



Mandalong Southern Extension Project

**Increased Personnel, Carpark
Extension & Substation Upgrade**

State Significant
Development
Modification Assessment
(SSD-5144 MOD 8)



January 2020

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Cover photo

Mandalong Mine Access Site Carpark (EMM Consulting, 2019)

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Executive Summary

Centennial Mandalong Pty Ltd (Centennial) owns and operates the Mandalong Coal Mine (Mandalong) located near Morisset, approximately 35 kilometres (km) southwest of Newcastle in the Central Coast and Lake Macquarie local government areas.

Centennial has approval to extract up to 6.5 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal. Mining operations are approved to be carried out until 31 December 2040. Centennial's approved coal extraction is separated into three areas. Area 1 is located to the west of the Mandalong Mine Access Site (MMAS) and ROM coal extraction is permitted by longwall mining. Mining in Area 1 has recently ceased with longwall mining now commenced in its Southern Extension Area. Mining Area 2 is located to the south of the MMAS where ROM coal extraction is permitted by the bord and pillar method due to narrower coal seams.

Centennial supplies ROM coal to the Eraring Power Station (Eraring) which also receives coal from other sources. Centennial's ROM coal is of a higher quality than the other sources and is blended to improve the quality prior to being used by Eraring for electricity generation.

Due to encountering geological constraints in the Southern Extension Area, Centennial is now seeking to commence extraction in Area 2 concurrently with its longwall mining operations in the Southern Extension Area. To cater for the proposed concurrent mining operations, Centennial is seeking to modify its State significant development consent (SSD-5144) to increase its approved maximum full-time equivalent employees from 470 to 815 and increase its onsite parking from 228 to 460 car spaces. Centennial is also proposing to upgrade its electrical substation to convert 11 kilovolt (kV) power generated onsite to 33 kV for use either by the mine or to be fed into the State grid. The proposed modification was submitted under section 4.55(2) of the *Environmental Planning and Assessment Act 1979*.

The Department exhibited the proposed modification in local newspapers and notified all previous submitters of SSD-5144. The Department also requested advice from 10 agencies, utilities and councils. Lake Macquarie City Council (LMCC) initially objected to the proposal based on insufficient information and Roads and Maritime Services (RMS) raised concerns over deficiencies in the traffic impact assessment. Two public submissions were also received objecting to the project, with concerns mainly related to the traffic impacts of the project.

Centennial addressed these matters in its response to submissions report, with LMCC withdrawing its objection. RMS also responded by recommending conditions of consent to address its concerns.

Following the assessment of the proposed modification and careful consideration of agencies' advice and public submissions, the Department considers that the impacts resulting from the proposed modification are minor and can be appropriately managed by conditions of consent to address its concerns. The key issue for the modification is potential impacts on the regional road network due to the increase in employees. These impacts are proposed to be mitigated by staggering the shift start and finish times for the employees working in the Southern Extension and Area 2 mining areas.

The modification would allow provision of higher quality coal supply to Eraring, accounting for some production losses due to reduced supply from the Southern Extension Area and provide additional employment opportunities for the local and regional economy. The Department considers that the project, as modified, is in the public interest and recommends the modification application be approved.



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1. Introduction

This report provides an assessment of an application to modify the State significant development (SSD) consent (SSD-5144) for the Mandalong Southern Extension Project (MSEP).

The modification application seeks approval to increase the maximum number of full-time equivalent (FTE) employees from 470 to 815 to enable mining operations to occur concurrently in the Southern Extension and Area 2 mining areas of the MSEP. The modification application also seeks to upgrade an electrical substation to convert electricity generated onsite from 11 kilovolts (kV) to 33 kV for use either by the mine or to be fed into the State grid.

1.1 Background

Centennial Mandalong Pty Ltd (Centennial) owns and operates the MSEP, which is located near Morisset, approximately 35 kilometres (km) southwest of Newcastle in the Central Coast and Lake Macquarie local government areas (LGAs, see **Figure 1**).

1.2 Approval History

The MSEP was originally known as Cooranbong Colliery Extension, which was approved by the then Minister of Urban Affairs and Planning under development consent DA97/800. Centennial purchased the mine in 2002 and changed its name to the Mandalong Coal Mine and continued to operate under the existing consent, which permitted:

- extraction of up to 6 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal from Mining Areas 1 and 2 until 2019;
- transportation up to 4 Mtpa of ROM coal to the Cooranbong Entry Site via underground conveyor;
- delivery of 4 Mtpa of ROM coal to Eraring Power Station via overland conveyor;
- operation of the Mandalong Mine Access Site (MMAS); and
- disposal of coal fines into disused workings.

In 2013, Centennial lodged a State significant development (SSD) application to establish the MSEP, a proposed additional underground mining area located to the south of the approved mine, which was approved by the then Planning Assessment Commission (the Commission) on 12 October 2015. The consent permitted:

- continued mining operations in Areas 1 and 2;
- continued operation of the MMAS;
- extended underground mining operations south of the existing mining domains (Southern Extension Area);
- construction and use of the Mandalong South Surface Site (MSSS);
- extension of the life of the mine by 25 years; and
- progressive rehabilitation of the MMAS and MSSS.

Figure 2 shows the three mining domains and the location of the MMAS.

