



AGL Macquarie Pty Limited
Liddell Future Land Use and Enabling Works
Scoping Report

July 2021

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- Appendix A – Scoping worksheets
- Appendix B – Existing consents to be surrendered
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Abbreviations

Term/ acronym	Definition
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACM	Asbestos containing material
AGL	AGL Energy Limited
AGLM	AGL Macquarie
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ASS	Acid sulphate soils
BWAD	Bayswater Ash Dam Augmentation
BAM	Biodiversity Assessment Methodology
BC Act	<i>Biodiversity Conservation Act 2016</i>
BDAR	Biodiversity Development Assessment Report
BESS	Battery Energy Storage System
BoM	Bureau of Meteorology
BOS	Biodiversity Offsets Scheme
BPS	Bayswater Power Station
°C	Degrees Celsius
CEEC	Critically endangered ecological community
CEMP	Construction Environmental Management Plan
CLM Act	<i>Contaminated Land Management Act 1997</i>
CO	Carbon monoxide
DA	Development application
Dams Safety Act	<i>Dams Safety Act 2015</i>
DPIE	Department of Planning, Industry and Environment
DAWE	Department of Agriculture, Water and the Environment
EEC	Endangered ecological community
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EPI	Environmental planning instrument
EPL	Environment Protection Licence
FTE	Full Time Equivalent
FM Act	<i>Fisheries Management Act 1994</i>
GDE	Groundwater Dependent Ecosystems
GDP	Gross Domestic Product
GHG	Greenhouse Gas
ha	Hectares
Heritage Act	<i>Heritage Act 1977</i>

Term/ acronym	Definition
Hazmat	Hazardous materials
H ₂ S	Hydrogen sulphide
HRSTS	Hunter River Salinity Trading Scheme
IPC	Independent Planning Commission
ISEPP	State Environmental Planning Policy (Infrastructure) 2007
km	Kilometres
km/h	Kilometres per hour
km ²	Square kilometres
LAD	Liddell Ash Dam
LALC	Local Aboriginal Land Council
LSC	Land and soil capability
LEP	Local Environmental Plan
LGA	Local Government Area
LPS	Liddell Power Station
m	metres
MNES	Matters of National Environmental Significance
mm	millimetres
MWh	Megawatt hour
NEM	National Energy Market
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NSW	New South Wales
PCT	Plant community type
PFAS	Perfluoroalkyl and Polyfluoroalkyl substances
PHA	Preliminary Hazard Analysis
PM ₁₀	Particulate matter less than 10 microns in diameter
PM _{2.5}	Particulate matter less than 2.5 microns in diameter
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
Roads Act	<i>Roads Act 1993</i>
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SEPP 33	<i>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development</i>
SIA	Social Impact Assessment
SO ₂	Sulphur dioxide
SSD	State Significant Development
SRD SEPP	<i>State Environmental Planning Policy (State and Regional Development) 2011</i>
TRH	Total recoverable hydrocarbons
WM Act	<i>Water Management Act 2000</i>

Executive summary

Background

Liddell Power Station (**LPS**) was commissioned in 1971 and operates as part of the AGL Macquarie (**AGLM**) integrated power generation complex (**complex**) located near Muswellbrook, New South Wales (**NSW**). The complex also incorporates the Bayswater Power Station (**BPS**) (commissioned in 1985), Hunter Valley gas turbines and a range of supporting water supply, water management, coal ash management, coal supply, power supply and control system infrastructure. AGL Energy Limited (**AGL**) acquired these assets from the NSW Government in September 2014 and in doing so formed the subsidiary AGL Macquarie Pty Limited (AGLM).

AGL has publicly announced an intention to transition towards a low-carbon future including a commitment to the closure of its coal fired power stations at the end of their design and economic life, whilst also responding to National Energy Market and customer requirements. In line with reporting requirements, AGL has informed the Australian Electricity Market Operator (AEMO) of its closure schedule for the LPS. The generation unit retirement schedule has been set as one unit in April 2022 and the remaining three units in April 2023. Following commencement of cessation of coal fired power generation at the LPS, works will commence to decommission and demolish the power station, as well as associated infrastructure, and rehabilitate the site, in line with statutory requirements and relevant guidelines.

To support these works, AGLM (the proponent) is now seeking State Significant Development (**SSD**) approval to undertake the Future Land Use and Enabling Works Project (**project**). The Project aims to rehabilitate the operational areas of the site to achieve a safe, stable and non-polluting landform in preparation for the proposed future establishment of an Energy Hub focused on energy generation, storage/ dispatch, waste to energy, solar thermal and other emerging technologies associated with electricity generation or other beneficial uses of the land.

The key elements of the Project include:

- The construction and use of a 'borrow pit area' for the extraction of material for the use as wall building material for the final stages of operation of the Liddell Ash Dam (**LAD**), capping of the LAD and across the LPS site to enable future land use;
- The construction and use of a hazardous materials disposal facility (termed the 'Hazmat landfill') which would be utilised to dispose of contaminated soil and asbestos containing materials from demolition of the LPS and its associated infrastructure;
- The demolition of the LPS and redundant associated infrastructure;
- Rehabilitation of landform and revegetation of the LPS site; and
- Surrender, consolidation and modernisation of existing relevant consents.

The project, if approved, will allow for an integrated approach to the demolition and rehabilitation of the LPS.

Approvals process and document purpose

AGLM is seeking SSD approval for the Project under Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**). An Environmental Impact Statement (**EIS**) is a requirement of the approval process. Before preparing an EIS, terms of reference must be established. In NSW, the terms of reference for an EIS are referred to as the Secretary's Environmental Assessment Requirements (**SEARs**). In order for a proponent to receive SEARs for a project, an application must be made to the Secretary of the NSW Department of Planning, Industry and Environment (**DPIE**).

The application is to be accompanied by a Scoping Report prepared in accordance with the requirements of Part 2 of Schedule 2 of the NSW *Environmental Planning and Assessment Regulation 2000 (EP&A Regulation)*. Consideration has also been given to the *Scoping an Environmental Impact Statement - Draft Environmental Impact Assessment Guidelines* (DPIE, 2017) in the preparation of this Scoping Report. The Scoping Worksheet prepared in accordance with those Draft Guidelines is included in Appendix A of this Scoping Report.

This document has been prepared to support AGLM's request for SEARs for the Project. Its purpose is to brief government agencies, the community and other stakeholders about the Project, and identify key matters to be addressed in the EIS and the proposed assessment methodologies. It is expected that DPIE will circulate this document to relevant government agencies. It will assist government agencies in preparing their advice to DPIE on matters seen as relevant for assessment in the EIS.

Project description

This Project supports the closure strategy of the LPS. The demolition and rehabilitation of the LPS associated infrastructure may commence while the LPS is still generating electricity (that is, prior to the final unit being shut down) to enable the proposed future use of the LPS site as an Energy Hub (or other beneficial uses of the land).

The key elements of the Project are described below.

Construction and use of a borrow pit area

A borrow pit area is required for supply of suitable materials for capping/ rehabilitation of the LAD and potentially other areas such as the proposed Hazmat landfill and the LPS site areas.

Currently AGLM uses material that has been previously supplied and stockpiled by the former Drayton Coal Mine. This material was stockpiled within the current footprint of the LAD and has been used for wall construction, capping and rehabilitation works. It is anticipated that the stockpiled material supplied by the former Drayton Coal Mine will be exhausted within the next 6 to 18 months. The proposed borrow pit area would provide the large volumes of suitable material required for the final stages of operation, and the closure and rehabilitation of the LAD and LPS.

Construction and operation of a Hazmat landfill

Removal of asbestos from the LPS, pipelines, soils and stacks would be undertaken as part of the initial demolition works. The quantity of asbestos waste to be disposed from the Project area is estimated to be approximately 14,000 cubic metres (m³).

It is proposed that on-site disposal would be undertaken to manage the large quantity of contaminated waste and allow the highest quality of site clean-up to be achieved enabling the redevelopment of the site. Onsite disposal is a cost-effective method which diverts this waste from landfill and also avoids hundreds of vehicle movements transporting asbestos waste on the public road networks.

Liddell Power Station demolition and rehabilitation works

The Project will involve the demolition and rehabilitation of the LPS and associated infrastructure. As the current land zoning of the site is SP2 - Infrastructure associated with 'power generation', the objective of the power station demolition and rehabilitation works would be to make the approximately 165-hectare (ha) central power station site ready for permissible future power generation uses associated with an Energy Hub.

AGL is currently developing a strategic plan for the LPS site and surrounding buffer lands within the AGLM landholding, focused on the extents as to which the site can be redeveloped, how to leverage off existing infrastructure such as water, energy connectivity, network transmissions and establishing wildlife corridors in areas of rehabilitation.

AGLM is continuing to explore options that are permissible within the current zoning and is proposing to establish the site as an Energy Hub (or other beneficial uses) in line with the *NSW Government Electricity Infrastructure Roadmap 2020*, various local council strategies as well as the *Hunter Regional Plan 2036*.

Project rationale and alternatives considered

The construction and use of the borrow pit area is required to provide material for the final stages of operation and rehabilitation of the LAD, and other project areas. In turn, the borrow pit area would provide an area suitable for the disposal of asbestos containing materials that will be removed during the power station demolition process.

Following the commencement of decommissioning of the LPS, it is likely the first stage of demolition works would involve the removal of all accessible asbestos from the equipment prior to removing structures. This would include the removal of asbestos ash transfer pipelines and asbestos contaminated soil to the Hazmat landfill. During this process, additional material will be removed from the borrow pit area to be used to cap and shape the Project area for either the re-establishment of sustainable vegetation or for the establishment of a safe, stable and non-polluting landform suitable for the establishment of a proposed Energy Hub (or other beneficial uses). Other demolition works may be carried out to remove redundant infrastructure within the Project site while the LPS is still generating electricity.

Fundamental relationships and dependencies exist between the power station demolition and rehabilitation works, the Hazmat landfill, and the construction and operation of the borrow pit area. Each project component has an integral role to ensure the safe and efficient closure of the LPS and in preparation of the site for future projects associated with electricity generation or other beneficial uses of the land.

The LPS currently operates under existing use rights and several development approvals, many of which are up to 50 years old. This Project presents an opportunity to adopt a holistic and contemporary approach to the demolition and rehabilitation of the Project area via one contemporary SSD approval.

The proposed approach would minimise environmental impacts in a number of ways. Onsite disposal of asbestos and the utilisation of onsite material for capping and landform works minimises off site vehicle movements, which would reduce fuel consumption and transportation emissions and other associated amenity impacts.

The proposed location of the borrow pit is in a previously disturbed area where the former Drayton Coal Mine established an out-of-pit mine overburden dump in the 1990's. Use of this location limits impacts to undisturbed locations both on and offsite.

The co-location of the Hazmat disposal facility in the proposed borrow pit area maximises the use of disturbed areas which are suitable for the disposal of hazardous material generated during demolition. Onsite disposal also diverts waste from other landfills. Utilisation of the readily available mine spoil to cap the LAD presents an opportunity to safely cap the LAD without the need to import material from other sources, thereby significantly reducing associated environmental and social impacts.

Options analysis has confirmed that onsite disposal of asbestos in the proposed Hazmat landfill and sourcing of suitable material for capping and landform works are the most feasible options, based on social, environmental and economic considerations.

While a final land use for the entire LPS site has not yet been confirmed, and is likely to vary across the site, the intent is to make the site viable for industries which are complementary to its current use and therefore will not inhibit any future compatible land use(s).

A number of project's being investigated are currently at the feasibility analysis stage and are likely to focus on waste to energy, solar thermal, storage/dispatch and other emerging technologies associated with electricity generation. AGLM proposes to use part of the LPS site for a Battery Energy Storage System (**BESS**) as part of the Liddell Battery and Bayswater Ancillary Works Project, subject to a separate approval (SSD-9679). Similarly to SSD 9679, future projects proposed within the 'Energy Hub' will require separate planning approval

AGLM proposes to continue investigation and consultation during the EIS process to define the final landform and rehabilitation requirements for future complementary redevelopment of the LPS site.

Matters for consideration in the EIS

Key issues for consideration in the EIS and the proposed level and scope of assessments were identified using the DPIE's draft Scoping Worksheet. The relevant matters and impacts proposed for detailed consideration in the EIS include land use, soil, contamination, waste management, hazardous substances and dangerous goods, surface water, groundwater, biodiversity, Aboriginal heritage, air quality and greenhouse gas (**GHG**), noise and vibration, social, economic, traffic and transport, visual amenity. Appropriately qualified specialists would be commissioned to conduct the required impact assessment studies for the EIS.

Stakeholder engagement

The Project is in its early development stage and environmental assessment is proceeding in parallel with the design and feasibility considerations.

AGL has undertaken consultation regarding the LPS closure and transition since late 2017, engaging with industry stakeholders, local, State and Federal governments, research and development institutions as well as community groups.

Key Project stakeholders include:

- Government (Federal, State and Local)
- Local industry and businesses
- Employees
- Neighbours and infrastructure owners
- Aboriginal stakeholders (Traditional owners)
- Local community

Project-specific community and stakeholder consultation is in its early stages for the Project and it is anticipated that concerns would include social and amenity impacts, remediation and rehabilitation, options considered and local jobs.

AGLM would develop a consultation plan for the EIS once SEARs are received and the outcomes of consultation would inform the project design and be included in the EIS and relevant technical studies.

Assessment process

The Project is in the early stages of the comprehensive assessment and approval process. This Scoping Report accompanies AGLM's request to the Secretary of DPIE for SEARs. It is expected that DPIE will circulate it to the relevant government agencies and invite them to recommend assessment requirements. The Secretary for DPIE will then issue the SEARs for the Project, which will identify the matters that must be addressed in the EIS.

Components of the Project's environmental assessment have already commenced in the form of specific technical investigations and feasibility studies. These will continue as AGLM undertakes more detailed impact assessments and develops environmental mitigation, management, monitoring and offset measures to enhance the Project's benefits and address any impacts.

The assessments will be prepared in accordance with relevant guidelines, policies and assessment requirements issued by DPIE, and in consultation with government agencies and other stakeholders. The findings will be documented in the EIS for the Project.

The details of the Project will continue to be developed and defined during development of the EIS in response to the outcomes of ongoing investigations, studies and stakeholder consultation. The EIS will accompany AGLM's development application for the Project and will be made publicly available for review and comment.

1. Introduction

Liddell Power Station (**LPS**) was commissioned in 1971 and operates as part of an integrated power generation complex located near Muswellbrook, NSW. The complex also incorporates the BPS (commissioned in 1985), Hunter Valley gas turbines and a range of supporting water supply, water management, coal ash management, coal supply, power supply and control system infrastructure. AGL acquired these assets from the NSW Government in September 2014 and in doing so formed the subsidiary AGL Macquarie Pty Limited.

AGL has publicly announced an intention to transition towards a low-carbon future and has committed to the closure of its coal fired power stations at the end of their operating life. AGL has developed and published plans and guidance for its approach to asset retirement and transition to low emissions technology.

To support the proposed closure strategy of LPS, AGLM (the proponent) is now seeking SSD approval to undertake. The Project aims to rehabilitate the operational areas of the site to achieve a safe, stable and non-polluting landform in preparation for the proposed future redevelopment of the LPS site as an Energy Hub (or other beneficial uses of the land). The SSD application for the Project does not seek consent for any future land use of the LPS site.

1.1 Proponent details

AGLM (ABN 18 167 859 494) is the owner and operator of LPS and is the proponent for the Project. AGLM is owned by AGL and forms a key component of the company's generation portfolio.

The proponent's address is:

AGL Macquarie
Level 24, 200 George Street
Sydney NSW 2000

The proponent's nominated contact is:

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Private Mail Bag 2
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Level 3 GHD Tower, 24 Honeysuckle Drive
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2. Project details

2.1 Site details

The Project area encompasses three main areas:

1. LPS infrastructure area
2. LAD
3. The borrow pit area and Hazmat landfill which are connected by a pipeline and haul road corridor.

All these areas collectively form the Project area. While the LAD is located within the Project area, AGLM is not seeking approval for the closure and rehabilitation of the LAD, which is approved under DA 1/2011. AGLM propose to consolidate DA 1/2011 into the Project approval as described further in Section 2.4.1. The Project would however include areas surrounding the LAD, such as drainage works and other infrastructure.

The Project area is depicted in Figure 2-1 and Figure 2-2. The total area of the Project is approximately 960 hectares (**ha**) of which approximately 165 ha is proposed for redevelopment associated with the establishment of an Energy Hub (or other beneficial uses of land), which is shown as the LPS infrastructure area on Figure 2-2. The remaining approximately 795 ha of the Project area is proposed for biodiversity and ecosystem functions, with the exception of existing transmission line easements that traverse the Project area.

2.1.1 Liddell Power Station infrastructure area

LPS and associated infrastructure is located in the eastern portion of the Project area between the New England Highway to the west and Lake Liddell to the east. Land to the west and south of the LPS comprises, electricity infrastructure associated with power generation/ distribution, coal storage and associated transportation infrastructure.

2.1.2 Liddell Ash Dam

The LAD is situated west of the New England Highway and LPS, directly north of BPS and east of Maxwell Infrastructure (formerly Drayton Coal Mine). The LAD is approved under DA 1/2011, which would be surrendered subject to consent being granted for the Project. The continuation of the LAD as approved under DA 1/2011 would form part of the Project and no further assessment is required (see Section 3.3.3).

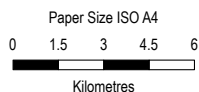
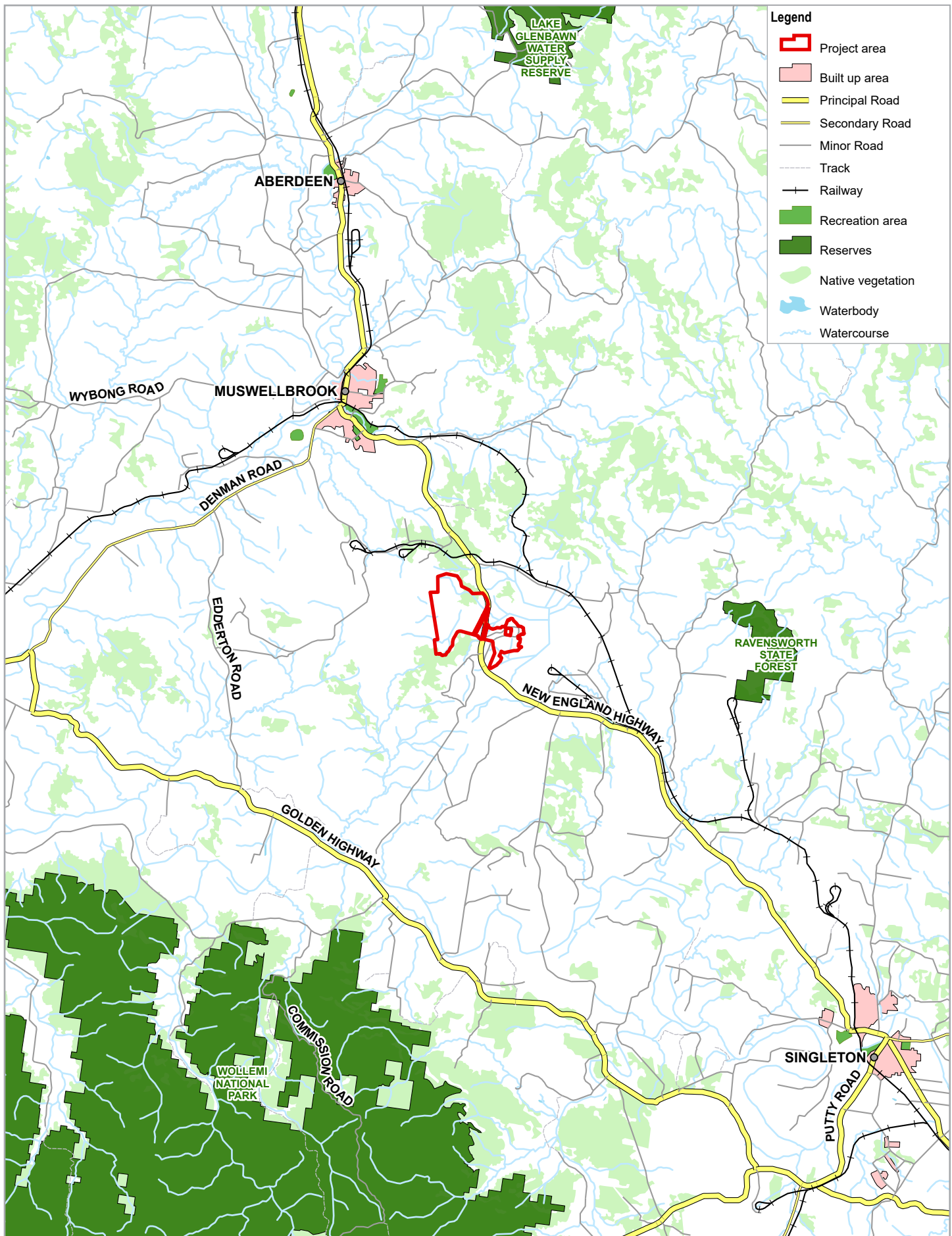
2.1.3 Borrow pit area and Hazmat landfill

The proposed borrow pit area and Hazmat landfill is located immediately north of the LAD and constitutes an existing material emplaced on AGLM land approximately 30 years ago by the former Drayton coal mine operations (now Malabar Coal) under DA 9/90 granted by Muswellbrook Shire Council. This area has been rehabilitated with grasses and a stand of larger, planted vegetation.

