AGL Future Land Use and Enabling Works

Planning Proposal Scoping Report

AGL Macquarie Pty Limited

14 September 2023

→ **The Power of Commitment**

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Executive Summary

AGL Macquarie Pty Ltd (AGL) owns the operating Bayswater Power Station (BPS) and the adjoining former Liddell Power Station (LPS) site. In line with the commitments in its Climate Transition Action Plan released in 2022, AGL ceased to operate LPS in April 2023 and has committed to close BPS by no later than 2033.

AGL has recently applied for state significant development consent under the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) to demolish the former LPS and ancillary structures. On completion of the demolition works, the LPS site will be rehabilitated in line with all regulatory requirements.

This Planning Proposal Scoping Report (the 'Scoping Proposal') has been prepared to support a pre-lodgement meeting with Muswellbrook Shire Council (the 'Council') in relation to an interim planning proposal which seeks to amend the *Muswellbrook Local Environmental Plan 2009* (the 'MLEP' 2009'). The amendment will enable compatible additional uses to occur and support the ongoing clean energy transition and an integrated industrial energy hub as identified in the Hunter Regional Plan 2041.

New land uses are proposed to be introduced to the current SP2 Infrastructure zone ('SP2 zone') which applies to the land owned by AGL and includes both the former LPS and the operating BPS sites. The SP2 zone is defined as the site and where the LEP amendments will apply. The aim of MLEP 2009 changes is to provide a flexible approach to meet the needs of potential developer scenarios in the short, medium and long term.

The Scoping Report provides an overview of AGL's proposal to amend MLEP 2009 to permit additional compatible land uses within the SP2 zone. The three (3) amendment options that have been determine are:

- Option 1: An additional Local Provision in the LEP bound by the SP2 zone based on proposed land uses, constraints, opportunities and capacity threshold to be determined and dependent upon future impacts and operational needs.
- Option 2: An additional permitted use in Schedule 1 of the LEP.
- Option 3: Insert new objectives and permitted land uses into the SP2 Zone.

The aim of the Planning Proposal is to maintain a flexible approach to a future integrated energy and industry hub that may occur within the SP2 zone and as such Option 1 is considered the preferred option.

To support the preferred option, technical investigations will be required to support the Planning Proposal and justify the site's suitability for future development. A multi criteria analysis will be required to understand site constraints and opportunities and identify suitable locations to support industrial development options.

The Scoping Proposal has been prepared in accordance with Department of Planning and Environment's (DPE) Local Environmental Plan Making Guidelines Scoping Proposal template, and addresses all information required for Council to consider the Proposal at a pre-lodgement meeting.

The Proposal represents a considered planning response that will enable additional compatible land uses to support the ongoing clean energy transition and an integrated industrial hub and development consistent with DPE's Regional Plan and strategic approach to meeting community expectations.

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Glossary

Glossary	
AGL	AGL Macquarie Pty Ltd
ACHAR	Aboriginal Cultural Heritage Assessment
BPS	Bayswater Powe Station
CLM Act	Crown Land Management Act 2009
CSP	Community Strategic Plan
DA	Development Application
DCP	Development Control Plan
DPE	Department of Planning and Environment
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	Environmental Protection and Assessment Act 1979
EPBC Act	Environmental Protection and Biodiversity Conservation Act 1999
GHD	GHD Pty Ltd
E&H	Environment and Heritage
LEP	Local Environmental Plan
LGA	Local Government Area
LPS	Liddell Power Station
LSPS	Local Strategic Planning Statement
Council	Muswellbrook Shire Council
MLEP 2009	Muswellbrook Local Environmental Plan 2009
SEE	Statement of Environmental Effects
SEPP	State Environmental Planning Policy

1. Introduction

1.1 Project appreciation

AGL Macquarie Pty Ltd (AGL) has engaged GHD to prepare this Scoping Proposal (the 'Scoping Proposal') to request a pre-lodgement scoping meeting with Muswellbrook Shire Council ('Council') to amend *Muswellbrook Local Environmental Plan 2009* (MLEP 2009).

