APPENDIX Q

Appendix Q - Social Impact Assessment

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Tahmoor South Project
Tahmoor Coal Pty Ltd
21-Dec-2018

Social Impact Assessment

Tahmoor South Project



Social Impact Assessment

Tahmoor South Project

Client: Tahmoor Coal Pty Ltd

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Certification

Submission of a Social Impact Assessment prepared:

- In accordance with relevant guidelines, including consideration of the *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (Department of Planning and Environment, September 2017).
- To inform the Environmental Impact Statement for the Tahmoor South Project, which has been prepared in accordance with Part 4 of the *Environmental Planning and Assessment Act 1979*.

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Qualifications: Jamie McMahon holds a Bachelor of Environmental Science (Hons I); Certified Environmental Practitioner – Impact Assessment Specialist (EIANZ). Jamie has over 17 years' experience in environmental and social impact assessment. His experience has comprised significant international and Australian experience covering a broad range of industries including renewable and non-renewable electrical generation and transmission, oil and gas, transport, urban development, water, defence and resources.

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Peer Reviewer: Mary Diab

Qualifications: Bachelor of Science (Physical Geography) (Hons 1); Master of Environmental Studies (University of New South Wales); Graduate Diploma, Social Science (International Development) (Royal Melbourne Institute of Technology); IAP2 Certified Practitioner (International Association for Public Participation).

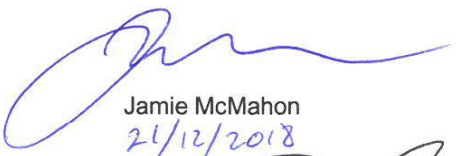
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Address: AECOM, Level 21, 420 George Street, Sydney NSW 2000

Declaration:

I certify this contains all available information that is relevant to the assessment of social impacts for the proposed development. To the best of my knowledge, the information contained in the Social Impact Assessment is neither false nor misleading.

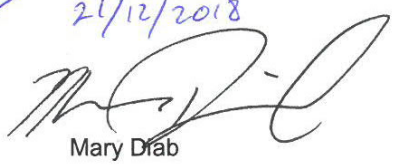
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Executive Summary

Tahmoor Coal Pty Ltd (Tahmoor Coal) owns and operates the Tahmoor Mine, an underground coal mine approximately 80 km south-west of Sydney in the Southern Coalfields of NSW.

This report documents the outcomes of a Social Impact Assessment (SIA) undertaken by AECOM on behalf of Tahmoor Coal as part of an Environmental Impact Statement (EIS) for the Tahmoor South Project (the proposed development).

Tahmoor Coal is seeking approval under Part 4 of the *Environmental Planning and Assessment Act 1979* for the proposed development. Secretary's Environmental Assessment Requirements (SEARs) in relation to SIA were issued for the proposed development on 20 June 2017

The objective of the SIA was to identify and assess the potential social impacts of the proposed development in order to inform the EIS and provide a social perspective, so as to balance the environmental and economic outcomes of the proposed development. The SIA has been prepared to address the SEARs and support the EIS prepared for the proposed development.

Methodology

The SIA was undertaken in accordance with the *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (Department of Planning and Environment (DPE), September 2017) including:

1. preparing a social baseline study;
2. predicting and analysing the extent and nature of the social impacts, both negative and positive;
3. evaluating the significance of the social impacts, and identifying residual negative social impacts;
4. developing mitigation measures for significant negative social impacts and enhancement measures for significant positive social impacts; and
5. developing a monitoring and management framework.

Study Area

The SIA considered the area of social influence of the proposed development (the Study Area), recognising that social impacts associated with the proposed development may occur over a broader area than the proposed development's footprint. The immediate locality of the proposed development is characterised by a mixture of village residential, rural-residential, market gardens, agricultural and conservation areas. Rural-residential lands in the area are characterised by a series of small towns and villages separated by a semi-rural and partially forested landscape. Higher residential dwelling densities are generally clustered in and around the town centres of Bargo, Tahmoor and Buxton, with smaller rural residential land uses characterising the villages of Yanderra, Pheasants Nest, Couridjah and Balmoral.

Community Identity and Profile

The community identity and profile of the Study Area was identified as:

- Being subject to population growth over the region as a whole, with a growth in population in larger townships and periods of declining population in smaller villages;
- Having a high proportion of family households, mostly residing in detached housing, reflecting the primarily rural-residential nature of the area;
- Having a varied level of socio-economic disadvantage. Wingecarribee and Wollondilly LGAs were ranked as having a low level of disadvantage, indicating that the region is not greatly disadvantaged as a whole. However, smaller towns/suburbs within the area recorded higher levels of disadvantage. Tahmoor was considered to have the lowest socio-economic index within the Study Area, being more disadvantaged than 70% of the State; and
- Being accessible to a number of diverse sport and recreational facilities in the Study Area which contributes to providing a sense of community and place.

The existing Tahmoor Mine has played an active role in the local community for more than 30 years. During this time the mine has maintained links to the local community through the support of local community events and sporting teams, contributions to community partnerships and initiatives, and by employing most of its workforce from within the local area.

Potential Impacts

The proposed development would result in beneficial employment outcomes. The proposed development would require an additional 50 to 175 employees, including operational positions augmented by the temporarily employed construction workforce. The overall workforce would peak at up to 565 employees during the transition period when longwall mining would continue at the existing Tahmoor North Mine and pre-mining activities would occur at the proposed development. Operational employment at the Tahmoor South Project would peak at 510 employees in 2020 before gradually reducing to an average of approximately 422 people. The additional workforce would be sourced from the local region as far as practical. The proposed development would extend the mine life compared to the current approval and would postpone mine closure to 2035. The eventual closure of the mine may have an adverse impact on employment in the region, which would be managed through the preparation of a Social Investment Plan.

Community identity and cohesion would not be affected by the proposed development. The proposed development would require limited new surface infrastructure and this infrastructure would not physically divide the existing community, nor would it create a physical barrier whereby community members are not able to interact with each other.

The proposed development is likely to continue to generate amenity impacts in line with those already experienced by the community, rather than to significantly exacerbate amenity impacts within the local area and region. There may be some minor impacts to the wider community with regards to construction of the proposed development; however, these would be short term and temporary in nature. There may also be some minor visual impacts from limited viewpoints, and operational noise, air quality, odour and traffic impacts. However, these impacts would be managed and minimised through the implementation of environmental and operational management and mitigation measures.

Management and Mitigation

The proposed development is anticipated to generate both beneficial and adverse social impacts. Tahmoor Coal would continue to have an active role in the local community and would continue to adopt existing strategies and implement current programs in the local area.

Conclusions

Without approval, completion of mining in the Tahmoor North mining area would result in closure of Tahmoor Mine in approximately 2022, prohibiting the extraction of a coal resource via existing infrastructure. Conversely, if approved, the proposed development would prolong the life of Tahmoor Mine and enable recovery of a greater proportion of the existing resource through the continued use of existing infrastructure. This would enable the continued servicing of existing supply contracts and ongoing employment of the existing 390 direct employees and an additional 50 to 175 employees at peak employment.

Glossary of Terms

Term	Definition
Aboriginal cultural heritage	The tangible (objects) and intangible (dreaming stories, songlines, and places) cultural practices and traditions associated with past and present day Aboriginal communities.
Aquifer	Geologic formation, group of formations, or part of a formation capable of transmitting and yielding quantities of water.
Assessment Background Level	The Assessment Background Level (ABL), as defined by the NSW Industrial Noise Policy 2000, is a measure of the background level for noise, representing discrete assessment periods (i.e. day, evening or night) for each day. It is determined by calculating the 10th percentile (lowest 10%) background noise level over a 90 minute period (LA90).
Blast	A controlled explosion which is used to loosen the substance being mined.
Bore	A cylindrical drill hole sunk into the ground from which water is pumped for use or monitoring.
Borehole	A hole produced in the ground by drilling for the investigation and assessment of soil and rock profiles.
Bulli seam	Shallowest coal horizon in the Illawarra Coal Measures in the Southern Coalfield. The Bulli coal seam is a primary source of coking coal, located in the Illawarra and Southern Coalfields of New South Wales.
Catchment	The area from which a surface watercourse or a groundwater system derives its water.
CEMP	Construction Environmental Management Plan. A site specific plan developed for the construction phase of a project to ensure that all contractors and sub-contractors comply with the environmental conditions of approval for the project and that environmental risks are properly managed.
Clearing	The removal of vegetation or other obstacles at or above ground level.
Coal handling and preparation plant (CHPP)	Treatment by screening to give coal of various sizes to meet a purchasers requirements and treatment by one or more processes to reduce the amount of waste (ash) present in the coal.
Conveyor	The means of transporting coal from the face and to the underground bin or surface. It consists of a belt being driven by a motor drum system over a structure roller assembly.
Cumulative impacts	Combination of individual effects of the same kind due to multiple actions from various sources over time.
dB(A)	Decibels using the A-weighted scale measured according to the frequencies perceptible to the human ear.
Decibel	A scale unit used in the comparison of powers and levels of sound energy. Used for measuring noise.
Downcast	Shaft or other mine opening down which fresh air from the surface passes.
Drainage	Natural or artificial means for the interception and removal of surface or subsurface water.
Drift	An inclined access from the surface to the coal seam or from coal seam to another coal seam. A drift often contains a conveyor belt or man-riding train.

Term	Definition
Ecosystem	As defined in the *Environment Protection and Biodiversity Conservation Act 1999*, an ecosystem is a 'dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.'
Emission	The discharge of a substance into the environment.
Environment	As defined within the *Environmental Protection & Assessment Act, 1979*, all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings.
EPL	Environment Protection Licence. EPLs are issued by EPA under the *Protection of the Environment Operations Act 1997*. EPLs with respect to scheduled development work or scheduled activities or non-scheduled activities may regulate all forms of pollution (including water pollution) resulting from that work or those activities. EPLs authorising or controlling an activity carried on at any premises may also regulate pollution resulting from any other activity carried on at the premises to which the licence applies.
Existing Tahmoor Approved Mining Area	Shown on **Figure 1-1** Encompasses all existing approved mining areas associated with the Tahmoor Mine, including the Surface Facilities Area.
Exploration	The work done to prove or establish the extent of the coal resource.
Face	The inbye end of the mine roadway, usually the working place for coal extraction.
Fan	Part of the ventilation system used to pass air through the mine workings. The 'main' fan is located on the surface but other booster fans may be located underground within the workings.
Fault	Break in the continuity of a coal seam or rock strata.
Gate	Roadway leading to a working place in longwall mining.
Goaf	The goaf is the part of a longwall mine from which the coal has been removed. After longwall mining is complete, typically, the roof collapses filling the void.
Groundwater	Water located within an aquifer, that is, held in the rocks and soil beneath the earth's surface.
Habitat	The place where a species, population or ecological community lives (whether permanently, periodically or occasionally).
Impact	Influence or effect exerted by a project or other activity on the natural, built and community environment.
Intake	Any passage taking fresh air into the workings.
Local road	A council controlled road which provides for local circulation and access.
Longwall	A system of coal mining, where the coal seam is extracted from on a broad front or long face.
Panel	The mining unit that has previously been extracted or is currently being extracted.
Preparation plant	A place where coal is sized, treated by one or more processes, including washing, to reduce the amount of waste (ash) present and prepared for market.
Product coal	Coal that has been processed within the processing plant to remove unwanted waste rock and prepared to customers specifications

Term	Definition
Proposed development	Extension of underground coal mining and associated activities at Tahmoor Mine within the Project Area. Referred to as The Tahmoor South Project, as described in Section 4 of this EIS.
Revegetation	Direct seeding or planting (generally with native species) within an area in order to re-establish vegetation that was previously removed from that area.
Riparian	Relating to the banks of a natural waterway.
Seam	Layer or bed of coal.
Sensitive receiver	A location where a person works or resides, including residential, hospitals, hotels, shopping centres, play grounds, recreational centres or similar.
Shaft	An opening, usually vertical, that connects the surface with the underground workings.
Subsidence	The vertical lowering, sinking or collapse of the ground surface.
Surface Facilities Area	Comprises surface land containing mining and non-mining infrastructure.
Surface water	Water flowing or held in streams, rivers and other wetlands in the landscape.
Upcast	Shaft or other mine opening through which air returns to the surface after ventilating the mine workings.
Waterway	Any flowing stream of water, whether natural or artificially regulated (not necessarily permanent).

Acronyms

Acronym	Term/ Definition
ABS	Australian Bureau of Statistics
AQIA	Air Quality Impact Assessment
ARTC	Australian Rail Track Corporation
CCL	Consolidated Coal Lease
CHPP	Coal Handling & Preparation Plant
CO	Carbon monoxide
CO_2	Carbon dioxide
CSI	Corporate Social Involvement
DP&E	Department of Planning and Environment
EIS	Environmental Impact Statement
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Act 1999* (Commonwealth)
EPL	Environment Protection Licence
IEO	Index of Education and Occupation
IER	Index of Economic Resources
IRSD	Index of Relative Socio-economic Disadvantage
IRSAD	Index of Relative Socio-economic Advantage and Disadvantage
LGA	Local Government Area
ML	Mining Lease
NOW	NSW Office of Water
PEA	Preliminary Environmental Assessment
pH	A measure of acidity or alkalinity of a solution. The potential of hydrogen.
PM	Particulate matter

Acronym	Term/ Definition
REA	Rejects emplacement area. Can also be called refuse emplacement area.
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements
SEIFA	Socio-Economic Indexes for Areas
SEPP	State Environmental Planning Policy
SIA	Social Impact Assessment
SRLUP	Strategic Regional Land Use Policy
SMP	Subsidence Management Plan
TARP	Trigger action response plan
TCCCC	Tahmoor Colliery Community Consultative Committee
VAC	Visual Absorption Capacity
WCMG	Waste Coal Mine Gas

1.0 Introduction

Tahmoor Coal Pty Ltd (Tahmoor Coal) owns and operates the Tahmoor Mine, an underground coal mine approximately 80 km south-west of Sydney in the Southern Coalfields of NSW (**Figure 1-1**). Tahmoor Coal produces up to three million tonnes per annum of Run-of Mine (ROM) coal from its existing operations at the Tahmoor Mine under its existing development consents, licences and conditions of relevant mining leases.

1.1 Tahmoor South Project

Tahmoor Coal is seeking approval for the Tahmoor South Project (the proposed development). This Project includes the extension of underground coal mining at Tahmoor Mine to the south of the existing Tahmoor Mine surface facilities area. The proposed development would be accessed via the existing Tahmoor Mine surface facilities, located between the towns of Tahmoor and Bargo.

The proposed development seeks to extend the life of underground mining at Tahmoor Mine until approximately 2035. The proposal would enable mining to be undertaken within the southern portion of Tahmoor Coal's existing lease areas, providing an additional 13 years of operational life.

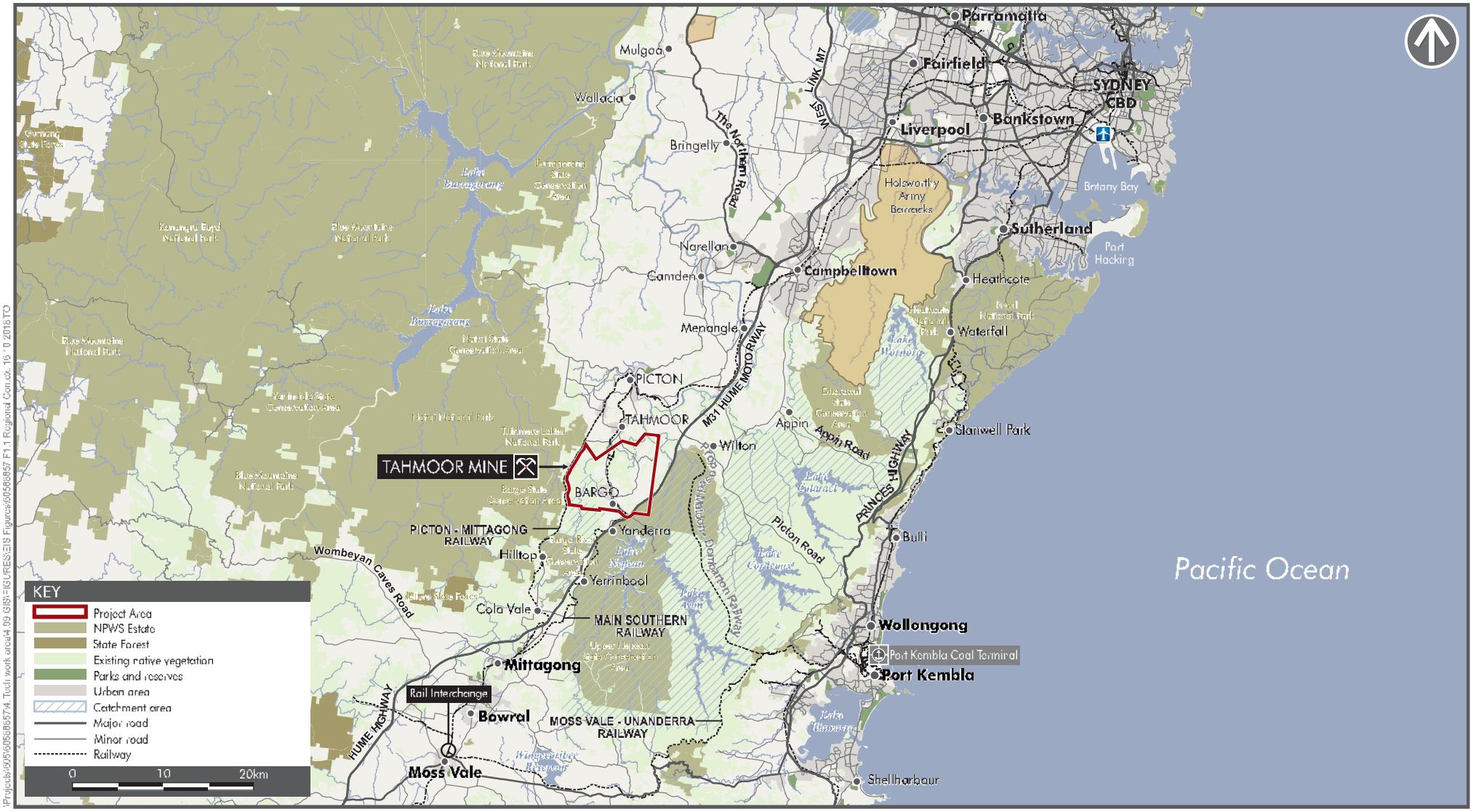
The proposed development would use established longwall mining methods, utilising existing ancillary infrastructure at the existing Tahmoor Mine surface facilities area. The Project Area and proposed mine plan is shown on **Figure 1-2** and covers the coal lease areas owned by Tahmoor Coal within the Wollondilly and Wingecarribee Local Government Areas (LGA), including the existing Tahmoor Approved Mining Area comprising the surface facilities area, historical workings and other existing mine infrastructure, and the area immediately to the south of the existing Tahmoor Mine Approved Mining Area. Within the Project Area, the proposed development (including all longwall mining and surface development) would be confined to the Wollondilly LGA.

This Social Impact Assessment (SIA) identifies and assesses the potential social impacts of the proposed development in order to inform the EIS and provide a social perspective, so as to balance the environmental and economic outcomes of the proposed development.

1.1.1 Proposed Development

The proposed development would use longwall mining to extract coal from the Bulli seam within the bounds of CCL 716 and CCL 747. Coal extraction of up to four million tonnes of ROM coal per annum is proposed as part of the development. Once the coal has been extracted and brought to the surface, it would be processed at Tahmoor Mine's existing Coal Handling and Preparation Plant (CHPP), and coal clearance facilities, and then transported via the existing rail infrastructure to Port Kembla. The components of the proposed development comprise:

- Mine development including pit bottom redevelopment, vent shaft construction, pre-gas drainage and service connection;
- Longwall mining in the Central Domain, beneath the suburbs of Tahmoor and Bargo;
- Upgrades to the existing surface facilities area including:
  - upgrades to the CHPP;
  - expansion of the existing rejects emplacement area (REA);
  - additional mobile plant for coal handling;
  - additions to the existing bathhouses and associated access ways; and
  - upgrades to offsite service infrastructure, including electrical supply;
- Rail transport of product coal to Port Kembla and to Port Waratah (from time to time);
- Mine closure and rehabilitation; and
- Environmental management.

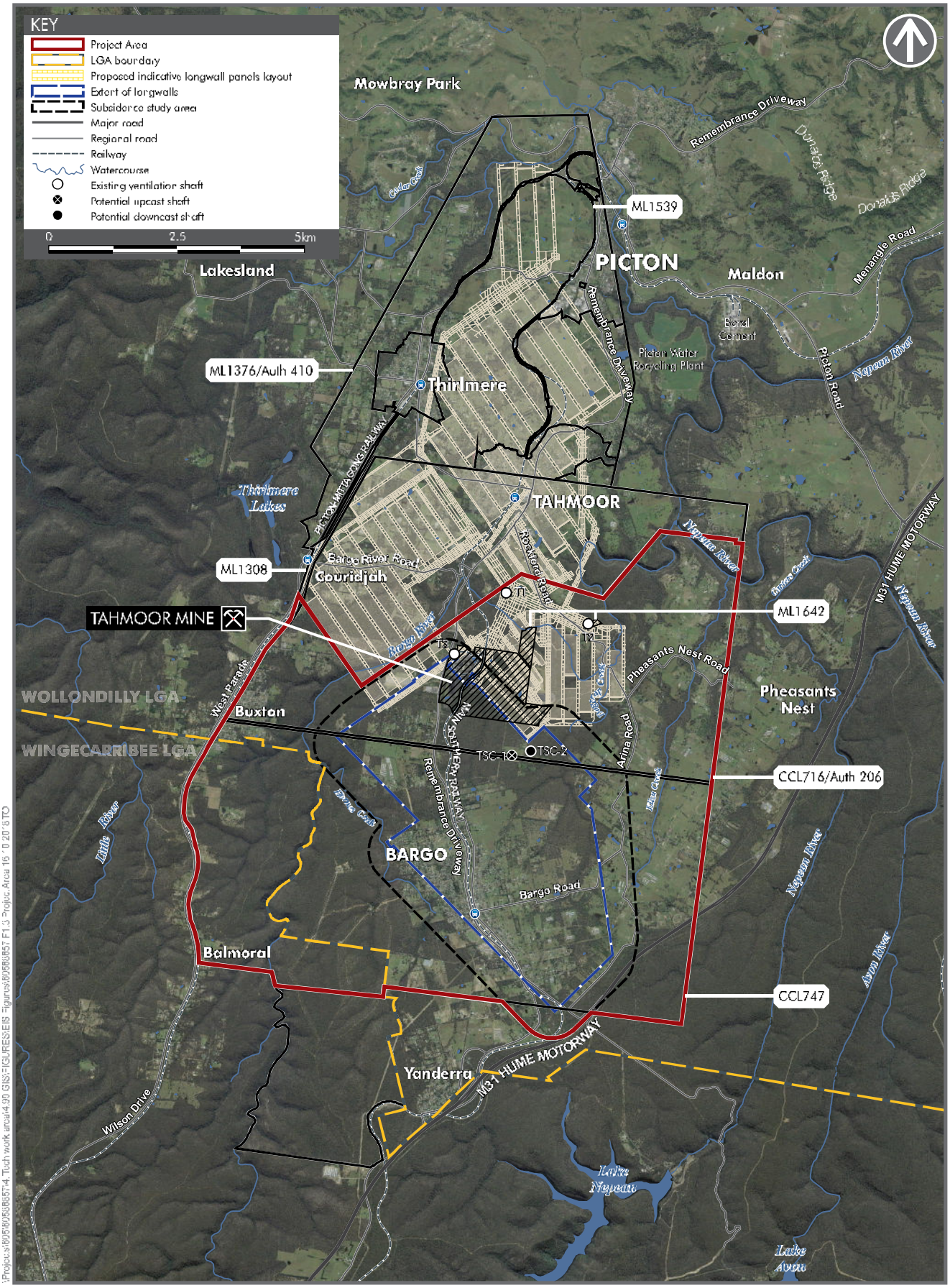


SIMEC MINING

LOCATION OF THE PROPOSED DEVELOPMENT

Tahmoor South Project Social Impact Assessment

FIGURE 1.1



SIMEC MINING

PROPOSED DEVELOPMENT WITHIN THE PROJECT AREA

Tahmoor South Project

Social Impact Assessment

FIGURE 1.2

1.2 Proposed Operations Relevant to the Social Impact Assessment

This section describes the components of the proposed development that are relevant to the assessment of social impacts. Further detail regarding the full project description is included in the Environmental Impact Statement (EIS) prepared for the proposed development.

1.2.1 Project Context

Tahmoor Mine's existing surface facilities area is located approximately 2.5 km south of the village of Tahmoor and approximately 4 km north of the village of Bargo (refer to **Figure 1-1**). The proposed development seeks to undertake longwall mining of the Bulli seam within the Central Domain, at a depth of between approximately 375 metres and 430 metres below ground level. Longwalls in the Central Domain would be orientated in a south-east/ north-west direction and would be located beneath the village of Bargo and surrounds. Although the longwall layout would continue to be refined during the detailed design phase of the proposed development, the maximum extent of longwall mining for the proposed development is depicted on **Figure 1-2**.

1.2.2 Mine Development

The proposed development would utilise the existing surface infrastructure at the Tahmoor Mine surface facilities area, with some upgrades proposed to facilitate the extension.

Mine Ventilation

The proposed development would use the existing mine's ventilation system, including the three existing ventilation shafts and would require the construction of two new ventilation shafts to provide a reliable and adequate supply of ventilation air to personnel in the mine. The proposed two additional ventilation shafts would include one upcast shaft (TSC1) and one downcast shaft (TSC2) located within the Tahmoor Mine Charlies Point Road property and on Crown land adjacent to this property (refer to **Figure 1-2**).

The ventilation system would deliver fresh air into the mine from the existing and proposed downcast vent shafts and would extract stale air from the mine via the existing and proposed upcast vent shafts. Similar to the existing operations, following pre-gas drainage works, the ventilation system would carry the return air out of the mine via the upcast mine vent shafts. The upcast shaft sites would also incorporate ventilation fans within fan buildings, as well as a fan outlet stack, approximately 30 metres high, to control potential odours discharged from the mine. The ventilation fans would operate for the life of the proposed development.

Gas Drainage Operations

Pre-gas Drainage

The purpose of pre-gas drainage is to reduce gas volumes in the coal seams prior to mining. Pre-gas drainage of the gas levels in the seams is required to facilitate the timely commencement and progression of mining as well as to reduce the demands on the mine ventilation system for the purpose of gas dilution during operations.

Underground pre-gas drainage works at Tahmoor Mine would drain gas prior to development of the mine roadways. Gas would be drawn from the coal seam by vacuum and piped to the existing Waste Coal Mine Gas (WCMG) Power Plant at the surface facilities area via the underground pipe network. Underground gas drainage of the coal seam would continue ahead of longwall development for the life of mining.

Gas from the coal seam would be drained using pumps, collected at the surface and piped to the existing WCMG Power Plant. Once the gas reaches the WCMG Power Plant, it would be tested to determine its composition. If the gas has sufficient methane, it would be used to generate electricity. If the gas composition does not meet the specification for electricity generation, it would be sent to the onsite gas flare plant where the methane would be flared. The existing WCMG Power Plant and gas flare plant would continue to be utilised and would not require expansion or augmentation for the proposed development.

Post-gas Drainage

Post-gas drainage would be required as strata relaxation caused by the retreating underground longwall face would liberate volumes of gas into the mine workings from the underlying Wongawilli seam and from overlying strata, which is released due to fracturing of the goaf. To capture this gas during the proposed development, cross-measure boreholes are proposed to be drilled from the mine workings into the strata above and below the Bulli Seam. These boreholes would be designed to collect the gas at its source or to intercept gas before it migrates into the mine workings. At the conclusion of mining from each panel, the panel would be sealed and gas drawn from the sealed areas as part of the post gas drainage operations.

The gas collected from the in-seam and cross-measure boreholes would flow via the underground pipe network to the WCMG Power Plant located at the surface facilities area.

Rejects Management

The existing REA would be expanded onto adjacent areas to accommodate the reject material associated with the proposed development. The expansion area is anticipated to cover up to an additional 43 hectares, providing further emplacement capacity of approximately 12 million tonnes for the coal rejects generated during the operation of the proposed development. Construction and maintenance of new internal haul roads would also be required to and around the REA to cater for the REA expansion.

Access

The proposed development would use the existing infrastructure at Tahmoor Mine for employee and material access. Access to the Central Domain would be via the existing Tahmoor Mine surface facilities area, the existing drift, and men and materials travel lift installed within the existing T3 downcast shaft. The T3 vertical men and material travel lift has a capacity for 70 persons and approximately 12 tonnes of materials.

The existing vehicular access point to Tahmoor Mine's surface facilities area would be retained for the proposed development. The existing entrance off Remembrance Driveway, approximately three kilometres south of Tahmoor and five kilometres north of Bargo, would continue to provide access for mine personnel, contractors and materials.

The existing passing lane northbound and deceleration turning lane southbound on Remembrance Driveway at the turnoff to Tahmoor Mine allow vehicles to safely enter Tahmoor Mine without impeding other traffic on Remembrance Driveway.

The existing intersection at the entry to Tahmoor Mine from Remembrance Driveway would be upgraded as part of the proposed development to provide a dedicated right hand turning bay for vehicles entering the surface facilities area from the south and extended acceleration and deceleration lanes for vehicle entering and exiting from the north and south. The intersection upgrade would accommodate additional traffic movements during the f pre-mining activities for the proposed development and the finalisation of longwall mining in Tahmoor North, both of which would operate concurrently.

An existing secondary access point to the Tahmoor Mine surface facilities area from Remembrance Driveway would continue to be utilised for the operational life of the proposed development.

Coal Logistics

ARTC currently allocate four train paths per day between Tahmoor Mine and Port Kembla. This existing allocation is equivalent to the transport of approximately four million tonnes of ROM coal per annum. A rail transport study has been undertaken for the proposed development, which indicates that the existing rail capacity would be sufficient to cater for the proposed transport of product coal to Port Kembla for the life of the proposed development, and no increase in rail capacity between Tahmoor Mine and Port Kembla would be required. As such, existing rail infrastructure and the number of allowable train movements would remain unchanged.

Workforce Facilities

The existing site amenities at the Tahmoor Mine surface facilities area would be utilised for the proposed development. Additional site amenities, including bath houses and onsite car parks would be required to accommodate the increased workforce during the transition period from mining operations at Tahmoor North and the Tahmoor South Project's development works. Additional bathhouses would be constructed adjacent to the existing amenities. A new car parking area would be constructed to relieve the pressure on existing facilities and to provide additional capacity for the proposed development. The new car parking area would be constructed to the south east of the existing main Remembrance Driveway entrance to Tahmoor Mine and would accommodate 150 vehicles providing a total parking capacity at the mine of 428 spaces.

Tahmoor South Mine Closure

Tahmoor South will continue to utilise existing surface facilities of Tahmoor North (with relevant upgrades, as described) once Tahmoor North ceases operations. Rehabilitation activities at the Tahmoor South Project at the end of mine life would include all surface facilities previously used by Tahmoor North that have continued to be used for Tahmoor South with relevant upgrades and new surface infrastructure established for Tahmoor South (such as new vent shafts).

Rehabilitation of the proposed development would be undertaken using a staged approach comprising:

- Progressive rehabilitation of the REA; and
- Mine closure and rehabilitation of the surface facilities area and ventilation shafts.

There are a number of post mining land use options that may be applicable to the proposed development including passive recreation or as native bushland. Currently, it is considered that the likely final land use option for most of the surface areas would be a return to native bushland. However, final land use options would be confirmed in a detailed closure planning process (no later than five years prior to permanent mine closure), which involves undertaking a final land use analysis. A Conceptual Mine Closure Plan SLR (2017) has been prepared for the proposed development and is included as part of the EIS, identifying closure strategies for the surface facilities area with regard to the proposed final land use and considering key principles for mine closure.

Annual monitoring would be undertaken to determine the success of revegetation and to inform ongoing management of the rehabilitated areas.

1.2.3 Project Phasing

To enable the continuation of mining at Tahmoor South to occur sequentially with the current mining operations in Tahmoor North, which are scheduled for completion in approximately 2022, project development works for Tahmoor South would need to commence in approximately 2019. A number of pre-mining activities are required to be completed prior to this, to enable the commencement of coal production from the Central Domain. These pre-mining activities include:

- gas drainage;
- redevelopment of the pit bottom;
- longwall development including establishment of gate roads;
- installation of electrical, water and gas management networks; and
- the purchase and installation of equipment.

The Tahmoor South Project's pre-mining activities are anticipated to take approximately three years to complete before longwall mining can commence in the Central domain. These pre-mining activities are proposed to begin in approximately 2019 to maintain business continuity.

Longwall mining is proposed to commence in the Central Domain once mining is completed at Tahmoor North, anticipated by 2022, depending upon geological and mining conditions.

Mining for the proposed development would be complete by approximately 2035, with surface works, rehabilitation and mine closure occurring after this time. **Table 1-1** provides an outline of the indicative schedule for mining.

Table 1-1 Indicative mining schedule

Activity	Approximate date
Tahmoor South pre-mining activities	Commence approximately 2019
Central Domain development (Tahmoor South)	Commence approximately 2019
Mining of Tahmoor North complete	Approximately 2022
Central Domain longwall mining (Tahmoor South)	Approximately 2022–2035

1.2.4 Workforce

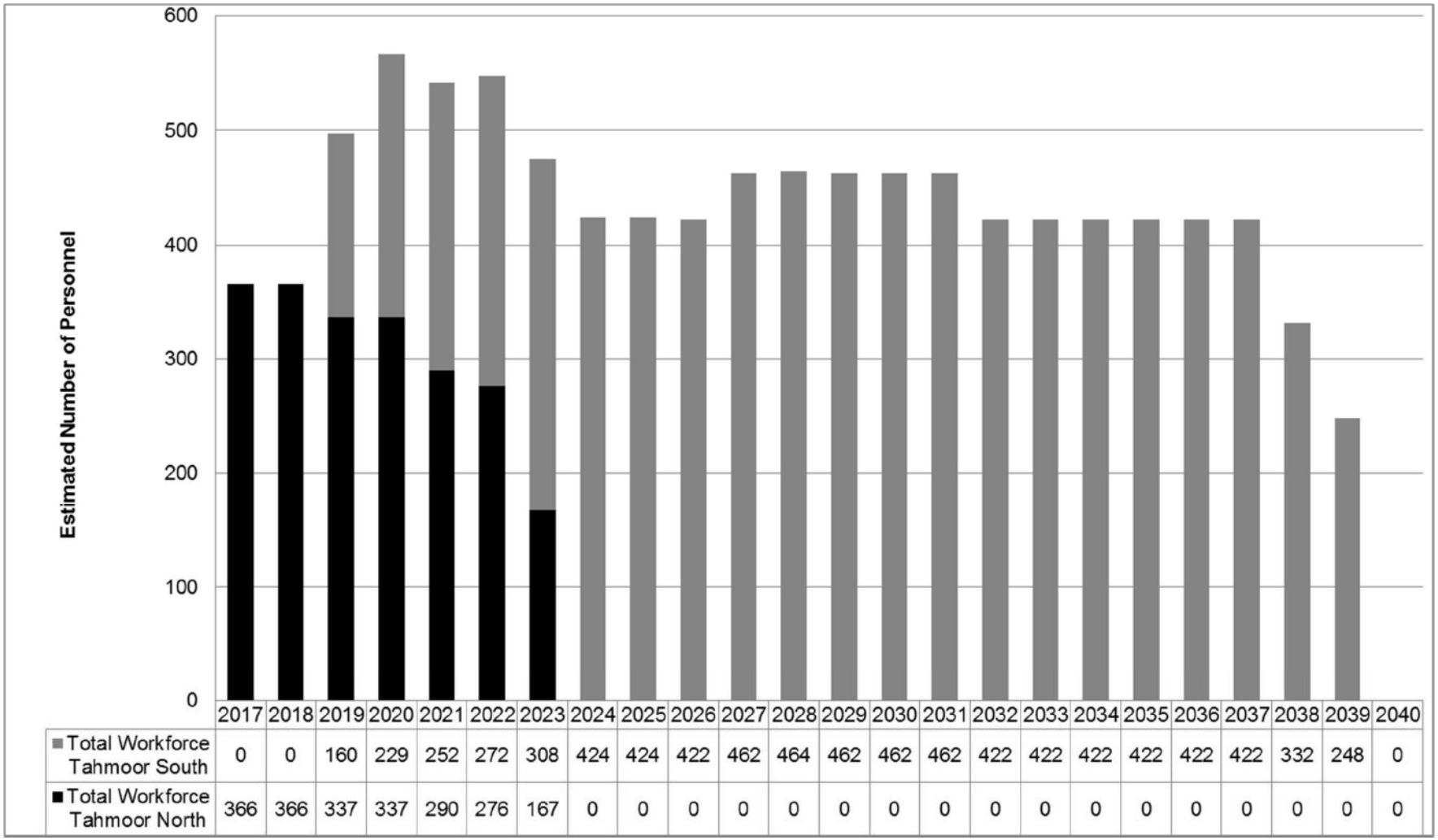
Personnel

The proposed development would involve ongoing employment of the existing workforce at Tahmoor Mine, which totals approximately 390 permanent and contract employees. In addition, there would be a period of concurrent operations, involving pre-mining activities for the proposed development and ongoing longwall mining in Tahmoor North, during which time approximately 50 to 175 additional employees (at peak employment) would be required to augment the current workforce.

Table 1-2 shows the anticipated transition of personnel between the existing Tahmoor North operations and the proposed Tahmoor South Project, and shows the approximate number of additional personnel required to facilitate the extension of mining. At the peak of the transition period, there would be approximately 565 permanent and contract employees at the mine. Operational employment would peak at Tahmoor South in 2020 (approximately 510 personnel). The average number of permanent and contract employees at Tahmoor South for the duration of the mining operations would be 422 employees (post-2020).

Hours of Operation

The proposed development, including construction activities, are proposed to be undertaken 24 hours a day, seven days per week, consistent with the working hours of the current operations at Tahmoor Mine. During vent shaft construction, the shaft drill rig would operate continuously on a 24 hour basis, seven days per week. However, the majority of construction activities would generally be undertaken during daytime hours. Construction of the vent shafts, upgrades and augmentation of the existing infrastructure, services and amenities at the surface facilities area, and upgrades to offsite infrastructure and public roadways outside the surface facilities area, would be generally undertaken between Monday and Friday from 7am to 6pm and Saturday from 8am to 1pm.



	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Total Workforce Tahmoor South	0	0	160	229	252	272	308	424	424	422	462	464	462	462	462	422	422	422	422	422	422	332	248	0
Total Workforce Tahmoor North	366	366	337	337	290	276	167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1-2 Approximate number of personnel required for the existing Tahmoor North operations and proposed Tahmoor South Project

1.3 Purpose of the Report

1.1.2 Secretary's Environmental Assessment Requirements

The Tahmoor South Project EIS has been prepared in accordance with Part 4, Division 4.15of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This section requires that the potential environmental effects of a proposal (on both the natural and built environments, including social and economic impacts) are properly assessed and considered in the decision-making process.

In preparing this Social Impact Assessment, the Secretary's Environmental Assessment Requirements (SEARs) issued for the Tahmoor South Project (SSD 17_8445) on 20 June 2017 have been addressed as required by Section 4.12(8) of the EP&A Act. Issues raised in the SEARs for consideration in the SIA, and the relevant section of this report which addresses the SEARs, are outlined in **Table 1-3**. Additional SIA requirements identified in DPE's letter of 13 July 2018 are also outlined in **Table 1-3**. with details of where these matters are addressed.

Table 1-3 DPE requirements for the Social Impact Assessment

Requirement		Section Addressed
SEARs		
Social & Economic including:	A detailed assessment of the likely social impacts of the development on the local and regional community in accordance with the *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (2017); and	Section 4.0 Potential Impacts
	An assessment of the likely economic impacts of the development, paying particular attention to: • The significance of the resource • The costs and benefits of the development, identifying if it would result in a net benefit for NSW, including consideration of fluctuation in commodity markets and exchange rates; and • The demand for the provision of local infrastructure and services.	Section 4.0 Potential Impacts Also refer to the separate economic assessment, prepared for the proposed development, *Cost Benefit Analysis and Economic Impact Analysis of the Tahmoor South Project* (Cadence Economics, 2017).

Requirement		Section Addressed
Additional SIA requirements DPE letter of 13 July 2018		**Section Addressed**
Section of SIA Guideline: Appendix D, Q1, SIA Principles	• The SIA should ensure the SIA principles in the guideline are explicitly addressed, particularly with reference to an inclusive approach, distributive equity of identified impacts and benefits, action-oriented outcomes, a life-cycle approach, a material and proportionate focus, and integrated assessment, including evidence and information from other projects in the area which could impact on the identified stakeholders. • The social scientist responsible for preparing the SIA should refer to the Guideline Appendix D - Review Questions for detailed information about the expected standards and content of the SIA in the EIS.	• Section **2.2.3** – SIA Guideline Principles • **Section 4.9** Cumulative impacts • **Appendix C** – outlines compliance of this SIA report with the review questions in Appendix D of the SIA Guideline
Section of SIA Guideline: Appendix D, Q2: Authorship requirements	• The SIA should specify the names, qualifications, and experience of those involved in preparing the report, and should be prepared in accordance with the provisions in Box 4 of the SIA guideline, p. 24.	• Certification Section
Section of SIA Guideline: Appendix D, QS-11: Area of social influence	• The SIA should include a more detailed social baseline, properly describing the area of social influence in terms of its social context as set out in Sections 3. 1 and C1 of the guideline. • The social baseline in the SIA should be informed by community engagement findings, and provide a clear understanding of the key values and social issues expressed by a range of stakeholder groups.	Section 0 - Baseline Study Section 2.6 Consultation and engagement and Section 3.3 Tahmoor Mine

Requirement		Section Addressed
Section of SIA Guideline: Identifying social impacts	The SIA will need to address the shortcomings described above through adherence to the provisions in the guideline (Sections 1, 2, 4, Appendix C and Review Questions in Appendix D). Key focus areas include: • The social baseline in the SIA for the EIS should describe the social context in more detail so that potentially affected people are identified; and the project's area of social influence is informed by the nature and extent of potential impacts and benefits as experienced by, or expected to be experienced by, these stakeholder groups. • Social impacts should be considered from the perspectives of impacted stakeholders (p. 5 of the guideline) when identifying material impacts and assigning the proportionate level of assessment. The SIA should draw on a wider range of data sources. Community feedback, professional knowledge of published research on the social impacts of mining and information on impacts from other similar projects should inform judgements about the social impacts to be included in the SIA. These sources should also be used to evaluate the veracity or significance of community feedback and SIA claims for project benefits. The SIA should detail how social science methods have been used in its preparation, including the rationale, assumptions and evidence for the selection of social impacts and limitations of data and conclusions drawn.	**Section 0** - Baseline Study and **Section 3.1** Area of Social Influence **Section 2.2.1 –** SIA Scoping **Section 2.6** Consultation and engagement **Section 4.0** Impact Assessment **Section 2.5** – Social Baseline Data, **Section 2.6** Consultation and engagement **Section 2.0** methodology and **Section 4.0** Impact Assessment

1.3.1 Social Impact Assessment Objectives

The objective of the SIA is to identify and assess the extent and nature of potential social impacts of the proposed development. The SIA informs the EIS by providing a social perspective, so as to balance the environmental and economic outcomes of the proposed development.

To achieve this objective the SIA applies a material and proportionate focus to evaluate the significance of potential social impacts associated with the project, and provides an appropriate and justified response. This response includes proportionate and action-oriented arrangements to avoid, reduce, mitigate or offset impacts, as well as to manage any residual social impacts over the life of the project.

This SIA provides an understanding of the community context within which the proposed development would be undertaken, considering community perceptions, while recognising the diversity of stakeholder interests and values. These values are informed by both local strategic documentation and feedback from the community, including the TCCCC.