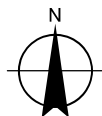
2.2 Land ownership

The majority of the Project area is owned by AGLM and is located along the New England Highway within the Muswellbrook Local Government Area (LGA), approximately 10 kilometres (km) southeast of the town of Muswellbrook see (Figure 2-1). A small area of the Project area is situated on Transport for New South Wales (TfNSW) land where the coal ash transfer pipelines are situated along with associated access road. The Project area on AGLM land comprises the following lots:

- Lot 2 DP774681
- Lot 11 DP247944
- Lot 19 DP247944
- Lot 18 DP247944
- Lot 19 DP752486
- Lot 18 DP752486
- Lot 2 DP966589
- Lot 2 DP1022827
- Lot 116 DP752486
- Lot 162 DP752486
- Lot 163 DP752486
- Lot 601 DP1019325
- Lot 2 DP1095515
- Lot 1 DP1095515
- Lot 2 DP1193252
- Lot 4 DP1193430
- Lot 162 DP752486
- Lot 163 DP752486
- Lot 2 DP1095515



Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56

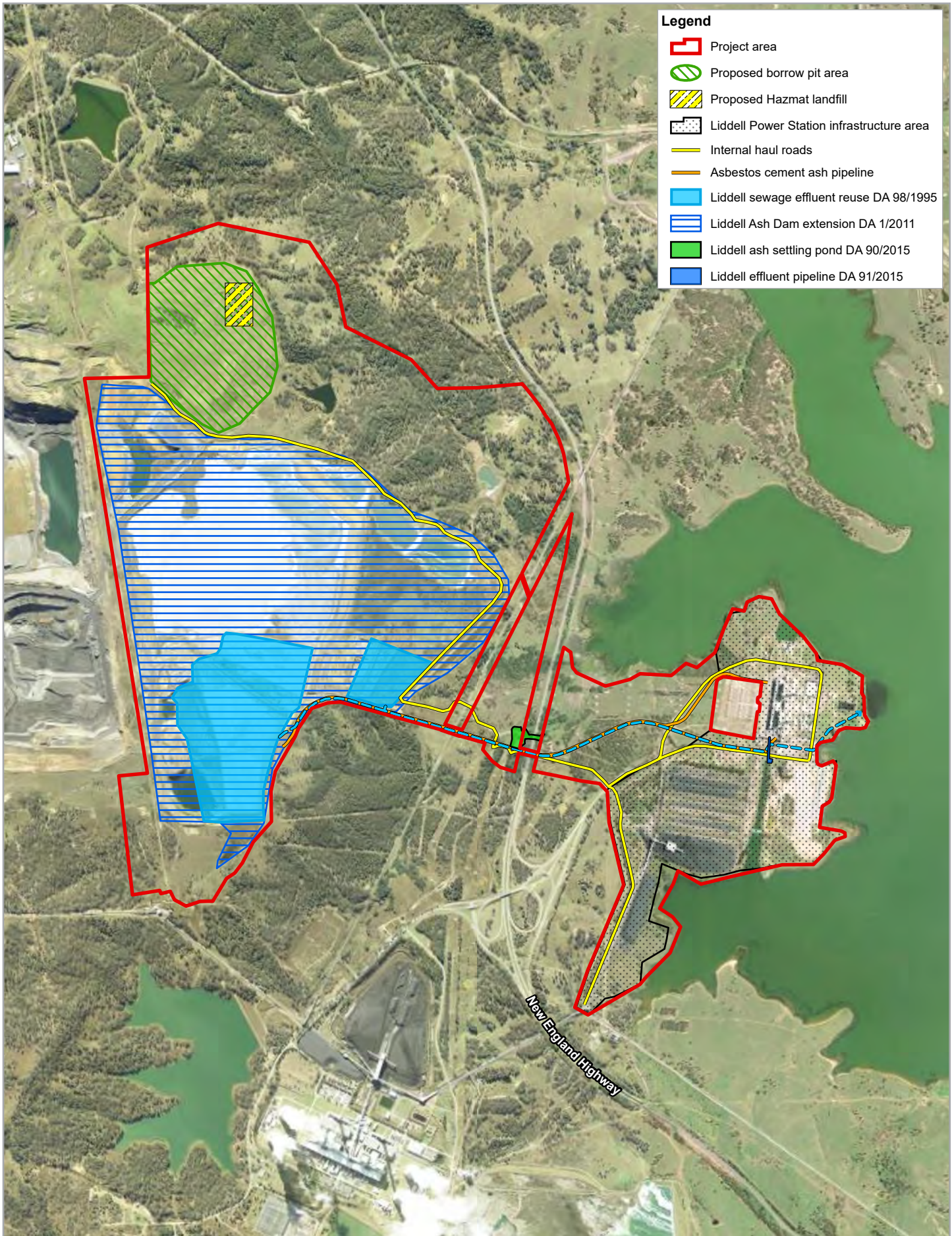












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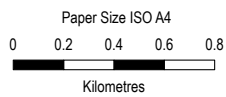
Project No. 12532502
 Revision No. 0
 Date 17/06/2021

Project locality

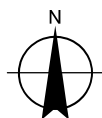
FIGURE 2-1



- Legend**
-  Project area
 -  Proposed borrow pit area
 -  Proposed Hazmat landfill
 -  Liddell Power Station infrastructure area
 -  Internal haul roads
 -  Asbestos cement ash pipeline
 -  Liddell sewage effluent reuse DA 98/1995
 -  Liddell Ash Dam extension DA 1/2011
 -  Liddell ash settling pond DA 90/2015
 -  Liddell effluent pipeline DA 91/2015



Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



AGL Macquarie Pty Limited
Liddell Future Land Use and Enabling Works
 Scoping Report

Project No. **12532502**
 Revision No. **0**
 Date **17/06/2021**

The Project

FIGURE 2-2

2.3 Description of the project

2.3.1 Project overview

This Project supports the closure strategy of the LPS to demolish the power station, as well as associated infrastructure, and rehabilitate the site.

The decommissioning component of the Project represents one of the final stages of the electricity generating project life cycles for LPS.

Decommissioning involves taking the power station from an 'operational' or 'energised' state to a 'cold, dark and dry' state where fuels, chemicals and energy sources are removed and/or disconnected from the power station. This process is not considered to be an intensification of activity nor the carrying out of new development that would require consent under the EP&A Act. As such, it is considered that existing use rights apply to the decommissioning stage and additional approvals are not required (and decommissioning is therefore not part of this project for which consent is sought). The decommissioning process will not generate waste that will require disposal in the proposed Hazmat landfill.

Following decommissioning, the Project involves demolition and removal of the power station and associated infrastructure. Demolition and rehabilitation of the site will be carried out to enable the proposed future use of the LPS site as an Energy Hub (or other beneficial uses of the land). The proposed borrow pit would also support ongoing progressive rehabilitation of the LAD prior to closure of Liddell and will continue post closure of the LPS. Some demolition works may be carried out to remove redundant infrastructure within the Project site while the LPS is still generating electricity.

The Project is not seeking approval to rezone the LPS site, rather the intent is to make the site viable for industries and other beneficial uses which are complementary to its current zoning, which is SP2 - Infrastructure associated with 'power generation'. As such AGL is continuing to explore options that are permissible within the current zoning and is proposing to establish the site as an Energy Hub in line with the *NSW Government Electricity Infrastructure Roadmap 2020*, various local council strategies as well as the *Hunter Regional Plan 2036*. Strategic planning for the Liddell site and surrounding buffer lands within the AGLM landholding is currently under development, focusing on the extents of land that can be redeveloped, how to leverage off existing infrastructure and establishing wildlife corridors in areas of rehabilitation such as the LAD.

A number of these projects are currently at the feasibility analysis stage and are likely to focus on energy generation, storage/dispatch, waste to energy, solar thermal, and other emerging technologies associated with electricity generation (or other beneficial uses).

Consent is not being sought for future projects proposed within the Energy Hub, or a change of use, and as such does not form part of this SSD application.

The Project involves the following key elements:

- Construction and use of a 'borrow pit area' for the extraction of material for the use as wall building material for the final stages of operation of the LAD, capping of the LAD and across the LPS site to enable future land use;
- Construction and use of a hazardous materials disposal facility (termed the 'Hazmat landfill') which would be utilised to dispose of contaminated soil and asbestos containing materials from demolition of the LPS and its associated infrastructure;
- The demolition of the LPS and redundant associated infrastructure; and
- Rehabilitation of landform and revegetation of the LPS site.

In addition, it is proposed as part of the SSD approval for the Project to consolidate and modernise existing relevant consents related to the LPS site.

The capital investment value (**CIV**) of the Project is expected to be greater than \$30 million.

2.3.2 Borrow pit area

The proposed borrow pit area would allow for the extraction of up to 15 million cubic metres (m^3) of capping material and consist of an approximate maximum disturbance area of 62 ha. The borrow pit area is to be constructed in an area of AGLM owned land north of the LAD that has previously been impacted by mining operations.

Specific extraction methods and excavation depth are currently being confirmed but would be dependent on the material requirements for LPS and BPS. Preliminary assessment of the material requirements for LPS and BPS has identified the need to extract approximately 15 million m^3 of material from the proposed borrow pit. Assuming extraction from the proposed borrow pit commenced in 2023 and rehabilitation works at LPS and BPS is completed by 2040, this is the equivalent to average annual extraction of up to approximately 882,000 m^3 of material. The Project would be refined throughout the assessment process to achieve a safe, stable and productive final landform and to avoid areas of higher risk of spontaneous combustion.

Establishment of the proposed borrow pit area would generally involve the following:

- Delineation of the borrow pit area using survey pegs or similar
- Installation of erosion and sediment controls
- Upgrade of internal heavy vehicle tracks
- Weed management prior to stripping topsoil
- Topsoil stripping from the proposed borrow pit area and stockpiling for later reuse
- Extraction of up to 15 million m^3 of material from the borrow pit area
- Transport of excavated material to the LAD and other required locations within the Project area
- Final landform contouring and rehabilitation

The borrow pit area would be designed to be extracted in stages using a top-down approach – i.e. material from the top is excavated initially, and excavation progresses down into the material and into natural ground in subsequent stages. This approach reduces the likelihood of any slope stability issues that could be caused by excavation of the toe of the stockpile.

The material extracted from the borrow pit may also be used for civil construction works and rehabilitation activities at BPS such as the Bayswater Ash Dam Augmentation (**BWAD**) and capping. This material would be transported to other areas within the complex via existing internal haul roads. It is not envisaged that the use of any external roads would be required to haul the material to other areas of the AGLM site.

AGLM has submitted an application to Muswellbrook Shire Council to modify DA 1/2011, to source material from the borrow pit area in the short term. The modification is currently under assessment and therefore not yet approved.

2.3.3 Hazmat landfill (Asbestos)

It is proposed to construct a Hazmat landfill within the excavated area of the borrow pit. The Hazmat landfill would be operated during demolition and rehabilitation to provide for the safe and efficient disposal of asbestos containing materials (**ACM**) and asbestos contaminated soils from the site. ACM and asbestos contaminated soils would be transported to the Hazmat landfill via existing internal haul roads.

The total volume of hazardous materials from the Project area to be processed at the facility is estimated to be 14,000 m³, or approximately 28,000 tonnes (**t**), of asbestos waste generated during demolition and rehabilitation works.

Containment cells for other contaminated soils from the site may be created based on the outcomes of future contamination studies and remediation plans. As the demolition and rehabilitation of the BPS progresses, the Hazmat facility would also be utilised to accommodate the disposal of an estimated further 7,000 m³ of asbestos waste.

2.3.4 Demolition of Liddell Power Station and associated infrastructure

To enable redevelopment, the built infrastructure made redundant by the closure of the LPS would be demolished. This infrastructure would include these elements of LPS plant:

- The turbine house including turbines, generators, turbine auxiliary equipment
- The boiler house including boilers, economisers, coal bunkers, coal mills, and boiler auxiliary equipment
- The dust plant baghouses, ID fans and gas ducts
- Flue gas stacks
- Transformers, and power systems
- The electrical and mechanical plant from the cooling water pumping station (as water levels in Lake Liddell allow)
- The ash disposal plants, ash disposal pipelines and ash water return systems
- The coal supply system including coal conveyors, bins, coal yards, stackers and reclaimers and all associated switch yards and switch rooms.
- The water treatment plant, chemical storage plant, chemical dosing plants, hydrogen plant and distribution pipework.
- The fuel oil tank farm and vehicle fuel bowsers
- The Liddell Solar Arrays
- Ancillary buildings including offices, workshops, storehouses, amenities, roads and carparks where not suitable for re-use.
- Other associated ancillary infrastructure not required beyond closure for future land use.

Lake Liddell and the associated dam wall, discharge and pumping infrastructure remains an integral part of the BPS cooling water system and therefore does not form part of this Project scope. Civil structures associated with cooling water intake and outfall would be left in place while the lake remains in use as the water level in Lake Liddell will not enable their removal.

Materials from the demolition process would be recovered and recycled where practical. This would involve the separation of metals and concrete from other construction wastes. Scrap metals would be sold off site while clean waste concrete would be crushed and re-used in site rehabilitation works.

Post demolition, the disturbed site areas would be rehabilitated as described in Section 2.3.5.

The demolition and rehabilitation of the LPS site is anticipated to take a number of years with the bulk of the works taking up to approximately four years. It is anticipated that Project plans would be structured in a manner that peripheral plant areas, such as the coal plant or solar arrays, could be accelerated to allow redevelopment to occur ahead of the main power station site if determined necessary.

2.3.5 Rehabilitation and final landform

A detailed rehabilitation strategy for the Project would be developed in consultation with stakeholders and with consideration of the detailed environmental investigations undertaken as part of the EIS. The final rehabilitation strategy would consider outcomes of strategic planning currently being undertaken and following an open and consultative approach that aligns with stakeholder expectations and considers relevant industry standards. Indicative rehabilitation activities for the LPS, LAD, borrow pit area and Hazmat landfill are described below.

Liddell Power Station rehabilitation

Post demolition, where relevant the disturbed LPS site areas would be rehabilitated to a state suitable for future redevelopment consistent with the current zoning. This is anticipated to involve the management of any contaminated soils exceeding commercial / industrial land use criteria, to enable ongoing electricity generating works associated with the Energy Hub (or other beneficial uses of the land), as well as the implementation of stabilisation, drainage works and suitable groundcover such that the site is safe and non-polluting for the period prior to redevelopment. This is anticipated to largely involve the capping of the sites using recycled crushed concrete or earth material from the borrow pit area.

For land areas where no future commercial / industrial use is identified the area would be rehabilitated to as close as practical to the pre-existing state.

Liddell Ash Dam closure and rehabilitation

The closure and rehabilitation of the LAD is approved under DA 1/2011 which is proposed to be consolidated into this SSD approval and then surrendered (refer Section 2.4.1). Additional works not currently approved under DA 1/2011 are anticipated to be undertaken prior to and following decommissioning of the LAD to manage surface water and maintain the structural integrity of ash retaining structures. This is likely to involve works on the relevant dam walls, Skimmer Dam and associated channel, water management and drainage improvements to the south west of the LAD and removal of sections of the LAD return water lines. Further detail on the proposed works would be provided in the EIS.

Borrow pit area and Hazmat landfill

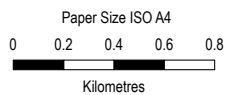
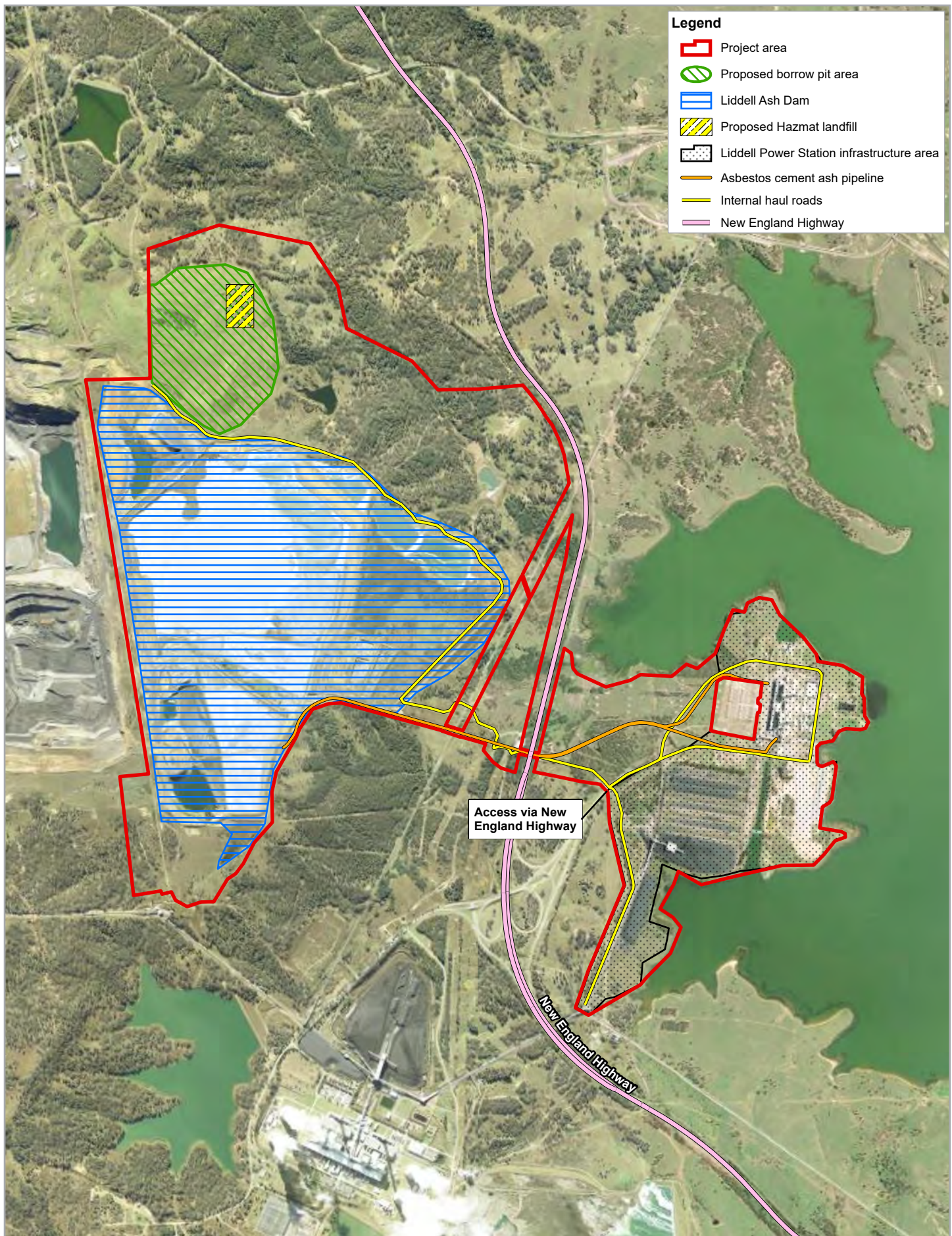
It is anticipated that the borrow pit area and Hazmat landfill would be rehabilitated to a safe and non-polluting landform. The proposed rehabilitation strategy would be consistent with relevant legislation, standards and guidelines, community and government expectations and will be addressed as part of the EIS process.

2.3.6 Utilities and services

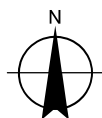
Utility and infrastructure relocations are not proposed as part of the Project. Consultation with utility and infrastructure owners would continue throughout the EIS and post-approval phases of the Project to ensure impacts are managed appropriately as required.

2.3.7 Site access

Access and parking would remain consistent with the current approved arrangements for the LPS and LAD. External access to the site would be via the existing access to the LPS via the New England Highway. Existing internal haul roads, including the existing highway underpass, would be utilised to access and transport materials to and from the various components of the Project, including material from the borrow pit area to the LAD and other rehabilitation areas as well as ACM and asbestos contaminated soil to the Hazmat landfill for disposal. A new haul road or upgrade of existing access roads may be required to connect the borrow pit area to existing access roads. External and internal access routes are shown in Figure 2-3.



Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



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Site access

FIGURE 2-3

2.3.8 Construction activities and facilities

Existing facilities would be utilised where practicable to minimise any requirement for additional construction. Should additional facilities, such as construction offices, parking areas, stores and laydown areas, equipment assembly areas, fuel facilities, power, communications or water services be required, they will be located within previously disturbed.

Construction activities would be guided by a Construction Environmental Management Plan (**CEMP**) to ensure work is carried out in accordance with the Project's environmental management obligations. Detailed work methodologies would be determined during detailed design and construction/demolition planning.

A range of plant and equipment would be used as part of the Project. The Project contractors would determine the final equipment and plant requirements. An indicative list is provided below:

- Concrete crushing plant
- Excavators, including specialised demolition attachments, such as grapples, pulverisers and shears
- Bulldozers
- Wheeled loaders
- Smooth drum and Pad foot rollers
- Skid steer loaders
- Dump trucks
- Cranes
- Backhoes
- Light vehicles

2.3.9 Workforce

The demolition and rehabilitation workforce is expected to peak at approximately 75 to 100 full time equivalent (**FTE**) personnel. Local contractors and employees would be utilised where possible. A more definitive estimate of the number of personnel required for the Project would be determined during the preparation of the EIS.

2.3.10 Work hours

It is anticipated that construction would be largely carried out during standard construction hours:

- Monday to Friday: 7.00 am to 6.00 pm
- Saturday: 8.00 am to 6.00 pm
- Sundays and public holidays: no work

Notwithstanding this, the *Interim Construction Noise Guideline* (DECC, 2009) acknowledges that the following activities may need to be undertaken outside the recommended construction hours:

- Emergency work
- The delivery of oversized plant or structures
- Works for which it can be demonstrated that there is a need to operate outside the recommended standard hours.

2.3.11 Work schedule

The closure and demolition of the LAD and LPS are anticipated to take approximately ten years. Ongoing rehabilitation and maintenance works are anticipated to continue for ten years thereafter. The work schedule will be assessed during development of the EIS.

2.4 Project rationale and alternatives considered

2.4.1 Project rationale

AGL has publicly announced an intention to transition towards a low-carbon future and has committed to the closure of its coal fired power stations at the end of their operating life. AGL has developed and published plans and guidance for its approach to asset retirement and transition to low emissions technology. In line with reporting requirements, AGL has informed the AEMO of its plan to close LPS, with generation unit retirement schedule being one unit in April 2022 and the remaining three units from April 2023.

Consolidation of existing consents

LPS was constructed under a Ministerial Declaration. More recently development consents have been granted by Muswellbrook Shire Council (**MSC**) for ancillary activities associated with the LAD, sewerage effluent reuse, ash line settling pond and water treatment plant effluent discharge to the outfall canal (these existing development consents are summarised in Table 2-1 and provided in full in Appendix B. See Section 3.3.3 for further detail). It is proposed to consolidate these existing development consents into a single, contemporary SSD planning approval which would provide a clear set of criteria and standards for the holistic management of the Project. The existing development consents would be surrendered subject to consent being granted for the Project.

Table 2-1 Development consents to be consolidated

Development application number	Consent authority	Description
DA 1/2011	MSC	Extension of Liddell Ash Dam
DA 98/1995	MSC	Liddell sewerage effluent reuse
DA 90/2015	MSC	Liddell ash line settling pond and associated Infrastructure
DA 91/2015	MSC	Installation of an effluent pipeline from the Liddell Power Station water treatment plant to the outfall canal

Integrated Project approach

Due to the high levels of interdependency between the elements of the Project scope it is intended to seek a single approval for the Project works. This planned integration of the Project planning would cater for both the inherent interdependence of the Project elements and allow for the most sustainable, safe and efficient execution of the works. Figure 2-4 represents the physical and logistic relationship of the Project scope.

The primary purpose of the borrow pit area is to provide the required material for the final stage of operation and subsequent closure and rehabilitation of the LAD and other Project areas. These activities include the progressive construction and rehabilitation earthworks required to achieve the final landform and management of environmental risk associated with decommissioning LAD and the LPS site.

The 'operating-phase' of the borrow pit area would excavate an area suitable for use as the Hazmat landfill within the borrow pit area. This creates an inherent relationship between the current operational consent for the LAD, the borrow pit area and the Hazmat landfill.