Once both the LPS and BPS closures occur, when structures are demolished and the site rehabilitated, AGL are committed to redeveloping the site into an integrated industrial energy hub. The proposed changes to the MLEP 2009 will aim to provide a flexible approach to future development on the site in the short, medium and long term to allow for a range of land uses to occur in accordance with state and local government expectations. Allowing the transition to commence prior to closure of BPS, and as the LPS is rehabilitated, will reduce shocks to the social and economic conditions in the Upper Hunter.

The Hunter Regional Plan 2041 identifies the land owned by AGL as an opportunity to co-locate other employment generating activities on the Liddell and Bayswater site with to establish an integrated industrial energy hub. The Liddell Future Land Use and Enabling Works Reporting prepared by GHD has also identified future opportunities within this overall locality. The availability of rail, highway access and infrastructure offer developers an alternative site outside of existing urban areas.

AGL are currently working with Council and Department of Planning and Environment (DPE) to investigate how this outcome can be delivered through place-based planning. The Regional Plan 2041 has suggested a number of employment generating land uses including manufacturing, waste, freight, hydrogen, data and agribusiness. Due to the nature of the site, industrial related uses are considered compatible with existing character of the locality.

1.2 Proponent and applicant details

The details of the proponent are provided in Table 1.1.

Table 1.1 Proponent Details

Particulars	Details
Applicant	Muswellbrook Shire Council - Council to lodge the Planning Proposal with DPE
Property owner	AGL Macquarie Pty Limited - Single landowner including the SP2 zone

1.3 Reference documents

The Scoping Proposal has been prepared using the following local documents.

- Environmental Planning and Assessment Act 1979
- Hunter Regional Plan 2041
- Local Strategic Planning Statement (LSPS) 2020-2040
- Muswellbrook Shire Council Community Strategic Plan (CSP) 2022-2032
- Muswellbrook Local Environmental Plan 2009

A number of strategies and reports have recently been prepared for the land owned by AGL. The Scoping report has also referenced to the following.

- Liddell Battery and Bayswater Ancillary Works Project Environmental Impact Statement, prepared by Jacobs, dated March 2021
- Landscape Character and Visual Impact Assessment, prepared by Jacobs, dated February 2021
- Biodiversity Development Assessment Report, prepared by Jacobs, dated April 2021

- Traffic and Transport Assessment prepared by Jacobs dated February 2021
- Baseline Contamination Assessment Report, prepared by Jacobs, dated 18 March 2021
- AGL Macquarie Land Use Study Summary Report, prepared by AECOM 2022
- SSD-24937520 Liddell Future Lansd Use and Enabling Works – Environmental Impact Assessment dated 7 March 2021 (including Aboriginal Cultural Heritage Assessment, Historic Heritage Assessment, Transport Impact Assessment, Social Impact Assessment, Water Impact Assessment)

This Scoping Proposal has been prepared in accordance with Department of Planning and Environment's Local Environmental Plan Making Guidelines Scoping Proposal template, and addresses all information required for Council to consider the Proposal at a pre-lodgement meeting.

1.4 Proposed scope

The intention of the Proposal is to seek an amendment to the MLEP 2009 so as to permit compatible additional uses to support the ongoing clean energy transition and support an integrated industrial energy hub. Compatible uses that have been identified and are currently market driven include:

- Energy generation and storage
- Manufacturing of renewable energy components (i.e., solar panels)
- Recycling of renewable energy components (ie material recycling facilities for solar panels and/or lithium batteries)
- Manufacture of building materials using materials sourced from on-site such as coal ash from power station activities
- Agricultural produce industry to support ongoing agricultural land uses in the region as coal fired power stations and mines progressively close

  Agricultural produce industry is defined by the MLEP 2009 a building or place used for the handling, treating, processing or packing, for commercial purposes, of produce from agriculture (including dairy products, seeds, fruit, vegetables or other plant material), and includes wineries, flour mills, cotton seed oil plants, cotton gins, feed mills, cheese and butter factories, and juicing or canning plants, but does not include a livestock processing industry.
- Ancillary activities and services to support the needs of businesses and workers

The Regional Plan 2041 supports the development of alternative land uses dependant on the characteristics of each site and its surrounds. New uses could occur while other existing uses continue to operate.