The importance of social equity is also recognised, both at a temporal scale (intra-generational versus intergenerational), as well as at a spatial scale in the local area. For the purposes of assessing the latter, this SIA considers potential impacts on a regional scale, balanced by the experiences and perceptions of residents and landholders within the local community. In doing so the assessment adopts an inclusive approach that addresses the full life-cycle of the project.

This SIA will assist in facilitating further community engagement and information sharing, by providing an inclusive and transparent identification and assessment of the potential social impacts of the proposed development across its lifecycle. Ongoing community consultation, as part of Tahmoor Coal's existing community engagement program for the proposed development, will allow further insight into community perceptions and opinions, through the use of surveys undertaken at Project information days.

1.4 Report Structure

This report is structured as follows:

Section 1.0 Introduction – outlines the proposed development and presents the purpose of the report

Section 2.0 Methodology – describes the methodology employed for the Social Impact Assessment

Section 3.0 Baseline study – describes the context of the proposed development's area of social influence and presents a profile of the local community.

Section 4.0 Potential impacts – describes the potential impacts to the community resulting from the proposed Project.

Section 5.0 Mitigation and management – provides a summary of mitigation, management and monitoring responsibilities in relation to social impacts identified for the proposed development.

Section 6.0 Conclusion

Appendix A Social baseline data including statistical data from the Australian Bureau of Statistics (ABS)

Appendix B Tahmoor South Project SIA Scoping Report

Appendix C Peer review of the SIA Guideline review questions

2.0 Methodology

The methodology used to assess potential social impacts of the proposed development is discussed in the following section, with reference to the relevant guidelines and legislative policy requirements. An overview of data sources used to inform the assessment is also provided.

2.1 Legislation, Policy and Guidelines

2.1.1 Legislative Requirements

The assessment of social impacts is intrinsic to the assessment of broader environmental impacts under both Commonwealth and NSW State environmental planning legislation, whereby 'environment' is defined to include the social environment.

The statutory definition of the environment at both the Commonwealth and State level is provided in the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the EP&A Act 1979 respectively. Section 528 of the EPBC Act 1999 defines the environment as including:

"(a) ecosystems and their constituent parts, including people and communities; and

(b) natural and physical resources; and

(c) the qualities and characteristics of locations, places and areas; and

(d) heritage values of places; and

(e) the social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d)."

Similarly, Part 1 Section 1.4 of the NSW EP&A Act defines the environment as "*all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings*." In addition, the *Environmental Planning and Assessment Regulation 2000,* clause 228, requires the consideration of environmental issues that comprise both direct and indirect social impacts. These issues, specified under clause 228, include:

"(a) any environmental impact on a community,

(b) any transformation of a locality,

(c) any environmental impact on the ecosystems of the locality,

(d) any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality,

(e) any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations,

(f) any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974),

(g) any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air,

(h) any long-term effects on the environment,

(i) any degradation of the quality of the environment,

(j) any risk to the safety of the environment,

(k) any reduction in the range of beneficial uses of the environment,

(l) any pollution of the environment,

(m) any environmental problems associated with the disposal of waste,

(n) any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply,

(o) any cumulative environmental effect with other existing or likely future activities,

(p) any impact on coastal processes and coastal hazards, including those under projected climate change conditions."

Direct and indirect social impacts of the proposed development, including those relating to amenity and the natural, aesthetic value of the environment, are considered in **Section 4.0** of this SIA.

2.1.2 Relevant Guidelines

Social Impact Assessment Guideline for State Significant Mining, Petroleum Production and Extractive Industry Development 2017

The *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (SIA Guideline) was prepared by the NSW Department of Planning and Environment (DPE) to provide a consistent and rigorous framework and methodology for social impact assessment for state significant resource projects. The SIA Guideline provides greater clarity around how to identify, assess and respond to the social impacts of state significant resource projects as part of the overall environmental impact assessment. It promotes better development outcomes and ensures that potential social impacts of approved projects are managed in a transparent and accountable way over the project life cycle.

The SIA Guideline provides four core objectives to be met when preparing the SIA component of an EIS:

1. The extent and nature of potential social impacts are predicted and analysed using accepted social science methods against existing baseline conditions
2. The SIA component of the EIS effectively draws attention to, and focuses effort on, the potential social impacts that are assessed as being significant
3. Potential social impacts, particularly those evaluated as significant, have an appropriate, justified response, and residual social impacts are identified and explained
4. Appropriate arrangements are proposed to monitor and manage mitigation and enhancement measures and residual social impacts over the life of the project, including unforeseen issues.

The SIA Guideline applies to applications for development consent for State significant resource projects where the SEARs are issued after the date of publication of the guideline in September 2017. The SIA Guideline includes the following transitional arrangements for State significant resource projects for which SEARs have already been issued but are not expecting to be lodge an EIS until six months or more following publication of the SIA guideline (i.e. after March 2018):

> *The Department, in consultation with the applicant, will re-issue the Secretary's Environmental Assessment Requirements (SEARs) to require the social impact assessment component of the environmental impact statement to be prepared in accordance with this guideline*.

This situation applies to the Tahmoor South project for which SEARs were originally issued on 9 June 2017 prior to the publication of the SIA Guideline.

In accordance with the transitional arrangements of the SIA Guidelines, supplementary SEARs were issued for the Tahmoor South Project by DPE on 20 June 2018

This SIA has been prepared to meet the objectives and requirements of both the SIA Guideline and the supplementary SEARs.

Other Guidelines

Other best practice guidelines relevant to the assessment of social impacts, which were also considered as part of the SIA are identified below:

- *Techniques for Effective Social Impact Assessment: A Practical Guide (Office of Social Policy, NSW Government Social Policy Directorate, 1995)* - This document provides guidance on social impact assessment for a broad range of purposes, including the assessment of public and private sector policies and programs, as well as development proposals. The guideline document presents a number or techniques or methodologies for the assessment of social impacts, and provides a comparison of the ease of use or suitability of these methods, in order to assist in the development of a social impact assessment approach.
- *International Principles for Social Impact Assessment* (International Association for Impact Assessment (IAIA), 2003) – The IAIA document provides a set of principles to guide the assessment of social impacts as part of broader environmental impact assessment. The principles describe eight key social indicators against which impacts, in the form of change to the social environment, can be assessed. These include people's way of life, culture, community, environment, health and wellbeing, personal property and rights, and health and wellbeing. These principles are consistent with the factors listed in Section 1.1 of the SIA Guideline, and are further outlined in **Section 2.2** of this report.

2.2 SIA Guideline Methodology

The SIA Guideline defines social impacts as changes that can occur as a result of:

- **way of life**, including:
  - how people live, for example, how they get around, access to adequate housing
  - how people work, for example, access to adequate employment, working conditions and/or practices
  - how people play, for example, access to recreation activities, and
  - how people interact with one another on a daily basis
- **community**, including its composition, cohesion, character, how it functions and sense of place
- **access to and use of infrastructure, services and facilities**, whether provided by local, state, or federal governments, or by for-profit or not-for-profit organisations or volunteer groups
- **culture**, including shared beliefs, customs, values and stories, and connections to land, places, and buildings (including Aboriginal culture and connection to country)
- **health and wellbeing**, including physical and mental health
- **surroundings**, including access to and use of ecosystem services, public safety and security, access to and use of the natural and built environment, and its aesthetic value and/or amenity
- **personal and property rights**, including whether people's economic livelihoods are affected, and whether they experience personal disadvantage or have their civil liberties affected
- **decision-making systems**, particularly the extent to which people can have a say in decisions that affect their lives, and have access to grievance and remedy mechanisms, and
- **fears and aspirations** related to one or a combination of the above, or about the future of their community.

The SIA Guideline identifies stages of social impact assessment that are tied into the overall environmental impact assessment for State significant resources projects (**Figure 2-1)**.

2.2.1 SIA Scoping

At the commencement of the EIS process a scoping report is prepared in order to seek SEARs. For resources and mining projects the SIA Guideline outlines specific requirements of the scoping report as far as it discusses social impacts. The SIA Guideline requires the scoping report to identify those elements of the natural or human environment are expected to be affected by activities associated with the proposed development (whether positively or negatively), how those impacts should be assessed and to what level of detail. A scoping assessment tool is provided to identify issues, characterise the likely level of impact and guide the level of assessment and consultation required.

This scoping exercise was undertaken for the proposed development in June 2018, and has guided the scope and level of this assessment, including the degree of baseline investigation, the nature and breadth of impacts assessed and the type and degree of community and stakeholder engagement undertaken. The SIA Scoping Report identified potential social impacts arising from the proposed development in relation to amenity, access, the built environment, community, economics, heritage and the natural environment. The SIA Scoping Report is attached in **Appendix B**.

Based on the results and recommended level of assessment in the SIA Scoping Report, a specialist stand-alone SIA (this report) has been prepared for the proposed development. Where social issues have been addressed in separate specialist technical assessments or other sections of the EIS, this SIA presents further analysis of the issue from a social impact perspective. This analysis is based on a review of the specialist technical assessment results and conclusions, supplemented where required by baseline social data and other relevant social information sources. Where social issues have not been addressed by a specialist technical assessment or section of the EIS, this report provides specific assessment of the social impact based on relevant evidence and research, including stakeholder and community engagement feedback.

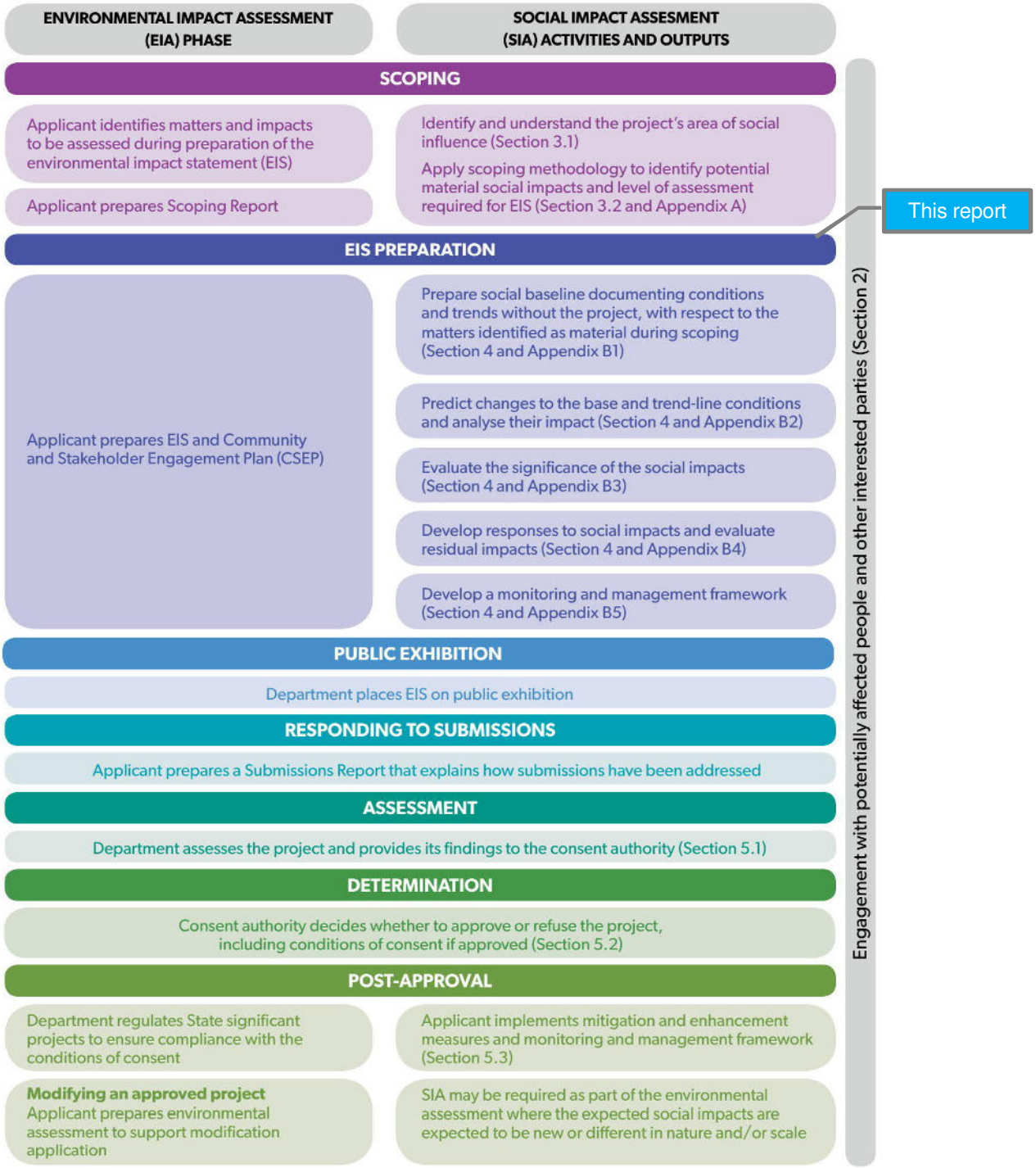


Figure 2-1 Stages of assessment in SIA Guideline (SIA Guideline, DPE, 2017)

2.2.2 SIA Preparation

During the EIS preparation stage, the SIA Guideline requires five key social impact assessment steps to be complied with:

1. Preparing a social baseline study
2. Predicting and analysing the extent and nature of the social impacts, both negative and positive
3. Evaluating the significance of the social impacts, and identifying residual negative social impacts
4. Developing mitigation measures for significant negative social impacts and enhancement measures for significant positive social impacts, and
5. Developing a monitoring and management framework.

The methodology for the SIA has followed the assessment steps of the SIA Guideline (EIS preparation stage) as identified below.

Step1 - preparing a social baseline study, which has involved:

- Identifying the area of social influence within which the proposed development may result in potential social impacts
- Identifying the social indicators, against which social impacts will be assessed and monitored
- Undertaking a desktop review of social indicators and other relevant data in order to create a baseline profile of the community
- Undertaking community and stakeholder engagement to seek direct feedback on community views, concerns and social impacts, and
- Considering the overall sensitivity of different stakeholders and how they are likely to respond (based on knowledge of the community profile, their values, fears and aspirations, previous projects etc.)

Step 2 - predicting and analysing the extent and nature of potential social impacts, which has involved:

- Identifying and describing project components or activities that may result in potential social impacts (against baseline conditions), both positive and negative;
- Liaising with other technical specialists to identify any potential social implications of, for example, impacts from subsidence, traffic, noise, air quality, and landscape and visual amenity; and
- Taking into consideration factors such as the spatial extent, duration, severity, and sensitivity of receptors in characterising potential social impacts.
- **Step 3** - evaluating the significance of potential social impacts without mitigation and with mitigation (to determine residual impacts) based on likelihood and consequence ratings, as per the social risk matrix approach in the SIA Guideline. This includes consideration of potential cumulative social impacts and the timing of impacts.

Steps 4 and 5 - Recommending measures for the avoidance, reduction, mitigation, management and/ or monitoring of potential social impacts and any residual impacts.

2.2.3 SIA Guideline Principles

Section 1.3 of the SIA Guideline identifies 12 core principles to guide the assessment of social impacts. The principals are identified in **Table 2-1** below and reference is provided to where these matters have been considered as part of this SIA.

Table 2-1 SIA Principles (SIA Guideline, DPE 2017)

Principles	Description	Consideration in SIA
Action-oriented	Delivers outcomes that are practical, achievable and effective.	**Section 5.0** of this SIA identifies the mitigation and management measures proposed for the Tahmoor South Project. The measures have been developed to be action-oriented and are based on existing experience of mining conditions, understanding of local conditions and awareness of community issues based on over 30 years of mining at Tahmoor North. The effectiveness of previous mitigation measures within the environment and within the local community have been used to inform and better target mitigation actions (e.g. in relation to subsidence and noise amenity management). Furthermore, mitigation measures have been developed by technical specialists following detailed assessment, consultation between specialists and consideration of the recommendations of the Southern Coalfield Inquiry to ensure that the measures are scientifically robust, consistent with current practices and achievable.
Adaptive	Establishes systems to actively respond to new or different circumstances and information and support continuous improvement.	The mitigation measures developed for the project (see **Section 5.0**) have been based on existing experience in the southern coalfields and Tahmoor and Bargo in particular (of what works and what does not) and is the result of continuous improvements to processes. These include programs to reduce operational noise from existing surface facilities and subsidence monitoring, investigations and remediation of damage. Furthermore, the mitigation measures specifically incorporate adaptive management including real-time noise management for surface facility operations and Trigger-Action-Response Programs to manage water resources. The environmental management framework at Tahmoor South would be supported through the continuation of the community consultative program and an extensive program of monitoring subsidence, ground water, surface water, noise and air quality to identify issues and provide for rapid and effective response.

Principles	Description	Consideration in SIA
Distributive equity	Considers how social impacts are distributed within the current generation (particularly across vulnerable and under-represented groups) and between current and future generations.	Distributive equity has underpinned the methodology for assessing potential impacts associated with the proposed development. This includes assessment across a conservative timeline to consider future impacts (e.g. modelling of groundwater recovery >450 years post mine closure), assessment of a conservative study area to ensure that the geographic distribution of impacts are identified, identification of risk management zones so that impacts to significant environmental features (e.g. significant watercourses) can be avoided and preserved for future generations, and appropriate mine closure and final land use planning to ensure the development site can continue to be used by future generations. Furthermore, detailed consultation and engagement activities have been carried out to reach out to as many affected stakeholders as possible including specific community members, Aboriginal heritage stakeholders and community groups (refer **Section 2.6**).
Impartial	Is undertaken in a fair, unbiased manner and follows relevant ethical standards.	Impact assessment (both negative and positive) as part of the SIA has been carried out in an impartial manner in accordance with the SIA Guideline as provided in **Section 4.0**. This SIA has been prepared by experienced and accredited EIA and SIA practitioners drawing upon community feedback and sentiment and based upon data with no bias for or against the project. The methodology for the assessment of impacts transparently outlines the constituent components of each decision (likelihood and consequence) and provides a standardised method for arriving at significance.
Inclusive	Seeks to hear, understand and respect the perspectives of the full diversity of potentially affected groups of people. It is also informed by respectful, meaningful and effective engagement that is tailored to suit the needs of those being engaged (for example, culturally sensitive, accessible).	Consultation activities undertaken for the proposed development to engage with and reach a wide range of stakeholder groups are identified in **Section 2.6** and the feedback received has been considered in the development of the proposal in **Section 3.3** and assessment of social risks in **Section 4.0**.

Principles	Description	Consideration in SIA
Integrated	Uses and references relevant information and analysis from other assessments to avoid duplication and double counting of impacts in the EIS. It also supports effective integration of social, economic and environmental considerations in decision-making.	The SIA has referenced the detailed technical assessments prepared for other key issues as part of the EIS to identify and assess social impacts. This includes consideration of social and economic benefits of the proposal as outlined in **Section 4.0**.
Life cycle focus	Seeks to understand potential impacts (including cumulative impacts) at all project stages, from pre-construction to post closure.	Social risks associated with all stages of the proposal from construction to operation to post-mining have been considered (as relevant) in **Section 4.0**. This includes consideration of cumulative impacts and identification of mitigation and management measures with respect to stage of development (**Section 5.0**).
Material	Identifies which potential social impacts matter the most, and/or pose the greatest risk to those expected to be affected.	The significance of impacts based on a risk matrix approach (likelihood vs consequence) are identified in **Section 4.10** including identification of key residual risks (following the implementation of mitigation measures).
Precautionary	If there is a threat of serious or irreversible damage to the environment, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental (including social) degradation.	**Section 5.0** of this SIA identifies the mitigation and management measures proposed for the Tahmoor South Project. The measures have been developed to be precautionary based on rigorous technical assessment, consultation between specialists and consideration of the recommendations of the Southern Coalfield Inquiry to ensure the measures are scientifically robust, consistent with current practices for similar developments and achievable.
Proportionate	Scope and scale should correspond to the potential social impacts.	Social impacts have been assessed in detail proportionate to their level of impacts in **Section 4.0**
Rigorous	Uses appropriate, accepted social science methods and robust evidence from authoritative sources.	The SIA has been based on the review and analysis of publicly available data including census data, published reports, and previous studies as detailed in **Section 2.5**. The assessment methodology has been prepared and implemented in accordance with both the SIA Guideline and other relevant guidance documents.
Transparent	Information, methods and assumptions are explained, justified and accessible; and people can see how their input has been considered.	The impact assessment methodology, baseline data and other information sources considered in the SIA have been clearly detailed in **Section 2.0** with impacts discussed in detail in **Section 4.0**.

2.3 Area of Social Influence

The Area of Social Influence has been determined for the SIA based on the following factors:

- The activities proposed as part of the development, comprising the surface disturbance activities and longwall mining within the Project Area. The development would utilise the existing rail loop and rail network to transport coal to Port Kembla and from time to time to Port Waratah. However, this would not involve any change to existing train movements, train loading capacity or frequencies. As there would be no change to operations or impacts along the train haulage route(s) (compared to existing), the area of social influence for the SIA does not include broader rail network haulage routes to Port Kembla or Port Waratah.
- The likely scale and extent of impacts – the severity and spatial and temporal extent of impacts identified in other specialist assessments within this EIS has informed the area of influence of this SIA. For example economic and employment opportunities created by the proposed development are considered likely to have far-reaching effects for the south west Sydney region, and NSW more broadly. However, impacts upon amenity values are anticipated to occur largely within close proximity to the proposed development, generally limited to the Wollondilly Shire LGA.
- Cumulative impacts – the specialist studies carried out for the proposed development have included consideration and modelling (where relevant) of cumulative impacts from other mines and other known and/or proposed developments within the Southern Coalfields.
- The natural, land use and social characteristics of the areas likely to be affected by the development, including proposed future land use and growth, based on a review of baseline and publicly available data as further detailed in **Section 2.5**.
- The community and stakeholder groups most likely to be affected by the kinds of impacts predicted, based on the consultation activities carried out for the proposed development (see **Section 2.6**).

Based on the above, the area of social influence (referred to hereafter as the study area) for the assessment of social impacts includes a broad consideration of the statistical areas of Wollondilly, Wingecarribee, Camden, Campbelltown and Wollongong LGAs, with comparison to broader NSW provided for context.

An assessment of local level social impacts for the proposed development are provided for the localities of Tahmoor, Bargo, Yanderra, Pheasants Nest, Buxton and Couridjah within the Wollondilly Shire LGA. These localities have been chosen based on their proximity to the proposed development, the results of specialist assessments and the availability of baseline data.

2.4 Identification of Social Indicators

Social indicators have been identified with reference to the potential for social change to be incurred as a result of the proposed development. Social indicators were selected to be reflective of key social issues for the study area.

Social impacts associated with the proposed development would be measured against the following social indicators:

- Current population and projected population growth and trends
- Health and wellbeing of the community, in terms of its potential relative disadvantage
- Housing
- Education
- Employment and income
- Availability and access to community services, and
- Community identity, including the shared values and customs, as well as community cohesion.

2.5 Social Baseline Data

2.5.1 Database Searches

Statistics for social indicators, as identified in **Section 2.4** have been obtained from sources such as the ABS for the statistical areas described in **Section 2.3**. **Table 2-1**outlines the data source used to inform each social indicator.

Table 2-2 Database searches undertaken

Social Indicator	Source
Population demographics	
Total Population	Estimated Resident Population (ERP), ABS
Age / Gender Breakdown	ABS Quickstats for statistical areas
Household composition	ABS Quickstats for statistical areas
Family Structure	ABS Quickstats for statistical areas
Ethnic composition	ABS Quickstats for statistical areas
Indigenous Population	ABS Quickstats for statistical areas
Population Projections	Department of Planning & Environment (DP&E) website
Health & wellbeing	
Need for Assistance	ABS data, Basic Community Profile B18
Socio-Economic Indexes for Areas (SEIFA) - score and relative ranking	2033.0.55.001 - Census of Population and Housing: Socio-Economic Indexes for Areas (SEIFA), Australia, 2011
Housing	
Current housing number and types	ABS Quickstats for statistical areas
Tenure	ABS Quickstats for statistical areas
Housing affordability - Rent weekly payments	ABS Quickstats for statistical areas
Housing affordability - Median mortgage repayments	ABS Quickstats for statistical areas
Education	
Current education attendance	ABS Quickstats for statistical areas
Post-school qualification levels	Basic Community Profile B37
Employment & income	
Average Median Weekly Income	ABS Quickstats for statistical areas
Employment Status / Unemployment Rate	Department of Education, Employment and Workplace Relations (DEEWR) Small Area Labour Markets (this data is more up to date data than ABS)
Employment by industry	ABS Industry of employment
Employment by occupation	ABS Quickstats for statistical areas

2.5.2 Review of Mining and Exploration Tenure

A review was undertaken of other operating mines in the Southern Coalfields in order to assess potential cumulative impacts on the community. **Table 2-3** lists current mining operations and identifies the current owner/operator and status of these mines. The location of these mines in relation to the proposed development is shown in Figure 2-1 of the EIS.

An assessment of the cumulative impacts of these mines alongside the proposed development is provided in Section 11.25 of the EIS. A summary of the cumulative social impacts is provided in **Section 4.9**.

Table 2-3 Current Mining Operations in the Southern Coalfield

Coal Mine	Current Owner/Operator	Source of Coal (Seam)	Status
Appin and Appin West Colliery (formerly Tower Colliery) (labelled 1 on Figure 2.1 of EIS)	Illawarra Coal Holdings Pty Ltd	Bulli	Operating
West Cliff Colliery (labelled 2 on Figure 2.1 of EIS)	Illawarra Coal Holdings Pty Ltd	Bulli	Operating
North Cliff Colliery (labelled 3 on Figure 2.1 of EIS)	Illawarra Coal Holdings Pty Ltd	Bulli	Non Operational
Peabody Metropolitan Colliery (labelled 4 on Figure 2.1 of EIS)	Helensburgh Coal Pty Ltd, a subsidiary of Peabody Energy Australia Coal Pty Ltd.	Bulli	Operating
Russel Vale Colliery (labelled 5 on Figure 2.1 of EIS)	Wollongong Coal Ltd.	Bulli	Care & Maintenance
Dendrobium Colliery (labelled 6 on Figure 2.1 of EIS)	Illawarra Coal Holdings Pty Ltd	Wongawilli	Operating
Wongawilli Colliery (labelled 7 on Figure 2.1 of EIS)	Wollongong Coal Ltd.	Wongawilli	Operating
Tahmoor Mine	Tahmoor Coal Pty Ltd.	Bulli	Operating
Berrima (Medway) Colliery (labelled 8 on Figure 2.1 of EIS)	Boral Cement Pty Ltd.	Wongawilli	Care & Maintenance

2.5.3 Review of Major Development Applications

A review of the current Major Projects, listed on the DPE website, identified several major developments relevant to the assessment of cumulative impacts on the community. **Table 2-2** lists these developments and identifies the relative anticipated workforce requirements and timeframes. An assessment of the cumulative impacts of these developments with the proposed development (as relevant) is provided in Section 11.25 of the EIS**.**

Table 2-4 Review of surrounding developments

Project	Proponent	Location	Anticipated timeframe / Project life	Anticipated workforce
Appin WestCliff Mining Complex – Bulli Seam Operations Project Approval granted (22/12/11)	Illawarra Coal Holdings Pty Ltd	Wollondilly Shire Council LGA, Campbelltown City Council LGA and Wollongong City Council LGA	Existing operation extended for an additional 30 year timeframe	Long-term employment of 1,170 employees and contractors. Short-term construction workforce of up to 100 employees at various stages of the proposed development
Camden Gas Project Approval granted for Stage 2 expansion (2008)	AGL	Camden Shire Council LGA, Campbelltown LGA and Wollondilly Shire Council LGA	6 years - production to cease in 2023	Current: 37 full time
Boral Cement Works (16/08/05)	Boral Cement Limited	New Berrima, Wingecarribee Shire Council LGA	No information	Current: 155
Berrima (Medway) Colliery Coal Project Approval granted (20/06/12)	Boral Cement Limited	Medway, Wingecarribee Shire Council LGA	Operations have ceased and the mine has been placed in care and maintenance mode	No information
New Berrima Quarry Approval granted (06/07/17)	The Austral Brick Company Pty Ltd	New Berrima, Wingecarribee Shire Council LGA	30 years	Operation: 5 (plus ongoing 38 at brick plant)
Green Valley Sand Quarry Approval granted (21/06/13)	Rocla Pty Ltd	Wingecarribee Shire Council LGA	30 years	Construction: up to 20 Operation: up to 20 Transport: up to 40 contractors (truck drivers)
Russell Vale Colliery Underground Expansion Project More information required following PAC Review (2016)	Wollongong Coal Ltd	Russell Vale, Wollongong City Council LGA	5 years	Currently in care and maintenance mode Expansion proposes to extend mine life by 13 years

Project	Proponent	Location	Anticipated timeframe / Project life	Anticipated workforce
Metropolitan Coal Project Approval granted (22/06/09)	Helensburgh Coal Pty Ltd, a subsidiary of Peabody Energy Australia Coal Pty Ltd	Helensburgh, Wollongong City Council LGA	23 years	Operation: 320
Wongawilli Mine Continued Operations Project – Nebo Area Approval granted (27/11/15)	Wollongong Coal Ltd	Wollongong City Council LGA	5 years	Operation: 300 (ongoing 275 plus 25 new)
Hume Coal Project Under assessment	Hume Coal Pty Ltd	Wingecarribee LGA	23 Years	Construction: 414 Operational: 300
Dendrobium Mine Expansion Project SEARs Issued	Illawarra Coal Holdings Pty Ltd	Wollondilly LGA	Existing operation extended for an additional 13 year timeframe	Operational: 270 ongoing with additional short-term construction workforce
Proposal for the construction and operation of a new sand quarry at Sutton Forest Proponent reviewing submissions	Sutton Forest Quarries Pty Ltd	Wingecarribee LGA	30 years	Construction: 20 Operation: 20
Menangle Quarry life extension Under assessment	Menangle Sand and Soil Pty Ltd	Wollondilly LGA	Existing operation extended for an additional 15 year timeframe	Operational: 16 ongoing

2.5.4 Review of Previous Studies

A review of relevant government inquiries, and relevant Council and community interest submissions made as part of the inquiries, was undertaken to provide context for the assessment of the proposed development. These inquiries, discussed in the following sections, include:

- The Southern Coalfields Inquiry, and
- The Thirlmere Lakes Inquiry.

Southern Coalfields Inquiry

An independent inquiry into underground coal mining in the Southern Coalfields was established by the NSW Government on 6 December 2006 (the Southern Coalfields Inquiry). The Southern Coalfields Inquiry was established in response to concerns held by the Government over past and potential future impacts of mining-induced ground movements on significant natural features in the Southern Coalfields. This action by the NSW Government followed community concerns regarding mine-related subsidence impacts to the Cataract River that occurred as a result of the operation of the Appin West Colliery.

One of the key purposes of the Southern Coalfields Inquiry was to "*report on the social and economic significance to the region and the State of the coal resources in the Southern Coalfields."*

Submissions made during the Inquiry included a submission by Wollondilly Shire Council and a submission by the Tahmoor Colliery Community Consultative Committee (TCCCC). Issues of relevance to the SIA, raised by these submissions, include concerns relating to:

- Underground mining impacts on watercourses (notably the Cataract River, Georges River and Bargo River) in the Wollondilly, Wollongong and Wingecarribee LGAs. In particular, subsidence impacts resulting in river bed cracking, water loss, cliff line collapse, toxic gas release, water quality degradation and associated ecological impacts.
- Subsidence impacts to the values of natural features in the region (such as Bargo River features including Mermaid Pools and Bargo Gorge).
- Inadequacy of existing legislation, guidelines and assessment procedures. Specifically noted was the Tahmoor Subsidence Management Plan (SMP) which was reviewed by an independent source who noted the "*lack of rigour in the current procedures for risk assessment and evaluation of potential impacts in SMPs and EISs for underground mining proposals*."
- Adequacy of decision-making processes in considering community benefit, including consideration of future impacts to recreation and tourism.
- The need to examine issues "*objectively, scientifically and in the context of economic, social and environmental issues*."

The outcomes of the Southern Coalfields Inquiry have been considered by this SIA, including assessment of direct employment, community infrastructure and contributions, and community consultation. For completeness, the Council and TCCCC submissions have also been considered with subsidence related issues reviewed in the overarching EIS for the proposed development, and the relevant social impacts addressed within this SIA (**Section 4.0**).

Thirlmere Lakes Inquiry

An Independent Committee of Inquiry was established on 25 October 2011 to determine the reasons for fluctuations in the water levels of the Thirlmere Lakes (the Thirlmere Lakes Inquiry). The Inquiry was a response to community concerns regarding the loss of water in the lakes, and community suggestions that it may be due to the impact of longwall mining approximately 1 km to the east of the lakes. The findings of the Inquiry highlighted the historical climatic variation in lake water levels due to a prolonged period of drought, and uncertainty of the role of mining in affecting lake water levels.

One of the key recommendations relevant to the SIA is the recommendation for a "*socio-economic study of the lakes be commissioned, aimed to assess community values and community opportunities to realise all the potential values of the lakes in whichever hydrologic state they are in*." This SIA concentrates on the surrounding natural values in proximity to the Tahmoor Mine and potential impacts on these values (refer to **Section 4.0**).

2.6 Consultation and engagement

Tahmoor Coal has undertaken various consultation activities within the local community to date. Relevant ongoing consultation and engagement for the Tahmoor Mine and proposed development have included community surveys, community information days, newsletters and TCCCC meetings. These activities have enabled Tahmoor Coal to obtain an understanding of the community's perceptions and values about their environment, their community, the Tahmoor Mine and the proposed development.

Consistent with the community consultation objectives of the SIA Guideline (Section 2.1). the objective of recent consultation has been to reach a wide variety of stakeholders who are likely to be affected or have an interest in the proposal, increase awareness and understanding of the proposed development, and seek input on issues of concern to guide the ongoing development/ refinement of project parameters and inform the impact assessment.

A detailed summary of consultation activities undertaken as part of the proposed development is provided in the EIS for the proposed development, while only those relevant to the SIA have been detailed in this document.

2.6.1 Community Consultation

Glencore NSW Stakeholder Survey

The previous owners of Tahmoor Mine, Glencore Coal Pty Ltd, engaged the Hunter Valley Research Foundation (HVRF) in 2012 to undertake an independent study in order to investigate community relations in the areas within which it conducts mining operations.

The survey included residents within surrounding communities, government bodies and community groups. The study surveyed a representative sample of people from the mining areas, and provided comparisons across varying aspects such as environmental performance, employment opportunities and community impacts, and information and communication.

The main findings of the survey for each key aspect is summarised in **Table 2-5**.

Table 2-5 Findings of Glencore NSW Stakeholder Survey 2012

Aspect	Summary of Ratings (response)
Awareness	• Awareness of the mine before the time of the survey was very high among all stakeholder groups in the Tahmoor area.
Performance	• Overall residents and community groups were satisfied with current performance relating to sponsoring community events, contribution to the local economy, and employing local people. • Tahmoor area residents were neither satisfied nor dissatisfied with Tahmoor Coal's current performance in: providing support to community groups, consulting with the community, responding to community concerns, providing information on environmental and community activities or managing its impacts on the environment. • Compared to three years ago, community groups rate an improvement in all activities and state that performance is better than that of other coal operations in the area. • Government agencies were generally satisfied with current performance across all activities, in particular they were satisfied with the mine's level of local employment and contribution to the local economy.
Community Impacts	• The top-ranked positive impacts for residents, government bodies and community groups were: - Increased employment opportunities - Contribution to local economy, and - Community support/funding. • The top-ranked negative impacts for residents, government bodies and community groups were: - mine subsidence - overall environment/cumulative impact - impacts on surface water - impacts on ground water - lack of communication/information. • Other top ranked negative impacts amongst residents were damage to homes and damage to Lake Thirlmere. • Other top ranked negative impacts amongst government bodies were social dislocation.

Aspect	Summary of Ratings (response)
Information and Communication	• Overall residents who received information in the last twelve months were neither satisfied nor dissatisfied with the amount of detail, amount of information, how often the information was sent and how trustworthy the information was. However, residents felt they were satisfied with most recent contact with the company in terms of professionalism, knowledge and willingness to help. • While government bodies and community groups were very aware of the company's community support program, residents were only slightly aware. • All stakeholders agree to 'strongly agree' that the company should continue to support job creation and training, environmental projects and health services.

Tahmoor Community Survey 2012

Tahmoor Coal undertook a survey in 2012 to investigate community feedback in relation to Tahmoor Mine. The study is undertaken on a regular basis, updated every three to four years. The aims of the study, *Tahmoor Coal Community Survey 2012*, were to:

- assess the adequacy of its existing stakeholder engagement strategy and identify areas for improvement
- help ensure that information exchange and engagement meets the needs and expectations of the community
- help understand the company's image within its operating areas, and
- guide social investment programs (partnerships and sponsorships).

The survey included a sample of 123 residents within the surrounding communities of Tahmoor Mine. The survey asked for community feedback on aspects such as the mine's environmental performance, employment opportunities and community impacts, and the level of information and communication provided. Participants for the survey were sourced from a mix of previous complainants, neighbouring landholders and randomly selected residents.

The main findings of the survey are summarised in **Table 2-6**.

Table 2-6 Results of the 2012 Community Survey

Main Impact of Tahmoor Mine Perceived by the Community	Percentage of respondents (of 123 residents) that raised a particular issue
Positive Impact	
Increased employment opportunities	61.8%
Contribution to local economy	16.3%
Negative Impact	
Mine subsidence	66.7%
Damage to homes/time taken to repair	37.3%
Overall environment/cumulative impact	23.5%
Damage to Thirlmere Lakes	17.6%
Lack of communication/information	15.7%
Damage to roads, houses	13.7%

Tahmoor South Community Information Days and Surveys

As part of Tahmoor Coal's community engagement for the proposed development, the following Community Information Days have been held to date:

- 6 June 2013
- 26 July 2013
- 19 December 2013
- 1 May 2014
- 21 September 2017
- 4 September 2018, and
- 30 October 2018.

The purpose of the Community Information Days was to provide the community with information and resources in relation the proposed development, and to enable staff to respond to any queries or issues raised by the community.

Community surveys were handed out at these sessions to obtain initial feedback on the mine and the local community in general. The sample of responses received during the consultation identified that:

- There is dissatisfaction amongst some community members regarding the company's environmental management, in particular in relation to watercourses
- There is dissatisfaction amongst some community members regarding adequate consultation and information. However, there is a level of satisfaction (or neutral opinion) amongst other community members which identified they were adequately informed of the mine's operations
- Community members were not satisfied with current employment opportunities and were supportive of increased employment opportunities for the area
- There is dissatisfaction amongst some communities with regards to the level of community safety
- There is dissatisfaction amongst some community members with regards to housing, with regards to quality, variety, cost and availability
- Community members perceive the need for more availability and access to community services, particularly in relation to recreation, sport, entertainment and facilities for youth
- Community members were dissatisfied with the condition and level of traffic on local roads, and
- Subsidence and impacts to homes were a key issue raised by numerous respondents.

Tahmoor South Project Community Information Survey

Community surveys were undertaken during a series of pop-up community sessions held in September 2018. The surveys were undertaken to gauge community awareness and interest in the Tahmoor South project and to obtain feedback regarding existing mine operations and the proposed Tahmoor South Project. The pop-up sessions were held at the following locations:

- 18 September 2018 – Our Community Pantry, Bargo – approximately 30 attendees
- 19 September 2018 – IGA, Bargo – 30 attendees
- 20 September 2018 - Town Centre, Tahmoor – 24 attendees, and
- 25 September 2018 – IGA, Bargo – 33 attendees.

At each session, attendees were encouraged to fill out an approximately 10-minute written survey. Copies of the survey were also left behind at the session held on 18 September 2018 for community members to fill out at their leisure and returned forms were collected the following week. The survey was filled out by 58 respondents and not all questions were completed by each respondent. Based on the responses received, the following issues were identified:

- 63% of respondents rated their understanding of existing operations at the Tahmoor Mine to be low

- 52% of respondents identified that they are unaffected by existing operations at Tahmoor Mine or considered the mining operations to be positive, whilst 38% made no comment or were unsure
- 10% of respondents identified impacts associated with Tahmoor Mine ranging from subsidence to traffic and noise from the mine operations and associated coal trains
- 69% of respondents were unaware of the Tahmoor South Project
- 45% of respondents had no comment to make on the Tahmoor South project
- Of the respondents that raised issues regarding the Tahmoor South Project, the key concerns identified related to potential impacts to water resources, flora and fauna, housing, recreational activities and community services. A breakdown of issues raised on the Tahmoor South Project by respondents is provided in **Table 2-7** below.

Table 2-7 Issues raised regarding the Tahmoor South Project during the 2018 Community Survey (number of respondents)

What affect will the Tahmoor South Project have on the following:	Not Sure	Very Negative	Negative	Neutral	Positive	Very Positive
Community services	23	3	0	9	12	3
Water	25	5	3	11	3	1
The local economy	17	1	2	3	17	4
Housing	19	2	4	10	7	2
Flora and fauna	21	4	8	10	0	2
Local lifestyles	21	1	2	11	8	2
Recreation activities	22	2	4	10	5	2
You and your family	21	2	3	15	2	2
Local amenity	21	2	2	13	5	2

2.6.2 Other Consultation and Engagement

Other consultation activities included responding to individual community enquires, including complaints, and the implementation of activities guided by the Social Involvement Plan (refer **Section 3.3**).

At the TCCCC meeting on 15 June 2017, Tahmoor Mine representatives advised the committee that updated assessment requirements (SEARs) for the Tahmoor South Project were requested from DPE with the intention to recommence the proposed development, including submission of the project's EIS. Registered Aboriginal Parties were contacted in August 2017 to discuss recommencement of the proposed development.

A meeting was held with Wollondilly Shire Council on 7 September 2017 to provide the council with a project update. Tahmoor Coal advised council that SEARs had been re-issued for the Tahmoor South Project and work was being undertaken to finalise the EIS. A meeting was also held with Wingecarribee Shire Council on 11 October 2017 to provide a project update. Wingecarribee Shire Council were advised that whilst the Project Area extends into the Wingecarribee LGA, no activities associated with the proposed development will take place in the LGA.

Meetings were also held with community organisations within close proximity of the project to inform them of the project and give them the opportunity to provide feedback. A summary of the matters discussed is provided in **Table 2.8**.

Table 2.8 Community Organisation Consultation Log

Reason for Consultation	Date	Details/issues raised
Wollondilly Anglican College		
General discussion regarding proposed development	06/06/14	Tahmoor Coal provided an overview of proposed development and preliminary identification of potential impacts.
Wirrimbirra Flora and Fauna Sanctuary		
General discussion regarding proposed development	24/04/13	Tahmoor Coal provided an overview of proposed development and preliminary identification of potential impacts.
General discussion regarding proposed development	30/08/13	Tahmoor Coal provided an overview of proposed development and preliminary identification of potential impacts.
Bargo Dingo Sanctuary		
General discussion regarding proposed development	24/04/13	Tahmoor Coal provided an overview of proposed development and preliminary identification of potential impacts.
General discussion regarding proposed development	17/10/18	Tahmoor Coal provided an overview of proposed development and preliminary identification of potential impacts. Bargo Dingo Sanctuary noted that there were unlikely to be impacts to the Dingoes, as although they are quite sensitive to noise, the depth of mining activities would dampen the noise.
Emergency Services		
General discussion regarding proposed development	17/10/18	Tahmoor Coal provided an overview of proposed development and preliminary identification of potential impacts. The Rural Fire Service (RFS) and Picton Fire Station (PFS) noted that back burning activities being carried out in the area may impact the operation of the proposed ventilation outlets. They also raised concerns about an increase in truck movements. State Emergency Services (SES) requested further information on the surface water studies carried out for the EIS, specifically in regards to flood modelling. RFS requested information on how heritage items would be managed.