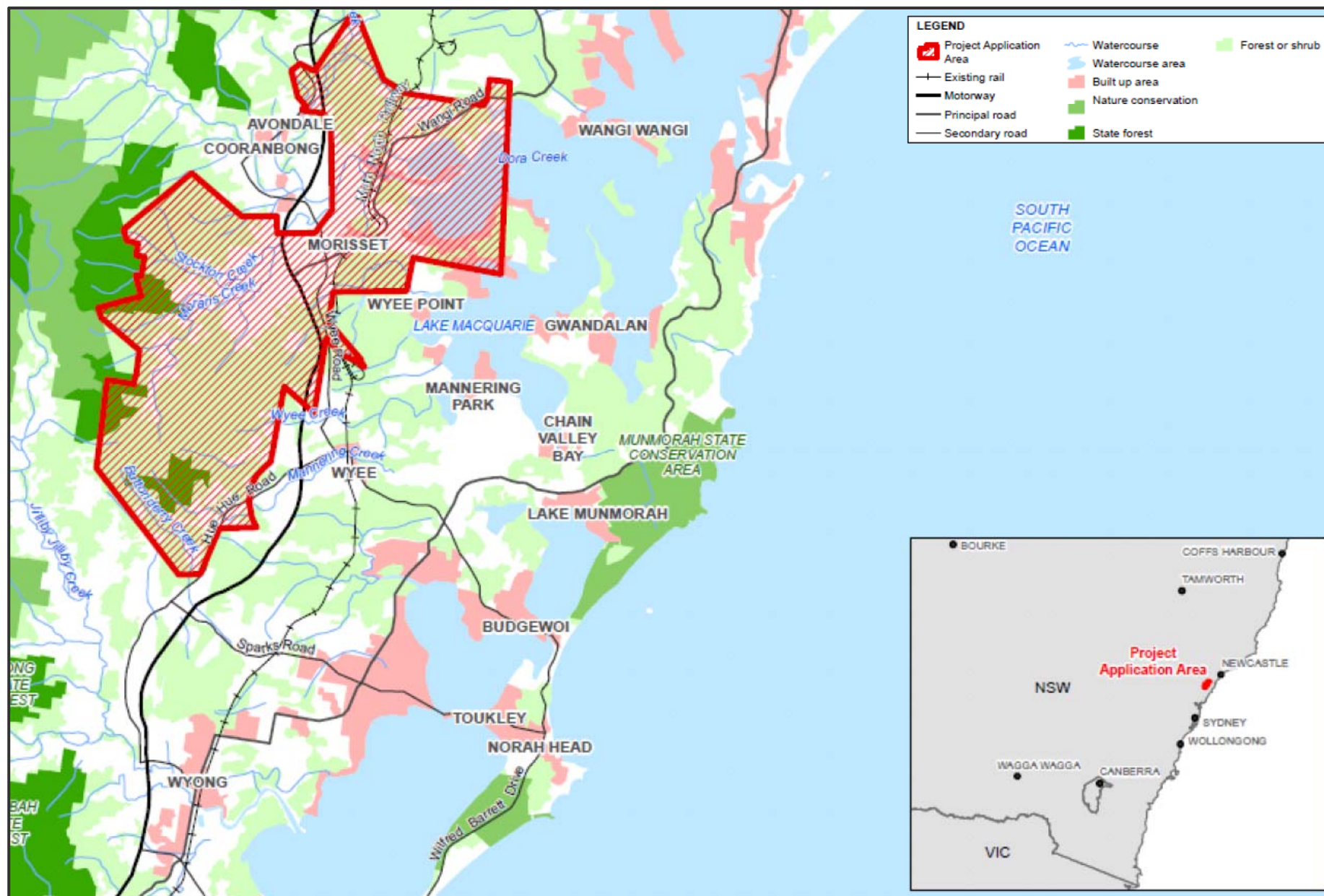


Figure 1 | Site location

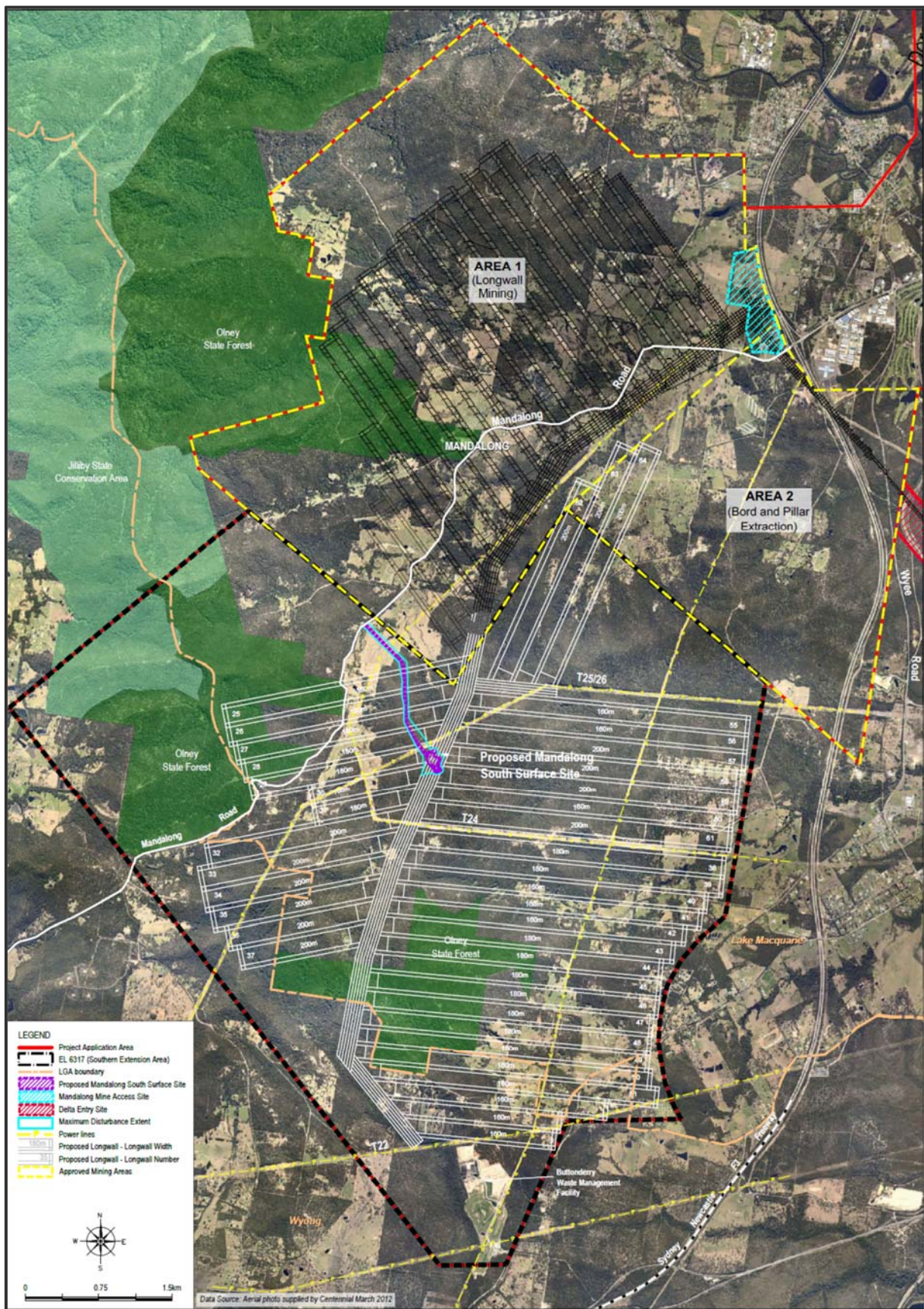


Figure 2 | MSEP Mining Domains and MMAS location

The development consent for the MSEP has been modified on seven occasions (see **Table 1**):