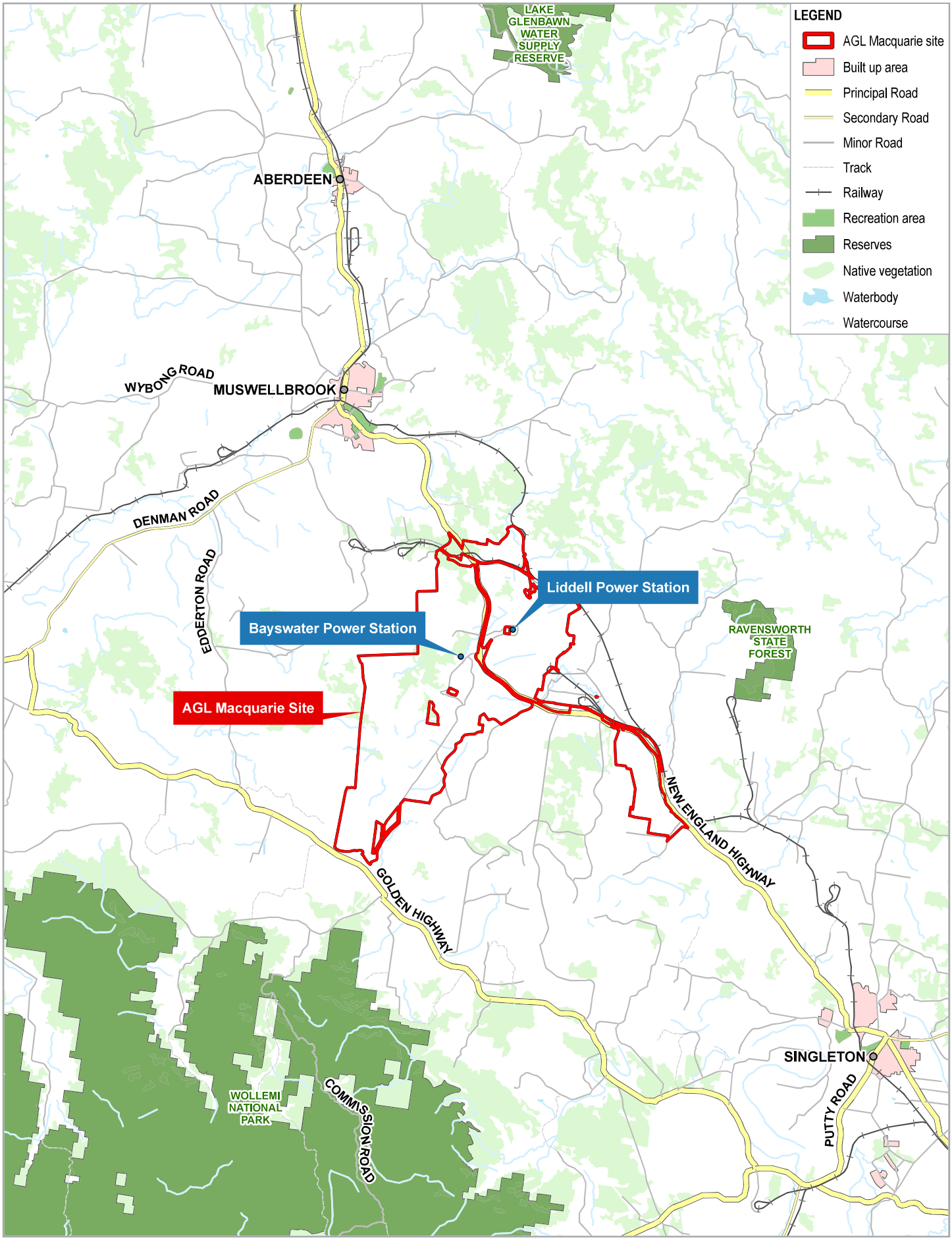
1.5 Site details

AGL owns the expanse of land surrounding the BPS and LPS sites as indicated in Figure 1.1. The broader AGL site is dominated by agriculture and power generation. Local land use is dominated by large-scale industrial infrastructure associated with both Liddell and Bayswater, as well as open cut mining activities at Ravensworth, Mount Arthur, Hunter Valley Operations, Liddell Coal Mine and the Maxwell project. Agricultural clearing for the purposes of grazing has also occurred within and surrounding the broader AGL landholding.