2.6.3 Aboriginal Community Consultation

As part of the Aboriginal Cultural Heritage Assessment (ACHA) completed for the proposed development (Niche Environment and Heritage, 2018), consultation with indigenous stakeholders was undertaken in accordance with the *Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation* (DEC, 2005) and *The Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, 2010).

The mine plan for the project has undergone revisions to avoid longwall mining directly under sensitive features where possible including items of Aboriginal heritage significance. The mine plan has been designed to minimise potential for impacts to significant rock shelters at Dogtrap Creek.

Notification and Registration of Interest

Notifications of the proposed development were sent to Registered Aboriginal Parties (RAPs) on 8 January 2013 and 16 September 2017, with the objective of identifying potential cultural knowledge holders (registered parties) for the subject area. Advertisements were also published in the Macarthur Advertiser on 13 February 2013 and 23 August 2017, to invite Aboriginal stakeholders to register an interest.

Twenty-one Aboriginal stakeholders registered an interest in the proposed development and as a result these 21 individuals and organisations became Registered Aboriginal Parties (RAPs) to the proposed development.

Presentation and Gathering of Information

RAPs were provided with a letter containing information about the proposed development and the proposed methodology for an ACHA in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010) on 25 March 2013 and 13 September 2017. RAPs were also sent an invitation to attend an information session, and requested to respond to a supplied questionnaire about their group's connection to the area. A 28 day period was provided for RAPs to:

- suggest any protocols to be adopted into the information gathering process and assessment methodology, and
- highlight any other matters such as issues or areas of cultural significance that might affect, inform or refine the methodology.

An information session was held at Tahmoor Mine on 6 October 2017. Attendees were provided with a presentation on the nature and scale of the proposed development, an overview of the impact assessment process, critical timelines and milestones for the completion of assessment activities and delivery of reports, a discussion of the roles, functions and responsibilities of participants and protocols for the management of any sensitive cultural heritage information. The information session also provided RAPs with an opportunity to raise any cultural issues or comments/perspectives and assessment requirements (if any) regarding the proposed development or the proposed methodology.

No comments were received from any of the RAPs in regards to the project methodology.

RAPs were also invited to attend site inspections during preparation of the ACHA. Representatives from the following RAPs were available to conduct the site inspections:

- Tharawal LALC, and
- Cubbitch Barta Native Title Claimants.

Additional meetings were held with Tharawal LALC on 1 May 2014, 9 May 2013, 15 July 2014, 25 July 2013 and 5 August 2014. An additional meeting was held with Cubbitch Barta Native Title Claimants on 5 August 2014.

A detailed log of the Aboriginal consultation undertaken throughout the preparation of the EIS is provided in the ACHA.

Review of Draft ACHA Report

A draft of ACHA report was provided to the RAPs for their review and comment on 28 December 2017 in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010). A total of 28 days was provided to enable each of the RAPs to submit comments. Within the 28 day period, an information session was held on 24 January 2018 at Tahmoor Colliery to discuss the key findings of the draft ACHA and to provide an opportunity for RAPs and other community stakeholders and Elders to discuss, ask questions and/or provide comment on the draft ACHA. Three RAPs provided comment on the draft report during the 28 day period:

- Cubbitch Barta Native Title Claimants;
- Woronora Plateau Gundungurra Elders Council; and
- Didge Ngunawal Clan.

To date, feedback from Aboriginal community consultation has been that all sites within the Project Area (archaeological or cultural) are of value to the Aboriginal community. There were a total of 39 Aboriginal archaeological sites identified in the ACHA, including some sites previously registered on the Aboriginal Heritage Information Management System (AHIMS) database and some identified during the field work component of the assessment. The ACHA found that four of the 39 Aboriginal sites are of high archaeological significance, two are of moderate archaeological significance and the remaining 33 are considered to be of low archaeological significance.

Recommended measures for the mitigation and management of Aboriginal heritage sites have taken into account the feedback received from RAPs, which included:

- ongoing involvement of RAPs in subsidence monitoring of aboriginal heritage sites;
- keeping RAPs informed of the progress of longwall mining and early subsidence monitoring results to determine any changes to mine planning; and
- additional investigations of surface areas for any new surface infrastructure.

These measures would be incorporated into the Heritage Management Plan prepared for the proposed development (Refer **Section 5.0**). Additional details of consultation undertaken and feedback received on aboriginal cultural heritage is provided in the ACHA prepared for the EIS.

2.7 Evaluation of Impacts

2.7.1 Negative Social Impacts

The significance of potential social impacts (Social Risk Rating) was assessed based on the framework outlined in the SIA Guideline. This is illustrated in **Figure 2-2**.

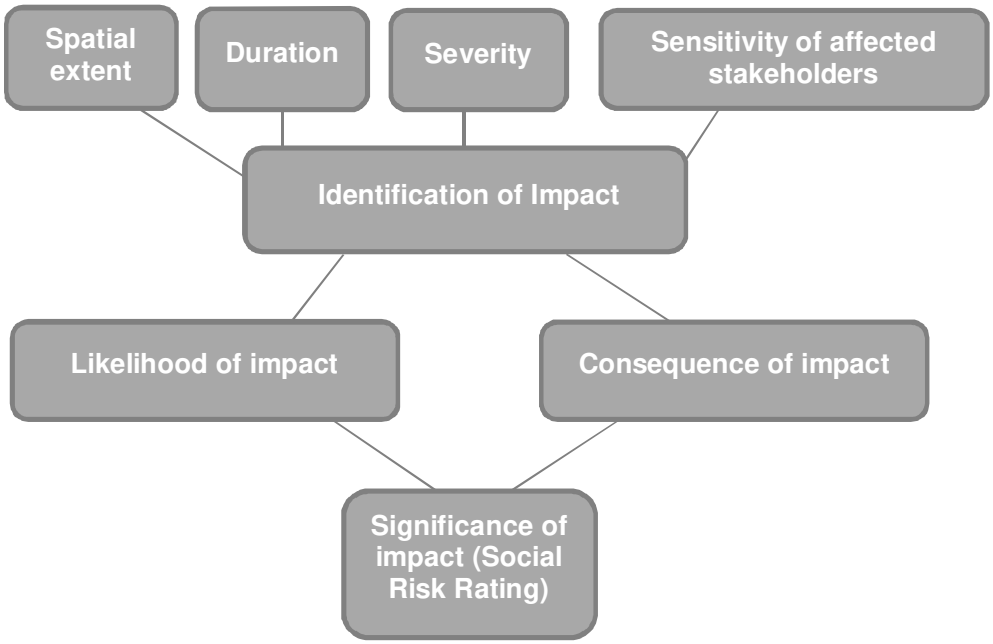


Figure 2-2 Assessment framework for determining risk rating of social impacts

Potential negative social impacts were identified through the following means:

- Those considered in the Scoping Report;
- Additional impacts identified in the EIS by other technical studies; and

- Ongoing feedback from community engagement activities.

Consistent with the SIA Guideline, factors considered in predicting and identifying potential social impacts included:

- Spatial extent: the geographic area affected by the impact, considering the number or proportion of people affected;
- Duration: the timeframe over which the impact occurs (e.g. pre-construction, construction, operation and closure or post closure);
- Severity: the scale or degree of change from the existing condition as a result of the impact; and
- Sensitivity: susceptibility or vulnerability of people, receivers or receiving environments to adverse changes caused by the impact, or the importance placed on the matter being affected. For the purposes of the SIA, consideration of sensitivity took into account feedback from stakeholders or in submissions made on similar developments.

As per the methodology applied in the SIA Scoping Tool (Excel worksheet) of the SIA Guideline, where an issue associated with the proposed development was likely to have social effect with respect to spatial extent, duration, severity and/ or receiver sensitivity, it was identified as a potential negative social impact.

As part of the SIA, the 'likelihood' and 'consequence' of the identified negative social impacts were then evaluated based on the criteria provided in the SIA Guideline to determine a social risk rating (level of significance) for each impact without mitigation.

The likelihood criteria identified in the SIA Guideline comprises: *almost certain, likely, possible, unlikely,* or *rare*. The consequences criteria identified in the SIA Guideline are provided in **Table 2-9**.

Table 2-9 Consequence criteria for assessment of social risk rating (SIA Guideline, DPE 2017)

Consequence criteria	
Minimal	No discernible positive or negative changes caused by the impact
Minor	• Small change caused by the impact; • Generally temporary or short term in duration; • Impacts confined to a small number of receivers within the proposed development locality; and • Able to be mitigated or managed such that impacts are deemed to be low.
Moderate	• Moderate change caused by the impact; • Generally temporary or short to medium term in duration; • Spatial extent of impacts may vary across the affected LGAs; and • Able to be mitigated or managed such that impacts are deemed to be moderate.
Major	• Large change caused by the impact; • Generally medium to long term in duration; • Spatial extent of impacts may vary across the affected LGAs, or the broader region or State; and • Negative impacts would require extensive mitigation and consultation with affected stakeholders.
Worst Case	• Very large change caused by the impacts; • Likely to be long-term in duration; • Spatial extent of impacts may vary across the affected LGAs, or the broader region or State; and • Negative impacts would require extensive mitigation and consultation with affected stakeholders.

The social risk matrix provided in the SIA Guideline (reproduced in **Figure 2-3** below), was used determine a social risk rating for impacts (without mitigation).

Figure 2-3 Social Risk Matrix (SIA Guideline, DPE, 2017)

			Consequence Level				
			1	2	3	4	5
			Minimal	Minor	Moderate	Major	Catastrophic
Likelihood Level	A	Almost certain	A1	A2	A3	A4	A5
	B	Likely	B1	B2	B3	B4	B5
	C	Possible	C1	C2	C3	C4	C5
	D	Unlikely	D1	D2	D3	D4	D5
	E	Rare	E1	E2	E3	E4	E5
Social Risk Rating							
	Low		Moderate		High		Extreme

The likely impacts were then evaluated with the implementation of mitigation measures to identify residual impacts and any contingency and monitoring measures required.

2.7.2 Positive Social Impacts

Consistent with the guidance provided in the SIA Guideline, positive social impacts were evaluated qualitatively with consideration to the following factors:

- level of interest by stakeholders;
- the scale of improvement or benefit; and
- the importance placed on the benefit and the equity of distribution.

The social risk matrix approach identified in the SIA Guideline as discussed above was adopted to assess the significance of positive social impacts considering the likelihood of benefits and the scale of the improvement or benefit (replacing ‘consequence level’).

3.0 Baseline Study

3.1 Area of Social influence

The following section describes the context of the proposed development's area of social influence, within which social impacts may be experienced.

3.1.1 State Context

Tahmoor Mine is located within the Southern Coalfields of NSW. The Southern Coalfields is one of five major coalfields located within the Sydney-Gunnedah Basin. It is located south of Sydney and to the west of Wollongong with topography that is defined by the Illawarra and Woronora Plateau (**Figure 1-1**).

The geology of the Southern Coalfields includes the Illawarra Coal Measures and is the only NSW source of premium quality hard coking coals, which are primarily used for steel production. There are nine operational underground coal mines and one undergoing exploration in the Southern Coalfields.

Coal produced by the Tahmoor Mine is transported via the existing rail loop, the Main Southern Railway and the Moss Vale to Unanderra Railway, to Port Kembla for export. An upgrade to the Port Kembla Coal Terminal, to increase the throughput capacity to up to 27 million tonnes per annum, has been proposed in anticipation of continued growth in export market coal.

3.1.2 Regional Context

Tahmoor Mine is located on the outer south western peri-urban fringe of Sydney, approximately 5 km south of Picton and 20 km northeast of Mittagong. The mining lease areas are bounded on the west by the Picton-Mittagong Railway and traversed by the Main Southern Railway. The Main Southern Railway bisects Tahmoor Mine's Surface Facilities Area and connects to the site via a rail loop.

Access to the Project Area from Sydney and Canberra is via the Old Hume Highway and Main Southern Railway. Access from Port Kembla to the east is via Picton Road and the Moss Vale Unanderra Railway and the Main Southern Railway (interchange at Moss Vale).

The existing Tahmoor Mine and proposed development are located within the Wollondilly LGA. The Project Area also extends into the Wingecarribee LGA, as identified on **Figure 1-2**, however no activities associated with the proposed development will take place in Wingecarribee LGA. Land use in the region is characterised by a mix of village residential, rural residential, market gardens, agricultural and conservation areas.

The region encompasses large areas dedicated to conservation and the protection of drinking water catchments. These are the Upper Nepean State Conservation Area to the east of the Old Hume Highway, and the Bargo River State Conservation Area, Nattai National Park, Thirlmere Lakes National Park and Blue Mountains National Park to the west (refer to **Figure 1-1**).

The Project Area is also within the Greater Sydney Basin, with major drinking water catchments in the areas to the east, surrounding Lake Nepean, Lake Avon, Lake Cordeaux and Lake Cataract. The Project Area is downstream of these areas, within the Bargo and Nepean catchments.

3.1.3 Local Context

The Project Area for the proposed development is generally bounded by the Bargo and Nepean Rivers to the north, West Parade and the Picton-Mittagong Railway to the west, the Nepean River and Upper Nepean State Conservation Area to the east, and vegetated Crown land and the Hume Motorway to the south (refer to **Figure 1-2**). The mine infrastructure at the surface facilities area is surrounded by vegetated land and gullies, bounded by Remembrance Driveway (Old Hume Highway) to the west and bisected by the Main Southern Railway.

The Project Area exhibits a gently undulating landscape with generally low relief and small slopes. However, topography becomes steeper nearer to the valleys of the Bargo and Nepean Rivers which lie in the north and western portions of the Project Area, respectively. These areas, generally associated with the steeply incised sandstone embankments and escarpments, are more densely vegetated (undisturbed forest) and, in the case of the Nepean River, form part of designated protected

areas. Approximately one third of the Project Area remains forested, in particular in the west of CCL 747, surrounding the surface facilities area and along the Bargo River.

The Project Area extends beneath semi-rural and partly forested landscapes, along with a mix of rural and environmental land uses. Natural features in the local area include Thirlmere Lakes, which includes unique wetland systems, protected within the Thirlmere Lakes National Park to the northwest of the Project Area (refer to Figure 1.2). Thirlmere Lakes National Park also forms part of the Greater Blue Mountains World Heritage Area. Lake Nepean lies south of the Project Area, and the Upper Nepean State Conservation Area lies to the southeast. The Upper Nepean State Conservation Area lies to the southeast of the Project Area (refer to **Figure 1-2**).

The Project Area is located in a region with a long history of agricultural use. Rural uses within the Project Area include small-scale agricultural activities such as farming produce, poultry, cattle grazing, trotting horse training, greyhound training and several horse studs. While incised gullies and plateaux have largely remained undisturbed, large areas of flat and low gradient slopes have undergone moderate landscape disturbances as a result of large-scale vegetation clearance relating to agricultural activities, generally on areas with shale derived soils.

Townships, villages and rural residences dot the landscape, the nearest of which include the township of Tahmoor and villages of Bargo, Yanderra, Pheasants Nest, Couridjah, Balmoral and Buxton (refer to **Figure 1-2**). These localities are serviced by Picton Road, Remembrance Driveway/Old Hume Highway, and Wilson Drive/Parade and the rail infrastructure corridors referred to in in **Section 3.1.2**.

3.1.4 Land Tenure and Land Use

Land ownership across the Project Area is a combination of Crown land, Government authority or corporation owned land, privately owned land, and land owned by Tahmoor Coal as part of the Tahmoor Mine. Approximately one third of the Project Area is Crown land. Privately owned rural residential, cleared agricultural land and commercial properties are located within the villages of Bargo, Yanderra, Pheasants Nest, Couridjah, Balmoral and Buxton and the town of Tahmoor. Tahmoor Coal owns land across the surface facilities area, existing ventilation shafts and areas in relation to the Bargo lease areas in the south of the Project Area.

Land use is characterised by a series of small towns and villages, separated by a semi-rural and partly forested landscape. Land use is governed by the *Wollondilly Local Environmental Plan 2011* and *Wingecarribee Local Environmental Plan 2010*. Within the Project Area residential and commercial land uses are generally clustered around the local centres of Bargo, Tahmoor and Buxton, with smaller rural residential land uses characterising the villages of Yanderra, Pheasants Nest, Couridjah and Balmoral. The remainder of the Project Area is a mix of rural and environmental land uses.

The Project Area is covered by mining tenements held by Tahmoor Coal Australia, being CCL 747, held by Bargo Colliery Holdings, and CCL 716, and Exploration Authorisations 206 and 410 held by Tahmoor Colliery Holdings. The proposed development would utilise existing surface infrastructure facilities at the Tahmoor Mine, located within ML 1642, also held by Tahmoor Colliery Holdings (**Figure 1-2**).

Approximately a third of the Project Area is forested. Forested land is generally located in the south eastern parts of the lease area as well as along the Bargo River. Forested land is mostly held in Crown Land ownership and is zoned a– either *E2 - Environmental Conservation* or *RU3 – Forestry* under the *Wollondilly Local Environmental Plan 2011* and *Wingecarribee Local Environmental Plan 2010*. Forested land also exists in the south eastern corner of the lease area. This land is designated as Nepean State Conservation Area.

3.2 Community Profile

Statistics for the Study Area are provided in **Table 6-1**to **Table 6-23**of **Appendix A** of this report. Trends and patterns of growth drawn from these statistics have been summarised in the following section in order to provide a profile of the community within which the Tahmoor South Project is proposed.

3.2.1 Population Demographics

Current Population

Wollondilly, Wingecarribee, Camden, Campbelltown and Wollongong LGAs, which make up the broader regional study area, comprise approximately seven percent of the overall population of NSW, as recorded at the time of the 2011 Census.

Current population statistics for the broader regional study area demonstrate positive growth in all five LGAs (Wollondilly, Wingecarribee, Camden, Campbelltown and Wollongong) between the 2011 and 2016 Census of Population and Housing (ABS, 2011 & 2016). Although Wollongong (192,418 persons) and Campbelltown (145,967 persons) represent the largest LGAs in terms of population numbers, the highest growth between the 2011 and 2016 censuses was recorded for the Camden (78,218 persons or 27 percent) and Wollondilly (48,519 persons or 11 percent) LGAs.

While the overall population trend of the LGAs is one of growth, the local towns have experienced various population changes in recent years. Between the 2011 Census and 2016 Census, the larger town of Tahmoor (+11 percent) and the villages of Bargo (+6 percent), Pheasants Nest (+14 percent), Couridjah (+9 percent), and Balmoral (+15 percent) all recorded positive population growth in line with that of the Wollondilly and Wingecarribee LGAs. The smaller villages of Yanderra (-3% percent), and Buxton (-1% percent) have experienced declines in population levels since 2011. Between the 2006 Census and 2011 Census, smaller villages within the immediate locality experienced higher rates of decline in population, including Balmoral (-54 percent), Couridjah (-39 percent) and Pheasants Nest (-10 percent). As part of the Wollondilly Shire *Growth Management Strategy* (2011), Wollondilly Shire Council recognises that there is an increasing trend of out-migration of people aged 18 to 34. However, declines in the population of smaller villages may also result from factors such as lower fertility rates, an aging population, and mortality.

Future Population Projections

Population projections provided by the DP&E (2016), for the Wollondilly, Wingecarribee, Camden, Campbelltown and Wollongong LGAs, which make up the broader regional study area, are presented in **Table 6-3**of **Appendix A**. Population growth is anticipated for all LGAs within the study area, with the highest growth anticipated for the LGAs of Camden (284 percent) and Campbelltown (54 percent), in line with the South West Growth Centre development.

Population projections are based on Estimated Resident Population statistics sourced from ABS 2016 Census data, and take into account the latest data and expertise on trends in fertility, mortality and migration. However, the DP&E notes the uncertainty associated with the forecast projections, as trends in "*fertility and migration (and to a lesser extent, mortality) are influenced by a variety of social, economic and political factors, many of which cannot be foreseen with any degree of precision*" (DP&E, 2016).

Population growth projected for the Wollondilly and Wingecarribee LGAs between 2011-2036 (62.8 percent and 12 percent, respectively), reflect natural growth rates associated with births and deaths combined with a net migration of people moving into the local area. Projections for the local study area have also been estimated as part of a profile prepared for the Wollondilly Shire Council (Profile.id, 2013). The local area of Buxton-Couridjah is anticipated to experience the highest proportion of local growth (34 percent), followed by Tahmoor (13 percent) and the area of Bargo-Yanderra-Pheasants Nest (4 percent). Projections for the suburb of Balmoral, within the Wingecarribee LGA are not currently available.

Age and Gender Structure

The gender profile and distribution of female and male populations for the Wollondilly and Wingecarribee LGAs, as well as the towns and villages of Tahmoor, Bargo, Yanderra, Pheasants Nest, Buxton, Couridjah and Balmoral, is presented in **Table 6-5**in **Appendix A**. The statistics indicate an even distribution of males and females within the local area, in line with the overall distribution for NSW as a whole.

The population of the Wollondilly and Wingecarribee LGAs is ageing, with the median age increasing from 36 to 37, and 45 to 47 respectively between the 2011 and 2016 censuses. The Wingecarribee median age is notably higher than the median age reported for NSW as a whole. The statistics for median age differ between local towns, with the highest median age reported for Balmoral (45 years) and the lowest median age for Buxton (33 years).

The age profiles for the Wollondilly and Wingecarribee LGAs, presented in **Figure 3-1** and **Figure 3-2**, respectively, indicates growth proportion of people aged 65 years and over, between the 2006 and 2011 censuses. This growth is in line with and presumably the cause of the significant number of senior's living developments that are currently planned or in development within the LGAs.

Wollondilly Shire Council also recognises the low proportion of people aged 18 to 34, which is likely to be an indication of net outwards migration. The Council recognises this trend to be the result of limited tertiary education facilities, diversity in local employment, and a want to relocate to and experience a 'city lifestyle' (Wollondilly Shire Council, 2011).

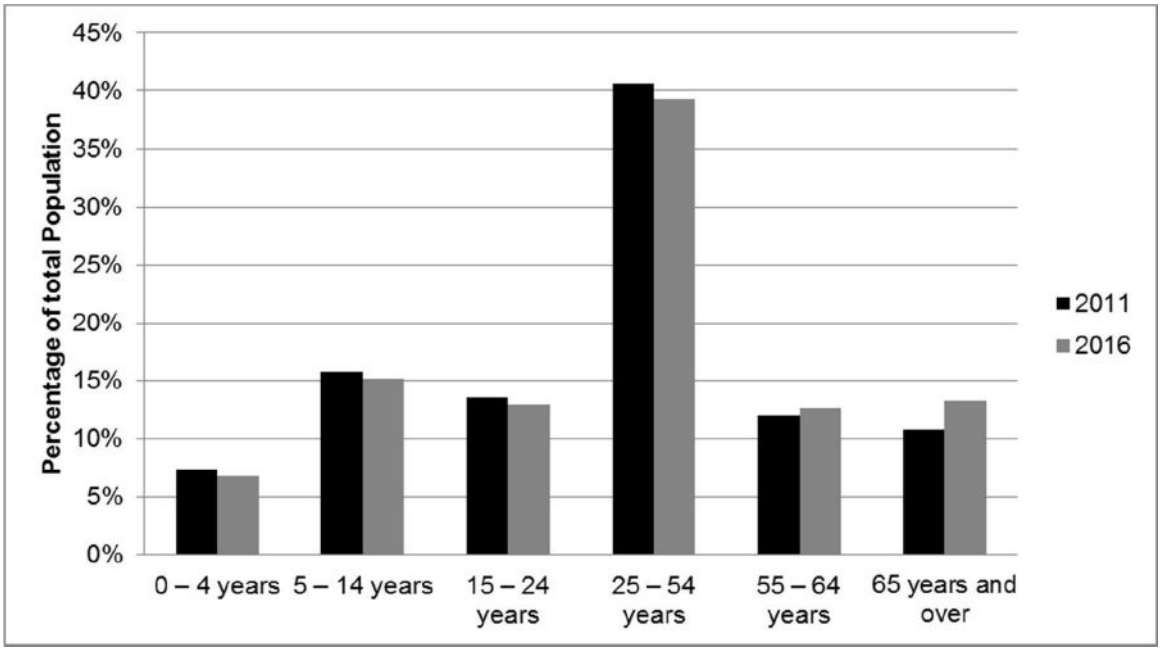


Figure 3-1 Age profile for the Wollondilly LGA for 2011 and 2016

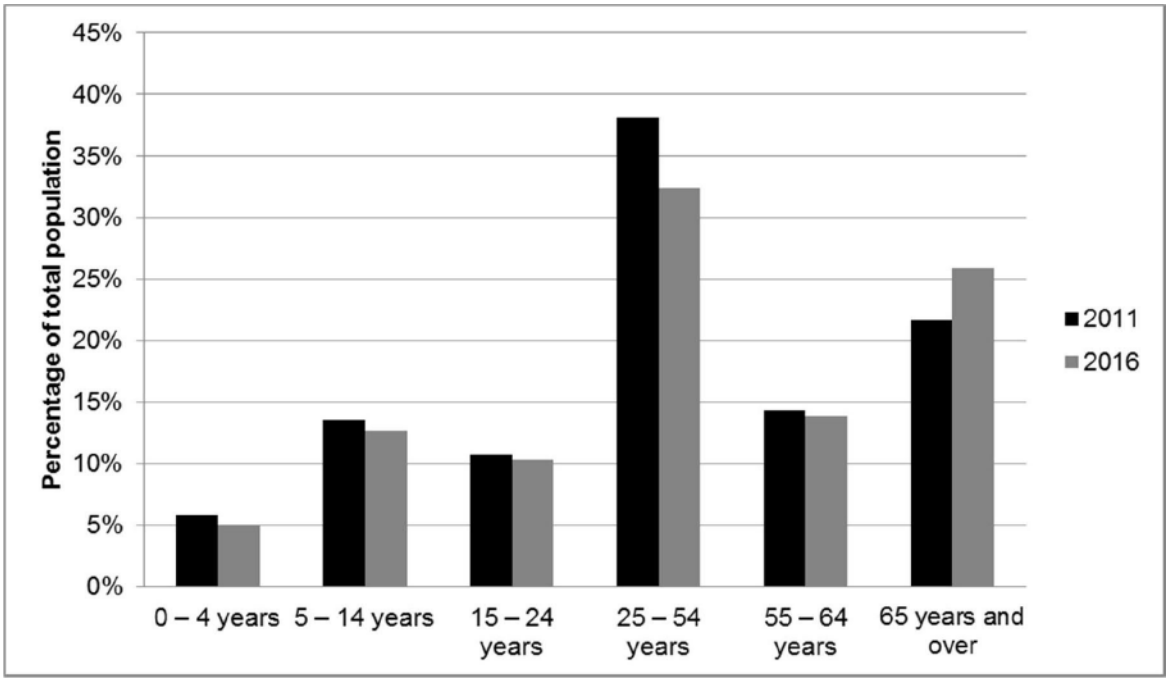


Figure 3-2 Age profile for the Wingecarribee LGA for 2011 and 2016

Household Composition and Family Structure

Data regarding the household demographic of the Wollondilly and Wingecarribee LGAs indicates that households primarily comprise family households (83 and 72 percent respectively), with smaller proportions of single-person households (15 and 26 percent respectively) and group households (2 and 2 percent respectively).

Table 6-8, provided in **Appendix A** summarises the family composition for the Wollondilly and Wingecarribee LGAs, and the towns and villages of Tahmoor, Bargo, Yanderra, Pheasants Nest, Buxton, Couridjah and Balmoral, in comparison with the broader NSW context. There are relatively higher proportions of couples with children for the Wollondilly LGA (53 percent) and the suburbs of Tahmoor, Bargo, Yanderra, Pheasants Nest, Buxton, Couridjah and Balmoral; whereas the Wingecarribee Shire as a whole records a higher population of couples without children (47). The town of Tahmoor recorded the highest proportion of single parent families (20 percent).

Ethnic Diversity

Table 6-10in **Appendix A** presents a profile of the ethnic diversity of the local study area. The proportion of Aboriginal and Torres Strait Islanders recorded within the local area is generally higher than the proportion recorded for NSW as a whole (3 percent) at the time of the 2016 Census. Wingecarribee LGA and the local area of Balmoral recorded a marginally lower proportion of Indigenous people (2 percent); whereas the village of Couridjah recorded a higher proportion of indigenous individuals (9%).

The Wollondilly and Wingecarribee LGAs, and towns and villages within the local study area, recorded a lower proportion of people born overseas and those who speak a language other than English at home, compared with NSW as a whole. At the time of the 2016 Census, between 15 and 23 percent of people identified themselves as being born overseas, compared with the NSW average of 35 percent. Similarly, between 5 and 9 percent of the local population stated that they spoke a language other than English at home, compared with the State average of 27 percent.

3.2.2 Health and Wellbeing

A profile of the health and wellbeing of the community is provided in the following sections in the context of:

- The available health services in the area;
- Extent to which people in the community require assistance; and
- The relative ranking of the community according to the SEIFA (ABS, 2011).

The purpose of presenting health and wellbeing data for the region is to determine the extent to which the region may be suffering a disadvantage when compared to the NSW average.

Health Services

The Project Area is serviced by Camden, Campbelltown and Bowral District Hospitals. General practice physicians within the Project Area include Bargo Surgery and Tahmoor Medical Centre.

Need for Assistance

The percentage of persons with a need for assistance ranges across the local study area from 3 percent in Pheasants Nest and Balmoral to 7 percent in Bargo. The low percentage of persons with a need for assistance in Pheasants nest and Balmoral may be reflective of the small population and relative distance from services. For all areas within the Project Area the percentage of persons with a need for assistance is generally consistent with the percentages for Wollondilly LGA (5 percent), Wingecarribee LGA (6 percent) and NSW (5 percent).

Socio-Economic Indexes for Areas (SEIFA)

SEIFA broadly defines relative socio-economic advantage and/or disadvantage in terms of people's access to material and social resources, and their ability to participate in society. SEIFA aids in providing an assessment of the welfare of Australian communities and helps in determining areas that require funding and services (ABS, 2013).

There are four indexes which each aim to capture a different aspect of socio-economic advantage and/or disadvantage:

- Index of Relative Socio-economic Disadvantage (IRSD);
- Index of Relative Socio-economic Advantage and Disadvantage (IRSAD);
- Index of Economic Resources (IER); and
- Index of Education and Occupation (IEO) (ABS, 2013).

Table 6-12in **Appendix A** presents the IRSD for the local study area, which provides a broad measure of overall disadvantage of an area.

All areas, including LGAs and state suburbs, are provided with a SEIFA score and are ordered from lowest to highest score. The lowest 10 percent of areas are given a decile number of 1, up to the highest 10 percent of areas which are given a decile number of 10. This allows the division of all areas into ten groups, to reflect relative levels of disadvantage across the State, depending on their score. A decile of 1 represents the most disadvantaged, and a decile of 10 represents the least disadvantaged.

A decile indicates relatively greater disadvantage in general. For example, an area could have a low score if there are (among other things) many households with low income, many people with no qualifications, or many people in low skill occupations. Conversely, an area may have a high score if there are (among other things) few households with low incomes, few people with no qualifications, and few people in low skilled occupations (ABS, 2013).

Areas within the Project Area vary in terms of their SEIFA rankings, indicating varying levels of disadvantage across the Project Area. Tahmoor is ranked as the area subject to the highest level of disadvantage (decile 3) and Balmoral is ranked as the least disadvantaged (decile 9). Buxton and Bargo are ranked in the 6th decile indicating that these areas are more disadvantaged than 40 percent of other areas in NSW.

Both Wollondilly and Wingecarribee LGAs overall are ranked in the 9th decile indicating that 90 percent of other LGAs in NSW are more disadvantaged.

3.2.3 Housing

A profile of the type, availability and affordability of housing within the local area is provided in the following sections. The need for growth in local housing in order to accommodate projected population growth is also discussed, which is relevant to the proposed development and the assessment of social impacts in terms of the increased number of potential landholders or residents that may experience potential impacts associated with the Tahmoor South Project.

Dwelling Type

A significant proportion of all dwellings within the Wollondilly (95 percent) and Wingecarribee (90 percent) LGAs are detached houses. Dwelling types within the local towns demonstrate a similar trend, with the majority of dwellings (89 to 100 percent) comprising detached houses, and a small proportion of semi-detached, terrace house or townhouses recorded for the larger town centres of Tahmoor (6 percent) and Bargo (8 percent). This is consistent with the primarily rural residential nature of the local area.

Tenure

Based on the results of the 2016 Census, a higher proportion of properties were fully owned or owned with a mortgage for the LGAs of Wollondilly and Wingecarribee, when compared with NSW as a whole. As a result, the percentage of rental properties within the two LGAs (15 percent and 20 percent, respectively), were relatively lower than those of the State as a whole (32 percent).

Tenure types within the local towns largely align with those of the LGAs. However, the proportion of tenure types within the town of Tahmoor is more in line with that of NSW as a whole, with a higher percentage of rental properties (29 percent). This is likely to be a reflection of the size and structure of Tahmoor as one of the larger towns within the study area.

Housing Affordability and Availability

Table 6-15, provided in **Appendix A**, indicates that the proportion of household income that contributes to mortgage loan or rental payments in the LGAs of Wollondilly and Wingecarribee are largely in line with those of NSW as a whole. Bargo recorded the highest proportion of household income which contributes to mortgage repayments (32 percent), and Tahmoor recorded the highest contribution to rental payments (26 percent). Couridjah contributes the lowest proportion of household income to rental payments (16 percent), which is a reflection of the relatively low rental rates in this area ($305 per week).

Table 6-16, provided in **Appendix A**, indicates the pattern of rental vacancy rates in Sydney and outer Sydney (greater than 25 km from the city centre) and the Illawarra regions between March and July 2017. Rental vacancy rates in the Outer Sydney and Illawarra regions, are at low levels and indicate that there is a high demand in these areas for accommodation (REINSW, 2017). A search of property website domain.com.au, conducted on 8 September 2017, indicated that 12 properties were available for rent in Tahmoor, 10 in Bargo, one in Pheasants Nest, three in Buxton, two in Yanderra. The search indicated that there were no properties available for rent in Balmoral or Couridjah.

Occupancy

Statistics recorded for the occupancy rates of dwellings demonstrates the availability of housing within the local area. **Table 6-17** in **Appendix A** presents the proportion of unoccupied dwellings as a percentage of the total number of dwellings for each local area. Occupancy rates for most of the local areas are slightly lower than the overall occupancy rate for NSW as a whole (10%). However, a higher percentage of unoccupied dwellings were recorded for the Wingecarribee LGA (14 percent) and the village of Couridjah (20 percent). A lower percentage of unoccupied dwellings were recorded for the villages of Balmoral (4 percent) and Bargo (5%).

Housing Growth

The Wollondilly Growth Management Strategy (2011) identifies the need for an additional 7,500 dwellings within the LGA to accommodate projected population growth over the next 25 years.

Wollondilly Shire Council recognises that a diverse range of local housing types will be required in order to provide appropriate and affordable housing to accommodate this growth. The Growth Management Strategy document sets out ten key policy directions for the development and distribution of housing growth within the Shire. These key policies primarily aim to maintain the rural identity of the Shire while accommodating natural patterns of growth in and around existing population centres.

As part of the Growth Management Strategy, Wollondilly Shire Council has identified the following housing targets for towns and villages within the local study area, as presented in Table 3.1.

Table 3-1 Housing target distributions for the local study area (Wollondilly Shire Council, 2011)

Area	Current housing development planned (2011 data)	Additional housing required to meet the target (number of dwellings)	Total housing target (number of dwellings)
Picton, Tahmoor, Thirlmere	• Draft LEP 74 for PTTAG lands 280 dwellings • Draft LEP 73 PTT Urban Precincts 1,100 dwellings • Botanic Gardens Estate remaining 142 dwellings • Brundah Road seniors living 122 dwellings • Progress Street seniors living 168 dwellings • Highlands resort seniors living 118 dwellings Total – 1,930 dwellings	2,070	4,000
Bargo	• Seniors living development Total – 40 dwellings	1,960	2,000

After the release of the Wollondilly Growth Management Strategy in 2011, the NSW Government launched its Potential Homesites Program. The focus of the investigation was to identify new opportunities for additional housing and employment, and associated establishment of a comprehensive infrastructure program, for the region. This program identified a number of investigation sites for potential housing development within the Wollondilly LGA, including the Greater Macarthur Land Release Investigation Area and the Wilton New Town Priority Growth Area.

The Greater Macarthur Land Release Investigation Area identified immediate opportunities to deliver up to 35,000 homes in Menangle park and Mount Gilead, as well as a new town in Wilton. Beyond 2036 there are opportunities to provide another 33,000 homes and employment opportunities with the support of upgraded infrastructure in the area (DPE, 2015). The Greater Macarthur Land Release Area Preliminary Strategy and Action Plan was released for public comment in September 2015. DPE is currently working with the councils of Campbelltown and Wollondilly Shire and other relevant Government agencies to finalise the precinct planning with consideration to feedback received during consultation.

The Wilton New Town Priority Growth Area, situated at the junction of the Hume Motorway and Picton Road, is proposed to provide up to 15,000 new homes supported by development of a new town centre, with open space, schools, employment areas and a range of retail and commercial uses. In July 2016, the Minister for Planning gazetted the *State Environmental Planning Policy (Sydney Region Growth Centres) Amendment (Wilton) 2016*, which identifies Wilton as a Priority Growth Area. DPE has worked with Wollondilly Shire Council, Transport for NSW and other State agencies to prepare the Wilton Interim Land Use and Infrastructure Implementation Plan (August 2017), which provides a framework for development in Wilton over the next 20 to 30 years.

This investigative work has required Wollondilly Shire Council to place their Revised Growth Management Strategy, which sets out the plan for future growth and provisions for future services and infrastructure for Wollondilly, on hold until this investigative work is completed.

The Wingecarribee Demographic and Housing Study, completed in 2012, found that there is sufficient capacity to satisfy housing demand across the Wingecarribee LGA to 2031, with capacity to provide an additional 22,680 dwellings after 2031. The study identified major centres such as Bowral, Mittagong and Moss Vale as likely to receive the majority of demand for housing, including growth in medium and high density dwelling types. The study also identified a need for provision of additional aged care facilities, both low and high levels of care, within the LGA.

3.2.4 Education

A profile of local education is provided in the following sections in order to assess any potential impact on access to and availability of community facilities and social infrastructure (such as educational facilities) as a result of the proposed development. Assessment of potential impacts is provided in **Section 4.0**.

Educational Facilities

Educational facilities provided within or in proximity to the Project Area predominantly comprise early childhood and primary school education facilities. High school facilities are also available within the LGAs, but are located at further distances from the local study area. These educational facilities include:

- Preschools and childcare:
  - Tahmoor Pre-School Kindergarten on Thirlmere Way, Tahmoor
  - Rainbow Playhouse Pre-School on Harper Close, Tahmoor
  - Miss Lizzies Kindergarten on Thirlmere Way, Tahmoor
  - Thirlmere Pre-School Kindergarten on Oaks Road, Thirlmere
  - Winsome Farm Child Care Centre on Oaks Road, Thirlmere
  - Thirlmere Pegasus Early Education Centre on Antill Street, Thirlmere
  - Bargo Child Care Centre on Hawthorne Road, Bargo
  - Little Elves Child Care Centre on Elvy Street, Bargo
  - Picton Preschool on Kent Road, Picton, and
  - Pioneers Pre-School on East Parade, Buxton.
- Primary schools:
  - Buxton Public School on Hassall Road, Buxton
  - Bargo Public School on Great Southern Road, Bargo
  - Tahmoor Public School on Bronzewing Street, Tahmoor
  - Thirlmere Primary School on Oaks Road, Thirlmere
  - St Anthony's Primary School on Menangle Street, Picton
  - Picton Primary School on Lumsdaine Street, Picton, and
  - Wollondilly Anglican College.
- High schools:
  - Picton High School, Argyle Street, Picton, and
  - Wollondilly Anglican College.

Attendance

The proportion of total attendance at educational facilities for the Wollondilly and Wingecarribee Shires was largely in line with that of NSW as a whole, as recorded at the time of the 2016 Census. Both LGAs recorded slightly less proportions of people in attendance at tertiary or university educational facilities (3 percent and 2 percent, respectively) compared with NSW (5 percent), but Wollondilly

recorded slightly higher proportions of people attending primary school education (10 percent, compared with 8 percent for NSW and Wingecarribee). These statistics are in line with the higher proportion of families with young children and the lack of tertiary or university educational facilities within the LGAs.

Qualifications

Table 6-19 in **Appendix A** presents the proportion of post-school qualifications for the Wollondilly and Wingecarribee LGAs in comparison with the total proportion for NSW, as recorded at the time of the 2011 Census[1]. A higher proportion of advanced diploma qualifications were recorded for the Wollondilly and Wingecarribee Shires (20 and 17 percent respectively) in comparison with NSW as a whole (7 percent). Wollondilly Shire recorded a lower proportion of bachelor degree and post graduate degree qualifications, compared with Wingecarribee and NSW as a whole.

3.2.5 Income and Employment

Income

The median personal, family, and household incomes for the study area are presented in **Table 6-20**of **Appendix A**. Median household incomes were recorded as relatively higher for the Wollondilly LGA ($1,871 per week), and the villages of Pheasants Nest ($2,042 per week), Buxton ($1,787 per week), Couridjah ($1,928 per week), Yanderra ($1,831) and Balmoral ($1,678 per week), when compared with NSW as a whole ($1,486 per week). Median incomes for Bargo ($1,485 per week) were in line with those reported for NSW, and median incomes for the Wingecarribee LGA ($1,335 per week) and Tahmoor ($1,403 per week) were relatively lower than NSW as a whole. The highest median household income within the local study area was recorded for Pheasants Nest, and the lowest median household income was recorded for Tahmoor.

Employment

Table 6-21 in **Appendix A** presents the total labour force as a proportion of the total population for the local study area. The total labour force represents the proportion of people within the workforce, aged 15 years and over.

At the time of the 2011 Census[1], the rate of unemployment as a total of the available labour force, for the LGAs of Wollondilly (4 percent) and Wingecarribee (4 percent) was lower than that of NSW as a whole (6 percent). The town of Tahmoor and the village of Yanderra recorded the highest unemployment rates (7 and 6 percent, respectively) within the local area. The lowest unemployment rate was recorded for the village of Balmoral (2 percent).

The Wingecarribee LGA reported the lowest proportion of full time employment (57 percent) and the highest proportion of part time employment (33 percent) when compared to the local study area, and NSW as a whole. The highest proportions of full time employment were recorded for the villages of Balmoral (66 percent) and Yanderra (65 percent), which are higher than those for NSW as a whole (60 percent). Balmoral recorded the lowest proportion of part time employment (22 percent) compared with that of the local area, and NSW as a whole (28 percent).

Employment by Industry Sector

Table 6-22 in **Appendix A** identifies trends in employment by industry sector for the local area. The manufacturing, construction, retail trade and health care and social assistance sectors employ the highest proportion of the labour force across the Wollondilly and Wingecarribee LGAs, and the towns and villages within the local study area. There is also a high proportion of people employed within the education and training sector, particularly for the village of Yanderra (10 percent), as well as a high proportion of people employed within the transportation sector, primarily as truck drivers (Wollondilly Shire Council, 2011).

[1] Data for the 2016 Census was not available at the time of data analysis for this SIA.

Employment by Occupation

Table 6-23, **Appendix A**, demonstrates a relatively even distribution of occupations within the Wollondilly and Wingecarribee LGAs and across the local study area. The top occupations recorded at the time of the 2011 Census[1], for the Wollondilly and Wingecarribee LGAs included professionals, technicians and trade workers, managers and clerical and administrative workers. The local towns and villages recorded a similar distribution of occupations, with a higher proportion of technicians and trade workers, labourers and machinery operators and drivers, compared to the broader Wollondilly and Wingecarribee LGAs.

Approximately 60% of Wollondilly LGA residents travel outside the Shire for work, though the majority of these journeys are to a neighbouring LGA (Wollondilly Shire Council, 2011).

