

ASSESSMENT REPORT MANNERING COLLIERY MOD 2 (MP 06_0311) & CHAIN VALLEY COLLIERY MOD 1 (SSD 5465) Construction of an underground linkage

1. BACKGROUND

Mannering Colliery (Mannering) and Chain Valley Colliery (Chain Valley) are underground coal mines located on the southern side of Lake Macquarie, approximately 60 kilometres (km) south of Newcastle, in the Lake Macquarie and Wyong local government areas (see **Figure 1**).

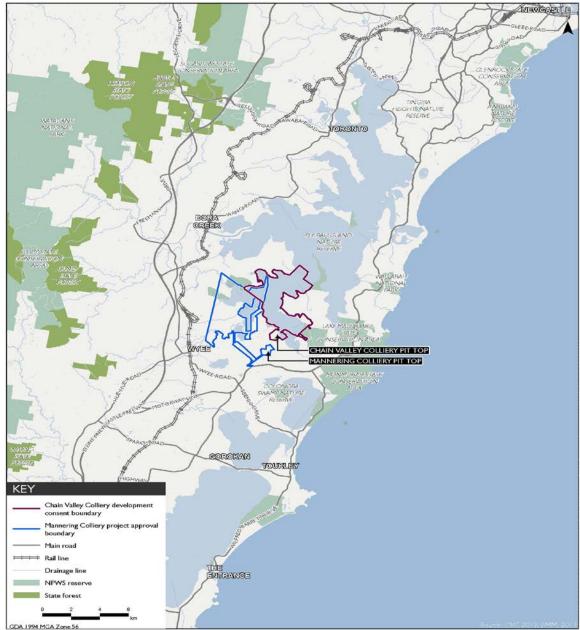


Figure 1: Location of Mannering and Chain Valley Collieries

Mannering is owned and operated by Centennial Mannering Pty Limited, a wholly-owned subsidiary of Centennial Coal Company Limited (Centennial). Chain Valley is owned and operated by LakeCoal Pty Limited (LakeCoal), a wholly-owned subsidiary of LDO Coal Pty Limited. The collieries' pit tops are located approximately 1.1 km from one another on the south-western shore of Lake Macquarie, near Chain Valley Bay (see **Figure 1**).

The majority of land surrounding the pit tops consists of industrial facilities, such as the Vales Point Power Station (VPPS) and fragmented areas of vegetation including parts of Lake Macquarie State Conservation Area (SCA). Seagrass beds are also present in the shallow waters (<2 metres (m) depth) of Lake Macquarie.

Surrounding residential areas include the Macquarie Shores mobile home village, Chain Valley Bay, Mannering Park, Summerland Point and Gwandalan. The closest residential area is Kingfisher Shores, located around 350 m southeast of the Chain Valley pit top.

1.1 Current Operations

<u>Mannering</u>

Mannering was granted project approval (MP 06_0311) on 12 March 2008 by the then Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The approval allowed the continued production of up to 1.1 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal from a total resource of approximately 14.8 million tonnes until 31 March 2018. On 25 October 2012, approval was granted for an extension to underground mining within the Fassifern Seam and the employment of an additional 80 employees.

Mannering's current approval allows:

- extraction of 1.1 Mtpa of ROM coal from the Fassifern and Great Northern Seams until 31 March 2018 using bord and pillar mining methods;
- transport of coal to VPPS via covered overland conveyor;
- employment of 170 full-time personnel; and
- operation 24 hours a day, seven days a week.

On 27 November 2012, Mannering ceased production and was placed on care and maintenance due to a combination of high production costs, low coal prices, difficult mining conditions and poor coal quality. However, the owners of Mannering and Chain Valley have since entered into an agreement, which enables LakeCoal to operate Mannering from 17 October 2013 until 2022.

Chain Valley

Chain Valley currently operates under Development Consent SSD 5465, granted on 23 December 2013, which allows for continued mining within the Fassifern Seam. Approved operations include:

- extraction of up to 1.5 Mtpa of ROM coal until 31 December 2027;
- first and second workings using continuous miner and miniwall methods;
- secondary extraction under Lake Macquarie and outside of the High Water Mark Subsidence Barrier (HWMSB) and Seagrass Protection Barrier (SPB);
- sizing and crushing of coal at the Chain Valley Preparation Plant;
- transport of coal via public roads to Port Waratah Coal Services (PWCS);
- transport of coal via private roads to VPPS and by public roads to other customers;
- employment of 120 full-time personnel and 40 full-time contractors; and
- operation 24 hours per day, 7 days a week.

