PROJECT ASSESSMENT
Western Coal Services Project
(SSD 5579)

Environmental Assessment Report
Section 89E of the
Environmental Planning and Assessment Act 1979
March 2014

Cover Photo: Wood ducks on Cooks Dam, Western Coal Services Site (photograph: P Anink)

March 2014
NSW Planning and Infrastructure
www.planning.nsw.gov.au

EXECUTIVE SUMMARY

The Western Coal Services Project is located about 15 kilometres (km) north of Lithgow, in the Central West of New South Wales. The project consists of several ancillary coal infrastructure elements owned and/or operated by the Centennial Coal Company (Centennial). Centennial is seeking to expand its coal processing and distribution capacity in the Western Coalfield and bring most ancillary coal infrastructure elements of its existing and proposed operations in the Lithgow area under a single development consent.

The proposal is 'State significant development' under Section 89C of the *Environmental Planning & Assessment Act 1979* (EP&A Act), and NSW Planning and Infrastructure (P&I) has carried out a detailed assessment of the merits of the proposed development in accordance with the requirements of Section 79C of the EP&A Act.

P&I received 12 submissions on the proposal: two were by way of objection and 10 provided comment. None of the Government authorities objected to the proposal, however most raised concerns about the potential impacts of the project and recommended conditions to be imposed should it be approved.

The two submissions objecting to the project were concerned with noise, blasting, air quality and health impacts, loss of property values, potential impacts on water resources and biodiversity and cumulative impacts of the development with other nearby mining and power developments. These submissions considered that the threat posed by this project to local communities would far outweigh the benefits it would bring to the local economic and employment sectors.

P&I considers that the proposed development would not significantly increase environmental impacts when compared to the combined impacts of the existing individual elements, such as from existing overland conveyors, private coal haul roads and the Springvale Coal Services Site (SCCS). The predicted impacts for the residents of Blackman's Flat from increased activities on the SCCS have been recognised by Centennial as adding to an already poor residential amenity for this locality, primarily though noise impacts. Centennial has acted by offering to purchase all residences, not already owned, within the village. As of early 2014, all but one had been purchased. In essence, the proposal represents an intensification of existing mining support operations, but not an expansion of the footprint of these operations.

P&I has recommended conditions of consent to safeguard residential amenity (particularly due to noise impacts) by setting noise levels at which Centennial would be required to undertake noise mitigation works at residences or offer to purchase properties. In all, P&I has recommended that Centennial be required to offer to purchase two residences and offer to undertake mitigation measures at another two residences, due mainly to noise impacts from private haul roads.

The development would clear 10.67 ha of native vegetation. P&I considers that these impacts should be offset as a component of Centennial's proposed regional biodiversity offset. Combined with proposed rehabilitation, vegetation management and riparian enhancement of Lamberts Gully and Wangcol Creeks P&I considers that biodiversity outcomes should be improved in the medium to long-term.

P&I believes that impacts in respect of other components of the project such as visual, Aboriginal heritage, traffic, waste management and hazards would not be significant, and can be minimised and managed through appropriate conditions of consent.

Overall, P&I is satisfied that the proposed development would not result in any significant additional environmental impacts when compared to the current operations, and that its impacts can be managed, mitigated or offset through appropriate conditions of consent.

The proposed development would result in a range of ongoing social and economic benefits including:

- providing direct employment for 18 personnel;
- providing improved flexibility and coal processing capacity for Centennial's mining operations and thereby increasing the security of employment for over 570 mine workers;
- additional capital investment of $104 million; and
- facilitate the provision of over $200 million of royalties to the NSW Government.

P&I is satisfied that, with appropriate restrictions on night-time coal trucking operations, particularly during adverse meteorological conditions, the proposed ancillary mining operations can be undertaken with minimal adverse environmental impacts, and hence the proposed development is in the public interest, and should be approved, subject to the recommended conditions of consent.

1. STRATEGIC CONTEXT

The Western Coal Services Project is located about 15 kilometres (km) north of Lithgow, in the Central West of New South Wales, adjacent to, and east of the Great Dividing Range. The project consists of several ancillary coal infrastructure elements owned and/or operated by the Centennial Coal Company (Centennial) (see **Figure 1**). Centennial is seeking to expand its coal processing and distribution capacity in the Western Coalfield and bring most existing and proposed ancillary coal infrastructure elements of its operations in the Lithgow area under a single development consent. In addition, it is seeking approval to expand its coal processing capacity and flexibility to supply domestic and export coal markets.

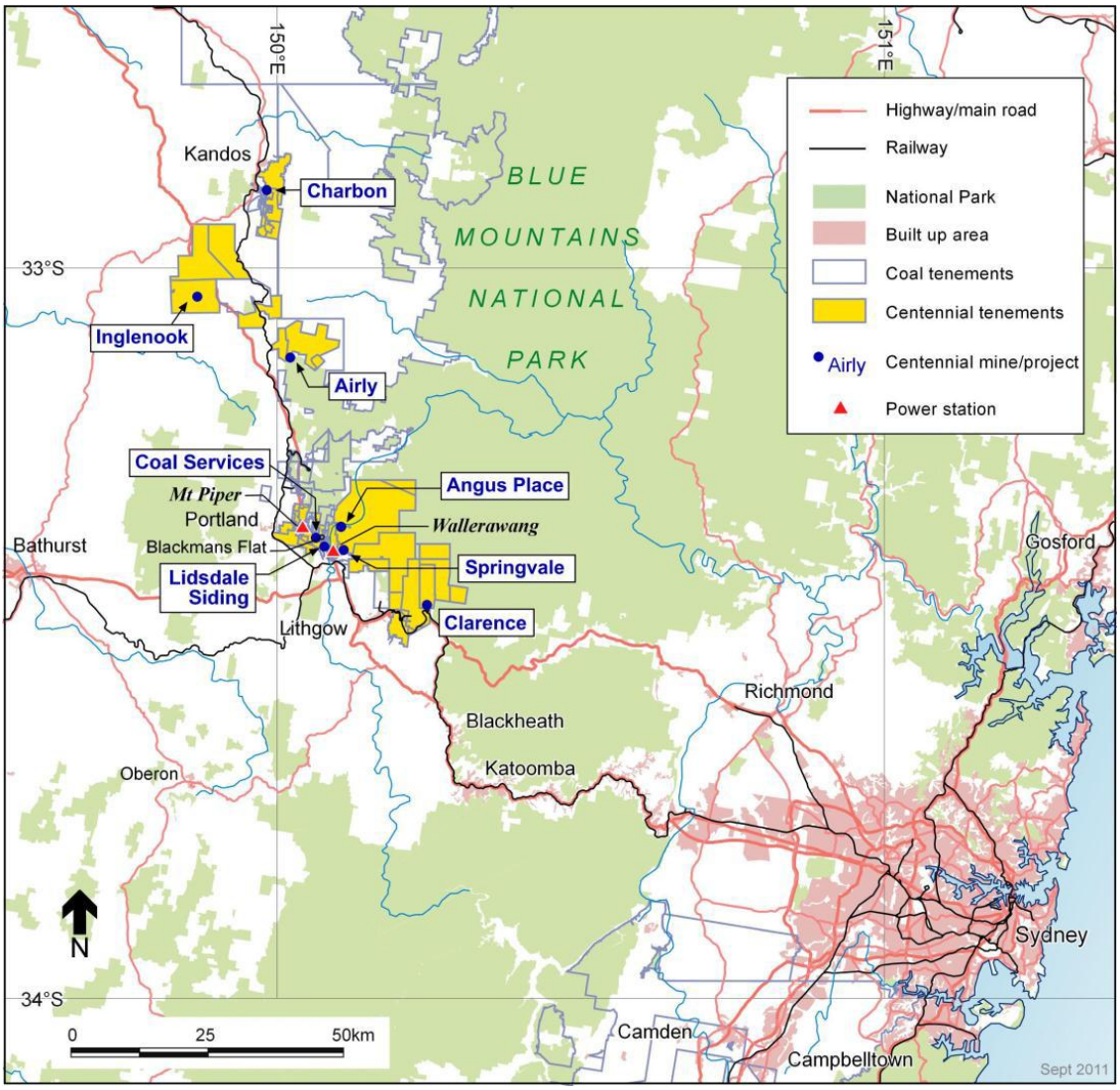

Figure 1: *Regional Location*

The proposal is centred on the existing Springvale Coal Services Site (SCSS) at Blackmans Flat. Coal mining operations commenced on this site in 1940, with the Eastern Main and Western Main underground coal mines operating until the 1990s. Four different open cut mines operated on the site between 1980 and 2010, with the most recent being the Lamberts Gully Open Cut which operated from 1994 to 2010. The SCSS is so named as the existing 900 tonnes per hour (tph) coal handling and preparation plant (CHPP) and connecting coal conveyors form part of the approved Springvale Colliery development (Springvale), even though it is approximately 7 km to the northwest of Springvale's surface facilities site (see **Figure 2**).

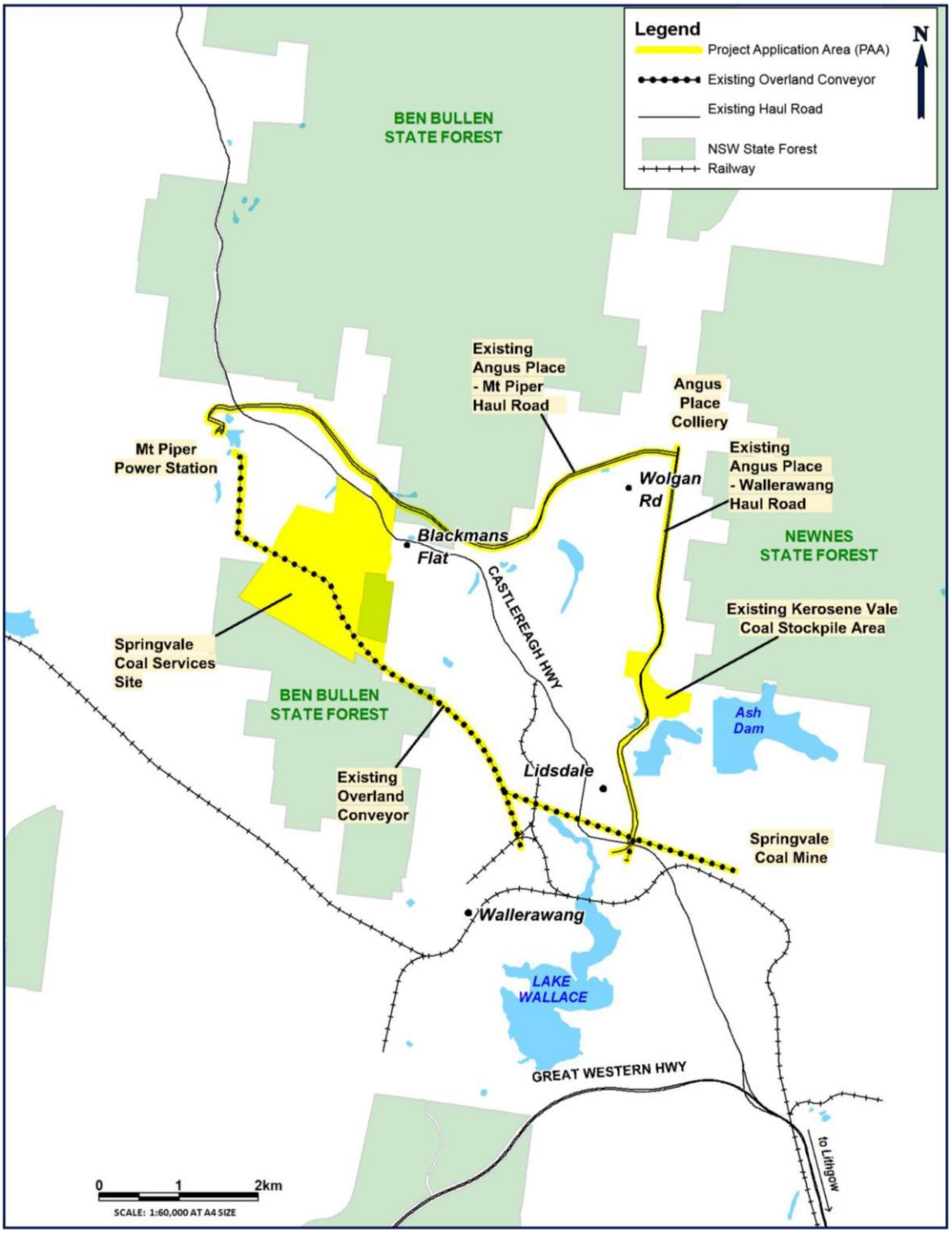

Figure 2: *Western Coal Services Project*

Other approved developments on the SCSS include ash disposal facilities for the adjacent Mt Piper Power Station operated by Energy Australia, Lithgow City Council's (LCC's) regional waste management facility and a facility to produced road base from crushed coal rejects owned by Weston Matrix. The site also includes a portion of the Ben Bullen State Forest.

Accordingly, the strategic context of this proposal is entwined with the other approved land uses on the site, which have been carefully considered in this assessment.

In brief, the project seeks to place under one consent the following elements:

- construction and operation of an expanded CHPP and reject management facility on the SCSS;
- management of coal transport, either by road or conveyor, from the Angus Place Colliery (Angus Place) and Springvale to Mt Piper and Wallerawang Power Stations and the SCSS;
- transportation, by conveyor, of product coal to either the Mt Piper Power Station or the Lidsdale Siding Coal Loader,
- construction of a new Link Haul Road to enable the CHPP to receive coal by private haul road and to transport coal rejects from the site for disposal.

Ultimately the Angus Place and Springvale consents would regulate the extraction of coal and management of each mine up until the point where coal is transported from each mine's surface facilities. Coal logistics would form part of the proposed Western Coal Services Project. The CHPP at the SCSS would become a "hub" receiving coal from Angus Place and Springvale and future coal projects. Following handling and/or processing, the product coal would be distributed from the "hub", either for domestic power generation at Mt Piper Power Station or to the Lidsdale Siding Coal Loader to be loaded onto trains and railed to ports to supply export markets.

Apart from the Ben Bullen State Forest, the main land uses in the area are associated with coal mining and power generation. Nearby mines include Pine Dale, Invincible and Cullen Valley (operated as Coalpac), as well as Angus Place and Springvale. There is also evidence of former mines such as Enhance Place, Wallerawang and the Commonwealth mines in close proximity to the SCSS. There is very little land, both on the site and adjacent to it, that has not been affected to some degree by existing or past mining operations, ancillary mining infrastructure (such as rail lines) or power generation activities.

Even the village of Blackmans Flat (now consisting of approximately 13 residences) was originally established to accommodate mine workers close to their employment. The main road in the vicinity of the project is the Castlereagh Highway, which is the main road link from Mudgee to Lithgow, and then on to Sydney. Residents in Blackmans Flat are affected by road noise, both from the Castlereagh Highway and also from coal trucks on the Mt Piper Power Haul Road.

Topographically, the project is located in the headwaters of the Coxs River, which forms part of the catchment for Sydney's drinking water supply. However, the river has been dammed to form Lake Wallace which is used to supply to Wallerawang Power Station, and many of its reaches have been modified by past mining activities, such as the Blue Lake, located at the confluence of Wangcol Creek and Coxs River, which is a flooded mining void of the former Commonwealth Colliery.

The SCSS drains to the north into Wangcol Creek. The site attains an elevation of approximately 1000 metres (m) at its southern margin, with a fall in elevation of about 100 m over the site. The site has previously been vegetated by Eucalypt woodland, but most of this vegetation was removed by past mining activities. To the south, the site is bordered by Ben Bullen State Forest and an isolated patch of this forest forms part of the project site (see **Figure 2**). None of the project's activities are proposed to be undertaken within the State Forest.

2. EXISTING AND PROPOSED DEVELOPMENT

2.1 Existing Operations

The project includes the following existing components which operate under several different Ministerial and LCC planning approvals (see **Figure 2**):

- SCSS;
- Wallerawang Haul Road, which links Angus Place to Wallerawang Power Station;
- Mt Piper Haul Road, which links Angus Place to Mt Piper Power Station;

- Springvale Overland Conveyor, which links Springvale to Mt Piper Power Station, with off-takes to Wallerawang Power Station and the SCSS;
- Lidsdale Siding Conveyor, which links the CHPP to the Lisdale Siding Coal loader; and
- Kerosene Vale Coal Stockpile Area.

Springvale Colliery, an underground mining operation, was approved in 1992 and developed in 1995 to supply coal to Mt Piper Power Station by overland conveyor via the old Western Main site – now referred to as the SCSS. This consent provides for the ability to process coal and transfer product coal via the same overland conveyor to the Lidsdale Siding Coal Loader for export. A subsequent LCC consent approved a short conveyor link to the Wallerawang Power Station.

The Springvale Overland Conveyor and coal stockpile facilities and reject disposal facilities on the SCSS were constructed under Springvale's 1992 development consent. The existing CHPP was built in the early 1970s for production of export coal that was trucked across the Castlereagh Highway to the Wallerawang Rail Siding (now dismantled and forming part of the Pine Dale Mine site). This CHPP was upgraded in 1995.