Table 1 | Summary of Modifications

Mod No.	Summary of Modifications	Approval Authority	Type	Approval Date
MOD 1	Relocation of a 2.4 km section of a TransGrid 330 kV transmission line	Minister	96 (2)	14 June 2016
MOD 2	Extension of first workings associated with Longwalls 22 and 23	Minister	96 (1A)	22 September 2016
MOD 3	Increased annual production limit from 6 to 6.5 Mtpa of ROM coal	Minister	96 (1A)	16 November 2016
MOD 4	Extension of Longwalls 22 and 23 and extraction of an additional 1.4 million tonnes of ROM coal	Minister	96 (2)	24 March 2017
MOD 5	Extension of Longwall 24, addition of Longwall 24A and extraction of an additional 3.71 million tonnes of ROM coal	Minister	96 (2)	1 August 2017
MOD 6	Controlled discharge of mine water from sediment dam	Minister	4.55 (2)	15 April 2019
MOD 7	Construction of a 33-kV powerline from the MMAS to the MSSS	Minster	4.55 (2)	25 July 2019

ROM coal is transported to Eraring Power Station (Eraring) and blended with lower quality coal from other sources to feed into the power station. To date extraction of coal has occurred predominantly from Area 1 using longwall mining, due to the thicker coal seam of up to seven metres (m) thick. Extraction of ROM coal from Area 1 has satisfied Eraring's demand for higher quality coal such that extraction from Area 2, by the bord and pillar method, has not commenced.

Longwall mining in Area 1 has recently concluded and Centennial has commenced longwall mining in the Southern Extension Area. However, due to encountering geological constraints, longwall extraction in the Southern Extension Area has slowed. Therefore, Centennial plans to commence bord and pillar mining operations in Area 2 to maintain supply of higher quality ROM coal.

1.3 Local Setting around the MMAS

The modification application relates to the MMAS, where the increased workforce would access the mine and the substation upgrade would occur. The MMAS is surrounded by a variety of agricultural, residential and industrial land uses and contains areas of undisturbed bushland. The nearest settlements are the townships of Morisset, Dora Creek and Cooranbong that are located around 2.5 km east and 5 km northeast of the MMAS.



2. Proposed Modification

On 16 April 2019, Centennial lodged a modification application seeking approval to increase its maximum full-time equivalent employees (FTE) from 470 to 815, increase onsite car parking from 228 to 460 spaces and upgrade an existing substation at the MMAS (see **Figure 3**). The proposed modification would require clearing of approximately 1,800 m² (0.18 hectares (ha)) of vegetation.



Figure 3 | Proposed layout of MMAS

As outlined above, Centennial is seeking the proposed modification as its current rate of coal extraction has slowed due to geological constraints. As a result, Centennial intends to commence coal extraction in Area 2 concurrently with its extraction operations in the Southern Extraction Area, which would require additional personnel.

An upgrade to the existing on-site substation is sought to convert power generated from Mandalong's 11 kV gas engines to 33kV for use by Mandalong or supplied into the State grid.



3. Statutory Context

3.1 Scope of Modification

This application seeks to modify development consent SSD-5144 in accordance with section 4.55(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). A development consent cannot be modified under section 4.55(2) unless the consent authority is satisfied that the proposed modification would remain substantially the same as the development for which consent was originally granted.

The Department has reviewed the scope of the modification and considers that the proposed modification is consistent with section 4.55(2). While there is an increase in the number of employees and additional parking required at the MMAS, there would be no change to proposed mining areas or the intensity of mining operations. The annual production rate of 6.5 Mtpa would not increase, rather the bord and pillar mining in Area 2 would be used to supplement predicted production decreases as mining progresses into the Southern Extension Area.

Therefore, the Department considers that the proposed modification is within the scope of section 4.55(2) of the EP&A Act and would not constitute a new development application.

3.2 Environmental Planning Instruments

Several environmental planning instruments (EPIs) apply to the proposed modification, including:

- *State Environmental Planning Policy (SEPP) (State and Regional Development) 2011*;
- *SEPP (Mining, Petroleum and Extractive Industries) 2007 (Mining SEPP)*;
- *SEPP (Infrastructure) 2007*; and
- *Lake Macquarie Local Environmental Plan (LEP) 2014*.

Under *Lake Macquarie LEP 2014*, the MMAS is situated on land that is zoned SP1 Special Activities and E2 Environmental Conservation. Mining is permitted within the SP1 zone but is prohibited within the E2 zone. The proposed carpark works and substation upgrade partially encroaches into land zoned E2. Under clause 7 of the Mining SEPP, underground mining may be carried out on any land with development consent.

The Department considers that the carpark and substation are ancillary components of the approved underground mining operation and falls within the scope of the underground mining definition. Therefore, the Department considers that the proposed carpark works and substation upgrade are permissible under clause 7 of the Mining SEPP.

The Department has considered the proposed modification against the relevant provisions of these EPIs, as well as Centennial's review of these matters. The Department considers the project, if modified, could continue to operate in a manner that is consistent with the aims, objectives and provisions of these EPIs.

3.3 Consent Authority

The Minister for Planning and Public Spaces is the consent authority for the application under section 4.5(a) of the EP&A Act.

Centennial has not reported any political donations and neither Lake Macquarie City Council (LMCC) nor Central Coast Council (CCC) objected to the modification. As less than 25 public objections were received the Executive Director - Energy and Resources may determine the application under the Minister's delegations dated 11 October 2017 and 25 June 2019.