3.2.6 Community Services

A profile of community services available within local area is provided in the following sections in the context of sport and recreation facilities, public transport services and public utilities. An overview of these community services is provided in order to assess any potential impact on the access and availability of these services as a result of the proposed development. Assessment of potential impacts is provided in **Section 4.0**.

Sport and Recreation

There are several local sport and recreation facilities within the Study Area. Those within the Project Area, identified on **Figure 1-2** include:

- Bowling greens (Bargo Sports Club)
- Bargo Sportsground, which includes a hall used for dance classes, tennis courts, cricket pitch, oval, skate park, playground and off leash dog area
- Wollondilly Anglican College oval and tennis courts
- Several public parks and reserves such as Tahmoor Park, Tahmoor Lions Park, Progress Street Reserve, York Saint Park and Crown Reserve.

Sport and recreation facilities provide a sense of community and place. They also provide open space which provides visual amenity to the local townships.

Transport Services

Rail Services

The Main Southern Railway traverses the Study Area. The railway line is also known as the Southern Highlands Line as part of the Sydney Trains intercity network, connecting the Sydney metro area via Campbelltown to Goulburn, including stops at Tahmoor Station, Bargo Station and Yerrinbool Station. Weekday services generally travel through Bargo on an hourly basis (or half hour during peak times). On the weekend services are less regular, running between one hour and two and a half hour intervals.

Bus Services

Picton Bus Lines operates two bus routes (the 911 and 912 services) along Remembrance Driveway between Yanderra / Bargo and Picton on weekdays and on Saturdays. The routes provide seven services a day on weekdays and two services on Saturdays. There are no bus services on Sundays.

Utilities

The Study Area is serviced by utilities and utility infrastructure including:

- Telecommunications networks
- Transmission network
- Potable water network
- Waste facilities

As part of the state government's Bargo Wastewater Scheme, Sydney Water provided upgrades to the sewerage system in Bargo and Buxton. This Scheme provided connection for approximately 830 homes to a pressurised sewerage system, connecting them to an existing system, allowing waste to be processed at the existing Picton Sewage Treatment plant.

3.2.7 Community Identity

The 'Create Wollondilly' Community Strategic Plan 2033 (2017) (Wollondilly CSP) identifies Wollondilly's vision to be "*a place to live and work that values the inherent beauty of the Shire, is proud of its community and supports innovation and inclusiveness*". The plan identifies community aspirations and provides long term planning strategies in which these can be achieved. The Plan details Wollondilly Shire Council's intent to foster and protect the LGA's unique identity, providing a balanced approach to growth which maintains the vision of 'rural living' while developing a network of sustainable, prosperous and resilient towns and villages. The Plan outlines a number of key community values for which strategic goals are have been developed to protect. These include:

- A built environment that supports liveable communities, respects the character, setting and heritage of our towns and villages and retains the vision of Rural Living
- A unique environment and rural landscape balanced with managed growth that is consistent with Council's Position on Growth and vision of Rural Living
- A strong local economy providing employment and other opportunities
- Expansion of employment and other opportunities based on the Shire's natural assets, strong agricultural base and tourism potential, and
- A strong and viable agricultural sector supported by the protection and preservation of agricultural assets and resources.

As a primarily rural residential community, located on Sydney's urban fringe, Wollondilly Shire is faced with the challenge of managing future growth, while maintaining the Shire's rural character. As described in the Growth Management Strategy, Wollondilly Shire Council recognises that rural living is not just about development issues, but about the broader aspects of life in a rural area - towns and villages, community spirit, working agriculture, and a deep sense of place. As such rural living and growth can coexist if managed and planned for carefully.

Perceptions of growth within Wollondilly Shire stem from community values, within which there is a diversity of opinions and stakeholder interests. Community members who value rural living are opposed to any change that may affect the sense of place created by their local environment. Actions of community groups, such as the opposition of the Bargo Progress Association to the Bargo sewerage scheme and waste transfer station, demonstrate the community's resistance to change, as well as their active participation in the development and growth of their local area. The Growth Management Strategy also recognises the interests of landowners, developers and business operators, who would value the opportunities created by future growth.

Wollondilly Shire Council anticipates that some growth in the LGA is inevitable, however the Growth Management Strategy document presents Council's aim to preserve the local community identity as one of 'rural living' while accommodating natural patterns of growth in and around existing population centres. These population centres are envisioned to provide a focal point for the community, promoting community cohesion through opportunities of employment, business, education, events, community facilities and social interaction.

The Wollondilly CSP and the Growth Management Strategy are discussed further in **Section 3.2.8**

The Wingecarribee Community Strategic Plan 2031 (2017) (Wingecarribee CSP) identifies Wingecarribee Shire's vision to be "*a healthy and productive community, learning and living in harmony, proud of our heritage and nurturing our environment".* The Plan identifies guiding principles of social justice and sustainability, and proposes strategies and measures to address goals associated with the following key themes:

- Leadership
- People

- Places
- Environment, and
- Economy.

These goals aim to address key issues and challenges identified by the community, through extensive engagement undertaken as part of the development of the Wingecarribee CSP. Key issues and challenges identified by the community, as relevant to the proposed development, include:

- Roads and road maintenance, including traffic congestion in towns
- Infrastructure renewal and maintenance
- Development and its effect on the environment and infrastructure
- Population growth and aging population trends
- Effects of coal mining and coal seam gas
- Provision of local employment opportunities
- Provision of diverse and affordable housing options
- Environmental issues including climate change, biodiversity, waste, water, energy and carbon reduction
- Sustainable economic development
- Preservation of the character of the Shire, and
- Broaden range of youth activities, education and employment opportunities locally.

The Wingecarribee CSP was originally prepared in 2010, with a review process undertaken during 2016 following local government elections to ensure the Plan remained current and representative of the community's vision. As part of this review, community feedback identified that there has not been a significant shift in community aspirations or priorities, rather a refinement of these, between 2010 and 2016/17. The Wingecarribee Community Strategic Plan 2031 is discussed further in **Section 3.2.8**.

Wingecarribee Shire has also prepared separate Community Action Plans (2012 - 2015) for a number of its villages, including the village of Balmoral, which identifies the Balmoral community's vision as being "*a friendly, supportive, visually appealing community surrounded by the natural environment where there are opportunities for active and passive recreation*." The Balmoral Community Action Plan sets out a number of objectives aimed at achieving this vision, which provides insight into the community's values and aspirations for their local area. These objectives include:

- Increase passive and active recreational opportunities in the village
- The village community feels safe
- The village is surrounded by natural bushland and pest animals are controlled
- Increase community connectedness in the village
- Improve the use of the roads in the village for all users
- Improve public transport options in the village, and
- The village is clean and tidy and visually appealing.

Community Groups

A number of groups exist within the local community, formed for various purposes. Examples of these include:

- Community Links
- Wollondilly Asperger's Action Group
- Little Fella's Group

- Haven Coffee Mornings
- Tahmoor Supported Playgroup
- Drop In youth services
- Sibworks sibling support group
- Indigenous community BBQ
- Warrayites youth group
- Wollondilly Music Capers
- Aboriginal Land Councils and stakeholders, and
- Various sporting clubs, such as Wollondilly Macarthur Mountain Bike Club, Tahmoor Cricket Club, Tahmoor Soccer Club, Thirlmere - Tahmoor Rugby League Football Club, Tahmoor Netball Club, Bargo Mens Bowling Club, Bargo Netball Club, Yerrinbool – Bargo Soccer Club, Bargo Rugby League Football Club.

Six Registered Aboriginal Parties (RAPs) were identified during the formal consultation process that was undertaken as part of the Aboriginal Cultural Heritage Assessment:

- Cubbitch Barta Native Title Claimants
- Gundugarra Aboriginal Heritage Association Inc.
- Indigenous Historical Research
- Peter Falk Consultancy
- Tharawal Local Aboriginal Land Council, and
- La Perouse/Botany Bay Aboriginal Corporation.

Community Action Groups, which take a more active role in the development of the community, include:

- Shafted; a community action group opposed to coal seam gas and longwall mining. The members of Shafted rallied the local community and local Council in opposition to the development of an approved mine ventilation shaft in Tahmoor North in proximity to residential areas.
- Bargo Progress Association; this group was formed by residents concerned over the future development of the Bargo area, and have provided opposition to previous proposed developments such as the Bargo Wastewater Treatment Plant, the Telstra Mobile Phone Tower in Radnor Road, a car rally school on Government Road and the Waste Transfer Station on Anthony Road.
- Rivers SOS Alliance; a community environmental activist group with a specific focus on mining impacts upon rivers though bed cracking. This group arose out of concerned landowners and members of the public as a result of the cracking of the Cataract River in the 1990s.
- Balmoral Village Association;
- Wingecarribee Coal Action Committee; and
- Climate Action Now Wingecarribee.

In recognition of the strong community voice represented by these action groups, the TCCCC includes members from the Bargo Chamber of Commerce and the Shafted action group as community representatives, and ensures that ongoing consultation is undertaken with these groups to facilitate information sharing and foster good relationships.

3.2.8 Strategic Future Directions

The NSW and Australian strategic planning and policy framework within which the proposed development sits is discussed in Section 8.0 of the EIS prepared for the Tahmoor South Project.

Strategies specific to the social and economic development of the local area are highlighted as follows.

- The Greater Sydney Region Plan, A Plan for Growing Sydney (NSW Government 2014), presents the NSW Government's vision and goals for the metropolitan Sydney area for the next 20 years. The plan outlines key directions and actions to guide Sydney's growth.
- Towards Our Greater Sydney 2056 (The Greater Sydney Commission, 2016), the proposed amendment to A Plan for Growing Sydney, presents a major shift in strategic planning for Greater Sydney, with a long term transformational focus on the regional significance of central and western Sydney.
- The Draft South West District Plan, which sets out a 20 year vision for Sydney's South West as *"a place where opportunity, success and prosperity are forged from humble beginnings, where innovation thrives, smart jobs are created, international business connections are established and global investment is supported. Local people form the basis of a highly skilled and educated workforce that continues to grow and invest in itself and its future"*.
- New South Wales 2021 is a ten year plan which aims to "*rebuild the economy, return quality services, renovate infrastructure, restore accountability to government, and strengthen our local environment and communities"*. The NSW 2021 Plan includes a priority to develop Local and Regional Action Plans. Of relevance to the proposed development is the *South Western Sydney Regional Action Plan* (December 2012) and the *Southern Highlands & Tablelands Regional Action Plan* (December 2012).
- *NSW Strategic Regional Land Use Policy* (SRLUP), which aims to provide protection for agricultural land and manage competing land uses between agriculture and mining and coal seam gas developments.
- Local Council planning and strategies:
  - *Wollondilly Community Strategic Plan 2033* (Wollondilly CSP), which focuses on the five themes of community, governance, environment, economy and infrastructure, and the *Wollondilly Growth Management Strategy 2011*.
  - *Wingecarribee Community Strategic Plan 2031* (Wingecarribee CSP) and the *Demographic and Housing Study* (SGS Economics & Planning, 2012)

A Plan for Growing Sydney

A Plan for Growing Sydney is a regional level plan that aims to promote the growth of Sydney by providing guidance on land use planning decisions in Sydney for the next 20 years. The plan describes where people are likely to live and work, and how they would move around the city and its subregions. As part of meeting this challenge, the NSW Government will:

- Continue to focus investment in North West and South West Priority Growth Areas and priority urban renewal precincts; and
- Look beyond these priority areas to other locations that could contribute to meeting the housing supply challenge, now and beyond 2036.

Action 2.4.2 of A Plan for Growing Sydney commits the NSW Government to developing a framework for the identification of new growth areas, with an initial focus on opportunities in the Greater Macarthur Investigation Area.

Towards Our Greater Sydney 2056

Towards Our Greater Sydney 205 outlines a 'three cities' approach, with the Sydney CBD representing the 'Eastern City', the Parramatta CBD representing the 'Central City' and the future western Sydney Airport and surrounds representing the 'Western City'. The rationale for this approach is to create economic diversification and improve Greater Sydney's international competitiveness. The strategy identifies a range of changes associated the expected increase in population and commercial growth in western Sydney, and puts forward the Draft South West District Plan to manage the expected growth.

Draft South West District Plan

In late 2016 the Greater Sydney Commission released draft District Plans to allow for integrated planning of land use, residential growth areas, transport and infrastructure between state and local governments, in alignment with the Towards our Greater Sydney 2056 strategy. The draft South West District Plan sets out priorities and actions across the areas of productivity, liveability and sustainability for Greater Sydney's South West District.

NSW 2021 Regional Action Plans

South Western Sydney

The South Western Sydney Regional Action Plan (2012), which includes the Wollondilly LGA, identifies the following key projections:

- An increase in population from 829,342 to 1,298,400 (57 percent growth) by 2031.
- An increase in housing from 267,800 to 461,400 (72 percent growth) by 2031.

As a result of these pressures the Plan identifies a need to grow local economy and diversity, improve integrated regional transport, deliver appropriate services to disadvantaged and vulnerable members of the community, improve access to quality health services, improve education outcomes, protect our environment and heritage (which specifies a need to "*manage the impact of coal seam gas and longwall mining*"), and provide more affordable housing options.

Southern Highlands and Tablelands

The Southern Highlands and Tablelands Regional Action Plan (2012), which includes the Wingecarribee LGA, identifies the following key projections:

- An increase in population from 83,200 to 94,000 (13 percent growth) by 2031.
- An increase in housing from 36,900 to 46,700 (27 percent growth) by 2031.

As a result of these pressures the Plan identifies a need to revitalise the economy, effectively manage natural resources and agricultural land (including *protecting agricultural land and the aquifer system from the impact of coal seam gas and coal mining were priorities for this community and need to be balanced against the economic benefits of mining*), improve integrated regional transport, deliver quality health and community services, and improve access and options for further education and employment.

NSW Strategic Regional Land Use Policy

The NSW SRLUP was developed to better manage the potential land use conflicts arising from the location of high quality agricultural land, and the mining and coal seam gas industries.

More than 50,000 hectares in the Southern Highlands region have been identified as high-quality farmland as part of the SRLUP initiatives.

The Strategic Agricultural Land Map Series shows that the nearest Biophysical Strategic Agricultural Land to the proposed development is located between Douglas Park and Camden, approximately 20 kilometres to the north-east of the Project Area.

Local Strategies

The Wollondilly CSP is a strategic document prepared in line with the objectives of the NSW 2021 plan. Key strategies from each theme include:

- Looking after the community – community building through programmes, services and events, social planning, engagement and communication with residents.
- Accountable and transparent governance – provide employment choices, advocate strongly for the interests of the community, and promote a positive representation of the Council's image.

- Caring for the environment – protect and conserve biodiversity and natural resources, including waterways, riparian lands and groundwater dependent ecosystems, undertake auditing, monitoring and regulatory enforcement to protect the environment. It was noted that "*Wollondilly's residents have high expectations regarding the protection of rivers and other water courses and have opposed mining under rivers, coal seam gas extraction and their associated impacts."*
- Building a strong local economy – strengthen and diversify Wollondilly's economic base by attracting and supporting the development of a diverse range of industries. It was noted that productive rural lands and agriculture is a key industry as well as manufacturing, retailing, tourism and mining, and *Council will continue to support all of these industries but will also strive for the employment base to be widened*.
- Management and provision of infrastructure – manage the road network to respond to community needs, growth in the Shire, improving road safety and improving transport choices.

The *Wollondilly Growth Management Strategy 2011* supplements the Wollondilly CSP and sets new directions for accommodating growth for the next 25 years. The *Growth Management Strategy 2011* includes assessment criteria for meeting objectives consistent with overarching State, regional and local strategies (such as NSW 2021 and the Wollondilly CSP).

The Wingecarribee CSP provides the future vision, goals and priorities for the LGA to 2031 and was developed by Council in conjunction with the community. The Wingecarribee CSP is comprised of five themes being leadership, people, places, environment and economy. There are goals attributed to each theme and a three tiered approach provided to facilitate achieving these goals. The Wingecarribee CSP is guided by the principles of social justice and sustainability and was adopted in 2010, and revised in 2017.

The Wingecarribee *Demographic and Housing Study* (2012) was prepared to provide Council with data to inform decisions about accommodating growth in the demand for housing over the next 20 years.

3.3 Tahmoor Mine

The Southern Coalfields Inquiry (discussed in **Section 2.5.4**) noted that "*the contribution of coal mining in the Southern Coalfield to State revenues, regional income and employment is considerable, especially when indirect employment and support industries are taken into account. Furthermore, many industry employees live in the region and donations and sponsorships provided by the coal industry play a significant role in local communities*." Tahmoor Mine is one such mine referenced in the Inquiry.

3.3.1 Role of Tahmoor Mine in the Community

Tahmoor Mine has been in operation for over thirty five years, since mining commenced in 1979. Over this period Tahmoor Mine has developed a relationship with the surrounding local community, supporting local events, making community contributions and employing staff primarily from within the local area.

Tahmoor Coal has worked to continually improve and maintain the role of Tahmoor Mine in the community. As part of this role, the Tahmoor Colliery Community Consultative Committee (TCCCC) was established to enable open dialogue and dissemination of information between mine operators, management, key stakeholders and the community.

3.3.2 Employment

Tahmoor Mine currently has 390 employees (2017) and employs the majority of its workforce from the local region. In 2013 the largest proportion of personnel employed at Tahmoor Mine reside within the Wollondilly LGA (46 percent). The remaining employees travel to work from other nearby LGAs including Wollongong and Shellharbour (30 percent), Wingecarribee (8 percent), and Campbelltown (16 percent) (**Figure 3.3**).

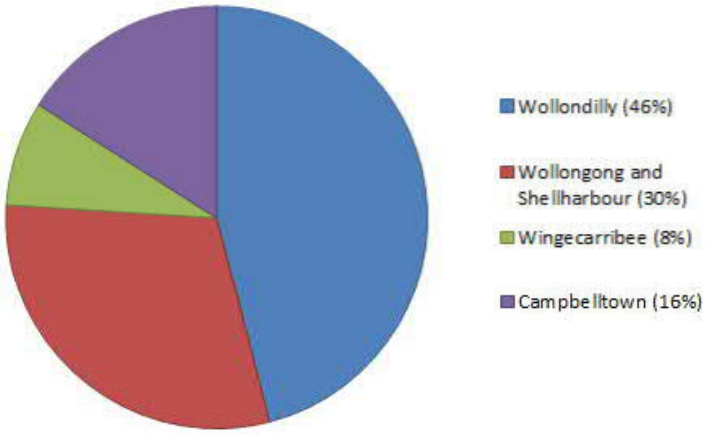


Figure 3.3 Tahmoor Coal Employees by Local Government Area of Origin (2009)

Workforce data obtained for 2006 indicates the average age of employees at Tahmoor Mine was 43. At this time the employees ranged in age from 21 to 63 years of age. Tahmoor Mine also has an Apprentice Engagement Program which employs at least two apprentices from the local area each year.

3.3.3 Contributions

Tahmoor Mine contributes broadly to National and State economic development through mandatory contributions from royalties and taxes, as well as providing mandatory payments to local councils as part of project approval agreements. These payments typically contribute to local infrastructure development or maintenance, and are an important part of Tahmoor Coal's support for local communities.

These mandatory contributions are supplemented by contributions to community partnerships and initiatives through Tahmoor Coal's Corporate Social Involvement (CSI) program.

Tahmoor Coal's CSI program provides for local contributions as part of the targeted Tahmoor Community Support Program and other local programs. Some of Tahmoor Coal's recent contributions include, but are not limited to:

- **Tahmoor Uniting Men's Shed- Apprentice Project (2016-2017)** - Tahmoor Colliery commenced an apprentice community project with the Tahmoor Uniting Men's Shed (TUMS) in late February 2016. Tahmoor Colliery has provided $25,000 to support the project. The TUMS is a community-based, non-profit organisation that is accessible to all men. The primary activity of TUMS is the provision of a safe, friendly and healing environment where men are able to work on meaningful projects at their own pace in their own time in the company of other men. A major objective is to advance the well-being and health of their male members and to encourage social inclusion. In conjunction with local contractors, the Tahmoor Colliery apprentices built new pathways, retaining walls, an awning for the shed, plumbing and some electrical work, allowing Tahmoor Colliery apprentices to give back to the local community. In 2017 Tahmoor Colliery donated $10,000 to TUMS to provide a BBQ trailer that is available to local community groups.
- **Thirlmere Volunteer Bush Fire Brigade (2016)** - Tahmoor Colliery donated $4,000 to the Thirlmere Volunteer Bush Fire Brigade for new radios for the organisation. The new radios will improve access and communication between volunteers, assisting the Thirlmere Volunteer Fire Brigade in providing a safer, faster and more efficient response to incidents.
- **Koala Habitat Restoration (2016)** - Tahmoor Colliery donated $2,500 to partner with Wollondilly Shire Council and Conservation Volunteers Australia to restore koala habitat and undertake a diurnal koala population study within the local area.

- **Wollondilly School Breakfast Program (2016)** - Tahmoor Colliery donated $5,000 to Wollondilly School Breakfast Program, a school-based project delivering a free, healthy and nutritious start to the day to disadvantaged children. The aim of the program is to assist in reducing food insecurity and to provide students with an equal opportunity to excel academically, emotionally and socially. Outcomes associated with the program include improved health status, concentration levels, academic performance, behavioural and social skills and improved relations with other students, school staff and the wider community. Children who eat breakfast are more likely to attend school, be better behaved and have positive interactions with fellow students and teachers.
- **Thirlmere Festival of Steam (2016)** - Tahmoor Colliery was a platinum sponsor ($4,000) for the 2016 Thirlmere Festival of Steam, the largest community event in Wollondilly Shire. The Festival of Steam is a two day community celebration of steam locomotives in the village of Thirlmere. All money raised during the event by Picton Rotary was used to support local charities and community groups for 2016.
- **2016 and 2017 Design an Ad Competition** - Tahmoor Colliery provided $4,000 in sponsorship prizemoney to the Wollondilly Advertiser's 'Design an Ad' competition in both 2016 and 2017. The competition is open to local primary and secondary students to design an advertisement for local business to be published in the "Wollondilly Advertiser". Tahmoor Colliery believes that the 'Design an Ad' competition allows for children to develop their creativity whilst providing exposure for a number of local businesses. Children also gain knowledge about the local community and begin to develop strong community relationships.
- **Dementia Café (2017)** – Tahmoor Colliery donated $3,000 towards the Wollondilly Dementia Café initiative which provides a space for people with dementia, their carers, family and friends to socialise with others in similar situations within their community and access services and support networks.
- **Picton High School Business week (2017)** - Tahmoor Colliery donated $2,500 to Business Week, which offers the opportunity for students to acquire the skills necessary to run their own company. In an exciting one week intensive program students have the opportunity to experience what it is like to run a multi-million dollar company and make decisions which have real outcomes. Students learn valuable skills such as teamwork and leadership, as well as skills that will help take them into the business related community at the conclusion of their schooling career.
- Other Tahmoor area sponsorships and contributions (2016-17) include:
    - Burragorang Scout Group ($2,500) to replace stairs with a ramp for disabled access and to repaint the scout hall
    - Community Links ($5,000) to provide Christmas gifts for the less fortunate among the Wollondilly Community
    - Picton Strings Orchestra ($3,000) to encourage young local community members to participate in their musical program
    - St Marks Cemetery Restoration Project ($5,000)
    - The Oaks Historical Society Incorporated (Wollondilly Heritage Centre and Museum) ($1,600)
    - 2016 and 2017 Wollondilly Anglican College Country Fair
    - 2016 and 2017 Picton High School Science Fair ($1,000 and $1,500 respectively)
    - 2017 Bargo Public School Show and Shine Car Show BBQ ($2,000)
    - Paws Pet Therapy, supporting volunteers and their pets to visit and comfort people in hospitals, mental health centres, homeless shelters, rehab and other facilities ($5,000)
    - Riding for the disabled (Wollondilly) ($4,000).

- Tahmoor Coal has also contributed to wider fundraising programs and charities initiated by the local community or staff such as NSW Cancer Council, National Breast Cancer Foundation, Glenn Sargood MND (Motor Neuron Disease) Fundraiser, Cystic Fibrosis Swim-a-thon Fundraiser, Rural Fire Service, Focus on Families and AusIMM Student Chapter. also donates money to sporting groups in the Wollondilly LGA for the Junior Sports Development Program. In 2017 the following sporting groups received donations:
  - Buxton Netball Club
  - Jarvisfield Netball Club
  - Picton Swimming Club/Picton Leisure Centre
  - Wollondilly JAFC
  - Macarthur BMX Club
  - Tahmoor "Wildcats" Netball Club.

3.3.4 Listening to the Community

As well as active involvement in the TCCCC and enabling staff to attend community activities such as community information days, Tahmoor Coal maintains a database of complaints received by Tahmoor Mine to allow it to understand issues as they arise in the community. A summary of complaints received each year is provided in the Tahmoor Annual Review report, available on the Tahmoor Coal website. A review of complaints received in 2015 and 2016 identified that noise complaints were the most significant type of complaint received. Other complaints of note include concerns regarding dust, odour, property access and erosion, subsidence, the condition of local roads, Tahmoor Coal's environmental management, particularly with regards to local waterways, employment opportunities, housing quality, variety, cost and availability, and accessibility to community services.

In response to noise complaints received in 2015 and 2016, follow up actions included contacting complainants to discuss the complaints, specific monitoring, and review of operating activities and real time noise monitoring data at the time of the complaint. The Tahmoor South noise reduction plan continued to be implemented in consultation with the NSW Environment Protection Authority (EPA). Similarly, in response to odour concerns, open dialogue was undertaken with local authorities and the local community to resolve the issue.

Tahmoor Coal actively engages with the community to resolve issues and complaints raised. This engagement would continue as part of the proposed development.

3.3.5 Stakeholder Perception Research

In July 2015 the previous owners of Tahmoor Mine, Glencore Coal Pty Ltd, engaged the Australian Centre for Corporate Social Responsibility (ACCSR) to undertake research into community and stakeholder perceptions to assist Glencore in evaluating their engagement efforts in the Southern NSW Coalfields to date and to inform Glencore's stakeholder engagement practice going forward. ACCSR undertook interviews with 89 key stakeholders in the Southern NSW Coalfields (Tahmoor). Stakeholders included community groups, indigenous groups, government agencies and representatives, local businesses and local government, the general community and landholders.

The ACCSR report (2016) provides a consistent baseline evaluation of community and stakeholder relationships and investments across the Southern NSW Coalfields. Key findings of the stakeholder perception research identified in the ACCSR report are discussed in the following sections.

Stakeholder issues

Stakeholders and community members interviewed were asked to identify issues which are important to them. Stakeholders primarily spoke about environmental, social and relationship concerns, and in particular, issues of subsidence and impact on water resources.

Tahmoor stakeholders identified subsidence as their key issue. Stakeholders spoke about damage to housing and infrastructure due to subsidence, as well concerns around the sustainability of water resources, given the uncertainty surrounding impacts of mining on groundwater. Stakeholders were particularly concerned about damage to infrastructure and property not being adequately addressed in future due to the abolishment of the Mine Subsidence Board.

Local job security was identified as an important issue by landholders and the general community and stakeholders spoke extensively about the tangible difference that Glencore makes by supporting community groups, projects, and business.

Social licence to operate

Social Licence to Operate (SLO) is defined as the level of acceptance or approval granted to an organisation or project by stakeholders and the local community. The relationships between Glencore and its stakeholders were examined through a sequence of validated statements that measure SLO. The ACCSR report found that feedback from the general community and landholders suggests that stakeholders overall feel a high level of acceptance towards Glencore, but fall short of approval or full trust in the organisation.

Glencore's stakeholder network in the Southern NSW Coalfields

The ACCSR report found that Glencore had a loosely connected stakeholder network in the Southern Coalfields, with two main clusters of stakeholders identified. These include communities based around the region's public schools, and local businesses and community groups. Findings of the report suggest that relationships among stakeholders are driven by geographical proximity and type of organisation rather than common goals/interests.

Community and environmental programs

As part of the research, community members were asked to rate Glencore's community investment programs and environmental performance. In Tahmoor the average rating for all of the environmental issues assessed fell between fair and satisfactory. Efforts to reduce subsidence had the highest level of awareness (76 per cent) among stakeholders, and the lowest performance rating (2.10 out of 5). This is consistent with subsidence being raised as a core issue across all stakeholder groups. These findings suggest that environmental impact and performance is influencing stakeholders' perceptions of Tahmoor Mine.

Awareness of most areas of performance was between 50-75 per cent, suggesting that there is a reasonable level of awareness, informing stakeholder and community perceptions. Awareness of community investment programs was notably lower than that for environmental initiatives, with awareness of the majority of community programs falling between 25-50 per cent.

Engagement preferences

Stakeholders were asked about their preferred method of engaging with Glencore. Personal interactions through one-on-one meetings were identified as the preferred way to engage. with phone calls and emails less preferred.

Recommendations

The ACCSR report provides a list of recommendations for ongoing stakeholder and community relationship management as summarised below.

1. Openly discuss and work collaboratively to address the issue of subsidence

Subsidence was consistently identified as the most important issue for stakeholders across the Southern NSW Coalfields. The report identified subsidence as having the highest level of awareness and lowest performance rating of all environmental issues evaluated. While stakeholders understood that Glencore is not solely responsible for addressing subsidence issues, this issue was found to impact on Glencore's reputation and social licence.

The report recommended open discussion with stakeholders on subsidence concerns and that the issue of subsidence be addressed proactively in engagement activities. The report suggested raising awareness of Glencore's commitment to cooperation with property owners in implementing solutions for subsidence to improve stakeholder perceptions of the company's accountability, and enhance reputation.

2. Engage closely with influential stakeholders who have both high social capital and motivation to collaborate

The report recommended that Glencore continue to actively and closely engage with stakeholders and strengthen relationships, particularly those who have high social capital and motivation to collaborate with Glencore on matters of common interest. It was recommended that strategies for engagement in Tahmoor target stakeholder-specific issues, as stakeholders appear to be connected based on geographic proximity and type of organisation rather than common goals.

3. Focus engagement efforts with landholders and the general community

The report recommended that Glencore focus engagement efforts on landholders and the general community and issues that were identified as important to these groups as they reported the lowest SLO and reputation rating to Glencore. Landholders and the general community identified environmental impacts including subsidence and sustainability of water resources as important issues. They also called for improved infrastructure, more services, and local job security.

The report recommended a proactive and transparent communication approach, with feedback mechanisms to address concerns. This approach was identified as important to demonstrate that stakeholder views are being heard and factored into decisions. Listening and ensuring promises are kept was suggested to improve trust, relationship quality and reputation.

4. Continue community investment strategy but avoid creating dependence

Stakeholders recognised that Glencore makes a tangible impact by supporting community groups and projects. They see Glencore supporting the community by funding services, projects, or infrastructure that otherwise would not be funded.

These results suggest that Glencore should continue its community investment strategy to address local needs and aspirations, in order to build and improve relationships with stakeholders. However, the report identified the importance of avoiding dependence on Glencore's funding, to build community capacity and diversify the local economy. Working collaboratively with local business, community groups and local governments was suggested to provide opportunities to target specific areas of interest in each community.

5. Improve reputational risk by maintaining engagement efforts

Stakeholders in the Southern Coalfields gave Glencore an average reputation score between fair and satisfactory (47%). The report recommended that Glencore's reputation in the community could be improved by strengthening engagement with the most influential stakeholders, including the Wollondilly Shire Council. Existing strong relationships with local businesses, government agencies and community groups were recommended to be leveraged to align and promote Glencore's activities in the community and influence reputations of other stakeholders.

6. Environmental programs are a key indicator of relationship quality and SLO

Stakeholders in the Southern Coalfields were highly aware of most of Glencore's environmental programs, but performance was rated relatively poorly. Subsidence was the issue that received the lowest performance rating and had the highest level of awareness, closely followed by ground water management and land rehabilitation activities.

High levels of awareness and low performance ratings of environmental programs suggest that Glencore's environmental performance affects the quality of relationships and the SLO. Increasing information sharing about environmental programs, particularly related to key issues of community concern, is recommended to raise greater awareness about Glencore's efforts and improve community perception of Glencore's environmental performance.

7. Continue a high level of inter-personal interactions with key stakeholders

The majority of stakeholders reported that they prefer personal interactions through face-to-face meetings, followed by emails and phone calls, rather than group communication methods such as workshops and newsletters. Stakeholders identified one-on-one meetings as the most effective way of engaging with Glencore, and these meetings may be a critical factor in building social capital and trust. The report also recommended that Glencore improve the usefulness of mass communication methods such newsletters, community meetings and workshops as channels for engaging with the community about issues that are important to them.

4.0 Impact Assessment

Social impacts associated with the proposed development are summarised below. There are two main types of social impacts: direct impacts, and indirect impacts. Direct impacts are those that would cause changes to the existing community as a result of the proposed development, as measured through the use of social indicators, such as population, health, and employment,. Indirect impacts are those that result from changes brought about by the proposed development relating to non-quantitative measures such as community values and sense of place. Both direct and indirect impacts are discussed in the following sections to determine the likely impact of the proposed development on social amenity. The impacts identified been informed by, and built on, the issues identified in the SIA Scoping Report.

The assessment of direct impacts has been undertaken against the range of social indicators outlined in **Section 2.7** to predict the degree of change (benefit or loss). A review of relevant government inquiries, and Council and community interest submissions made as part of the proposed development, as well as outcomes of community engagement, was undertaken to provide insight into stakeholder and community perceptions, values and concerns in relation to indirect social impacts.

This section also includes an assessment of the potential cumulative social impacts of the proposed development, when considered in the context of other past, current and future planned developments in proximity of the proposed development.

The significance of impacts (both positive and negative) for each of the social impacts identified below are summarised in **Section 4.10** in accordance with the matrix approach outlined in the SIA Guideline, and as described in **Sections 2.7.1**and **2.7.2**. Based on the matrix assessment, the significance/ risk rating of impacts without mitigation and with the implementation of mitigation (residual) is shown in **Table 4-1**.

4.1 Surroundings - Natural Features

A key community concern relates to the potential impacts of underground mining on natural water courses, and the perception that environmental effects on watercourses may affect the ecological value of the local area and the potential to recognise economic gains associated with tourism. Within the Project Area, community concerns have been raised relating to the potential impacts of the proposed development on the Bargo River Gorge, Mermaids Pool and Thirlmere Lakes. The concerns have centred on whether the proposed development would involve the implementation of risk management zones that would adequately protect natural water courses.

During the mine planning process constraints analysis, risk assessment and preliminary fieldwork investigations were undertaken to identify sensitive natural surface features and to develop risk management zones for the proposed development. Following the risk assessment the proposed longwall layout was modified to reduce subsidence impacts to these natural features. Specifically mining is no longer proposed in the Eastern Domain and the commencement ends of longwalls have been shortened to minimise and avoid impacts to the Metropolitan Special Area including Cow Creek and the Upper Nepean State Conservation Area located within its bounds. The mine planning process has avoided direct undermining of sensitive environmental features including the Bargo and Nepean Rivers, Bargo River Gorge, Mermaid Pools and of several waterways including Eliza Creek, Dry Creek, Sugar Loaf Gully, Carters Creek and Cow Creek, which are outside of the Subsidence Study Area (SSA) for the proposal. Similarly, the Thirlmere Lakes are located 3.5 km from the nearest longwalls and outside the SSA for the proposal. The underground extent of the mine proposed on **Figure 1-2** represents this configuration.

4.1.1 Surface Water

Potential impacts of the proposed development on surface water as a result of mining-induced subsidence would include impacts to base flow, hydraulic characteristics and associated physical stability of the watercourses, as well as water quality generally. It is predicted that the proposed development would result in minor localised changes, diversions and ponding to surface water. Management of these potential impacts would include further baseline monitoring, monitoring during mining and post-mining monitoring programs. Trigger Response Action Plans would be prepared for the proposed development, which would focus on water quality exceedances, unexpected flow loss and unexpected loss of pool water holding capacity.

The assessment of flooding identified minor localised increases of inundation during flood events as a result of subsidence related changes from the proposal at Tea Tree Hollow (upstream) at Remembrance Driveway near Caloola Road. Drainage enhancement works, including provision of additional drainage culverts or pipes are proposed at this location to mitigate impacts. Flooding is unlikely to be increased in the Bargo township as a result of the proposed development.

The water balance undertaken for the site identified that a high level of water supply efficiency would be maintained by on-site recycling. However, ongoing supply from Sydney Water would still be required. Controlled releases of treated water to Tea Tree Hollow would continue to be required for the proposed development.

Further detail regarding impacts of the proposed development on surface water is provided in Section 11.4 of the EIS and Appendix L (Surface Water Impact Assessments)

Summary of impacts

The proposed development is predicted to result in some changes to natural features such as local watercourses and water quality and there is potential for any change to these natural features to be perceived negatively by the community, as sustainability of water resources was identified as a key issue across all stakeholder groups (ACCSR, 2016). Given the level of community value and concern raised relating to the potential impacts of the proposed development on local watercourses, the sensitivity of potentially affected stakeholders is considered to be high.

The likelihood of impacts to waterways is considered to be *likely* with *major* consequences of impact without mitigation, resulting in a significance/ risk rating of *extreme*. Based on the outcomes of the specialist assessments, it is considered that with the implementation of project specific mitigation measures as detailed in **Section 5.0**, the consequence of impacts can be reduced to *moderate* resulting in a residual post-mitigation significance/ risk rating of *high*.

4.2 Surroundings - Amenity

Amenity refers to the quality of a place, its appearance, feel and sound, and the way its community experiences the place. Amenity contributes to a community's identity and its sense of place. Aesthetic qualities are an important part of amenity, but the broader concept of amenity is determined also by the physical design of a place and the human activity that takes place within it. A place that has 'amenity' is regarded as pleasant and attractive, as well as convenient and comfortable (Handy, 2002).

Amenity impacts include any factors that affect the ability of a resident or visitor to enjoy their home and daily activities, for example, noise, vibration, changes to views or changes to air quality. Changes in amenity may also conflict with community values, contributing to a loss of or change in a community's sense of place, and subsequently a community's perceived identity.

The proposed development has the potential to affect social amenity as a result of changes to the following factors:

- Subsidence;
- Noise and vibration;
- Air quality and odour;
- Visual and aesthetics;

- Traffic; and
- Land use.

4.2.1 Subsidence Impacts

Subsidence impacts that have the potential to create direct social impacts include changes to:

- Natural features including waterways, cliffs and escarpments and water related ecosystems, conservation areas, and other features;
- Areas and items of archaeological and heritage significance;
- Public infrastructure including the Main Southern Railway, highways and local roads, pedestrian overbridges, and various utility infrastructure;
- Public amenities and facilities including schools, Bargo village shops, and various other facilities;
- Farm land and agricultural land uses;
- Commercial and business establishments; and
- Residential properties.

As identified previously, the mine planning process has resulted in changes to the longwall configuration to avoid and/ or minimise impacts to a range of sensitive features identified in the Project Area, including natural, built and cultural features. As a result direct undermining has been avoided at the Bargo and Nepean Rivers, Bargo River Gorge, Mermaid Pools, and at several waterways including Eliza Creek, Dry Creek, Sugar Loaf Gully, Carters Creek and Cow Creek, which would remain outside of the SSA for the proposal. The Metropolitan Special Area (including Cow Creek and the Upper Nepean State Conservation Area located within its bounds) and the M31 Hume Highway would also be located outside of the predicted limit of subsidence. The mine plan has also avoided direct undermining of rock shelter sites along Dog trap Creek with artwork that is of high cultural and archaeological significance and of archaeological heritage sites in the south east section of the Project Area south of the Hume Highway.

Mine Subsidence Engineering Consultants (MSEC) have undertaken a subsidence assessment for the proposed development (MSEC, 2018). This assessment identified that the majority of impacts to existing public infrastructure (surface and underground assets) arising from subsidence can be managed by a Subsidence Management Plan. The key subsidence impact requiring consideration from a social perspective is the impact on housing. This issue is often raised throughout community consultation and feedback as a key concern.

The main township of Bargo would be directly affected by subsidence as a result of longwall mining within the extent of longwalls. There are 1,458 houses within the SSA and the subsidence report (MSEC, 2018) identified that 751 of these are located directly above the proposed longwalls (the majority located in Bargo). Maximum conventional subsidence impacts to the 1,458 houses within the SSA are summarised in Figure 4.1.

It is expected that subsidence impacts to houses would include cosmetic alterations and at times minor structural damage to buildings, predominantly in the urban areas. The MSEC assessment predicted that of the 1,458 houses within the SSA, 70% would remain in the “No Claim or R0” category (nil impacts or minor adjustment) of housing impacts.

The potential impacts of the proposed development simulated for the future Bargo urban growth area indicates that of the potential 2,000 future houses in this area, impacts to the majority of new houses (76%) would be classified as “No Claim or R0” category. Property owners affected by subsidence would be compensated through the repair, restoration and rehabilitation of the properties in conjunction with Subsidence Advisory NSW.

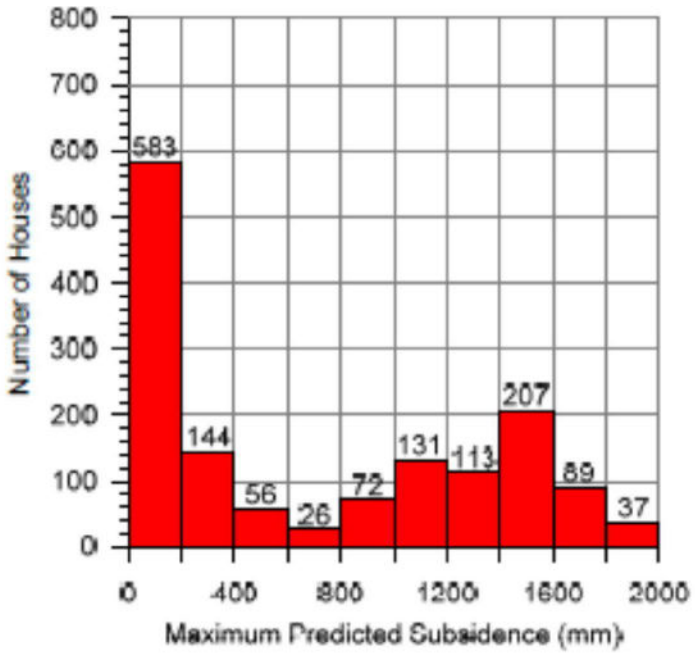


Figure 4-1 Maximum predicted subsidence for houses (MSEC, 2018)

The Southern Coalfields Inquiry made recommendations regarding best practice in relation to the assessment of subsidence impacts, minimising adverse impacts on significant natural features, and the management, monitoring and remediation of subsidence and subsidence-related impacts. These recommendations have been, and will continue to be, considered during the environmental assessment and approvals process for the proposed development.

There are 791 bores within the Study Area recorded by the NSW Water Access Licences (WAL) Register, which are predominantly in Hawkesbury Sandstone, surficial alluvium or basalt aquifers (89%). Longwall mining as a result of the proposed development has the potential to result in the drawdown of aquifers and to affect up to 30 registered bores and three unregistered bores with drawdown impacts of greater than 2 metres.

Prior to commencement of mining all water works identified as being potentially adversely affected in the Groundwater Assessment (Hydrosimulations, 2018) and the Subsidence Impact Assessment (MSEC, 2018) will be surveyed for their existence, location, use, and construction details. Tahmoor Coal would commit to a 'make good' standard of remediation for impacts to bore users, which could involve deepening and/or replacing bores and wells and/or providing an alternative water sources to affected users.

Further detail regarding the assessment of potential subsidence and groundwater impacts is provided in Sections 11.1 and 11.3 of the EIS and Appendix H (Subsidence Impact Assessments) and Appendix I (Groundwater Impact Assessment).

Summary of impacts

As identified in **Section 3.3.5**, subsidence and water resources were consistently identified as important issues for stakeholders across the Southern NSW Coalfields (ACCSR, 2016) demonstrating the high sensitivity of affected stakeholders. The overall findings of the subsidence assessments undertaken by MSEC are that the levels of potential impact to identified natural features and built infrastructure are able to be mitigated and can be controlled by the preparation and implementation of Subsidence Management Plans (or Extraction Plans), many of which have already been developed and are being successfully implemented as part of current mining activities at the Tahmoor Mine. Similarly, Tahmoor Coal would continue to implement its existing policy of 'making good' for any affected private bore users to mitigate impacts to water quality or quantity.