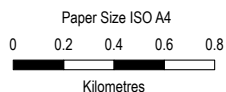
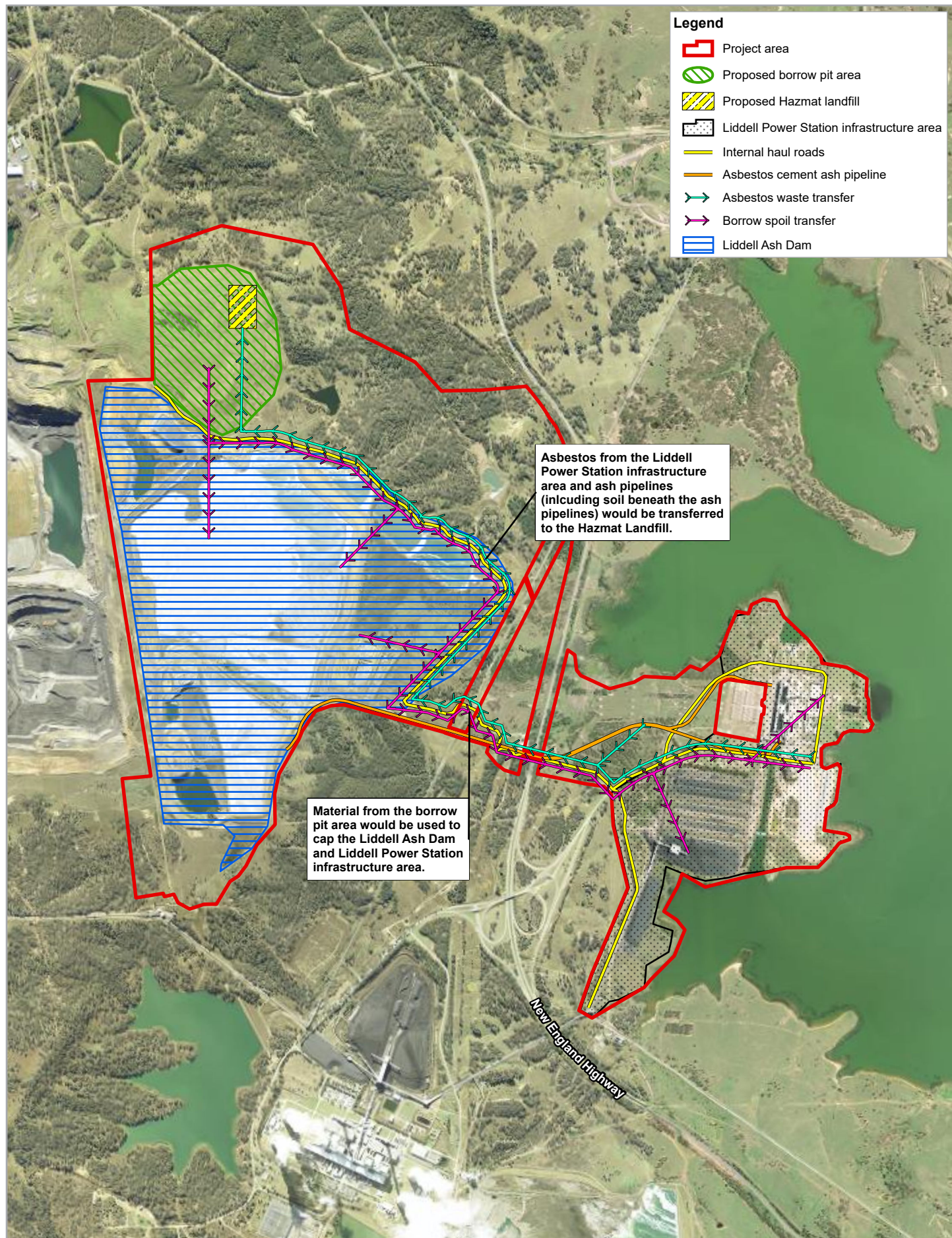
Following the commencement of decommissioning of the LPS, the first stage of the plant demolition works will involve the removal of all accessible asbestos from the equipment. Onsite disposal of asbestos wastes within the Hazmat landfill allows for the required hazardous materials being transported to be restricted to the Project area therefore avoiding access to public roads. This approach eliminates unnecessary community risk as well as being efficient for transport fuel use. Asbestos waste will continue to be removed from the power station structures and equipment during the demolition, processing and sorting of materials for recycling. Based on the current proposed schedule, these materials would be processed over an approximate three year period. As demolition of the BPS progresses the Hazmat facility would also be utilised to accommodate the disposal of an estimated further 7,000 m³ of asbestos waste.

Another significant element of the Project is the disassembly and disposal of the four asbestos pipelines running the 3.3 km between LPS and the LAD. This process would be followed by the removal and disposal of asbestos contaminated soils under these pipelines. The asbestos pipelines and asbestos contaminated soils would be disposed of in the onsite Hazmat landfill. Where necessary, borrow pit material would in turn be used in rehabilitation works where the asbestos containing soils have been removed from the pipeline route in preparation for revegetation.

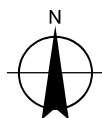
Asbestos disposal from the LPS would continue after the removal of structures, as the site is rehabilitated. This process would also involve the removal of underground asbestos cement pipes and associated contaminated soils for disposal in the Hazmat landfill.

Following demolition and rehabilitation activities within the LPS area, it is anticipated that borrow material would be required in some areas of the Project area for the reestablishment of the site for future redevelopment.

Fundamental relationships and dependencies therefore exist between the power station demolition and rehabilitation works, the Hazmat landfill, and the construction and operation of the borrow pit area. They are inherently interrelated by their purpose, the layout of the Project area and the logistics of the integrated Project approach. These elements are also interdependent in achieving the most efficient, safe and environmentally sustainable approach to the rehabilitation of the Project area and to establish the LPS site as an Energy Hub (or other beneficial uses of the land).



Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



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Integrated project plan

FIGURE 2-4

2.4.2 Alternatives considered

AGLM has investigated a number of alternatives to each main element of the Project.

Construction and use of a borrow pit area

Existing sources of material suitable for capping of the LAD, previously supplied by the former Drayton Coal Mine, will be exhausted in approximately 12 months or less. AGLM has investigated sourcing suitable material from an off-site location or identifying alternatives onsite. The proposed on-site borrow pit area was identified based on a number of key considerations:

- The onsite area is located on AGLM owned land north of the LAD and requires no external vehicle movements
- The onsite area has been previously disturbed by the establishment of a mine spoil dump that was established in the 1990s and rehabilitated to the standards of the time by the former Drayton Coal Mine and consists of a grassy mound with multiple terraces.
- The onsite area meets the material specifications required for its intended use
- Off site sources would require approximately 245,000 heavy vehicle movements on the New England Highway and local roads
- Uncertainty in identifying a source(s) of clean fill material with soil characteristics required for capping specification in the volume (up to 15 million m³ of material) and timeframes required.
- Options analysis demonstrates that utilising on-site source of material is the most feasible option

Construction and operation of a Hazmat landfill

AGLM considered off-site disposal or identifying a new onsite location for disposal. The proposed onsite Hazmat landfill was identified based on a number of key considerations:

- The proposed location of the Hazmat landfill within the proposed borrow pit area means that the landfill can be incorporated into the design of this area, reshaping and capping can also be incorporated into the rehabilitation of this area.
- The proposed location of the Hazmat landfill is located away from the proposed commercial / industrial development area, which minimises the risk of future disturbance.
- Onsite disposal would divert this waste from landfill and not significantly reduce capacity at landfill facilities that accept asbestos containing materials.
- Off-site disposal would require an estimated 28,000 t of asbestos waste for disposal requiring an estimated 2,700 transport movements by trucks on public roads. Truck movements would likely peak during the ash pipeline removal and remediation potentially requiring 10 to 20 truck movements per day.
- Anticipated community concern could be raised in regard to the transportation of asbestos on public roads and best practice is to seek to eliminate public risk entirely.
- Options analysis demonstrates that onsite disposal of asbestos waste material is the most feasible option.

Liddell Power Station demolition and rehabilitation works

AGLM have undertaken a number of investigations and initiatives to identify potential opportunities for use of the LPS site. Identified opportunities include:

- Power generation and energy storage developments for the LPS site in line with AGL corporate strategies
- Commercial / industrial redevelopment of the LPS site, which would:
 - Take best advantage of existing infrastructure
 - Minimise the cost of site rehabilitation
 - Contribute to replacing the economic output derived from the LPS
- Intensive food production on current suitable buffer lands (the LPS site itself is not being considered for intensive food production)

AGLM is continuing to explore options that are permissible within the current zoning of SP2-Infrastructure associated with 'power generation' and is currently proposing to establish the site as an Energy Hub. As an important component of the development of the LPS site as an Energy Hub or other beneficial use, AGLM sought development consent for the construction, operation and maintenance of a Battery Energy Storage System (BESS): SSD 9679 AGLM is currently developing a strategic plan for the LPS site and surrounding buffer lands within the AGLM landholding. The strategic plan is focused on the extents to which the site can be redeveloped, how to leverage off existing infrastructure such as water, energy connectivity, network transmissions and establishing wildlife corridors in areas of rehabilitation such as the LAD.

AGLM would continue development of the strategic plan and engage with government agencies, businesses and organisations during the EIS to identify any potential opportunities for the site and rehabilitation requirements.

2.5 Relationship to other major Projects and/or developments

2.5.1 Liddell Battery and Bayswater ancillary works

AGLM are currently progressing a SSD application (SSD-9679) that includes the Liddell Battery and Bayswater Ancillary Works to facilitate the efficient, safe and reliable continuation of electricity generating works within the AGLM landholding. The SSD application includes the proposed construction and operation of a grid connected Battery Energy Storage System (BESS) with a capacity of up to 500 megawatts (MW) and 2 gigawatt hour (GWh). The progressive increase in renewable generators within the National Energy Market (NEM) and transition from thermal generation necessitates the need for the BESS to provide storage and firming capacity to the NEM as well as additional services to assist grid stability including frequency control ancillary services.

2.5.2 Bayswater Power Station

LPS and BPS share significant supporting water, coal conveying, power distribution and transport infrastructure on the AGLM site. While LPS will be closed in 2023, BPS will remain a critical generation facility up until its planned closure in 2035.

Lake Liddell and the associated dam wall, discharge and pumping infrastructure remains an integral part of the BPS cooling water system and will be retained as part of the ongoing operation of BPS under existing development consents. Similarly, civil structures associated with cooling water intake and outfall will be left in place while Lake Liddell remains filled.

BPS has extensive asbestos cement pipe and asbestos contaminated soils to be managed during its operation and ultimate closure. As such the proposed Hazmat landfill would be critical to facilitate the efficient closure and related asbestos waste disposal associated with the BPS site.

The proposed borrow pit would also be utilised to supply or augment materials required for civil projects related to ongoing operations of BPS and closure activities such as capping and rehabilitation of BWAD. Use of this material on the BPS site does not form part of this Project and would be in accordance with the relevant approvals for those works. Extraction of material from this disturbed area of the LPS site results in significantly lower levels of environmental impact than extraction of materials from virgin borrow sites at BPS. Extraction of this required material from the previously disturbed LPS site can therefore offset the impacts to higher environmental value areas associated with greenfield borrow area activities on the BPS site. Extraction of this material for use in augmentation and rehabilitation of the BWAD (which is subject to a separate SSD application (SSD 9697)) would cost approximately \$15 million (in addition to the capital investment estimate for SSD 9697) and may avoid some of the Biodiversity Offset requirements of that Project.

2.6 Baseline information

2.6.1 Project setting and land use

The Project is located in the Upper Hunter Valley, set amongst land uses dominated by power generation, coal mining, livestock grazing and rural housing. The Project area is dissected by the New England Highway and high voltage electricity transmission lines. To the east and north east of the Project area respectively lies Lake Liddell, the Main North Railway Line and a mix of remnant vegetation and grazing land. Grazing land and remnant vegetation also exists extensively to the north of the site. The BPS is located immediately to the south of the site. Open cut coal mining is the dominant landscape feature to the south-east and west of the site.

The Project site is zoned SP2 – Infrastructure associated with 'power generation' in the *Muswellbrook Local Environmental Plan 2009 (Muswellbrook LEP)*, while surrounding land is predominantly zoned RU1 – Primary Production. A small portion of land to the north and east of Lake Liddell is Crown land zoned RE1- Public Recreation which includes Lake Liddell Recreation Area.

The New England Highway runs through the Project area and would provide access to the various project components by means of a dedicated internal road network designed to service AGLM facilities.

The closest residential area is the Antiene subdivision, which is located behind a ridge line around 3 km north of the Project area with the nearest receiver identified as being an isolated residence approximately 1.8 km to the north of the proposed borrow pit area.

All Project components are located within the catchment of Lake Liddell, located within the Hunter River catchment. Lake Liddell is an artificial operational water body constructed for the purposes of supplying cooling water to AGLM facilities.

2.6.2 Climate

The meteorological information presented in this section has been sourced from long-term data collected at the Bureau of Meteorology's (**BoM**) nearest operational weather stations.

Mean monthly maximum temperatures recorded at BoM Scone Airport weather station (station number 061363) between 1991 and 2020 range between 16.7 degrees Celsius (°C) in July to 31.9 °C in January. Mean monthly minimum temperatures range between 3.4 °C in July to 17.2 °C in January. Autumn and spring are generally mild with sporadic temperature fluctuations.

Based on the long-term climate statistics sourced from the BoM Doyles Creek (Wood Park) weather station (station number 061130) between 1920 and 2020, mean monthly rainfall in the area ranges between 77.6 millimetres (mm) in February to 35.8 mm in August, with most of the mean annual 639.9 mm of rainfall occurring between October and March.

Mean monthly wind speeds recorded at BoM Scone Airport weather station (station number 061012) between 1991 and 2020 are typically greater in summer and spring, ranging from 20.6 kilometres per hour (km/h) in November to 7.0 km/h in May and July. Winds are predominantly from the north west and south in the mornings and from the south, south east and north west in the afternoons.

2.6.3 Ambient air quality

A range of anthropogenic and natural sources including coal-fired power generation, coal mining, vehicle emissions, and wind-blown dust influence the air quality in the region surrounding the Project area. Specifically, the air quality is influenced by:

- Operational ash emplacement within the LAD
- Power generation activities at LPS and BPS
- Rehabilitation activities and earthworks at the adjacent Malabar coal mine
- Non-Project related traffic-generated emissions
- Open cut mining operations, including Ravensworth Mine Complex, Mount Arthur Coal, Hunter Valley Operations and Liddell Coal Mine.

Regional events such as bushfires and dust storms also periodically contribute to short-term elevated concentrations of suspended particulates.

2.6.4 Ambient noise environment

The ambient noise environment surrounding the Project area is currently influenced by ongoing material and ash emplacement within approved ash dam extension works, power generation activities at LPS and BPS, rehabilitation activities and earthworks at the adjacent Malabar coal mine, road and rail transportation and operation of the neighbouring open cut coal mines also influence the ambient noise of the local area.

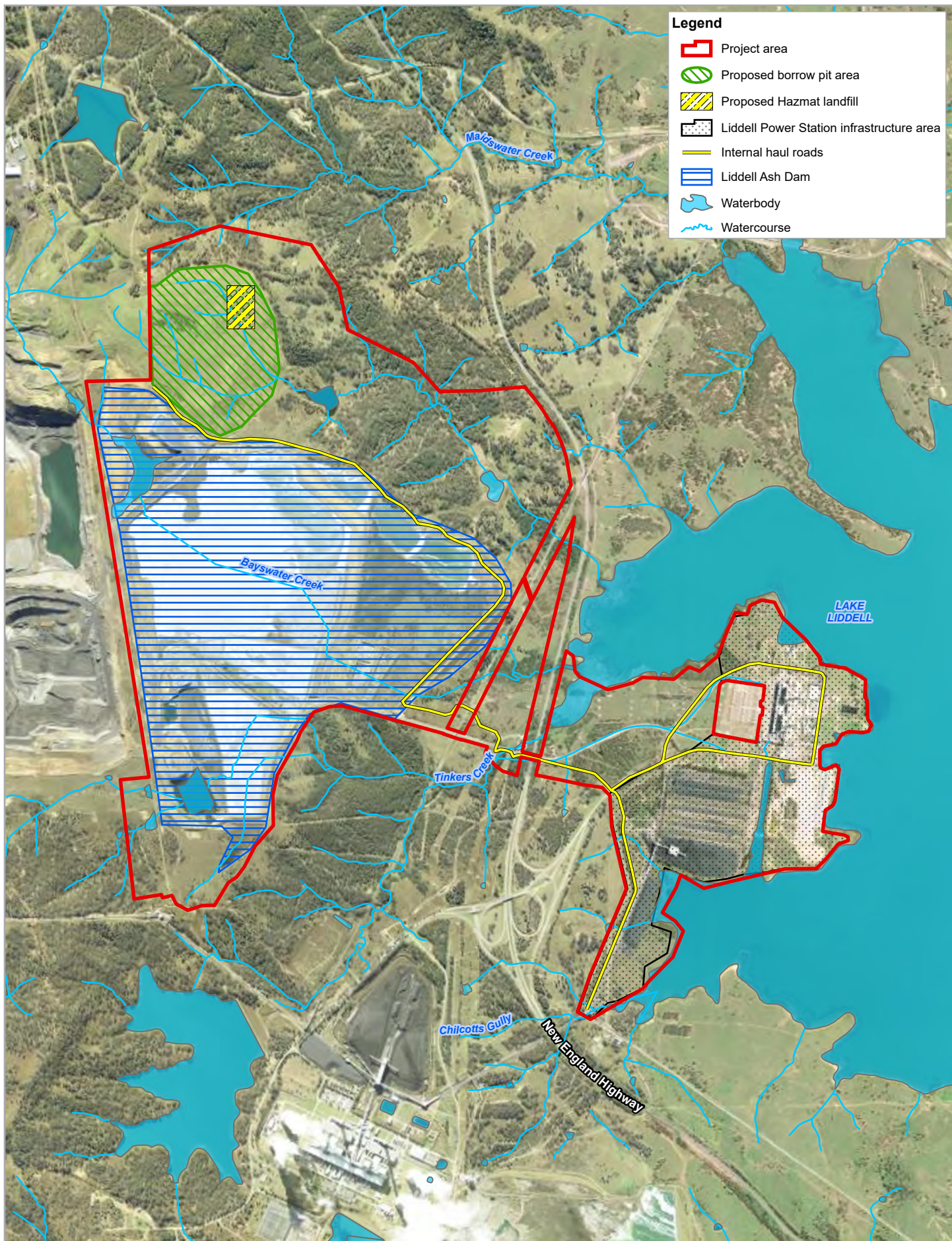
The nearest residential receivers are located approximately 1.8 km to the north off Thomas Mitchell Drive consisting of rural residences. Dense vegetation and topographic features provide a buffer between these residences and the Project area.

2.6.5 Surface water









The major surface water feature within the Project area is the LAD, which is located within the western portion of the Project area. The LAD stores ash, which is pumped as a slurry from LPS. After the waste products have settled out, the majority of the decant water from the LAD overflows through a spillway (Skimmer Dam Spillway) to Lake Liddell. The LAD is a “turkey’s nest” dam and therefore receives no surface water flows into the dam.

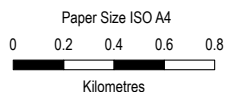
In addition to the LAD, there are other artificial lakes near the Project area, including Lake Liddell, located to the east. Lake Liddell was constructed for cooling and water storage in the 1960s and is located downstream of the LAD (AGL, 2018). Lake Liddell is operated as a part of the site's water management system with discharges only allowed under the Hunter River Salinity Trading Scheme (**HRSTS**). The majority of water in Lake Liddell is pumped from the Hunter River. Lake Liddell also receives water from a variety of sources including the LAD, Bayswater Ash Dam, cooling water and stormwater discharge from the LPS and BPS, overflow from the LPS and BPS coal handing settling ponds and catchment runoff (AECOM, 2016). A number of waterways traverse the Project area, including Tinkers Creek, which flows into Lake Liddell to the west of LPS. Several unnamed waterways are located to the north of the LAD and flow in an easterly direction into Lake Liddell.

Lake Liddell has historically been a recreational water source. The major hydrological feature in the Hunter Valley is the Hunter River, which is located approximately 12 km to the southwest of the Project area. Surface water features within the Project area are shown on Figure 2-5.

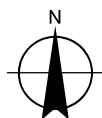


Legend

-  Project area
-  Proposed borrow pit area
-  Proposed Hazmat landfill
-  Liddell Power Station infrastructure area
-  Internal haul roads
-  Liddell Ash Dam
-  Waterbody
-  Watercourse



Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 56



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Hydrology

FIGURE 2-5

2.6.6 Groundwater

A review of data from AGLM groundwater monitoring sites (based predominately on the boundary of the LAD and therefore considered suitable for a general assessment of existing groundwater conditions in the Project area) indicate groundwater being encountered at depths ranging from 0.59 to 7.55 m below ground level (GHD, 2020a). The inferred groundwater flow is to the east towards Lake Liddell, which is consistent with the topography of this area.

A desktop hydrogeology assessment undertaken by GHD (GHD, 2020b) concluded that it is likely that shallow groundwater to the east of the LAD is being influenced by seepage from the LAD. Based on the groundwater flow direction, Lake Liddell is the likely groundwater receptor for groundwater within the Project area.

The groundwater has also likely been affected by current and historical mining activities, agriculture and possibly natural processes.

A search of the Australian Groundwater Explorer (BOM, 2020a) was undertaken to identify registered bores near the Project area. The search identified nine bores within an approximate five km radius.

Two of these bores were reported to be removed or non-functional (BOM, 2020a). The remaining bores are licenced as monitoring (4), commercial and industrial (2), water supply (1) and irrigation (1). Bore details are summarised in Table 2-2.

Table 2-2 Groundwater bore search

Bore	Latitude	Longitude	Bore Depth (m)	Purpose	Status
GW200743.1.1	-32.3672	150.9325	114	Monitoring	Non-functional
GW200745.1.1	-32.3672	150.9325	119	Monitoring	Unknown
GW024022.1.1	-32.3712	150.9618	3	Unknown	Removed
GW200746.1.1	-32.3683	150.9313	133	Monitoring	Unknown
GW053862.1.1	-32.3631	150.9286	99	Commercial and Industrial	Unknown
GW055208.1.1	-32.3173	150.947	53	Water Supply	Unknown
GW047486.1.1	-32.3568	150.9303	92	Commercial and Industrial	Unknown
GW200744.1.1	-32.3672	150.9325	196	Monitoring	Unknown
GW047690.1.1	-32.3212	150.9448	6.7	Irrigation	Unknown

2.6.7 Topography and landform

The Project area is situated in the undulating low hills of the Upper Hunter Valley. Ground elevation varies between 250 m Australian Height Datum (AHD) north of the LAD to approximately 140 m AHD at the New England Highway and LPS. Slopes range from 4 to 7 per cent (%), with long slope lengths and local relief is between 60 and 120 m.

2.6.8 Geology and soils

A review of the *Hunter Coalfield Regional 1:100,000 Geology Map* (Glen & Beckett, 1993) indicates that the eastern portion of the Project area containing LPS is underlain by Permian aged materials of the Mulbring Siltstone, with lithology summarised as siltstone, claystone and minor fine-grained sandstone. The western portion of the Project area containing the LAD and proposed borrow pit area is underlain by Permian aged materials of the Branxton Formation, with lithology summarised as conglomerate, sandstone and siltstone.

A review of the *Soil Landscapes of the Singleton 1:250,000 Sheet* (Lawrie & Kovac, 1991) shows that the Project area is underlain by the Liddell soil landscape. The Liddell soil landscape unit is characterised by undulating low hills and undulating hills in the Project area, with elevations ranging from 140 to 220 m and typical slope gradients of four to seven per cent. Key limitations of the Liddell soil landscape include moderate to high erosion hazard, high soil salinity and hardsetting. The Liddell soil landscape consists of fine sandy and silty clays with massive structure. Medium clay soils persist throughout the deeper soil horizons.

A review of the Australian Soil Resource Information System (**ASRIS**) on 17 February 2021, for acid sulphate soil (**ASS**) risk mapping, indicates that the Project site has a low probability of occurrence of ASS. As such, land management practices within the Project site are likely to be unaffected by ASS materials.

The land and soil capability (**LSC**) scheme assesses the physical capacity of land to sustain a range of land uses and management practices. Classification of land into classes on a scale of 1 to 8 identifies the types of land use that would be appropriate in each classification. Review of the online eSPADE mapping portal (DPIE, 2020a) indicates the LSC of the Project area is mapped as Class 5, which indicates the land has severe limitations for high impact land management uses such as agriculture.

3. Strategic and statutory context

3.1 Strategic location of the Project

The Project is located in the Upper Hunter Valley, set amongst land uses dominated by power generation, coal mining, livestock grazing and rural housing. The Project area is dissected by the New England Highway and high voltage electricity transmission lines. To the east of the Project area lies Lake Liddell, the Main North Railway Line and a mix of remnant vegetation and grazing land. Grazing land and remnant vegetation also occurs extensively to the north of the site. The BPS is located immediately to the south of the site. Open cut coal mining is the dominant landscape feature to the south-east and west of the site.