Chain Valley has approval to transport up to 660,000 tonnes per annum (tpa) of ROM coal to PWCS for export and 180,000 tpa to domestic customers other than VPPS. The remainder of the coal produced is sold and delivered to VPPS via private, sealed roads (Chain Valley access road and Construction Road).

1.2 Proposed modification

LakeCoal is seeking approval under Sections 75W and 96(2) of the EP&A Act for modifications to the Mannering project approval and the Chain Valley development consent to allow the:

• development and use of up to four first working headings within the Fassifern Seam, at a depth of about 195 m, to connect Mannering and Chain Valley;

- installation and use of a 1.6 km underground conveyor belt and ancillary services to enable ROM coal to be transferred between the Chain Valley and Mannering conveyors; and
- use of existing Mannering infrastructure to process and transport up to 1.1 Mtpa of ROM coal from Chain Valley underground workings to VPPS.

The proposed modification would connect existing first workings and consist of four headings (5.4 m wide and 3.2 m high) creating three rows of pillars (25 m wide and 94.6 m long) (see **Figure 2**). The conveyor would be located within one of these headings which would pass below the western foreshore of Chain Valley Bay. Construction would take approximately 12 months.

Initially, two underground roadways would be developed to connect the Mannering and Chain Valley belt systems and to enable the movement of personnel and equipment between the collieries. Another two underground roadways would be constructed in the future to permit increased ventilation flow between the collieries.

The modifications would enable ROM coal to be transported from Chain Valley to Mannering surface facilities to be crushed, screened and conveyed to the existing product bin at Mannering before being transferred to VPPS. This would remove the requirement for coal transport by truck from Chain Valley to VPPS.

During construction of the conveyor, around 40 full-time staff would be employed at Mannering, with 20 full-time employees being retained following construction. The number of employees at Chain Valley would reduce by 9 truck drivers with the commencement of conveyor transport of coal to VPPS.

The proposed modification would involve an adjustment to Chain Valley's development consent boundary limits to accommodate the underground linkage (see **Figure 2**).

1.3 Alternatives considered

The following alternatives to the underground conveyor were considered:

- Do nothing: Should the proposed modifications not occur, coal to the VPPS would continue to be transported from Chain Valley via truck, resulting in continued high operating costs and noise and dust emissions from the handling, haulage and unloading of coal; and
- Construction and use of a new overland conveyor from Chain Valley to VPPS: An overland conveyor would cost more as, in order to receive coal directly from Chain Valley, additional infrastructure would be required at VPPS. There would also be potential vegetation, air quality, noise and light impacts associated with a new overland conveyor.

2. STATUTORY CONTEXT

2.1 Mannering

Section 75W

Mannering was approved under the former Part 3A of the EP&A Act. Although Part 3A was repealed on 1 October 2011, the project remains a 'transitional Part 3A project' under Schedule 6A of the EP&A Act. The proposed modification must therefore be assessed under section 75W.

Approval Authority

The Minister for Planning is the approval authority for the Mannering modification application. However, under the Minister's delegation of 10 November 2014, the Executive Director, Resource Assessments may determine the application as there were less than 10 public submissions objecting to the modification, Council did not object and Centennial has made a political donations statement, but only in respect of a previous related application (MP06_0311 Mod 1). The Department received no public submissions objecting to the modification.

2.2 Chain Valley

Section 96(2)

Chain Valley was approved under Part 4 of the EP&A Act in relation to an application for State Significant Development (SSD). LakeCoal is therefore seeking to modify the existing development consent under section 96(2).