The likelihood of subsidence and groundwater bore impacts are considered to be *likely* with *major* consequences of impact without mitigation, resulting in a significance/ risk rating of *extreme*. Based on the outcomes of the specialist assessments, it is considered that with the implementation of project specific mitigation measures as detailed in **Section 5.0**, the consequence of impacts can be reduced to *moderate* resulting in a residual post-mitigation significance/ risk rating of *high*.

4.2.2 Noise and Vibration Impacts

Exposure to noise and vibration has the potential to create annoyance, interfere with daily activities or the enjoyment of these activities, interfere with concentration and memory particularly with regard to children's school performance and business activity that depends on quiet environments, disrupt sleep and rest patterns and create or exacerbate health concerns such as hearing impairments and cardiovascular health (elevated blood pressure).

As discussed in **Section 3.3.4**, a review of the Tahmoor Coal's complaints register identified that noise complaints are the most significant type of complaint received. This suggests that noise is a key concern for the local community. In response to these complaints, Tahmoor Coal has developed and implemented a noise reduction plan in consultation with NSW EPA. Noise at the mine is monitored through quarterly attended night-time surveys, and by two continuous real-time noise monitors which operate 24 hours per day 7 days per week. The continuous real-time noise monitors are linked to the mine's control room with alarms in place to proactively monitor and manage night time noise levels. The implementation of the plan has resulted in a reduction of noise-related complaints and Tahmoor Coal continues to monitor and respond to each noise complaint received.

Construction noise for the proposed development has been assessed in accordance with the *Interim Construction Noise Guideline* (ICNG) (DECC, 2009). Construction works are proposed to occur primarily during standard (daytime) construction hours, however the installation of ventilation staffs would involve drilling works which are required to occur on a 24 hour basis. The noise assessment predicts exceedances of Noise Management Levels (NMLs) during standard and non-standard construction hours at nearby receivers and a range of reasonable and feasible mitigation measures are proposed to be implemented as part of a Noise Management Plan to minimise impacts. Mitigation would focus particularly on sensitive night time hours in order to minimise the potential for sleep disturbance. Social amenity impacts from construction noise would be temporary and consistent with construction projects of a similar scale. With the implementation of mitigation measures, it is considered that impacts can be managed so as to not significantly impact on social amenity.

Operational noise in NSW is assessed against the *Noise Policy for Industry* (EPA, 2017) (NPfI) which replaced the *NSW Industrial Noise Policy* (EPA, 2000) (INP) in October 2017. However, the project is subject to transitional arrangements under the NPfI, whereby the requirements of the INP continue to apply. As such the project operational noise has been assessed against the INP.

The proposed development would utilise existing surface facilities at the Tahmoor Mine (with some expansion or upgrade) to service proposed longwall mining at the Tahmoor South Project. This option was considered the most optimal environmental and social outcome compared to the construction of entirely new surface facilities (and associated disturbance and impacts) to support the proposed development. The existing Tahmoor Mine and associated surface facilities is a legacy industrial premise, developed prior to the introduction of contemporary noise assessment standards. Many residential and other noise-sensitive receivers have developed in the area since the establishment for the mine. As a legacy industrial premise, Tahmoor Coal has in consultation with the EPA implemented a series of pollution reduction programs focusing on reasonable and feasible at-source measures and engineering controls to minimise noise emissions from the site. The INP recognises that legacy industrial premises may never achieve contemporary noise standards and focuses on driving 'achievable levels', being the noise levels that can be achieved following the implementation of all reasonable and feasible mitigation measures.

The operational noise assessment undertaken for the proposal identifies that that with the implementation of reasonable and feasible mitigation measures as part of surface facility upgrades for the Tahmoor South Project, the Tahmoor Mine surface facilities would result in noise emission reductions compared to the existing scenario. Noise emissions are predicted to reduce compared to the existing operations at almost all noise-sensitive receptors during the day and evening periods and, importantly, most significantly during the night-time period at all noise-sensitive receptors. As such the

proposed development would lead to significantly improved noise and social amenity outcome compared to the existing situation. Nevertheless, residual impacts above project specific noise levels are predicted to occur at some receivers and Tahmoor Coal would seek negotiated noise agreements or acquisition (where required) for these receivers as per the NSW Government *Voluntary Land Acquisition and Mitigation Policy* (2018). This is further detailed in Section 11.10 of the EIS.

Site employee traffic volumes are expected to increase between 2019 and 2020 (peak in 2020) as a result of the proposed development. As such the road traffic noise assessment focused on traffic noise generated in 2020 and found that the levels would not exceed relevant *NSW Road Noise Policy* (DECCW, 2011) criteria. It is noted that traffic would reduce from 2020 and result in reduced traffic noise levels compared to the worst case assessed in the noise assessment.

The vibration assessment undertaken for the proposal identified that based on the safe working distances for typical plant items and the distance to surrounding sensitive receptors (typically >170 meters away), it is unlikely that human response vibration criteria would be exceeded. As such there is unlikely to be any amenity impacts as a result of vibration during the construction of the proposal.

Increases to existing noise are likely to be perceived negatively by the community (ACCSR, 2016). Affected receivers are considered to be sensitive to additional noise impacts. However, with the implementation of noise mitigation measures, noise levels of the proposed development will be reduced overall compared with the existing operations of the Tahmoor Mine.

For construction noise, the likelihood of noise impacts is considered to be *likely* and the consequence of impact is considered to be *moderate* resulting in a significance/ risk rating of *high*. With the implementation of mitigation the consequence of impact is likely to reduce to *minor* however the residual post-mitigation significance/ risk rating would remain *high*.

For operational noise the likelihood of noise impacts is considered to be *possible* and the consequence of impact is considered to be *moderate* resulting in a significance/ risk rating of *high*. With the implementation of measures including real time noise monitoring and reactive management to trigger noise levels during surface facility and REA operations, it is considered that the consequence of impacts can be reduced to *minor* resulting in a residual post-mitigation significance/ risk rating of *moderate*.

4.2.3 Air Quality and Odour Impacts

Impacts to air quality and odour emissions have the potential to adversely affect community health and local amenity. A review of the Tahmoor Coal complaints register for the period of 2014-2016 identified some instances of complaints from the local community relating to odour (refer **Section 3.3.4**).

The Air Quality Impact Assessment (AQIA) assessed the worst case air quality impact for the proposed development, including the development of stage one of the REA.

Construction of the proposed development has the potential to result in dust generation, visible dust plumes, elevated PM_{10} concentrations from dust generating activities and emissions from construction vehicles and equipment. Sensitive receptors in proximity to construction areas would be most sensitive to these impacts; however, these impacts would be short term and temporary for the duration of the construction period. Construction of the proposed development would be across several separate areas and construction is unlikely to occur simultaneously. As a result, social amenity impacts associated with air quality during construction are anticipated to be low and temporary for the duration of the works.

There are no predicted exceedances of the air quality criteria as a result of the proposed development or when including cumulative (background) contributions for annual average $PM_{2.5}$, annual average PM_{10}, annual average TSP or annual average deposited dust. In addition, no sensitive receptors are predicted to exceed the maximum 24-hour $PM_{2.5}$ criterion of 25 $\mu g/m^3$ as a result of the proposed development.

One private receptor near the REA (R10) is predicted to experience maximum 24-hour average PM_{10} concentrations above the criterion of 50 $\mu g/m^3$, due to the proposed development's operations alone. This receptor is predicted to exceed the 24-hour average impact assessment criterion on only one day of the year as a result of emissions from the proposed development.

Assessment of cumulative PM_{10} 24-hour impacts concluded that there was a probability that up to seven receptors may exceed the EPA criterion of 50 µg/m^3 when impacts are considered cumulatively. Receptor (R10) had the highest estimated number of days exceeding the 24-hour average PM_{10} criterion (up to 9 days per year), with the remainder of receptors estimated to exceed the criteria >5 days in a year. Exceedances would depend on actual mine activities, other nearby dust generating activities, weather conditions as well as the implementation of real-time controls. The assessment is considered to be conservative and with the incorporation of mitigation measures including TARP and other dust management practices (such as automatic water sprays of coal stockpiles triggered by wind speed monitoring), it is considered that these exceedances can be manged so as to not singnificnatly impact on amenity.

The odour assessment undertaken for the proposal identified compliance with the 99th percentile odour concentration criteria for residences (7 odour units) and at schools (2 odour units) at all nearby receptors.

Further detail regarding the assessment of potential air quality impacts is provided in Section 11.15 of the EIS and Appendix N (Air Quality Impact Assessments).

Summary of impacts

There are no predicted exceedances for most of the air quality criteria assessed as a result of the proposed development. Exceedances of the 24-hour average PM_{10} criteria would occur at up to seven sensitive receivers however are predicted to occur over a limited number of days per year and would be able to be managed with the implementation of on-site controls. No exceedance of odour criteria are predicted.

Stakeholders in the Southern NSW Coalfields rate Tahmoor Coal's current efforts to improve air quality as below satisfactory (ACCSR, 2016) and increased air quality and odour impacts would be perceived negatively by the community.

The likelihood of air quality and odour impacts is considered to be *unlikely* and the consequence of impacts is considered to be *minor*, resulting in a significance/ risk rating of *low*. With the implementation of mitigation measures, the consequence of impact is likely to reduce to *minimal*, resulting in residual post-mitigation significance/ risk rating of low.

The residual risk rating is expected to remain substantially unchanged (at *low*) with the implementation of mitigation measures.

4.2.4 Visual Aesthetics Impacts

Changes in the visual character of a locality may impact upon community identity and sense of place.

The proposed development would be of a similar visual nature to the operation of the existing Tahmoor Mine. The mine currently sits within an area of sloping and ridgeline platforms with some extensive areas of established, moderate to dense tree cover. The Project Area is considered to have a high Visual Absorption Capacity (VAC), which reflects the landscape's ability to absorb change without affecting overall landscape character. As such the magnitude of visual impacts of the proposed development is lower than other flatter, more open locations.

The Visual Impact Assessment assessed views to the key above ground features of the proposed development from several points, including surrounding rural residential dwellings and local roads. The visual assessment concluded that the overall magnitude of the visual impact was negligible to low.

Based on this, the likelihood of visual amenity impacts is considered to be *unlikely* and of *minor* consequence, resulting in significance/ risk rating of *low*. With the implementation of mitigation measures, the consequence of impacts could be further reduced to *minimal* resulting in a residual post-mitigation significance/ risk rating of *low*.

Mitigation measures to address potential visual amenity impacts are summarised in **Section 5.0**.

Further detail regarding the assessment of potential visual aesthetics impacts is provided in Section 11.18 of the EIS and Appendix U (Visual Impact Assessments).

4.2.5 Traffic Impacts

Traffic has the potential to result in changes to amenity, with increased traffic associated with increased noise and air quality impacts, as well as the visual presence of more vehicles on the road. An increase in traffic volume also impacts upon local travel, including trip duration, wait times at intersections, road safety and access to properties and community infrastructure.

A review of the Tahmoor Coal complaints register identified some complaints have been received in relation to property access and the condition of local roads (refer **Section 3.3.4**) and the Wingecarribee CSP identifies traffic congestion in towns as a key challenge (refer **Section 3.2.8**).

Construction and operation of the proposed development would result in an increase in the number of traffic movements; however, given the capacity of the local road network, the impact of this increase is considered minor. The upgrade of the mine access intersection with Remembrance Driveway is expected to improve the safety of this intersection, including when the proposed development reaches its peak construction/ operational employment in 2020. Traffic management measures including driver protocols would be implemented to manage heavy vehicle traffic during construction and operation to protect public safety on public and private access roads.

The likelihood of traffic impacts is considered to be *possible* and the consequence of impact is considered to be *moderate,* resulting in significance/ risk rating of *high*. With the inclusion of standard traffic control measures, the consequence rating can be reduced to *minor*, resulting in a residual post-mitigation significance/ risk rating of *moderate*.

Mitigation measures to address potential traffic amenity impacts are summarised in **Section 5.0**.

Further detail regarding the assessment of potential traffic impacts is provided in Section 11.13 of the EIS and Appendix P (Traffic Impact Assessment).

4.2.6 Land Use Impacts

Impacts to urban land uses as part of the proposed development may occur as physical impacts to dwellings and public infrastructure from subsidence which are considered to be minor and are able to be mitigated.

Land use within the Project Area has been identified as predominately rural with some urban townships. There is no mapped BSAL in the Project Area. The nearest area of mapped BSAL is located between Douglas Park and Camden, approximately 20 km to the north-east of the Project Area. Rural land use includes existing agricultural land and land identified has having agricultural potential or availability. Impacts to these land uses are anticipated as a result of surface infrastructure upgrades and expansion of the REA, as well as subsidence related impacts to agriculture structures. However, the latter impacts are expected to be minor and readily managed through the Subsidence Management Plan and Extraction Plan.

Landholder access agreements would be required to gain access to private property in order to construct surface inseam gas drainage and ventilation shafts for the proposed development and to expand the REA. The social impacts of the land access, including the need to install new access gates and the potential for localised erosion as a result of increased activity, would be managed through the terms of the land access agreements which provide for compensation for the use of the land and disturbance to the land surface.

Approximately 13 hectares of potential agricultural land would be temporarily removed during the proposed development for the construction of surface facilities (the two ventilation shaft sites). This land is classified as Land and Soil Capability (LSC) Class 4 land. The area where TSC1 is located is currently used to graze pleasure horses, while TSC2 is located in Crown Reserve which comprises native bushland. At the end of mining life, rehabilitation measures would ensure that this land is returned to pre-mining conditions maintaining its agricultural potential for future generations (if required).

However, approximately 43 hectares of potential agricultural land, comprising 37 hectares of LSC Class 4 and six hectares LSC Class 6 land, would be reduced to LSC Class 7 land and therefore permanently removed from potential agricultural production as a result of the REA expansion. This land is not currently used for agricultural production and would be returned to bushland as part of the

rehabilitation of the site following mine closure. It is considered that the economic benefits of the proposed development exceed the economic loss of this 43 ha of potential agricultural land. In addition, the Agricultural Impact Statement (Appendix T of the EIS) identifies a trend in recent years of a shift away from agricultural land uses and an increase in rural residential areas.

As discussed in **Section 3.3.5**, landholders were identified as having a low perception of the mine operator, particularly with regard to issues of land use. The likelihood of impacts to land use is considered to be *possible* and the consequences of impacts is considered to be *minimal*, resulting in a significance/ risk rating of *low*. The residual risk rating is considered unlikely to change with the inclusion of mitigation measures (landform rehabilitation). Mitigation measures to address potential land use impacts are summarised in **Section 5.0**.

Further detail regarding the assessment of potential land use impacts, including impacts to agricultural land, is provided in Section 11.19 of the EIS and Appendix T (Agricultural Impact Assessments).

4.3 Way of Life

The proposed development may influence changes in the local population and their way of life as a result of:

- the presence of an increased construction workforce, and
- the maintenance of the existing operational workforce for a further 13 years.

During the transition period when longwall mining would continue at the existing Tahmoor North Mine and pre-mining and construction activities would occur at the proposed development, an additional 50-175 employees would be employed at the mine resulting in a peak of up to 565 employees at the mine during this transition period. Operational employment at Tahmoor South would peak at 510 in 2020 before gradually reducing to an average of 422 people.

The construction workforce for the proposed development is anticipated to be locally sourced from contractors and contracting businesses in the Wollongong, Wollondilly, Campbelltown and Camden areas. The local sourcing of construction employees would therefore provide a temporary increase in employment opportunities for businesses in the region (such as contract labour providers and local manufactures, vehicle and equipment suppliers and service businesses), providing a positive short term employment benefit.

Should the proposed development successfully source future employees locally there would be no expected increase in local population induced by the project. On this basis there would be no expected influx of additional workers or any commensurate increase in local housing demand. As such it is unlikely that there would be any substantial changes to the demographics of the local community as a result of the project.

Census statistics between 2011 and 2016 (refer **Section 3.2.1**) indicate positive growth in the LGAs of Wollondilly, Wingecarribee, Camden, Campbelltown and Wollongong. These include the key LGAs (Wollondilly, Wollongong/ Shellharbour, Campbelltown and Wingecarribee) from which the majority of the workforce for the mine is currently sourced. Whilst the census data indicates an overall aging trend in the local population (Wollondilly and Wingecarribee LGAs), given that mine employees range from the ages of 21 to 63, with a median age of 43, it is considered that the existing local and regional population can accommodate the expected additional demand for 50-175 employees during peak construction activity.

Furthermore the baseline assessment (**Section 3.2**) indicates that the highest proportion of workers in the Wollondilly and Wingecarribee LGAs are for manufacturing, construction, retail trade and health care and social assistance. On this basis it is apparent that the workforce skills required during peak construction are likely to already be present within the local area.

Tahmoor Mine has been operating within the Southern Coalfields for approximately 35 years and currently employs around 390 personnel across its operations, including in the mining, administration and maintenance sectors. The proposed development would provide continued employment for the existing workforce by extending the operational life of Tahmoor Mine to 2035. In the instance that the proposed development does not proceed, a 'no development' scenario would result in the closure of

Tahmoor Mine in approximately 2022, and loss of ongoing employment opportunities which could result in a portion of people moving out of the local area to seek new employment, with consequent negative impacts to the local economy and social infrastructure and services. The proposed development would therefore provide a positive social benefit through an additional 13 years of employment for the workforce, which would support the continued patronage of the local economy, business and community and social infrastructure by the existing workforce within their local areas of residence.

Notwithstanding the extension of the life of the mine that would result from the proposed development, the eventual closure of Tahmoor Mine will inevitably result in a negative impact on employment in the region, with some people having to move out of the area to seek alternate employment. The Tahmoor Coal Social Involvement Policy requires a social impact assessment to be conducted, as part of the mine closure planning, at least five years prior to the end of the mine's life. This planning would involve consultation with local and regional stakeholders to explore the potential future land uses of the surface facilities area which may have future employment generation potential.

Based on the above the proposed development is considered to have the following social impacts with respect to population and way of life:

Negative

- Demographic change and housing shortages – the likelihood of an influx of workers for the proposed development is considered to be *unlikely* and the consequence of such an influx on housing shortages, would be *minor*, resulting in a *low* significance/ risk rating. With the implementation of existing mitigation (policy of employing locally), there would be no change to the significance/ risk rating post-mitigation; and
- Cessation of employment at mine closure – without mitigation, the likelihood of job losses for up to 422 employees (post 2020) at the end of the mine life is considered *almost certain* which could lead to potential *major* impacts in relation to a portion of population leaving the local area to find alternate employment (and associated impacts to the local economy, business, community infrastructure and services). This would result in an *extreme* significance/ risk rating. With the implementation of mitigation in the form of a Social Involvement Policy as described in **Section 5.0** including employment transitioning to help employees find alternate employment and appropriate mine closure planning, the likelihood of net employment losses can be reduced to *likely* and the consequence of impacts to the population can be reduced to *moderate*. As such, the residual significance/risk rating would be reduced post-mitigation to *high*.

Positive

- Employment – the likelihood of the proposed development generating and maintaining employment in the local and regional area during the mine life is considered *likely*. The beneficial consequences for the local and regional population (with respect to employment and associated benefits to the local economy, business, community infrastructure and services) is considered *moderate*, resulting in an overall *high* positive social impact rating. With the implementation of the existing policy of sourcing mine employment from the local area and region, there would be no change to the post-mitigation beneficial significance rating.

4.4 Community Identity and Cohesion

Tahmoor Mine has been operating within the Southern Coalfields for approximately 35 years and forms an integral part of the existing community and land use in the area. The Tahmoor South Project proposes the continuation of longwall mining operations immediately adjacent to the existing Tahmoor mining area and would not significantly change the character or land use of the project area, and as such would not affect how the local community functions or its sense of place.

The proposed development would predominately use existing surface infrastructure ,to support the extension of underground mining operations as part of Tahmoor South. The existing surface facilities area does not form a physical or non-physical barrier between communities or affect the ability of community members to interact with one another. As the proposed development would utilise the existing surface facilities area and only require upgrades (such as the expansion of the rejects emplacement area) in its immediate vicinity, the proposed development would not create additional

barriers to access that could physically or non-physically divide communities or affect how the community functions.

Temporary disruption to access may occur during construction activities in proximity to private property or on public roads, however these impacts would be temporary and localised, and would be managed using standard mitigation measures and construction practices.

Additional surface facilities associated with the proposed development would include two new ventilation shafts, which have the potential to impact on adjacent receptors sense of place. However, given that these facilities would remain consistent with the character, land use and function of existing surface facilities associated with the mine, it is considered unlikely that these additional facilities would significantly alter landscape character or receptors sense of place. In the past, concerns have been raised regarding noise impacts from the existing ventilation shafts and in response Tahmoor Mine undertook to manage the impacts through a pollution reduction program. The proposed ventilation shafts would be designed to incorporate the improvements undertaken on the existing shafts in order to reduce noise impacts to the community. This would reduce potential amenity impacts that could affect adjacent receptor's enjoyment of their surroundings, sense of place, and the value placed on their (rural) surroundings. This demonstrates Tahmoor Mine's commitment to working with the community in good faith to minimise impacts of the proposed development.

The proposed development has the potential to impact on the natural environment through direct vegetation clearing and subsidence impacts to natural features such as water courses. This could affect the local community's sense of place, particularly on the value placed on the area's undisturbed/ natural characteristics. In recognition of the high ecological and social values placed on the areas natural features, the mine planning for the proposed development identified risk management zones to be avoided, including significant features such as the Thirlmere Lakes, the Nepean and Bargo Rivers and associated gorges, Mermaid Pools, and the Metropolitan Special Area (water catchment) and associated Upper Nepean State Conservation Area. Detailed management, mitigation and monitoring measures, including Trigger Action Response Plan (TARPs), have been proposed to minimise and manage impacts to natural features within the Project Area. With the implementation of these measures it is considered that significant changes to the natural environment are unlikely and the natural features and values of the landscape that feed into the community's sense of place would be maintained.

As discussed previously, the project would aim to source the majority of its employees from the local area. As such there would be little need for the migration of workers into the area and hence the social demographics of the community would remain largely unchanged with minimal effects on access to social and community infrastructure. On this basis there would be a negligible impact upon community identity or cohesion arising from this factor.

The proposed development would allow Tahmoor Mine to continue their important role in supporting the local community through their Social Involvement Plan, as described in **Section 3.3**. The transition between Tahmoor North and the proposed development would not result in a change to the social investments made by Tahmoor Coal, as these would continue to be undertaken as part of the continuation of mining under the proposed development. This includes the mine's existing support of local events, community contributions and the employment of staff primarily from within the local area. The proposed Tahmoor South project would provide for the continuation of community investment for an additional 13 years of mine life, thereby supporting community cohesion in this regard.

The ongoing employment opportunities provided by the proposed development (and associated benefits to the local economy, business, community infrastructure and services) and direct community contribution made by the mine are in line with the themes of the *Wollondilly Community Strategic Plan 2033* (CSP) including looking after the community and building a strong local economy. As discussed in **Section 4.3**, a Social Involvement Policy would be implemented to provide for employment transitioning and mine closure planning to minimise employment and livelihood impacts of mine closure, consistent with CSP objectives of providing for the local economy. The proposed road upgrades to the mine entrance at Remembrance Driveway would provide for additional road safety for the local community sharing the road network with traffic generated by the mine consistent with the CSP theme of managing the road network and improving road safety. In addition, a rigorous process of identifying risk management zones and detailed technical assessment in accordance with the recommendations of the Southern Coalfields Inquiry has underpinned mine planning for the proposed

development to minimise impacts to the natural environment, consistent with the CSP themes of caring for the environment. The overall consistency of the proposed development with the *Wollondilly Community Strategic Plan*, demonstrates that the proposal would support community cohesion and community identity in the area, in all stages of the proposed development (mine planning, mine life and post-closure).

Based on the above, the proposed development is considered likely to result in the following social impacts with respect to community identity and cohesion:

Negative

- Use of Existing Mine Facilities - the proposed development would not change Tahmoor Mine's existing character, function and role within the landscape and therefore have minimal impacts to community identity and sense of place in this regard. The likelihood of impact is considered *unlikely* and the consequence of impact *minor*, resulting in a *low* significance/ risk rating. No mitigation measures are proposed and the residual significance/ risk rating would remain unchanged.
- Access - the proposed development would not create an access barrier or physical divide between communities. Any temporary disruptions to access during construction would be localised and mitigated with the implementation of standard construction measures. The likelihood of impact is considered *unlikely* and the consequence of impact *minor*, resulting in a *low* significance/ risk rating. The post mitigation significance/ risk rating is expected to remain the same.
- New Infrastructure – the introduction of new surface infrastructure having a *possible* likelihood of impacting on landscape character and certain receptor's sense of place with localised *minor* consequences, resulting in a *moderate* significance/ risk rating. With appropriate facility design the consequence rating can be reduced to *minimal* resulting in a residual post mitigation significance/ risk rating of *low*;
- Natural features – the potential for the project to affect local natural features, resulting in impacts upon the community's sense of place. This impact is considered *possible*, with the consequence without mitigation being *moderate* if it occurs. A such the overall significance is considered to be *high*. With the implementation of mitigation measures including monitoring, Trigger action Response Plans and remediation of damage, the consequence of impacts can be reduced to *minor* resulting in a residual post mitigation significance/ risk rating of *moderate*; and
- Employment and Demographics – *unlikely* likelihood and *minor* consequence to overall demographic composition and associated effects on social cohesion, as employment would be primarily sourced locally, thereby resulting in a *low* significance/ risk rating. With the implementation of existing policy to employ locally, the post mitigation significance/ risk rating is expected to remain the same; and
- Wollondilly CSP – *possible* likelihood and *moderate* consequence of effects to the local strategic community direction, resulting in a *high* significance/ risk rating, should mitigation measures not be integrated into all stages of the proposal. With the implementation of proposed mitigation in all stages of the proposed development (mine planning, mine life and post-closure) the consequence of impacts would reduce to *minor* resulting in a residual post mitigation significance/ risk rating of *moderate*.

Positive

- Community Contributions– the ongoing operation of the mine would include the continuation of Tahmoor Coal's provision of ongoing community contributions and support for the local community as part of its Social Involvement Plan. The likelihood of this occurring would be *almost certain*, with a *moderate* beneficial consequence, resulting in an *extreme* beneficial significance rating. With the implementation of ongoing community contributions there would be no change to the post-mitigation beneficial significance rating.

4.5 Access to, and use of, infrastructure, services and facilities

Longwall mining has the potential to result in subsidence impacts to public infrastructure (including roads, rail, utilities, as well as public buildings, schools, community centres, and public domain spaces such as parks etc.) and could cause disruption of services to the local community The overall findings of the subsidence technical assessment are that the levels of impact and damage to identified built infrastructure are able to be mitigated. Importantly, the extensive experience gained by Tahmoor Coal in successfully managing subsidence impacts from Tahmoor Mine to-date would be applied to the proposed development with the existing subsidence management framework to be employed at the Tahmoor South Project. This would enable any impacts to services and infrastructure to be identified early, managed and repaired (if required) without significant disruption or public safety risks to stakeholders and the community.

General construction activities also have the potential to damage local infrastructure and utilities and disrupt services or restrict access to infrastructure (e.g. damage to buried utilities, fence structures, roadways etc). Such impacts would be temporary and localised and would be able to be repaired rapidly at Tahmoor Coal's expense.

The proposed development would require ongoing water sourcing from Sydney Water, and require additional building materials during construction, which has a small potential to lead to additional local resource competition. However, it is considered that the additional demand on resources would not be so significant as to result in shortages or place undue pressure on service provision.

The additional construction employment generated by the proposed development during the construction period is unlikely to place significant additional pressure on existing community facilities or services. This is because, employment would be sourced locally and there is unlikely to be a significant influx of population to the area which would change population demographics or affect access to social infrastructure. In this context it is considered that the additional employment can be accommodated by existing infrastructure and services (such as the road network and medical and education facilities) without causing significant disruption and would not adversely affect the existing community's ability to access the same services and facilities.

The economic assessment and cost-benefit analysis carried out for the proposed development (Cadence Economics, 2018) indicates net economic benefits accruing from the proposal including:

- royalties estimated around $149.1 million to the NSW Government;
- increase in gross regional income in the Wollondilly Region by between $3,288 million and $3,561 million (in NPV terms), depending on labour market responsiveness; and
- increase in NSW's gross state product by between $4,692 million and $5,055 million (in NPV terms) depending on labour market responsiveness.

The economic benefits from the proposed development represent additional public funds available to State and (indirectly) to local governments to spend on community infrastructure and facilities.

Based on the above the proposed development is considered to have the following social impacts on access to, and use of, infrastructure, services and facilities:

Negative

- Subsidence impacts – the likelihood of subsidence impacts on infrastructure is considered to be *likely* with *moderate* consequences on disruption to services and infrastructure, resulting in a significance/ risk rating of *high* (without mitigation). With the implementation of subsidence management and remediation measures the consequence rating can be reduced to *minor*, however the residual post mitigation significance/ risk rating would remain at *high*;
- Construction damage – a *possible* likelihood of construction related damage and disruption to services/ infrastructure with *minor* consequences resulting in a significance/ risk rating of *moderate*. With the implementation of standard construction practice and mitigation such as due diligence dial-before-you-dig searches and remediation in the case of damage, it is expected that the consequence of impact can be reduced to *minimal*. Therefore, the residual post-mitigation significance/ risk rating would be *low*;

- Resources – the likelihood of requiring additional potable water supplies and construction material is considered to be *likely*, with *minimal* consequences on existing services and resource availability, resulting in a significance/ risk rating of *low*. Given the low significance of impact specific mitigation measures are not proposed and there would be no change to the residual risk rating; and
- Workforce – *unlikely* likelihood of influx of construction workforce (as employment to be sourced locally) with *minor* consequences on community facilities and services, resulting in a significance/ risk rating of *low*. With the implementation of existing policy to employ locally, the post mitigation significance/ risk rating is expected to remain the same.

Positive

- Royalties – an *almost certain* likelihood of royalties from the proposed development being available to Government with *moderate* beneficial consequences for community infrastructure and facility funding resulting in an overall significance rating of *extreme benefits*. With the implementation of royalty arrangements as per government requirements there would be no change to the post-mitigation beneficial significance rating.

4.6 Culture

The ACHA (Niche, 2018) carried out for the proposed development identified that subsidence related impacts (indirect impacts) have the potential to affect 26 of the 40 Aboriginal cultural heritage sites identified within the SSA. In addition, one of the 40 heritage sites are predicted to be directly impacted by surface disturbance for surface infrastructure works. Detailed consultation with Aboriginal heritage stakeholders were conducted as part of the ACHA preparation (refer **Section 2.6.3**) and the cultural importance of all of the recorded sites were emphasised by the Aboriginal stakeholders. Importantly, the mine plan has been designed to avoid direct undermining of archaeological heritage sites along Dog Trap Creek, which include sand shelter sites with artwork of high significance, to avoid potential impacts and preserve the heritage values for future generations. Detailed mitigation measures have been proposed to manage, monitor and mitigate subsidence impacts to Aboriginal heritage sites.

The Historic Heritage Assessment (Niche, 2018) carried out for the proposed development identified that potential impacts on heritage items are primarily limited to subsidence associated impacts. A total of 23 historical heritage items were identified during the assessment, with 19 located directly above the proposed longwall mining area. Impacts to historic heritage items may result in changes to the way in which the community interacts with and values heritage items and the extent to which heritage is available for future generations. The assessment concluded that there was nil to low likelihood of significant impacts to any of the built structures of heritage value identified in the project area, as such it is considered that the proposed development would have minimal impacts to historic cultural values.

Based on the above, the likelihood of negative impacts to Aboriginal cultural heritage have been rated as *possible* with *moderate* consequences resulting in a significance/ risk rating of *high*. With the implementation of project specific mitigation measures, the consequence of impacts can be reduced to *minor* resulting in a residual post-mitigation significance/ risk rating of *moderate*.

Negative impacts to historical cultural heritage have been rated as *unlikely* with *moderate* consequences resulting in a significance/ risk rating of *moderate*. With the implementation heritage management and monitoring measures in relation to subsidence impacts and ongoing consultation with affected stakeholders it is considered that the consequence level can be reduced *minor* resulting in a residual post-mitigation significance/ risk rating of *low*.

4.7 Health and Wellbeing

Longwall mining related subsidence impacts to private properties and structures (including farm infrastructure such as farm dams and fences) as well as negotiations in relation to noise agreements and/or acquisition at noise affected properties have the potential to increase anxiety and stress in the community, including in relation to the timing, duration and process for accessing any reparations for subsidence. Tahmoor Coal has extensive experience to-date in successfully managing subsidence related impacts from the Tahmoor Mine, including in investigating and closing out subsidence claims

sensitively and expeditiously in accordance with Subsidence Advisory NSW's (SA NSW) requirements. Tahmoor Coal would apply the same process for the proposed development in consultation with affected receivers with the aim of minimising stress and anxiety associated with the process as far as possible. Noise agreements (in relation to at-receiver acoustic mitigation such as double glazing) and/ or acquisition negotiations (where required) would be carried out in accordance the *NSW Industrial Noise Policy* (EPA, 2000) and *Voluntary Land Acquisition Policy* (NSW Government, 2018) to ensure procedures comply with NSW best practice.

There is the potential for environmental emissions associated with the proposed development including air quality (particulates and odour), noise, surface water discharge and groundwater intrusion (affecting bore water quality) to raise concerns and anxiety within the community regarding health impacts (actual or perceived). Such stress and anxiety could occur at any stage of the proposed development from the development assessment stage, to construction, mine operation and closure and post-closure stages (in regards to residual impacts of the development). Impacts to surface water and groundwater were commonly raised issues during consultation activities. Specialist technical assessments have been completed for all key impacts associated with the proposed development against current NSW assessment standards and requirements to ensure that the environmental impacts of the proposal can be managed within acceptable limits so as not to pose unacceptable risks or impacts to surrounding receivers. In addition a range of mitigation and management measures have been proposed as part of the technical assessments to manage the environmental impacts of the proposal.

Noise and air quality emissions and surface water discharge from the proposed development would be managed in accordance with regulatory limits placed on the Environmental Protection Licence for the site. Impacts to private groundwater bores (water quality or levels) would be mitigated to a 'make good' standard of remediation by Tahmoor Coal. Ongoing consultation and engagement with the community including through the mine's community consultative committee would be carried out to keep the community up to date with activities and management measures at the mine and to alleviate and respond to concerns.

Based on the above negative social impacts in relation to health and wellbeing are considered *possible* but likely to be of *minor* consequence (as impacts are likely to localised to specific receivers with concerns), resulting in a significance/ risk rating of *moderate*. It is considered that with the implementation of mitigation measures the likelihood of increased anxiety and health impacts (perceived and actual) can be reduced to *unlikely*, resulting in a residual post-mitigation significance/ risk rating of *low*.

4.8 Other Impacts

Other direct social impacts that could arise from the proposed development are summarised below:

- Personal and property rights – as discussed previously, access to private property for the purposes of construction activities would be subject to landholder access agreements to identify access arrangements and management measures to avoid impacts to private property during project related activities. Any impacts to private bore users (groundwater quality or quality) would be subject to make good provisions by Tahmoor Coal. Similarly subsidence related property claims would be subject to reparation in accordance with SA NSW's requirements. Environmental impacts of the mine would be managed in accordance with regulatory requirements to ensure acceptable limits are met at nearest receptors. Impacts to personal and property rights are considered to be *possible* but *minimal* in consequence, resulting in a significance/ risk rating of *low*. With the implementation of mitigation measures the likelihood of impacts on personal and property rights would reduce to *unlikely*, resulting in a residual post-mitigation significance/ risk rating of *low*.
- Decision making systems - environmental regulation at the mine would be governed by its development consent and associated environmental management framework which would include complaint handling mechanisms to address and remedy issues raised by the community. Subsidence related property claims would be handled in accordance with the SA NSW's requirements and would be overseen by that agency in the case of dispute or advice. Tahmoor Coal would continue to engage with the community and affected stakeholders through its mine

community consultative committee and other mechanisms to ensure affected receptors are aware of their rights under the development consent and are aware of and have the opportunity to provide feedback on the mine's activities and environmental management. Impacts to individual's decision making abilities are considered to be *possible* but *minimal* in consequence, resulting in a significance/ risk rating of *low*. With the implementation of mitigation measures the likelihood of impacts on individual's decision making abilities would reduce to *unlikely*, resulting in a residual post-mitigation significance/ risk rating of *low*.

- Fears and Aspirations – opposition to coal mining projects in general (on the basis of greenhouse gas and climate change impacts), and concern regarding the cumulative impacts of mining in the Southern Coalfields on landscape features such as Thirlmere Lakes are concerns raised by the broader public and regional receivers in submissions on similar development projects. The Tahmoor South Project has been developed with specific consideration to the recommendations of the Southern Coalfield Inquiry, and based on the precautionary and robust assessment approach of developing RMZs in the first instance to avoid and minimise impacts to significant natural features. In addition, the assessment of the proposed development has been based on significant technical studies (including the assessment of greenhouse gas emissions) and significant consultation between specialist to ensure interconnections between impacts are identified and appropriate mitigation measures developed. Tahmoor Coal will continue to engage with community members through the mine community consultative committee and other mechanisms (including the mine website) to ensure accurate and up-to-date information on the project's impacts assessment, environmental management and monitoring results are made available for public viewing and feedback. Impacts of the proposed development on individual's fears and aspiration are considered to be *possible* but *minimal* in consequence, resulting in a significance/ risk rating of *low*. With the implementation of mitigation measures it is considered that the risk rating would remain similar.

4.9 Cumulative Social Impacts

The Social impact assessment guideline for State significant mining, petroleum production and extractive industry development (NSW Government, 2017) describes cumulative impacts as "the successive, incremental and combined impacts (both positive and negative) of activities on society, the economy and the environment. They can arise from a single activity, multiple activities or from interactions with other past, current and foreseeable future activities."

This section provides an assessment of the potential cumulative social impacts of the proposed development, when considered in the context of other relevant activities and existing and proposed developments.

An overview of other operating mines within the Southern Coalfields and Major Development Applications relevant to the proposed development are provided in **Sections 2.5.2** and **2.5.3** respectively. An assessment of the broader cumulative impacts of these mines with the proposed development is provided in Section 11.25 of the EIS.

4.9.1 Direct Cumulative Social Impacts

Workforce

The Tahmoor South Project is proposed to allow a transition of employees from the current Tahmoor North Workforce to the proposed development, to maintain direct employment of the existing 390 employees with an additional 50 to 175 employees at peak employment.

Through the local sourcing of construction employees and the additional operational workforce, the Tahmoor South Project is unlikely to significantly contribute to cumulative impacts on increasing population trends projected for the region, and unlikely to result in an associated increased demand for local housing. However, as the proposed development would occur within the context of these local trends, there is the potential for the existing and proposed employees of the Tahmoor Mine to experience increased issues with housing supply and affordability.

Other operational mine developments are likely to retain their own existing workforces; however, potential new developments within the region, including the Hume Coal Project, may if approved provide increased demand and competition for skilled workforce. Cumulative construction projects

may also result in increased demand for construction personnel, with potential to drive increases in wages, increased demand for construction materials and equipment and increased opportunity for local businesses to supply goods or services with potential for increases in local business turnover.

The likelihood of cumulative projects generating additional employment and economic opportunity is considered to be *possible* with a likely *minor* beneficial consequence (given its temporary and localised nature), resulting in a moderate significance rating. As this would comprise a community benefit no mitigation measures are proposed and the residual significance rating would remain unchanged.

Other Mining Operations

The Tahmoor South Project proposes a continuation of mining using the existing surface facilities area of Tahmoor North, alleviating the need to develop undisturbed areas, and as a result, the surface footprint of the mine would largely remain the same as the current operations for Tahmoor North.

The majority of surface facilities for other operating mining developments are situated around 30 kilometres east of the proposed development, along the Princes Highway corridor and separated from the Old Hume Highway/ Remembrance Driveway corridor, within which the Tahmoor Mine operates, by areas of national park and state forest (refer Figure 1.1). As a result, surface activities and transport movements associated with these mines would also be sufficiently physically separated from those of the Tahmoor Mine, such that cumulative impacts associated with these surface activities, including potential social amenity impacts, are anticipated to be low.

The proposed Hume Coal Project would be located approximately 30 kilometres south-west of the proposed development and, if approved, would utilise the Old Hume Highway/ Remembrance Driveway corridor. Surface facilities for the proposed Hume Coal Project are also anticipated to be sufficiently physically separated from those of the Tahmoor Mine, such that cumulative impacts are anticipated to be low. However, cumulative impacts on traffic and road users may occur along the Old Hume Highway/ Remembrance Driveway corridor in the event that transport movements for the Tahmoor Mine and the proposed Hume Coal Project coincide.

In the event that the construction period for the proposed development occurs concurrently with the construction of other proposed and approved major developments, the concurrent or overlapping construction periods are not expected to result in an intensification of construction impacts due to the distance of proposed major developments from the Project and separate access corridors to be utilised.

Cumulative and extended periods of construction may also affect the local community's sense of place and perception of local identity, which is influenced by social amenity.

The likelihood of surface amenity and traffic impacts from other mining operations in the area is considered to be *unlikely* and consequence of impact *minor*, resulting in a significance/ risk rating of *low*. Mitigation measures implemented at the mine to manage project specific surface amenity impacts would reduce contributions to cumulative impacts, however given the distance between nearest mining operations, the risk rating is likely to remain unchanged.

4.9.2 Indirect Cumulative Social Impacts

There is greater potential for indirect social and cumulative impacts in terms of community concerns around key environmental issues, which do not share the same spatial boundaries as the direct impacts identified above (e.g. potential cumulative impacts to subsidence or groundwater resources).

However, as the Tahmoor Mine has been operating in the region since the 1970s, the geology and environmental conditions are well known and therefore allow informed impact predictions and identification of suitable and proven mitigation and management measures.

In order to account for potential cumulative impacts, the method for subsidence prediction for the proposed development used observed monitoring data from previous mining at Tahmoor Mine, as well as other data from the Southern Coalfields of NSW. Subsidence predictions were used to inform assessments of the impact upon natural and built features, and were also compared to observed subsidence and impacts at neighbouring collieries. Further detail is provided in Section 11.1 of the EIS and Appendix H (Subsidence Impact Assessments).

Cumulative local impacts on groundwater, surface water, terrestrial and aquatic ecology have been assessed by utilising two years' worth of baseline data. Regional impacts were assessed through analysis of observed data from the existing Tahmoor Mine, other collieries in the Southern Coalfields, and other available data sources relevant to the environmental issue. Further detail is provided in Sections 11.3, 11.4 11.6 and 11.7 of the EIS respectively.

In addition to managing impacts associated with the proposed development, Tahmoor Coal would continue to address community concerns via the existing engagement mechanisms including through the open dialogue with the TCCCC.

Potential cumulative impacts on other key environmental issues are addressed in further detail in Section 11.25 of the EIS.

The likelihood of contributing to cumulative environmental impacts to receivers and the natural landscape is considered *likely* and the consequences of impacts to be *moderate*, resulting in a significance/ risk rating of *high*. With the implementation of project specific mitigation measures contributions to cumulative impacts would be reduced and is likely to reduce the consequence of impact to *minor*. However, the residual post mitigation significance/ risk rating would remain *high*.

4.10 Summary and Significance of Impact

The social impacts of the proposed development are likely to be generally consistent with those of the existing operations at Tahmoor Mine.

The significance rating of impacts have been assessed without mitigation and with the incorporation of mitigation and management measures and is provided in **Table 4-1** below. High residual (negative) impacts are highlighted in bold and positive impacts or benefits of the proposed development are shown in green.