The site is located across two Local Government boundaries being Muswellbrook and Singleton LGAs. The site is surrounded by rural lands and is divided by the New England Highway. The closest social infrastructure development and residential sensitive receiver is the Lake Liddell Recreation Area and the Lake Liddell Recreation Area's owner's residence, which is located approximately 2 km north of the Liddell Core Investigation Area.

Given its setting and proximity to existing road, rail and electricity transmission infrastructure and regional employment hubs, the project area is ideally located to serve as a site for future commercial or industrial land uses.

The site is distant from the towns of Muswellbrook and Singleton and currently operates without access to a reticulated water or sewage system. It is intended that this self-sufficient approach will continue as the uses on the site transition.



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Grid: GDA 1994 MGA Zone 56

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AGL Macquarie Pty Limited
AGL Future Land Use and Enabling Works
Scoping Proposal

Project No. **12562257**
Revision No. **0**
Date **14/09/2023**

Locality Plan

FIGURE 1.1

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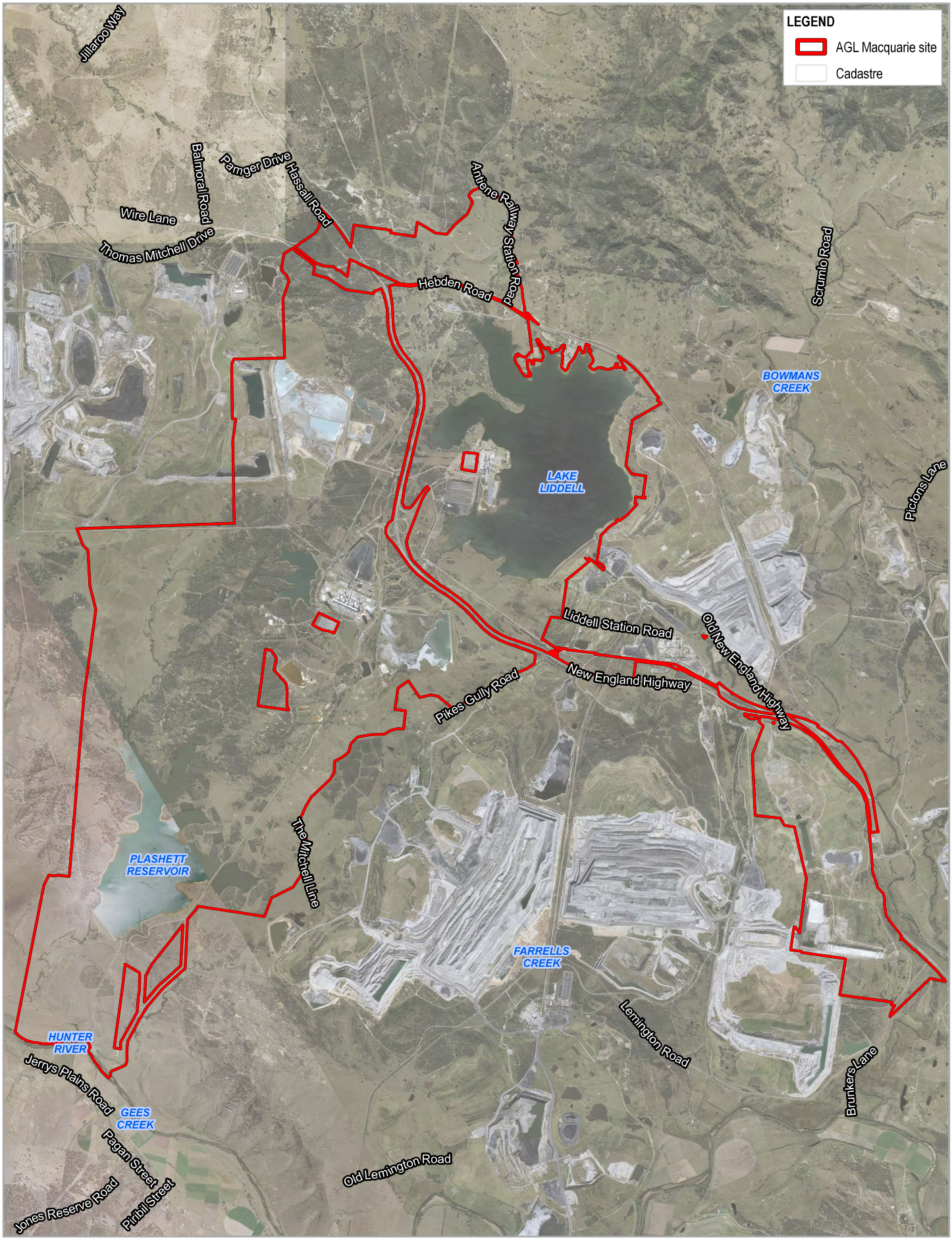