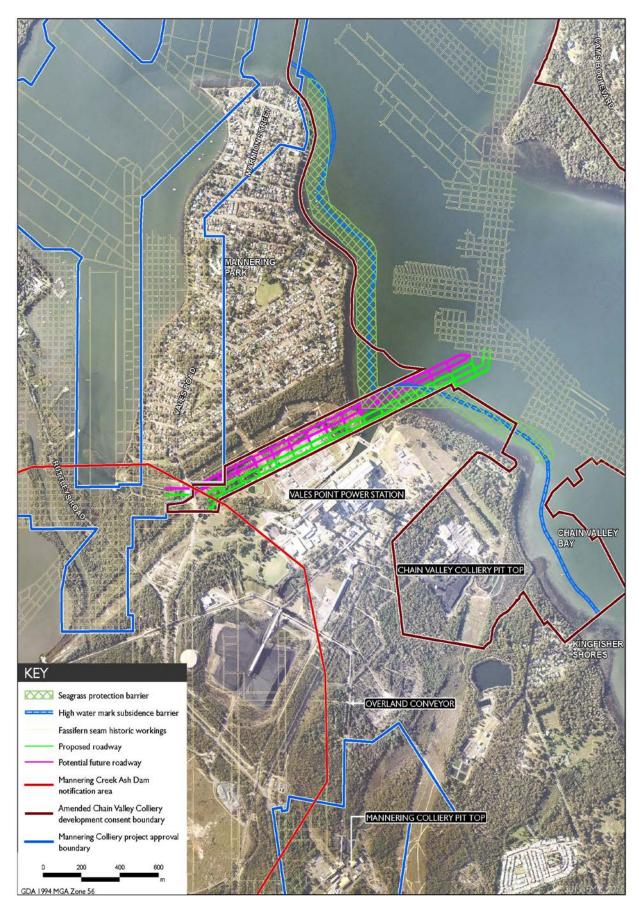


Figure 2: Proposed underground linkage between Chain Valley and Mannering collieries

Approval Authority

The Minister for Planning is the approval authority for the Chain Valley modification application. However, under the Minister's delegation of 10 November 2014, the Executive Director, Resource Assessments may determine the application as there were less than 25 public submissions objecting to the modification received, Council did not object and LakeCoal has not made a political donations statement. The Department received no public submissions objecting to the modification.

2.3 Modifications

The Department is satisfied that the proposals are within the scope of section 75W and section 96(2) and can be characterised as modifications to the original Mannering project approval and Chain Valley development consent. There would be no change to the approved mining methods, no increase in coal production, no change to processing systems, and the resulting environmental impacts would be substantially the same as, or less than, those for the approved projects.

2.4 Environmental Planning Instruments

Section 2.3.3 of the Environmental Assessment (EA) for Mannering and section 2.3.4 of the SEE for Chain Valley include an assessment of the applications against relevant Environmental Planning Instruments, including State Environmental Planning Policies, the *Lake Macquarie Local Environmental Plan 2004*, the *Wyong Local Environmental Plan 2013* and the *Draft Lake Macquarie Environmental Plan 2013*. The Department concurs with these assessments.

As the modifications were lodged with the Department prior to the gazettal of the *Lake Macquarie Local Environmental Plan 2014*, savings provisions in Clause 1.8A of the plan apply and state that such applications should be determined as if the plan had not commenced.

3. CONSULTATION

The Department exhibited the EA and SEE for the proposed modifications from 22 May to 10 June 2014. Copies of the EA and SEE (see **Appendix A**) were placed on display at:

- the Department's Sydney Information Centre;
- Lake Macquarie City Council;
- Wyong Shire Council; and
- the Nature Conservation Council.

3.1 Summary of Submissions

Both applications received 6 submissions from agencies, 1 submission from the CFMEU and 7 public submissions in support. No public submissions in objection were received. An additional submission from TransGrid about the Chain Valley modification application was also received. The key concerns, comments and recommendations from agencies, interest groups and the community are summarised below.

Government Agency Submissions

Wyong Shire Council (WSC) considered the existing conditions of the project approval and development consent to be adequate in mitigating the impacts of the proposal with the exception of a sewer main which would require monitoring and management. WSC also requested all works recommended in a past road safety audit of the intersection of Ruttleys Road and the entrance to Mannering Colliery be completed. The Department consulted with LakeCoal and WSC to obtain a resolution of this issue which is discussed in Section 4.2.

Lake Macquarie City Council (LMCC) stated that surface subsidence could exacerbate the effects of flooding and permanent inundation caused by rising lake levels. LMCC also considered that there was insufficient discussion of the need for 4, rather than 2, underground tunnels (roadways) that form the proposed underground linkage.

NSW Office of Water (NOW) advised that the EA and SEE have adequately addressed the potential impacts of the proposed modifications on water resources.

Agriculture NSW and Fisheries NSW had no comments on the proposed modifications.