Angus Place is an underground mining operation that commenced operations in 1979. It received a contemporary Part 3A project approval in 2006 to extend mining operations. Angus Place produces coal from the Lithgow Seam to supply Wallerawang and Mt Piper Power Stations by road transport on two private haul roads.

The Wallerawang Haul Road forms a component of Angus Place development and is owned and operated by Centennial. However, the Mt Piper Haul Road is owned by Coal>Link which obtained development consent from LCC for its operation, although Centennial now operates and manages this road.

The Kerosene Vale Coal Stockpile Area currently forms part of the Angus Place operation and is located on the site of surface facilities of the former Newcom Colliery which operated from 1949 to 1979, when the mine was renamed as Angus Place and its surface facilities were relocated to their present location.

2.2 Proposed Development

Centennial is proposing to reorganise, upgrade and expand its coal transportation and processing infrastructure in the Blackmans Flat / Lidsdale / Wallerawang area by seeking approval for its Western Coal Services Project. This project is designed to provide Centennial with flexibility in the supply and processing of coal and to respond to changing domestic and export market trends.

To achieve this aim, Centennial is seeking development consent under Part 4 of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) to:

- upgrade the existing CHPP and supporting infrastructure, to a total processing capacity of up to 7 million tonnes per annum (Mtpa) by constructing a new CHPP adjacent to the existing facility;
- enable up to 9.5 Mtpa of coal to be received at the SCSS from:
  - Springvale (up to 4.5 Mtpa);
  - Angus Place (up to 4.0 Mtpa); and
  - other sources, such as the Neubeck Project (up to 1.0 Mtpa);
- construct ancillary infrastructure, within the existing disturbance footprint of the site, including additional conveyors and transfer points to cater for the upgraded CHPP (see **Figure 3**);
- extend and enlarge the existing Reject Emplacement Area (REA) on the SCSS to provide up to 25 years of coal reject disposal capacity;
- construct a private Link Haul Road, approximately 1.3 km in length, linking the SCSS with the existing Mt Piper Haul Road. The new road would traverse a section of Pine Dale Mine's operations, and the Castlereagh Highway via a proposed road overpass bridge;
- improve the water management systems on the SCSS by more effectively separating clean and dirty water catchments, prior to either reuse or discharge of water from the site;

- integrate the remaining rehabilitation, monitoring, water management and reporting requirements associated with the now-closed Lamberts Gully Open Cut Mine;
- integrate the transport of coal from Springvale and Angus Place into the one consent;
- enable up to 6.3 Mtpa of coal to be delivered to the Lidsdale Siding Coal Loader by conveyor; and
- continue to use all existing approved infrastructure, facilities and activities associated with the transport and processing of coal from each mine gate to the SCSS. This infrastructure includes the existing conveyors, private haul roads, Kerosene Vale Stockpile Area, REAs, services, access roads, car parks and buildings.

The location of the project components are shown in **Figures 2** and **3**, and summarised in **Figure 4**.

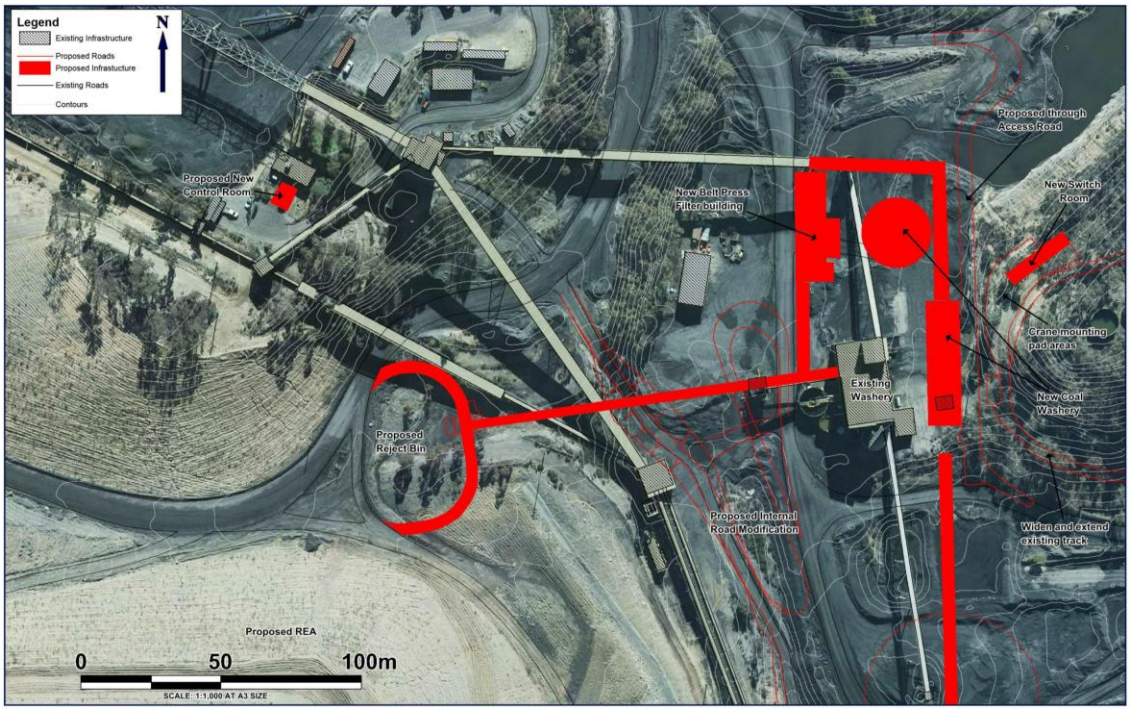

Figure 3: *Upgrade Components for the CHPP*

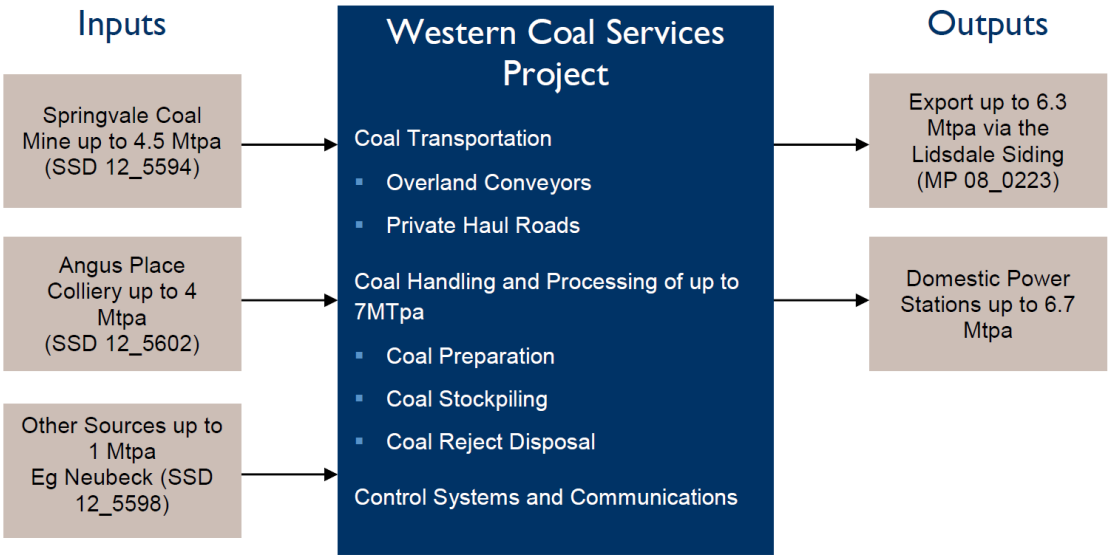

Figure 4: *Overview of the Western Coal Services Project*

Table 1 provides a comparison of the existing and proposed operations associated with the Western Coal Services Project.

Table 1: *Comparison of Existing/Proposed Operations*

Aspect	Existing	Proposed
Rate of Production	Up to 3.4 Mtpa of ROM coal received. Up to 2 Mtpa of ROM coal processed Up to 0.6 Mtpa of product coal transferred to the Lidsdale Siding Coal Loader for export.	Up to 9.5 Mtpa of ROM coal received. Up to 7.0 Mtpa of ROM coal processed. Up to 6.3 Mtpa of product coal transferred to the Lidsdale Siding Coal Loader. Up to 1.0 Mtpa of ROM coal received from future coal projects.
Project Life	Existing consent expires in September 2014.	25 years.
Hours of Operation	24 hours a day, seven days a week.	No change.
Workforce	15 full-time employees.	18 full-time employees. Construction and commissioning activities would require an average of 50 people over 18 months with peak employment of about 120 workers.
Overland Conveyor to Lidsdale Siding Coal Loader	Operate at 900 tph.	No change.
Coal Transport - Springvale	Overland conveyors from Springvale to Wallerawang and Mt Piper Power Stations and SCSS.	No change.
Coal Transport – Angus Place	Private haul roads from Angus Place to Wallerawang and Mt Piper Power Stations.	Existing haul roads to remain. New Link Haul Road to connect SCSS to the Mt Piper Haul Road.
Coal Handling and Preparation Plant (CHPP)	Existing CHPP able to process 900 tph.	Augmentation of CHPP to process an additional 900 tph, introduction of belt press filters and improved infrastructure to handle and process fine and coarse coal rejects.
Reject Emplacement Areas (REAs)	Two approved REAs.	Southern REA to be re-configured and increased in height to provide sufficient capacity for a 25 year project life. Up to 1.0 Mtpa of reject to be transported off-site for emplacement.
Water Supply	Process water supply for CHPP obtained from groundwater seepage and runoff recovered in pollution control dams and from CHPP rejects areas.	Existing water supplies proposed to be augmented by improved water recovery from CHPP operations and supplies piped to the site from underground mine dewatering (Springvale).
Water Management	On-site water management system comprising water management dams and collection drains, runoff diversions, sediment control.	Improved separation of clean and “dirty’ water catchments to improve the quality of water discharged from the site. Review of location of Licensed Discharge Points. Improvement water monitoring program.
Rehabilitation	Rehabilitation required by Lamberts Gully Open Cut Mine Project.	Rehabilitation measures to be revised to incorporate previous commitments and the revised configuration of the southern REA.
Capital Investment Value	Existing infrastructure.	$132 million.

3. STATUTORY CONTEXT

3.1 State Significant Development

The project is development for the purposes of coal mining as defined in Schedule 1 of the *State and Regional Development State Environmental Planning Policy 2011* and is therefore

State significant development under Section 89C of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Minister for Planning and Infrastructure is the approval authority for the project, under section 89D of the EP&A Act. However, under the Minister's delegation of 14 September 2011, the Planning Assessment Commission must determine the development application, since Centennial has made reportable political donations.

3.2 Permissibility

The project is located in the Lithgow Local Government Area (LGA). Under the *Lithgow City Local Environmental Plan 1994* (Lithgow LEP) the land on which the project is located is predominantly zoned Rural (General) 1(a), as is the adjacent village of Blackmans Flat (see **Figure 5**). Some of the land within the project area is zoned Rural (Forestry) 1(f). Under the Lithgow LEP mining is permissible with consent in the 1(a) and 1(f) zones.

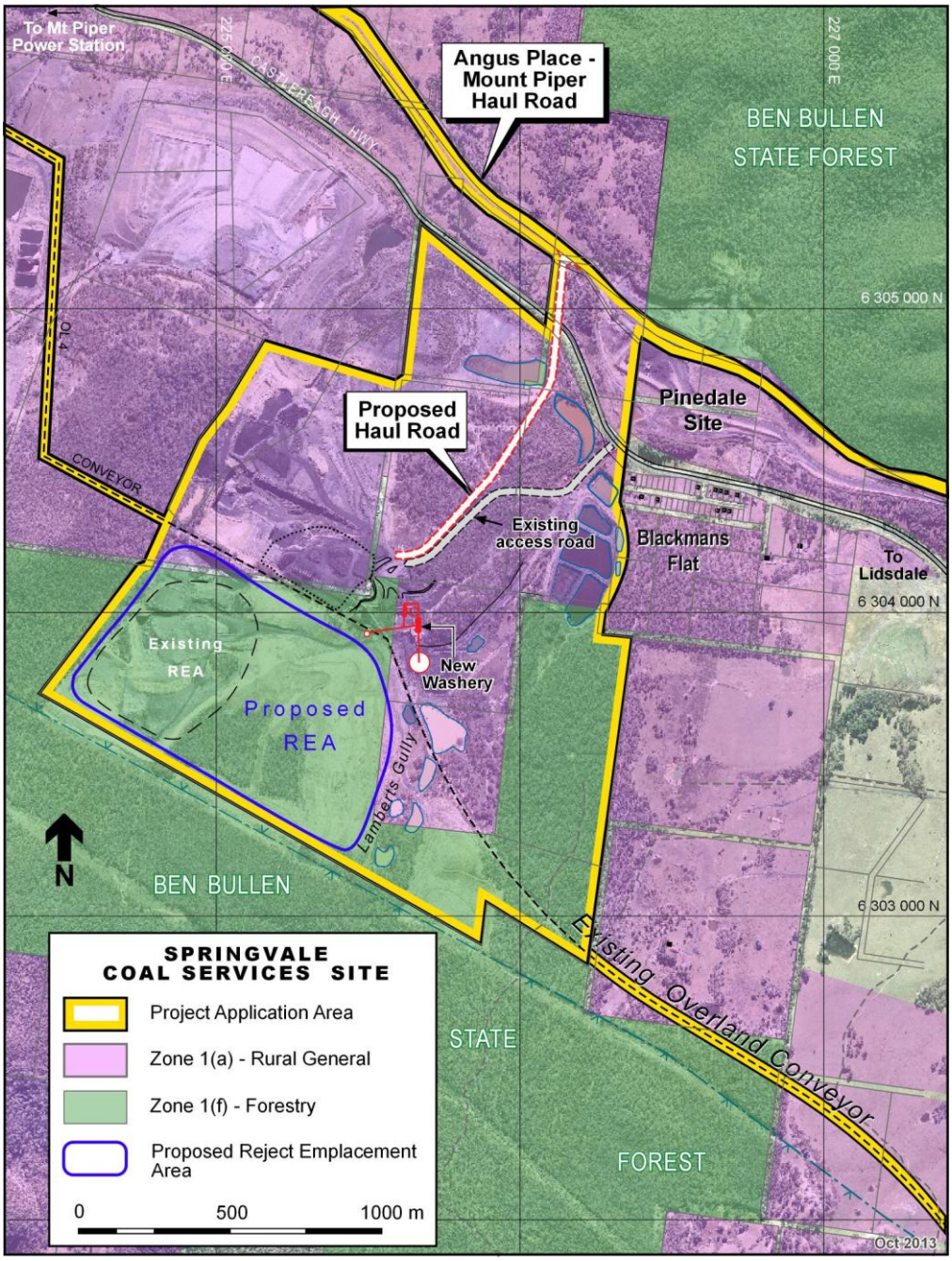

Figure 5: *Land Use Zones*

Any development, except that which is prohibited, is permissible within these zones. As the Lithgow LEP adopts the *Environmental Planning and Assessment Model Provisions 1980* (the Model Provisions), including the definition of "*mine",* which extends to include the ancillary coal handling and processing facilities that form the Western Coal Services Project, the proposal is permissible with consent on land zoned Rural (General) and Rural (Forestry).

The Lithgow LEP also adopts clause 14 of the Model Provisions, relating to the use of public roads, which in effect, permits similar development to be carried out on public roads as is permitted by the zoning for adjacent lands. Accordingly, the use of a "mine" is permitted in roads traversed by components of the project, such as overland conveyors and private haul roads, such as the proposed Link Haul Road.

The draft *Lithgow City LEP 2013* which commenced exhibition on 26 June 2013, provides for different land use zones for elements of the Western Coal Services Project, notwithstanding that most of the lands associated with the project would retain essential the same land use zones for either rural or forestry purposes. The land associated with LCC's regional waste facility and public roads are proposed to be afforded an Infrastructure zoning. This draft LEP contains a general savings provision such that a development application made before the commencement of the updated LEP is to be considered under the provisions of the existing LEP. Accordingly, under the Lithgow LEP, the Western Coal Services Project is permissible with consent.

3.3 Other Approvals

Under Section 89J(1) of the EP&A Act, a number of other approvals are not required to be separately obtained for the project. These include certain approvals, permits and concurrences under the *National Parks and Wildlife Act 1974* and the *Water Management Act 2000*.

Under Section 89K of the EP&A Act, a number of further approvals are required, but these cannot be refused if they are necessary for the carrying out of an approved State significant development. These include:

- consolidation of various existing mining leases under the *Mining Act 1992*;
- issue of a single environment protection licence (EPL) under the *Protection of the Environment Operations Act 1997* for the project and consequent variation to existing EPLs for Springvale and Angus Place collieries;
- a permit under Section 144 of the *Fisheries Management Act 1994* for construction of the Link Haul Road bridge within Wangcol Creek; and
- an approval for road construction works and intersection upgrade under Section 138 of the *Roads Act 1993*.

3.4 Objects of the EP&A Act

The Minister is required to consider the objects of the EP&A Act when making decisions under the Act. The most relevant objects are Section 5(a)(i),(ii),(vi) and (vii), which are as follows.