3.4 Objects of the EP&A Act

The Minister or delegate must consider the objects of the EP&A Act when making decisions under the Act. [The Department has assessed the proposed modification against the objects of the EP&A Act as set out in section 1.3. The objects of most relevance to the decision of whether to approve the proposed modification are:

- Object 1.3(a): *to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources;*
- Object 1.3(b): *to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment;*
- Object 1.3(c): *to promote the orderly and economic use and development of land;*
- Object 1.3(e): *to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats;*
- Object 1.3(f): *to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage); and*
- Object 1.3(j): *to provide increased opportunity for community participation in environmental planning and assessment.*

The Department considers that the proposed modification encourages the proper management and development of resources (Object 1.3(a)) and the promotion of the orderly and economic use of land (Object 1.3(c)), since the proposed modification:

- involves a permissible land use on the subject lands;
- only alters Mandalong's surface infrastructure to accommodate the required additional employees; and
- maintains socio-economic benefits for the community of NSW.

The Department has considered the principles of ecologically sustainable development (ESD, Object 1.3(b)) in its assessment of the proposed modification. The Department has also noted Centennial's consideration of these matters in its Environmental Impact Statement (EIS) for the original SSD application. The Department considers that mining operations would remain consistent with the principles of ESD under the proposed modification. The Department's assessment has sought to integrate all significant environmental, social and economic considerations.

The Department has considered the protection of the environment and heritage (Objects 1.3(e) and (f)). The Department recognises that the proposed modification could introduce minor additional impacts on biodiversity due to the proposed vegetation removal. The Department's consideration of biodiversity and Aboriginal heritage impacts is included in **Section 5.2**.

The Department exhibited the proposed modification and made the accompanying SEE publicly available (Object 1.3(j)). Two public submission by way of objection were received (see **Section 4.3**).

3.5 Reasons for Granting the Original Approval

In determining the original MSEP, the Commission concluded that the benefits of the project outweighed the impacts and imposed a range of strict conditions to appropriately manage impacts. The Department has considered the proposed modification against the reasons the Commission gave for determining the project and is satisfied that the proposed modification does not affect the decision that was previously made. The proposed modification would allow similar benefits to be realised at local, regional and State levels.



4. Engagement

4.1 Department's Engagement

The MSEP is in both the CCC and LMCC LGAs. Therefore, the Department:

- publicly exhibited the proposed modification in newspapers that covered each LGA;
- made the SEE and supporting documents available on its website; and
- provided hardcopies at CCC's and LMCCs' offices.

The Department requested expert advice from six agencies; the Division of Resources and Geosciences within the Department (DRG), Subsidence Advisory NSW (SA NSW), Roads and Maritime Services (RMS), Office of Environment and Heritage (OEH – now the Biodiversity Conservation Division within the Department), Environment Protection Authority (EPA) and the Department of Industry (Dol). LMCC and CCC were also invited to comment on the modification (see **Section 4.2**).

The Department also notified 216 previous submitters of the original 2015 development application and modification applications and invited comment (see **Section 4.3**).

The Department received expert advice from five agencies and LMCC during exhibition. One submission from a member of the public and one from a special interest group, objecting to the proposed modification, were also received (see **Appendix B**).

4.2 Government Agency Advice

Advice was received from DRG, OEH, EPA, SA NSW and RMS. Comments were also received from LMCC. Dol stated that it had no comments about the modification and CCC did not provide a submission.

RMS advised that its focus is primarily the safe and efficient operation of the classified road network including the M1 motorway access ramps and Mandalong Road. RMS identified a discrepancy in the Traffic Impact Assessment (TIA) between the summary of the SIDRA analysis and Appendices D and E that contain the SIDRA output results. The summary information identified that the degree of saturation (DOS) of the eastern interchange ramp in the afternoon peak would exceed 0.9, which indicates unstable traffic flow and problematic overflow queues. Therefore, RMS requested Centennial to confirm the operation of the eastern interchange ramp.

OEH reviewed the proposed modification regarding flooding, biodiversity and Aboriginal cultural heritage impacts. OEH advised that the proposed modification did not pose any flooding concerns and was satisfied with Centennial's assessment of impacts on Aboriginal cultural heritage. It recommended that Centennial provide the registered Aboriginal parties copies of the final Aboriginal Cultural Heritage Impact Assessment report. OEH advised that it was satisfied with Centennial's assessment of biodiversity impacts and the approach of retiring four ecosystem credits to offset those impacts.

DRG advised that it supported coal extraction in Area 2 concurrently with the southern extension as a result of geological constraints in the Mandalong longwall area. DRG identified that due to vegetation clearing, biodiversity offsets needed to be satisfied. However, as there were no details of where these would be provided, DRG could not comment whether these offset areas would result in resource sterilisation. The Department notes that the clearing of vegetation is minor, and that Centennial has committed to pay into the Biodiversity Conservation Fund in lieu of land-based offsets.

EPA advised it was satisfied that Mandalong's Environment Protection Licence (EPL) addressed environmental pollution matters resulting from the proposed modification. However, construction noise levels were predicted to exceed existing EPL limits which would require Centennial to obtain a licence variation to account for noise during the construction period. EPA also recommended several conditions of consent including restricted construction noise hours and requirement to manage construction noise in accordance with the requirements of the Interim Construction Noise Guideline (ICNG). The Department notes that these requirements are already in the conditions of consent and therefore construction noise would be effectively managed through both the EPL, as amended, and the consent.

SA NSW advised that Centennial would require approval from SA NSW for construction of improvements under the *Coal Mine Subsidence Compensation Act 2017*. Centennial's development consent requires approval by SA NSW for any buildings or structures, and any alterations or additions to structures that are part of Mandalong and within a Mine Subsidence District.

LMCC reviewed the proposal and raised concerns with Centennial's reliance on addressing specific management activities by the use of post approval management plans. LMCC considered that this approach lacked enough detail for it to make an informed assessment and therefore, formally objected to the proposed modification. LMCC also identified that the proposed modification was located on land zoned E2 Environmental Conservation under *Lake Macquarie LEP 2014* and was inconsistent with the zone objectives and requested additional information (see **Section 3.2**).