Table 4-1 Summary of Assessment of Significance

Impact Category		Likelihood	Consequence (Negative) or Scale of Benefit (Positive)	Rating (Before mitigation)	Likelihood	Consequence (Negative) or Scale of Benefit (Positive)	Rating (After mitigation)
Surroundings - Natural features	Surface Water	B	4	B4 (Extreme Impact)	B	3	**B3 (High Impact)**
Surroundings - Amenity	Subsidence	B	4	B4 (Extreme Impact)	B	3	**B3 (High Impact)**
	Groundwater	B	4	B4 (Extreme Impact)	B	3	**B3 (High Impact)**
	Acoustic - operation	C	3	C3 (High Impact)	C	2	C2 (Moderate Impact)
	Acoustic - construction	B	3	B3 (High Impact)	B	2	**B2 (High Impact)**
	Particulate matter	D	2	D2 (Low Impact)	D	1	D1 (Low Impact)
	Odour	D	2	D2 (Low Impact)	D	1	D1 (Low Impact)
	Visual	D	2	D2 (Low Impact)	D	1	D1 (Low Impact)
	Traffic	C	3	C3 (High Impact)	C	2	C2 (Moderate Impact)
	Land use	C	1	C1 (Low Impact)	C	1	C1 (Low Impact)
Population and way of life	Housing	D	2	D2 (Low Impact)	D	2	D2 (Low Impact)
	Mine Closure	A	4	A4 (Extreme Impact)	B	3	**B3 (High Impact)**
	Employment	B	3	B3 (High Benefit)	B	3	B3 (High Benefit)

Impact Category		Likelihood	Consequence (Negative) or Scale of Benefit (Positive)	Rating (Before mitigation)	Likelihood	Consequence (Negative) or Scale of Benefit (Positive)	Rating (After mitigation)
Community (composition, cohesion, character, function, sense of place)	Use of Existing Mine facilities	D	2	D2 (Low Impact)	D	2	D2 (Low Impact)
	Barrier/ Access	D	2	D2 (Low Impact)	D	2	D2 (Low Impact)
	New Facilities	C	2	C2 (Moderate)	C	1	C1 (Low Impact)
	Natural features	C	3	C3 (High Impact)	C	2	C2 (Moderate Impact)
	Employment and Demographics	D	2	D2 (Low Impact)	D	2	D2 (Low Impact)
	Wollondilly CSP	C	3	C3 (High Impact)	C	2	C2 (Moderate Impact)
	Community contributions	A	3	A3 (Extreme Benefit)	A	3	A3 (Extreme Benefit)
Access to and use of infrastructure, services and facilities	Subsidence Impacts	B	3	B3 (High Impact)	B	2	**B2 (High Impact)**
	Construction impacts	C	2	C2 (Moderate Impact)	C	1	C1 (Low Impact)
	Natural resource use	B	1	B1 (Moderate Impact)	B	1	B1 (Moderate Impact)
	Workforce	D	2	D2 (Low Impact)	D	2	D2 (Low Impact)
	Royalties	A	3	A3 (Extreme Benefit)	A	3	A3 (Extreme Benefit)
Culture	Aboriginal cultural	C	3	C3 (High Impact)	C	2	C2 (Moderate Impact)
	Historic Heritage	D	3	D3 (Moderate Impact)	D	2	D2 (Low Impact)

Impact Category		Likelihood	Consequence (Negative) or Scale of Benefit (Positive)	Rating (Before mitigation)	Likelihood	Consequence (Negative) or Scale of Benefit (Positive)	Rating (After mitigation)
Health and Well being	Subsidence	C	2	C2 (Moderate Impact)	D	2	D2 (Low Impact)
	Other environmental impacts	C	2	C2 (Moderate Impact)	D	2	D2 (Low Impact)
Other	Fears and Aspirations	C	1	C1 (Low Impact)	C	1	C1 (Low Impact)
	Personal and property rights	C	1	C1 (Low Impact)	D	1	D1 (Low Impact)
	Decision-Making Systems	C	1	C1 (Low Impact)	D	1	D1 (Low Impact)
Cumulative Impacts	Workforce	C	2	C2 (Moderate Benefit)	C	2	C2 (Moderate Benefit)
	Other mining operations	D	2	D2 (Low Impact)	D	2	D2 (Low Impact)
	Environmental impacts	B	3	B3 (High Impact)	B	2	**(B2 (High Impact)**

The assessment of social risk indicates that with the implementation of mitigation measures the likelihood and/ or consequences of impact can be reduced. Whilst a number of issues retain a residual social risk rating of 'high' under the risk matrix (subsidence, water resources, noise, including cumulative impacts), this reflects the key nature of these issues for longwall mining projects in general and within the Southern Coalfields in particular. In recognition of the key nature of these issues, the impacts have been subject to significant technical assessment including specific consideration of the recommendations of the Southern Coalfield Inquiry, and significant consultation between specialist to ensure interconnections between impacts are identified and appropriate mitigation measures developed.

Potential impacts to population from the loss of employment (and associated impacts to the local economy and community services and infrastructure) at the end of mining, also retained a high residual risk rating. However the matrix indicates an expected reduction in impacts (compared to risks without mitigation) with the implementation of appropriate mitigation and contingency measures. The assessment shows that with the implementation of mitigation and management measures in the form of a Social Involvement Policy as committed to by Tahmoor Coal (refer **Section 5.0)**, the likelihood and consequence of impacts to the population can be reduced through appropriate transitioning of employment and planning for mine closure.

With the implementation of the proposed management, mitigation and monitoring regime, it is considered that residual social impacts of the proposed development are unlikely to be significant and would be outweighed by the social benefits of the proposed development.

Without approval, completion of mining in the Tahmoor North mining area would result in closure of Tahmoor Mine by approximately 2022, prohibiting the extraction of a coal resource via existing infrastructure. Conversely, if approved, the proposed development would prolong the life of Tahmoor Mine and enable recovery of a greater proportion of the existing resource, which in turn would enable ongoing supply to existing contracts and direct employment for the existing 390 employees and an additional 50 to 175 employees at peak employment. This would also facilitate Tahmoor Coal's ongoing role in supporting the local community, through ongoing contributions to community partnerships and initiatives through Tahmoor Coal's Corporate Social Involvement (CSI) program, for a further 13 years.

Based on the identified social risks of the proposed development, the experience of managing such impacts over 30 years of mining in the Southern Coalfields, and the gradual transition of mining activities from Tahmoor North to Tahmoor South, it is considered that the proposed development would not result in significant adverse social outcomes, a provided that the recommended mitigation, management and monitoring measures outlined in Section 12.0 of the EIS are implemented. On balance, the benefits of the proposed development with identified management, mitigation and offset measures in place, are considered to outweigh the predicted residual consequences.

5.0 Mitigation, Management and Monitoring

Tahmoor Coal has over 30 years history of working with the local community and managing social amenity impacts generated by its mining operations. Consequently, Tahmoor Coal has a strong foundation of experience to support community engagement activities during the proposed development.

Community engagement activities undertaken by Tahmoor Coal would be reviewed regularly to ensure that the information and mechanisms for providing information to key community and government stakeholders are appropriate. The Tahmoor Colliery Community Consultative Committee (TCCCC) would continue to facilitate open dialogue and dissemination of information between mine operators, management, key stakeholders and the community. Complaints received by Tahmoor Mine from the local community would be addressed as quickly as possible.

In addition to managing impacts associated with the proposed development, Tahmoor Coal would continue to provide ongoing community support measures for areas of need within the community, identified through consultation with the local community. Tahmoor Coal would continue to have an active role in the local community and would continue to adopt existing strategies and implement current programs in the local area. The existing Social Investment Plan would be updated to allow for the continuation of mining proposed as part of the Tahmoor South Project, and would provide a framework for ongoing contributions to community partnerships and initiatives through Tahmoor Coal's Corporate Social Involvement (CSI) program. In addition, discussions with the Wollondilly Shire Council regarding a Voluntary Planning Agreement have commenced. Tahmoor Coal commit to continuing these discussions with the Wollondilly Shire Council, with the Voluntary Planning Agreement to be resolved before proposed development determination.

The proposed development is anticipated to extend the life of the Tahmoor Mine until 2035. Following completion of mining at Tahmoor South, the land would be rehabilitated and returned to a nominated final land use. The eventual closure of the mine may eventually have an adverse impact on employment in the region. This impact would be managed through the Tahmoor Coal Social Involvement Policy, which requires a social impact assessment to be conducted as a component of mine closure planning, at least five years prior to the end of the mine life. This planning would involve consultation with local and regional stakeholders to explore the employment generating potential of future land uses of the surface facilities area.

Social impacts that result from impacts associated with other key environmental issues would be managed in accordance with the recommended management and mitigation measures outlined in Section 12.0 of the EIS. Mitigation measures to address direct impacts on sensitive receivers and to manage community concerns with regard to key environmental issues are summarised in **Table 5-1**.

Table 5-1 Summary of Mitigation Measures

Issue	Project Phase	Stakeholders Impacted	Mitigation Measures
Noise impact on sensitive receivers	Construction	Local residents	• Development and implementation of a CNVMP for incorporation into the CEMP. • Site personnel would be inducted to each construction site prior to the commencement of works and briefed about best practice work methods to minimise construction noise. • Select quiet plant for use in construction activities and investigate and identify engineering options for reducing noise emissions from drilling operations include housing hydraulic power pack, compressors and water pumps in acoustic enclosures, localised acoustic screens/bunding.
	Operation	Local residents	• Develop and implement a Noise Management Plan outlining a noise monitoring program. • Monitor real time meteorological conditions and forecasts. Modify operation to avoid unacceptable noise levels should adverse weather conditions be identified. • Specific mitigation measures for noise sensitive residential receivers that fall within the Noise Management Area and Noise Affected Area will include consideration of reasonable and feasible architectural treatments in consultation with noise affected residential receivers. Treatments could include double glazing, insulation and air conditioning, and negotiated agreements. In the Noise Affected Area, consideration may also be given to acquisition in consultation with noise affected residential receivers.
Air Quality Impacts on sensitive receptors	Design	Local Residents	• Design and construction of vent shafts to minimise potential for nuisance odour impacts on receivers.
	Construction	Local residents	• Implement a Construction Air Quality Management Plan as part of the CEMP which would outline measures to manage and mitigate dust generation from construction activities.
	Operation	Local residents	• Monitor air quality and odour at nearby receivers. • The existing Air Quality and Greenhouse Gas Management Plan would be updated to provide dust control measures which align with the operation of the proposed development.
Visual Impacts	Operation	Wider community	• Colour and texture of new structures would be dark in tone and would utilise non-reflective material where possible. • New lighting would be designed to avoid direct line of sight where practicable. • Vegetation would be retained to the fullest extent where reasonable and feasible. • Landscaping would be undertaken to increase the level of existing screening potential to *proposed development* infrastructure.

Issue	Project Phase	Stakeholders Impacted	Mitigation Measures
Traffic	Construction	Local road users	• Preparation of CTMP which would provide mitigation measures to address potential impacts on local road users.
	Operation	Local road users	• Existing traffic management plan would be updated where required to align with operation of the proposed development.
	Construction and Operation	Local road users	• Prepare and implement a Drivers Code of Conduct for traffic movements required with particular reference to heavy vehicle movements along local roads.
Land Use	Operation	Residents whose properties are directly impacted by the proposed development	• Minimise disturbance to agricultural land by minimising land clearing activities during mine planning and prompt rehabilitation following impact. • Establish landholder access agreements for access and works within private property. • Develop a Surface, Safety and Serviceability Management Plan for each asset expected to experience impacts from subsidence. • Develop a Land Management Plan to manage land use and agricultural land within the Project Area. • Agricultural land would be re-established where possible in accordance with the Conceptual Mine Closure Plan.
Subsidence and Groundwater	Operation	Local residents Wider community Water users	• Prepare subsidence management sub plans for the proposed development in accordance with and overarching Subsidence Management Plan. The sub plans would include a plan for environmental or natural features, heritage, rail, the Bargo Township and utility services And other public infrastructure. • Investigate, process and close-out subsidence property damage claims expeditiously and sensitively, in accordance with SA NSW requirements. • Undertake 'make good' measures at any affected private bore user (groundwater quality and level).
Surface Water	Pre-construction	Wider community water users	• Establishment of a continuous pool water level monitoring network two years prior to the commencement of longwall mining at the Dog Trap Creek, tea Tree Hollow, Eliza Creek and Cow Creek surface water monitoring sites.

Issue	Project Phase	Stakeholders Impacted	Mitigation Measures
	Operation	Wider community water users	• Maintenance of existing network of streamflow monitoring, as well as the implementation of an additional gauging station along Tea Tree Hollow, and upgrades to the Dog Trap Creek downstream, Eliza Creek and Tea Tree Hollow stations to include low flow control weirs to reliably record low flows. • Development of an adaptive monitoring and trigger action response plan. • The pit top water management system performance should be assessed annually against its predicted performance range.
	Post-operation	Wider community water users	• Monitor stream flow, pool water levels and water quality for two years following the cessation of mining. Data would be reviewed six monthly within this period against long term performance objectives based on pre-mine baseline conditions.
Heritage	Pre-construction	Aboriginal heritage stakeholders and wider community	• Prepare a Heritage Management Plan (HMP) in consultation with registered aboriginal parties (RAPs) to include specific background information and mitigation measures proposed by this EIS and the ACHA on Aboriginal heritage values. • Confirm the final locations of all ancillary infrastructures (e.g. transmission lines, gas pipelines etc.) with the aim of avoiding identified aboriginal sites as far as possible. Any previously unidentified sites would be managed in accordance with the management measures described in the HMP and in consultation with the RAPs.
	Operation	Wider community	• A site specific Heritage Management Plan would be prepared for each heritage site of local significance identified within the Project Area, including Bargo Cemetery, Bargo Railway Bridges (South and North) and Tahmoor Mine. Each Heritage Management Plan would form part of the Extraction Plan for the longwalls relevant to each item, and would be developed in consultation with property owners/managers and the Wollondilly Shire Council prior to commencement of mining.

6.0 Conclusion

The SIA provides a detailed local and regional context of the Project Area for the proposed development and identifies a number of social impacts that are likely to arise as part of the proposed development. The key impacts of relevance largely include impacts of subsidence, noise and vibration, air quality, visual aesthetics, traffic, land use and community concerns regarding surface water environments. Tahmoor Coal has sought to reduce these impacts by utilising the existing surface infrastructure facilities where reasonable and feasible.

Community concerns identified as part of this SIA include those relating to subsidence, the condition of local roads, Tahmoor Coal's environmental management, particularly with regards to local waterways, employment opportunities, housing quality, variety, cost and availability, and accessibility to community services.

The social impacts associated with the proposed development are likely to be consistent with those of the already operating mine. There may be some minor impacts to the wider community with regards to construction of the proposed development; however, these would be short term and temporary in nature.

During operation there may also be minor visual impacts from limited viewpoints, and operational noise, air quality, odour and traffic impacts. These impacts would be managed and minimised through the implementation of appropriate management and mitigation measures.

Mining-induced subsidence may result in structural and/or cosmetic damage to houses over and near the proposed longwalls. Impacts to bores as a result of the proposed development would potentially comprise impacts to their structural integrity, or from drawdown of the aquifer. These impacts as a result of the proposed development would be managed, monitored and remediated in accordance with the recommendations from the Southern Coalfields Inquiry. Affected property owners would be addressed through the repair, restoration and rehabilitation of these impacts in conjunction with Subsidence Advisory NSW.

Without approval, completion of mining in the Tahmoor North mining area would result in closure of Tahmoor Mine by approximately 2022 prohibiting the extraction of a coal resource via existing infrastructure. Should the proposed development be approved the life of Tahmoor Mine would be prolonged, enabling the recovery of a greater proportion of the existing resource. This would in turn enable ongoing supply to existing contracts and direct employment of the existing 390 employees, as well as an additional 50 to 175 employees at peak employment.

References

Australian Bureau of Statistics (ABS) QuickStats.
http://www.abs.gov.au/websitedbs/censushome.nsf/home/quickstats

ABS Census of Population and Housing 2006.
http://abs.gov.au/websitedbs/censushome.nsf/home/historicaldata2006

ABS Census of Population and Housing 2011.
http://abs.gov.au/websitedbs/censushome.nsf/home/historicaldata2011?opendocument&navpos=280

ABS Census of Population and Housing 2016. First issued June 2017.
http://www.abs.gov.au/ausstats/abs@.nsf/mf/2024.0

Australian Bureau of Statistics. (2013). 2011 Australian Census of Housing and Population, Socio-economic Index for Areas (SEIFA), Local Government Areas. Commonwealth Government.

Australian Centre for Corporate Social Responsibility (ACCSR) (2016) *Stakeholder perception research: Insights for informing Glencore's stakeholder engagement practice in the Southern NSW Coalfields.* Prepared for Glencore Coal Assets Australia. 28 January 2016

Department of Planning and Environment (DP&E) (2017) *Wilton Interim Land Use and Infrastructure Implementation Plan*. http://www.planning.nsw.gov.au/Plans-for-your-area/Priority-Growth-Areas-and-Precincts/Wilton/Key-actions-and-documents

DP&E (2016) *2016 NSW population and housing projections.* NSW Government.
http://www.planning.nsw.gov.au/projections

DP&E (2015) *The Greater Macarthur Land Release Area Preliminary Strategy & Action Plan*.
http://www.planning.nsw.gov.au/~/media/Files/DPE/Plans-and-policies/greater-macarthur-land-release-investigation-land-use-and-infrastructure-analysis-preliminary-strategy-and-action-plan.ashx

International Association for Impact Assessment (IAIA) (2003). International Principles for Social Impact Assessment. Available at: http://www.iaia.org/uploads/pdf/IAIA-SIA-International-Principles.pdf

NSW Government (September 2017) *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development*.
http://www.planning.nsw.gov.au/~/media/Files/DPE/Guidelines/social-impact-assessment-guideline-2017-09.ashx

Office of Social Policy (1995). *Techniques for Effective Social Impact Assessment: A Practical Guide*. NSW Government Social Policy Directorate.

SGS Economics & Planning (2012) *Wingecarribee Demographic and Housing Study.*
http://www.wsc.nsw.gov.au/uploads/1446/final-report-.pdf

Wingecarribee Shire Council (2017) *Wingecarribee Shire Community Strategic Plan*. Adopted June 2017. http://www.wsc.nsw.gov.au/uploads/2515/csp-adopted-june-2017-lr.pdf

Wollondilly Council (2011) *Growth Management Strategy*.
https://www.wollondilly.nsw.gov.au/assets/Documents/Council/Council-Documents/Reports-and-Discussion-Papers/Planning-Documents/Growth-Management-Strategy-2011-Adopted.pdf

Wollondilly Council (2017) Create Wollondilly Community Strategic Plan 2033. Adopted 19 June 2017.
http://www.wollondilly2033.com.au/community-strategic-plan

Appendix A

Social Baseline Data

Appendix A Social Baseline Data

Population Demographics

Current Population

Table 6-1 Current population statistics by Local Government Area (regional study area)

Regional Area	Current Population Trends			
	2006	2011	2016	% change 2011 - 2016
Wollondilly (A)	40,344	43,259	48,519	11%
Wingecarribee (A)	42,272	44,395	47,882	7%
Camden (A)	49,645	56,720	78,218	27%
Campbelltown (C)	143,076	145,967	157,006	7%
Wollongong (C)	184,212	192,418	203,630	6%
New South Wales	6,549,177	6,917,658	7,480,228	8%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Populations based on Estimated Resident Population (place of usual residence, excluding overseas visitors) sourced from ABS 2006, 2011 and 2016 QuickStats.
3. Percentage growth rates highlighted in green indicates positive growth; red indicates negative growth.

Table 6-2 Current population statistics by local area (local study area)

Local Area	Current Population Trends			
	2006	2011	2016	% change 20011 - 2016
Tahmoor (SSC)	3,836	4,505	5,067	11%
Bargo (SSC)	3,952	4,130	4,393	6%
Yanderra (SSC)	561	683	661	-3%
Pheasants Nest (SSC)	656	592	688	14%
Buxton (SSC)	1,699	2,054	2,028	-1%
Couridjah (SSC)	456	276	303	9%
Wollondilly (A)	40,344	43,259	48,519	11%
Balmoral (SSC)	785	363	426	15%
Wingecarribee (A)	42,272	44,395	47,882	7%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C)
2. Populations based on Estimated Resident Population (place of usual residence, excluding overseas visitors) sourced from ABS, 2011 and 2016 QuickStats.
3. Percentage growth rates highlighted in green indicates positive growth; red indicates negative growth.

Forecast Population Projections

Table 6-3 Current and projected population statistics by Local Government Area (regional study area)

Regional Area	Population Projections							
	2011	2016	2021	2026	2031	2036	% change 2011 – 2036	Average Annual % change
Wollondilly (A)	44,600	49,350	51,300	57,350	64,450	72,600	62.8%	2%
Wingecarribee (A)	46,150	47,750	49,100	50,300	51,200	51,800	12 %	<1%
Camden (A)	58,450	80,900	109,400	147,850	185,600	224,550	284%	6%
Campbelltown (C)	151,150	164,400	177,800	197,000	214,100	233,150	54%	2%
Wollongong (C)	202,050	211,750	220,750	229,250	237,150	244,400	21%	1%
New South Wales	7,218,550	7,748,000	8,297,500	8,844,700	9,386,850	9925550	38%	1%

Notes:

1. Projections sourced from the Department of Planning & Infrastructure 2016 Preliminary NSW Population Projections http://www.planning.nsw.gov.au/projections
2. Population projections have been rounded to the nearest hundred persons and should not be taken as accurate to that level of detail.
3. Population projections are based on Estimated Resident Population statistics sourced from ABS 2011 Census data, and take into account the latest data and expertise on trends in fertility, mortality and migration. However, the DP&E notes the uncertainty associated with the forecast projections, as trends in "fertility and migration (and to a lesser extent, mortality) are influenced by a variety of social, economic and political factors, many of which cannot be foreseen with any degree of precision" (DP&E, 2013).

Table 6-4 Population projection forecasts by local area (local study area)

Local Area	Population Forecasts		
	2011	2031 Projections	% change 2011 - 2031
Tahmoor	4,714	6,314	13%
Bargo – Yanderra – Pheasants Nest	5,544	6,273	4%
Buxton – Couridjah	2,139	2,230	34%
Wollondilly (A)	43,259	56,768	31%

Notes:

1. Projections forecast for 2031 sourced from Wollondilly Shire Council Population Forecasts, prepared by profile.id (http://profile.id.com.au/wollondilly/seifa-disadvantage)
2. Population projections for local suburb areas are not available for each individual suburb. Projections for smaller suburbs have been grouped to present the forecast projections, in some cases.
3. Population projections are not available for the suburb of Balmoral specifically. Population growth in Balmoral is therefore anticipated to be in line with the forecast growth projections for the Wingecarribee LGA, estimated by the DP&E (2013) presented in Table 6.3.

Age and Gender Structure

Table 6-5 Gender distribution by local area (local study area)

Area	Population				
	Total 2016 population	Male		Female	
		Total male	% of total	Total female	% of total
Tahmoor (SSC)	5,067	2,455	48.5%	2,611	51.5%
Bargo (SSC)	4,393	2,208	50%	2,184	50%
Yanderra (SSC)	661	322	49%	339	51%
Pheasants Nest (SSC)	688	360	52%	330	48%
Buxton (SSC)	2,028	1,024	50.5%	1,005	49.5%
Couridjah (SSC)	303	152	51%	148	49%
Wollondilly (A)	48,519	24,207	50%	24,314	50%
Balmoral (SSC)	426	220	52%	203	48%
Wingecarribee (A)	47,882	22,894	48%	24,988	52%
New South Wales	7,480,228	3,686,014	49%	3,794,217	51%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Populations based on Estimated Resident Population (place of usual residence, excluding overseas visitors) sourced from ABS 2016 QuickStats.
3. Percentages are rounded to the nearest whole number.

Age Profile

Table 6-6 Age profile for the Wollondilly and Wingecarribee LGAs for 2006 and 2011

Age group	Wollondilly LGA			Wingecarribee LGA		
	2006	2011	2016	2006	2011	2016
0 – 4 years	3025	3173	3313	2531	2588	2358
5 – 14 years	6769	6817	7365	6240	6023	6050
15 – 24 years	5524	5860	6313	4637	4772	4933
25 – 54 years	17190	17552	19040	15384	16924	15505
55 – 64 years	4253	5187	6115	5893	6381	6645
65 years and over	3584	4671	6460	7590	9611	12395

Notes:

1. Local Government Areas (A).
2. Populations based on age profiles sourced from ABS 2006, 2011 and 2016 QuickStats.

Median Age

Table 6-7 Median age by local area (local study area)

Area	2006 Median Age	2011 Median Age	2016 Median Age
Tahmoor (SSC)	34	37	37
Bargo (SSC)	34	37	40
Yanderra (SSC)	32	33	35
Pheasants Nest (SSC)	38	38	41
Buxton (SSC)	30	33	33
Couridjah (SSC)	38	40	39
Wollondilly (A)	34	36	37
Balmoral (SSC)	38	42	45
Wingecarribee (A)	42	45	47
New South Wales	37	38	38

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2006, 2011 and 2016 QuickStats for Median Age.

Household Composition

Table 6-8 Household composition by local area (local study area)

Area	Family households		Single (or lone) person households		Group households		Total number of households
	No.	% of total	No.	% of total	No.	% of total	No.
Tahmoor (SSC)	1,317	77%	357	21%	39	2%	1,713
Bargo (SSC)	1,156	79%	285	19%	25	2%	1,466
Yanderra (SSC)	159	80%	32	16%	7	4%	198
Pheasants Nest (SSC)	166	87%	17	9%	7	4%	190
Buxton (SSC)	531	85%	90	14%	3	<1%	624
Couridjah (SSC)	72	80%	18	20%	0	0%	90
Wollondilly (A)	12,552	83%	2,316	15%	232	2%	15,100
Balmoral (SSC)	127	85%	22	15%	0	0%	149
Wingecarribee (A)	12,744	72%	4,636	26%	379	2%	17,759
New South Wales	1,874,524	72%	620,778	24%	109,004	4%	2,604,306

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats for Household Composition.
3. Percentages for each household type have been calculated against the total number of houses for a particular area. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Family Composition

Table 6-9 Family composition by local area (local study area)

Area	Couple family without children		Couple family with children		One parent family		Other family	
	No.	% of total	No.	% of total	No.	% of total	No.	% of total
Tahmoor (SSC)	454	33%	628	46%	274	20%	12	1%
Bargo (SSC)	472	39%	565	47%	165	14%	8	1%
Yanderra (SSC)	56	31%	91	50%	29	16%	7	4%
Pheasants Nest (SSC)	60	36%	97	58%	11	6.5%	0	0%
Buxton (SSC)	155	28%	301	55%	82	15%	8	2%
Couridjah (SSC)	24	31%	45	58%	8	10%	0	0%
Wollondilly (A)	4,424	34%	6,960	53%	1,654	13%	109	1%
Balmoral (SSC)	51	40%	72	57%	4	3%	0	0%
Wingecarribee (A)	6,148	47%	4,984	38%	1,801	14%	123	1%
New South Wales	709,524	37%	887,358	46%	310,906	16%	32,438	2%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats for Family Composition.
3. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Ethnic Diversity

Table 6-10 Ethnic diversity within local areas

Area	Total Population	Indigenous population		Born Overseas		Households Where a Language Other Than English is Spoken At Home	
		No.	% of total	No.	% of total	No.	% of total
Tahmoor (SSC)	5,067	227	4.5%	326	19.2%	140	7.7%
Bargo (SSC)	4,393	151	3%	796	17%	130	9%
Yanderra (SSC)	661	34	5%	120	16%	12	6%
Pheasants Nest (SSC)	688	26	4%	135	18%	16	8%
Buxton (SSC)	2,028	79	4%	308	15%	31	5%
Couridjah (SSC)	303	26	9%	60	20%	8	9%
Wollondilly (A)	48,519	1,552	3%	8,716	18%	1,403	9%
Balmoral (SSC)	426	8	2%	85	17%	14	9%
Wingecarribee (A)	47,882	954	2%	10,987	23%	1,404	7.5%
New South Wales	7,480,228	216,176	3%	2,581,138	35%	735,563	27%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats.
3. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Health and Wellbeing

Need for Assistance

Table 6-11 Persons with Need for Assistance by local area

Area	Number of persons with need for assistance	
	No.	% of total population
Tahmoor (SSC)	273	5%
Bargo (SSC)	295	7%
Yanderra (SSC)	39	6%
Pheasants Nest (SSC)	23	3%
Buxton (SSC)	82	4%
Couridjah (SSC)	11	4%
Wollondilly (A)	2,221	5%
Balmoral (SSC)	14	3%
Wingecarribee (A)	2,703	6%
New South Wales	402,048	5%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 Census of Population and Housing Basic Community Profile for each particular area. B18 Core Activity Need for Assistance by Age by Sex.
3. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Socio-Economic Indexes for Areas (SEIFA)

Table 6-12 SEIFA score and ranking (2011 Census)

Area	Index of Relative Socio-economic Disadvantage (IRSD)		
	Score	Ranking within NSW	Area decile within NSW
Tahmoor (SSC - 12200)	958	730	3
Bargo (SSC - 10116)	1015	1411	6
Yanderra (SSC - 12594)	983	979	4
Pheasants Nest (SSC - 11867)	1048	1834	8
Buxton (SSC - 10413)	1019	1468	6
Couridjah (SSC - 10628)	991	1080	5
Wollondilly (A) (LGA – 18400)	1034	126	9
Balmoral (SSC - 10093)	1066	2062	9
Wingecarribee (A) (LGA - 18350)	1024	125	9

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2011 Census of Population and Housing: 2033.0.55.001 - Socio-economic Indexes for Areas (SEIFA) Data Cube only 2011. Table 3 Index of Relative Socio-economic Disadvantage (IRSD).
3. 2016 Census data was not available at the time of data analysis for this SIA.
4. SEIFA broadly defines relative socio-economic advantage and disadvantage in terms of people's access to material and social resources, and their ability to participate in society. SEIFA helps provide assessment of the welfare of Australian communities and helps in determining areas that require funding and services (ABS, 2013).

   A low score indicates relatively greater disadvantage in general. For example, an area could have a low score if there are (among other things) many households with low income, many people with no qualifications, or many people in low skill occupations. A high score indicates a relative lack of disadvantage in general. For example, an area may have a high score if there are (among other things) few households with low incomes, few people with no qualifications, and few people in low skilled occupations (ABS, 2013).

Housing

Dwelling type

Table 6-13 Dwelling type by local area

Area	Separate House		Semi-detached, row or terrace house, townhouse		Flat, unit or apartment		Other dwelling		Total Occupied Dwellings
	No.	%	No.	%	No.	%	No.	%	No.
Tahmoor (SSC)	1,628	95%	81	5%	3	0%	0	0%	1712
Bargo (SSC)	1,280	87%	144	10%	0	0%	39	3%	1463
Yanderra (SSC)	197	100%	0	0%	0	0%	0	0%	197
Pheasants Nest (SSC)	190	100%	0	0%	0	0%	0	0%	190
Buxton (SSC)	615	100%	3	0%	0	0%	0	0%	618
Couridjah (SSC)	86	100%	0	0%	0	0%	0	0%	86
Wollondilly (A)	14,179	94%	650	4%	102	1%	113	1%	15,099
Balmoral (SSC)	143	98%	0	0%	0	0%	0	0%	146
Wingecarribee (A)	16,121	91%	1,057	6%	326	2%	133	1%	17,766
New South Wales	1,729,820	66%	317,453	12%	519,390	20%	23,580	1%	2,604,320

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats.
3. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Tenure

Table 6-14 Tenure of occupied private dwellings by local area

Area	Fully owned		Owned with mortgage		Rented		Other		Tenure Type not Stated		Total
	no.	%	no.	%	no.	%	no.	%	no.	%	no.
Tahmoor (SSC)	516	30%	634	37%	500	29%	15	<1%	53	3%	1715
Bargo (SSC)	497	34%	660	45%	212	15%	42	1%	46	3%	1469
Yanderra (SSC)	44	22%	133	68%	15	8%	0	0%	5	2.5%	197
Pheasants Nest (SSC)	53	28%	101	54%	26	14%	0	0%	7	4%	190
Buxton (SSC)	161	26%	374	60%	71	11%	5	1%	12	2%	618
Couridjah (SSC)	32	37%	43	50%	19	10%	0	0%	3	3%	86
Wollondilly (A)	4,656	31%	7,576	50%	2,290	15%	180	1%	399	3%	15,099
Balmoral (SSC)	47	31%	88	57%	11	7%	3	2%	5	3%	146
Wingecarribee (A)	7,730	44%	5,849	33%	3,518	20%	194	1%	475	3%	17,766
New South Wales	839,665	32%	840,004	32%	826,922	32%	23,968	1%	73,763	3%	2,604,320

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats.
3. Percentages are rounded to the nearest whole number and are based on the tenure type as a percentage of the total tenure. “Tenure not stated” has not been included in the table above and as such the percentages provided may not sum to 100 percent.

Affordability

Table 6-15 Mean mortgage and rental repayments compared with median household income for local areas

Area	Median household income ($/week)	Median mortgage loan repayment ($/month)	Median mortgage loan repayment averaged per week ($/week)	Loan repayment as a % of household income	Median rental repayment ($/week)	Rental repayment as a % of household income
Tahmoor (SSC)	1,403	1,842	425	30%	370	26%
Bargo (SSC)	1,485	2,080	480	32%	360	24%
Yanderra (SSC)	1,831	1,853	428	23%	350	19%
Pheasants Nest (SSC)	2,042	2,221	513	25%	488	24%
Buxton (SSC)	1,787	1,950	450	25%	363	20%
Couridjah (SSC)	1,928	2,000	462	24%	305	16%
Wollondilly (A)	1,871	2,167	500	27%	365	20%
Balmoral (SSC)	1,678	2,167	500	30%	330	20%
Wingecarribee (A)	1335	1,842	425	32%	350	26%
New South Wales	1,486	1,986	458	31%	380	26%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats.
3. Percentages are rounded to the nearest whole number and as may not sum to 100 percent.

Table 6-16 Rental Vacancy Rates for the Sydney, Outer Sydney and Illawarra regions (2010)

Area	March 2017	April 2017	May 2017	June 2017	July 2017
Sydney	1.7	1.7	1.8	1.8	1.9
Outer Sydney (>25km)	2.1	2.2	1.8	1.7	1.9
Illawarra	1.5	1.4	1.8	2.5	2.3

Notes:

1. Rental vacancy rates sourced from the Real Estate Institute of New South Wales (2017).

Occupancy

Table 6-17 Occupancy by local area

Area	Number of unoccupied dwellings	Total number of dwellings	% unoccupied dwellings
Tahmoor (SSC)	118	1932	6%
Bargo (SSC)	74	1,608	5%
Yanderra (SSC)	19	235	9%
Pheasants Nest (SSC)	17	226	8%
Buxton (SSC)	37	688	6%
Couridjah (SSC)	12	99	20%
Wollondilly (A)	949	16,764	6%
Balmoral (SSC)	6	162	4%
Wingecarribee (A)	2,788	21,615	14%
New South Wales	284,741	3,059,599	10%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats.
3. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Education

Attendance

Table 6-18 Attendance at educational facilities by LGA

Area	Total population	Preschool	% of total population	Primary	% of total population	Secondary	% of total population	Technical or Further Education (e.g. TAFE)	% of total population	University or Tertiary	% of total population	Total	% of total population
Wollondilly (A)	48,519	1,103	2%	4,906	10%	3,563	7%	886	2%	1,457	3%	15,046	31%
Wingecarribee (A)	47,882	825	2%	3,872	8%	3,361	7%	764	2%	1070	2%	13,748	29%
New South Wales	7,480,228	132,047	2%	607,175	8%	466,853	6%	144,103	2%	376,133	5%	2,325,250	31%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats.
3. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Qualifications

Table 6-19 Post-school qualifications by LGA (2011 Census)

Area	Total population	Postgraduate degree level	% of total population	Graduate diploma and graduate certificate level	% of total population	Bachelor degree level	% of total population	Advanced diploma	% of total population	Level of education not defined	% of total population	Total	% of total population
Wollondilly (A)	43,259	626	1%	387	1%	2,675	6%	2,477	6%	457	1%	6,622	15%
Wingecarribee (A)	44,395	1,212	3%	651	1%	4,398	10%	7,529	17%	635	1%	21,332	48%
New South Wales	6,917,658	238,854	3%	82,615	1%	787,334	11%	462,061	7%	100,287	1%	1,671,151	23%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2011 Census of Population and Housing Basic Community Profile for each particular area. B40 – Non-school Qualification Level of Education (b) by Age and Sex.
3. 2016 Census data was not available at the time of data analysis for this SIA.
4. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Employment and Income

Income

Table 6-20 Median income by local area

Area	Median Individual Income ($/week)	Median Household Income ($/week)	Median Family Income ($/week)
Tahmoor (SSC)	640	1,403	1,569
Bargo (SSC)	638	1,485	1,686
Yanderra (SSC)	667	1,831	1,860
Pheasants Nest (SSC)	711	2,042	2,104
Buxton (SSC)	722	1,787	1,884
Couridjah (SSC)	583	1,928	2,059
Wollondilly (A)	738	1,871	2,032
Balmoral (SSC)	630	1,678	1,895
Wingecarribee (A)	645	1,335	1,639
New South Wales	664	1,486	1,780

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2016 QuickStats.

Employment status

Table 6-21 Employment status by local area

Area	Total population	Total Labour Force	% of total population	Employed Full Time	% of total Labour Force	Employed Part Time	% of total Labour Force	Employed (other)	% of total Labour Force	Unemployed	% of total Labour Force
Tahmoor (SSC)	4,505	2126	47%	1278	60%	582	27%	123	6%	143	7%
Bargo (SSC)	4,130	2039	49%	1245	61%	578	28%	123	6%	93	5%
Yanderra (SSC)	683	314	46%	203	65%	82	26%	10	3%	19	6%
Pheasants Nest (SSC)	592	315	53%	187	59%	104	33%	12	4%	12	4%
Buxton (SSC)	2,054	1046	51%	663	63%	269	26%	72	7%	42	4%
Couridjah (SSC)	276	160	58%	100	63%	41	26%	13	8%	6	4%
Wollondilly (A)	43,259	22224	51%	13886	62%	6094	27%	1308	6%	936	4%
Balmoral (SSC)	363	205	56%	136	66%	46	22%	18	9%	5	2%
Wingecarribee (A)	44,395	20106	45%	11367	57%	6728	33%	1165	6%	846	4%
New South Wales	6,917,658	3,334,857	48%	2007925	60%	939464	28%	190942	6%	196526	6%

Notes:

1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2011 Census of Population and Housing Basic Community Profile for each particular area. B42 (b) – Labour Force Status by Age and Sex.
3. 2016 Census data was not available at the time of data analysis for this SIA.
4. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Employment by industry

Table 6-22 Employment by industry by local area

Area	Tahmoor SSC		Bargo SSC		Yanderra SSC		Pheasants Nest SSC		Couridjah SSC		Buxton SSC		Wollondilly LGA		Balmoral SSC		Wingecarribee LGA	
	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total
Agriculture, forestry and fishing	27	1%	35	2%	0	0%	9	3%	0	0%	12	2%	512	2%	0	0%	635	3%
Mining	52	3%	41	2%	6	2%	9	3%	9	6%	38	4%	461	2%	3	2%	187	1%
Manufacturing	293	15%	253	13%	40	14%	36	12%	12	8%	161	16%	2,661	13%	33	17%	1,940	10%
Electricity, gas, water and waste services	40	2%	39	2%	6	2%	3	1%	6	4%	20	2%	353	2%	6	3%	185	1%
Construction	208	11%	212	11%	34	12%	34	11%	21	14%	114	11%	2,552	12%	21	11%	1,649	9%
Wholesale trade	71	4%	81	4%	12	4%	16	5%	3	2%	36	3%	909	4%	18	9%	650	3%
Retail trade	249	13%	240	13%	23	8%	19	6%	15	10%	109	11%	2,096	10%	20	10%	2,246	12%
Accommodation and food services	92	5%	94	5%	18	6%	12	4%	6	4%	37	4%	991	5%	6	3%	1,586	8%
Transport, postal and warehousing	131	7%	127	7%	22	7%	28	9%	12	8%	68	6%	1,378	7%	6	3%	872	5%
Information media *and* telecommunications	10	1%	13	1%	4	1%	6	2%	3	2%	9	1%	177	1%	0	0%	240	1%
Financial and insurance services	38	2%	36	2%	6	2%	4	1%	9	6%	18	2%	500	2%	6	3%	432	2%

Area	Tahmoor SSC		Bargo SSC		Yanderra SSC		Pheasants Nest SSC		Couridjah SSC		Buxton SSC		Wollondilly LGA		Balmoral SSC		Wingecarribee LGA	
	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total
Rental, hiring and real estate services	35	2%	31	2%	3	1%	0	0%	3	2%	7	1%	361	2%	6	3%	400	2%
Professional, scientific and technical services	88	5%	80	4%	8	3%	12	4%	9	6%	41	4%	997	5%	9	5%	1,232	7%
Administrative and support services	41	2%	48	3%	11	4%	3	1%	4	3%	26	3%	526	3%	3	2%	648	3%
Public administration and safety	116	6%	114	6%	21	7%	15	5%	3	2%	50	5%	1,208	6%	11	6%	818	4%
Education and training	149	8%	135	7%	28	10%	22	7%	9	6%	62	6%	1,757	8%	22	11%	1,793	10%
Health care and social assistance	211	11%	213	11%	37	13%	37	12%	20	13%	117	11%	2,115	10%	22	11%	2,295	12%
Arts and recreation services	25	1%	22	1%	0	0%	13	4%	3	2%	10	1%	297	1%	0	0%	277	1%
Other services	65	3%	81	4%	17	6%	15	5%	3	2%	43	4%	946	4%	5	3%	713	4%
Total	1941		1895		296		293		150		978		20797		197		18798	

Notes:
1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2011 Census of Population and Housing Basic Community Profile for each particular area. B43(c) – Industry of Employment by Age by Sex.
3. 2016 Census data was not available at the time of data analysis for this SIA.
4. Percentages are rounded to the nearest whole number and as such may not sum to 100 percent.

Employment by occupation

Table 6-23 Employment by occupation by local area

Area	Tahmoor SSC		Bargo SSC		Yanderra SSC		Pheasants Nest SSC		Couridjah SSC		Buxton SSC		Wollondilly LGA		Balmoral SSC		Wingecarribee LGA	
	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total	no.	% of total
Managers	181	9%	208	11%	29	10%	42	14%	16	11%	77	8%	2,626	12%	23	12%	2,822	15%
Professionals	270	14%	245	13%	44	15%	43	14%	22	14%	120	12%	3,236	15%	37	19%	3,864	20%
Technicians and trade workers	340	17%	362	19%	63	21%	54	18%	25	16%	207	21%	3,893	18%	45	23%	3,025	16%
Community and personal services	181	9%	209	11%	29	10%	33	11%	10	7%	104	10%	1,974	9%	12	6%	1,948	10%
Clerical and administrative	254	13%	267	14%	31	11%	49	16%	23	15%	128	13%	3,273	15%	22	11%	2,340	12%
Sales workers	203	10%	172	9%	19	6%	20	7%	8	5%	88	9%	1,759	8%	20	10%	1,824	9%
Machinery operators and drivers	263	13%	206	11%	38	13%	31	10%	19	12%	130	13%	2,097	10%	18	9%	1,161	6%
Labourers	256	13%	230	12%	36	12%	27	9%	24	16%	123	12%	2,044	10%	15	8%	1,930	10%
Inadequately described / not stated	34	2%	47	2%	6	2%	3	1%	6	4%	26	3%	390	2%	3	2%	347	2%
Total	1,982	100%	1,946	100%	295	100%	302	100%	153	100%	1,003	100%	21,292	100%	195	100%	19,261	100%

Notes:
1. Statistics for State Suburb (SSC), Local Government Area (A) and (C), and New South Wales.
2. Sourced from ABS 2011 Census of Population and Housing Basic Community Profile for each particular area. B44 – Industry of Employment by Occupation.
3. 2016 Census data was not available at the time of data analysis for this SIA.
4. Percentages are rounded to the nearest whole number.