> *To encourage:*
> *(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment;*
> *(ii) the promotion and co-ordination of the orderly and economic use and development of land;*
> *(vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats; and*
> *(vii) ecologically sustainable development.*

The Department has undertaken a merit assessment of the proposed development in accordance with these objects and in accordance with the provisions of relevant State and local environmental planning instruments.

4. CONSULTATION

The Department made the development application and accompanying Environmental Impact Statement (EIS) publicly available from 26 August to 26 September 2013 at the:

- Department's website;
- Department's Information Centre in Bridge St, Sydney;
- Lithgow Council's offices in Mort St, Lithgow;
- Council Library in Wallerawang; and
- Nature Conservation Council's office in Newtown.

NSW Planning and Infrastructure (P&I) also distributed copies of the EIS to relevant State and local government authorities and advertised the exhibition in the *Lithgow Mercury*.

The documents made publicly available on P&I's website included:

- the development application and EIS;
- the Director-General's environmental assessment requirements;
- the submissions received from the public and agencies; and
- Centennial's response to the issues raised in the submissions.

A number of Departmental officers, including the Director, Mining and Industry Projects, travelled to Lithgow during the past 12 months to attend meetings or to inspect the project site and its surrounds.

Departmental officers also attended the Planning Focus Meeting, held in Lithgow, undertook site visits, and travelled extensively on surrounding roads and within the village of Blackmans Flat to observe the locations of privately-owned residences, the type and quality of native vegetation and watercourses, and the potential for local topography to provide screening effects in terms of visual and noise impacts. The state of local infrastructure (primarily roads) and local land use were also observed as well as the distances of the project to Mt Piper and Wallerawang Power Stations, Pine Dale, Angus Place, Springvale and Coalpac coal mines and the Lidsdale Siding Coal Loader.

P&I received 12 submissions during the exhibition of the project (see **Appendix C**). Of these:

- 2 objected to the project; and
- 10 provided comments on the project.

Of the 2 **submissions objecting to the project**, one was from a Blackmans Flat resident and other from the **Nature Conservation Council** (NCC). The resident was concerned with noise, blasting, air quality and health impacts, loss of property values, potential impacts on water resources and biodiversity and cumulative impacts of the development with other nearby mining and power developments. This submission advocated strongly that all residents within 3 km of the development to be relocated at no cost to the resident and that the NSW government place staff in the field to assess and monitor the proposal.

The NCC objected to the development on the grounds that the project would pose health and environmental risks to the local community due to higher levels of coal dust, and water quality, lighting and noise impacts. The NCC considered that the threat posed by this project to local communities would far outweigh the benefits it would bring to the local economic and employment sectors.

4.1 Public Authority Submissions

Nine public authorities commented on the proposal. None of the State or local government authorities objected to the proposal. Most raised concerns about the potential impacts of the project and recommended conditions of consent, should it be approved.

The **Environment Protection Authority** (EPA) requested further investigation and information be provided by Centennial in relation to determination of relevant noise criteria, potential noise impacts and the seepage of acidic water from the site, first reported in May 2013. The EPA

indicated that it would not consider the conversation of the current licensed water discharge point (LDP 006) to a monitoring site until Centennial is able to demonstrate that all water at this point is sourced from uncontaminated water flows. The EPA also provided recommended conditions for construction and operating hours, noise and surface water management.

Lithgow City Council (LCC) recognised that the proposal would provide a number of benefits, including a reduction in traffic movements on public roads but also identified impacts that would be experienced locally, particularly by the residents of Blackmans Flat and Wolgan Road. These included the:

- noise impacts, predicted to consistently exceed the relevant operating and sleep disturbance criteria for most residents of Blackmans Flat;
- noise impacts from road haulage for residents near Wolgan Road;
- need for adequate sewage treatment facilities;
- need to reduce visual impacts by promptly revegetation all available areas following disturbance; and
- proposed construction of the Link Haul Road across LCC's land could interfere with the operation of its regional waste management facility.

LCC also considers that Centennial should enter into a Voluntary Planning Agreement (VPA) as a means of providing community contributions from the project. The VPA would also address commercial arrangements to allow the use of LCC's land for the Link Haul Road.

Division of Resources and Energy (DRE), part of the **Department of Trade & Investment, Regional Infrastructure & Services**, supported the proposal as it would improve the flexibility and efficiency of coal distribution and processing for Centennial and would help underpin the economic viability of the Angus Place and Springvale mines, as well as future mining projects. DRE recommended conditions of consent providing standards to be achieved in the progressive rehabilitation of the site. Overall, DRE considered that environmental impacts would be far outweighed by the economic and employment benefits of the proposal.

The **Office of Environment and Heritage** (OEH) recommended that Centennial provide a clear commitment to offset the impacts of the proposal on native vegetation and that the impact to biodiversity values of planted / regenerating vegetation be fully considered. It also recommended that water management on the site be included in a Regional Water Strategy, to be developed by Centennial for its operations in the Lithgow district.

The **Department of Primary Industries** (DPI), provided a combined submission on behalf of its constituent entities. **NSW Office of Water** (NOW), did not object to the proposal and supported Centennial's commitments in relation to site water management and considered these to be adequate to address the potential water-related impacts. NOW also provided advice on water licensing of the site's water storage dams. **Fisheries NSW**, and **Agriculture NSW**, both part of DPI, raised no issues with the proposal.

Forestry Corporation of NSW indicated that the Western Coal Services Project includes State forest land that it under the Corporation's control.

NSW Health's submission focused on noise and air quality impacts on long-term health effects for the community and requested more information about noise mitigation options for Blackmans Flat residents and the sleep disturbance criteria used in the EIS.

The **NSW Roads and Maritime Services** (RMS**)** has no objection to the proposal provided that the proposed Castlreagh Highway overpass is constructed in accordance with RMS guidelines and does not cause any reduction in sight distances for highway traffic. All other road works are to be in accordance with Austroads guidelines.

The **Sydney Catchment Authority** (SCA) has a role in the protection of water resources within Sydney's drinking water catchment, in which the Western Coal Services Project is located. SCA raised issues, or made recommendations, in relation to the:

- provision of additional treatment for waters prior to their discharge from the site;
- provision of additional data from groundwater monitoring bores on the site;

- paucity of information about groundwater flows to the Cooks and DML dams;
- provision of biodiversity offsets; and
- clarification of interactions where dual land uses are proposed for the site, such as the overlap of ash disposal and coal reject disposal facilities).

4.2 Other submissions

Energy Australia, the operator of the Mt Piper and Wallerawang Power Stations and the Pine Dale open cut coal mine provided a submission identifying potential land use conflicts between its existing and approved ash disposal facilities, power station and mining lands and the proposed Western Coal Services Project and sought a cooperative approach with Centennial to resolve these matters.

4.3 Response to Submissions

Centennial provided a response to the issues raised in the submissions (see **Appendix D**).

5. ASSESSMENT

The assessment of the project was undertaken in accordance with the *Environmental Planning and Assessment Act 1979* (the EPA Act). Under s79C of the EPA Act, the relevant matters for consideration in determining this development are:

- the provisions of any relevant environmental planning instrument;
- the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality;
- the suitability of the site for the development;
- any submissions made in accordance with this Act or the regulations; and
- the public interest, including whether the project is consistent with the objects of the EP&A Act.

The principal relevant environmental planning instruments (EPIs) applicable to this project are *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (the Mining SEPP) and the *Lithgow City Local Environmental Plan 2004*.

Under the Mining SEPP, the consent authority is required to consider:

- the significance of the resource and the economic impact of the development;
- the existing uses and approved uses of land in the vicinity of the development;
- whether or not the development is likely to have a significant impact on the uses that, in the opinion of the consent authority having regard to land use trends, are likely to be the preferred uses of land in the vicinity of the development; and
- any ways in which the development may be incompatible with any of those existing, approved or likely preferred uses.

The consent authority is required to consider the aims of the Lithgow LEP and other relevant provisions of the plan. The subject land is zoned General (Rural) and General (Forestry). The Lithgow LEP provides objectives for each of the zones and controls on the type of land uses that are permitted in each. A consideration of the project against the relevant sections of the Mining SEPP and the aims and provisions of the Lithgow LEP is attached at **Appendix B**.

The key issues identified by P&I for consideration (and the sections in which they are considered) are:

- noise (5.1);
- air quality (5.2);
- surface and ground water (5.3);
- biodiversity (5.4);
- Aboriginal heritage (5.5); and
- social and economic impacts of the project (5.6)

Other issues are addressed in the **Table 6** in Section 5.7.

In preparing this assessment, P&I has considered the EIS; the submissions made by government agencies, special interest groups and an individual resident in response to the public exhibition of the EIS; and Centennial's response to these submissions. As well, P&I has considered the current operations on the project lands and additional information provided by government authorities and Centennial during the assessment process.

5.1 Noise

The only two submissions objecting to the project raised strong concerns about noise impacts for Blackmans Flat residents.

The Noise Impact Assessment (NIA) recognised that this project is spread over a wide area and has the potential to impact several localities. Noise sources that could potentially impact residents of Lidsdale are different to those that could impact Wallerawang, and in turn, to those that could impact Blackmans Flat.

The NIA considered five different noise impact scenarios:

- operations on the SCSS;
- trucking operations on the Angus Place to Mount Piper Haul Road;
- trucking operations on the Angus Place to Wallerawang Power Station Haul Road and the use of the Kerosene Vale Stockpile;
- the use of the overland conveyors; and
- the eastern and western options for the Link Haul Road overbridge of the Castlereagh Highway to access the SCSS.

The noise modelling demonstrated that the "western option" for the Castlereagh Highway overbridge is a superior option as it would noticeably lower noise impacts for the residents of Blackmans Flat. The "eastern option" was not considered further in the NIA.

The NIA assessed impacts to the 11 residences in the "village" section of Blackmans Flat (shown as B1 to B11 in **Figure 6**) which are expected to be impacted above the relevant noise criteria, or otherwise termed, Project Specific Noise Levels (PSNLs). Centennial has purchased, or has agreement to purchase, all of these residences with the exception of residence B4. The company is also seeking to purchase this property. In addition, at the time of the conveyor's construction (around 1995), the owner of residence B17, entered into an agreement in respect of noise impacts.

Most of these property purchases and have been concluded after the finalisation of the project's EIS. Accordingly, P&I's assessment has considered noise impacts for residences B4 and B12-B16 (see **Figure 6**), rather than the NIA's much broader consideration, based on earlier land ownership details.

The EIS included a noise and vibration assessment of the project untaken in accordance with applicable guidelines, including the *NSW Industrial Noise Policy* (INP) and the *NSW Road Noise Policy* (RNP). In addition to considering the impacts from the project, the assessment also considered the cumulative impacts from the concurrent operation of the project with other projects in the area.

Assessment Criteria

The INP requires the consideration of two components of noise criteria:

- a project-specific intrusiveness criterion which requires that the continuous noise level (LAeq, 15 minute) not exceed the RBL by more than 5 decibels (dB); and
- an amenity criterion which aims to maintain amenity across an area, given the proposed and existing land uses.

The intrusive criteria in the Blackmans Flat area are significantly lower than the amenity criteria and become the assessment criteria against which the project is assessed (PSNLs).

With the exception of residence B4, the PSNL's for all privately-owned residences in the Blackmans Flat area are 35 dB(A) for Day, Evening and Night periods (see **Table 2**).

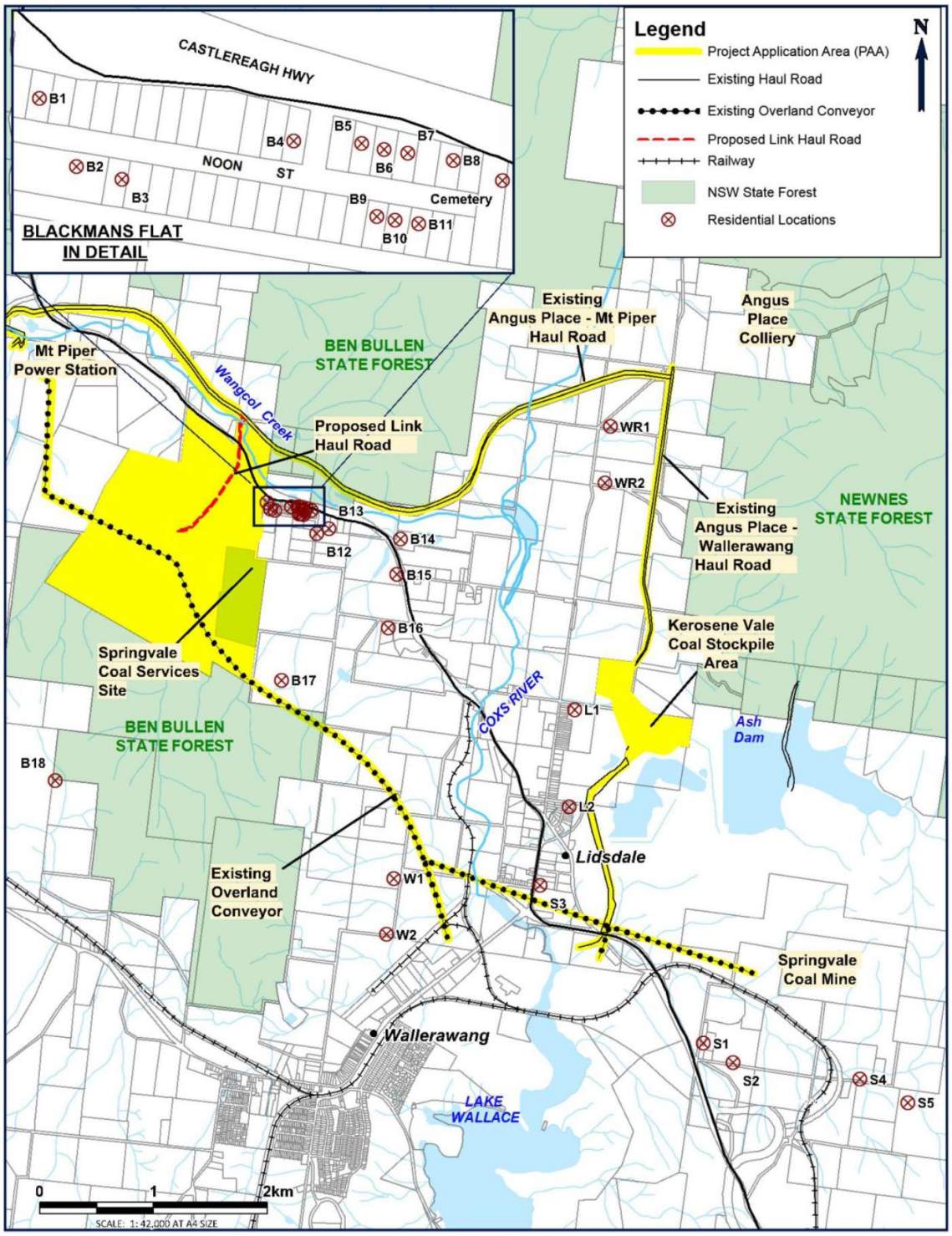

***Figure 6**: Residential Locations for Noise and Air Quality Predictions*

Existing noise impact assessment criteria that have been applied in the Lidsdale Siding Upgrade Project and Angus Place Colliery project approvals are applicable to residential locations W1 and W2 near the Lidsdale Siding Coal Loader and WR1, WR2, L1 and L2 adjacent to the Wallerawang Haul Road (and Kerosene Vale Coal Stockpile) (see **Figure 6**).

The NIA provides PSNL criteria for residences close to the Springvale Colliery end of the overland conveyor from that colliery to the SCSS. Locations S1 to S5 are representative of these residences.

Table 2: *Noise Criteria (PSNLs)*

Location	Day	Evening	Night
Blackmans Flat			
B4, B12-B14	*42*	*35*	*35*
B15, B16, B18	*35*	*35*	*35*
Wallerawang			
W1	*43*	*43*	*43*
W2	*47*	*47*	*47*
Lidsdale			
WR1	*42*	*38*	*36*
WR2	*41*	*37*	*35*
L1, L2	*44*	*40*	*35*
Springvale			
S1	*45*	*44*	*40*
S2	*43*	*43*	*40*
S3	*47*	*41*	*41*
S4, S5	*35*	*35*	*35*

Operational Noise Assessment

The NIA was based on Centennial's recognition that the movement of coal trucks on the haul roads is the greatest potential source of noise levels that would exceed the PSNLs contained in Table 2. The company decided to:

- confirm that the Wallerawang Haul Road would not be operated during night-time hours; and
- not undertake coal haulage on the Mount Piper Haul Road during temperature inversion conditions during night-time hours.

Blackmans Flat village

The consideration of noise impacts for Blackmans Flat "village" became a consideration of impacts for residence B4. Predicted noise impacts exceed the relevant Evening and Night-time criteria by 4 dB(A). Usually, P&I would recommend conditions of consent requiring Centennial to offer noise mitigation works (such as double gazing, noise insulation of walls and installation of air conditioning) for this residence, but not recommend that the company be required to purchase this property upon the landowner's request.

However, Centennial is prepared to accept such a requirement as a condition of consent as it has already offered to acquire this property, and has purchased all other residential properties within the "village". P&I has therefore recommended that Centennial be required to acquire this property upon request, and should the landowner choose not to sell, then Centennial would be required to undertake noise mitigation works.

