north of the proposed rail spur.

The planning proposal includes low-density residential allotments, rural residential land and 1.4ha of commercial development. Conditional Gateway approval was granted in May 2016 by the Department of Planning and Environment (DoPE). The proposal includes land adjacent to the MNRL, with the southern extent of the residential land located approximately 240m north of the proposed rail spur.

The amended assessment prepared by Hansen Bailey omitted the planning proposal and does not comment on the potential impacts posed by the proposed new coal delivery system.

Detailed Design Drawings

The detailed design drawings do not provide an accurate representation of the proposed coal delivery system.

This extends to the following:

- No details are provided on the elevated road crossings over Tooheys Road, the alignment along Tooheys Road / Doyalson Link Road or the connection with the coal load out facility.
- The omission of detailed designs of the structures identified above does not allow for a comprehensive assessment.

2.2 Flooding

The proposed rail spur will require the construction of two (2) new crossings over the Spring Creek tributaries located at existing rail bridges.

The new structures will be located within the tributaries and will be affected by the 1% AEP flood levels.

The flood modelling undertaken by G Herman & Associates indicated that the new structures would result in afflux of 0.01m at Bridge 1 and 0.03m at Bridge 2. Velocities during these large storm events will increase flows by a maximum of 0.04m/s around the new bridges.

As the proponent has provided no specific details on the bridge designs, it is difficult to gauge the robustness of the flood modelling. Based on the modelling provided, it would appear that the proposal will not significantly affect the flood patterns in the area, but this cannot be determined with certainty.

It is understood that the final design of any structures is to be discussed with the NSW Office of Water (NOW) to ensure limited impact on the riparian corridor.

2.3 Noise Impacts

The proponent provided acoustic modelling showing the changes in the acoustic environment. The modelling included the construction of a 4.5m high noise barrier along the southern section of the new rail spur. The barrier will extend approximately 50m north from the Doyalson Link Road.

The modelling indicated that the new coal delivery plant would have a negligible impact on the residential development in Blue Haven and Wyee South.

However, ongoing noise monitoring must be undertaken to verify the modelling during the operational stage of the development. The proponent must address and rectify any noise emissions found to be above those specified in the acoustic modelling.

Noise levels at the dwellings along Thompson Vale Road and Bushells Ridge Road will increase by up to 4dB. The report states that this level of impact can be described as a 'Moderate' degree of affectation, under the Voluntary Land Acquisition and Mitigation Policy for State Significant Mining, Petroleum and Extractive Industry Development (VLAMP). The recommendation includes the installation of *'reasonable and feasible noise mitigation measures such as double glazing, insulation and/or air conditioning will be made available to affected landowners, upon request.'*

The proposed changes in the ambient acoustic environment will result in significant impacts on these residences. The coal delivery system must be redesigned or additional mitigation measures developed to ensure these impacts are eliminated.

No modelling of the impacts on the future residential and commercial development to the north of the proposed rail spur was undertaken. The noise assessment therefore does not specifically address the potential impacts on the areas mentioned above.

The proponent must consider amendments to the current design to reduce the potential acoustic impacts. The amended assessment and modelling showing the potential impacts on the land to the north of the coal load out facility must also be provided.

2.4 Air Quality

Updated PM_{2.5} and PM₁₀ modelling was provided as part of the amended proposal. The modelling indicated that air quality would not significantly change from that expected under the original proposal.

The modelling does not however include impacts on the future residential and commercial development on the land included in RZ/14/2014 and on the Council Land Holdings. Additional modelling must be provided to identify the potential air quality impacts on the land to the north. Where necessary, appropriate mitigation measures must be provided.

The consent authority must ensure that specific air quality monitoring is undertaken as part of the ongoing operation of the proposed mine. This must include permanent dust deposition gauges to be located at the:

- southern extent of the future residential development included in RZ/14/2014;
- western extent of the Council Land Holdings;
- western extent of the existing residential development in Blue Haven;
- existing gauges D3 and D4 (as shown on Figure 2.1 of the Air Quality; and Greenhouse Gas Assessment prepared by Pacific Environment Limited).

Any emissions exceeding the relevant guidelines must be addressed and appropriate mitigation measures put in place to negate any health impacts resulting from the exceedances.

2.5 Ecology

Council's Ecologist has reviewed the Ecological Impact Assessment – Addendum prepared by Cumberland Ecology (June 2016) and notes that the amendments result in an overall reduction of impacts on biodiversity values compared to the original proposal.

The report identifies potential habitat in the study area for the species listed below, however, surveys were not undertaken during their optimal survey period (in accordance with Council's *Flora and Fauna Survey Guidelines* (2014)):

- *Caladenia tessellata* (Sep – Oct);
- *Corunastylis* sp. 'Charmhaven' (Feb – Mar). The earliest that known populations of the species have been detected is 29 January, with the majority detected in February and March (Payne, 2014);
- *Corunastylis insignis* (Sep – Oct);
- *Tetratheca juncea* (Sep – Oct); and
- *Thelymitra adorata* (Sep – Oct).