4.3 Community Submissions

One submission from the public and one from a special interest group were received objecting to the proposed modification. These submissions raised concerns about the adequacy of the TIA, particularly the assessment of traffic impacts on Mandalong Road to the east of the M1 Motorway. The submissions also were concerned that additional FTE should be sourced from the local community, rather than from the wider region and that visual screen vegetation would need to be quickly established around the proposed carpark extension.

4.4 Response to Submissions

On 23 August 2019, Centennial submitted its Response to Submissions report (RTS) addressing the matters raised in the exhibition period by agencies and the community. The RTS was provided to agencies who had identified matters of concern in their advice, namely RMS and LMCC.

RMS confirmed that its concerns had been addressed and it had no outstanding concerns regarding the modification.

LMCC confirmed that it no longer objected to the modification but requested that the additional vegetation planting to be installed to screen the proposed carpark from Mandalong Road be located wholly on Centennial's land. LMCC also requested that Centennial's proposed carpark plan contain a note that all carparking spaces are to comply with Australian Standard AS 2890.



5. Assessment

In assessing the merits of the proposal, the Department has considered the:

- Environmental Impact Statement (EIS) for the original project and SEEs for the previous modifications;
- SEE for the proposed modification;
- relevant EPIs;
- submissions and agency advice; and
- relevant requirements of the EP&A Act, including the objects of the Act.

The Department considers that the key issue of the proposed modification is traffic impacts. The Department's consideration of this issue is provided below.

5.1 Traffic

5.1.1 Traffic impacts

The proposed modification would result in additional traffic impacting the road network. Centennial's SEE included a TIA of the predicted traffic increase on the surrounding road network as a result of the additional FTEs and during the construction phase of the proposed car park and substation upgrade.

The TIA identified that the main traffic routes to access the MMAS were via the M1 Motorway, Mandalong Road and Kerry Anderson Drive. Existing traffic counts showed that around 660 daily light vehicle movements to and from the MMAS occurred on a typical weekday with a significant portion traveling along Mandalong Road. Recent traffic analysis indicated that these roads have peak hour levels of service (LOS) A. The TIA also identified that the road intersections most likely to be impacted by the proposed modification are the:

- M1 Motorway eastern ramps and Mandalong Road;
- M1 Motorway western ramps and Mandalong Road; and
- Mandalong Road and Kerry Anderson Drive (see **Figure 4**).

The existing LOS of these intersections has been determined for the morning shoulder peak (5:30 to 6:00 am), morning peak (7:30 to 8:30 am) and afternoon peak (3:30 to 4:30 pm) periods. SIDRA modelling was used to determine the predicted LOS for the same periods for the increased traffic due to the modification (see **Table 2**).

The most significant change predicted by the SIDRA modelling would be at the intersection of the M1 Motorway (northbound) and Mandalong Road, where the LOS decreases from B to D. Under the *NSW Roads and Traffic Authority Guide to Traffic Generating Developments (2002)*, intersections with a LOS D are operating near capacity and require the preparation of an accident study, which was provided in Centennial's SEE.

The motor vehicle accident data from 2014 to 2019 showed that there were three accidents at the western ramp, in which two accidents involved vehicles turning right. Centennial has also identified that this section of Mandalong Road is generally straight and level and provided excellent sightlines (approximately 500 m). The road is also speed limited to 60 km/h, further improving intersection safety for right-turning vehicles. The TIA concluded that, based on the above information, LOS D would be acceptable.