Other Blackmans Flat residents

The NIA predicts that the project would meet the relevant PSNLs for all other Blackmans Flat general area residential locations, with the exception of marginal 1 dB(A) exceedances for residences B13, B15 and B16. Given the masking effects of existing road noise from the Castlereagh Highway and that the PSNLs would usually be achieved, P&I has not recommended any additional noise mitigation measures for these residences.

Wolgan Road residents

Centennial is required, under the existing Angus Place approval, to acquire residence "Mason (east) –Wolgan Road", upon landowner's request. In the nine years that this consent has been in force this landowner has not made such a request. Impacts to this residence were not specifically assessed in the NIA, but as the control of this haul road would be transferred to the proposed Western Coal Services consent, Centennial's requirement to acquire this property

upon the landowner's request would be most appropriately addressed under the proposed new consent.

Residence WR1 is referred to as "Sharpe – Wolgan Road" under the Angus Place approval and has been afforded the right to noise mitigation works at the residence. Centennial has previously undertaken noise mitigation works on this residence. However, P&I has recommended that this residence continue to be afforded the opportunity to seek noise mitigation works to reduce noise impacts from the Western Coal Services Project as P&I is unaware of how extensive, complete or effective the previous noise mitigation measures have been. As a safeguard, P&I has included this residence in the table of residences to be afforded noise mitigation upon landowner's request.

Other residential locations
The project's operational noise impact for all other residential locations considered in the NIA is predicted to meet the relevant PSNLs contained in **Table 2**.

Sleep disturbance
The criterion for sleep disturbance is sourced from the EPA's RNP. The NIA predicted that noise impacts from the project (mainly from coal trucks on haul roads) would exceed the relevant EPA's sleep disturbance criterion of 45 dB(A) $L_{A1\ (1\ minute)}$ for almost all residences in the Blackmans Flat area, with the greatest exceedance of this criterion being 19 dB(A).

The company initially argued that these levels are acceptable. Firstly, because the EPA's criterion is a level at which further investigation of the potential for sleep disturbance should occur, and secondly, as once the attenuation effects of the walls of a house were taken into account, the noise levels within each residence would be reduced by about 10 dB(A), and in any event, would be unlikely to cause awakening reactions. However, the assessment did not provide any further investigation, other to quote sections of the EPA's RNP (on which the trigger level for further investigation criterion is based).

P&I indicated its concern with the predicted L_{A1} noise levels to the company, which revisited its consideration of sleep disturbance predictions and provided a revised assessment. This assessment considered that the predictions in the EIS were based on noise impacts from empty trucks striking a pothole(s) on the haul road. It considered that this was an unusual event and that the representative noise level for trucks should be reduced from a sound power level of 124 to 115dB(A), based on trucks travelling on a road without potholes.

Consequently, the company provided revised predictions that were 9 dB(A) lower for each residence and strongly argued that, once the attenuation effects of house walls were considered, the predicted impacts are acceptable and no further action is required, other than maintaining the haul road to be free of potholes.

P&I agrees that haul roads should be well-maintained and has recommended conditions of consent that require Centennial to maintain the surface of haul roads under its control to be of a smooth surface, free of potholes. These conditions also require six-monthly inspections of these haul roads by an independent road maintenance expert and the prompt rectification of any unevenness in their surface. These measures should reduce to a minimum the generation of sleep disturbance noise events from road haulage of coal.

For the Wolgan Road area, two residences (WR1, WR2) were predicted to receive $L_{A1\ (1\ minute)}$ noise levels above the sleep disturbance investigation criterion. WR1 has already been acoustically treated to reduce noise impacts from the Angus Place Colliery and the exceedance at WR2 is predicted to be a marginal 2 dB(A) and is therefore unlikely to cause awakening reactions. Accordingly, P&I has not recommended that any further measures be required for these residences.

Noise management
Centennial's approach to noise management is supported by P&I. Although a significant contributor to predicted noise impacts for Blackmans Flat village, it is not the only significant source of noise for these residents, with traffic from the Castlereagh Highway, and operations

from the power stations and Pine Dale mine are also significant noise sources. Centennial has purchased all but one residence within the village, facilitating a much simplified noise assessment avoiding the need to establish a basis on which to apportion costs of noise mitigation works or property acquisition.

Centennial's has also recognised that temperature inversion conditions at night have the potential to greatly enhance noise emissions and has undertaken not to conduct road haulage on the Angus Place to Mount Piper haul road under temperature inversion conditions.

P&I supports the noise mitigation measures proposed by Centennial, particularly its restrictions on the use of haul roads at night. The recommended conditions require Centennial to incorporate these into a comprehensively revised Noise Management Plan for the project.

P&I has also recommended a number of other conditions to confirm the noise management requirements for the project. These include requirements to:

- implement additional mitigation measures (such as double glazing and air conditioning) at residences where noise impacts are predicted to exceed the relevant PSNL;
- acquire property B4 within Blackmans Flat village upon request of the landowner;
- implement best practice noise mitigation onsite to minimise the noise impacts of the project;
- ensure that all plant and equipment is appropriately attenuated and maintained;
- develop a comprehensive Noise Management Plan, including real-time temperature inversion monitoring system and an active management system which includes an early warning alert system to identify and manage trucking operations and monthly attended compliance monitoring;
- investigate noise complaints and undertake applicable management measures; and
- communicate regularly with the community, including publicly reporting all monitoring results, and effectively responding to enquiries and complaints.

With these measures in place P&I believes that operational noise levels can be managed to an acceptable level.

Cumulative Noise Impacts

The EIS considered cumulative noise impacts resulting from the project operating concurrently with the following approved and proposed projects:

- Lidsdale Siding Upgrade Project;
- Angus Place Extension;
- Springvale Extension;
- Mount Piper Power Station;
- Pine Dale coal mine; and
- Blackmans Flat Waste Management Facility.

The likelihood of these projects and the Western Coal Services Project emitting simultaneous maximum noise emissions is remote due to the range of development locations, intervening topography and differences in noise enhancing conditions.

The assessment of cumulative noise impacts found that there would be no exceedance of the relevant amenity criteria at any privately-owned residence.

Construction noise impacts

The project would involve the construction of a CHPP and the Link Haul Road with its overbridge of the Castlereagh Highway. The NIA predicted that the relevant construction noise criteria would be met at all locations, with the exception of 4 residences within the Blackmans Flat village. With the exception of B4, all of these residences are owned by Centennial and P&I has recommended that Centennial be required to purchase this residence upon request. P&I considers that no further conditions are needed in respect of construction noise.

Road Traffic Noise

The NIA provided an assessment of traffic noise generated from increased use of the Castlereagh Highway, both during the construction and operational phase of the project. All

predicted increases are well-below the criterion in the RNP for new activities not to cause an increase in road traffic noise of more than 2 dB(A).

Blasting and Vibration

Blasting is not planned to be a feature of the project, but may be required to excavate foundations during the construction of the Castlereagh Highway overbridge or the CHPP. Any proposed blasts would be small scale and infrequent. With Centennial's purchase of all but one residence in Blackmans Flat village, P&I considers that there is a very low risk of blasting impacts for the surrounding community.

P&I considers the potential for vibration effects from the use of vibratory compactors during the construction phase is a very low risk activity in terms of its potential to be noticed by residents.

5.2 Air Quality

The EIS includes an air quality impact assessment (AQIA) which considered the project's impacts on air quality through the emission of particulate matter (in the form of PM_{10}, $PM_{2.5}$, Total Suspended Particulates (TSP)) and deposited dust.

The EPA has reviewed the AQIA and confirmed it was conducted in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* and indicates that the risk of adverse impacts at sensitive receptors is low, provided operations are well-managed and consistent with those proposed in the EIS. The criteria against which the assessment was carried out are listed in **Table 3** below.

Table 3: *Air Quality Criteria*

Pollutant	Averaging Period	Criterion/Standard	Agency
PM_{10}	Annual mean	30 µg/m^3	EPA[1]
	24-hour max	50 µg/m^3	EPA[1]
$PM_{2.5}$	Annual mean	8 µg/m^3	Air NEPM Advisory Reporting Standard[2]
	24-hour average	25 µg/m^3	
TSP	Annual mean	90 µg/m^3	NHMRC[3]
Deposited Dust	Annual	Max increase of 2 g/m^2/month Max total of 4 g/m^2/month	

1. NSW Environment Protection Authority (EPA) which specifies air quality criteria for NSW;
2. The Air NEPM is the National Environment Protection Measure for Ambient Air Quality – includes the national air quality standards set by the National Environment Protection Council (NEPC);
3. The National Health and Medical Research Council (NHMRC).

The AQIA utilised data obtained from EPA investigations of the relative proportion of fine particulates (FP), coarse particulates (CM) and remaining particulate size (Rest) factions contained within total suspended particulate (TSP) samples from the Hunter Valley mining areas to enable predictions of PM_{10}; $PM_{2.5}$ and TSP to be made. These proportions are:

- $PM_{2.5}$ (FP) is 4.7% of TSP;
- $PM_{2.5}$ to PM_{10} (CM) is 34.4% of TSP; and
- PM_{10} to PM_{30} (Rest) is 60.9 of TSP.

The air quality model was run with three sources corresponding to the above three particle size fractions and ultimately combined in the following manner to provide predictions of air quality impact against the relevant criteria:

- $PM_{2.5}$ is FP;
- PM_{10} is CM plus FP; and
- TSP is Rest + CM + FP.

Background Air Quality

The AQIA utilised the following background levels for air quality in the vicinity of the project (estimated from air quality monitoring data from Centennial's operations and Pine Dale Mine):

- annual average $PM_{2.5}$ – 4 µg/m^3
- annual average PM_{10} – 10 µg/m^3;
- annual average TSP – 27 µg/m^3; and
- annual average dust deposition – 1.4 g/m^2/month.

Predicted Air Quality Impacts

The AQIA predicted that all relevant air quality criteria in Table 3 would be met at all privately-owned residences in the vicinity of the project.

A more detailed consideration is provided in this report of predicted PM_{10} levels, both in terms of annual average levels and maximum 24-hour average levels. The Mining SEPP was amended in 2013 to include several non-discretionary development standards for mining, which if met at private dwellings, prevents the consent authority from requiring more onerous standards. The cumulative air quality parameter is an annual average PM_{10} level of 30 $\mu g/m^3$.

Maximum 24-hour average PM_{10} levels are indicative of short-term spikes in air quality and can be affected by general regional or State-wide events, which relevantly for the Lithgow area would include bushfires and dust storms. The cumulative criterion of 50 $\mu g/m^3$ is applied such that compliance with this criterion is deemed to be achieved if no more than 5 exceedances of this level occur within a calendar year.

The AQIA modelled various worst case scenarios, consistent with the flexibility in operations that is sought within this project. These included a scenario of all proposed operations at maximum capacity with all 4 Mtpa of coal trucked from Angus Place Colliery to Mt Piper power station and another scenario with all 4 Mtpa of coal trucked to Wallerawang power station. Neither scenario is likely, but rather a proportion of the 4 Mtpa trucked to each destination.

The AQIA considered all operations at the SCSS, Angus Place, Kerosene Vale, Springvale Colliery, Neubeck Open Cut, the overland conveyors and haulage. Other operations in the area such as Mt Piper and Wallerawang power stations, Lidsdale Siding Coal Loader and other coal mining operations are accounted for in the non-modelled background values.

Figures 7 and **8** illustrate the different patterns of project-related air quality impacts with the use of either the Angus Place to Mount Piper or the Wallerawang haul roads. These figures demonstrate the project would not cause any exceedance of the annual average PM_{10} criterion of 30 $\mu g/m^3$ at any privately-owned residence. Importantly, air quality impacts are concentrated to those lands owned by Centennial, LCC's waste management facility, power stations or other mining operations. In other words, the project would meet the development standard for air quality for mining in the Mining SEPP which is defined such that "*the development does not result in a cumulative annual average level greater than 30 $\mu g/m^3$ of PM_{10} for private dwellings*".

The AQIA predicted that the cumulative maximum 24-hour average PM_{10} criterion would be exceeded at residences WR1 and WR2. These residences are relatively close to both haul roads and also the Angus Place pit top. However, as shown in **Figure 9,** (by reference to the dotted lines in the figure) the 50 $\mu g/m^3$ criterion is predicted to be exceeded on only two days a year for both WR1 and WR2. This figure also predicts that this criterion would be achieved at all times for residences within Blackmans Flat village. The figure also demonstrates that background air quality contributes significantly to the overall air quality experienced in the neighbourhood of the project.

Proposed Mitigation and Management of Air Quality Impacts

The air quality predictions in the AQIA are based on the implementation of a number of existing and proposed mitigation measures, including:

- enclosure of the existing and proposed CHPP, conveyors, conveyor transfer points and coal rejects bin;
- use of underground reclaim tunnels for coal stockpiles;
- use of wind-activated stockpile water sprays;
- watering of unsealed roads and Reject Emplacement Area;
- fully sealing the surface of the Link Haul Road;
- minimising the area of disturbance as far as practicable; and
- undertaking progressive revegetation as soon as practicable.