The significance of impacts to these species cannot be fully assessed until surveys are undertaken in accordance with Council's survey guidelines. Prior to the consideration of the application, it is requested that surveys are undertaken for the species during the periods listed above and the appropriate survey time should be further refined by confirming with Council when known reference populations are flowering.

The results of targeted flora surveys should be used in updated Assessments of Significance for the species.

2.6 Visual Impacts

The applicant provided an addendum to the Visual Impact Assessment (VIA) to address the proposed amendments. This included the assessment of six (6) new viewsheds along the conveyor alignment and Nikko Road reserve. The assessment concluded that a 'Moderate' impact would result from the new coal delivery system and will therefore not significantly affect the surrounding development.

The VIA did not include any photomontages showing the view from the surrounding properties towards the 27.5m high coal load out facility. It is therefore difficult to understand the level of impact.

The proponent must provide an amended VIA to include:

- an assessment of the visual impacts on the land to the north of the proposed coal load out facility. ;
- the Council Land Holdings; and
- photomontages of all the viewsheds included in the amended VIA.

2.7 Service Connections

The proponent amended the proposed sewer connection that connects the Tooheys Road site to the CSTP.

The infrastructure is to be located along a similar alignment as the proposed conveyor system. At the Doyalson Link Road rail crossing, the sewer will follow the Nikko Road reserve to the CSTP in the south.

Should the proposal be granted approval, the proponent must liaise with Council to ensure the sewer alignment is acceptable. Potential servicing synergies with the future industrial development to the south of the Link Road may also be available in the future.

Furthermore, the following conditions relating to Council's water and sewer services should be imposed, in the event of any approval:

- no disposal of brine or mine water to the sewer;
- connection of potable water to Buttonderry and Tooheys Road sites;
- sewage connection to Buttonderry and Tooheys Road sites; and
- connections to be in accordance with Council's requirements.

2.8 Construction Management

The amended submission provides limited details on the management of the construction of the coal delivery system.

In the event of approval, a Construction Environmental Management Plan (CEMP) must be prepared to provide details on the access arrangements, traffic management procedures, depot locations and construction activities during the construction phase of the development.

CONCLUSION

The initial submission prepared by the former Wyong Shire Council and Gosford City Council, objected to the proposal on a number of grounds. These have been outlined above.

These concerns are still considered to be relevant and the Central Coast Council considers that the PAC should include these as part of its assessment of the amended proposal. In the event, however, that it is intended to progress the application, the matters set out in the table attached to the original submission need to be addressed.

It is considered that the information provided to inform the proposed amendments are not sufficient to undertake a comprehensive assessment of the potential impacts.

Prior to further consideration and determining of the application, the following matters need to be addressed:

- Detailed designs of the structures above must be prepared for review prior to further assessment of the application. This includes detailed bridge designs that reflect the pier configuration of the existing bridges.
- An updated noise impact assessment, air quality assessment and visual impact assessment must be prepared to assess the potential impacts from the proposed amendments on the future urban design included in RZ/14/2014 and the Council Land Holdings.
- Permanent dust deposition gauges must be installed and monitored at:
 - southern extent of the future residential development included in RZ/14/2014;
 - western extent of the Council Land Holdings;
 - western extent of the existing residential development in Blue Haven;
 - existing gauges D3 and D4 (as shown on Figure 2.1 of the Air Quality; and Greenhouse Gas Assessment prepared by Pacific Environment Limited).
- Seasonal flora and fauna surveys must be undertaken in accordance with Council's survey guidelines for the species listed in the submission above. The results of targeted flora surveys should be used in updated Assessments of Significance for the species.
- An amended Visual Impact Assessment must be prepared and include detailed photomontages of the vistas surrounding the proposed 27.5m high coal load out facility.
- Further, the following conditions relating to Council's water and sewer services must be imposed:
 - no disposal of brine or mine water to the sewer,
 - connection of potable water to Buttonderry and Tooheys Road sites,
 - sewage connection to Buttonderry and Tooheys Road sites, and
 - connections to be in accordance with Council's requirements.
- A CEMP must be prepared and include details on the access arrangements, traffic management procedures, depot locations and construction activities.

The information submitted as part of the amended proposal does not provide sufficient detail to undertake a comprehensive assessment of the potential impacts resulting from the new coal delivery system. Accordingly, Central Coast Council remains opposed to the proposal.

For any further enquiries, please contact the undersigned on (02) 4350 5555 or scott.cox@centralcoast.nsw.gov.au.

A handwritten signature in black ink, appearing to read 'Scott Cox', written in a cursive style.

Scott Cox
Group Leader
ENVIRONMENT AND PLANNING
CENTRAL COAST COUNCIL