Division of Resources and Energy (DRE) within the Department of Trade and Investment, Regional Infrastructure and Services did not object to the proposed modifications. However DRE suggested that the proposed mining plan be subject to an independent peer-review and recommended conditions of

consent for both modifications relating to subsidence and rehabilitation. The peer review was undertaken and has informed the Department's assessment. It is discussed in Section 4.1.

Environment Protection Authority (EPA) did not object to the proposed modifications. However the EPA stated that there had been no assessment of whether an increase in median annual groundwater inflow into the Fassifern workings would increase the volume of dewatering required. As part of the proposed modifications, LakeCoal will need to submit a variation application for its Environment Protection Licence (EPL) to the EPA. In addition, the EPA had advised LakeCoal of improvements needed to the water management system at Chain Valley.

Office of Environment and Heritage (OEH) considered there to be insufficient information provided relating to the impacts of potential subsidence on biodiversity and threatened species. OEH requested additional information relating to Aboriginal Cultural Heritage Assessment, seagrass populations, foreshore vegetation and predicted threatened species. These matters were addressed in LakeCoal's Response to Submissions (RTS).

TransGrid believed that the modifications could expose the Vales Point substation and 21 transmission towers to impacts from subsidence and vibrations. These may result in potential long-term damage and failure, and outages of the high voltage electricity network as these assets have not been designed or constructed to allow for subsidence impacts. TransGrid requested that the alignment of the proposed works be reconsidered to avoid undermining the substation and minimising the number of transmission towers undermined. The peer-review of subsidence impacts was supplied to TransGrid, which allayed its concerns, with details of this process provided in Section 4.1.

Special Interest Group Submission

Construction, Forestry, Mining & Energy Union (CFMEU) supported the modifications as they would result in improved amenity outcomes, operational cost savings and additional employment.

Community Submissions

All 14 public submissions supported the proposed modifications as the removal of trucks from the road network would result in reduced traffic, noise and dust emissions. Additionally there would be no new surface impacts as Mannering's surface infrastructure is pre-existing. The re-establishment of a workforce at Mannering and the continued employment of staff at Chain Valley would ensure the stability of ongoing employment for members of the local community.

3.2 Response to Submissions

On 15 September 2014 LakeCoal provided its RTS including an independent peer review of the subsidence and impact assessment. The Department made these documents publicly available on its website (see **Appendix C**). The RTS generally addressed the issues raised by agencies (including TransGrid) however WSC provided further comment on the Ruttleys Road intersection works. Recommended conditions from agencies and WSC comments are discussed in Section 4.

4. ASSESSMENT

4.1 Subsidence

Historical Subsidence

The proposed underground conveyor would be located beneath existing first and second workings in the Great Northern Seam and underlie Lake Macquarie foreshore, foreshore vegetation, dry sclerophyll forest woodland, a number of built surface features as well as the HWMSB and SPB (see **Figures 2** and **3**). The EA's subsidence assessment states historical subsidence (ie. subsidence which has already occurred) to be between 20 to 33 millimetres (mm), and 88 to 106 mm above first and second workings, respectively.

Incremental subsidence

The headings for the underground conveyor would be located at a depth of cover of approximately 195 m and pass 22.5 m below existing first and second workings panels. The development of the