The regional centres of Muswellbrook, with a population of around 12,000 (ABS, 2016a), and Singleton, with a population of around 23,000 (ABS, 2016b), are located approximately 10 km to the north and 25 km to the south of the site respectively. These towns operate as employment hubs and service centres for the local and regional economies.

Given its setting amongst a backdrop of mining and power generation, and its proximity to existing road, rail and electricity transmission infrastructure and regional employment hubs, the Project site is ideally located to serve as a site for future commercial or industrial land uses. The brownfield nature of the site also complements these land uses and redevelopment opportunities such as the proposed Energy Hub.

3.2 Strategic policies

3.2.1 AGL Policies

It is widely recognised that electricity generation in Australia is undergoing a significant transition towards more distributed, intermittent generation sources. AGL recognises community and government concerns in relation to energy security, as highlighted in the Australian Energy Market Operator's 2017 Electricity Statement of Opportunities (AEMO, 2017).

The *AGL Sustainability Report 2017, Sustainable Business Strategy* (AGL, 2017b) recognises that approximately three quarters of Australia's current thermal generation fleet is beyond its original engineering design life, and as such there is a concurrent need to modernise and decarbonise Australia's electricity generation sector. As the generator of approximately 25% of the energy within the NEM, AGL has committed to playing a leading role in this transition.

Twelve coal fired power stations have closed in Australia in recent years, and whilst some have been mothballed, and their closure anticipated, none were closed with more than one year's notice. In contrast, AGL has provided advanced notice of its intention to close its coal fired power stations, with its strategic approach presented in its GHG Policy (AGL, 2015).

AGL recently added to its *GHG Policy* (AGL, 2015) with an updated *Climate Statement and Commitments* (AGL, 2020) confirming AGL's target of net-zero emissions by 2050 and recognising three major forces driving Australia's energy transition: customer demand, how communities act, and how technology evolves. AGL's Climate Statement outlines five commitments:

- **“Offer customers the option of carbon neutral prices across all our products** – we will match accelerating customer demand to support decarbonisation of the energy system with a growing range of carbon neutral options.
- **Support the evolution of Australia's voluntary carbon markets** – we will explore ways through which we can participate in mechanisms to generate and supply carbon credits.

- **Continue investing in new sources of electricity supply** – we will continue both direct investment and offtake agreements as we have with projects like Barker Inlet Power Station and Coppers Gap Wind Farm.
- **Responsibly transition our energy portfolio** – we will continue to run our coal-fired power stations responsibly, and support our people and communicate during transition.
- **Be transparent** – we will openly and transparently track our progress through our annual report and hold ourselves accountable through our remuneration structures.”

In 2016 AGL committed to a detailed strategic review of their approach to rehabilitation, recognising the increasing need to inform stakeholders on the approach to managing the risks and opportunities associated with rehabilitation and energy transition.

In 2017 AGL released *Rehabilitation: AGL’s approach to rehabilitation of power generation infrastructure* (AGL, 2017a). The report summarises the outcomes of the strategic review of rehabilitation requirements, and understanding the challenges associated with repowering, repurposing and rehabilitating large power generation sites. The report also outlines AGL’s commitment to evidence based, best practice site transition. It serves as a foundation for engagement with stakeholders and policy makers and provides a methodology to identify options for generation sites post closure.

This response to the closure of the LPS aims to deliver a smooth transition away from carbon-intensive electricity generation and deliver affordable, reliable power for the state of NSW. The Project, which includes the demolition and rehabilitation of the LPS and the proposed Energy Hub focused on energy generation, storage/ dispatch, waste to energy, solar thermal and other emerging technologies associated with electricity generation (or other beneficial uses of the land), forms a key component of AGL’s strategy to modernise and decarbonise its electricity generation portfolio and is in keeping with AGL’s current policies.

3.2.2 Hunter Regional Plan 2036

The *Hunter Regional Plan 2036* is the NSW Government’s endorsed strategy to guide the detailed economic, social and environmental planning in the Hunter Region to the year 2036.

Its vision is for the Hunter to be: “*The leading regional economy in Australia with a vibrant new metropolitan city at its heart.*”

To achieve this the following goals have been set:

- The leading regional economy in Australia
- A biodiversity-rich natural environment
- Thriving communities
- Greater housing choice and jobs

The overall vision of The Hunter Regional Plan 2036 is for the Hunter to be the largest regional economy in Australia. The Hunter drives around 28% of regional NSW’s total economic output and is the largest regional contributor to the State’s gross domestic product (**GDP**). It notes that the Upper Hunter will undergo a transition in the context of a changing industry environments, particularly in mining and power generation, and emerging trends in agribusiness.

Key Directions in the plan relevant to the Project include:

- Direction 4: Enhance interregional linkages to support economic growth
- Direction 5: Transform the productivity of the Upper Hunter
- Direction 9: Grow tourism in the region

- Direction 10: Protect and enhance agricultural productivity
- Direction 12: Diversify and grow the energy sector

Additionally, the *Hunter Regional Plan 2036-Implementation Plan 2016-2018* includes Direction 12.3 to diversify and grow the energy sector by promoting new opportunities arising from the retirement of coal fired power stations that enable long term sustainable economic and employment growth in the region. Direction 5.1 also focusses on preparing for the diversification and innovation of the economy in response to long term industry restructuring in coal and power generation and the growth in new high-technology primary industry, associated specialist knowledge-based industries and rural tourism.

The future commercial and industrial land use opportunities that would be provided following the decommissioning, demolition and rehabilitation of the Project area are complementary to Direction 12 and Direction 5 of the Regional Plan. The Project is also not inconsistent with any of the other Directions set out in the Regional Plan.

3.2.3 Muswellbrook Shire Council Community Strategic Plan 2017-2027

The *Muswellbrook Shire Council Community Strategic Plan 2017-2027* (Muswellbrook Shire Council, 2017) outlines the community's main priorities and vision for the future.

The Strategic Plan recognises the importance of the power industry to the Shire's economy and employment.

Job creation and job security were identified in the Strategic Plan as key economic issues for the Shire, with increased employment identified as important by the local community. The Project would support both direct and indirect job opportunities by the creation of jobs during the demolition and rehabilitation activities and through the opportunities that would likely be created as part of future commercial and industrial land uses on the LPS infrastructure area, following approval of subsequent development applications.

Supporting Commonwealth and State initiatives to reduce the human impact on climate change is a goal for the Strategic Plan. The decommissioning of LPS, one of the State's most carbon intensive industrial facilities, is well aligned with this initiative.

MSC also commissioned a review of the Muswellbrook LEP 2009 and published a Draft Discussion Paper in May 2017 for consultation. The stated purpose of the Muswellbrook LEP 2009 Review was:

"to investigate means in which the planning framework for the Muswellbrook Local Government Area (LGA) can facilitate economic diversification and economic development as well as providing a general overview that would seek to correct any current anomalies in the planning framework itself, ensure the statutory framework is consistent with the outcomes of existing strategy documents and also promote a planning framework that is reflective of best practice. The Review will inform amendments to the Muswellbrook LEP 2009 and its accompanying Development Control Plan".

The Muswellbrook LEP 2009 Review recognised the significant change and new opportunities for Muswellbrook and the larger Upper Hunter district including AGL notifying their intentions to retire both of the major coal fired power generators. The Review culminated in recommendations for strategic directions and actions of relevance to AGLM lands, as described in Table 3-1.

Table 3-1 Muswellbrook LEP 2009 Review strategic directions and actions of relevance

Strategic direction	Actions	Relevance to the Project
<p>8. Sustainable Energy - Continue the production and distribution of sustainable energy from the AGLM site, based on a shift to alternative energies such as biomass, gas and/or pumped hydro sources.</p>	<p>Council adopt a policy to proactively pursue energy production as a continuing industry of significance within the LGA.</p>	<p>The demolition of the LPS would provide opportunities for future development of alternative energy generation technologies on the site, subject to approval of relevant development applications.</p>
	<p>Engage with all relevant stakeholders to explore the opportunities for alternative energy production and adaptive reuse of the existing generation and distribution infrastructure.</p>	<p>AGL has undertaken consultation with regional stakeholders representing industry, state and federal governments, research and development institutions, and new enterprise in an effort to drive innovation in the energy sector and, where possible, support the development of alternative industries to foster economic diversification and resilience. The goal of this engagement was to drive regional diversification and ultimately shift AGL’s existing economic footprint, workforce, and community reliance on operations through:</p> <ul style="list-style-type: none"> • Repurposing existing assets and infrastructure • Activating and intensifying productive and complementing land uses • Innovating and diversifying agribusinesses • Harnessing resources (e.g. water, wind, solar) and associated infrastructure to co-locate complementary enterprise
<p>13. Natural Areas and Biodiversity – The natural environmental values of the area will be protected, preserved, restored and managed to ensure high biodiversity values, and including improved public access to natural areas such as the</p>	<p>Investigate means of including incentives for vegetation rehabilitation and conservation on mining rehabilitation lands – and negotiating and enabling amendments to DA consents and conditions as reasonable and applicable.</p>	<p>A detailed rehabilitation strategy for the Project would be developed in consultation with stakeholders and with consideration of the detailed environmental investigations undertaken as part of the EIS. The final rehabilitation strategy would consider outcomes of the strategic plan currently being developed and following an open and consultative approach that aligns with stakeholder expectations and considers relevant industry standards.</p>

Strategic direction	Actions	Relevance to the Project
local National Parks and the Hunter River.		<p>Post demolition, the disturbed LPS site areas would be rehabilitated to a state suitable for future redevelopment to enable ongoing electricity generating works associated with the Energy Hub (or other beneficial uses of the land).</p> <p>For land areas where no future commercial / industrial use is identified the area would be rehabilitated to as close as practical to its existing state.</p> <p>Rehabilitation of the LAD would create linkages of foraging habitat between areas of high ecological value.</p>
	<p>Biodiversity Offset Policy – as a matter of policy, Council adopt a position that any biodiversity off sets for mining projects occur within areas that have been identified as having regional biodiversity significance (such as the Upper Hunter Biodiversity Corridor that traverses the north western part of the LGA) instead of on-site off sets, unless they can form part of an established and recognised local or regional biodiversity corridor.</p>	<p>The Project may involve limited vegetation clearing. These impacts would be offset in accordance with the <i>Biodiversity Conservation Act 2016 (BC Act)</i> and <i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i> in accordance with any approval conditions.</p>

3.3 Approval pathway and permissibility

3.3.1 Development purpose

Development purpose is generally identified through reference to the definitions provided in the *Standard Instrument (Local Environmental Plans) Order 2006 (the Standard Instrument)*.

Various components of the Project are appropriately characterised as development for the purpose of:

1. Electricity generating works
2. A (hazardous) waste disposal facility, which is a type of waste and resource management facility
3. Extractive industry

Further information on the development purposes of the Project is provided in Section 3.3.2 below.

3.3.2 Applicability of Part 4 of the Environmental Planning and Assessment Act 1979

The EP&A Act and EP&A Regulation provide the legal basis for environmental planning and assessment in NSW. Part 4 of the EP&A Act prescribes the processes for development assessment. Division 4.7 relates specifically to development deemed to be SSD.

Under Section 4.36(2) of the EP&A Act, a class or description of development may be declared as SSD by a State Environmental Planning Policy (**SEPP**).

Clause 8 of the *State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP)* provides that development is declared to be SSD for the purposes of the EP&A Act if:

- The development on the land concerned is, by the operation of an environmental planning instrument (**EPI**), not permissible without development consent under Part 4 of the EP&A Act (first criterion); and
- The development is specified in Schedule 1 or 2 of the SRD SEPP (second criterion).

With respect to the first criterion, the Project site is zoned SP2 – Infrastructure associated with 'power generation' under the Muswellbrook LEP. According to the land use table in the Muswellbrook LEP, development in the SP2 zone that is for the purpose shown on the Land Zoning Map is permitted with consent, including any development that is ordinarily incidental or ancillary to development for that purpose. As outlined below in relation to the second criterion, the Project proposes development for the purpose of a power station or, alternatively, development that is ordinarily incidental or ancillary to development for the purpose of a power station.

In addition, development for the purpose of a waste or resource management facility may be carried out by any person on any land in a prescribed zone under clause 121 of *State Environmental Planning Policy (Infrastructure) 2007 (ISEPP)*. SP2 Infrastructure is a prescribed zone for the purpose of clause 121 of the ISEPP.

Accordingly, the Project may be carried out with development consent under Part 4 of the EP&A Act.

With respect to the second criterion, as outlined above, three development purposes are relevant to the Project each of which are specified in Schedule 1 of the SRD SEPP.

First, "electricity generating works" is defined in the Standard Instrument as "a building or place used for the purpose of (a) making or generating electricity, or (b) electricity storage". The Project involves the demolition and rehabilitation of the LPS and its associated infrastructure including the LAD. Significant components of this work will take place whilst the LPS continues to generate electricity until 2023. In that sense the proposed development is part of the continuation of the site's use for electricity generating purposes. Even after decommissioning, the demolition and rehabilitation activities represents the final stages represents the final stages of the electricity generating project lifecycle and are therefore appropriately characterised as being development for the purpose of electricity generating works. This will enable the approximately 165 ha site to transition to a future Energy Hub. A number of these projects are currently at the feasibility analysis stage and are likely to focus on energy generation, storage/dispatch, waste to energy, solar thermal and other emerging technologies associated with electricity generation or other beneficial uses of the land. The Liddell Battery (SSD 9679) although yet to be determined is one example of these types of complementary projects proposed as part of the Energy Hub. Future projects which are being proposed across the Project site will require separate planning approval. This development does not itself involve any change of the use of the site

The works proposed therefore meet the definition of “electricity generating works”. “Electricity generating works” is SSD, being development specified in clause 20 of Schedule 1 of the SRD SEPP, where the CIV of the development exceeds \$30 million. The Project’s CIV has not yet been finally determined and is subject to further refinement during EIS preparation, but it is projected to be conservatively greater than \$30 million.

Second, the construction and use of the Hazmat landfill is development for the purpose of a “waste and resource management facility”, which is defined in the Standard Instrument as any of the following: “(a) a resource recovery facility, (b) a waste disposal facility, (c) a waste or resource transfer station, (d) a building or place that is a combination of any of the things referred to in paragraphs (a)–(c)”. The Hazmat landfill is consistent with the definition under subparagraph (b), being a “waste disposal facility” which is defined in the Standard Instrument as “a building or place used for the disposal of waste by landfill, incineration or other means, including such works or activities as recycling, resource recovery and other resource management activities, energy generation from gases, leachate management, odour control and the winning of extractive material to generate a void for disposal of waste or to cover waste after its disposal”.

The Project falls within clause 23(5) of Schedule 1 of the SRD SEPP, as the construction and operation of the Hazmat landfill involves development for the purpose of “hazardous waste facilities that transfer, store or dispose of solid or liquid waste classified in the Australian Dangerous Goods Code or medical, cytotoxic or quarantine waste that handles more than 1,000 tonnes per year of waste”. More than 1,000 tonnes per annum of asbestos waste will be disposed of within the Hazmat landfill during the first few years of the Project with a total of 28,000 t being disposed of over the lifetime of the Hazmat landfill. The Hazmat Landfill will be designed in accordance with *NSW EPA Solid Waste Guidelines 2016* and any relevant national guidelines relevant to asbestos landfills ensuring proper containment for asbestos containing materials. The Project will also involve the long-term management of the landfill. The EIS will identify and define the ongoing environmental management programs focused on potential environmental issues such as surface and groundwater impacts. As such, the components of the Project that include the Hazmat landfill are considered to be SSD.

Third, the construction and use of the proposed borrow pit will be development for the purpose of “extractive industry”. “Extractive industry” is defined in the Standard Instrument as “the winning or removal of extractive materials (otherwise than from a mine) by methods such as excavating, dredging, tunnelling or quarrying, including the storing, stockpiling or processing of extractive materials by methods such as recycling, washing, crushing, sawing or separating, but does not include turf farming”.

The preliminary geotechnical investigation for the borrow area (GHD, 2020c) (refer to Appendix C) characterised the material from the borrow area as predominately sand and gravel with cobbles and boulders which meets the definition of “*Extractive Material*” that being “sand, soil, gravel, rock or similar substances that are not minerals within the meaning of the Mining Act 1992”. Further, a preliminary Contamination Assessment of the borrow area (GHD, 2020c) indicates that the material would be suitable for use from a contamination perspective. Regarding classification of whether the material is Excavated Natural Material (ENM) / Virgin Excavated Natural Material (VENM), further assessment and consideration will be factored in during the EIS and design detailed stage as to the nature of classification of material.

Development for the purpose of “extractive industry” is SSD if the development “(a) extracts more than 500,000 tonnes of extractive materials per year, or (b) extracts from a total resource (the subject of the development application) of more than 5 million tonnes, or (c) extracts from an environmentally sensitive area of State significance”, per clause 7(1) of Schedule 1 of the SRD SEPP. Excavation of material from the borrow pit would involve more than 500,000 tonnes of extraction per year on one or more years. This would involve a total extraction that exceeds 5 million tonnes over the lifetime of the Project. Preliminary assessment of the material requirements has identified the need to extract up to approximately 15 million m³ (note that one m³ of material weighs approximately one and a half tonnes) of material from the proposed borrow pit. Assuming extraction commenced in 2023 and rehabilitation works at LPS and BPS is completed by 2040, this is equivalent to an average annual extraction of up to approximately 882,000 m³. Therefore, the components of the Project that are related to the establishment of the borrow pit are considered to be SSD.

Finally, clause 8(2) of the SRD SEPP provides that – subject to three exceptions, none of which are relevant to the Project – if a single proposed development the subject of one development application comprises development that is only partly SSD, the remainder of the development is also declared to be SSD. Despite the information above, in the event that any discrete component of the Project should end up not being considered SSD, the interrelationship between the collection of proposed works is such that each component of the Project is closely related to another component that is clearly SSD. Should this circumstance arise, clause 8(2) would apply such that the development proposed by the Project is SSD.

The Minister for Planning and Public Spaces (**Minister**) is the consent authority for SSD developments. The Minister has delegated some of his functions to determine SSD applications to senior officers of DPIE and the NSW Independent Planning Commission (**IPC**).

A development application for SSD must be accompanied by an EIS, prepared in accordance with the EP&A Regulation. Before preparing an EIS, the applicant must request SEARs, which are the terms of reference for the EIS. This document accompanies AGLM's request for SEARs for the Project.

3.3.3 Operation of Section 4.63(3) of the EP&A Act

LPS was constructed under ministerial declaration, with the first phase of construction completed in 1971. A number of local development consents for ancillary activities associated with the LPS have also been granted since then, as follows:

- Development consent DA 1/2011, granted on 1 November 2011 by Muswellbrook Shire Council for Liddell Ash Dam Extension.
- Development consent DA 98/1995 as modified, granted by Muswellbrook Shire Council on 19 December 2017 for the Liddell Sewerage Effluent Reuse.
- Development consent DA 90/2015, granted by Muswellbrook Shire Council on 28 June 2016 for the Liddell Ash Line Settling Pond and Associated Infrastructure.
- Development consent DA 91/2015, granted by Muswellbrook Shire Council on 13 January 2016 for installation of an effluent pipeline from the Liddell Power Station Water Treatment Plant to the outfall canal.

The Project proposes that these existing development consents would be surrendered subject to consent being granted for the Project.

Section 4.63(3) of the EP&A Act provides that:

If a development consent is to be surrendered as a condition of a new development consent and the development to be authorised by that new development consent includes the continuation of any of the development authorised by the consent to be surrendered:

- a) the consent authority is not required to re-assess the likely impact of the continued development to the extent that it could have been carried out but for the surrender of the consent, and*
- b) the consent authority is not required to re-determine whether to authorise that continued development under the new development consent (or the manner in which it is to be carried out), and*
- c) the consent authority may modify the manner in which that continued development is to be carried out for the purpose of the consolidation of the development consents applying to the land concerned.*

Accordingly, the works already authorised under the planning approvals proposed to be consolidated and surrendered as part of the Project, do not require re-assessment as part of the SSD application. Only works which are in addition to those currently approved under the various development consents associated with LPS would be detailed in the EIS.

3.3.4 Land use zoning

The Project is located within the Muswellbrook LGA and is therefore subject to the provisions of the Muswellbrook LEP. The Project is entirely located within land zoned SP2 Infrastructure associated with 'power generation' under the Muswellbrook LEP. The permissibility of the Project within this zone has been addressed above.

The Project is not seeking approval to rezone the site, the intent is to make the site viable for industries which are complementary to its current use to ensure it will not cause any future land use conflicts. AGL is continuing to explore options that are permissible within the current zoning and is proposing to establish the site as an Energy Hub and is currently developing a strategic plan for the Liddell site and surrounding buffer lands within the AGLM landholding.

3.3.5 Other relevant clauses of the EP&A Act

Provisions of the EP&A Act relevant to the scoping of the Project are identified in Table 3-2.

Table 3-2 Other EP&A Act clauses relevant to project scoping

Clause	Relevance to the Project
4.36 Development that is SSD	The Project is declared SSD through the application of Clause 8 and Schedule 1 of the SRD SEPP.
4.41 Approvals and legislation that does not apply	The following authorisations are not required for SSD that is authorised by a development consent granted after the commencement of this Division (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply): <ul style="list-style-type: none"> • A permit under section 201, 205 or 219 of the Fisheries Management Act 1994 (FM Act). • An approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977 (Heritage Act). • An Aboriginal heritage impact permit under section 90 of the National Parks and Wildlife Act 1974 (NPW Act). • A bushfire safety authority under section 100B of the Rural Fires Act 1997.

Clause	Relevance to the Project
	<ul style="list-style-type: none"> A water use approval under section 89, a water management work approval under section 90 or an activity approval (other than an aquifer interference approval) under section 91 of the Water Management Act 2000 (WM Act).
4.42 Approvals and legislation that must be applied consistently	<p>An authorisation of the following kind cannot be refused if it is necessary for carrying out SSD that is authorised by a development consent under this Division and is to be substantially consistent with the consent:</p> <ul style="list-style-type: none"> An aquaculture permit under section 144 of the FM Act. An approval under section 15 of the <i>Mine Subsidence Compensation Act 1961</i>. A mining lease under the <i>Mining Act 1992</i>. A production lease under the <i>Petroleum (Onshore) Act 1991</i>. An environment protection licence (EPL) under Chapter 3 of the <i>Protection of the Environment Operations Act 1997 (POEO Act)</i> for any of the purposes referred to in section 43 of that Act. A consent under section 138 of the <i>Roads Act 1993</i>. A licence under the <i>Pipelines Act 1967</i>. <p>At this stage it is likely that only a variation to the EPL for the LPS (EPL 2122) would be required for the Project.</p>

3.4 State environmental planning policies

State environmental planning policies relevant to the Project are described in the following subsections.

3.4.1 State Environmental Planning Policy (State and Regional Development) 2011

The SRD SEPP identifies development that is SSD. Division 4.36 of the EP&A Act enables an EPI to declare a development to be SSD. As identified in Section 3.3.2 the Project is SSD pursuant to the SRD SEPP as it meets the definitions of:

- Electricity generating works (clause 20 of Schedule 1 of the SRD SEPP)
- A waste and resource management facility (clause 23 of Schedule 1 of the SRD SEPP, specifically clause 23(5) related to a hazardous waste facility)
- Extractive industry (clause 7 of Schedule 1 of the SRD SEPP)

3.4.2 State Environmental Planning Policy (Infrastructure) 2007

The ISEPP aims to facilitate the effective delivery of infrastructure across NSW. As described in Section 3.3.4, the construction and operation of the Hazmat landfill is permissible with consent pursuant to clause 121 of ISEPP.