Appendix B

Tahmoor South SIA
Scoping Report June
2018

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18 June 2018

Howard Reed
Manager – Mining Projects
Department of Planning & Environment (DP&E)
GPO Box 39
SYDNEY NSW 2001

Dear Mr Reed,

Tahmoor South Development Application SSD12_5583 – Social Impact Assessment Scoping Report and Request for Supplementary SEARs

I refer to the Tahmoor South Preliminary Environmental Assessment (PEA) submitted on 1 May 2017 and the Secretary's Environmental Assessment Requirements (SEARs) issued for the development on 9 June 2017 and supplemented on 14 February 2018 with respect to Commonwealth requirements.

AECOM Australia on behalf of Tahmoor Coking Coal Operations has prepared a Scoping Report in accordance with the *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (SIA Guideline) (DP&E, September 2017).

The attached report forms the Social Impact Assessment (SIA) Scoping Report for the Tahmoor South Project and comprises an addendum to the PEA dated 1 May 2017. The SIA Scoping Report:

- Identifies the development's area of social influence;
- Outlines the social impact issues to be assessed in the Environmental Impact Statement (EIS) informed by the DP&E SIA Scoping Tool, and the environmental impact assessment and community and stakeholder consultation undertaken to date for the development; and
- Identifies the assessment methodology (including community consultation strategy) that would be followed in preparing a social impact assessment as part of the Tahmoor South Project EIS to meet the requirements of the SIA Guideline.

In submitting this SIA Scoping Report, Tahmoor Coking Coal seeks supplementary SEARs to address social impacts in accordance with the SIA Guideline as part of the EIS for the development.

Please feel free to contact me should you require any further details.

Kind regards



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Tahmoor South SIA Scoping Report

1.0 Background

The *Social impact assessment guideline for State significant mining, petroleum production and extractive industry development* (SIA Guideline) (DP&E, September 2017) identifies the assessment methodology and community consultation requirements for undertaking SIAs for State significant mining petroleum production and extractive industry development as part of an EIS.

The SIA Guideline includes the following transitional arrangements for EISs submitted six months or more following publication of the guideline (i.e. after March 2018):

> *The Department, in consultation with the applicant, will re-issue the Secretary's Environmental Assessment Requirements (SEARs) to require the social impact assessment component of the environmental impact statement to be prepared in accordance with this guideline*.

The Tahmoor South Project EIS is currently under preparation and is scheduled to be lodged after the six month transition period. As such, in accordance with the SIA Guideline requirements, updated SEARs are required to be sought from DP&E to allow the SIA component of the EIS to be prepared in accordance with the SIA Guideline.

This report forms the SIA Scoping Report for the Tahmoor South Project and the request for supplementary SEARs in relation to social impact assessment for the development. Tahmoor Coking Coal seeks these supplementary SEARs to inform the assessment of social impacts in accordance with the SIA Guideline as part of the Tahmoor South Project EIS.

This Scoping Report forms an addendum to the PEA dated 1 May 2017 and should be read in conjunction with that report. Background to the development and project description details are provided in the PEA.

1.1 SIA Guideline Requirements

The SIA Guideline identifies a number of stages in undertaking a social impact assessment (refer **Figure 1** below). Preparation of a Scoping Report to seek SEARs in relation to social impacts to be addressed in the EIS comprises the first stage of the process ('Scoping') and forms the basis of this report.

The SIA Guideline outlines two key steps in scoping social impact issues for a State significant resource project, comprising:

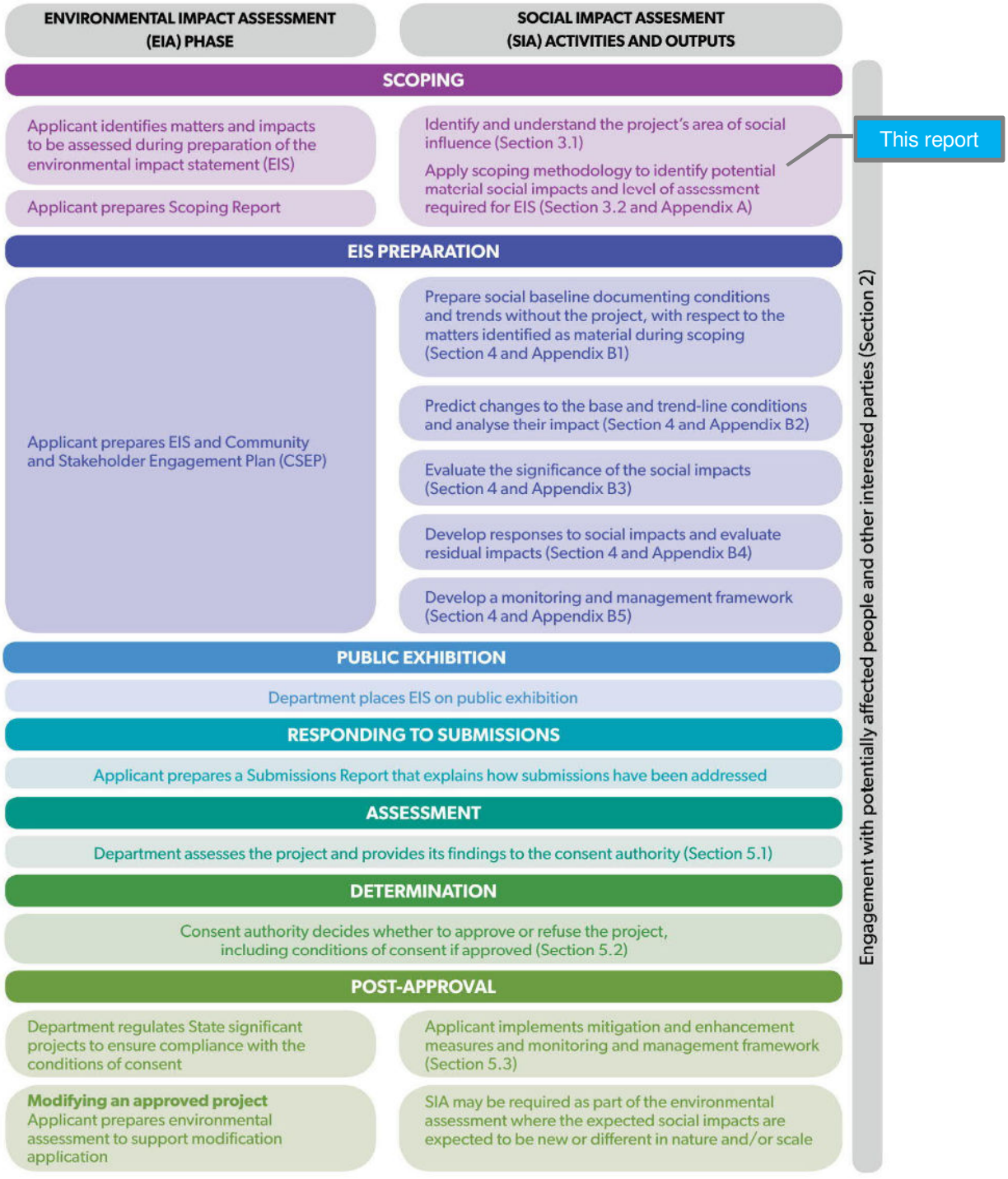
1. *Identifying and understand the development's area of social influence.* This may not be confined to the physical boundary of a development but extend beyond its geographic locality depending on the nature and scale of activities and impacts, ancillary facilities associated with the development and range of community stakeholders that have the potential to be affected.

2. *Applying scoping methodology to identify potential material social impacts and level of assessment required for the EIS.*

    - Negative Social Impacts - the SIA Guideline includes a Scoping Tool and methodology (Appendix B of the Guideline) to be used by the study team to determine likely negative social impacts resulting from the development and the level of assessment to be applied at the EIS stage.
    - Positive Social Impacts - the SIA Guideline also requires the identification of positive social impacts (the social opportunities or benefits expected to eventuate from the proposal) and level of assessment to be provided in the EIS to enable robust evaluation of the merits of the development.

The requirements of the SIA Guideline are addressed in turn in the sections below.

Figure 1 Stages of Social Impact Assessment under the SIA Guideline (Source: SIA Guideline, DP&E, 2017)



1.2 Area of Social Influence

1.2.1 Proposed Development Location and Site Context

Tahmoor Coking Coal Operations is located approximately 80 kilometres southwest of the Sydney Central Business District and 50 kilometres northwest of Wollongong and Port Kembla, in the Southern Coalfields of NSW. It is approximately 30 kilometres southwest of the suburb of Campbelltown and to the west of the M31 Hume Motorway.

Tahmoor Coking Coal's existing surface facilities area is located approximately 2.5 kilometres south of the town of Tahmoor and approximately four kilometres north of the village of Bargo. The mining area is bounded on the west by the Picton-Mittagong Railway and traversed by the Main Southern Railway. The railway system utilised by the existing Tahmoor Mine comprises the Tahmoor Mine Balloon Loop, Main Southern Railway Line (MSRL) and the Moss Vale to Unanderra Line for rail haulage to Port Kembla. The total distance travelled from the Tahmoor Mine to Port Kembla is approximately 113 kilometres.

Tahmoor Coking Coal is seeking approval for the Tahmoor South Project (the proposed development), being the extension of underground coal mining to the south and east of the Tahmoor Mine surface facilities area. The proposed development would be located immediately south of the existing coal mining operations of Tahmoor Mine. Access to the underground mine for the proposed development would be via the existing surface facilities area. The proposed development would utilise the existing rail loop to transport coal to Port Kembla via the MSRL.

The proposed development, including all surface infrastructure and longwall mining would be located within the Wollondilly Local Government Area (LGA). For the purposes of environmental impact assessment a conservative Project Area extending within the Wollondilly LGA and partially into the Wingecarribee LGA has been identified. The Project Area is shown in **Figure 2**.

1.2.2 Natural Features

The Project Area is bounded by the incised gullies associated with the Bargo and Nepean Rivers, with forested land largely located in the south-eastern section of the Project Area and along the Bargo River. The region encompasses areas of land dedicated to conservation and the protection of drinking water catchments.

One of the main natural features within the local area includes Thirlmere Lakes, which includes unique wetland systems protected within the Thirlmere Lakes National Park to the northwest of the Project Area. Thirlmere Lakes National Park also forms part of the Greater Blue Mountains World Heritage Area. In addition to this, Lake Nepean lies south of the Project Area and is surrounded by the Metropolitan Special Area which forms part of the drinking water system for Sydney and the Illawarra. Both this area and the Upper Nepean State Conservation Area are partially overlain by the southeast corner of the Project Area

1.2.3 Land Use and Population

The Project Area is located on the outer south-western peri-urban fringe of Sydney. The region is characterised by a mixture of village residential, rural residential, market gardens, agricultural and conservation areas. Rural residential areas are generally clustered around the town centres of Bargo, Tahmoor, Thirlmere and Buxton, and the villages of Yanderra, Pheasants Nest, Couridjah and Balmoral. These areas are separated by a semi-rural and partially forested landscape. The region has a long history of agricultural land use with large scale areas of vegetation clearance for agricultural and other activities including cropping, market gardeners, poultry, cattle grazing, trotting horse training, greyhound training and horse studs.

The *Wollondilly Growth Management Strategy* (2011) states that 7,500 additional dwellings will be required over the next 25 years in order to accommodate the projected population growth for the LGA. The Strategy has identified a target of 4,000 dwellings across Picton, Tahmoor and Thirlmere and 2,000 in the Bargo area.

Based on Census data, the local area has an above-average proportion of family households, with the number of single parent households lower than the State average. At the time of the 2016 census, the proportion of Aboriginal and Torres Strait Islander people living within the local area is 3%, higher than the State average of 2%. The number of people living in the local area that were born overseas and

that speak a language other than English is significantly lower than the State average. Trends in employment within the Wollondilly and Wingecarribee LGAs indicate that the highest proportion of the labour force comprises manufacturing, construction, retail trade, health care and social assistance sectors. The 2011 census reported that the employment rate of the two LGAs was lower than NSW as a whole.

1.2.4 Southern Coalfields

Coal mining has been carried out in the Southern Coalfields for around 200 years, contributing to the development of mining towns throughout the Southern Highlands and the Illawarra. In addition to Tahmoor Mine, there are another eight mining operations in the Southern Coalfields, including Appin and Appin West Colliery, West Cliff Colliery, North Cliff Colliery (not operating), Peabody Metropolitan Colliery, Russel Vale Colliery, Dendrobium Colliery, Wollongong Coal Wongawilli Colliery, and Boral Berrima Colliery (currently under care and maintenance).

Tahmoor Mine has been operating for over thirty five years, during which time the mine has developed a relationship with the local community through supporting local events, making contributions to community partnerships and employing most of its staff from within the local area. In 2013, the largest proportion of personnel employed at Tahmoor Mine resided within the Wollondilly LGA (199 employees or 46%). Remaining employees travel to Tahmoor Mine from nearby LGAs including Wollongong and Shellharbour (30%), Wingecarribee (8%), and Campbelltown (16%).

1.2.5 Study Area for SIA

The Study Area (or Area of Social Influence) that would be the subject of the SIA for the EIS would be informed by the following factors:

- The activities proposed as part of the development, comprising the surface disturbance activities and longwall mining, as defined by the Project Area. The development would utilise the existing rail loop and MSRL to transport coal to Port Kembla. However, this would not involve any change to existing train movements, train loading capacity or frequencies. As there would be no change to operations or impacts along the train haulage route (compared to existing), the study area for the SIA would not include the 113 kilometre coal haulage route to Port Kembla.
- The likely scale and extent of impacts – this would be determined by the specialist assessments undertaken for key issues including (but not limited to): subsidence, groundwater, surface water, biodiversity, heritage (Aboriginal and non-Aboriginal), noise, air quality, traffic and transport, greenhouse gas. The extent and types of receptors affected would be identified by the specialist assessments and would characterise the areas of influence for the development. Depending on the predicted impacts, this area of influence may extend beyond the Project Area (e.g. far field subsidence impacts).
- Cumulative impacts – areas where cumulative impacts from other mines and other known and proposed developments within the Southern Coalfields.
- The natural, land use and social characteristics of the areas likely to be affected by the development, including proposed future land use and growth.
- The community and stakeholder groups most likely to be affected by the kinds of impact and areas of impact predicted.

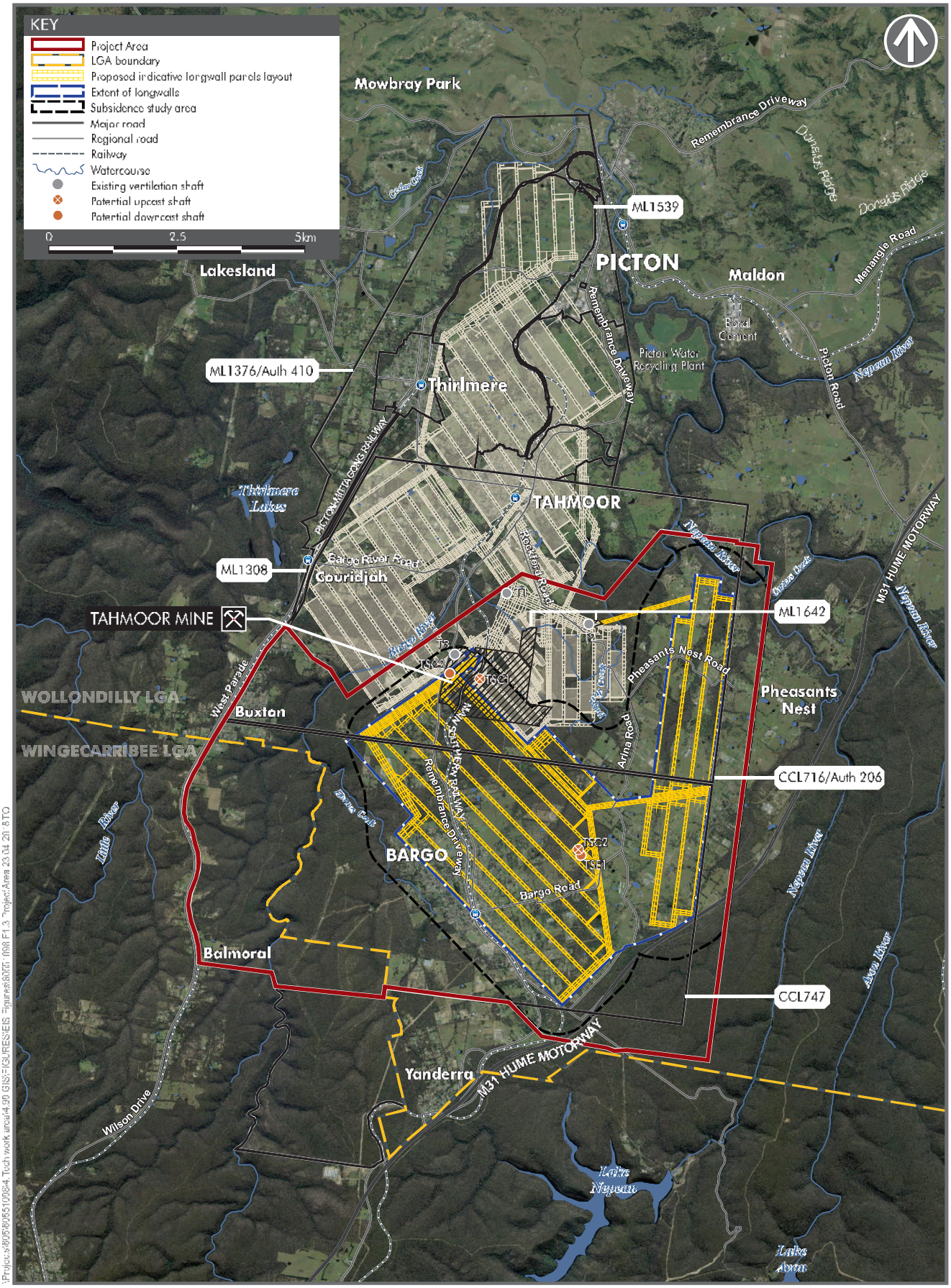
At a minimum the SIA would consider the following:

- Broad-scale consideration of social impacts - within the statistical areas of Wollondilly, Wingecarribee, Camden, Campbelltown and Wollongong LGAs with comparison to the broader NSW for context.
- Local scale consideration of impacts - incorporating the localities of Tahmoor, Bargo, Yanderra, Pheasants Nest, Buxton, Couridjah, and Thirlmere within the Wollondilly Shire LGA.

Data sources used to inform and confirm the SIA study area would include:

- Census and other statistical data from the Australian Bureau of Statistics (ABS);

- Local and regional strategic land use planning studies including *Draft South West District Plan* (Greater Sydney Commission, 2016) and *Sydney-Canberra Corridor Regional Strategy 2008*;
- The specialist environmental impact assessments completed as part of the EIS;
- A review of current Major Projects listed on the DP&E website to identify other major developments relevant to the proposed development in order to assess cumulative impacts on the community, particularly with regards to workforce requirements and timeframes;
- A review of relevant government inquiries, namely the Southern Coalfields Inquiry and the Thirlmere Lakes Inquiry, as well as relevant Council and community interest submissions made as part of the inquiries to provide context for the assessment of the proposed development; and
- Issues and feedback raised as part of community and stakeholder engagement activities including *Tahmoor Coal Community Survey 2012 and 2015*.



SIMEC MINING

PROJECT AREA
Tahmoor South Project

FIGURE 2

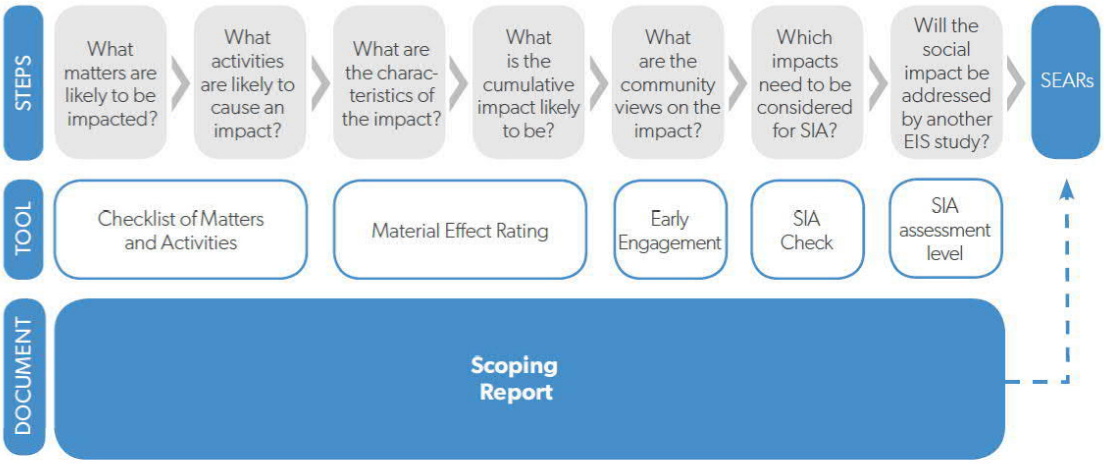
1.3 Identification and Prioritisation of Issues (Negative)

Issue identification and prioritisation has followed the methodology outlined in Appendix B of the SIA Guideline and the SIA Scoping Tool.

1.3.1 Scoping Tool Methodology

The SIA scoping methodology outlined in Appendix B of the SIA Guideline is carried out by completing the Scoping Tool excel worksheet, which follows the steps of the methodology. The broad steps of the methodology are shown in **Figure 3** and summarised below.

Figure 3 SIA Scoping Tool and Methodology for Negative Social Impacts (Source: SIA Guideline, DP&E, 2017)



- *Checklist of environmental and social matters* – initial identification of a list of matters likely to be affected by the development without mitigation, with a relevant rating of "likely" (real chance of adverse impacts), "unlikely" (where impacts have been avoided with relevant details provided) and "not applicable". If a matter is rated as "unlikely" with appropriate justification, the matter does not require further discussion in the SIA and EIS.
- *Activities causing impacts* – for matters rated as "likely" to result in negative social impacts (without mitigation), the main activities that would lead to these impacts and the receptors likely to be affected are identified.
- *Estimating material effects* - for matters rated as "likely" to result in negative social impacts (without mitigation), the material effects of the impact is estimated considering extent, duration, severity and sensitivity. For each characteristic, three categories of answers ("yes", "no" or "unknown") is possible. If two or more of the characteristics are categorised as "yes" or "unknown", the impact must be assessed in more detail in the EIS. If one or no characteristics are categorised as "yes" or "unknown" consideration of the matter and impacts in the scoping stage only is considered sufficient.
- *Cumulative impact* - for impacts identified as requiring further assessment in the EIS, consideration is to be given to their contribution to cumulative impacts. If there is reasonable likelihood ("yes" or "unknown") that the impact would interact with other projects or foreseeable future development, a more detailed assessment of potential cumulative effects of that impact is required in the EIS.
- *Mitigation level* – if an impact is expected to result in a material effect, the level of mitigation likely to be required is identified in the Scoping Report, including a brief conceptual discussion of mitigation and management measures. Mitigation measures may be:
    - **Standard** – measures to manage the effect of the impact are known and routinely used on similar projects and may not require separate specialist assessment.

  - **Project-specific** – measures that need a specialist assessment using an endorsed methodology or method unique to the project to establish the appropriate measures to mitigate the effect of the impact.
  - **Unknown** – measures are not known at this stage until further specialist assessment is undertaken as part of the EIS.

- *Stakeholder views* – identification of stakeholder concerns or views on the potential impact based on early engagement. This helps inform the level of specialist assessment, further stakeholder engagement and the consideration of mitigation measures at the EIS stage. The Scoping Report is to identify the issues raised as part of early engagement, how these view were collected and identify the approach for stakeholder and community engagement during the EIS preparation phase.
- *Level of assessment checkpoint* – identification of the level of assessment required for each impact to be considered in the EIS. An issue would be classed as a "key issue" if it requires the preparation of a specialist report and project-specific mitigation measures or an "other issue" if it can be addressed in the body of the EIS and typically be managed through routine mitigation measures. The Scoping Report is to identify:
  - Whether the impact would be addressed in full or in part by another specialist study;
  - The level of assessment for the standalone SIA ("desktop", "standard" or "comprehensive") with appropriate justification; and
  - The assessment methodologies to be employed for the SIA.

1.3.2 Results of the Scoping Tool Assessment

Context for SIA Scoping Process – Tahmoor EIS

The preparation of the EIS for Tahmoor South is well on the way to addressing the SEARs issued for the proposed development on 9 June 2017 and 14 February 2018, which include the requirement for social impact assessment. As part of EIS preparation, several technical studies have been completed or are underway and detailed community and stakeholder engagement activities have been carried out. Engagement activities carried out to date include:

- Agency briefings and one-on-one meetings;
- Distribution of community newsletters (mailed to approximately 250 individuals and organisations and letter box dropped to approximately 4,000 households);
- Meetings of the Tahmoor Coking Coal Community Consultative Committee which includes community and local council representatives;
- Community information days (five to date) to provide updates on the proposed development and assessment; and
- Community updates through the Tahmoor Coking Coal website.

The assessment and engagement activities undertaken to date have informed the SIA Scoping process. In the context of the Tahmoor South EIS, the Scoping Tool spreadsheet has been used to confirm the social impacts to be addressed in the EIS and identify gaps (where relevant) in the level of assessment currently proposed to be undertaken.

The level of assessment recommended by the Scoping Tool for social impact issues (outputs of the Scoping Tool) is further discussed in **Section 1.3.3** in the context of the EIS assessment process.

Scoping Workshop

An SIA scoping workshop was held on 22 May 2018 with Tahmoor Coking Coal representatives at Tahmoor Mine to work through the Scoping Tool and identify social impacts that could occur as a result of the proposed development. The completed Scoping Tool Excel worksheets for the development are provided in **Appendix A**.

Table 1 Summary of results of the Scoping Tool

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
AMENITY					
Acoustic - operation	Operation of Coal Handling Preparation Plant (CHPP), expansion of the Rejects Emplacement Area (REA), operation of the ventilation fans, increase in traffic accessing the site potentially resulting in impacts worse than existing operations at some locations, including potential for low frequency noise impacts.	Key Issue + CIA + Project Specific	Y	Noise & Vibration Impact Assessment (issues addressed in full) + Desktop SIA	Noise amenity issues would be addressed by a specialist Noise and Vibration assessment and results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment. As part of a conservative assessment both operational and construction noise would be assessed as key issues. Cumulative impacts would also be considered in a desktop cumulative impact assessment.
Acoustic - Construction	Construction of the ventilation shafts and other surface infrastructure may cause noise and vibration impacts.	Other Issue + Standard	Y	Noise & Vibration Impact Assessment (issues addressed in full) + Desktop SIA	
Visual	Expansion in height and extent of the REA, additional ventilation shafts, possible modifications to existing surface operations. These activities may impact some minor views of the site from receptors and public places but mostly screened by existing undulating landscape and vegetation	Other Issue + Standard	Y	Visual Impact Assessment (issues addressed in full) + Desktop SIA	Visual amenity issues would be addressed by a stand-alone desktop visual impact assessment and results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment.
Odour	Additional ventilation shaft(s) required for the project may result in instances of odour impacts above the criteria.	Key Issue + Project Specific	Y	Air Quality Impact Assessment (issues addressed in full) + Desktop SIA	Odour amenity issues would be addressed by a specialist air quality impact assessment and results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Micro-Climate	The proposal activities (longwall mining and surface facilities such as vent shaft construction and the REA) is not likely to effect the microclimate of receptors through overshadowing etc.	Other Issue + Standard	N	No SIA required	This issue is not considered to be relevant for the development and is not proposed to be addressed in the EIS.
Rail Haulage	Rail operations would not change. This can be accommodated within existing train loads, movements and frequencies. So no change to existing train haulage operations to Port Kembla and no change to associated amenity to receivers along the rail track.	Other Issue + Standard	N	No SIA required	Amenity impacts within the rail corridor would not change from existing conditions, as such no further assessment of environmental or social impacts of rail haulage is proposed. The EIS would include a Rail Assessment which demonstrates that the coal haulage proposed can be accommodated under existing rail operation conditions.
Traffic	Construction haulage (movement of construction workers and delivery of material) and construction within public roads (upgrade of Remembrance Driveway Access) is likely to result in increased traffic impacts to the local community during the construction stage. Increased employee numbers during the operation of the mine has the potential to add to result in an ongoing traffic impact.	Other Issue + CIA + Standard	Y	Traffic Impact Assessment (issue addressed in part) + Standard SIA	Traffic amenity issues would be addressed by specialist traffic impact assessment and include consideration of cumulative impacts from background and future traffic growth. Traffic amenity impacts would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment. Cumulative impacts would also be considered in stand-alone desktop CIA.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
ACCESS					
Access To Property	During construction of surface infrastructure (such as vent shafts and powerlines), there may be temporary impacts on access to private properties.	Other Issue + Standard	Y	Comprehensive SIA	Property access issues would be assessed in the specialist Social Impact Assessment.
Utilities	Longwall mining may result in subsidence impacts which could damage utilities - causing disruption of service to the community.	Key Issue + CIA + Project Specific	Y	Subsidence Impact Assessment (issue addressed in full) + Desktop SIA	Subsidence impacts to infrastructure) would be assessed in a specialist subsidence impact assessment. Subsidence impacts to utilities and infrastructure would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment. Cumulative subsidence impacts would also be considered in stand-alone desktop CIA.
Road and Rail Network	Longwall mining may result in subsidence impacts which could damage road and rail network - causing disruption of services to the community.	Key Issue + CIA + Project Specific	Y	Subsidence Impact Assessment (issue addressed in full) + Desktop SIA	Subsidence impacts to infrastructure would be assessed in a specialist subsidence impact assessment. Subsidence impacts to utilities and infrastructure would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment. Cumulative subsidence impacts would also be considered in stand-alone desktop CIA.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Offsite Parking	Provision for additional employee parking would be provided within the mine site, so impacts to offsite parking are not anticipated.	Other Issue + Standard	N	No SIA required	Parking provisions will be discussed in the traffic impact assessment section of the EIS. No social impacts are anticipated.
BUILT ENVIRONMENT					
Public Domain	Longwall mining may result in subsidence impacts to the public domain (e.g. parks and community spaces).	Other Issue + Standard	Y	Subsidence Impact Assessment (issue addressed in full) + Desktop SIA	Subsidence impacts to public domain, infrastructure, built assets and residential properties) would be assessed in a specialist subsidence impact assessment. Subsidence impact results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment. Cumulative subsidence impacts would also be considered in stand-alone desktop CIA.
Public Infrastructure	Longwall mining may result in subsidence impacts to public infrastructure (including roads, rail, utilities, as well as public buildings, schools, community centres etc.) and could cause disruption of services to local community through damage and during reparation works.	Key Issue + CIA + Project Specific	Y	Subsidence Impact Assessment (issue addressed in full) + Desktop SIA	
Other Built Assets	Longwall mining may result in subsidence impacts to commercial and industrial properties.	Other Issue + CIA + Standard	Y	Subsidence Impact Assessment (issue addressed in full) + Desktop SIA	As above?
Construction Impacts	Construction of surface facilities and excavation works may impact underground utilities and/or public or private infrastructure (e.g. public roads/ fencing), causing disruption of access of utilities and inability to use the asset.	Other Issue + Standard	Y	Comprehensive SIA	Potential damage to assets from construction activities would be assessed in the specialist Social Impact Assessment.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Residential Properties	Longwall mining may result in impacts to housing and private property (e.g. sheds, gates, water tanks, septic systems etc.) from subsidence and could cause disruption and stress to local community including as part of the process of seeking reparations.	Other Issue + CIA + Standard	Y	Subsidence Impact Assessment (issue addressed in part) + Standard SIA	The potential impacts of subsidence on residential properties would be assessed as part of the Subsidence Impact Assessment, with the resulting impacts on the community assessed as part of the Social Impact Assessment.
HERITAGE					
Natural	Potential impacts to natural heritage as a result of longwall mining and associated subsidence and groundwater impacts.	Key Issue + Project Specific	Y	Non-Aboriginal Heritage Impact Assessments, and as required, Biodiversity Impact Assessment (issue addressed in full) + Desktop SIA	Impacts to Aboriginal and Non-Aboriginal heritage would be addressed in specialist heritage assessments. Heritage impact results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment.
Cultural	Potential impacts as a result of longwall mining and associated subsidence on a number of Aboriginal Heritage sites, which are of value to the Aboriginal community and on a number of listed historic items	Key Issue + Project Specific	Y	Aboriginal & Non-Aboriginal Heritage Impact Assessments (issue addressed in full) + Desktop SIA	
Aboriginal Cultural	Potential impacts as a result of longwall mining and associated subsidence on a number of Aboriginal Heritage sites and landscape features, which are of value to the Aboriginal community.	Key Issue + Project Specific	Y	Aboriginal Heritage Impact Assessment (issue addressed in full) + Desktop SIA	

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Built	Potential impacts as a result of longwall mining and associated subsidence on a number of listed historic items. Impacts to built-heritage items may result in changes to the way in which the community interacts with and values heritage items and the extent to which heritage is available for future generations.	Key Issue + Project Specific	Y	Non-Aboriginal Heritage Impact Assessment (issue addressed in full) + Desktop SIA	
COMMUNITY					
Health	The project would involve longwall mining beneath residences and businesses, potentially creating anxiety in the community. The project may result in air quality impacts (dust and particulate matter) from the REA, require licensed discharge of excess water into waterways and groundwater intrusion during longwall mining, potentially leading to community anxiety about health risks from particulate exposure and surface and groundwater quality.	Key Issue + Project Specific	Y	Subsidence, Air Quality, Surface Water and Groundwater Impact Assessments (issue addressed in part) + Standard SIA	The project would be assessed against applicable air quality, water quality and groundwater impact assessment criteria in relevant specialist impact assessments (air quality, surface water and groundwater). Furthermore, subsidence impacts of undermining would be addressed in a specialist Subsidence Impact Assessment. Based on the results of the specialist assessments, potential health implications of these issues would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Safety	The project would involve longwall undermining of the railway lines, gas pipelines and rail bridges, which could potentially pose safety risks to the community in the case of damage. Subsidence from longwall mining could lead to landform safety risks such as rock fall. Increased heavy vehicle activity during the construction stages of the project could pose traffic safety risks to the community.	Key Issue + Project Specific	Y	Subsidence Impact Assessment (issue addressed in part) + Standard SIA	Subsidence safety risks would be addressed in a specialist Subsidence Impact Assessment. Potential health implications of these issues would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment.
Services and Facilities	Longwall mining related subsidence may cause damage to utilities (power, water, gas) and facilities (community/ public buildings) causing disruption of access to services and facilities. The additional workforce may impact on the local community services such as access to healthcare and education.	Key Issue + Project Specific	Y	Subsidence Impact Assessment (issue addressed in full) + Desktop SIA	Subsidence impacts to services and facilities would be assessed in a specialist Subsidence Impact Assessment. Subsidence impacts to utilities and infrastructure would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment.
Cohesion, Capital and Resilience	Longwall mining related subsidence impacts to public and private infrastructure could affect social cohesion and resilience by increasing anxiety and stress in the community, including in relation to the timing, duration and process for accessing any reparations for subsidence damages.	Key Issue + CIA + Project Specific	Y	Comprehensive SIA	Impacts relating to cohesion, capital and resilience would be would be assessed in the specialist Social Impact Assessment. This would include consideration of cumulative impacts for communities potentially dealing with subsidence related social impacts (anxiety, stress etc.) from more than one mine source

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Housing	The project would result in increased employment opportunities during the construction stages. Influx of labour force due to increased employment opportunities may cause temporary shortages in housing during peak employment periods.	Other Issue + Standard	Y	Comprehensive SIA	within the Southern Coalfields. Impacts relating to housing would be would be assessed in the specialist Social Impact Assessment
ECONOMIC					
Natural Resource Use	The mine would require ongoing water sourcing from Sydney Water, and require additional building materials during construction, which has a small potential to lead to additional resource competition and shortages.	Other Issue + CIA + Standard	Y	Surface Water Impact Assessment (issue addressed in part) + Standard SIA	Water sourcing for the mine would be addressed in the specialist Surface Water Impact Assessment including measures for water use efficiency in the context of reducing cumulative demand on water resources. Demand for natural resources would be addressed from a social impact point of view in the specialist Social Impact Assessment. Impacts relating to employment would be assessed in the specialist Social Impact Assessment prepared for the EIS
Livelihood	The project would result in increased employment opportunities during the construction stages. Local businesses could benefit from this through additional workers using local small businesses (such as retail and food outlets) and if materials for the construction of the mine were sourced locally. Additionally, the local and surrounding community would benefit from existing employment at the mine being maintained and new employment opportunity being created.	Other Issue + Standard	Y	Comprehensive SIA	

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Business Opportunity	The proposal would result in increased business opportunity for certain businesses such as local labour providers or local manufacturing or vehicle/equipment supply and servicing businesses.	Other Issue + Standard	Y	Comprehensive SIA	The proposal would result in increased business opportunity for certain businesses such as local labour providers or local manufacturing or vehicle/equipment supply and servicing businesses.
AIR					
Particulate Matter	The project has the potential to generate dust and other particulates during construction activities (temporary excavation and ground disturbance) and during operations (management of REA and coal stockpiles). Assessments to date indicate likely exceedances of PM10 (24 hour) criteria when considering cumulative sources	Key Issue + CIA + Project Specific	Y	Air Quality Impact Assessment (issue addressed in full) + Desktop SIA	Particulate matter impacts (including consideration of cumulative impacts from background air quality) would be addressed by a specialist Air Quality Impact Assessment and results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment. Cumulative impacts would also be considered in stand-alone desktop cumulative impact assessment.
Gases	The project has the potential to generate air quality emissions from the operation of the CHPP. The assessment undertaken to date indicates that Carbon Monoxide (CO), Nitrogen Oxides (NO) and volatile organic compounds (VOCs) concentrations would be below limits.	Other Issue + Standard	Y	Air Quality Impact Assessment (issue addressed in full) + Desktop SIA	Gas pollutant impacts would be addressed by a specialist Air Quality Impact Assessment and results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Atmospheric Emissions	The project would result in the generation of GHG emissions during construction and operation. Assessments to date have estimated Scope 1, 2 & 3 emissions from the proposal over its life. GHG emissions would be the focus of negative perception of community beyond the local scale.	Other Issue + CIA + Standard	Y	Greenhouse Gas Impact Assessment (issue addressed in full) + Desktop SIA	Greenhouse gas impacts (including project contributions to cumulative emissions on a National scale) would be addressed by a specialist Greenhouse Gas Impact Assessment and results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment. Cumulative impacts would also be considered in stand-alone desktop cumulative impact assessment.
BIODIVERSITY					
Conservation Areas	The proposal may result in subsidence and groundwater impacts from longwall mining and could have far-field impacts on the landform and waterways of surrounding conservation areas and drinking water catchments.	Key Issue + CIA + Project Specific	N	Subsidence and Groundwater Impact Assessment (issue addressed in full) + No SIA required	Subsidence and groundwater flow impacts to conservation areas (including consideration of cumulative impacts from other mining in the Southern Coalfields) would be assessed by specialist subsidence and groundwater impact assessments. Cumulative impacts would also be considered in stand-alone desktop cumulative impact assessment.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Native Vegetation	The proposal would result in the direct disturbance of vegetation and potential indirect impacts from subsidence related changes to landform and waterways. Impacts to native vegetation and habitat have been quantified and an offset strategy developed.	Key Issue + CIA + Project Specific	N	Biodiversity Impact Assessment (issue addressed in full) + No SIA required	Biodiversity impacts would be assessed by specialist terrestrial and non-terrestrial impact assessments. Cumulative biodiversity impacts would be accounted for in the offset requirements calculated in accordance with NSW Biobanking methodology. Cumulative impacts would also be considered in stand-alone desktop cumulative impact assessment. These impacts are limited to biophysical issues and have limited potential for social impacts. No further assessment proposed on social grounds.
Native Fauna	The proposal would result in the direct disturbance of vegetation and fauna habitat and potential indirect impacts from subsidence related changes to landform and waterways. Impacts to native vegetation and habitat have been quantified and an offset strategy developed.	Key Issue + CIA + Project Specific	N	Biodiversity Impact Assessment (issue addressed in full) + No SIA required	
LAND					
Stability and/ or Structure	The proposal would involve longwall mining which would affect subsoil structure resulting in subsidence related changes to surface landform and changes to groundwater flow.	Key Issue + CIA + Project Specific	N	Subsidence Impact Assessment (issue addressed in full) + No SIA required	Subsidence and groundwater flow impacts (including consideration of cumulative impacts from other mining in the Southern Coalfields) would be assessed by specialist subsidence and groundwater impact assessments. Cumulative impacts would also be considered in stand-alone desktop CIA.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
Soil Chemistry	There may be existing areas of contaminated soil within the mine area (from fuel/ oil leakage etc.). There is a risk of construction spills and leaks, as well as encountering and spreading contaminated material within the mine site during surface disturbance works for the construction of surface facilities.	Other Issue + Standard	N	No SIA required	Contaminated soil issues are likely to be confined to within the mine site only and are unlikely to pose social impacts. Contaminated soil risks would be addressed in the hazard and risk section of the EIS.
Capability	Surface facilities for the mine (vent shafts, reject emplacement area) have the potential to be located on land which has agricultural potential. Following the completion of the mining, the mine site would require rehabilitation to ensure the land can be used for appropriate ongoing land uses including agriculture, and would not be sterilised for future generations.	Key Issue + CIA + Project Specific	Y	Agriculture & Land Capability and Mine Closure & Rehabilitation Impact Assessments (issue addressed in full) + Desktop SIA	Impacts to soil and land capability and mine closure & rehabilitation would be assessed by specialist technical assessments which would consider cumulative impacts as relevant. Results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment. Cumulative impacts would also be considered in stand-alone desktop CIA.
Topography	The proposal would involve longwall mining and associated subsidence impacts to landform, which could affect landform stability and erosion. Construction related surface disturbance could also result in erosion. If not designed and managed properly, the Reject Emplacement Area has the potential for instability and erosion.	Key Issue + Project Specific	N	No SIA required	Measures to manage and repair subsidence related surface changes would be addressed in the Subsidence Impact Assessment. Erosion and sediment control would be addressed in the soils and land capability section of the EIS.

Issue	Activities which may cause an impact	EIS Issue Category, Cumulative Impacts & Mitigation Level	Does the Issue Include Social Impacts?	Scoping Tool Recommended Level of SIA Assessment	How Social Impact would be addressed in EIS
WATER					
Water Quality	The proposal would require licensed discharge of excess water into waterways and involve groundwater intrusion during longwall mining, potentially affecting surface and groundwater quality.	Key Issue + Project Specific	N	Surface Water and Groundwater Impact Assessments (issue addressed in full) + No SIA required	Surface water and groundwater quality impacts would be assessed by specialist subsidence and groundwater impact assessments.
Water Availability	Longwall mining as part of the proposal would result in subsidence and groundwater changes. This could impact on water availability for groundwater bore users and change base flow rates into waterways	Key Issue + CIA + Project Specific	Y	Surface Water Impact Assessment (issue addressed in full) + Desktop SIA	Surface water and groundwater impacts (including consideration of cumulative impacts from other mining in the Southern Coalfields) would be assessed by specialist Subsidence and Groundwater Impact Assessments. Cumulative impacts would also be considered in stand-alone desktop CIA. Results would be discussed and assessed qualitatively from a social impact point of view in the specialist Social Impact Assessment.
Hydrological Flows	Longwall mining from proposal may result in subsidence and groundwater changes. There is potential for the post-subsidence landscape to change existing flooding conditions at some locations (which could increase risks to the community), and changes to groundwater flow could impact on base flow into Thirlmere Lakes and other waterways.	Key Issue + CIA + Project Specific	Y	Surface Water and Groundwater Impact Assessments (issue addressed in full) + Desktop SIA	

1.3.3 Assessment Methodology

SIA

The SIA Scoping Tool has identified specific issues requiring assessment in the EIS which also include a social impact component. It is noted that the SIA Scoping Tool defaults to classifying any issue likely to require 'project specific' mitigation as a 'key issue'. Issues requiring assessment in the Tahmoor South EIS have previously been identified and categorised as either 'key' or 'other' issues in the project's PEA (May, 2017) and this Scoping Report should be read in conjunction with that report. The PEA includes consideration of assessment methodology and approaches to mitigation. The 'key' and 'other' issues identified in the PEA remain in place for the EIS, however, the SIA Scoping Tool has allowed the social impacts associated with these issues to be highlighted, so these matters can be specifically addressed in the updated SIA element of the EIS.