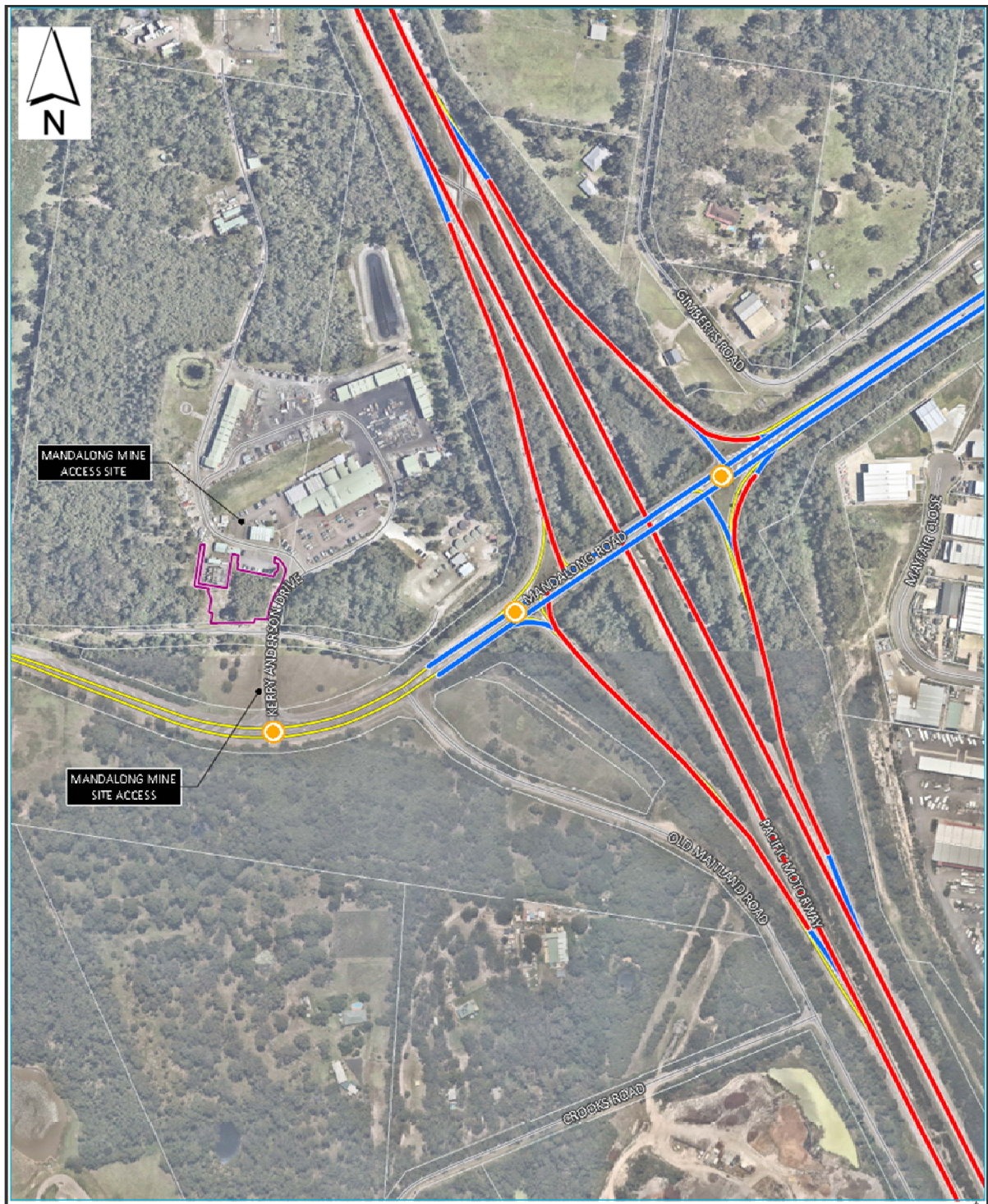


Figure 4 | Road intersections impacted by increase in proposed traffic

Table 2 | Existing and predicted intersection LOS

Intersection	Peak Period	Existing LOS	Predicted LOS
Kerry Anderson / Mandalong Road	Morning shoulder	A	A
	Morning	A	A
	Afternoon	A	A
Mandalong Road / M1 Motorway (eastern ramps)	Morning shoulder	A	B
	Morning	B	B
	Afternoon	B	C
Mandalong Road / M1 Motorway (western ramps)	Morning shoulder	A	B
	Morning	B	C
	Afternoon	B	D

However, RMS raised concerns over the accuracy of the data contained in the TIA. In its RTS, Centennial confirmed that the Degree of Saturation (DOS), a measure of intersection performance, of the western ramp would exceed 0.9. A DOS of 0.9 indicates that an intersection has reached 90% of its capacity. When an intersection approaches a DOS of 1, traffic queueing and delays rapidly increase. Further, the Department received two public submissions raising concern about traffic impacts resulting from the proposed modification. Both submissions highlighted that the locality suffered existing traffic congestion along Mandalong Road, particularly to the east of the M1 Motorway and requested assessment of these traffic impacts.

Centennial's additional traffic assessment of the eastern section of Mandalong Road identified that the roundabout to the east of the MMAS operated at LOS F and would remain at LOS F as a result of the proposed modification (see **Figure 5**). Peak traffic movements through this intersection as a result of increased traffic from the modification were predicted to increase afternoon peak hourly queueing time at the intersection from 144 to 225 seconds (an increase of 56%). To reduce this impact, Centennial proposed to adjust its operational hours for employees undertaking bord and pillar mining, setting work hours for:

- day shift between 5:00 am and 3:00 pm;
- afternoon shift between 1:00 pm and 11:00 pm;
- night shift between 9:00 pm and 7:00 am;
- weekend day shift between: 5:00 am and 5:00 pm; and
- weekend night shift between 5:00 pm and 5:00 am.

This adjustment to bord and pillar shift times would offset 63 daily traffic movements from the morning and afternoon peaks and would improve the western ramp's afternoon LOS D to LOS C. While the roundabout would continue to operate at LOS F, offsetting the operational hours for the bord and pillar workforce would decrease queueing times from the predicted 225 seconds, to 198 seconds, an improvement of 38% when compared to Centennial's original proposal. Following its review of the RTS, RMS confirmed that it had no outstanding issues.

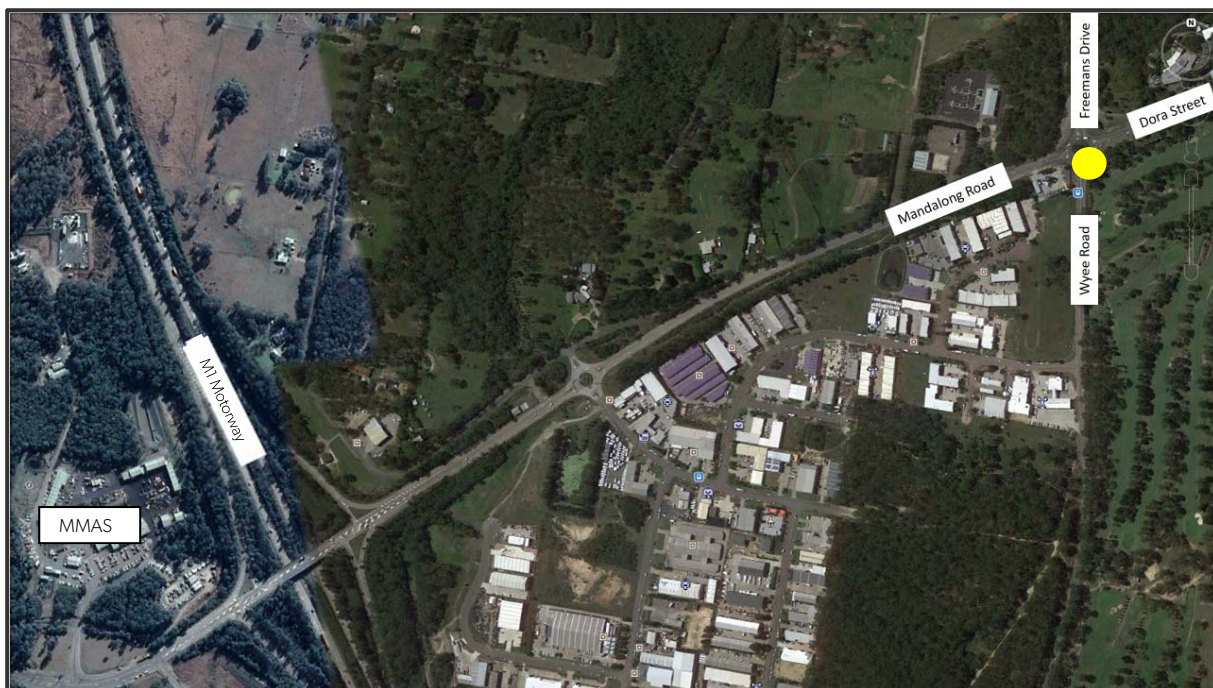


Figure 5 | Impacted roundabout east of the MMAS

Noting that the roundabout performance is at the lowest level of service regardless of the modification application, the Department considers that the measure of splitting the travel to and from the MMAS of the proposed bord and pillar workforce from the current workforce, to reduce traffic impacts, particularly in the afternoon peak, to be acceptable.