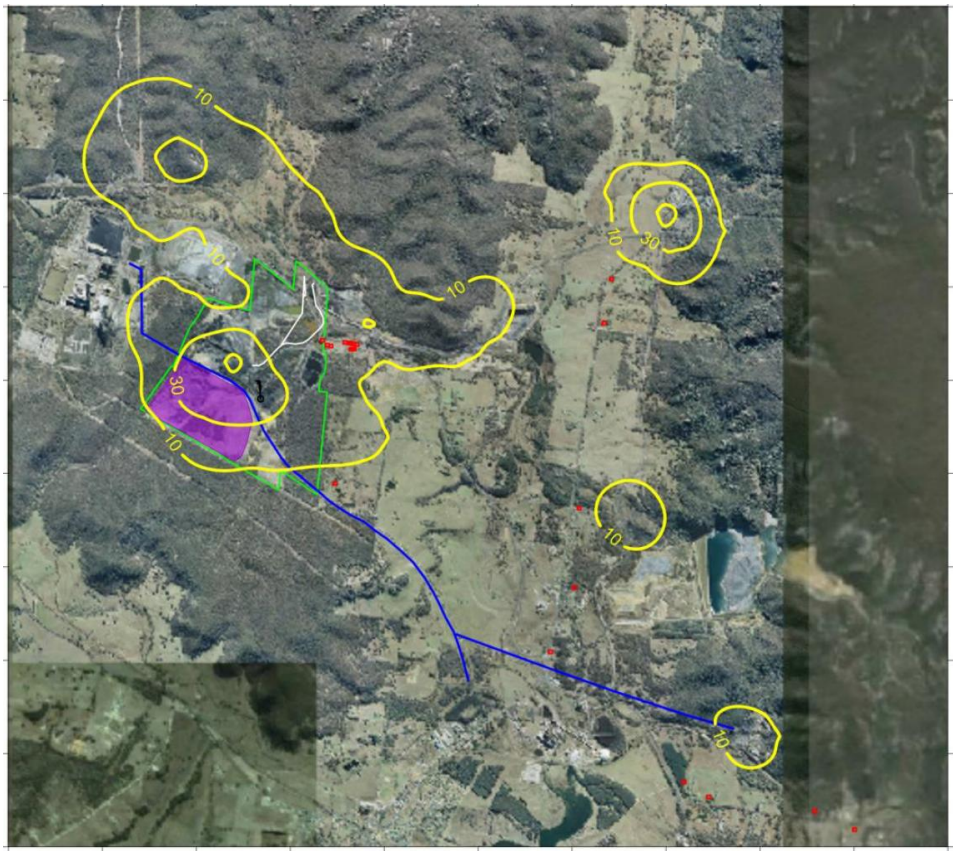

***Figure 7**: Annual Average PM_{10} Concentration (all coal to Mount Piper power station)*

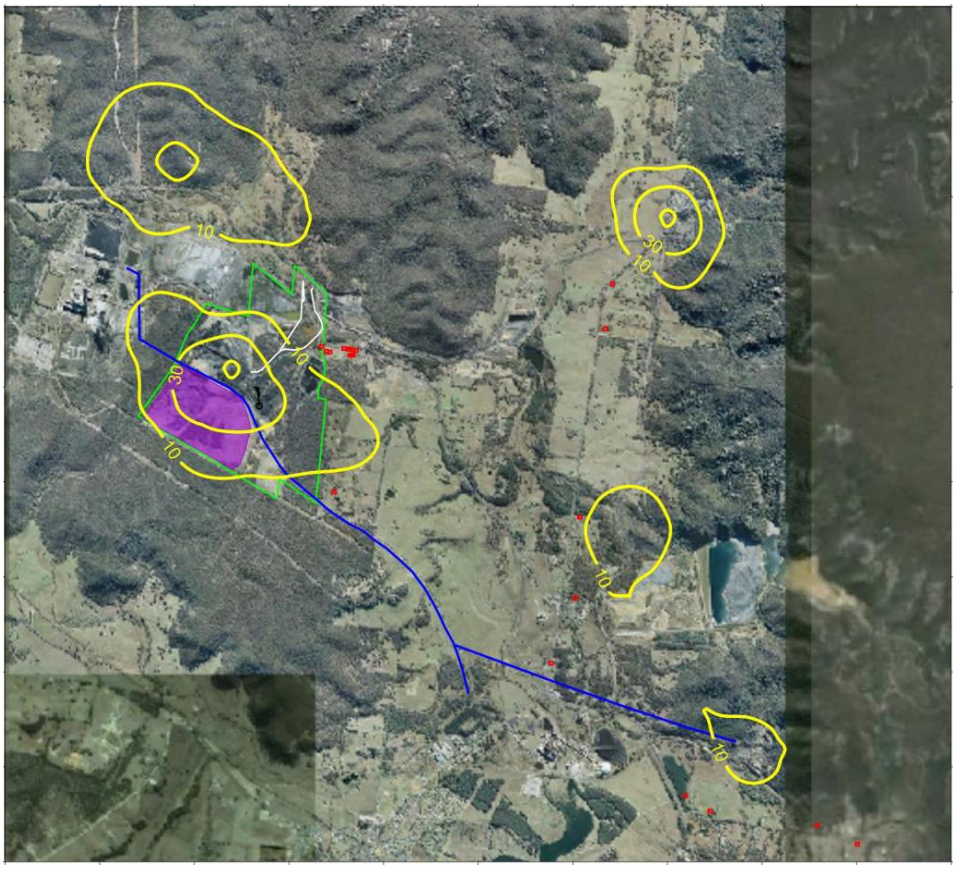

***Figure 8**: Annual Average PM_{10} Concentration (all coal to Wallerawang power station)*

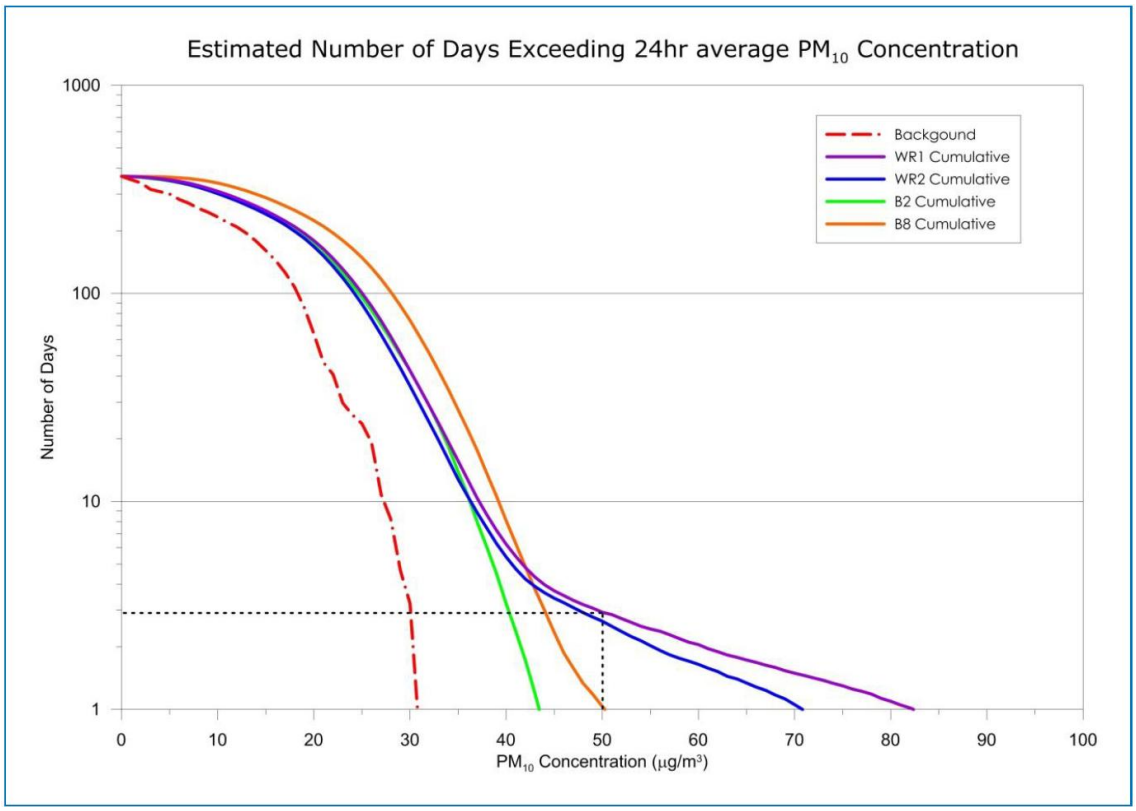

Figure 9: *Probability of Exceeding the Maximum 24-hour Average PM_{10} Criterion*

Centennial also proposes to install a Tapered Element Oscillating Microbalance (TEOM) dust monitor within the Blackmans Flat village to continuously monitor PM_{10}. The TEOM, combined with predictive and real-time meteorological monitoring, would allow Centennial to actively manage any short-term increase in emissions.

Summary and Consideration

In summary:

- there are no predicted annual average PM_{10} or TSP exceedances at privately-owned receivers (either from the project alone or cumulatively);
- there are no predicted exceedances of the $PM_{2.5}$ advisory standards at privately-owned receivers (either from the project alone or cumulatively);
- there are no predicted exceedances of the annual average dust deposition criteria at privately-owned receivers (either from the project alone or cumulatively);
- there are no predicted exceedances of the 24-hour PM_{10} criteria from the project alone; and
- the probability of the maximum 24-hour PM_{10} average criteria of 50 $\mu g/m^3$ being exceeded for 2 Wolgan Road residences (2 days per year) is within the acceptable range for this air quality parameter.

The submissions from the NCC and an individual resident suggest that the impact of the project on air quality is one of their most significant concerns. The NCC, in particular, highlighted the predicted high maximum 24-hour average PM_{10} levels at residences WR1 and WR2.

P&I believes that the AQIA has demonstrated that the project would be able to operate in compliance with the current air quality criteria and standards, with the only predicted exceedance being minor in nature (ie the probability of exceedance of the 24-hour PM_{10} criterion of 50 $\mu g/m^3$ at WR1 and WR2 would be 2 days a year against the standard of no more than 5 days a year). With improved real-time monitoring, P&I believes that the project would be able to operate so as to minimise any exceedances and would, other than for truly exceptional weather events, be in full-compliance with relevant quality criteria and standards.

P&I supports the proposed management and mitigation measures proposed by Centennial, particularly the implementation of real-time air quality monitoring systems.

P&I has prepared recommended conditions that would require Centennial to:

- comply with current air quality criteria;
- implement all reasonable and feasible mitigation and management measures to minimise air quality impacts;
- develop a comprehensive Air Quality Management Plan, that includes real-time monitoring of PM_{10};
- acquire any residence or property if dust emissions exceed the applicable land acquisition criteria, if requested by the landowner;
- provide tenants of mine-owned properties with information regarding the potential health-related impacts associated with mine dust;
- allow tenants of affected mine-owned residences to terminate tenancy agreements without penalty;
- undertake additional dust mitigation measures (such as air filters or air conditioning) at privately-owned or mine-owned residences if dust emissions exceed the applicable criteria, if requested by the landowner (or the tenant of any mine-owned residence);
- investigate air quality complaints and respond effectively to enquiries or complaints; and
- publicly report on its environmental performance.

Greenhouse Gas Emissions

The EIS includes a greenhouse gas (GHG) assessment which considered direct and indirect GHG emissions associated with the project, including:

- Scope 1 emissions (direct emissions from the burning of fuel on-site, as well as from employee travel);
- Scope 2 emissions (indirect emissions from the generation of the energy used by the project); and
- Scope 3 emissions (indirect emissions which include the emissions from the end use of the coal processed at the SCSS).

As shown in **Table 4**, the most significant, direct GHG emissions associated with the project are emissions from the combustion of diesel. The contribution of the project to climate change would be in proportion with its contribution to global GHG emissions. The total Scope 1 emissions from the project would be approximately 0.13 Mt CO_2-e, or approximately 0.005 Mt CO_2-e per annum. This is about 0.001% of Australia's commitment under the Kyoto protocol (591.5 Mt CO_2-e).

P&I acknowledges the threats posed by global warning and climate change. However, P&I considers that the contribution of the project to national and global GHG emissions is small and is significantly outweighed by the positive aspects of the project, including its contribution to employment and the NSW economy.

Table 4: *GHG Emissions (life of project)*

		Emissions in tonnes of CO_2 equivalent	Total Emissions (t CO_2-e)
Scope 1	Diesel use	121,367	
	Use of oils, greases and LPG	8,740	
	Staff transport	2,975	
			133,082
Scope 2	Electricity	313,383	
			313,383
Scope 3	Diesel and staff transport	9,465	
	Electricity	64,101	
	Combustion of Product Coal	564,669,765	
	Rail	553,434	
			565,296,537

P&I considers that the need for the project has been clearly demonstrated and that refusing the project would be unlikely to have any measureable impact on global GHG emissions as the gap in the market would be filled by coal sourced from other suppliers.

P&I has recommended a condition requiring Centennial to prepare and implement a detailed Greenhouse Gas Management Plan for the project, including requirements to implement all reasonable and feasible measures to minimise the emission of GHGs.

5.3 Surface and Ground Water

The EIS considered the impact of the project on surface water and groundwater, including its potential cumulative impact in conjunction with other approved and proposed projects.

Surface Water

The SCCS is located in the headwaters of Wangcol Creek, a tributary of the Coxs River, and ultimately part of the Sydney Metropolitan drinking water catchment that feeds into the Warragamba Dam. Consequently, the Sydney Catchment Authority (SCA) has a responsibility to promote the standard that all developments within this catchment should have either a neutral of beneficial effect (NorBE) on water quality and supply volumes.

The sub-catchments and water management structures on the SCSS are shown on **Figure 10**. The western Huon Gully catchment is captured by the water management system of the Mount Piper Ash Emplacement and does not discharge any surface water to the local Wangcol Creek catchment. The eastern Lamberts Gully catchment drains to the northeast and effectively discharges from the SCSS by way of EPA Licensed Discharge Point 006 (LDP006). Water discharging from the site is currently a mix of runoff from:

- forested headslopes (part of Ben Bullen State Forest);
- rehabilitated areas of the former Lamberts Gully open cut mine;
- reject emplacement areas and coal stockpiles;
- the CHPP and its surrounds; and
- unsealed roads.

In addition, process water from the CHPP and groundwater that collects in the DML and Cooks Dams is also discharged from the site in varying qualities and quantities, by combination with the flows exiting the site by way of LDP006.

Mining has been undertaken on the SCSS for over 70 years and there are a number of legacy issues associated with these activities. Coal reject material emplaced on the site has historically been difficult to manage due to its propensity to weather and produce acidic drainage. Another issue is the interconnection of former underground mine workings with more recent open cut mines and former open cut voids, which currently form part of the site's water management system. The two containment/process water dams in the north east of the site (DML and Cooks Dams) are the water management structures of lowest elevation on the site. They are former open cut voids which are known to be connected to flooded underground workings. These underground workings, at their highest elevation in the south west of the site, are connected to the base of the Reject Emplacement Area, which itself was part of the Lamberts Gully mining void, formed during the open cut mining of remnant coal within former underground workings.

This interconnected system is not a complex as first may seem, as water movement is governed by the principles that water flows downhill and follows the path of least resistance. As the mined areas within the former underground mine provide a pathway for water to move almost without resistance within the coal seam, any rainfall the infiltrates though to the coal seam from the surface, will follow these workings to their lowest elevation, which is the DML and Cooks Dams.

Centennial has been required, both by conditions of consent for the Lamberts Gully coal mine and by Pollution Reduction Programs (PRPs) attached to the EPA's EPL for the site, to improve water management outcomes. A comprehensive water management plan was produced in 2006 and subsequently revised in 2008 and 2012. Each iteration of the plan has resulted in progressive improvements in the quality of water leaving the site.

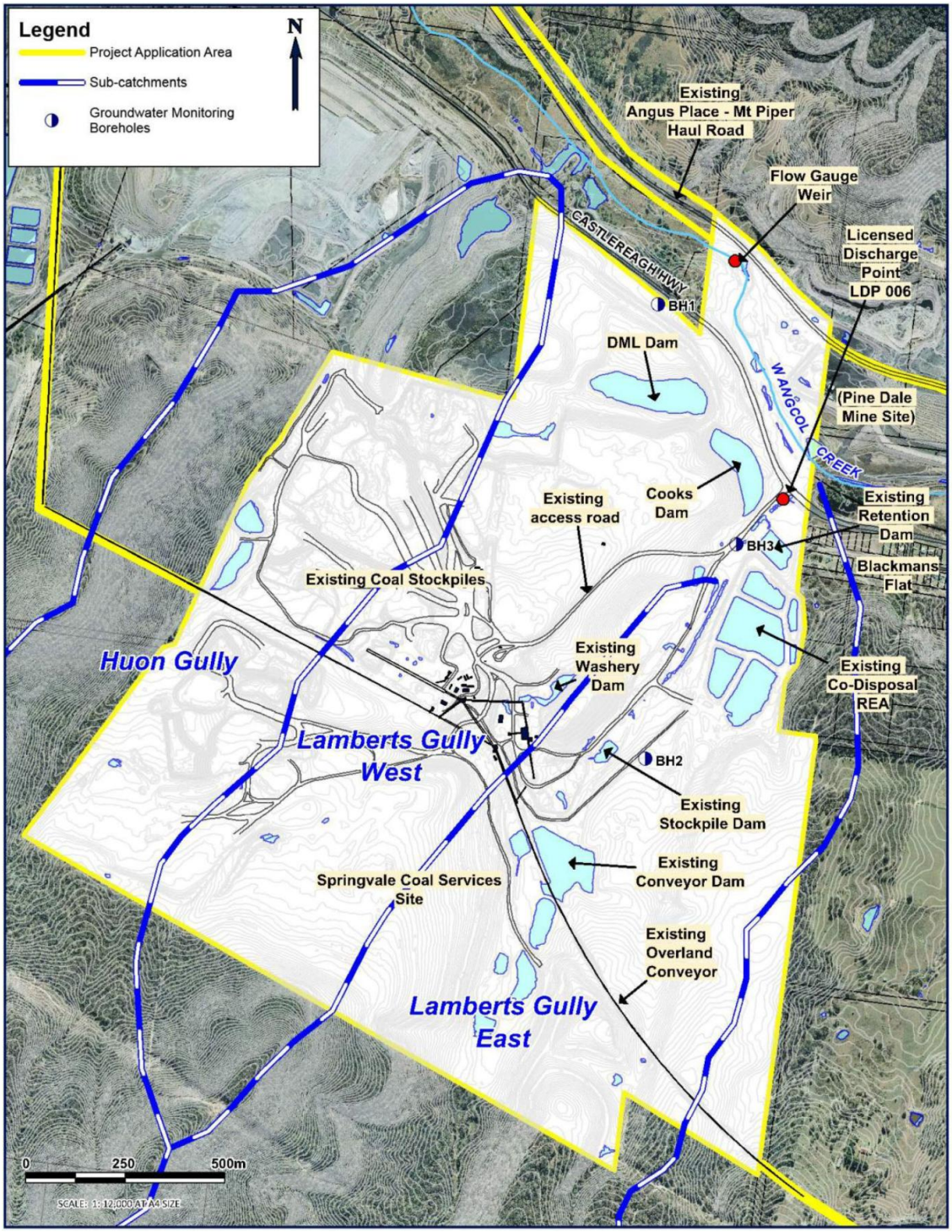

***Figure 10**: Surface Water Catchments and Management*

The EIS contains an assessment of surface water resources and its management on the SCSS and a water balance that considers the implications of the proposed expansion of the CHPP. A feature of the project is the planned introduction of a belt press filter (BPF) to improve the recovery of process water from the fine coal circuit in the CHPP.

Centennial is proposing to improve water management on the site by:

- separating clean water catchments from dirty water catchments and diverting clean water away from the process and dirty water management systems;
- improving recovery and recycling of process water in the CHPP;

- installing a 15 megalitre (ML) sediment dam to contain runoff from the proposed REA; and
- seeking the EPA's approval to move the SCSS's discharge point from LDP006 to the spillway of Cooks Dam.

The implementation of the proposed water recycling initiatives would provide 60% of the project's total water demand. Increased use of water sourced from the DML and Cooks Dams would also result in increased volumes of intercepted groundwater being used as process water, in preference to being managed by discharge from the site.

The existing CHPP operation uses an average of 0.885 ML/Day of water which would increase to 2.725 ML/Day with the proposed increased coal processing throughput and implementation of improved dust controls. Improved process water recovery would mean that only 0.34 ML/Day of make-up water would be required. Centennial proposes to source this make-up water by use of excess water from its Springvale Colliery which would be piped to SCSS by an approved, but not constructed, pipeline attached to the support structures of the overland coal conveyor.

Overall, the project has the potential to improve water management on the SCSS by the provision of improved water recycling capabilities and sediment dam capacity. Water quality in Wangcol Creek is likely to be improved by reduced discharges of process and intercepted groundwater from the site and so satisfies SCA's NorBE criteria for new developments in the Sydney drinking water catchment. The EIS provides a complete assessment of the project against all the elements of SCA's NorBE criteria and demonstrated its compliance with these criteria.