The ISEPP also includes provisions for development in rail corridors, electricity easements and within or adjacent to road corridors and road reservations, which would be relevant for the Project and addressed in the EIS. AGLM would consult with TfNSW, TransGrid and other relevant parties during the EIS process with respect to Project activities that have the potential to impact on their infrastructure.

Clause 104 of the ISEPP provides that developments that are listed in Schedule 3 of the ISEPP, and are of the “relevant size or capacity”, are defined as “traffic-generating developments” and are required to be referred to TfNSW. Waste or resource management facilities of any size or capacity are listed in Schedule 3, therefore the components of the Project that are related to the Hazmat landfill would be defined as a traffic-generating development under the ISEPP and referral to TfNSW would be required.

3.4.3 State Environmental Planning Policy No. 33 – Hazardous and Offensive Development

State Environmental Planning Policy No. 33 - Hazardous and Offensive Development (SEPP 33) regulates, amongst other matters, the determination of development applications to carry out what is defined in SEPP 33 as development for the purposes of a "potentially hazardous industry" or "potentially offensive industry". The Project would be assessed to determine if it is classified as “potentially hazardous” or “potentially offensive” development, with consideration of the guidelines Applying SEPP 33 (Department of Planning (DoP) 2011). If required, an assessment of hazards would be included in the EIS.

3.5 Other relevant legislation

3.5.1 Commonwealth legislation

3.5.1.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is administered by the Department of Agriculture, Water and the Environment (DAWE) and provides a legal framework to protect and manage nationally important flora, fauna, ecological communities and heritage places defined as ‘matters of national environmental significance’ (MNES). An action that “has, will have or is likely to have a significant impact on a matter of National Environmental Significance” may not be undertaken without prior approval from the Commonwealth Minister for the Environment, as provided under Part 9 of the EPBC Act. Approval under the EPBC Act is also required where actions are proposed on, or will affect, Commonwealth land and its environment.

An assessment of whether the Project would have a significant impact on these MNES would be undertaken as part of the environmental assessment process. If necessary, a referral to DAWE would be made to determine if the Project is a controlled action under the EPBC Act.

3.5.2 NSW legislation

3.5.2.1 Dams Safety Act 2015

The objects of the *Dams Safety Act 2015 (Dams Safety Act)* are to manage matters relating to dams safety and promote the application of risk management. The LAD is currently listed as a ‘declared dam’ by Dams Safety NSW under the Dams Safety Act. The closure and rehabilitation activities approved under DA 1/2011 and to be consolidated as part of the Project will ensure that the capped and rehabilitated LAD forms a relatively inert structure which is safe and stable. This will ultimately be achieved by capping and rehabilitating the dam and forming a relatively inert structure that is unable to hold water (and therefore fail and release a flood flow).

Dams Safety NSW requires, as a minimum, the consideration of the following issues, in decommissioning of an ash dam:

- Protection of its long term stability
- The potential for erosion of an embankment, especially if it has been an upstream construction with a low quality material on the exposed face

- Its flood capacity with consideration of provision for changes in future standards and the long term loss of holding capacity
- Advice on its ongoing effects on the surrounding environment and long term controls to minimise these effects
- Advice on the proposal for its long term monitoring and the role of the Department of Primary Industries in this respect
- Advice on when the dam can be de-listed as a 'declared dam' in the owner's opinion

The level of detail required to manage, operate, maintain and rehabilitate dams to satisfy the Dam Safety Act is based on a risk-approach. AGLM will continue to liaise with Dams Safety to facilitate de-listing of the LAD as a 'declared dam'.

3.5.2.2 Biodiversity Conservation Act 2016

The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future. The BC Act lists threatened species, populations and ecological communities as well as critical habitat and key threatening processes that must be considered when assessing the effects of an activity.

Part 7 of the BC Act requires that an application for SSD be accompanied by a "*biodiversity development assessment report*" (**BDAR**) unless "*the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values*".

Preliminary consideration of the impact of the Project on biodiversity values is provided in Section 4.2.8. A BDAR would be prepared to accompany the EIS unless an exemption to the need for a BDAR is obtained.

3.5.2.3 Protection of the Environment Operations Act 1997

The principal legislation regulating pollution and waste management in NSW is the POEO Act. All scheduled activities as listed in Schedule 1 of the POEO Act require an EPL.

LPS, including the LAD, is operated under EPL 2122, this licence would be varied to incorporate any new or discontinued scheduled activities, or to transfer any activities required for the ongoing operation of BPS into the EPL for BPS (EPL779).

3.5.2.4 Roads Act 1993

The *Roads Act 1993* (**Roads Act**) regulates activities that may impact on public roads in NSW. Consent is required from the relevant roads authority under section 138 of the Roads Act for any work in, on or over a public road.

Section 4.42 of the EP&A Act stipulates that a consent under section 138 cannot be refused for SSD and must have terms that are substantially consistent with the development consent for the SSD. Nevertheless, a referral to TfNSW would be required as the Project is classified a 'traffic-generating development' pursuant to clause 104 and Schedule 3 of the ISEPP (Section 3.4.2).

3.5.2.5 National Parks and Wildlife Act 1974

Under Section 86 of the *National Parks and Wildlife Act 1974* (**NPW Act**) it is an offence to harm or desecrate an Aboriginal object or Aboriginal place.

Under the NPW Act, harm an object or place includes any act or omission that:

- (a) destroys, defaces or damages the object or place, or
- (b) in relation to an object—moves the object from the land on which it had been situated, or
- (c) is specified by the regulations, or

(d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c),

but does not include any act or omission that:

(e) desecrates the object or place, or

(f) is trivial or negligible, or

(g) is excluded from this definition by the regulations.

Clause 3A of the *National Parks and Wildlife Regulation 2019* excludes the following from the definition of harm:

An act carried out in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW as published by the Department in the Gazette on 24 September 2010 is excluded from the definition of harm an object or place in section 5 (1) of the Act.

The Project is intended to be carried out in accordance with this Code of Practice. Further, under Section 4.41 of the EP&A Act, an Aboriginal Heritage Impact Permit (**AHIP**) under section 90 of the NPW Act is not required for an approved SSD. Notwithstanding, formal consultation in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (OEH, 2010) would be carried out during the EIS.

3.5.2.6 Heritage Act 1977

The Heritage Act protects the natural and historical cultural heritage in NSW. It is designed to protect both listed heritage items, such as standing structures, and potential archaeological remains or relics.

No known heritage items are located in or around the Project. The Project is not expected to impact on any known heritage items.

4. Matters and impacts

4.1 Overview

The identification of issues to be addressed in the EIS has been undertaken through a risk based and consultative approach. Key potential issues are those environmental aspects that will require project specific assessments to assess the potential impacts and develop measures to avoid, mitigate and/or offset those impacts, where necessary. The key assessment issues were identified with consideration of a range of factors including:

- The existing environmental context of the Project and its surrounding locality (see Section 2.1 and Section 2.6)
- The proposed Project activities (see Section 2.3)
- The regulatory framework applicable to the Project (see Section 3)
- The outcomes of consultation undertaken with the community and other relevant stakeholders (see Section 5)
- The Project team's experience from previous environmental approvals for projects in NSW

Key issues and the proposed level and scope of assessments were documented using DPIE's draft Scoping Worksheet, a copy of which is provided in Appendix A. In accordance with the draft Scoping Worksheet, each issue has been categorised as either a 'Key' issue, 'Other' issue, or 'Scoping only' issue. Further details regarding the identified issues and the proposed level and scope of assessment are presented in the following sections.

4.2 Key issues and other issues for inclusion in the EIS

Described below are the relevant matters and impacts proposed for detailed consideration in the EIS. This includes those that are of particular concern to the community and other stakeholders. For each relevant matter, further details of the baseline conditions, potential impacts of the Project, proposed assessment methodology and proposed impact mitigation measures are provided.

4.2.1 Land use

4.2.1.1 Existing environment

The Project area is zoned SP2 – Infrastructure associated with 'power generation', while surrounding land is predominantly zoned RU1 – Primary Production. Surrounding land use is dominated by power generation, coal mining, livestock grazing and rural housing. Existing land use within and surrounding the Project area is described further in Section 2.6.1.

4.2.1.2 Potential impacts

The Project aims to rehabilitate the operational areas of the Project area to achieve a safe, stable and non-polluting state in preparation for future redevelopment or other beneficial uses, which will be subject to approval of subsequent development applications.

It is currently proposed to rehabilitate the LAD to a native and exotic grassland area which may either be used for stock grazing or placed into environmental use to form a linkage in the environmental corridor through the site.

The LPS site is considered to have a high redevelopment potential for energy projects and other enterprise due to it having transmission grid connections, highway and rail connectivity, water supply infrastructure and the central site being largely cleared and levelled land.

The objective of the power station demolition and rehabilitation works would be to make the approximately 165 ha central power station site ready for redevelopment.

4.2.1.3 Proposed assessment approach

The EIS would include discussion of the potential land use changes as a result of the Project, including the potential future use of the Project area following rehabilitation and any potential impacts to existing surrounding land use during construction.

4.2.2 Soil

4.2.2.1 Existing environment

As described in Section 2.6.8, the eastern portion of the Project area containing the LPS infrastructure area is underlain by geology comprising siltstone, claystone and minor fine-grained sandstone, while to western portion, including the LAD and proposed borrow pit area is underlain by conglomerate, sandstone and siltstone. Soils within the Project area consist of fine sandy and silty clays with massive structure and medium clay soils persist throughout the deeper soil horizons. The Project area is mapped as a low probability of occurrence of ASS and a LSC class of 5, indicating severe limitations for high impact land management uses such as agriculture.

4.2.2.2 Potential impacts

The Project would involve major ground disturbance for the construction and operation of the borrow pit area and Hazmat landfill. Additionally earthworks would be required for capping of the relevant areas of the site and rehabilitation earthwork activities. Soils within the Project area are mapped as having a moderate to high erosion hazard. Earthworks could result in erosion and sedimentation impacts if not managed appropriately in accordance with the Managing Urban Stormwater: Soils and construction - Volume 1, 4th edition (Landcom 2004).

4.2.2.3 Proposed assessment approach

Assessment of impacts to soils would be included as part of the EIS and would include:

- Assessment of the existing soils by utilising available regional mapping and existing site specific data gained from environmental investigations
- Assessment of potential erosion and sedimentation impacts from the Project
- Identification of proposed sediment and erosion controls for the Project
- Identification of any other necessary mitigation measures

4.2.3 Contamination

4.2.3.1 Existing environment

A search of the list of contaminated sites notified to the EPA on the 17 February 2021 identified the LPS site as being notified to the EPA and that regulation under the *Contaminated Land Management Act 1997 (CLM Act)* is not required. A search of the contaminated land 'Record of notices database' was also undertaken on 17 February 2021 for the Muswellbrook LGA. This search did not identify properties that are currently or formerly regulated under the CLM Act.

Asbestos containing materials are common at the LPS and their long-term use has resulted in contamination in soils within the Project area. In particular a significant element of the Project is the disassembly and disposal of four asbestos pipelines running between LPS and the LAD. The site has been used extensively for electricity generation over a significant time period and the Project area is understood to be contaminated in places. The potential contaminants of interest may include:

- Total recoverable Hydrocarbons (**TRH**)
- Perfluoroalkyl and Polyfluoroalkyl Substances (**PFAS**) compounds
- Heavy metals
- Asbestos
- Other chemicals

4.2.3.2 Potential impacts

The disassembly and disposal of asbestos pipes running between LPS and the LAD, would be followed by the appropriate management of asbestos contaminated soils under these pipes.

It is expected that any existing asbestos contamination encountered during construction, would be disposed of on-site within the proposed Hazmat landfill.

The Project would also involve the storage, treatment or handling of fuels, chemicals, building materials, wastes and other potential contaminants. Contamination risks would be managed through the application of Australian Standards for the storage and handling of fuels and chemicals and appropriate engineering design.

4.2.3.3 Proposed assessment approach

A desktop contamination assessment would be prepared as part of the EIS and would describe:

- Site history including zoning, previous and present land use, building approvals and chronological list of site uses
- Review of historical aerial photographs
- Possible contaminant sources and potential off-site effects
- Potential environmental risks
- Any available reports or other information relating to the site and surrounding properties

4.2.4 Waste management

4.2.4.1 Existing environment

The operation of LPS generates waste that is managed under Waste Management Plans and in accordance with the EPL 2122 held by AGLM.

A range of waste streams generated onsite are treated, processed or disposed of at the premises in accordance with EPL 2122, including:

- Ash
- Acid solutions or acids in solid form
- Ash line poly pipe
- Boiler cleaning residues
- Coal fines from coal settling basins and plant and conveyor wash down
- Cooling tower sediments
- Demineralisation resins
- Filter bags
- Gypsum
- Lime

- Sediment basin clays
- Treated sewage effluent
- Water treatment residual chemicals

4.2.4.2 Potential impacts

The first stage of the LPS demolition works would involve the removal of all accessible asbestos prior to removal of structures. Another significant element of the Project is the disassembly and disposal of four asbestos pipelines running between LPS and the LAD, and asbestos contaminated soils under these pipes will generate asbestos waste. The quantity of asbestos waste to be disposed from the Project area is estimated to be approximately 14,000 m³. This waste would be disposed of onsite within the proposed Hazmat landfill.

Materials generated through the demolition of the LPS would be recovered and recycled where practical. This would involve the separation of metals and concrete from other construction wastes. Scrap metals would be sold off site while waste concrete would be crushed and re-used during rehabilitation works.

Material extracted from the borrow pit area that is not of suitable quality for capping would likely be placed back into the borrow pit area, if appropriate to do so or crushed and used for applications such as drainage structures. Material prone to spontaneous combustion would be buried and separated from oxygen to prevent the oxidation process.

The Project would also generate general construction waste including packaging, domestic waste, cleared vegetation, redundant erosion and sediment controls and sewage.

4.2.4.3 Proposed assessment approach

The EIS would assess the predicted waste generation impacts of the Project, including:

- Classification of wastes and an estimate of the quantity of each waste classification
- Identification of waste handling procedures, management measures and waste minimisation and reuse opportunities

4.2.5 Chemical, hazardous substances and dangerous goods

4.2.5.1 Existing environment

The Project would require the handling, transportation and storage of hazardous substances and dangerous goods, including asbestos containing material, hydrocarbons such as fuel and oil, and explosives which may be required for demolition activities.

4.2.5.2 Potential impacts

During demolition there is potential that aging infrastructure may cause spills or leaks of hazardous materials. Additionally, the storage of dangerous goods has the potential to cause fire or explosion if not managed appropriately.

4.2.5.3 Proposed assessment approach

As part of the EIS, risk screening would be undertaken using criteria and guidance in DPIE's Applying SEPP 33 (DoP, 2011), to confirm whether or not the Project is classified as potentially hazardous, requiring a preliminary hazard analysis (PHA) and if so, the level of assessment required. The screening criteria relate to factors such as the types and quantities of hazardous materials to be stored on-site, how they are handled and where they would be stored, and the anticipated frequency of road movements of this material to and from the site.

If a PHA is required, it would be conducted in accordance with SEPP 33 requirements, following relevant DPIE guidance. The PHA would identify potential hazards associated with the Project and estimate the likelihood and consequences of them occurring, taking into account AGLM's proposed controls. This information would then be reviewed to assess the level of off-site risk to people, property and the environment.

Additional risk mitigation measures would be incorporated into the Project design if required.

4.2.6 Surface water

4.2.6.1 Existing environment

As described in Section 2.6.5, the major surface water feature within the Project area is the LAD, which is located within the western portion of the Project area. Additionally, a number of waterways traverse the Project area, including Tinkers Creek, which flows into Lake Liddell to the west of LPS. Several unnamed waterways are located to the north of the LAD and flow in an easterly direction into Lake Liddell.

4.2.6.2 Potential impacts

Potential impacts associated with the Project include:

- Catchment and drainage modifications from alteration of surface features, including construction of the borrow pit area
- Impacts to water quality during construction or operation, such as from erosion and sediment entrainment in surface runoff
- Changes to existing flooding behaviour

4.2.6.3 Proposed assessment approach

A surface water assessment would be prepared as part of the EIS, which would investigate each of the above aspects. It would:

- Characterise existing flow paths, water quality, quantity and users and flooding and catchment characteristics
- Assess the potential surface water impacts of the Project's construction and operation including:
 - Water quality
 - Stream flows
 - Flooding
- Describe the proposed water management and monitoring, including mitigation measures as required

4.2.7 Groundwater

4.2.7.1 Existing environment

As described in Section 2.6.6, groundwater depths within the Project area range from 0.59 to 7.55 metres below ground level (GHD, 2020a). The inferred groundwater flow is to the east towards Lake Liddell.

The groundwater has also likely been affected by current and historical mining activities, agriculture and possibly natural processes.

4.2.7.2 Potential impacts

Once ash placement in the LAD has ceased, the dam will be capped and the site rehabilitated, seepage to groundwater would be minimised, and groundwater quality is expected to improve. This would reduce the metal concentrations that are associated with the LAD, like boron and cobalt and consequently the inputs of those metals to the groundwater or Lake Liddell, and would gradually reduce the risk associated with these metals with time.

Groundwater is considered unlikely to be intercepted by the extraction of material from the borrow pit area, given that the material was placed on top of the existing ground surface and extraction of this material would make progress towards returning the area to its predevelopment landform. However, any extraction of natural material from the borrow pit area and ground disturbance associated with the excavations for rehabilitation activities has the potential to impact on nearby groundwater sources if not appropriately managed.

4.2.7.3 Proposed assessment approach

A groundwater impact assessment would be undertaken as part of the EIS and would include:

- Characterisation of the existing environment, including climate, topography, hydrology, geology/soils, and groundwater occurrence, quality and use, including groundwater dependant ecosystems (**GDE**)
- Collation of existing data from previous studies and monitoring programs
- Development of conceptual groundwater model
- Qualitative assessment of potential groundwater related impacts that could arise due to the Project
- Recommendation for monitoring and management of identified potential impacts and risks, including mitigation measures as appropriate

4.2.8 Biodiversity

4.2.8.1 Existing environment

A search of the DPIE BioNet Atlas for records of threatened species listed under the BC Act and EPBC Act (DPIE, 2020b) was undertaken on 17 February 2021. Threatened species previously recorded within 10 km of the Project area are listed in Table 4-1.

Table 4-1 Threatened species recorded within 10 km

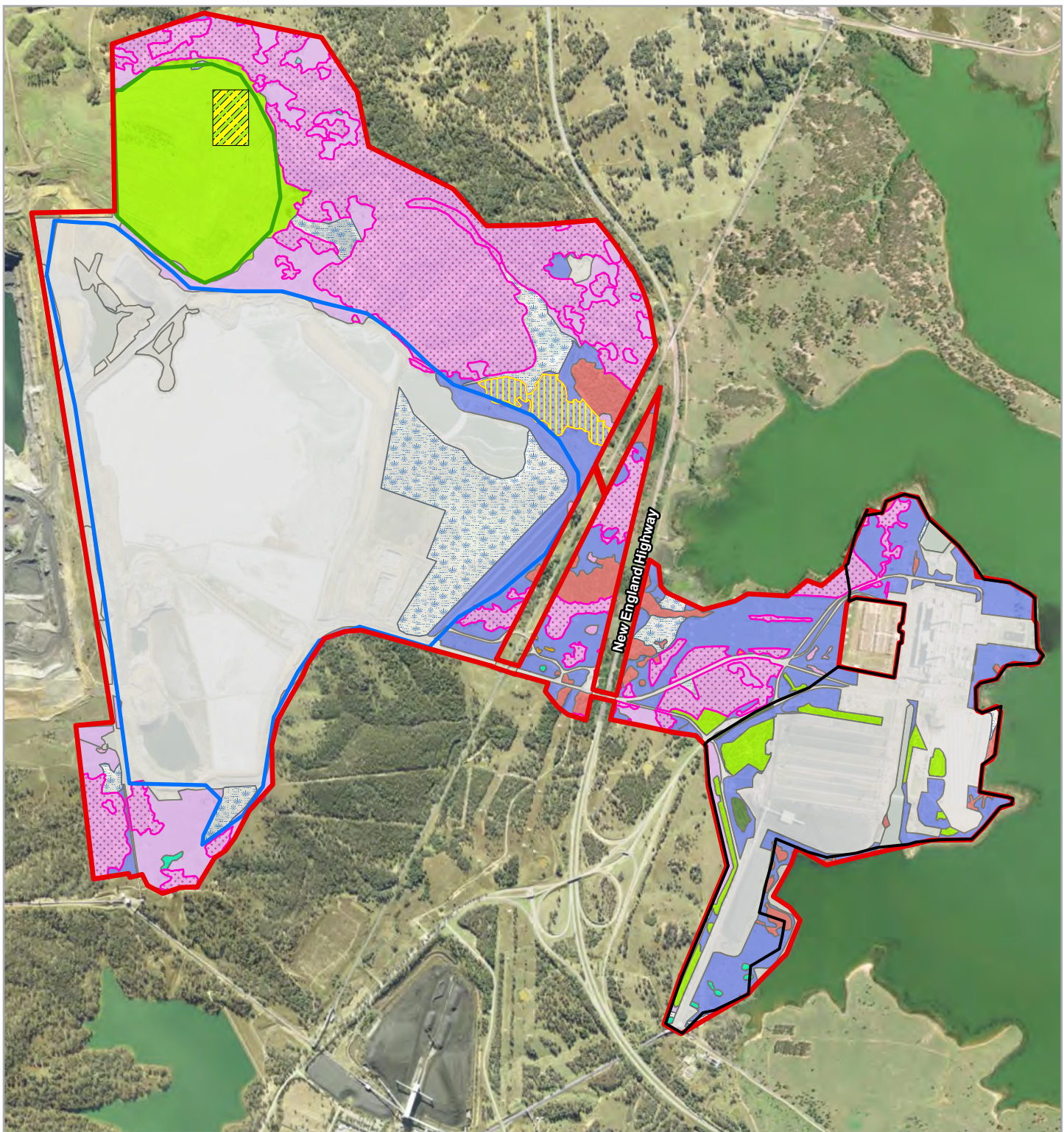
Class	Scientific name	Common name	BC Act status*	EPBC Act status*
Animalia	<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V
Animalia	<i>Stictonetta naevosa</i>	Freckled Duck	V	-
Animalia	<i>Hirundapus caudacutus</i>	White-throated Needletail	-	V
Animalia	<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V	-
Animalia	<i>Hieraaetus morphnoides</i>	Little Eagle	V	-
Animalia	<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo	V	-
Animalia	<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-
Animalia	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V	-
Animalia	<i>Chthonicola sagittata</i>	Speckled Warbler	V	-
Animalia	<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	V	-
Animalia	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-
Animalia	<i>Artamus cyanopterus cyanopterus</i>	Dusky Woodswallow	V	-
Animalia	<i>Melanodryas cucullata cucullata</i>	Hooded Robin (south-eastern form)	V	-
Animalia	<i>Petroica phoenicea</i>	Flame Robin	V	-
Animalia	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E
Animalia	<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	V	-
Animalia	<i>Phascolarctos cinereus</i>	Koala	V	V
Animalia	<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-
Animalia	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V
Animalia	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V	-
Animalia	<i>Micronomus norfolkensis</i>	Eastern Coastal Free-tailed Bat	V	-
Animalia	<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-
Animalia	<i>Myotis macropus</i>	Southern Myotis	V	-
Animalia	<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	V	-
Animalia	<i>Vespadelus troughtoni</i>	Eastern Cave Bat	V	-
Animalia	<i>Miniopterus australis</i>	Little Bent-winged Bat	V	-
Animalia	<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	V	-
Plantae	<i>Acacia pendula</i>	<i>Acacia pendula</i> population in the Hunter catchment	E	-
Plantae	<i>Eucalyptus camaldulensis</i>	<i>Eucalyptus camaldulensis</i> population in the Hunter catchment	E	-
Plantae	<i>Eucalyptus glaucina</i>	Slaty Red Gum	V	V
Plantae	<i>Rhodamnia rubescens</i>	Scrub Turpentine	CE	-
Plantae	<i>Diuris tricolor</i>	Pine Donkey Orchid	V	-
Plantae	<i>Diuris tricolor</i>	Pine Donkey Orchid population in the Muswellbrook local government area	E	-
Plantae	<i>Prasophyllum petilum</i>	Tarengo Leek Orchid	E	E

* V = vulnerable, E = endangered, CE = critically endangered

Vegetation mapping undertaken by Kleinfelder (2017) (see Figure 4-1) across the wider AGLM landholding has been undertaken following the Biodiversity Assessment Method (**BAM**) and identified the Project area as comprising areas of disturbed, cleared land which does not represent any natural vegetation community, as well as some areas of remnant vegetation north of the LAD and either side of the New England Highway, between the LAD and LPS infrastructure area.