Further, to address the impacts associated with construction traffic accessing the site, predicted to be a maximum of 50 daily vehicle movements, the Department has recommended a condition for Centennial to prepare and implement a Construction Traffic Management Plan

5.1.2 Carparking

The modification application seeks to increase Mandalong's onsite car parking from 228 to 460 spaces to accommodate the proposed increase in FTEs and provided a conceptual layout of the proposed carpark (see **Figure 6**).

LMCC initially raised a concern that the proposed carpark had not addressed the carparking provisions contained in *Lake Macquarie Development Control Plan 2014* (DCP 2014). During the preparation of its RTS, Centennial consulted with LMCC to provide clarification of the status of DCPs, noting that DCP's do not apply to SSD applications, in accordance with Clause 11 of *State Environmental Planning Policy (State and Regional Development) 2011*.

Following its review of the Centennial's RTS, LMCC withdrew its objection but raised a concern that the proposed visual screen planting encroached into Council's road reserve. LMCC requested two matters be addressed regarding the carpark. Firstly, that the endorsed plan denoted that the carpark would be constructed in accordance with Australian Standard AS 2890 and secondly, that no visual screen planting is to occur within Council's road reserve.

The Department considers that LMCC's concerns can be addressed by conditions of consent. Consequently, the Department has recommended a condition that the carpark's construction complies with AS 2890. The Department has also recommended conditions of consent requiring all reasonable and feasible visual screening to be implemented, and to ensure these measures are not located on LMCC lands.

The Department considers that these conditions are appropriate to ensure that suitable screening is provided that does not encroach onto Council’s road reserve.

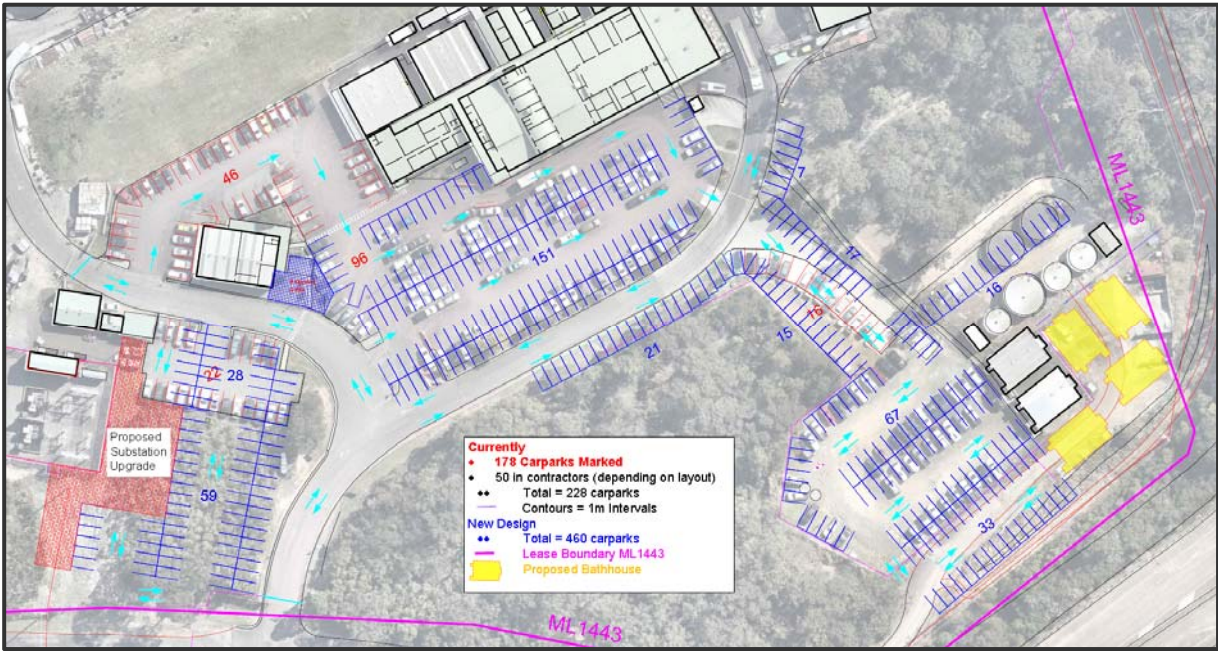


Figure 6 | Conceptual layout of the proposed carpark

5.2 Other Issues

The Department considers that proposed modification would have minimal impacts on other environmental matters. A summary of the Department’s consideration of these matters is included in **Table 3**.

Table 3 | Summary of other issues raised

Issue	Findings	Recommended Condition
Biodiversity	- The proposed modification requires clearing of approximately 0.18 ha of vegetation for the car park construction and substation upgrade. - One plant community type was identified within the area to be cleared (PCT 1649 <i>Smooth-barked Apple – Red Mahogany – Swamp Mahogany – Melaleuca sieberi</i> heathy swamp woodland of the coastal lowlands), which would require the retirement of four ecosystem credits. - Centennial proposed to offset the impacts on the PCT by making payment into the Biodiversity Conservation Fund. - OEH advised that it was satisfied with this approach to offsetting the impacts on biodiversity.	A condition is recommended requiring the purchase and retirement of four additional ecosystem credits in accordance with the NSW Biodiversity Offsets Scheme.
Aboriginal cultural heritage	- Centennial’s SEE included an Aboriginal Cultural Heritage Impact Assessment. - The potential for Aboriginal archaeology to be present in the location of the proposed car park is very low.	No changes to conditions considered necessary.