The EPA generally supports Centennial's proposed water management initiatives for the SCSS, considering these to be an improvement to current arrangements. The EPA has in train PRPs that require Centennial to ensure that its Main, Stockpile and Washery Sediment Dams (see **Figure 10**) have sufficient capacity to store a 95th percentile (56 mm) 5 day rain event and to conduct detailed monitoring of water discharged from LDP006 and at upstream and downstream locations within the Wangcol Creek.

However, the EPA does not support Centennial's plans to convert LDP006 into a water quality monitoring location only and relocate the SCSS LDP to the overflow of Cooks Dam until the company can demonstrate that water flowing down Lamberts Gully is unaffected by current or former mining and coal processing operations. P&I agrees with and supports the EPA's views on this matter.

The EPA also referenced a recently-notified seepage of acidic water from the SCSS site adjacent to the Castlereagh Highway. This seepage is subject to investigation and any resultant remedial actions would be incorporated as a PRP into the EPL for the site.

P&I considers that, with the implementation of the water management systems as set out in the EIS for the project, and the application of the recommended monitoring and review actions, the project can proceed and be ultimately decommissioned with only minimal impact to the streams of the Wangcol Creek catchment.

Groundwater

The outcropping Illawarra coal measures cover the entire SCSS and dip in the direction of Wangcol Creek. The primary water bearing zones are associated with the mined out Lithgow Seam and the undisturbed Marrangaroo Formation and Berry Siltstone. The former workings appear to be connected to unfilled open cut voids on the site and also to other voids which have been filled with power station ash and coal reject material or overburden.

Local shallow groundwater flow is generally towards Wangcol Creek, and thus groundwater contribution to the creek is possible. Whether it does, depends on the relationship of the elevation of the creek to the groundwater in the surrounding area. In the vicinity of SCSS, the creek is likely to be a "losing creek" where any leakage from the creek would contribute to local groundwater, rather than vice versa. The flow in Wangcol Creek is artificially elevated by discharges from Mount Piper power station and SCCS. In addition, the groundwater flow

gradient is downwards in the deep aquifer, indicating that no base flow contribution will occur from the deeper aquifers.

Groundwater is currently intercepted in the existing open cut void, but as this is in a relatively elevated position, there is often no evidence of groundwater flow (the walls of the void are dry). Inflow to the SCSS would mainly occur by rainfall infiltration and flow down gradient into the former underground workings, and ultimately to the connected dams at low elevation on the site (DML and Cooks Dams).

The EIS provided a groundwater assessment that included:

- numerical modelling of the groundwater system over a 100 km^2 area;
- consideration of potential impacts of existing and approved mining and power station developments in the area, within the numerical model;
- review of groundwater monitoring data, both of groundwater levels and quality.

This predictive analytical modelling indicated that the groundwater inflow to DML and Cooks Dams would increase slightly from 81 m^3/Day to 88 m^3/Day at the cessation of operations in 25 years time. This predicted increase is due to a change in ground permeability that would result from the construction of the expanded REA. The 7 m^3/Day increase is expected to be balanced by increased evaporation and seepage from the DML and Cooks Dams.

No groundwater inflow control strategies are proposed as any increase during the life of the project would be utilised within the SCSS process water circuit. The project is predicted to cause, at most, negligible impact to groundwater levels and the shallow aquifer (and Lithgow Seam).

No Groundwater Dependent Ecosystems were identified as potentially affected by the project and as the nearest registered privately-owned groundwater bores is over a kilometre from the SCSS, no impacts are predicted for the beneficial use of groundwater in the region.

One area where improvement could be made is in the groundwater monitoring program undertaken by Centennial on the SCSS. Three groundwater monitoring bores are located on the site but have been infrequently sampled. P&I has recommended a condition of approval that would require Centennial to revise its existing Groundwater Management Plan to include improved groundwater monitoring so that the predictions of the EIS can be verified, or should deviation from predicted outcomes occur, that these be identified quickly and any necessary remedial actions implemented.

P&I's view is that the proposal's impacts on groundwater are acceptable and would mainly be limited to the SCSS. P&I has recommended conditions of consent requiring Centennial to revise its existing Groundwater Management Plan, expand its groundwater monitoring network and to review the site's water balance each year.

5.4 Biodiversity

Flora

The footprint of the existing overland conveyors, private haul roads and Kerosene Vale coal stockpile will remain unchanged. Accordingly the ecological assessment in the EIS was centred on the SCSS, which is a highly disturbed site as the result of former mining operations and existing power industry, waste disposal and ancillary coal industry operations. However, native vegetation is present on the SCSS, mainly in a portion of the Ben Bullen State Forest (in the south east of the site) and remnant vegetation in the south of the site (see **Figure 11**). The ecological assessment has the benefit of drawing upon flora assessments undertaken for other developments either on, or neighbouring, the SCCS in 2005, 2010, 2011, 2012 and 2013. It included field surveys undertaken on 5 different occasions from December 2010 to August 2012. This survey effort, by differing flora experts, gives confidence to the quality of vegetation identification and mapping for the SCSS.

Figure 11 shows the current distribution of both native and non-native vegetation for the project area. About 10.67 ha of native vegetation and 30.67 ha of planted/regenerating vegetation would need to be cleared to enable the preferred option 2 location of the Link Haul Road to be used (see **Table 5**).

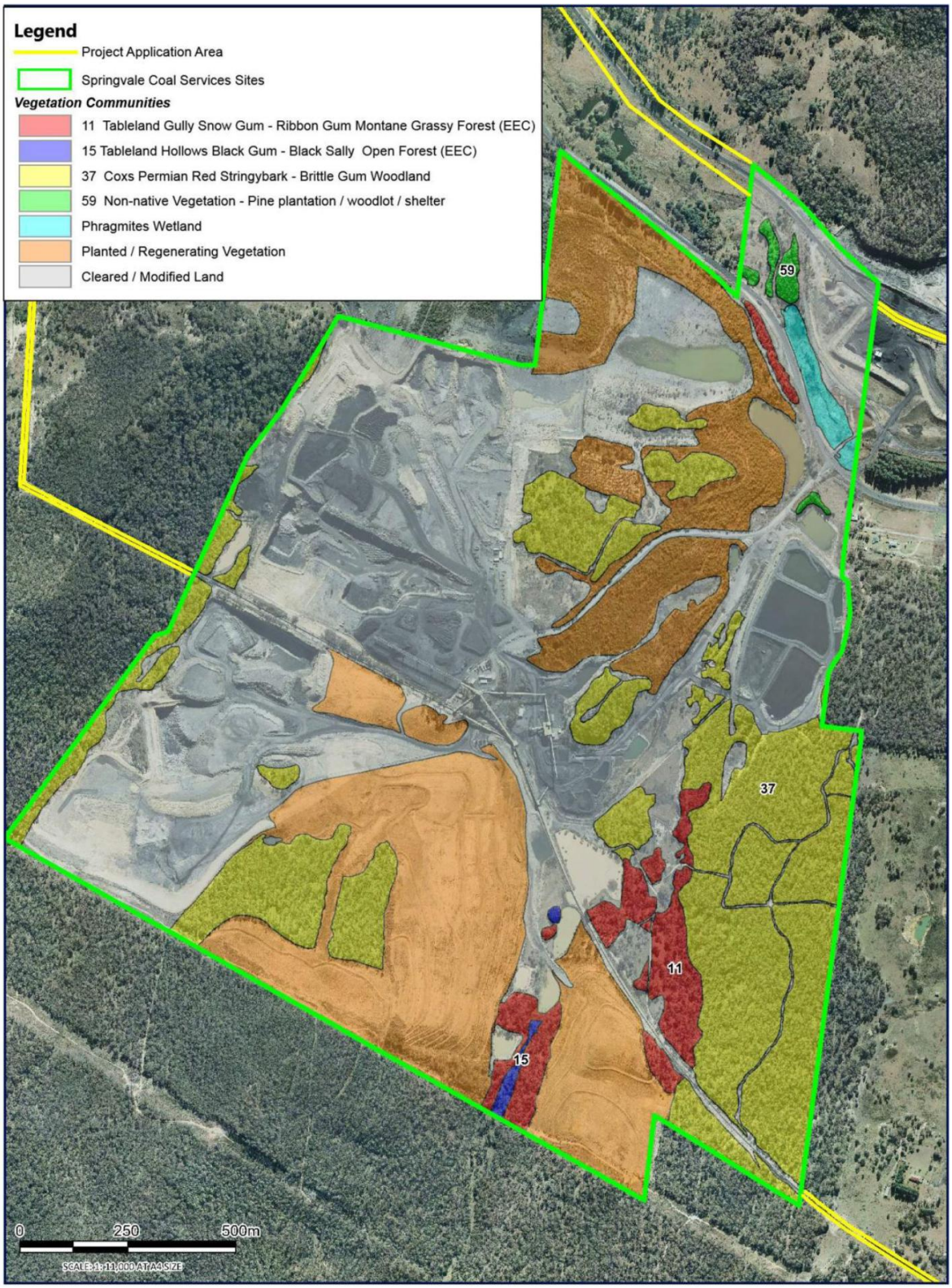

***Figure 11**: Vegetation Types of the SCCS*

Table 5: *Proposed Removal of Native Vegetation*

Native Vegetation Community	Area (ha) inclusive of Link Haul Road Option 2
MU 11 Tableland Gully Snow Gum – Ribbon Gum Montane Grassy Forest (EEC)	0.05
MU 37 Coxs Permian Red Stringybark – Brittle Gum Woodland	10.62
Planted / Regenerating Vegetation	30.67
Total	**41.34**

Flora surveys identified one threatened species, *Eucalyptus aggregata* (Black Gum), on the SCSS. These individuals are located outside of the proposed REA area and would not be impacted by the project. No other threatened species were recorded on the site, but 2 other species are considered to have the potential to occur based on previous records, both on the site and at the neighbouring Pine Dale and Neubeck mining projects. These are *Eucalyptus cannonii* (Capertee Stringybark) and *Thesium australe* (Austral Toadflax).

Importantly, the project would not disturb a small parcel of MU15 *Tableland Hollows Black Gum – Black Sally Open Forest* Endangered Ecological Community (EEC) that occurs in the drainage line of Lamberts Gully in the south east of the site (see **Figure 11**). The construction of the Link Haul Road would potentially disturb a 0.05 ha area of *Tablelands Gully Snow Gum – Ribbon Gum Montane Grassy Forest* EEC. This particular parcel of this EEC consists of a young stand of mostly *Eucalyptus pauciflora* in an elongated roadside location which is poorly connected to other areas of commensurate vegetation. Due to its small size, the poor quality of this vegetation and the location of better quality examples of this EEC on nearby lands, the loss of 0.05 ha of this EEC is considered to be a negligible impact.

The most significant impact of the project would be the removal 10.62 ha of *Coxs Permian Red Stringybark – Brittle Gum Woodland*. This vegetation would be removed at around year 10 of the project to enable the expanded REA to be constructed. Although this parcel of vegetation has been affected by past activities on the SCCS, it remains in fair condition and would provide a source of species recruitment for adjacent rehabilitation areas. P&I considers that the loss of biodiversity values that would occur with the removal of this parcel of vegetation should be offset. This is considered further later in this report.

The project would also remove 30.67 ha of planted or regenerating vegetation. A significant portion is land under rehabilitation following the cessation of mining for the Lamberts Gully mine. The revegetation process for these lands commenced in relatively recent years, with the resultant young vegetation not yet able to contribute substantially to biodiversity values. As all these lands would be revegetated during the Western Coal Services Project, ultimately the same net biodiversity outcome would be achieved for these lands. Consequently, P&I considers that other than ensuring that these land be rehabilitated to high standard, providing biodiversity offsets for clearing of 30.67 ha of revegetated lands is not appropriate.

Biodiversity Offsets

P&I considers that Centennial has, in the first instance, appropriately avoided impacts of the project on flora by minimising the disturbance footprint of its REA and its proposed use of existing infrastructure. No threatened flora species have been found in the areas proposed to be cleared and it is considered that the loss of the 10.67 ha of native vegetation can be mitigated through the revegetation and rehabilitation of the project area and the provision of appropriate offset areas.

The conditions of approval for the Lamberts Gully mine require Centennial to implement "Additional Rehabilitation Initiatives" which mainly consist of revegetation of the most of the riparian lands of Lamberts Gully watercourse as it traverses the SCCS. As this approval would be surrendered as part of the project, these "Additional Rehabilitation Initiatives" would need to

be incorporated into the recommended conditions of consent for the project. These initiatives are entirely consistent with Centennial's more refined proposal to prevent clean water within the Lamberts Gully catchment mixing with dirty runoff from other disturbed areas. The "Additional Rehabilitation Initiatives" would help ensure that runoff from the Lamberts Gully catchment is as free from entrained sediment as possible.

Centennial also proposes to implement a range of "good practice" land management initiatives for the SCSS including:

- ongoing weed inspections and weed control activities;
- ongoing feral animal inspections and control activities; and
- the use of "Eucalyptus cannonii" in rehabilitation seeding programs.

Centennial is also proposing to undertake riparian planting of a 100 m section of Wangcol Creek, downstream of the Link Haul Road crossing to compensate for any impact caused by the construction of this crossing within the riparian zone.

P&I supports Centennial's proposed actions to reduce or offset biodiversity impacts of the project but believes that the impacts of removal of 10.67 ha of native vegetation should be offset. For other Centennial projects in the Lithgow district that have involved the removal of relatively small areas of native vegetation P&I has required, not only appropriate rehabilitation measures but also the use of a regional biodiversity offset strategy to consolidate several small offset requirements into larger parcel(s) of vegetation that would be more effectively managed and more able to provide quality biodiversity values. P&I considers that such an approach should be employed for this project and has recommended a condition of consent that would require Centennial to offset the impact to biodiversity values on the SCSS as part of a regional biodiversity offset. To guard against Centennial's potential failure to secure a regional offset within a reasonable time, P&I has included a requirement for the removal of 10.67 ha of native vegetation to be separately offset by the end of December 2016, the date used for similar requirements at other Centennial mining operations.

Both the OEH and Centennial are supportive of this regional approach to provide biodiversity offsets for Centennial's operations in the Lithgow district.

Fauna

The terrestrial fauna assessment in the EIS identified the fauna that are known to occur, or are likely to occur, in the project area and then assessed the potential impact of the project on these species. The location of recorded occurrences of species listed under the *Threatened Species Conservation Act 1995* (TSC Act) are shown on **Figure 12**. It is unsurprising that these species have been almost exclusively recorded in the portion of the Ben Bullen State Forest that is located on the eastern margin of the SCSS. This area has the highest quality vegetation on the SCSS, is not fragmented, hasn't been affected by former mining activities and is reasonably well connected to other parcels of vegetation (see also **Figures 2** and **11**).

Of the 8 threatened species recorded, 4 are bats and 4 are woodland birds. They are:

- Brown Treecreeper;
- Gang-gang Cockatoo;
- Little Eagle;
- Scarlet Robin;
- Large-eared Pied Bat;
- Eastern Falsistrelle;
- Eastern Bent Wing Bat; and
- Yellow Bellied Sheathtail Bat.

It is also probable that the SCSS forms part of the foraging habitat for 3 threatened forest owl species (Barking Owl, Masked Owl and Powerful Owl), although an absence of large tree hollows means that the area is unlikely to provide breeding habitat.

The fauna assessment also recorded 6 common reptilian species (turtle and lizards) and 9 amphibian species (frogs and toadlets).