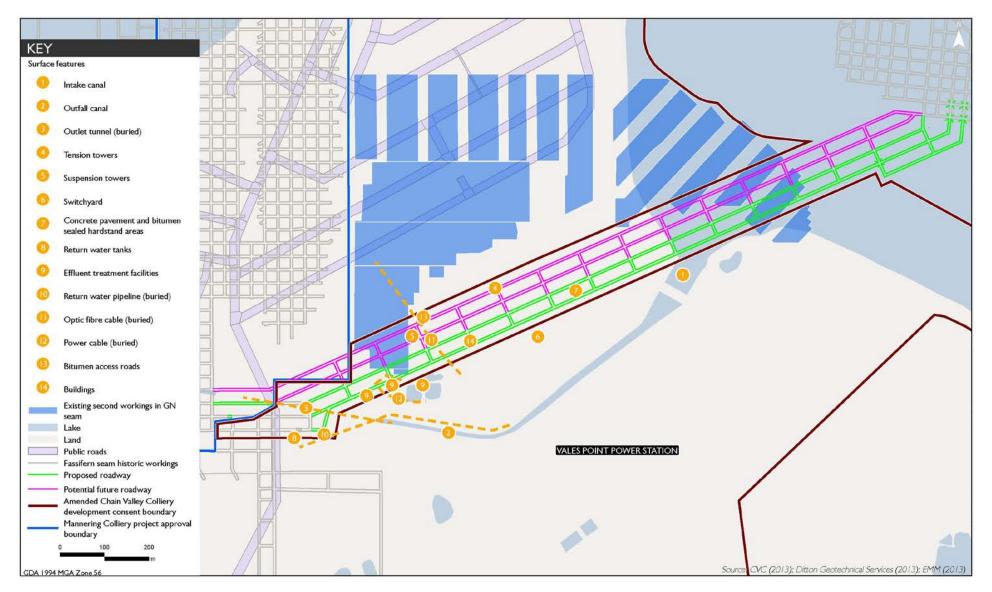


Figure 3: Proposed linkage in relation to existing workings and surface features

NSW Government Department of Planning and Environment linkage headings is predicted to increase subsidence by 5 to 20 mm, which is below the limit of measurement. This low level of predicted subsidence would result in negligible surface impacts on overlying dry sclerophyll woodland, lake foreshore vegetation and existing surface infrastructure. Similarly, negligible surface impacts are predicted to a sewer rising main and on the effects of flooding and permanent inundation caused by rising lake levels.

As part of LakeCoal's RTS, an independent peer-review of the subsidence predictions and impact assessment was provided. The peer-review satisfied DRE that site specific conditions including the presence of electrical transmission infrastructure, potential interaction of multi-seam workings which may contribute to subsidence and complex geotechnical conditions had been appropriately analysed and evaluated in the EA. On the basis of the peer-review and further consultation with LakeCoal, TransGrid withdrew its initial objection to the undermining of its assets and was satisfied that the proposal would be unlikely to result in damage or prevent the ongoing safe and reliable operation of its assets.

In relation to subsidence effects on aquatic and terrestrial ecology, additional information was supplied in LakeCoal's RTS to demonstrate to the satisfaction of OEH that undermining endangered ecological communities and groundwater dependent ecosystems would result in no greater than negligible impact. OEH recommended an additional monitoring location to be included in a revised Biodiversity Management Plan and an ecological monitoring program in the event that predicted subsidence levels are exceeded in a revised condition of the Chain Valley development consent.

The EA and SEE outline management strategies that would be implemented to monitor subsidence including the establishment of infrastructure monitoring plans in consultation with asset owners (eg. TransGrid and WSC) and the use of early warning survey lines to detect any subsidence impacts and allow mine planning adjustment or mitigation responses. Medium to long-term monitoring would also be undertaken after the completion of mine workings development.

The Department considers that the subsidence monitoring programs proposed by LakeCoal are comprehensive and highly conservative considering that only 5 to 20 mm of vertical subsidence and negligible impact is predicted. LakeCoal has proposed a precautionary approach with its monitoring that reflects the sensitive natural and built features that overlie the proposed mining areas. These requirements are reflected in LakeCoal's revised Statement of Commitments and in relevant management plans, which include ongoing monitoring of terrestrial and aquatic ecology.

4.2 Transport

<u>Mannering</u>

Mannering has approval to operate until 2022 with up to 170 employees but has been on care and maintenance since November 2012. Mannering's project approval only permits the transport of coal via conveyor to VPPS. No coal transport by truck is allowed. As Mannering is on care and maintenance with only 5 employees at the site, vehicle movements are minimal.

The re-opening of Mannering would see an increase in traffic movements associated with an additional 40 employees during construction and 20 for normal operations (spread over 24 hours). The traffic impacts of up to 170 employees operating the mine were assessed under Mod 1 and found to be acceptable subject to the completion of upgrade works to the intersection of Ruttleys Road and the mine's entrance road. In addition, the then operator, Centennial committed to upgrading the intersection to a type CHR intersection when the number of employees exceeded 130. The design for the CHR upgrade was approved by WSC under an extant Construction Certificate.

Shortly after Mod 1 was approved, the mine was placed on care and maintenance. The Department allowed the upgrade works to be deferred but advised that they would need to be completed prior to the recommencement of mine operations. During this time, WSC undertook road safety improvement work to the intersection. LakeCoal has relied upon these works to demonstrate that it has substantially satisfied the relevant condition of approval. WSC's primary contention is that its upgrade of Ruttleys road was not intended to satisfy the Mannering approval conditions, but to generally improve road safety. It identified that the installation of guard railing and extension of the road shoulder remain outstanding of the required upgrade works. WSC was also concerned that an increase in vehicles accessing the mine entrance would lead to the deterioration of the intersection's pavement.