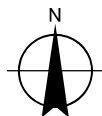
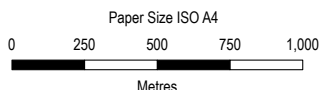
The proposed borrow pit area is mapped by Kleinfelder (2017) as rehabilitation with no equivalent Plant Community Type (**PCT**). High condition woodlands located to the north and east the borrow pit area and LAD have been mapped as representative of the NSW listed *Central Hunter Grey Box - Ironbark Woodland in the New South Wales North Coast and Sydney Basin Bioregions Endangered Ecological Community (EEC)* and *Central Hunter Ironbark - Spotted Gum - Grey Box Forest in the New South Wales North Coast and Sydney Basin Bioregions EEC*, both of which are commensurate with the Commonwealth listed *Central Hunter Valley eucalypt forest and woodland Critically Endangered Ecological Community (CEEC)*.

A review of the Atlas of Groundwater Dependent Ecosystems (BOM, 2020b) indicated that no known GDEs have been identified within the Project area, however land within the Project area has been identified as having low potential to contain GDEs.



Legend

- | | | |
|---|---|---|
| Project area | Central Hunter Box - Ironbark Woodland Regeneration | Plantation |
| Proposed borrow pit area | Central Hunter Bulloak Forest | Rehabilitation |
| Liddell Ash Dam | Central Hunter Ironbark - Spotted Gum - Grey Box Forest | Wetland/Dam (with wetland vegetation) |
| Proposed Hazmat landfill | Central Hunter Swamp Oak Forest | Threatened Ecological Communities |
| Liddell Power Station infrastructure area | Dam | Central Hunter Ironbark - Spotted Gum - Grey Box Forest in the New South Wales EEC (BC Act) |
| Vegetation Communities | Derived/Modified Native Grasslands | North Coast and Sydney Basin Bioregions EEC (BC Act) |
| Acacia Regrowth | Excluded | Central Hunter Valley eucalypt forest and woodland CEEC (EPBC Act) |
| Central Hunter Box - Ironbark Woodland | Exotic Grasslands | |



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Vegetation within Project area

FIGURE 4-1

4.2.8.2 Potential impacts

Potential impacts to biodiversity from the Project include:

- Clearing of vegetation during construction of the borrow pit area and any required ancillary facilities
- Loss of fauna habitat and habitat features directly impacted by vegetation clearing
- Impacts on threatened species and endangered populations
- Habitat fragmentation and connectivity issues for flora and fauna
- Indirect impacts to fauna such as from increased noise, light and dust

4.2.8.3 Proposed assessment approach

The EIS would include a BDAR completed in accordance with the BAM (DPIE, 2020) and MNES: Significant Impact Guidelines 1.1 (DotE, 2013).

The assessment would build on the ecological survey work already completed within the Project area (Kleinfelder, 2017) and would include:

- Assessment of potential impacts on State and Commonwealth listed terrestrial and aquatic species, populations, ecological communities or their habitats, with consideration of any proposed vegetation clearing, groundwater, surface water, air and noise impacts of the Project
- Assessment of potential impacts to GDEs
- Assessment of potential cumulative impacts resulting from the Project and other vegetation and habitat disturbance in the region
- Identification of measures that would be implemented to maintain or improve the biodiversity values of the surrounding region in the medium to long-term
- A strategy to offset any residual impacts of the Project in accordance with the Biodiversity Offsets (BOS) Scheme under the BC Act as required

4.2.9 Aboriginal heritage

4.2.9.1 Existing environment

The Project area is located within the administrative boundaries of the Wanaruah Local Aboriginal Land Council (LALC). The majority of the Project area has been heavily disturbed as a result of previous land uses, including the construction and operation of LPS and the LAD, mining, material emplacement and historical agricultural activities. However, the Project area does contain areas of undisturbed remnant vegetation, including to the north and east of the LAD.

A preliminary search of the Aboriginal Heritage Information System (AHIMS) database for the Project area was undertaken on 17 February 2021. The search returned 42 results within a 200 m buffer of the Project area.

4.2.9.2 Potential impacts

Potential impacts to Aboriginal cultural heritage from the Project include direct disturbance or loss of items of Aboriginal heritage or Aboriginal cultural values as a result of any excavations or surface disturbance in previously undisturbed areas.

4.2.9.3 Proposed assessment approach

An Aboriginal Cultural Heritage Assessment Report (**ACHAR**) will be prepared as part of the EIS in accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and the following additional guidelines:

- Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW, 2010a)
- Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010b)
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010c)

The assessment would include consultation with the relevant stakeholders and Aboriginal parties.

The assessment would describe and assess the significance of any Aboriginal objects and/or places that may be impacted by the Project and provide options to avoid, mitigate or manage the harm to those objects and/or places.

4.2.10 Air quality and greenhouse gas

4.2.10.1 Existing environment

A range of anthropogenic and natural sources including coal-fired power generation, coal mining, vehicle emissions, and wind-blown dust influence the air quality in the region surrounding the Project. The closure of LPS would considerably reduce coal-fired power generation emissions in the local and regional area. Ambient air quality is described further in Section 2.6.3.

4.2.10.2 Potential impacts

Potential air quality impacts from the Project would result from emissions associated with a variety of activities including material handling, material transport, processing, demolition activities and wind erosion. These emissions would mainly comprise of particulate matter (total suspended particulates, PM₁₀ and PM_{2.5}). There would also be emissions from machinery exhausts such as carbon monoxide (**CO**), oxides of nitrogen (**NO_x**) and particulate matter, and to a lesser extent sulphur dioxide (**SO₂**) and hydrogen sulphide (**H₂S**).

The use of construction equipment and manufacture of materials for use in the Project would consume resources and as such generate GHG emissions.

4.2.10.3 Proposed assessment approach

An air quality impact assessment in accordance with the Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA, 2016) would be undertaken as part of the EIS to assess potential impacts on nearby sensitive receptors. The assessment would include:

- Review and analysis of existing air quality and meteorological conditions
- Identification of sensitive receptors
- Identification of all likely sources of air pollution
- Quantification of potential impacts
- Recommendations on mitigation and management strategies

The significance of GHG emissions for the Project would be assessed in relation to national GHG objectives, and the impacts of those emissions in the context of Commonwealth and State government policies and protocols. Mitigation and management measures would be determined as required.

4.2.10.4 Proposed actions to mitigate impacts

AGLM would continue to employ the mitigation measures and management strategies currently adopted at the LPS and LAD sites, as relevant to the Project, to minimise emissions of dust and particulate matter. These include:

- Implementing standard work procedures to minimise emissions of particulate matter
- Maintaining plant and equipment to ensure optimal operating condition
- Using water sprays to dampen exposed surfaces to minimise windblown and traffic-generate dust emissions

Any additional mitigation measures identified in the environmental assessment would be implemented as required.

4.2.11 Noise and vibration

4.2.11.1 Existing environment

As described in Section 2.6.4, the ambient noise environment in the vicinity of the Project area is currently influenced by surrounding operational activities of LPS, BPS and surrounding mines, as well as road and rail transportation.

The nearest residential receivers are located approximately 1.8 km to the north of the Project area.

4.2.11.2 Potential impacts

The Project has the potential to generate noise emissions from a variety of sources, including:

- Earthworks to establish the borrow pit area and internal haul roads
- Loading and dumping of material and transporting the material to the LAD and LPS infrastructure area
- Movement of heavy vehicles on internal haul roads
- Movement of heavy vehicles to and from the Project area
- Demolition activities at the LPS infrastructure area and transportation of materials for disposal in the Hazmat landfill
- Rehabilitation activities

The proposed borrow pit area is the component of the Project that is closest to sensitive receivers. The plant and equipment required for the construction and operation of the borrow pit area would be generally the same as current approved activities at the LAD including excavators, bob cats, loaders and haul trucks. However the borrow pit area is located further north (and thus closer to receivers) than the current operations, and therefore a change in noise levels for these receivers may eventuate when works are being undertaken in this area.

4.2.11.3 Proposed assessment approach

A Noise and Vibration Impact Assessment would be prepared for the EIS with regard to the Noise Policy for Industry (EPA, 2017), Interim Construction Noise Guideline (DECC, 2009) and Road Noise Policy (DECCW, 2011) including the following tasks:

- Review of available ambient noise and meteorological monitoring data to gain an understanding of existing background noise and prevailing weather conditions
- Identify the likely emissions to noise from construction and operational activities
- Undertake an assessment of traffic noise impacts with consideration to the relevant guidelines
- Identification of noise management strategies and mitigation measures, as required

4.2.12 Social

4.2.12.1 Existing environment

The Project area is located in the Muswellbrook LGA, which is part of the Hunter Region of NSW. The LGA encompasses a total land area of about 3,400 square kilometres (**km²**), of which a large proportion is National Park, a number of rural communities and the larger town centres of Muswellbrook and Denman. The Singleton LGA is located to the east of the Project area and covers an area of approximately 4,900 km².

Key industries in the region include coal mining, energy generation, agriculture, viticulture, equine, manufacturing retail and tourism.

The regional centres of Muswellbrook, with a population of around 16,100 (ABS, 2016a), and Singleton, with a population of around 23,000 (ABS, 2016b), are located approximately 10 km to the north and 25 km to the south of the site respectively. These towns operate as employment hubs and service centres for the local and regional economies.

The population of the Muswellbrook LGA is projected to grow to 20,300 people by 2036, while the Singleton LGA is projected to grow to 28,600 people. This represents an average rate of growth of 1.3% and 1.2% respectively, which is below the expected rate of growth in NSW.

4.2.12.2 Potential impacts

The potential exists for the Project to generate short term impacts during construction related to air quality, traffic and access, noise and vibration, which may have temporary socio-economic impacts on the surrounding communities of Muswellbrook, Singleton and road users, however due to the remoteness of the Project to sensitive receivers, potential amenity impacts are expected to be minimal.

The Project would impact positively on employment through the creation of direct employment opportunities through the construction phase, with most workers expected to be sourced locally and from within NSW where practical. These positive impacts would follow the loss of existing employment due to the closure of LPS.

The Project is also likely to generate a number of indirect jobs in local, regional and national businesses and industries from increased economic activity and spending at businesses providing goods and services.

4.2.12.3 Proposed assessment approach

A Social Impact Assessment (**SIA**) would be prepared as a component of the EIS. It would:

- Identify the Project's area of social influence and the socio-economic characteristics of that area
- Identify, predict and analyse the potential negative and positive social impacts that may arise from the Project, drawing on information contained in the other technical assessments completed for the EIS.
- Evaluate the significance of the identified social impacts, including residual impacts.
- Outline a series of mitigation measures for significant negative social impacts and enhancement measures for significant positive social impacts

4.2.13 Economic

4.2.13.1 Existing environment

A comparison of income and employment data (ABS, 2016a; ABS, 2016b) for the Muswellbrook and Singleton LGAs with NSW as a whole indicates:

- Muswellbrook LGA generally had lower weekly personal and household incomes, while communities in the Singleton LGA generally reported higher incomes.
- Singleton LGA had higher levels of workforce participation with about 63.6% of people aged 15 years or over employed or looking for work, while workforce participation in the Muswellbrook LGA was similar to the NSW average.
- Muswellbrook LGA had a rate of unemployment well above the NSW average, while the Singleton LGA had a level of unemployment similar to NSW.

Coal mining is the dominant employment industry in the Muswellbrook and Singleton LGAs, responsible for approximately one fifth of employment in the area. While the electricity, gas, water and waste services industries are responsible for approximately 3 to 5 % of employment, significantly higher than the NSW average (0.9%), reflecting the importance of the power generation industry to the local economy.

4.2.13.2 Potential impacts

Potential positive economic impacts from the Project include:

- Creation of direct employment opportunities through the demolition and rehabilitation phases, with workers sourced from within NSW where possible.
- Generation of a number of indirect jobs in local, regional and national businesses and industries from increased economic activity at businesses providing goods and services.

Potential negative economic impacts from the Project include:

- Costs associated with environmental impacts

4.2.13.3 Proposed assessment approach

The potential economic impacts of the Project would be assessed as part of the EIS and would include:

- Identification of both the economic benefits and costs of the Project
- Evaluation of the significance of the identified economic impacts to the local and regional economies

4.2.14 Traffic and transport

4.2.14.1 Existing environment

The Project area is accessed from the New England Highway via an interchange that is shared with BPS (see Figure 2-3). The New England Highway is a national highway that links Newcastle to Brisbane. Near the Project area, the New England Highway is dual carriageway with two lanes in each direction and a central median. The speed limit in the vicinity of the Project area is 100 km/h.

4.2.14.2 Potential impacts

The Project would introduce additional traffic to local roads during the execution phase including the need for some oversize and overmass vehicle movements for the delivery of equipment and removal of waste metal and other wastes for recycling or re-use.

Vehicles, plant and equipment required for demolition of the LPS would use public roads to transport materials and machinery into and out of the Project area. There are no residential developments or other sensitive receivers adjacent or in close proximity of site entry and access points. The Project area would be accessed via the New England Highway and other secondary roads in the local area that are anticipated to have the capacity to accommodate expected additional traffic.

Internal haul roads would be used to transport excavated material to the LAD and other rehabilitation areas and asbestos containing materials to the Hazmat landfill.

4.2.14.3 Proposed assessment approach

A traffic impact assessment would be included in the EIS and would consider cumulative impacts with other proposed developments using the LPS access. It would evaluate the potential for traffic generated by the Project's construction and operation to impact on the performance (capacity, congestion and safety) of surrounding roads.

A summary of the assessment and any proposed mitigation and management measures would be presented in the EIS.

4.2.15 Visual amenity

4.2.15.1 Existing environment

The surrounding area is characterised by mining operations, rolling hills, grazing land and bushland. Local land use is dominated by large-scale infrastructure associated with power generation and open cut mining activities.

The LAD has been in existence and has been developed progressively overtime since LPS opened in the early 1970s. The local community is accustomed to the view of the existing power station and associated infrastructure including the LAD.

4.2.15.2 Potential impacts

The majority of the proposed activities within the Project area are not readily visible to sensitive receivers due to the surrounding vegetation and topography with the exception of the LPS itself.

The LPS is visible from the New England Highway and from across Lake Liddell, including the Lake Liddell recreation area. Demolition of LPS would represent the removal of this significant feature from the landscape. The LPS infrastructure area is proposed to be rehabilitated for future commercial industrial use and is therefore likely to remain generally consistent with the existing landscape.

The borrow pit area is not visible from surrounding potential viewpoints on the New England Highway and Thomas Mitchell Drive and there are few receivers in the vicinity of the site. The

Project would result in minor visual amenity impacts in the short term due to the presence of earthworks equipment and disturbed surfaces. Following rehabilitation, visual amenity in the area would likely be improved as the area would be transformed from the existing poorly shaped rehabilitated area to a more natural state, which blends into the surrounding landscape.

4.2.15.3 Proposed assessment approach

A visual impact assessment would be undertaken for the EIS. The assessment would:

- Describe the existing visual character of the Project area and surrounds
- Evaluate the significance of any predicted changes to views and visual amenity at representative viewpoints, considering factors such as the predicted magnitude of change, contrast, viewing distance and direction, length of viewing time and receptor sensitivity.
- Provide recommendations to enable avoidance or mitigation of impacts, and include assessment of residual impacts taking into account recommended mitigation and management measures.

4.3 Scoping only issues

A number of Project matters have been classified as ‘Scoping only’ issues during the scoping process. These matters were considered during scoping, but it was concluded, for various reasons, that the proposed Project activities are unlikely to have any significant impacts on them. AGLM does not propose to investigate these matters further in the EIS. A brief summary of each of the identified ‘Scoping only’ issues, and a justification as to why further investigation is not warranted, is presented as follows.

4.3.1 Historic Heritage

The Australian Heritage Database, State Heritage Register, and local heritage registers in the Muswellbrook LEPs were searched on 17 February 2021. No items of Historic Heritage were identified within or adjacent to the Project area.

As no historic heritage items were identified within the Project area, the Project is not expected to impact on historic heritage. There is a low potential that unexpected historic heritage finds may be discovered during ground disturbing works.

Potential risk to any unexpected historic heritage finds would be managed with standard unexpected finds safeguards and management measures.

No further assessment is proposed as part of the EIS.

4.3.2 Public safety

Potential public safety risks associated with the Project would include:

- Potential injury if access could be gained to the LPS infrastructure area prior to or during demolition
- Potential health impacts due to exposure to hazardous materials

Site security would be maintained throughout the duration of the Project to prevent access by the public. This would eliminate the risk of potential injury due to members of the public gaining access to the LPS infrastructure area. Additionally, all asbestos is proposed to be disposed of on-site in the proposed Hazmat landfill, eliminating the need for asbestos to be transported off-site and potentially being exposed to the public.

Smaller quantities of other hazardous materials, such as liquid wastes and sludge residues, may be required to be disposed of off-site. Appropriate waste handling and management measures would be employed to prevent potential exposure to the public

Appropriate health and safety procedures would be implemented onsite to manage risks to employees and contractors.

The Project is not anticipated to impact on public safety. No further assessment is proposed as part of the EIS.

4.4 Cumulative impacts

The environmental assessments for the matters identified in Section 4.2 would include a cumulative impact assessment component. These cumulative impact assessments would:

- Take into consideration past, present and reasonably foreseeable planned developments that are relevant due to their proximity and/or potential to interact with the identified Project impacts. This would include the continued operation of BPS and any associated construction Projects.
- Outline how cumulative impacts may be managed through strategic planning or policy. This would include implementation of AGLM's Stakeholder Consultation Strategy to manage social impacts throughout closure of the LPS.
- Document how cumulative impacts have been considered and, to the fullest extent possible, the Project's relative contribution to those cumulative impacts.

5. Community and other stakeholder engagement

The Project is in its early development stage and environmental assessment and socio-economic is proceeding in parallel with the design and feasibility considerations.

AGL seeks to establish and maintain open and effective communication and relationships with the community and all interested stakeholders. AGL's community engagement approach is based on meeting community expectations and being open and transparent about their operations, in line with their values.

5.1 Engagement undertaken to date

AGL has undertaken consultation since late 2017 with key government, community and industry stakeholders about Liddell's closure and transition. This has included meetings or briefing for the following:

- All local NSW and Federal MPs
- Relevant NSW and Federal Ministers
- NSW Planning and NSW Premier and Cabinet
- Regional Development Australia (Hunter)
- HunterNet
- Hunter Business Chamber
- Muswellbrook Chamber of Commerce
- Muswellbrook Shire Council
- Singleton Council
- Upper Hunter Shire Council
- Hunter Joint Organisation of Councils
- AGL Macquarie Community Dialogue Group
- Local and national media/journalists

AGL held an open day at the Liddell site in September 2018 with over 150 people in attendance. AGL has also continued to hold meetings with the AGLM Community Dialogue Group.

5.2 Matters raised by the community and other stakeholders

While Project specific community and stakeholder consultation is in its early stages it is anticipated that concerns would include:

- Social and amenity impacts including visual amenity, transport, traffic, noise and vibration, air quality impacts
- Suitability and safe design of the Hazmat landfill
- Impacts to biodiversity
- Impacts to water
- Whether other options were considered
- Remediation and rehabilitation

- Provision of local jobs
- General socio-economic impacts resulting from closure of LPS

5.3 Community and stakeholder engagement program

5.3.1 Stakeholder engagement during EIS preparation

AGLM would develop a consultation plan for the EIS once SEARs are received and the outcomes of consultation would be included in the EIS and relevant technical studies. The purpose of the consultation plan is to ensure ongoing and effective communication with key stakeholders and the community.

Stakeholder groups, with an interest in the Project are expected to include:

- The DPIE cluster regarding the environmental assessment and land use implications of the Project and full suite of environmental impacts.
- NSW EPA and State government in relation to management of legacy contamination
- Muswellbrook Shire and Singleton Councils regarding impacts to Council services, socio-economic impacts, as well as a full suite of environmental impacts and rehabilitation.
- Muswellbrook Local Emergency Management Committee and rural fire services in relation to bushfire hazards
- TfNSW regarding impacts to the road network and any need for oversize over mass transport
- Neighbours of the AGLM site
- Aboriginal stakeholders (Traditional owners)
- Ausgrid
- TransGrid
- Local business community
- Other local councils and government agencies

Engagement regarding the Project is expected to be targeted at keeping neighbours and key stakeholders informed of the assessment process and anticipated Project impacts such that concerns can be addressed and managed through the design process. This is expected to be achieved through direct consultation with immediate neighbours, advertising the Project and advising how additional information can be obtained in the local media, and the hosting of an information session via the AGLM Community Dialogue Group prior to and during EIS exhibition.

5.3.2 Socio-Economic Impact Assessment

AGLM plays an integral social and economic role in the Upper Hunter Valley. The LPS has been operating within the community for over 50 years and is recognised as a source of employment and economic growth. It is expected that community stakeholders, local councils, and the local business community would be concerned about potential adverse socio-economic consequences as a result of the LPS closure. AGLM shares these concerns and has committed to ensure the community is appropriately and reasonably supported through the LPS closure. As previously noted, AGLM will commission a SIA as part of the EIS process, however AGLM intends this assessment to understand not only the Project impacts, but also the short, medium and longer term social and economic impacts of the LPS closure.

This Socio-Economic Impact Assessment will involve significant stakeholder consultation and endorsement, with particular emphasis on engagement and collaboration with the Muswellbrook Shire, Singleton and Upper Hunter Shire Councils.

The outcomes of the SEIA will enable AGLM and key stakeholders to identify areas to best direct actions and contributions which should reasonably be made by AGLM to manage those impacts.

5.3.3 Stakeholder engagement during future Project stages

Opportunities for members of the community and other stakeholders to engage with AGLM during the Project would be provided through a range of mechanisms, as outlined in Table 5-1.

Table 5-1 Stakeholder engagement mechanisms

Mechanism	
AGL website	AGL maintains a webpage for the AGL Transition project. Project updates would be made available for members of the public. The webpage also allows members of the public to register their interest to stay informed about the Project.
AGLM Community Dialogue Group	AGLM would continue to provide community and other stakeholders updates through the Community Dialogue Group. These meetings would also provide the attendees with an opportunity to communicate community sentiments regarding Project activities and raise any issues or concerns.
Direct engagement	AGLM will continue progressing with briefings, meetings and discussions with local government and State and Federal government agencies. These provide opportunity for government stakeholders, to consult directly with AGLM on the Project and provide timely feedback throughout the process.

6. Conclusion

LPS operates as part of the AGLM integrated power generation complex located near Muswellbrook, NSW. AGL plans to retire the plant and cease coal fired power generation at LPS with the final units to close in April 2023.