Based on the scoping process, social impacts requiring consideration within the EIS have been classified as requiring either a desktop, standard or comprehensive level of SIA, supplemented (where required) by specialist technical assessment. The SIA Guideline defines the above levels of assessments as follows:

- Desktop – a review of the data and findings from the other sources through a SIA lens, cross-referenced and integrated into the overall social baseline and assessment.
- Standard – most of the information and analysis needed to predict, evaluate and develop a response to the social impact will be provided by another specialist study or section of the EIS. However, it will need to be supplemented with further evidence gathering and analysis to fill any gaps and obtain a complete picture from a SIA perspective
- Comprehensive – the author/s of the SIA component of the EIS will need to undertake the evidence gathering and analysis needed to predict, evaluate and develop a response to the social impact.

A specialist SIA report would be prepared for the Tahmoor South Project development as part of the EIS. Consistent with the requirements of the SIA Guideline, the report would present relevant levels of analysis depending on the issue under assessment (as per the results presented in **Table 1**). In general, where the issue has largely been addressed by a specialist technical assessment or other section of the EIS, the SIA would include a qualitative desktop analysis of the issue from a social impact perspective based on a review of the specialist report results and conclusions, supplemented where required by baseline research and other information sources.

Where the issue are not covered by a technical assessment or section of the EIS, the SIA would include a standalone assessment of the social impact based on relevant evidence and research including stakeholder and community engagement. Refer **Table 1** for issue specific details.

The SIA would review the 'project-specific' and 'standard' mitigation measures recommended in the issue-specific assessments to consider what additional measures (if any) may be required to manage and mitigate the social impacts arising from those issues.

The SIA would also document the stakeholder and community consultation measures undertaken, the issues raised, and how these matters have been taken into account in the SIA. Further details of community consultation measures are provided below.

Stakeholder and Community Engagement

The following stakeholder and community engagement activities are proposed to be undertaken as part of EIS preparation to meet the requirements of the SIA guideline and the Department of Planning & Environment *Draft Community and Stakeholder Engagement Guideline*. These activities would be in addition to consultation measures already implemented including detailed consultation with Aboriginal heritage stakeholders (in accordance with *Aboriginal cultural heritage consultation requirements for proponents* (DECCW, 2010)) as part of the specialist Aboriginal heritage impact assessment.

These measures would inform the SIA component and the EIS as a whole. Stakeholder and community engagement activities proposed include:

- Community Newsletters and Tahmoor Coking Coal Fact Sheets

- Resident Information Packs on the process of Longwall mining and subsidence
- Community Open Days
- Face to Face meetings with interested stakeholders regarding specific activities and issues
- Website
- Community Consultative Committee quarterly meetings
- Community event participation through sponsorship and donations

1.4 Identification and Prioritisation of Issues (Positive)

As part of the EIS, the social opportunities and beneficial social impacts of the development would be identified and assessed. The consideration of positive impacts would include:

- Consideration of the benefits of the development compared to greenfield alternatives, specifically the utilisation of existing surface facilities to minimise the need for additional surface disturbance and associated impacts at new locations and receivers.
- An assessment of economic benefits, supported by a specialist economic impact assessment which includes assessment of cost-benefit and economic impacts on local, regional and State-wide bases.
- The benefits of retaining Tahmoor Mine's existing workforce of approximately 370 employees, as well as providing additional employment (up to around 200 additional staff at peak employment), until 2040.

The net benefits of the proposal would be discussed as part of the EIS to allow a merit assessment of the development.

1.5 Conclusion

This Scoping Report has been prepared in accordance with the methodology and requirements of the SIA Guideline to seek supplementary SEARs for the Tahmoor South Proposal (SSD12_5583). It is intended that the SIA component of the EIS would be prepared in accordance with the SIA Guideline upon receipt of the updated SEARs.

A required by the SIA Guideline, the Scoping Report has identified:

- the area of social influence of the development;
- the social impacts requiring further assessment as part of the EIS;
- the level of assessment to be undertaken for the identified issues as part of the EIS;
- the assessment methodologies to be employed in the SIA component of the EIS; and
- the stakeholder and community engagement measures to be carried out as part of the EIS to inform the SIA and broader EIS.

Appendix A: Scoping Tool Results

Environmental Impact Statement (EIS) scoping worksheet for:			Tahmoor South Project									Date:	18-Jun-18	
What matters might be impacted?			What activities might cause an impact?	What are the characteristics of the impact?						How will the impact be managed?	What are the community and other stakeholder views?	What level of assessment and engagement is required in the EIS preparation phase?		
Social and environmental matters i.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements *Click on the matter for a description, or the link above for full glossary*			Without any mitigation, is the proposal likely to impact on the matter? *(Select from list)*	If there is a 'likely' impact: 1. list the activities expected to cause the impact; and 2. if applicable, list the receptor being impacted and its status. *E.g. construction noise will be heard at nearby school* If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location? *(Manual entry)*	Is the impact, without mitigation, expected to cause a material effect with regard to it's... *(Answer 'Y', 'N' or '?')* *Click on characteristic for description, or the link above for further detail*				Does the impact need assessment in the EIS? *(Auto fills)*	Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)? *(Select from list)*	What safeguards and management measures are expected to be required to address the impact? *(Select from list)*	Are there community or other stakeholder concerns regarding the impact or activity? *(Based on engagement with community and other stakeholders)* *(Select from list)*	Expected level of assessment and/or engagement required *(Auto fills)*	Relevant section in Scoping Report *(Manual entry)*
					extent?	duration?	severity?	sensitivity?						
What does the proposal mean for people?	AMENITY	acoustic	Likely	Operation of coal prep plant, expansion of the REA, operation of the ventilation fans, increase in traffic accessing the site potentially resulting in impacts worse than existing operations at some locations, including potential for low frequency noise impacts.	N	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		visual	Likely	Expansion in height and extent of the REA, additional ventilation shafts, possible modifications to existing surface operations. These activities may impact some minor views of the site from receptors and public places but mostly screened by existing undulating landscape and vegetation	N	Y	\	Y	Yes	No	Standard	\c	Other Issue	
		odour	likely	Additional ventilation shaft(s) required for the project may result in instances of odour impacts above the criteria.	N	Y	Y	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		microclimate	unlikely	The proposal activities (longwall mining and surface facilities and the vent shaft construction the reject emplacement area) is not likely to effect the microclimate of receptors through overshadowing etc.	N	N	\	\	\o	No	Standard	No	Other Issue	
		vibration/ground penetration	Likely	Construction of the ventilation shafts and other surface infrastructure may cause noise and vibration impacts.	\	\	Y	Y	Yes	No	Standard	Yes	Other Issue + Focussed Engagement	
		rail haulage	Unlikely	Rail operations would not change. Although increased output, this can be accommodated within existing train loads, movements and frequencies. So no change to existing train haulage operations to Port Kembla and no change to associated amenity impacts along the rail track	\	\	N	N	\o	No	Standard	\c	Other Issue	
		traffic	Likely	Construction haulage (movement of construction workers and delivery of materials) and construction within public roads (upgrade of Remembrance Drive Access) is likely to result in increased traffic impacts to the local community during the construction stage. Increased employee numbers during the operation of the mine has the potential to add to result in an ongoing traffic impact.	N	Y	Y	\	Yes	Yes	Standard	\c	Other Issue + CIA	
	ACCESS	access to property	Likely	During construction of surface infrastructure (such as vent shafts and powerlines), there may be temporary impacts on access to private properties.	Y	Y	Y	\	Yes	No	Standard	\c	Other Issue	
		utilities	Likely	Longwall mining may result in far field subsidence impacts which could damage utilities - causing disruption of service to the community.	Y	Y	Y	Y	Yes	Yes	Project Specific	\c	Key Issue + CIA	
		road and rail network	Likely	Longwall mining may result in far field subsidence impacts which could damage road and rail network - causing disruption of services to the community.	Y	Y	Y	Y	Yes	Yes	Project Specific	\c	Key Issue + CIA	
		offsite parking	unlikely	Provision for additional employee parking would be provided within the mine site, so impacts to offsite parking are not anticipated.	N	N	\	\	\o	No	Standard	\o	Other Issue	
	BUILT ENVIRONMENT	public domain	Likely	Longwall mining is likely to generate subsidence impacts to the public domain (e.g. parks and community spaces)	Y	Y	\	\	Yes	No	Standard	Yes	Other Issue + Focussed Engagement	
		public infrastructure	Likely	Longwall mining is likely to result in impacts to public infrastructure (including roads, rail, utilities, as well as public buildings, schools, community centres etc.) from subsidence and could cause disruption of services to local community through damage and during reparation works	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		other built assets	Likely	Longwall mining is likely to generate subsidence impacts to commercial and industrial properties.	Y	Y	Y	Y	Yes	Yes	Standard	Yes	Other Issue + CIA + Focussed Engagement	
		remediation impacts	Likely	Construction of surface facilities and excavation works may impact underground utilities and/or public private infrastructure (e.g. public roads/ fencing), causing disruption of access of utilities and inability to use the asset	Y	Y	Y	N	Yes	No	Standard	\c	Other Issue	
		residential properties	Likely	Longwall mining is likely to result in impacts to housing and private property (e.g. sheds, gates, water tanks, septic systems etc.) from subsidence and could cause disruption and stress to local community including as part of the process of seeking reparations	Y	Y	Y	Y	Yes	Yes	Standard	Yes	Other Issue + CIA + Focussed Engagement	
		natural	Likely	Potential impacts on natural heritage as a result of longwall mining and associated subsidence and groundwater impacts.	Y	Y	\	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		cultural	Likely	Potential impacts as a result of longwall mining and associated subsidence on a number of Aboriginal heritage sites, which are of value to the Aboriginal community and on a number of listed historic items	Y	Y	Y	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	

Environmental Impact Statement (EIS) scoping worksheet for:			*Tahmoor South Project*								Date:	18-Jun-18		
What matters might be impacted?			What activities might cause an impact?	What are the characteristics of the impact?						How will the impact be managed?	What are the community and other stakeholder views?	What level of assessment and engagement is required in the EIS preparation phase?		
Social and environmental matters i.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements *Click on the matter for a description, or the link above for full glossary*			Without any mitigation, is the proposal likely to impact on the matter? *(Select from list)*	If there is a 'likely' impact: 1. list the activities expected to cause the impact; and 2. if applicable, list the receptor being impacted and its status. *E.g. construction noise will be heard at nearby school* If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location? *(Manual entry)*	Is the impact, without mitigation, expected to cause a material effect with regard to it's... *(Answer 'Y', 'N' or '?')* *Click on characteristic for description, or the link above for further detail* extent?	duration?	severity?	sensitivity?	Does the impact need assessment in the EIS? *(Auto fills)*	Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)? *(Select from list)*	What safeguards and management measures are expected to be required to address the impact? *(Select from list)*	Are there community or other stakeholder concerns regarding the impact or activity? *(Based on engagement with community and other stakeholders)* *(Select from list)*	Expected level of assessment and/or engagement required *(Auto fills)*	Relevant section in Scoping Report *(Manual entry)*
What	HERITAGE	Aboriginal cultural	Likely	Potential impacts as a result of longwall mining and associated subsidence on a number of Aboriginal Heritage sites and landscape features, which are of value to the Aboriginal community.	Y	Y	Y	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		built	Likely	Potential impacts as a result of longwall mining and associated subsidence on a number of listed historic items. Impacts to built-heritage items may result in changes to the way in which the community interacts with and values heritage items, and the extent to which heritage is available for future generations.	Y	Y	Y	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
	COMMUNITY	health	Likely	The project would involve longwall mining beneath residences and businesses, potentially creating anxiety in the community. The project would result in air quality impacts (dust and particulate matter) from the project employment areas, require licensed discharge of excess water into waterways and groundwater intrusion during longwall mining, potentially leading to community anxiety about health risks from particulate exposure and surface and groundwater quality.	Y	Y	\	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		safety	Likely	The project would involve longwall undermining of the railway lines, gas pipelines and rail bridges, which could potentially pose safety risks to the community in the case of damage. Subsidence from longwall mining could lead to landform safety risks such as rock fall. Increased heavy vehicle activity during the construction stages of the project could pose traffic safety risks to the community.	Y	Y	Y	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		services and facilities	Likely	Longwall mining related subsidence could cause damage to utilities (power, water, gas) and facilities (community/ public buildings) causing disruption of access to services and facilities. The additional workforce may impact on the local community services such as access to healthcare and education.	Y	Y	Y	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		cohesion, capital and resilience	Likely	Longwall mining related subsidence impacts to public and private infrastructure could affect social cohesion and resilience by increasing anxiety and stress in the community, including in relation to the timing, duration and process for accessing any reparations for subsidence.	Y	Y	Y	Y	Yes	Yes	Project Specific	\c	Key Issue + C.A	
		housing	Likely	The project would result in increased employment opportunities during the construction stages. Influx of labour force due to increased employment opportunities may cause temporary shortages in housing during peak employment periods.	Y	Y	Y	Y	Yes	No	Standard	\c	Other Issue	
	ECONOMIC	natural resource use	Likely	The mine would require ongoing water sourcing from Sydney Water, and require additional building materials during construction, which has a small potential to lead to additional resource competition and shortages.	N	Y	Y	\	Yes	Yes	Standard	Yes	Other Issue + CIA + Focussed Engagement	
		livelihood	Likely	The project would result in increased employment opportunities during the construction stages. Local businesses could benefit from this through additional workers using local small businesses (such as retail and food outlets) and if materials for the construction of the mine were sourced locally. Additionally, the local and surrounding community would benefit from existing employment at the mine being maintained and new employment opportunity being created.	Y	Y	Y	Y	Yes	No	Standard	\c	Other Issue	
		opportunity cost	Likely	The proposal would result in increased business opportunity for certain businesses such as local labour providers or local manufacturing or vehicle/equipment supply and servicing businesses.	Y	Y	Y	Y	Yes	No	Standard	\c	Other Issue	
		particulate matter	Likely	The project has the potential to generate dust and other particulates during construction activities (temporary excavation and ground disturbance) and during operations (management of e.g. emplacement area and coal stockpiles). Assessments to date indicate likely exceedances of PM10 (24 hour) criteria when considering cumulative sources.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	

Environmental Impact Statement (EIS) scoping worksheet for:			Tahmoor South Project									Date:	18-Jun-18	
What matters might be impacted?			What activities might cause an impact?	What are the characteristics of the impact?						How will the impact be managed?	What are the community and other stakeholder views?	What level of assessment and engagement is required in the EIS preparation phase?		
Social and environmental matters I.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements *Click on the matter for a description, or the link above for full glossary*			Without any mitigation, is the proposal likely to impact on the matter? *(Select from list)*	If there is a 'likely' impact: **1.** list the activities expected to cause the impact; and **2.** if applicable, list the receptor being impacted and its status. *E.g. construction noise will be heard at nearby school* If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location? *(Manual entry)*	Is the impact, without mitigation, expected to cause a material effect with regard to it's... *(Answer 'Y', 'N' or '?')* *Click on characteristic for description, or the link above for further detail* extent?	duration?	severity?	sensitivity?	Does the impact need assessment in the EIS? *(Auto fills)*	Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)? *(Select from list)*	What safeguards and management measures are expected to be required to address the impact? *(Select from list)*	Are there community or other stakeholder concerns regarding the impact or activity? *(Based on engagement with community and other stakeholders)* *(Select from list)*	Expected level of assessment and/or engagement required *(Auto fills)*	Relevant section in Scoping Report *(Manual entry)*
What does the proposal mean for the natural environment?	AIR	gases	likely	The project has the potential to generate air quality emissions from the operation of the coal preparation plant. The assessment undertaken to date indicates that Carbon Monoxide (CO), Nitrogen Oxides (NO) and volatile organic compounds (VOCs) concentrations would be below limits.	N	Y	Y	?	Yes	No	Standard	Yes	Other Issue + Focussed Engagement	
		atmospheric emissions	Likely	The project would result in the generation of GHG emissions during construction and operation. Assessments to date have estimated Scope 1, 2 & 3 emissions from the proposal over its life. GHG emissions would be the focus of negative perception of community beyond the local scale.	Y	Y	Y	Y	Yes	Yes	Standard	Yes	Other Issue + CIA + Focussed Engagement	
	BIODIVERSITY	aquatic habitat areas	Likely	The proposal would result in subsidence and groundwater impacts from longwall mining and could have far-field impacts on the landform and waterways of surrounding conservation areas and drinking water catchments.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		native vegetation	Likely	The proposal would result in the direct disturbance of vegetation and potential indirect impacts from subsidence related changes to landform and waterways. Impacts to native vegetation and habitat have been quantified and an offset strategy developed.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		native fauna	Likely	The proposal would result in the direct disturbance of vegetation and fauna habitat, and potential indirect impacts from subsidence related changes in landform and waterways. Impacts to native vegetation and habitat have been quantified and an offset strategy developed.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
	LAND	stability and/or structure	Likely	The proposal would involve longwall mining which would affect subsoil structure resulting in subsidence related changes to surface landform and changes to groundwater flow.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		soil chemistry	Likely	There may be existing areas of contaminated soil within the mine lease (from fuel/ oil leakage etc.). There is a risk of construction spills and leaks, as well as encountering and spreading contaminated material within the mine site during surface disturbance works for the construction of surface facilities.	N	N	Y	Y	Yes	No	Standard	No	Other Issue	
		capability	Likely	Surface facilities for the mine (vent shafts, reject emplacement) areas have the potential to be located on land which has agricultural potential. Following the completion of the mining, the mine site would require rehabilitation to ensure the land can be used for appropriate ongoing land uses including agriculture, and would not be sterilised for future generations.	Y	Y	Y	Y	Yes	Yes	Project Specific	No	Key Issue + CIA	
		topography	Likely	The proposal would involve longwall mining and associated subsidence impacts to landform, which could affect landform stability and erosion. Construction related surface disturbance could also result in erosion. If not designed and managed properly, the reject emplacement area has the potential for instability and erosion.	Y	Y	Y	Y	Yes	No	Project Specific	No	Key Issue	
	WATER	water quality	Likely	The proposal would require the need discharge of excess water into waterways, and involve groundwater intrusion during longwall mining, potentially affecting surface and groundwater quality.	Y	Y	Y	Y	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	
		water availability	Likely	Longwall mining as part of the proposal would result in subsidence and groundwater changes. This could impact on water availability for groundwater bore users and change base flow rates into waterways.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
		hydrological flows	Likely	Longwall mining from proposal would result in subsidence and groundwater changes. There is potential for the post-subsidence landscape to change existing flooding conditions at some locations (which could increase risk to the community), and changes to groundwater flow could impact on base flow into the Thirlmere Lakes and other waterways.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	
What does the proposal face?		coastal hazards	n/a	The proposal is not located near the coast and would not be at risk from coastal hazards									No assessment necessary - Worksheet only	
		flood waters	Likely	Longwall mining from proposal would result in subsidence. There is potential for the post-subsidence landscape to change existing flooding conditions at some locations	N	Y	Y	N	Yes	No	Standard	No	Other Issue	

Environmental Impact Statement (EIS) scoping worksheet for:			Tahmoor South Project									Date:	18-Jun-18	
What matters might be impacted?			What activities might cause an impact?	What are the characteristics of the impact?						How will the impact be managed?	What are the community and other stakeholder views?	What level of assessment and engagement is required in the EIS preparation phase?		
Social and environmental matters i.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements *Click on the matter for a description, or the link above for full glossary*			Without any mitigation, is the proposal likely to impact on the matter? *(Select from list)*	If there is a 'likely' impact: 1. list the activities expected to cause the impact; and 2. if applicable, list the receptor being impacted and its status. *E.g. construction noise will be heard at nearby school* If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location? *(Manual entry)*	Is the impact, without mitigation, expected to cause a material effect with regard to it's... *(Answer 'Y', 'N' or '?')* *Click on characteristic for description, or the link above for further detail*				Does the impact need assessment in the EIS? *(Auto fills)*	Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)? *(Select from list)*	What safeguards and management measures are expected to be required to address the impact? *(Select from list)*	Are there community or other stakeholder concerns regarding the impact or activity? *(Based on engagement with community and other stakeholders)* *(Select from list)*	Expected level of assessment and/or engagement required *(Auto fills)*	Relevant section in Scoping Report *(Manual entry)*
					extent?	duration?	severity?	sensitivity?						
What risks does the p	RISKS	bushfire	Likely	There are significant vegetated areas in proximity to the proposal areas and if not mitigated with the implementation of a bushfire management plan, the proposal would be at risk from bush fires.	Y	Y	Y	Y	Yes	No	Standard	No	Other Issue	
		undermining	Likely	The proposal would involve longwall mining which would result in subsidence impacts within the project area.	N	Y	Y	N	Yes	No	Project Specific	Yes	Key Issue - Focussed Engagement	
		steep slopes	n/a	The surface facilities of the project are not located on areas of steep slopes which would pose a risk of landslides, erosion etc.									No assessment necessary - Worksheet only	

Social impact assessment (SIA) scoping worksheet for:			Tahmoor South Project			Date:	18-Jun-18		
Scoping results from EIS Worksheet					Is there a social impact?		What information will be required to assess the social impact?		
Social and environmental matters *Click on a matter below for brief description, or refer to full glossary*			Outline of Impact *(Auto fill from EIS worksheet)*	Is a material effect on the matter expected? *(Auto fill from EIS worksheet)*	Is there community or other stakeholder concerns regarding the impact or activity? *(Auto fill from EIS worksheet)*	With regard to the matter expected to be impacted, will there be a social impact? *Select this cell for brief description, or click link above for further detail* Yes/No *(Select from list)*	If yes, outline the social impact *(Manual entry, if not already covered in column D)* If no, outline why *(Manual entry)*	Are impacts on the matter expected to require a non-SIA specialist study? *(Auto fill from EIS worksheet, then manually enter non-SIA report type)*	Will the non-SIA specialist study address the social impact? *Click on link above for further detail on potential classifications* *(Select from list)*	Level of assessment for the social impact in the SIA *Click on link above for further detail on potential classifications* *(Auto fills)*
	AMENITY	acoustic	Operation of coal prep plant, expansion of the REA, operation of the ventilation fans, increase in traffic accessing the site potentially resulting in impacts worse than existing operations at some locations, inducing potential for low frequency noise impacts.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Noise & Vibration Impact Assessment	Yes - fully	Desktop SIA
		visual	Expansion in height and extent of the REA, additional ventilation shafts, possible modifications to existing surface operations. These activities may impact some minor views of the site from receptors and public places but mostly screened by existing undulating landscape and vegetation	Yes	No	Yes	Social impact as per "Outline of Impact"	Yes - Visual Impact Assessment (desktop)	Yes - fully	Desktop SIA
		odour	Additional ventilation shaft(s) required for the project may result in instances of odour impacts above the criteria.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Air Quality Impact Assessment	Yes - fully	Desktop SIA
		microclimate	The proposal activities (longwall mining and surface facilities such as vent shaft construction the project emplacement area) is not likely to affect the microclimate of receptors through overshadowing etc.	Yes	No	No	The proposal would not affect the microclimate of receptors through overshadowing etc. Refer "Outline of Impact"	No	No	No SIA required
		acoustic - construction	Construction of the ventilation shafts and other surface infrastructure may cause noise and vibration impacts.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Noise & Vibration Impact Assessment	Yes - fully	Desktop SIA
		rail haulage	Rail operations would not change. Although increased output, this can be accommodated within existing train loads, movements and frequencies. So no changes to existing train haulage locations to Port Kembla and no change to associated amenity to receivers along the rail track	Yes	No	No	No changes to train loads or movements or frequencies. So no changes to amenity along rail corridor compared to existing. Refer "Outline of Impact"	No	No	No SIA required
		traffic	Construction haulage (movement of construction workers and delivery of materials and construction within public roads (upgrade of Remembrance Drive Access) is likely to result in increased traffic impacts to the local community during the construction stage. Increased employee numbers during the operation of the mine has the potential to add to result in an ongoing traffic impact.	Yes	No	Yes	Social impact as per "Outline of Impact"	Yes - Traffic Impact Assessment (exclusing existing approved coal haulage)	Yes - in part	Standard SIA
	ACCESS	access to property	During construction of surface infrastructure (such as vent shafts and powerline), there may be temporary impacts on access to private properties.	Yes	No	Yes	Social impact as per "Outline of Impact"	No	No	Comprehensive SIA
		utilities	Longwall mining may result in far field subsidence impacts which could damage utilities - causing disruption of service to the community.	Yes	No	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence Impact Assessment	Yes - fully	Desktop SIA
		road and rail network	Longwall mining may result in far field subsidence impacts which could damage road and rail network - causing disruption of services to the community.	Yes	No	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence Impact Assessment	Yes - fully	Desktop SIA
		offsite parking	Provision for additional employee parking would be provided within the mine site, so impacts to offsite parking are not anticipated.	Yes		No	Parking provisions provided within the mine site so no impact to offsite parking. Refer "Outline of Impact"	No		No SIA required
	BUILT ENVIRONMENT	public domain	Longwall mining is likely to generate subsidence impacts to the public domain (e.g. banks and community spaces)	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence Impact Assessment	Yes - fully	Desktop SIA
		public infrastructure	Longwall mining is likely to result in impacts to public infrastructure (including roads, rail, utilities, as well as public buildings, schools, community centres etc.) from subsidence and could cause disruption of services to local community through damage and during repairation works	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence Impact Assessment	Yes - fully	Desktop SIA
		other built assets	Longwall mining is likely to generate subsidence impacts to commercial and industrial properties.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence Impact Assessment	Yes - fully	Desktop SIA
		construction impacts	Construction of surface facilities and excavation works may impact underground utilities and/or public or private infrastructure (e.g. public roads/ fencing), causing disruption of access of utilities and inability to use the asset	Yes	Yes	Yes	Social impact as per "Outline of Impact"	No	No	Comprehensive SIA

Social impact assessment (SIA) scoping worksheet for:			Tahmoor South Project			Date:	18-Jun-18		
Scoping results from EIS Worksheet						Is there a social impact?	What information will be required to assess the social impact?		
Social and environmental matters *Click on a matter below for brief description, or refer to full glossary*			Outline of Impact *(Auto fill from EIS worksheet)*	Is a material effect on the matter expected? *(Auto fill from EIS worksheet)*	Is there community or other stakeholder concerns regarding the impact or activity? *(Auto fill from EIS worksheet)*	With regard to the matter expected to be impacted, will there be a social impact? *Select this cell for brief description, or click link above for further detail* Yes/No *(Select from list)*	If yes, outline the social impact *(Manual entry, if not already covered in column D)* If no, outline why *(Manual entry)*	Are impacts on the matter expected to require a non-SIA specialist study? *(Auto fill from EIS worksheet, then manually enter non-SIA report type)*	Will the non-SIA specialist study address the social impact? *Click on link above for further detail on potential classifications* *(Select from list)*	Level of assessment for the social impact in the SIA *Click on link above for further detail on potential classifications* *(Auto fills)*
What does the proposal mean for people?		residential properties	Longwall mining is likely to result in impacts to housing and private property (e.g. sheds, gates, water tanks, septic systems etc.) from subsidence and could cause disruption and stress to local community during as part of the process of seeking reparations	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence Impact Assessment	Yes - in part	Standard SIA
	HERITAGE	natural	Potential impacts to natural heritage as a result of longwall mining and associated subsidence and groundwater impacts.	Yes	Yes	Yes	Impacts to natural heritage.	Yes - Non-Aboriginal Heritage Impact Assessment	Yes - fully	Desktop SIA
		cultural	Potential impacts as a result of longwall mining and associated subsidence on a number of Aboriginal Heritage sites, which are of value to the Aboriginal community and on a number of listed historic items	Yes	Yes	Yes	Impacts to items of Aboriginal and Non-Aboriginal cultural Heritage Significance	Yes - Heritage Impact Assessments (Aboriginal and Non-Aboriginal)	Yes - fully	Desktop SIA
		Aboriginal culture	Potential impacts as a result of longwall mining and associated subsidence on a number of Aboriginal Heritage sites and landscape features, which are of value to the Aboriginal community.	Yes	Yes	Yes	Impacts to items of Aboriginal cultural Heritage Significance	Yes - Aboriginal Heritage Impact Assessment	Yes - fully	Desktop SIA
		built	Potential impacts as a result of longwall mining and associated subsidence on a number of such historic items. Impacts to cultural heritage items may result in changes to the way in which the community interacts with and values heritage items and the extent to which heritage is available for future generations.	Yes	Yes	Yes	Impacts to built heritage items may result in changes to the way in which the community interacts with and values heritage items and the extent to which heritage is available for future generations.	Yes - Non-Aboriginal Heritage Assessment	Yes - fully	Desktop SIA
	COMMUNITY	health	The project would involve longwall mining beneath residences and businesses, potentially creating anxiety in the community. The project would result in air quality impacts (dust and particulate matter) from the project emplacement area, requirement for discharge of excess water into waterways and groundwater intrusion during longwall mining, potentially leading to community anxiety about the risks from particulate exposure and surface and groundwater quality.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence, Air Quality, Surface Water and Groundwater Impact Assessments	Yes - in part	Standard SIA
		safety	The project would involve longwall undermining of the railway lines, gas pipelines and rail bridges, which could potentially pose safety risks to the community in the case of damage. Subsidence from longwall mining could lead to landform safety risks such as rock fall. Increased heavy vehicle activity during the construction stages of the project could pose traffic safety risks to the community.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence Impact Assessment	Yes - in part	Standard SIA
		services and facilities	Longwall mining related subsidence could cause damage to utilities (power, water, gas) and facilities (community/ public buildings) causing disruption of access to services and facilities. The additional workforce may impact on the local community services such as access to healthcare and education.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Subsidence Impact assessment	Yes - fully	Desktop SIA
		cohesion, capital and resilience	Longwall mining related subsidence impacts to public and private infrastructure could affect social cohesion and resilience by increasing anxiety and stress in the community, including in relation to the timing, duration and process for accessing any reparations for subsidence.	Yes	No	Yes	Social impact as per "Outline of Impact"	No	No	Comprehensive SIA
		housing	The project would result in increased employment opportunities during the construction stages. Influx of labour force due to increased employment opportunities may cause temporary shortages in housing during peak employment periods.	Yes	No	Yes	Social impact as per "Outline of Impact"	No	No	Comprehensive SIA
		natural resource use	The mine would require ongoing water sourcing from Sydney Water and require additional building materials during construction, which has a small potential to lead to additional resource competition and shortages.	Yes	Yes	Yes	Small potential for additional resource competitions and shortages within the community.	Yes - Surface Water Impact Assessment	Yes - in part	Standard SIA

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	ECONOMIC	live hood	The project would result in increased employment opportunities during the construction stages. Local businesses could benefit from this through additional workers using local small businesses (such as retail and food outlets) and if materials for the construction of the mine were sourced locally. Additionally, the local and surrounding community would benefit from existing employment at the mining operation and new employment opportunity being created.	Yes	No	Yes	Social impact as per "Outline of Impact"	No	No	Comprehensive SIA
		business opportunity	The proposal would result in increased business opportunity for certain businesses such as local labour providers or local manufacturing or vehicle/equipment supply and servicing businesses.	Yes	No	Yes	Social impact as per "Outline of Impact"	No	No	Comprehensive SIA
What does the proposal mean for the natural environment?	AIR	particulate matter	The project has the potential to generate dust and other particulates during construction activities (temporary excavation and ground disturbance) and during operations (management of reject emplacement area and coal stockpiles). Assessments to date indicate likely exceedances of PM10 (24 hour) criteria when considering cumulative sources	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Air Quality Impact Assessment	Yes - full	Desktop SIA
		gases	The project has the potential to generate air quality emissions from the operation of the coal preparation plant. The assessment undertaken to date indicates that Carbon Monoxide (CO), Nitrogen Oxides (NO) and volatile organic compounds (VOCs) concentrations would be below limits.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Air Quality Impact Assessment	Yes - full	Desktop SIA
		atmospheric emissions	The project would result in the generation of GHG emissions during construction and operation. Assessments to date have estimated Scope 1, 2 & 3 emissions from the proposal over its life. GHG emissions would be the focus of negative perception of community beyond the local scale.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Greenhouse Gas Impact Assessment	Yes - full	Desktop SIA
	BIODIVERSITY	*conservation areas*	The proposal would result in subsidence and groundwater impacts from longwall mining and could have far-field impacts on the landform and waterways of surrounding conservation areas and drinking water catchments.	Yes	Yes	No	The impact would be limited to a biophysical impact. Refer "Outline of Impact"	Yes - Subsidence, Groundwater and Biodiversity Impact Assessments	Yes - full	No SIA required
		native vegetation	The proposal would result in the direct disturbance of vegetation and potential indirect impacts from subsidence related changes to landform and waterways. Impacts to native vegetation and habitat have been quantified and an offset strategy developed.	Yes		No	The impact would be limited to a biophysical impact. Refer "Outline of Impact"	Yes - Biodiversity Impact Assessment	Yes - full	No SIA required
		native fauna	The proposal would result in the direct disturbance of vegetation and fauna habitat and potential indirect impacts from subsidence related changes to landform and waterways. Impacts to native vegetation and habitat have been quantified and an offset strategy developed.	Yes	Yes	No	The impact would be limited to a biophysical impact. Refer "Outline of Impact"	Yes - Biodiversity Impact Assessment	Yes - full	No SIA required
	LAND	stability and/or structure	The proposal would involve longwall mining which would affect subsoil structure resulting in subsidence related changes to surface landform and changes to groundwater flow.	Yes	Yes	No	The impact would be limited to a biophysical impact. Refer "Outline of Impact"	Yes - Subsidence and Groundwater Impact Assessments	Yes - full	No SIA required
		soil chemistry	There may be existing areas of contaminated soil within the mine area (from fuel/oil leakage etc.). There is a risk of construction spills and leaks, as well as encountering and spreading contaminated material within the mine site during surface disturbance works for the construction of surface facilities.	Yes	No	No	The impact would be limited to a biophysical impact. Refer "Outline of Impact"	No	No	No SIA required
		capability	Surface facilities for the mine (vent shafts, reject emplacement area) have the potential to be located on land which has agricultural potential. Following the completion of the mining, the mine site would require rehabilitation to ensure the land can be used for appropriate ongoing land uses, including agriculture, and would not be sterilised for future generations.	Yes	No	Yes	Social impact as per "Outline of Impact"	Yes - Agriculture and Land Capability Impact Assessment and Mine Closure and Rehabilitation Assessment	Yes - full	Desktop SIA

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		topography	The proposal would involve longwall mining and associated subsidence impacts to landform, which could affect landform stability and erosion. Construction related surface disturbance could also result in erosion. If not designed and managed properly, the reject emplacement area has the potential for instability and erosion.	Yes	No	No	The impact would be limited to a biophysical impact. Refer "Outline of Impact"	No	No	No SIA required
	WATER	water quality	The proposal would result in licensed discharge of excess water into waterways and involve groundwater intrusion during longwall mining, potentially affecting surface and groundwater quality.	Yes	Yes	No	The impact would be limited to a biophysical impact. Refer "Outline of Impact"	Yes - Surface Water and Groundwater Impact Assessments	Yes - fully	No SIA required
		water availability	Longwall mining as part of the proposal would result in subsidence and groundwater changes. This could impact on water availability for groundwater bore users and change base flow rates into waterways	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Groundwater Impact Assessment	Yes - fully	Desktop SIA
		hydrological flows	Longwall mining from proposal would result in subsidence and groundwater changes. There is potential for the post-subsidence landscape to change existing flooding conditions at some locations (which could increase risks to the community), and changes to groundwater flow could impact on base flow into the Lake Nepean Lakes and other waterways.	Yes	Yes	Yes	Social impact as per "Outline of Impact"	Yes - Surface Water and Groundwater Impact Assessments	Yes - fully	Desktop SIA

Appendix C

SIA Guideline (Appendix D) Review Questions

SIA Guideline Appendix D – Review Questions	How Addressed
General	
Has the applicant applied the principles in Section 1.3? How? Does the lead author of the Scoping Report meet the qualification and skill requirements in Box 2? Does the lead author of the SIA component of the EIS meet the qualification and skill requirements in Box 4? Has the lead author of the SIA component of the EIS provided a signed declaration certifying that the assessment does not contain false or misleading information?	1. SIA Principles have been applied. **Section 2.2.3**, **Table 2-1** outlines SIA Guideline principles and how they have been considered in the SIA. 2 and 3. The lead author for SIA has years demonstrated experience preparing SIA's. 4. The lead author has signed a declaration indicating that the SIA contains all information *relevant to the SIA for the project*, the information is not false or misleading, and the date when the SIA was completed.
Community engagement for social impact assessment (Section 2)	
Does the SIA include adequate explanations of how the engagement objectives have been applied? How? Does the SIA demonstrate that there has been a genuine attempt to identify and engage with a wide range of people, to inform them about the project, its implications and to invite their input? How? Does the SIA demonstrate that an appropriate range of engagement techniques have been used to ensure inclusivity and to ensure the participation of vulnerable or marginalised groups? How?	5. Yes, **Section 2.6** outlines consultation timing and methods used. The purpose of each activity is outlined. 6 and 7. Yes, **Section 2.6** outlines consultation undertaken with communities around the mine site, information that was provided and opportunities for input / feedback. There was a concerted effort to reach out to key stakeholders such as community members, the Bargo Progress Association, and the Aboriginal community and obtain feedback.
Scoping – area of social influence (Section 3.1)	
Does the Scoping Report identify and describe all the different social groups that may be affected by the project? Does the Scoping Report identify and describe all the built or natural features located on or near the project site or in the surrounding region that have been identified as having social value or importance? Does the Scoping Report identify and describe current and expected social trends or social change processes being experienced by communities near the project site and within the surrounding region? Does the Scoping Report impartially describe the history of the proposed project, and how communities near the project site and within the surrounding region have experienced the project to date and others like it?	8, 9. **Section 2.3** identifies the study area considered as part of the SIA including the built and natural environment. **Section 2.6** identifies the community, stakeholder and social groups whose feedback has informed the assessment. 10. Yes, **Section 3.2** 11. Yes, **Section 3.3**.

SIA Guideline Appendix D – Review Questions	How Addressed
Scoping – identifying social impacts (Section 3.2, Appendix A and Appendix B)	**Note: Questions relate to SIA Scoping Report.** A copy of the SIA Scoping Report submitted to DPE in June 2018 is provided in **Appendix B**.
Does the Scoping Report adequately describe and categorise the social impacts (negative and positive), and explain the supporting rationale, assumptions and evidence for those categories? How has feedback from potentially affected people and other interested parties been considered in determining those categories? Does the Scoping Report outline how they will be engaged to inform the preparation of the SIA component of the EIS? Does the Scoping Report identify potential cumulative social impacts?	12, 14. Social impacts including positive, negative and cumulative impacts are identified in **Section 4.0.** Assumptions that underpinned the assessment methodology for negative and positive impacts are outlined in **Section 2.0.** 13. Consultation undertaken and how feedback has been incorporated into the assessment is outlined in **Sections 2.6** and **3.3**.
Social baseline study (Appendix C – Section C1)	
Does the SIA component of the EIS discuss the local and regional context in sufficient detail to demonstrate a reasonable understanding of current social trends, concerns and aspirations? Does the SIA component of the EIS include appropriate justification for each element in the social baseline study, and provide evidence that the elements reflect the full diversity of views and potential experiences in the affected community? Does the social baseline study include an appropriate mix of quantitative and qualitative analysis, and explain data gaps and limitations?	15. Yes, **Section 2.3** provides State, regional and local context. **Section 3.2** outlines community identity perceptions, values and aspirations. 16. Yes, the baseline study draws on published data. Effort made to reach out to key stakeholders to obtain a diversity of feedback is outlined in **Section 2.6**. 17. Yes, a mix of qualitative and quantitative data is used for the baseline study (**Section 2.5**) such as census data and feedback obtained from consultation activities. The sources of data used and any limitations/ data gaps (e.g. of census data) is outlined in **Section 0** as relevant.

SIA Guideline Appendix D – Review Questions	How Addressed
Prediction and analysis of impacts (Appendix C – Section C2)	
Does the SIA component of the EIS include an appropriate description of the potential impacts in terms of the nature and severity of the change and the location, number, sensitivity and vulnerability of the affected stakeholders? Does the SIA component of the EIS identify potential impacts at all stages of the project life cycle? Does the SIA component of the EIS appropriately identify and justify any assumptions that have been made in relation to its predictions? Does the SIA component of the EIS include appropriate sensitivity analysis and multiple scenarios to allow for uncertainty and unforeseen consequences? If relevant, does it include comparisons with studies of similar projects elsewhere?	18. Yes, **Section 4.0** describes potential impacts (positive and negative) with consideration to the sensitivity of receivers, where relevant. **Section 0** identifies the study area of the SIA with details of the numbers of receptors affected provided in respective technical assessments (as relevant). 19. **Section 4.0** outlines impacts during all relevant stages of the proposed development including mine planning, construction, operation, mine closure and post closure. 20. Yes. Rationale for impact evaluation discussed in **Section 4.0**. 21. Multiple scenarios and sensitivity analysis were not carried out for the SIA. It is noted that the mine plan assessed as part of the SIA is the outcome of multiple risk analysis and consideration of alternative scenarios to reduce the impacts associated with the proposal, as far as possible. This is discussed in detail in Sections 5.0 and 6.0 of the EIS. In addition, the modelling undertaken as part of relevant technical assessments which have informed this SIA (including groundwater and economics) have included separate sensitive analysis, of predicted impacts.

SIA Guideline Appendix D – Review Questions	How Addressed
Evaluation of significance (Appendix C – Section C3)	
Does the SIA component of the EIS explain how impacts were evaluated and prioritised in terms of significance? Does the evaluation of significance consider cumulative aspects where relevant? Does the evaluation of significance consider the potentially uneven experience of impacts by different people and groups, especially vulnerable groups?	22. Section 4.0 outlines the rationale for the evaluation of impacts. Significance rating is provided in Section 4.10 23. Yes cumulative impacts are provided in Section 4.9. 24. The SIA has evaluated impacts based on the study area identified in Section 2.3 and the affected receptors identified in technical assessments.
Responses and monitoring and management framework (Appendix C – Sections C4 and C5)	
Does the SIA identify appropriate measures to avoid, reduce, or otherwise mitigate any significant negative impacts of the project, and justify these measures? Does the SIA explain and justify measures to secure and/or enhance positive social impacts? Does the SIA component of the EIS impartially assess the acceptability, likelihood and significance of residual social impacts? Does the SIA component of the EIS propose an effective monitoring and management framework?	25. Yes, Section 5.0, Table 5-1 outlines safeguards, management and monitoring. Section 4.0 also considers impacts before and after the implementation of measures. 26. Yes, Section 4.0 outlines the positive benefits associated with the proposed development including community contributions. 27. Yes, Section 4.10 28. Section 5.0 outlines the management, mitigation and where relevant, monitoring measures proposed to manage impacts associated with the proposed development.
Modifications (Introduction – application)	
Are the social impacts associated with the modification expected to be new or different (in terms of scale and/or intensity) to those that were approved under the original consent? If yes, apply the review questions above to the SIA component of the environmental assessment.	**N/A – the proposed development application is not a modification application**

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