The Department consulted closely with both WSC and LakeCoal to understand safety and construction constraints of the proposed intersection upgrade.

The Department believes that the guard rail barrier is needed and should be installed within three months of approval of this modification. Based on the low number of employees proposed to use the mine entrance, the Department considers it unnecessary to further upgrade the intersection until employee numbers increase. However, the full upgrade of the intersection to a Type CHR treatment will be required once employee numbers reach 70 (a reduction from the previous trigger of 130). This would remove the need for interim works before a full intersection upgrade is required. Finally, in order to resolve WSC's concern regarding the deterioration of its asset, the Department has recommended that the operator of the mine be required to maintain the pavement of the intersection to WSC's satisfaction (limited to the length of the road identified in the extant Construction Certificate approval). WSC supports the proposed conditions of approval relating to this intersection.

Overall, the Department is satisfied that the proposed operation of the Ruttleys Road intersection is safe and that the recommended conditions of approval would provide for its timely upgrade so that it would continue to operate with safety.

Chain Valley

Chain Valley currently transports coal via private haul road to VPPS and via public roads to other domestic users and to PWCS. Truck deliveries to VPPS use private roads. The utilisation of an underground conveyor would eliminate the need for truck transport from Chain Valley to VPPS, removing trucks from the private haul road.

Other traffic generated from Chain Valley consists of employee vehicle movements, waste collection and deliveries via Construction Road. There would be no increase in personnel employed at Chain Valley and truck deliveries of plant and equipment for the underground conveyor are expected to be within currently approved daily truck numbers. The proposed modifications would result in the loss of 9 full-time contractor jobs as there would be no need for the transport of coal via truck to the VPPS. The modifications would however, see a net increase in employment between the two mines resulting in positive socio-economic contributions to the local and regional community. The Department is satisfied that the modifications would not result in unacceptable traffic or transport impacts.

4.3 Groundwater

Additional groundwater inflow associated with the proposed first workings is predicted to be negligible based on the low permeability of the strata, minimal predicted levels of subsidence (5 to 20 mm), the relatively small additional area to be mined and the narrow width (5.4 m) of the roadways. The negligible increase in groundwater inflows would be managed under Chain Valley's existing licence under the *Water Act 1912*. Limited lateral drawdown is predicted to result in negligible impact on local groundwater users and groundwater dependent ecosystems. The Department is satisfied that no additional management or monitoring measures are required and that the existing conditions of the project approval and development consent are sufficient to control predicted negligible groundwater impacts that may occur as a result of the modification.

4.4 Other issues

Other potential impacts of the proposed modifications are discussed below in Table 1.

issue	Assessment	Consideration
Socio- economic	 Although 9 contract truck driver positions would be lost at Chain Valley, there would be a net gain in employment between the two mines with 40 full-time personnel employed during construction and 20 during normal operations. The net gain in employment would deliver positive socio-economic benefits to the local and regional community. 	No new conditions required.
Aboriginal Heritage	 Subsidence would not occur beneath nearby Aboriginal or non-indigenous heritage items. No surface disturbance or alterations to 	No new conditions required.
NSW Government		9