To support the proposed closure strategy of LPS, AGLM is now seeking SSD approval to undertake the Future Land Use and Enabling Works Project. The Project aims to rehabilitate the operational areas of the site to achieve a safe, stable and non-polluting landform in preparation for the proposed future establishment of an Energy Hub or other beneficial uses, associated with power generation at the LPS site. Consent is not being sought for future projects proposed within the Energy Hub, or a change of use, and as such does not form part of this application.

An EIS will be prepared for the Project in accordance with the SEARs and with consideration of feedback received during the community and stakeholder engagement program.

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Appendices

Appendix A – Scoping worksheets

Environmental Impact Statement (EIS) scoping worksheet for:			Liddell Future Land Use and Enabling Works						Date:		Jun-21				
What matters might be impacted?			What activities might cause an impact?			What are the characteristics of the impact?				How will the impact be managed?	What are the community and other stakeholder views?	What level of assessment and engagement is required in the EIS preparation phase?			
Social and environmental matters i.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements <i>Click on the matter for a description, or the link above for full glossary</i>			Without any mitigation, is the proposal likely to impact on the matter? <i>(Select from list)</i>	If there is a 'likely' impact: 1. list the activities expected to cause the impact; and 2. if applicable, list the receptor being impacted and its status. <i>E.g. construction noise will be heard at nearby school</i> If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location? <i>(Manual entry)</i>	Is the impact, without mitigation, expected to cause a material effect with regard to its... <i>(Answer 'Y', 'N' or '?')</i> <i>Click on characteristic for description, or the link above for further detail</i>				Does the impact need assessment in the EIS? <i>(Auto fills)</i>	Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)? <i>(Select from list)</i>	What safeguards and management measures are expected to be required to address the impact? <i>(Select from list)</i>	Are there community or other stakeholder concerns regarding the impact or activity? <i>(Based on engagement with community and other stakeholders)</i> <i>(Select from list)</i>	Expected level of assessment and/or engagement required <i>(Auto fills)</i>	Relevant section in Scoping Report <i>(Manual entry)</i>	
					extent?	duration?	severity?	sensitivity?							
What does the proposal mean for people?	AMENITY	acoustic	Likely	Construction noise during decommissioning, borrow pit establishment, waste emplacement, rehabilitation	Y	N	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.4, 4.2.11	
		visual	Likely	Impacts during construction. Opportunity to improve visual amenity as part of decommissioning and rehabilitation.	Y	Y	Y	N	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.15	
		odour	n/a											No assessment necessary - Worksheet only	
		microclimate	n/a											No assessment necessary - Worksheet only	
		other - please specify	n/a											No assessment necessary - Worksheet only	
	ACCESS	access to property	n/a											No assessment necessary - Worksheet only	2.3.7
		utilities	Likely	Interactions with existing power, telecommunications, water utilities during construction.	Y	Y	Y	N	Yes	No	Unknown	Yes	Key Issue + Focussed Engagement	2.3.6, 5.3.1	
		road and rail network	Likely	Construction traffic impacts on New England Highway	Y	N	Y	N	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.3.7, 4.2.14	
		offsite parking	n/a											No assessment necessary - Worksheet only	2.3.7
		other - please specify	n/a											No assessment necessary - Worksheet only	
	BUILT ENVIRONMENT	public domain	n/a											No assessment necessary - Worksheet only	
		public infrastructure	Unlikely	New England Highway	Y	Y	N	N	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.3.7, 4.2.14	
		other built assets	Likely	LPS, LAD, transmission lines	Y	Y	Y	N	Yes	No	Project Specific	Yes	Key Issue + Focussed Engagement	2.3.4, 2.3.5	
		other - please specify	n/a											No assessment necessary - Worksheet only	
	HERITAGE	natural	n/a	No items of natural heritage are located within the project area										No assessment necessary - Worksheet only	4.3.1
		cultural	n/a	No items of cultural heritage are located within the project area										No assessment necessary - Worksheet only	4.3.1
		Aboriginal cultural	Unlikely	Need to confirm impact on Aboriginal cultural heritage	?	?	?	?	Unknown	Unknown	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.9	
		built	n/a	No items of built heritage are located within the project area										No assessment necessary - Worksheet only	4.3.1
	COMMUNITY	other - please specify	n/a											No assessment necessary - Worksheet only	
		health	Likely	Demolition of LPS, including hazardous waste	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.5	
safety		Likely	Demolition of LPS, including hazardous waste	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.5		
services and facilities		n/a											No assessment necessary - Worksheet only		
cohesion, capital and resilience		Likely	Change of use from power station to commercial/industrial uses	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.12, 4.2.13		
ECONOMIC	housing	Unlikely	Temporary impacts during construction	Y	N	N	Y	Yes	Yes	Unknown	Yes	Key Issue + CIA + Focussed Engagement	4.2.12, 4.2.13		
	other - please specify	n/a											No assessment necessary - Worksheet only		
	natural resource use	Likely	Borrow pit, construction materials	Y	Y	Y	Y	Yes	Yes	Unknown	Yes	Key Issue + CIA + Focussed Engagement	4.2.13		
	livelihood	Likely	Employment during construction	Y	Y	Y	Y	Yes	Yes	Unknown	Yes	Key Issue + CIA + Focussed Engagement	4.2.13		
	opportunity cost	Likely	Construction cost	Y	Y	Y	Y	Yes	Yes	Unknown	No	Key Issue + CIA	4.2.13		
What risks does the proposal face?	AIR	other - please specify	n/a										No assessment necessary - Worksheet only		
		particulate matter	Likely	Construction impacts	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.3, 4.2.10	
		gases	Likely	Construction impacts (vehicle emissions)	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.3, 4.2.10	
		atmospheric emissions	Unlikely	GHG construction impacts	Y	N	N	Y	Yes	Yes	Standard	No	Other Issue + CIA	4.2.10	
	BIODIVERSITY	other - please specify	n/a											No assessment necessary - Worksheet only	
		native vegetation	Unlikely	Clearing of undisturbed areas unlikely	N	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.8	
		native fauna	Unlikely	Clearing of undisturbed areas unlikely	N	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.8	
		other - please specify	n/a											No assessment necessary - Worksheet only	
	LAND	stability and/or structure	Likely	Capping and rehabilitation of LAD, reshaping LPS landform	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.8, 4.2.2	
		soil chemistry	Likely	Capping and rehabilitation of LAD, rehabilitation of LPS site	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.8, 4.2.2	
		capability	Likely	Capping and rehabilitation of LAD, rehabilitation of LPS site	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.8, 4.2.2, 4.2.1	
		topography	Likely	Capping and rehabilitation of LAD, reshaping LPS landform	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.7	
		contamination	Likely	Capping and rehabilitation of LAD, rehabilitation of LPS site	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.3	
		waste	Likely	Hazmat landfill, LPS demolition	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.4	
		Land use	Likely	Decommissioning and rehabilitation of LPS and LAD and repurposing for future beneficial land use	Y	Y	Y	Y	Yes	Unknown	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.1	
	WATER	water quality	Likely	Capping and rehabilitation of LAD, rehabilitation of LPS site	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.5, 2.6.6, 4.2.6, 4.2.7	
		water availability	Likely	Dust suppression during construction	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.5, 2.6.6, 4.2.6, 4.2.7	
		hydrological flows	Likely	Changes to surface water flows during and after construction	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.5, 4.2.6,	
		other - please specify													
	RISKS	coastal hazards	n/a											No assessment necessary - Worksheet only	
flood waters		Likely	Changes to flooding behaviour due to landform changes	Y	Y	?	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	2.6.5, 4.2.6		
bushfire		Likely	Spontaneous combustion risk from borrow pit in mine waste. Risks from construction activities.	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	5.3.1		
undermining		n/a											No assessment necessary - Worksheet only		
steep slopes		n/a											No assessment necessary - Worksheet only		
Hazardous substances and dangerous goods		Likely	Hazmat landfill, LPS demolition	Y	Y	Y	Y	Yes	Yes	Project Specific	Yes	Key Issue + CIA + Focussed Engagement	4.2.5		

Appendix B – Existing consents to be surrendered

Muswellbrook Shire Council

TELEPHONE - PERSONAL ENQUIRIES
PLEASE ASK FOR K. Nichols/dl
OUR REFERENCE DA.98/95
YOUR REFERENCE



ADMINISTRATION CENTRE
MUSWELLBROOK N.S.W. 2333

A handwritten signature in black ink, appearing to read 'J. G. Gals'.

MUSWELLBROOK SHIRE COUNCIL

NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION Issued under the Environmental Planning and Assessment Act 1979 (Section 92)

A handwritten signature in black ink, appearing to read 'C. W. Officer', with the date '9/8/13.4.2' written below it.

Development Application

Applicant Name
Applicant Address

Mr. J. Marcheiff
Liddell Power Station
PMB 2
MUSWELLBROOK 2333

Land to be developed
Proposed development

Part 14, 60 Parish Liddell
To Establish a 2ha Wood Lot and Effluent Irrigation
System at Liddell Power Station

Determination
made on (date)

28th July 1995

Determination:

Consent granted subject to conditions described below.

Consent to operate from:

28th July 1995

Consent to lapse on:

28th July 1997 if work has not commenced.

Details of conditions
(including section 94 conditions)

1. The proposed development being carried out strictly in accordance with the details set out on the Plans Numbered 98/95(a) and on the Application form, except as modified by the conditions of this consent.
2. No development is to be undertaken which does not comply with the requirements of the following legislation:

Soil Conservation Act

- Areas greater than 18 degrees slope are protected lands and consent from Soil Conservation Service is required under Section 21D of the Act before any timber destruction is under taken.

.../2

- Lopping or removal of trees and shrubs within 20 metres of dedicated stream requires consent of Department of Water Resources under Section 21D of the Act.

National Parks & Wildlife Act

- Protection of endangered fauna - consult National Parks and Wildlife Service.
- Protection of aboriginal sites - consult National Parks and Wildlife Service.

Water Act

- Use of dedicated stream for irrigation purposes requires a licence from Department of Water Resources under Part II of the Act. A licence is also necessary for any new wells or bores that are constructed to access ground water.

Rivers and Foreshores Improvement Act

- Any works (excavations, creek crossings etc) in or within 40 metres of the banks of a river require a permit from Department of Water Resources under Part 3A.
3. A suitable barrier such as a bund wall shall be placed around the woodlot to ensure effluent does not drain into Lake Liddell.
 4. The applicant shall obtain the approval of the Department of Public Health and the Environment Protection Authority.
 5. A summary of results from the monitoring programmes outlined in the application shall be submitted to Council annually.

Reasons for Conditions:

1. To ensure that the development is carried out in accordance with the appropriate provisions of Section 90 of the Environmental Planning and Assessment Act.
2. To ensure that the development is carried out in the public interest.
3. To ensure that Council feels consideration of the relevant matters contained in Section 90 of the Act are adhered to by the developer.

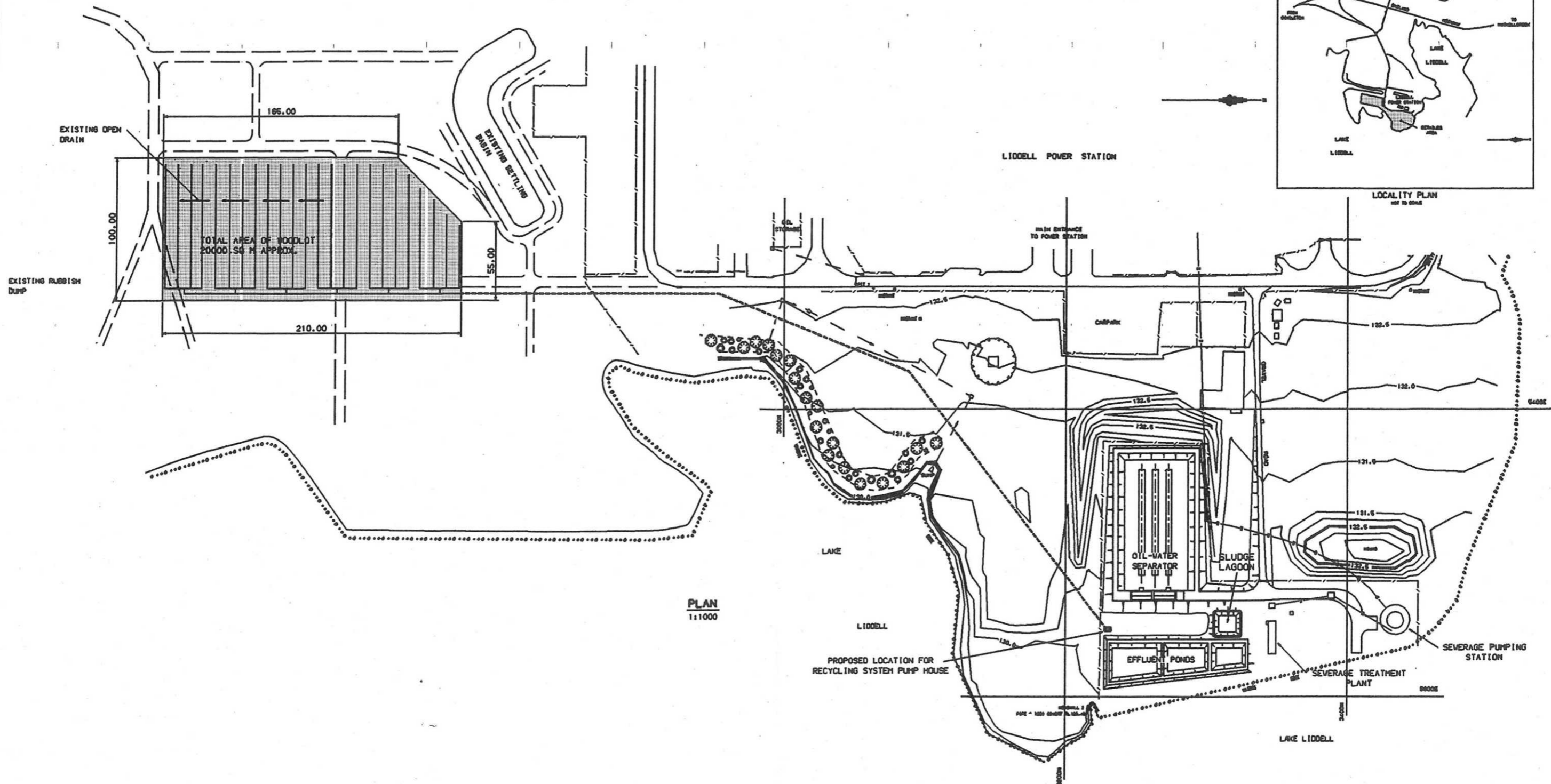
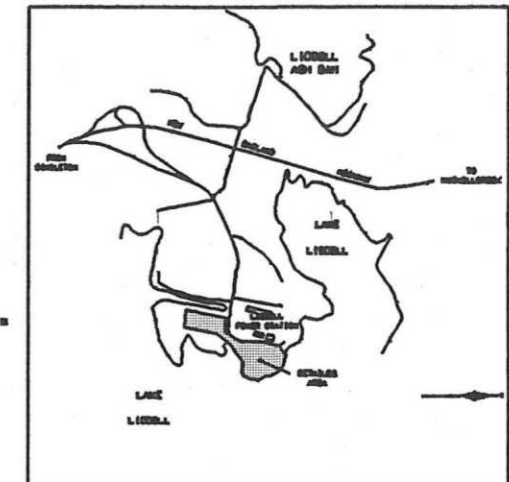
Right of Appeal: If you are dissatisfied with this decision, Section 97 of the Environmental Planning and Assessment Act 1979 gives you the right to appeal to the Land and Environment Court within 12 months after the date on which you receive this notice.

Signature


K. Nichols
Planning Services Manager

Date

1, 8 95 .



The Electricity Commission of New South Wales trading as Pacific Power

THIS DRAWING MAY BE OF REDUCED SIZE

DATE: NOVEMBER 1987 NO. 1. 03/214

CONTROL	DESIGN NO.	REV.	DATE	BY	CHKD.	APP'D.
LD 627	64					
LD 627	67					

PACIFIC POWER

LIDDELL POWER STATION
SEWERAGE TREATMENT PLANT
SEWERAGE PUMPING STATION
OIL-WATER SEPARATOR
SLUDGE LAGOON
EFFLUENT PONDS
RECYCLING SYSTEM PUMP HOUSE

TENTATIVE

SCALE

LD 63875



Muswellbrook Shire Council

ENQUIRIES

PLEASE ASK FOR

DIRECT

OUR REFERENCE

YOUR REFERENCE

Chirs Gidney
(02) 6549 3770
DA 98/1995



MUSWELLBROOK SHIRE COUNCIL
ADMINISTRATION CENTRE
MUSWELLBROOK NSW 2333
ABN 86 864 180 944

15 December 2005

HLA Envirosciences Pty Ltd
P O Box 73
HUNTER REGION MC NSW 2310

17 9 DEC 2005

Attention: Holly Marlin

Dear Ms Marlin

Development Application No. 98/1995 - Section 96 Amendment - Change Of Location Of Irrigation System, Macquarie Generation, New England Highway Muswellbrook 2333

I refer to your application received by Council on 25 October 2005, requesting an amendment to the subject development consent.

Pursuant to Section 96 of the Environmental Planning and Assessment Act 1979, Council has approved the amended plans. In this regard, conditions of the development consent have been amended in the following manner:

- Replace Condition No. 1.
- Attach additional conditions 6, 7, 8, 9 and 10.

Council advises that the conditions of development consent have been amended and now comprise:

1. The development has been approved in accordance with the development application and submitted statement of Environmental Effects by HLA Envirosciences Pty Ltd dated 20 October 2005 and submitted to Council on 25 October 2005, as amended by conditions of this consent.
2. No development is to be undertaken which does not comply with the requirements of the following legislation:

Soil Conservation Act

- Areas greater than 18 degrees slope are protected lands and consent from Soil Conservation Service is required under Section 21D of the Act before any timber destruction is undertaken.
- Lopping or removal of trees and shrubs within 20 metres of a dedicated stream requires consent from the Department of Water Resources under Section 21D of the Act.

National Parks and Wildlife Act

- Protection of endangered Fauna – consult National Parks and Wildlife Service.
- Protection of aboriginal sites – consult with National Parks and Wildlife Service.

Water Act

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- Use of dedicated stream from irrigation purposes requires a licence from the Department of Water Resources under Part 11 of the Act. A licence is also necessary for any new wells or bores that are constructed to access ground water.

Rivers and Foreshores Improvement Act

- Any works (excavations, creek crossings etc) in or within 40 metres of the banks of a river require a permit from the Department of Water Resources under Part 3A.

3. A suitable barrier such as a bund wall shall be placed around the woodlot to ensure effluent does not drain into Lake Liddell.
4. The applicant shall obtain the approval of the Department of Public Health and the Environment Protection Authority.
5. A summary of results from the monitoring programs outlined in the application shall be submitted to Council annually.
6. A survey of the existence of the Green and Golden Bell Frog within the woodlot is to be undertaken and provided to Council. Any recommendations proposed within the survey require approval from Council prior to the removal of the woodlot.
7. The proposed erosion and sediment control plan is to include all areas where new pipelines are to be laid from the treatment plant to the ash dam.
8. Monitoring of groundwater is to be undertaken to assess any contamination from treated effluent.
9. The disposal of the treated effluent is to comply with the requirements of the Department of Environment and Conservation's "Environmental Guidelines – Use of Effluent by Irrigation".
10. Approval is to be obtained from the Department of Environment and Conservation for any modification to Environmental Protection License No. 2122 as described under Section 58 of the Protection of the Environment and Operations Act 1997.

It should be noted that this approval remains effective from the original date of consent, 28 July 1995. All other terms of the original consent notice remain unchanged.

Section 96 confers on an applicant who is dissatisfied with this determination a right of appeal to the Land and Environment Court (except in the case of State Significant Development). This appeal provision is pursuant to the Land and Environment Court Rules and is exercisable within forty (40) days of the receipt of this notice under Section 96(6) of the Act.

Should you require further information in relation to this matter, please contact me on (02) 6549 3770.

Yours faithfully



CHRIS GIDNEY
MANAGER ENVIRONMENTAL SERVICES



Enquiries

Please ask for

Direct

Our ref

Your ref

Mrs D L Watson

02 6549 3777

DA 10098/1995

19 December 2017

Kate Coates
General Manager AGL Macquarie
AGL Macquarie Pty Limited
Private Mail Bag 2
MUSWELLBROOK 2333

Dear Madam

Development Application No. 98/1995 – Section 96(2) Modification to Sewerage Effluent Irrigation, AGL Macquarie, Muswellbrook

I refer to your application received by Council on 30 January 2017, requesting an amendment to the subject development consent. This consent was originally granted in 2005 and was modified in December 2005.

The application to amend the development consent was considered by Council pursuant to Section 96 of the Environmental Planning and Assessment Act 1979. Council has now determined the application.

Council advises that the conditions of development consent have been amended and now comprise:

1. Obligation to minimise harm to the environment

The Applicant must implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, rehabilitation and, where relevant, decommissioning of the development.

2. Adherence to terms of DA, EIS, etc.

The development must be carried out in accordance with the conditions of this consent and generally in accordance with:

- i. The accompanying SEE titled "Liddell Ash Dam Sewage Effluent Reuse Project – s96 Modification DA 98-1995 Statement of Environmental Effects" Dated 1 August 2017.
- ii. the SEE titled "Statement of Environmental Effects Effluent Reuse, Liddell Power Station" dated 20 October 2005.
- iii. the Management Plan titled "Liddell Sewerage Treatment Plant Management Plan" dated September 2017 or its most recent version.

Where there is an inconsistency between two or more of the above documents, the most recent document prevails to the extent of that inconsistency. However, the conditions of this consent shall prevail to the extent of any inconsistency.

Muswellbrook Shire Council ABN 86 864 180 944

Address all communications to The General Manager · PO Box 122 · Muswellbrook NSW 2333
Phone 02 6549 3700 · Email council@muswellbrook.nsw.gov.au · Web www.muswellbrook.nsw.gov.au

3. Compliance with documentation

The Applicant must comply with any reasonable requirement/s of Council arising from:

- Any reports, strategies, plans, programs, audits or correspondence that is submitted in accordance with this consent;
- Any reports, reviews or audits commissioned by Council regarding compliance with this consent; and
- The implementation of any actions or measures contained in these documents.

4. Annual Report

(a) The Applicant must, prepare and submit to Council an Annual Report which shall include:

- (i) a compliance review of the performance of the project against conditions of this consent, management plans and statutory approvals;
- (ii) assess the project against predictions made in the SEE's and other supporting documentation, Management Plans and the terms and commitments in the documents listed in the consent;
- (iii) a review of the effectiveness of the environmental management of the Effluent disposal system in terms of EPA, DPI Water and Council requirements;
- (iv) review the results of environmental monitoring required under this consent or other approvals, including interpretations and discussion ;
- (v) identification of trends in monitoring results;
- (vi) a listing of any variations obtained to approvals applicable to the DA area during the reporting year;
- (vii) the water budget for the year;
- (viii) a summary report on the yearly review of the irrigation management and how its operation is being managed to maximise beneficial re-use throughout the reporting year;
- (ix) A list of any incidents that occurred within the reporting year.

(b) In preparing the Annual Report, the Applicant must:

- (i) comply with any reasonable requirements of Council or other relevant government agencies; and
- (ii) ensure that the first report is completed and submitted within 3 months of the end of the reporting year, or at a date determined by Council in consultation with the DRE

- (c) The Applicant must ensure that copies of each Annual Report are submitted to Council, DPI Water and the EPA, and made available for public information at Council within fourteen days of submission to these authorities.
- (d) The Annual Report required by this consent can be incorporated into another Annual Report required by another Council consent for the Bayswater/Liddell site.