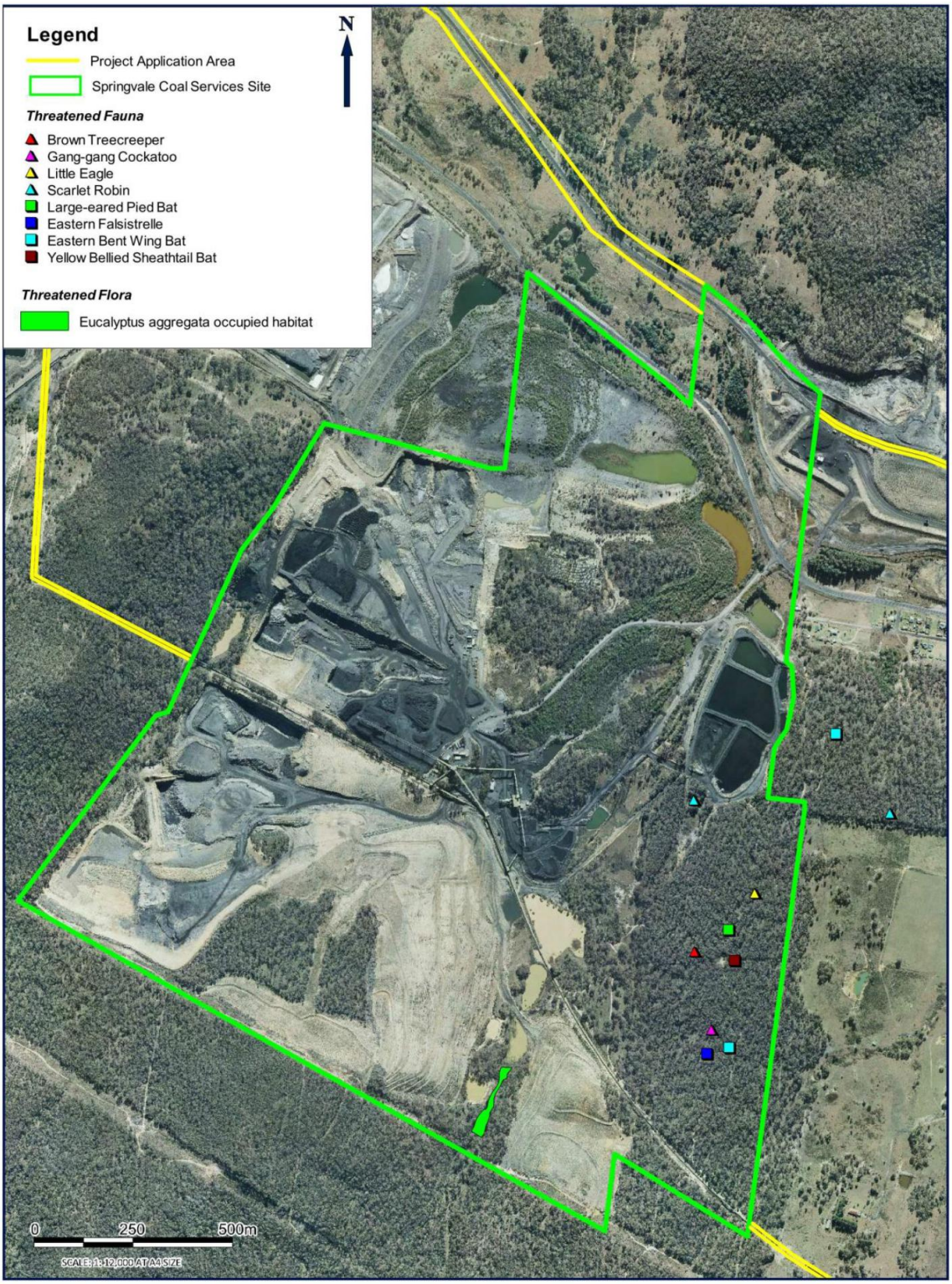

***Figure 12**: Threatened Species Observed on the SCSS*

The project would not reduce habitat values within the portion of the Ben Bullen State Forest on the SCSS. In fact, Centennial proposes to improve habitat values for this parcel of land by implementing weed and feral animal control measures. As this parcel of vegetation is adjacent to Lamberts Gully which would be subject to "Additional Rehabilitation Initiatives", the main habitat area on the SCSS is likely to benefit from improved linkages to other parcels of vegetation in the district, particularly to the south of SCSS. In addition, the "Additional

Rehabilitation Initiatives" would, over time, expand the area of contiguous vegetation and reduce edge effects.

The main impact for native fauna would be the loss of 10.67 ha of native vegetation that stands in the path of the proposed expansion of the REA. As shown in **Figure 13**, this parcel of vegetation has a tenuous link to the vegetated lands to south. Nevertheless, it does provide suitable habitat for a range of woodland birds and shelter for grazing macropods such as the Eastern Grey Kangaroo as well as the Common Wombat which have been observed on the SCSS. The biodiversity values of the site would be diminished by the removal of this vegetation and P&I considers it appropriate that the loss of biodiversity values be formally offset.

Key Threatening Processes (KTPs)
The EIS considered the effect that the project would have in regard to 7 KTPs as listed under the TSC Act that are considered relevant, or potentially relevant, to the Project. These are:

- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands;
- Anthropogenic climate change;
- Clearing of native vegetation;
- Invasion of native plant communities by exotic perennial grasses;
- Competition and grazing by the feral European Rabbit;
- Loss of hollow-bearing trees; and
- Removal of dead wood and dead trees.

In most instances the effect of the project on KTPs would relate to the clearing of native vegetation and its consequences. As indicated in this report P&I considers that these impacts, although quantifiable, are relatively small and that planned land management practices and the offset of residual impacts would ensure that the KTPs are not accelerated by this project.

In some instances the project would have a positive effect of particular KTPs, such as improvements to water quality and stream flow regimes and the implementation of a feral animal control program that would include the European Rabbit.

Aquatic Ecology
The EIS contained an assessment of the existing condition of, and potential impacts on the aquatic ecology of streams in the project area and its surrounds. The main waterways in the area are Lamberts Gully on the SCSS and the adjacent Wangcol Creek, which is classified as "Class 2 – Moderate Fish Habitat" under the DPI Fisheries' stream classification scheme and is considered to provide suitable habitat for freshwater fish, plants and macroinvertebrates that utilise the upper reaches of streams. Geomorphologically, Wangcol Creek is highly modified by channel diversions to accommodate past mining activities and its flow regime is also highly modified by constant discharges from the Mount Piper power station and SCSS which have converted a once ephemeral stream into one with a constant flow.

No threatened aquatic species or threatened ecological communities under the *NSW Fisheries Management Act, 1994*, were considered likely to occur in the project area or its surrounds. Potential impacts of the project are vegetation clearing and earthworks, haul road crossings, and potential impact on surface water quality.

The project is predicted to improve the quality of water discharged from SCSS to Wangcol Creek and to reduce the volume of water discharged from the site. In addition, Centennial proposes to undertake a range of bank stabilisation and riparian vegetation improvements to the 100 m section of Wangcol Creek downstream of the proposed Link Haul Road stream crossing.

P&I considers that the implementation of the project, as set out in the EIS, would have minimal impact on the aquatic ecology of the Wangcol Creek catchment and should progressively produce an improvement in water quality that would benefit all species of flora and fauna that are dependent upon an aquatic or riparian environment. As this stream is part of Sydney's

drinking water catchment improvements to the condition of Wangcol Creek, would ultimately lead to improvements for this important catchment.

NSW Fisheries did not raise any concerns with the project and P&I supports Centennial's proposed management measures to protect and improve water quality and stream health.

Groundwater Dependent Ecosystems (GDEs)
There are no surface aquatic ecosystems that are substantially dependent on groundwater in Wangcol Creek or within the drainage lines of the SCSS.

Rehabilitation
The manner and standard of rehabilitation proposed for the SCSS ultimately depends upon the final land use for each particular parcel of land. The SCSS is more complex than most, as there are multiple existing and proposed land uses on the site. **Figure 13** indicates future land uses and rehabilitation outcomes that P&I believes, based on current approved developments, have reasonable expectations of being achieved.

The eastern, least disturbed portion of the site, would provide a high-quality parcel of native vegetation. It consists of a portion of the Ben Bullen State Forest and the Lamberts Gully "Additional Rehabilitation Initiatives" (shown as Landuse 1). The final landform of the REA (shown as Landuse 2) would be revegetated with species selected to be consistent with the surrounding woodland and bushfire risk.

Much of the western portion of the site would be used for "industrial purposes". Energy Australia has approval to emplace power station ash within the area shown as Landuse 3 and LCC has approval for a regional waste management facility in the area shown as Landuse 4. The existing pollution control dams would be retained. The site of the CHPP and ancillary structures would potentially provide a suitable site for future industry. It is a highly disturbed area, with existing services such as power, water, industrial buildings and workshops that could be adaptively reused.

The default position is that all buildings and structures would be removed at the end of the project and the land returned to native woodland. Centennial has demonstrated, by its initial rehabilitation of the former Lamberts Gully open cut mine lands and at other mine sites in the Lithgow district, that it has the capability to implement rehabilitation programs. In addition, the company is required to provide a rehabilitation bond to DRE to ensure that the rehabilitation works would be fully implemented.

Overall, P&I supports the integration of the rehabilitation of the SCSS with the use of portions of the site for ash emplacement and waste management. This integration is largely dependent upon effective communication between Centennial, Energy Australia and LCC. P&I has recommended a condition of consent that requires Centennial to produce and implement a Rehabilitation Management Plan for the SCSS in consultation with DRE, LCC and Energy Australia.

Conclusion
In summary, P&I considers that the impact of the project on biodiversity has been appropriately avoided and minimised where possible. In addition, the residual impacts would be mitigated by management measures such as the planned implementation of improved land and water management practices on the SCSS and the planned use of a regional biodiversity offset strategy to compensate for the proposed clearing of 10.67 ha of native vegetation.

In the medium to long-term, the project would improve biodiversity values of the land in the vicinity of the SCSS. This would be achieved principally through the protection of native vegetation in the adjacent portion of the Ben Bullen State Forest, the improvement of vegetative linkages through the implementation of the Lamberts Gully "Additional Rehabilitation Initiatives", and improvements to surface water management on the site.

P&I has recommended conditions that would require Centennial to provide an appropriate biodiversity offset by December 2016, and prepare and implement a Rehabilitation Management Plan for the project.

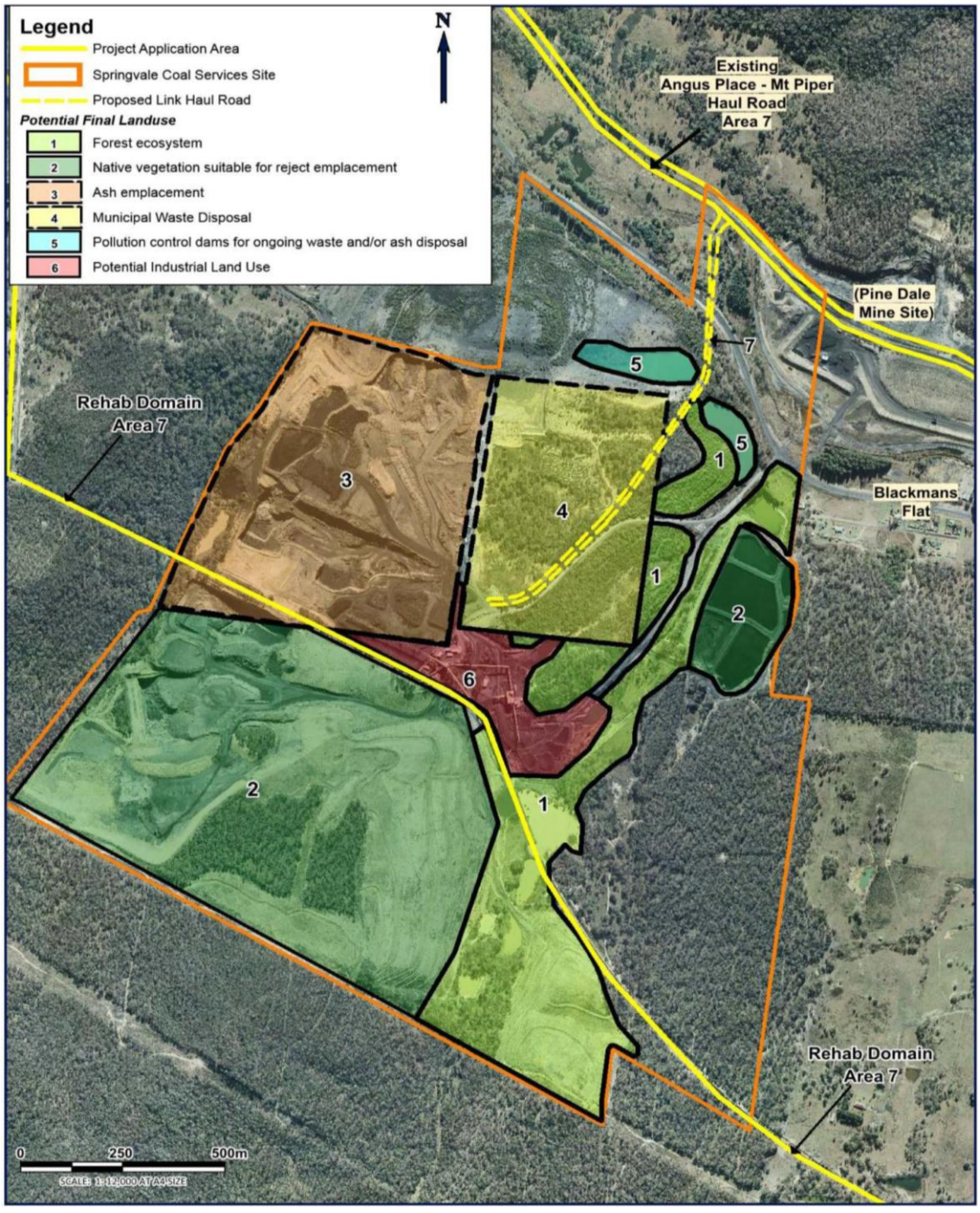

Figure 13: *Potential Final Landuse*

6.5 Aboriginal Heritage

The EIS contains Aboriginal Cultural Heritage Assessment for the project. As shown in **Figure 14**, this study identified:

- 3 previously recorded Aboriginal heritage sites (2 open campsites with potential archaeological deposits (PADs) and 1 open campsite);
- 6 previously unrecorded isolated finds.

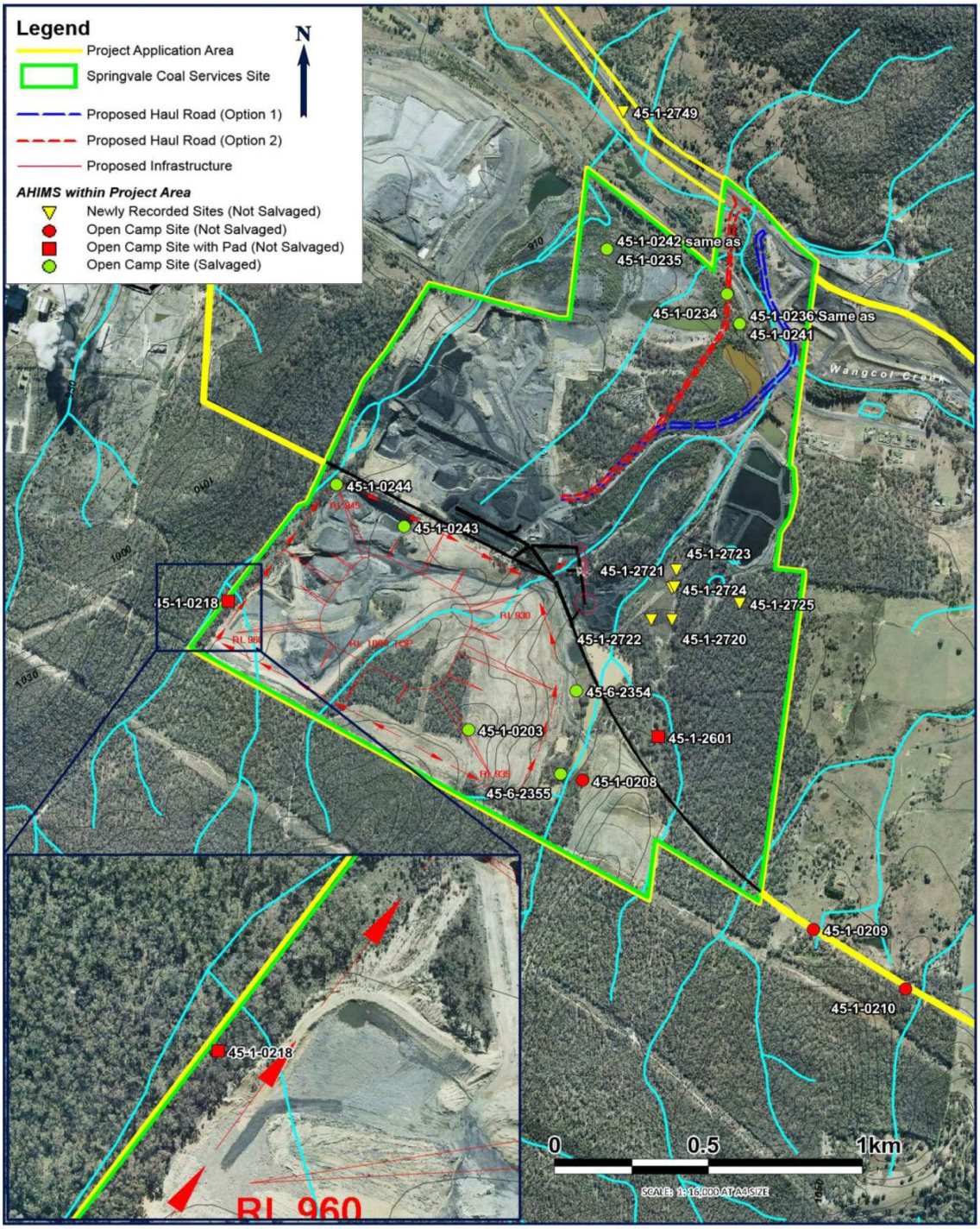

Figure 14: *Aboriginal Cultural Heritage Sites*

Also shown on **Figure 14** are sites identified during heritage assessments of the SCSS for previous developments and subsequently salvaged or destroyed in accordance with the provisions of the *National Parks and Wildlife Act 1974.*

Nearly all components of the Western Coal Services Project that would involve ground disturbance, and consequent threat of harm to Aboriginal heritage, are within the footprint of former developments and all areas have been previously been subject to Aboriginal heritage surveys. The current survey did not identify any previously unrecorded Aboriginal heritage sites within the disturbance footprint of the project. It did however identify 6 previously unrecorded sites either in the Ben Bullen State Forest or the riparian areas of Lamberts Gully. None of these existing sites are directly threatened by the project.

One site located within 40 m of the western edge for the REA (Site 45-1-0218) is already subject to protection measures. The EIS recommends that this site be re-fenced with high visibility materials to ensure that the site is not inadvertently disturbed by the construction of the REA.