Table 1: Summary of Other Impacts of the Proposals

Consideration

	ourfage infrastructure are proposed	
Surface Water	 surface infrastructure are proposed. No change to existing surface water system proposed. Mine water and surface runoff is managed through a series of 13 interconnected sediment ponds. Water is discharged at a Licenced Discharge Point on Swindles Creek, a tributary of Lake Macquarie. Water inflows to the new underground linkage are not expected to be significant and would be managed under Chain Valley's existing water management system. 	 No new conditions required. The Chain Valley Water Management Plan is currently being reviewed to incorporate recent Pollution Reduction Plan requirements under the mine's EPL. The Department has previously agreed to an extension of time for the plan to be finalised by December 2014.
Biodiversity	 There is potential for three endangered marine species to occur above areas of predicted subsidence within Lake Macquarie: Loggerhead turtle; Green turtle; and Seagrass (<i>Posidonia australis</i>). The proposed workings would occur beneath an area of dry sclerophyll woodland and lake foreshore vegetation. The Chain Valley development consent (SSD 5465) allows the discharge of water from the final sediment pond through the Swamp Oak Floodplain Forest (an endangered ecological community under the <i>Threatened Species Conservation Act 1995</i>) before draining to Swindles Creek. This occurs subject to monitoring under an endorsed Biodiversity Management Plan. 	 Due to the low levels of subsidence predicted, impacts are not expected to affect endangered marine species, dry sclerophyll woodland or lake foreshore vegetation identified to potentially occur above the proposed workings. Existing Seagrass and Biodiversity Management Plans require ongoing monitoring and management of these issues. No changes to the discharge of water through the Swamp Oak Floodplain Forest EEC and monitoring under the existing Biodiversity Management Plan. A new monitoring location 'L1' will be included in an updated Seagrass Management Plan as requested by OEH. Ecological monitoring will also be required in the event that subsidence predictions are exceeded.
Visual	There would be no additional surface disturbance, new infrastructure or intensification of activities.	No new conditions required.
Noise	 The proposed modifications would only involve underground operations. No change to surface operations other than a reduction in road traffic. Noise emissions at Chain Valley would reduce through the reduction in use of 	No new conditions required.
Air Quality and Greenhouse Gas	 truck for coal transport to VPPS. The proposed modifications would only involve underground operations and would not increase plant and equipment types/numbers, coal movements or stockpiling. Dust and vehicle emissions from Chain Valley would be reduced due to the cessation of transport of coal via trucks to VPPS. 	No new conditions required.
Hazards	 The modifications would not increase the risk of bushfire hazard as there is no additional surface disturbance. Potential in-rush hazards would be managed in accordance with in-rush hazard management plans for both mines. Potential ventilation hazards would be managed in accordance with ventilation management plans for both mines. A detailed operational risk assessment would be undertaken prior to the construction of the underground linkage. 	No new conditions required.

	 Should Mannering and Chain Valley require physical separation, the proposed headings could be sealed through the installation of large barriers in the connection roadways. Hazards associated with mining activities would be managed in accordance with established risk management plans and procedures. 	
Rehabilitation	The modifications do not involve changes to existing surface infrastructure or disturbance	Contemporary rehabilitation objectives and conditions recommended by DRE
	areas.	have been included in Mannering's approval.

CONCLUSION 5.

The Department has assessed the modification applications in accordance with the relevant requirements of the EP&A Act. The proposed modifications would have minimal or negligible environmental impacts beyond those already approved and any potential impacts would be able to be controlled by existing and proposed conditions of consent or approval.

In fact, the proposed modifications would have positive effects of improved economic efficiency. reduced coal transport costs, reduced diesel fuel usage which is currently being used in coal trucks and resultant improvements to air quality and noise emissions. The proposed modifications would enable coal to be efficiently transported from Chain Valley to Mannering and on to VPPS for use in the production and supply of electricity for the State. This would reduce fuel costs for this power station and help contain power charges for the State, with resultant benefits for the wider community.

Although there would be the loss of 9 contract truck driver positions, there would be a net gain in employment through the creation of 40 contract construction positions and 20 full-time operational positions at Mannering. Consequently, the Department believes that the modifications are in the public interest and should be approved.

RECOMMENDATION 6.

It is RECOMMENDED that the Executive Director, Resource Assessments exercise the powers and functions delegated in the Minister for Planning's Instrument of Delegation, dated 10 November 2014, and:

- consider the findings and recommendations of this report;
- determine that the proposed modifications are within the scope of section 75W and section 96(2) • of the EP&A Act;
- approve the modification applications, subject to conditions, under section 75W and section 96(2) of the EP&A Act; and
- sign the attached notices of modification (Appendix D).

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ACTO 26/11/14

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APPENDIX A: ENVIRONMENTAL ASSESSMENTS

See the Department's website at www.majorprojects.planning.nsw.gov.au

APPENDIX B: SUBMISSIONS

See the Department's website at www.majorprojects.planning.nsw.gov.au

APPENDIX C: RESPONSE TO SUBMISSIONS

See the Department's website at www.majorprojects.planning.nsw.gov.au

APPENDIX D: NOTICES OF MODIFICATION

APPENDIX E: CONSOLIDATED CONSENT AND PROJECT APPROVAL