5. Compliance with Legislation

The Liddell sewerage plant and disposal area is to be operated generally in accordance with the following guidelines:

- a) Australian Guidelines for Water Recycling;
- b) NSW Department of Primary Industries – Water NSW Guidance for Recycled Water Management Systems;
- c) NSW Environment Protection Authority Environmental Guidelines.

6. Monitoring and Maintenance Plan

The Applicant must prepare a Monitoring and Maintenance Plan to the satisfaction of Council. The plan must include, but not be limited to the following matters:

- a) A monitoring period and a description of the monitoring of pond water levels, water quality and volume disposed per day;
- b) Details of water quality monitoring to be undertaken for pH, Ec, BOD, TSS, EColi and oil/grease and other analytes as agreed with Council;
- c) An inspection regime and maintenance plan for the STP, pump and pipeline and disposal area;
- d) Water assessment criteria, including trigger levels for investigating any potential adverse impacts.
- e) A description of what is defined as an incident and a description of the reporting process should an incident occur;
- f) To initially, for a period of 6 months from the date of this approval, provide Council with monthly monitoring results for the water in Pond 1, Pond 3, and the effluent disposal area;
- g) To initially, for a period of 12 months from the date of this approval, provide quarterly servicing reports for the STP. Subsequent reporting periods to be provided in the management plan;

This plan must be provided to Council within 3 months of the date of this approval and reviewed on a 3 yearly basis or as agreed by Council. The Applicant must implement the approved management plan as approved from time to time by Council.

7. Liddell Sewerage Treatment Plant Management Plan

The Applicant must prepare a Liddell Sewerage Treatment Plant Management Plan to the satisfaction of Council. This plan must include, but not be limited to the following matters:

- a) The design of the sprinkler system showing its existing/planned layout to demonstrate it can manage the peak volume being applied, and in a way that will not cause "misting";
- b) The sprinkler system design must demonstrate how waterlogging and nutrient saturation of the ground is to be monitored and minimised;
- c) The methods used in the sprinkler system to ensure the system has no leaks and all the water is disposed through the sprinklers;
- d) A description of the treatment plant, maintenance and service methods to ensure the water quality being disposed can be maintained to the standards outlined in the SEE.
- e) A description of how treatment pond overflow into Lake Liddell is avoided, and if water levels exceed acceptable limits, the methods to ensure acceptable levels are then achieved.

This plan must be provided to Council within 3 months of the date of this approval and reviewed on a 2 yearly basis or as agreed by Council. The Applicant must implement the approved management plan as approved from time to time by Council.

8. Notification of environmental incidents

The applicant must notify Council and any other relevant agencies immediately of any environmental incident relating to this consent. Within 7 days of the date of the incident, the Applicant shall provide Council and any relevant agencies with a detailed report on the incident, and such further reports as may be reasonably requested.

It should be noted that this approval remains effective from the original date of the consent, 28th July 1995.

Section 96 confers on an applicant who is dissatisfied with this determination a right of appeal to the Land and Environment Court under Section 96(6) of the Environmental Planning and Assessment Act 1979 (except in the case of State Significant Development). This appeal provision is pursuant to the Land and Environment Court Rules and is exercisable within sixty (60) days of the date of determination.

Should you require further information in relation to this matter, please contact me on 02 6549 3777.

APPROVED BY DELEGATED AUTHORITY



Donna Watson
Development Planner

MUSWELLBROOK SHIRE COUNCIL

**NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION
Issued under the Environmental Planning
and Assessment Act 1979 (Section 81)**

DEVELOPMENT APPLICATION:	90/2015
APPLICANT NAME:	AGL Macquarie Pty Ltd
APPLICANT ADDRESS:	Private Mail Bag 2 MUSWELLBROOK NSW 2333
LAND TO BE DEVELOPED:	Lot 2 DP 1095515 Liddell Power Station
PROPOSED DEVELOPMENT:	Liddell Ash Settling Pond and Associated Infrastructure

DETERMINATION MADE ON: 28 June 2016

DETERMINATION: Consent granted subject to conditions described below.

CONSENT TO OPERATE FROM: 28 June 2016

CONSENT TO LAPSE ON: 28 June 2021 if work has not commenced in accordance with Section 95(4) of the Environmental Planning and Assessment Act 1979.

DETAILS OF CONDITIONS:

IDENTIFICATION OF APPROVED PLANS

1. Development in Accordance with Plans

The development being carried out in accordance with the development application and the drawings referenced below, and endorsed with Council's approval stamp, except where amended by the following conditions.

Drawing No.	Drawn by	Drawing Date	Received
Conceptual Layout of Project Site	AECOM	8 April 2016	15 April 2016

2. Plans on Site

A copy of all stamped approved plans, specifications and documents (including the Construction Certificate if required for the work incorporating certification of conditions of approval) must be kept on site at all times so as to be readily available for perusal by any officer of Council or the Principal Certifying Authority.

3. Development in Accordance with Documentation

The development is to be carried out generally in accordance with the following documents:

Title	Written by	Date
Statement of Environmental Effects	Aecom	8 April 2016

ANCILLARY MATTERS TO BE COMPLETED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

4. Section 94A Contributions

Pursuant to section 80A(1) of the Environmental Planning and Assessment Act 1979, and the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010, a contribution of **\$14,000-00** shall be paid to Muswellbrook Shire Council.

The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the provisions of the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010. The contribution is to be paid prior to the issue of any Construction Certificate.

CONDITIONS THAT MUST BE ADDRESSED PRIOR TO COMMENCEMENT

5. Construction Certificate Requirement

No works shall commence on site until such time as a Construction Certificate has been issued for either part or all of the works. If a certificate is issued for part of the works it must cover the works being undertaken onsite.

6. Sediment and Erosion Control

All required erosion and sedimentation techniques are to be properly installed prior to the commencement of any site works and maintained in a functional and effective condition throughout the construction activities until the site is stabilised.

CONDITIONS WHICH MUST BE COMPLIED WITH PRIOR TO THE ISSUE OF THE OCCUPATION CERTIFICATE**7. Occupation**

The Ash Dam spillway is not to be used until a final inspection has been carried out and an occupation certificate has been obtained from the Principal Certifying Authority.

CONDITIONS THAT MUST BE COMPLIED WITH AT ALL TIMES**8. DPI Water - Controlled Activity Approval**

The applicant shall carry out the works, subject to this approval, in accordance with the Controlled Activity Approval issued by the Department of Primary Industries – Water dated 6 June 2016 (ref – 20 ERM2015/1155).

9. Roads and Maritime Services Infrastructure Deed

The applicant shall at all times comply with the Roads and Maritime Services Infrastructure Deed issued to the Company.

REASON FOR IMPOSITION OF CONDITIONS:

The reason for the imposition of the following conditions is to ensure, to Council's satisfaction, the objects of the *Environmental Planning and Assessment Act 1979* (as amended) are achieved:

- (a) To encourage:
 - (i) The proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forest, 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 of development of land;
 - (iii) The protection, provision, and co-ordination of communication and utility services;
 - (iv) The provision of land for public purposes;
 - (v) The provision and co-ordination of community services and facilities;
 - (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;
 - (vii) Ecologically Sustainable Development; and
 - (viii) The provision and maintenance of affordable housing.
- (b) To promote the sharing of the responsibility for environmental planning between the different levels of government in the State.
- (c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.

ADVICE:**1. Location of Services**

Prior to construction work commencing you should ensure that all services have been clearly located and identified by contacting "Dial before you Dig" by telephoning 1100.

2. Rehabilitation

The area subject to this consent shall be considered for remediation and rehabilitation in any Closure Plan for the Power Station.

- Failure to comply with any of the above requirements is an offence under the provisions of the Act, and may result in enforcement action being taken by Council if these requirements are not complied with.

RIGHT OF APPEAL:

Section 82A of the Environmental Planning and Assessment Act 1979 provides that the applicant may request the Council to review the determination. The request must be made in writing (or on the review application form) within six (6) months *after receipt of this Notice of Determination*, together with payment of the appropriate fees. It is recommended that the applicant discuss any request for a review of the determination with Council Officers before lodging such a request.

If you are dissatisfied with this decision, Section 97 of the Environmental Planning and Assessment Act, 1979 gives you the right to appeal to the Land and Environment Court within six (6) months after the date on which you receive this notice.

APPROVED UNDER DELEGATED AUTHORITY

Donna Watson
Development Planner

Date / /

Enquiries
Please ask for Mrs D L Watson
Direct 02 6549 3777
Our references DA 91/2015
Your reference

MUSWELLBROOK SHIRE COUNCIL

**NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION
Issued under the Environmental Planning
and Assessment Act 1979 (Section 81)**

DEVELOPMENT APPLICATION:	91/2015
APPLICANT NAME:	AGL Macquarie Pty Ltd
APPLICANT ADDRESS:	Private Mail Bag 2 MUSWELLBROOK NSW 2333
LAND TO BE DEVELOPED:	Lot 2 DP 1022827 Liddell Power Station NEW ENGLAND HIGHWAY MUSWELLBROOK
PROPOSED DEVELOPMENT:	Install an effluent pipeline from the Liddell Power Station Water Treatment Plant to the outfall canal

DETERMINATION MADE ON: 13 January 2016

DETERMINATION: Consent granted subject to conditions described below.

CONSENT TO OPERATE FROM: 13 January 2016

CONSENT TO LAPSE ON: 13 January 2021 if work has not commenced in accordance with Section 95(4) of the Environmental Planning and Assessment Act 1979.

DETAILS OF CONDITIONS:

IDENTIFICATION OF APPROVED PLANS

1. Development in Accordance with Plans

The development being carried out in accordance with the development application and the drawings referenced in the Statement of Environmental Effects, and endorsed with Council's approval stamp, except where amended by the following conditions.

Title	Written by	Date
Statement of Environmental Effects	AECOM	21 October 2015

Muswellbrook Shire Council ABN 86 864 180 944

Address all communications to The General Manager Mail PO Box 122 Muswellbrook NSW 2333 Phone 02 6549 3700
Fax 02 6549 3701 Email council@muswellbrook.nsw.gov.au Web www.muswellbrook.nsw.gov.au

2. Plans on Site

A copy of all stamped approved plans, specifications and documents (including the Construction Certificate if required for the work incorporating certification of conditions of approval) must be kept on site at all times so as to be readily available for perusal by any officer of Council or the Principal Certifying Authority.

ANCILLARY MATTERS TO BE COMPLETED PRIOR TO THE ISSUE OF THE CONSTRUCTION CERTIFICATE

3. Section 94A Contributions

Pursuant to section 80A(1) of the Environmental Planning and Assessment Act 1979, and the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010, a contribution of \$6,000.00 shall be paid to Muswellbrook Shire Council.

The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the provisions of the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010. The contribution is to be paid prior to the issue of the Construction Certificate.

CONDITIONS THAT MUST BE ADDRESSED PRIOR TO COMMENCEMENT

4. Sediment and Erosion Control

All required erosion and sedimentation techniques are to be properly installed prior to the commencement of any site works and maintained in a functional and effective condition throughout the construction activities until the site is stabilised.

5. Construction Certificate Requirement

No works shall commence on site until such time as a Construction Certificate has been issued for either part or all of the works. If a certificate is issued for part of the works it must cover the works being undertaken onsite.

REASON FOR IMPOSITION OF CONDITIONS:

The reason for the imposition of the following conditions is to ensure, to Council's satisfaction, the objects of the *Environmental Planning and Assessment Act 1979* (as amended) are achieved:

- (a) To encourage:
- (i) The proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forest, 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 of development of land;
 - (iii) The protection, provision, and co-ordination of communication and utility services;
 - (iv) The provision of land for public purposes;
 - (v) The provision and co-ordination of community services and facilities;

- (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;
 - (vii) Ecologically Sustainable Development; and
 - (viii) The provision and maintenance of affordable housing.
- (b) To promote the sharing of the responsibility for environmental planning between the different levels of government in the State.
- (c) To provide increased opportunity for public involvement and participation in environmental planning and assessment.

ADVICE:**(1) Location of Services**

Prior to construction work commencing you should ensure that all services have been clearly located and identified by contacting "Dial before you Dig" by telephoning 1100.

RIGHT OF APPEAL:

Section 82A of the Environmental Planning and Assessment Act 1979 provides that the applicant may request the Council to review the determination. The request must be made in writing (or on the review application form) within six (6) months *after receipt of this Notice of Determination*, together with payment of the appropriate fees. It is recommended that the applicant discuss any request for a review of the determination with Council Officers before lodging such a request.

If you are dissatisfied with this decision, Section 97 of the Environmental Planning and Assessment Act, 1979 gives you the right to appeal to the Land and Environment Court within six (6) months after the date on which you receive this notice.

APPROVED UNDER DELEGATED AUTHORITY

Donna Watson
Development Planner

Date 13/1/2016

AGL Macquarie Pty Limited
21-Oct-2015

AECOM MELLBROOK SHIRE COUNCIL
This document forms part of the approval referred to
in the Council's notice of determination dated
13 JAN 2016
endorsed by: *D. Watson*

Statement of Environmental Effects

Water Treatment Plant Backwash Effluent Management Upgrade



Enquiries
Please ask for
Direct
Our references
Your reference

Ben Oliver
02 6549 3772
DA 1/2011

MUSWELLBROOK SHIRE COUNCIL

**NOTICE OF DETERMINATION OF DEVELOPMENT APPLICATION
Issued under the Environmental Planning
and Assessment Act 1979 (Section 81)**

DEVELOPMENT APPLICATION:	1/2011
APPLICANT NAME:	MACQUARIE GENERATION
APPLICANT ADDRESS:	34 GRIFFITHS ROAD LAMBTON 2299
LAND TO BE DEVELOPED:	PORTION 2 DP 774681 LOT 162 DP 752486, LOT 2 DP 1095515 PORTION 19 DP 247944 NEW ENGLAND HIGHWAY LIDDELL, NEW
PROPOSED DEVELOPMENT:	EXTENSION OF ASH DAM (LIDDELL POWER STATION)

DETERMINATION MADE ON: 31 October 2011

DETERMINATION: Consent granted subject to conditions described below.

CONSENT TO OPERATE FROM: 31 October 2011

CONSENT TO LAPSE ON: 31 October 2016 if work has not commenced.

DETAILS OF CONDITIONS:

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Proponent must implement all reasonable and feasible measures to prevent and/or minimise any material harm to the environment that may result from the construction, operation, or rehabilitation of the development.

TERMS OF CONSENT

2. The Proponent must carry out the development in accordance with the:
 - a) Application;
 - b) Site locality plan showing the proposed new embankment prepared by Coffey Environments and dated December 2010 (received by Council on 4 January 2011);
 - c) Statement of Environmental Effects prepared by Coffey Environments and dated 18 July 2011 (received by Council August 2011); and
 - d) conditions of this consent.
3. If there is any inconsistency between the conditions of this consent and any of the documents set out in 2(a), 2(b) or 2(c), the conditions of this consent prevail to the extent of that inconsistency.
4. Except where condition 3 applies, if there is any inconsistency between any of the documents set out in 2(a), 2(b) or 2(c), the most recent document prevails to the extent of that inconsistency.
5. The Proponent must comply with any reasonable requirement/s of the Council arising from the Council's assessment of:
 - a) any reports, strategies, plans, programs, reviews, audits or correspondence that are submitted by the Proponent in accordance with this consent; and
 - b) the implementation of any actions or measures contained in any of the documents set out in condition 5(a).
6. The Proponent must reimburse Council for any reasonable expense incurred by Council in the assessment of the matters set out in condition 5.

LIMITS ON CONSENT

7. Ash emplacement for the Project may take place until 30 June 2032
8. The Proponent must not:
 - a) emplace more than 1,600,000 tonnes of ash each year into the Ash Dam;
 - b) emplace compacted mine overburden of more than 2,084,000 cubic metres in raising the height of the Eastern Wall Embankment;
 - c) Raise the height of the Eastern Wall Embankment to an elevation which exceeds RL201m AHD;

- d) Emplace compacted mine overburden of more than 2,018,000 cubic metres in extending the Western Wall Embankment.
9. The Proponent must not haul overburden or ash on any Council local road.
10. The Proponent must ensure that the dust emissions generated by the development do not exceed those predicated in the Statement of Environmental Effects.

DUST AND AIR QUALITY MANAGEMENT PLAN

11. The Proponent must prepare and implement a Dust and Air Quality Management Plan for the development to the satisfaction of Council. The Plan must:
- a) be submitted to the Council for approval by the end of March 2012.
 - b) make provision for measures which ensure compliance by the Proponent with the relevant conditions of this consent and includes a real-time air quality management system that employs reactive and proactive mitigation measures.
 - c) make provision for best practice air quality management, including all reasonable and feasible measures to minimise dust emission by the development.
 - d) make provision for minimising visible off-site air pollution.
 - e) make provision for minimising the area of the Ash Dam surface prone to dust generation.
 - f) make provision for the regular assessment of real-time air quality monitoring and meteorological forecasting and the relocation, modification and/or cessation of operations on-site to ensure compliance with the relevant conditions of this consent.
 - g) make provision for the co-ordination of air quality management on-site with the air quality management at nearby mining operations so as to minimise the cumulative air quality impact.

WATER MANAGEMENT PLAN

12. The Proponent must prepare and implement a Water Management Plan for the development to the satisfaction of the Council. This plan must:
- a) be prepared in consultation with NOW and DECCW, and be submitted to the Council for approval by the end of March 2012; and
 - b) include:
 - (i) a Site Water Balance;
 - (ii) an Erosion and Sediment Control Plan;
 - (iii) a Surface Water Monitoring Program;

- (iv) a Groundwater Monitoring Program; and
- (v) a Surface and Ground Water Response Plan.

13. The Site Water Balance must include details of:

- a) sources and security of water supply;
- b) water use on site;
- c) water management on site;
- d) any off-site water transfers;
- e) reporting procedures; and
- f) investigate and implement all reasonable and feasible measures to minimise water use by the development.

14. The Erosion and Sediment Control Plan must:

- a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition, 2004* (Landcom);
- b) identify activities that could cause soil erosion, generate sediment or affect flooding;
- c) describe measures to minimise soil erosion and the potential for the transport of sediment to downstream waters, and manage flood risk;
- d) describe the location, function, and capacity of erosion and sediment control structures and flood management structures; and
- e) describe what measures would be implemented to maintain the structures over time.

PROTECTION OF PUBLIC INFRASTRUCTURE

15. Unless the Proponent and the applicable authority agree otherwise, the Proponent must:

- a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and
- b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development.

For the purposes of this clause, "public infrastructure" does not include any infrastructure owned or operated by the Proponent.

OPERATION OF PLANT AND EQUIPMENT

16. The Proponent must ensure that all plant and equipment used on site is:

- a) maintained in a proper and efficient condition; and
- b) operated in a proper and efficient manner.

STAGED SUBMISSION OF PLANS

- 17. With the approval of the Council, the Proponent may submit any strategy, plan or program required by this consent on a progressive basis.
- 18. The Proponent must continue to implement any existing strategies, plans or programs that apply to the development on site until they are replaced by an equivalent strategy, plan or program approved under this consent.

DAM STRUCTURAL ADEQUACY

- 19. Prior to the emplacement of ash in the Dam:
 - a) a Construction Report – including an Engineer's certification as to adequacy, the specifications, Works as Executed Drawings and construction photographs must be submitted to Council and the Dam Safety Committee; and
 - b) An updated Dam Safety Emergency Plan must be prepared and a copy submitted to Council and the Dam Safety Committee.

VEGETATION MANAGEMENT PLAN

- 20. The Proponent must prepare a vegetation management plan to the satisfaction of Council by March 2013 which:
 - a) enhances the extent and composition of any threatened ecological community found on the site and, in particular, the Central Hunter Grey Box - Ironbark Woodland;
 - b) avoids the use of insecticides and herbicides within the subject site and, where possible, retains the integrity of the surrounding habitat for insectivorous bats and amphibian species; and
 - c) includes planting of salt tolerant species as part of the proposed saline discharge rehabilitation works.

REHABILITATION MANAGEMENT PLAN

- 21. The Proponent must prepare and implement a Rehabilitation Management Plan for the development to the satisfaction of Muswellbrook Shire Council. This plan must:
 - a) be prepared in consultation with the CCC;
 - b) be submitted to the Council for approval by the end of March 2012;

- c) be prepared in accordance with any relevant DRE guideline and any applicable Council policy;
- d) integrate, to the maximum extent practicable, with the other management plans required under this consent; and
- e) address all aspects of rehabilitation of the Ash Dam – including progressive rehabilitation, station closure (to the extent relevant to rehabilitation of the Ash Dam), final landform including final land use assessment, rehabilitation objectives, domain objectives, completion criteria and rehabilitation monitoring, and include a life of station ash management strategy, including an environmental risk assessment demonstrating that the emplacements can be designed, managed and rehabilitated appropriately.

CLOSURE PLAN

22. The Proponent must prepare, to the satisfaction of Council, a Closure Plan by June 2020 which describes the steps which the Proponent proposes to take to mitigate the adverse socio-economic effects associated with the cessation of the use of the Ash Dam by making best use of the rehabilitated final land form the subject of this consent.

COMMUNITY CONTRIBUTION

23. The Proponent must make a contribution to Council pursuant to s94A of the Environmental Planning and Assessment Act.

GENERAL TERMS OF APPROVAL PURSUANT TO SECTION 91A OF THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 (AS AMENDED)NSW Office of Environment and Heritage

24. The Proponent must comply with the National Parks and Wildlife Act 1974 (NPW Act) as amended, prior to commencing any ground disturbance or development works which is the subject of the development application.
25. In the event that surface disturbance identifies a new Aboriginal site, all works must halt in the immediate area to prevent any further impacts to the object(s). A suitable qualified archaeologist and representatives of the local Aboriginal community must be contacted to determine the significance (cultural and scientific) of the object(s). The site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) (managed by OEH). The proponent will consult with the Aboriginal community representatives, the archaeologist and OEH to develop and implement management strategies for all objects/sites. Prior to recommencing works in that area, the proponent will ensure they have the necessary approvals.
26. If human remains are located in the event that surface disturbance occurs, all works must halt in the immediate area to prevent any further impacts to the remains. The NSW Police are to be contacted immediately. No action is to be undertaken unless the NSW Police provide written notification to the proponent stating otherwise. If the skeletal remains are identified as

Aboriginal, the proponent must contact OEH's Enviroline on 131 555. NO works are to continue until OEH provided written notification to the proponent.

27. All reasonable efforts are to be made for the development to avoid impacting Aboriginal cultural heritage. If impacts are unavoidable, mitigation measures are to be negotiated with the local Aboriginal community and the required legislative approvals. All sites impacted must have an OEH Aboriginal Site Impact Recording (ASIR) form completed and submitted to OEH AHIMS unit within three (3) months of completion of the Aboriginal cultural heritage works.

RIGHT OF APPEAL:

If you are dissatisfied with this decision, Section 97 of the Environmental Planning and Assessment Act, 1979 gives you the right to appeal to the Land and Environment Court within six (6) months after the date on which you receive this notice.

APPROVED AT EXTRAORDINARY COUNCIL MEETING HELD 31 OCTOBER 2011



**BEN OLIVER
PLANNING SERVICES MANAGER**

Date 01 / 11 / 2011

Appendix C – Preliminary Geotechnical and Contamination Assessment

GHD

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3/https://projectsportal.ghd.com/sites/pp01_01/liddellfuturelanduse/ProjectDocs/12532502_REP_A_GLM_Liddell_Scoping_Report.docx

Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
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