Issue	Findings	Recommended Condition
	- The car park expansion and substation are sited mostly on heavily disturbed land with shallow depth of remnant topsoil. - No previously identified Aboriginal archaeological sites are within the car park expansion or substation areas. - No concerns were raised by registered Aboriginal parties during Centennial's consultation.	
Visual	- LMCC raised concerns over the visual impact of the car park from Mandalong Road. - LMCC also raised concerns that the proposed screen planting would be located on Council's road reserve. - Centennial has committed to providing additional screen planting within its land boundaries to the satisfaction of Council.	The Department has recommended a condition of consent that requires Centennial to implement visual screening of the proposed carpark and to ensure that visual screens are not located on LMCC lands.
Water Resources	- There is additional risk of erosion and sediment laden run-off leaving the site due to an increase in exposed ground during construction. - Centennial has committed to prepare and implement a Construction Environment Management Plan in its SEE that would include erosion and sediment controls for the Modification 8 construction works. - Centennial has assessed the potential cumulative impact on groundwater from concurrent mining operations in Area 2 and the MSEP. The assessment considered impacts on GDEs, surrounding water users due to groundwater drawdown and changes to mine inflows. - The Department notes that the bord and pillar mining of Area 2 is already approved, the assessment issue being whether concurrent mining operations with the MSEP area would exacerbate impacts. - Three registered bores were identified in Area 2, which belong to Centennial for testing and monitoring purposes. Groundwater modelling recalculated in 2016 incorporated existing workings and the approved MSEP. - The assessment identified a 2 m drawdown contour over the Mandalong Mine, Cooranbong and future MSEP mining areas due to dewatering of the underground workings. The predicted 2 m drawdown in fractured rock aquifers 50 m above the target coal seam is predicted to already extend over most of Area 2, that is the target coal seams are already depressurised to some extent from the existing operations. - The modelling includes approximately 5,630 ha of underground mine workings (including 2,770 ha of the MSEP). Area 2 is approximately 400 ha or around 7% increase in the modelled underground mining area.	No changes to conditions considered necessary.

Issue	Findings	Recommended Condition
	- The groundwater assessment concluded that the 2m drawdown within the fractured rock aquifer would extend over Area 2, but that as the mining method is bord and pillar, not longwall mining, there would be less fracturing of the rock above the mined area and drawdown would be less than that predicted above long wall mining areas. - The groundwater model does not predict a drawdown of greater than 0.1 m within alluvial aquifers overlying the Mandalong Mine longwall area and Southern Extension Area. - The groundwater assessment concludes that there would be no additional drawdown impacts on registered bores due to mining of Area 2, nor would there be additional impacts on GDEs. - Further, it is predicted that there may be a small increase in peak inflow of around 0.1-0.2 Megalitres (ML)/day, compared to a predicted peak without Area 2 of around 2.1 ML/day in 2036. Centennial has enough existing water entitlement in the <i>Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Source</i>, to account for this water take. - Centennial is required to operate under an approved Water Management Plan. This plan includes an extensive groundwater monitoring program. - The Water Management Plan is required to be reviewed, and if necessary, updated following approval of a modification under the existing conditions of consent.	
Social Impact	- One submission was received raising concern about Mandalong's adverse impact on community cohesion. - The submission requested that Centennial provide details of measures to employ local Mandalong Valley workers rather than regionally-based workers. - Centennial has committed to advertising in the local area and has stated that over 300 locally based expressions of interest have been received via its website.	- No changes to conditions considered necessary. - Centennial's RTS commits to notifying the Mandalong Community Association Inc of employment opportunities when they occur.
Air and Greenhouse Gas Emissions	- Overall, the modification is expected to result in a negligible 0.02% increase in Scope 1 greenhouse gas emissions due to increased transport for the additional employees. - Centennial has prepared and implemented a Air Quality and Greenhouse Gas Management Plan (AQGGMP) for its northern region, including the Mandalong Mine. - In addition to the AQGGMP, the consent includes operating conditions to implement best practice to minimise the release of greenhouse gas emissions from the development.	No changes to conditions considered necessary.

5.3 Recommended conditions

A notice of modification (see **Appendix D**) and a consolidated version of the MSEP development consent (see **Appendix E**), as proposed to be amended, have been prepared.

The Department has recommended conditions for offsetting biodiversity and to manage construction traffic impacts.

The Department provided the draft conditions to Centennial for comment. Centennial has accepted the recommended conditions.



6. Evaluation

Centennial is seeking to increase its maximum FTEs from 470 to 815 to facilitate commencement of mining in Area 2 concurrently with mining in its Southern Extension Area. The increase in employees would result in onsite car parking to be increased from 228 to 460 spaces.

The proposed modification would result in additional traffic impacts particularly affecting afternoon peak traffic movements through the western ramps of the M1 Motorway and a regional traffic roundabout located to the east of the motorway with an existing low level of service performance. To mitigate this impact, Centennial has proposed to stagger the operational hours for employees undertaking bord and pillar mining operations in Area 2, which would reduce additional vehicle movements during the morning and afternoon peaks.

The minor clearing of 0.18 ha of native vegetation has been appropriately addressed through a condition requiring Centennial to offset impacts via payment into the Biodiversity Conservation Fund.

Centennial proposes to advertise the additional positions locally to enhance employment opportunities in the local area. This would provide an opportunity for the local and regional community to benefit from flow-on economic stimuli resulting from 345 additional employment opportunities.

The Department considers that MSEP, as modified, would continue to provide benefits to the region through its production of high-quality thermal coal for electricity generation. Therefore, the Department considers that the proposed modification is in the public interest and should be approved.



7. Recommendation

It is recommended that the Acting Executive Director, Energy and Resources, as delegate of the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report;
- **determines** that the application Mandalong Southern Extension Project Mod 8 falls within the scope of section 4.55(2) of the EP&A Act;
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to approve the modification application;
- **modify** the consent SSD-5144; and
- **signs** the attached notice of modification (**Appendix E**).

Recommended by:

16.1.20

Anthony Barnes

Senior Environmental Planning Officer



8. Determination

The recommendation is: **Adopted / Not adopted by:**

17/1/20

Steve O'Donoghue

A/Executive Director

Energy and Resources



Appendices

Appendix A – Statement of Environmental Effects

Please refer to the Department's major projects website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/11381>

Appendix B – Submissions

Please refer to the Department's major projects website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/SSD-5144-Mod-8/submissions/12921/3251>

Appendix C – Response to Submissions Report

Please refer to the Department's major projects website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/11381>

Appendix D – Consolidated Consent

Please refer to the Department's major projects website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/11381>

Appendix E – Notice of Modification

Please refer to the Department's major projects website at:

<https://www.planningportal.nsw.gov.au/major-projects/project/11381>