Measures to minimise and manage the impacts of the project on Aboriginal cultural heritage values have been identified in the EIS, supported and augmented by the OEH, and incorporated into a draft condition which requires:

- the development of a Heritage Management Plan;
- ongoing involvement of the Aboriginal community in the management of Aboriginal cultural heritage at the site;
- employment of protective measures for Aboriginal objects close to proposed ground disturbance activities;
- provision of access by Aboriginal stakeholders to cultural sites; and
- induction and education programs for staff and contractors.

P&I is satisfied that, following the implementation of the proposed mitigation measures, the project should proceed in accordance with a Heritage Management Plan, which incorporates monitoring and management of identified sites.

5.7 Socio-economic Considerations

It is difficult to separate the economic considerations of the proposed Western Coal Services Project from those of the existing and planned coal mines that it would service. Some of the capacity and planned throughput of the CHPP is subject to development applications which are not yet assessed or determined. These are planned expansions of Angus Place and Springvale mines and plans to establish a new mine, the Neubeck Project.

In effect, the economic consideration of the Western Coal Services Project would need to be considered as part of all the totally of all these operations. As it is not certain that the proposed expansion of coal production capacity would be achieved, P&I does not have the information before it to consider the overall economic benefit and costs of this proposal.

The economic analysis presented in the EIS considers one of the benefits of the project to be the payment of coal royalties. In one way this is appropriate as royalties are levied on product coal, but the project of itself does not actually produce any coal, it only serves to highlight the difficulties of identifying the separate benefits and costs of the project.

What is evident is that the project would facilitate a regional expansion in coal production from Centennial's existing and planned mines. It would also improve Centennial's access to export coal markets and help direct coal to the most profitable markets. Overall, the project should improve the efficiency of Centennial's interaction with the markets for its coal and allow the pursuit of new markets.

The project, of itself would have little effect on employment. It would create 3 new full-time equivalent (FTE) positions at the CHPP and provide 50 FTE positions during the 18-month construction period. However, the main impact for employment benefits would be offsite, as the project would help underpin the employment of 570 workers at Angus Place and Springvale mines and a potential workforce of about 30 workers for the Neubeck Project.

The Western Coal Services Project would involve an investment $104 million that would be injected into the State and regional economies. Due to the consideration of matters such as project management costs the project has a Capital Investment Value of $132 million.

Nevertheless, the EIS has clearly set out its bases of economic analysis, which includes apportioning the coal royalties as a benefit of this project. The economic analysis referred to, and used, studies that had placed a price on noise, soil and water, air, GHG emissions, heritage, biodiversity and visual amenity impacts. This exercise provided a total environment cost of the project at $102 million.

It concludes that the project has a net present value (NPV) benefit of $302 million using the standard 7% discount rate. An included sensitivity analysis indicated that this would reduce to $207 million with a 20% reduction in revenue, which is more likely to be representative of current lower coal prices.

P&I accepts that the project would result in a range of substantial economic benefits. Overall P&I is satisfied that these benefits, and hence the project, is ultimately in the public interest.

5.7 Other Issues

Although the project would have a number of other impacts, P&I is satisfied that these can be adequately mitigated or managed through appropriate conditions of approval. Other issues are considered in **Table 6**.

Table 6: *Consideration of Other Issues*

Issue	Consideration	Conclusion / Recommended Conditions
Non-Aboriginal Heritage	The project area (SCSS and associated haul roads, conveyors and the Kerosene Vale stockpile) is well removed from any listed non-Aboriginal heritage items and consequently the project would have no impact on them.	P&I has recommended that protocols for dealing with previously unrecorded non-Aboriginal heritage items be included in the project's Heritage Management Plan.
Visual Impacts	The EIS contains a Visual Impact Assessment of the project. The strongest impacts were predicted for the Blackmans Flat village. As Centennial has acquired all but one of these residences, the project would create few impacts for private lands. Views of the REA as it approaches and achieves it final height, would be available from distant public viewing points, such as Lidsdale. Such impacts would occupy a small portion of the viewshed and would not be particularly obtrusive with the power station cooling towers usually forming part of the backdrop to the REA. Most of the project's elements are screened from travellers using the Castlereagh Highway, with the exception of the Link Haul Road overbridge. Such overbridges are often encountered on major highways.	P&I considers that by the implementation of progressive rehabilitation on the SCCS, visual impacts of the project would not be significant from most public viewpoints. Other than the implementation of progressive rehabilitation of the REA and the SCSS generally P&I does not consider that specific visual mitigation measures are required.
Traffic and Transport	The EIS included a traffic assessment which considered traffic volumes, intersection capacity and road safety. The project would increase employment at SCSS from 15 to 18. The increase in traffic generated by the project would be negligible. The intersection of at the entry to the SCSS from the Castlereagh Highway is not configured to Austroads standards. Additional heavy traffic would be generated to and from the SCSS during the construction phase. In the long-term, heavy vehicle volumes would reduce as Centennial has undertaken to cease road haulage of 50,000 tonnes of coal a year to domestic customers.	P&I has recommended conditions of consent that would require Centennial to: • upgrade the SCSS entry road intersection to Austroads standards; • cease road haulage of coal from the site by public roads; • construct the Link Haul Road overbridge to Austroads standards and to the satisfaction of RMS; and • produce and implement a Construction Management Plan that includes construction traffic management procedures.
Agricultural Impacts	The land capability and agricultural suitability assessment has classified the project area lands as unsuitable for cultivation or grazing. Therefore	No specific recommendation.

	the project will not have any impacts on agricultural lands or production.	
Contamination	Centennial has undertaken Phase 1 Environmental Site Assessments (ESAs) for the SCSS and the Kerosene Vale stockpile site, in accordance with procedures recommended by the EPA. The SCSS is likely to contain soil, sediment and surface water contamination and also possible ground water contamination. A more-detailed Phase 2 Investigation is planned to be conducted during the construction phase of the project and before February 2015, in accordance with commitments given to the EPA. The Phase 1 investigation of the Kerosene Vale site identified the presence of asbestos. No asbestos has been identified within the proposed areas of activity associated with this project (coal stockpiles and road access to those stockpiles). Centennial has undertaken immediate measures to protect public safety and has provided commitments to the EPA to have long-term management measures in place by February 2015.	The proposed coal stockpiling activities at Kerosene Vale would not produce a risk of interaction with known asbestos located on the broader site. P&I considers that Centennial has undertaken an appropriate level of investigation of its sites and that the measures put in place by the EPA represent the best way to identify and manage the legacy contamination issues for these sites.
Hazards	The SCSS is potentially exposed to the following hazards: • bushfire; • unauthorised public access; • storage of hydrocarbons; and • on-site traffic.	P&I is satisfied with the current level of hazard management on the SCSS. It has recommended that the current Bushfire Management Plan be reviewed and revised to incorporate the expanded activities proposed as a result of the project.
Waste	LCC questioned whether the SCSS's on-site sewage treatment system has sufficient capacity for the proposed workforce. As this system was constructed to cater for the much larger workforce associated with the Lamberts Gully open cut, P&I is satisfied that the current system has spare capacity. Existing waste streams are currently well-managed under a Waste Management Plan.	P&I has recommended that the existing Waste Management Plan be revised to take into account the expanded operations on the SCSS.

6. RECOMMENDED CONDITIONS

P&I has prepared recommended conditions of consent for the proposed development (see **Appendix A**). These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the development;
- ensure standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the development.

The recommended conditions represent an improvement on existing conditions of consent for relevant sections of the Springvale and Angus Place Mines, and reflect current best practice for the regulation of coal mines in NSW. The separation of ancillary mining infrastructure from these mines and its control by the proposed single development consent would enable the regulation of these activities to be more efficiently undertaken and in a clear and transparent manner.

7. CONCLUSION

P&I has thoroughly assessed the proposed development in accordance with Section 79C and the objects of the EP&A Act, including:

- the environmental, social and economic impacts of the proposed development;
- relevant environmental planning instruments;
- submissions on the proposed development;
- the suitability of the site; and
- the public interest.

The Western Coal Services Project would allow Centennial to expand its coal processing and distribution capacity in the Western coalfield and bring most ancillary coal infrastructure elements of its existing and proposed operations in the Wallerawang area under a single development consent. In addition, it is seeking approval to expand its coal processing capacity and flexibility in supplying domestic and export coal markets.

P&I considers that the proposed development would not significantly increase environmental impacts when compared to impacts of the individual existing elements of this proposal, such as from existing overland conveyors, private coal haul roads and the SCCS. The predicted impacts for the residents of Blackman's Flat from increased activities on the SCCS have been recognised by Centennial as adding to an already poor residential amenity for this locality, primarily though noise impacts. Centennial has acted by offering to purchase all residences, not already owned, within the village. As of early 2014, all but one had been purchased by Centennial. In essence, the proposal represents an intensification of existing mining support operations, but not an expansion of the footprint of these operations.

P&I has recommended conditions of consent to safeguard residential amenity (particularly due to noise impacts) by setting noise levels at which Centennial would be required to undertake noise mitigation works at residences or offer to purchase properties. This is particularly important for the owners of the one remaining residence in Blackmans Flat, where noise impacts are predicted to be high. In all, P&I has recommended that Centennial be required to offer to purchase two residences, the other being a residence along the Wallerawang Haul Road with acquisition rights under the Angus Place approval, which need to be maintained under the Wester Coal Services approval. An additional two residents have been recommended to be afforded noise mitigation measures at their home due to the impact of coal haulage on private haul roads.

The development would clear 10.67 ha of native vegetation. P&I is satisfied that these impacts should be offset as a component of Centennial's proposed regional biodiversity offset. Combined with proposed rehabilitation, vegetation management and riparian enhancement of Lamberts gully and Wangcol Creeks P&I considers that biodiversity outcomes should be improved in the medium to long-term.

P&I believes that impacts in respect of other components of the project such as visual, Aboriginal heritage, traffic, waste management and hazards would not be significant, and can be minimised and managed through appropriate conditions of consent.

It is also important to note that only two submissions were received objecting to the proposal and its impacts. Importantly, Lithgow Council supports the development and is a significant stakeholder though its ownership of the regional waste management facility that is proposed to co-exist on the SCSS.

Finally, the proposed development would result in a range of significant beneficial social and economic impacts, including direct employment of 18 workers. More importantly, the Western Coal Services Project is an integral part of Centennial's mining operations, servicing the Angus Place and Springvale Collieries which employ 570 workers. Without approval of this project to improve Centennial's ability to process and transport product to coal to its markets in an

improved and efficient manner, the financial viability of all of these operations are placed at an economic disadvantage. As well, it would contribute $104 million of additional capital investment and $200 million (Net Present Value) to the State through royalties levied on the coal mined from mines that would supply coal to be processed.

On balance, P&I believes that the proposed development represents a logical rationalisation and expansion of Centennial's ancillary coal operations in the Wallerawang area that offers significant synergies in the operational and regulatory management of these activities, that the site proposed for the development is suitable, and that the benefits of the proposed project significantly outweigh any potential costs. Consequently, P&I believes that the Western Coal Services Project is consistent with the objects of the EP&A Act, is in the public interest, and should be approved subject to conditions.

8. RECOMMENDATION

It is RECOMMENDED that the Planning Assessment Commission, as delegate of the Minister for Planning and Infrastructure:

- **considers** the findings and recommendations of this report;
- **approves** the development application, subject to conditions; and
- **signs** the attached instrument of consent (**Appendix A**).

Howard Reed 13.3.14

Manager
Mining & Industry Projects

26.3.14

Executive Director
Development Assessment Systems and Approvals

APPENDIX A:
RECOMMENDED CONDITIONS OF CONSENT

APPENDIX B: CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

SEPP (State and Regional Development) 2011
The proposed development is 'State Significant Development' as it meets the classification 'development for the purpose of mining related works' under Clause 5(3) of Schedule 1 of the *SEPP (State and Regional Development) 2011,* and therefore requires development consent from the Minister for Planning and Infrastructure.

SEPP No.33 – Hazardous and Offensive Development
Centennial undertook a preliminary hazard analysis in accordance with *SEPP No.33 – Hazardous and Offensive Development* and in consultation with, and under the direction of the EPA. The project is consistent with the land use zoning for the surrounding lands. Consequently, P&I is satisfied that the proposed development does not pose a credible risk to surrounding land uses, and is therefore consistent with the aims, objectives, and requirements of SEPP 33.

SEPP No.44 – Koala Habitat Protection
The SEPP requires a consent authority to consider the presence of any core or potential Koala habitat. The EIS includes a detailed fauna assessment which found that there are no Koalas in the development area, and therefore there is no 'core Koala habitat'. However, although one feed tree species is present on the site, it does not exist in sufficient densities to be considered as potential Koala habitat. Therefore SEPP 44 does not apply to the land associated with this project.

SEPP No.55 – Remediation of Land
The EIS incorporates a Preliminary Investigation carried out in accordance with SEPP 55. The findings of this investigation indicate that there are certain contamination issues associated with former and current uses of the SCSS and asbestos has been identified on the Kerosene Vale Stockpile surrounds. Centennial has committed to a timetable of remediation actions to be completed in accordance with undertakings given to the EPA. P&I is satisfied that the project is generally consistent with the aims, objectives, and provisions of SEPP 55 and that the EPA is the appropriate agency to regulate the necessary remediation of these sites.

SEPP (Infrastructure) 2007
SEPP (Infrastructure) 2007 requires the consent authority to notify relevant public authorities about developments that may affect public infrastructure or public land. P&I has notified the Roads and Maritime Authority (RMS) and Lithgow Council. Neither of these authorities objected to the proposed development, and any recommendations made by these authorities have been considered by P&I, and incorporated into the conditions of consent where appropriate. This satisfies the requirements of *SEPP (Infrastructure) 2007*.

SEPP (Sydney Drinking Water Catchment) 2011
The project area is situated within the Sydney drinking water catchment. In accordance with clause 10 of the SEPP, a consent authority must not grant consent to the carrying of development on land within the Sydney drinking water catchment unless it is satisfied that the development would not have a "Neutral or Beneficial Effect" on water quality. The EIS and P&I has considered this matter and is satisfied that the Western Coal Services Project would satisfy this requirement.

SEPP (Mining, Petroleum Production and Extractive Industries) 2007
Under the *State Environmental Planning Policy (Mining, Petroleum and Extractive Industries) 2007* (Mining SEPP), there are a number of matters that must be considered by the consent authority prior to granting development consent:

1. Clause 7 (1) (d) of the Mining SEPP makes facilities for the processing and transportation of minerals permissible with consent on any land where mining may be

carried out, but only if they were mined from that land or adjoining land. Consequently, the proposed development is permissible with consent, and the consent authority may determine the application.

2. Part 3 of the Mining SEPP requires the consent authority to consider the following:
   a. the significance of the coal resource
   b. compatibility of the proposal with other land uses;
   c. natural resource management and environmental management;
   d. resource recovery;
   e. road transport; and
   f. rehabilitation.

Recent amendments to Part 3 of the Mining SEPP require that the consent authority must consider the significance of the coal resource the subject of the development application, and that this matter is to be the consent authority's 'principal consideration' under that Part (although not under section 79C of the EP&A Act).

The Western Coal Services Project is proposed to service the Angus place and Springvale Collieries, but does not include a coal resource within the bounds of project, and therefore the significance of the coal resource is not a relevant consideration for this project. However, the proposed development would contribute $104 million of additional capital investment and facilitate the payment of over $200 million to the State through royalties. Finally, it would also result in a range of beneficial social and economic impacts, including a proposed support of over 570 jobs at the two currently operating mines the project would service.

P&I has fully considered all other matters listed under Part 3 in its merit assessment (see Section 5 of this report). Having considered these matters in detail, P&I is generally satisfied that the proposed development should be approved subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner.

One issue in regard to compatibility with other land uses is the potential interaction of the project with Energy Australia's ash emplacement facilities, LCC's waste management facilities and Weston Matrix's road base facilities on the SCSS. The unco-ordinated implementation of these projects could significantly impact on each other. Centennial has met regularly with these parties to address all key areas of potential interaction and/or conflict. P&I has included a recommended condition of consent that requires Centennial to use its best endeavours to cooperate with these other parties to minimise environmental impacts and adverse outcomes to each and any of these projects.

P&I is satisfied that the proposed development is generally consistent with the requirements of Part 3 of the Mining SEPP and that the proposed development should be approved subject to conditions aimed at ensuring that the development is undertaken in an environmentally responsible manner.

Lithgow City Local Environmental Plan 1994

P&I has considered Centennial's detailed review of the relevant provisions of *Lithgow City Local Environmental Plan 1994* and Draft *Lithgow City Local Environmental Plan 2013* in Sections 7.2.3 and 7.2.4 of the EIS. P&I has also considered the compatibility of the proposed development with the zoning objectives that apply to the land within the development area (see Section 4 of this report). P&I is satisfied that the proposed development can be undertaken in a manner that is generally consistent with the aims, objectives and provisions of these instruments, subject to adherence to the recommended conditions of consent.

APPENDIX C: SUBMISSIONS

(See folder in attached CD)

APPENDIX D:
RESPONSE TO SUBMISSIONS

(See folder in attached CD)

APPENDIX E:
ENVIRONMENTAL IMPACT STATEMENT

(See folder in attached CD)