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AGL owned land

FIGURE 1.2

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Data source: LPI: DTDB, 2019. AGL: Project data, 2020. LPI: DTDB, 2019. Metromap Tile Service: Aerial imagery, 05/09/2023
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1.6 LEP amendment options

To support future development within the SP2 zone, the MLEP 2009 is required to be amended to introduce additional land uses.

Three options have been identified to support an integrated industrial energy hub include:

1. An additional Local Provision in the MLEP 2009 including development controls and key sites map defining the locations the local provisions will apply to.
2. Additional permitted uses in Schedule 1 of the MLEP 2009.
3. Insert new objectives and permitted land uses into the SP2 zone.

The Scoping Proposal has been prepared with regard to the following legislation and policies:

1.7 Current LEP provisions

The SP2 zone is identified by the MLEP 2009 Maps LZN 009 & 012. The land is designated specifically for the purposes of a 'Power Station' pursuant to the Land Zoning map as indicated in Figure 1.3. The LEP Land Use Table and the Zone Objectives are listed below in Table 1.2.

Table 1.2 SP2 Zone Land Use table

Zone SP2 Infrastructure	
1 Objectives of zone	– *To provide for infrastructure and related uses.* – *To prevent development that is not compatible with or that may detract from the provision of infrastructure.* – *To recognise existing railway land and to enable future development for railway and associated purposes.* – *To prohibit advertising hoardings on railway land.* – *To recognise major roads and to enable future development and expansion of major road networks and associated purposes.* – *To recognise existing land and to enable future development for utility undertakings and associated purposes.*
2 Permitted without consent	*Nil*
3 Permitted with consent	*Aquaculture; The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose; Roads*
4 Prohibited	*Any development not specified in item 2 or 3*

The current permissible uses are limited to the purpose of a 'power station'. Consequently, without an amendment to the MLEP 2009, the land cannot currently be developed for other compatible land uses that have the potential to support the ongoing clean energy transition and an integrated industrial energy hub. The site is not subject to any other planning controls or development standards pursuant to the MLEP 2009.

1.8 Background and context

LPS was commissioned in 1971 and operates as part of an integrated power generation complex located near Muswellbrook. The complex also incorporates the BPS which was commissioned in 1985, along with the Hunter Valley Gas Turbines and a range of infrastructure to support water supply, water management, coal ash management, coal supply, power supply and control systems.

AGL announced an intention to transition towards a low-carbon future and the closure of its coal fired power stations at the end of their operating life with the LPS having now reached its life as a power generating facility. AGL commenced the staged shutdown of the LPS in April 2022 when the first of its four generating units was closed. A key component of AGL's future planning is the subsequent demolition of the LPS. Bayswater Power Station is scheduled for closure in 2033.

AGL is seeking State Significant Development (SSD) approval to undertake the Liddell Future Land Use and Enabling Works Project (SSD-24937520). GHD was commissioned to prepare an Environmental Impact Statement (EIS) addressing the Secretary's Environmental Assessment Requirements (SEARs) issued by DPE to support the State Significant Development (SSD).

AGL's policy to transition towards a low carbon future includes the closing of coal powered stations at the end of their design and economic life and in response to market demands. This Scoping Proposal is a necessary next step that will enable such land uses envisioned for the site to be permitted with consent in the SP2 zone subject to a merit assessment DA approval process.

Due to its state significance, DPE have identified the AGL site as having opportunity for employment generating development to offset employment loss anticipated due to closure of the power stations and mining operations.

1.9 Outcomes of previous consultation

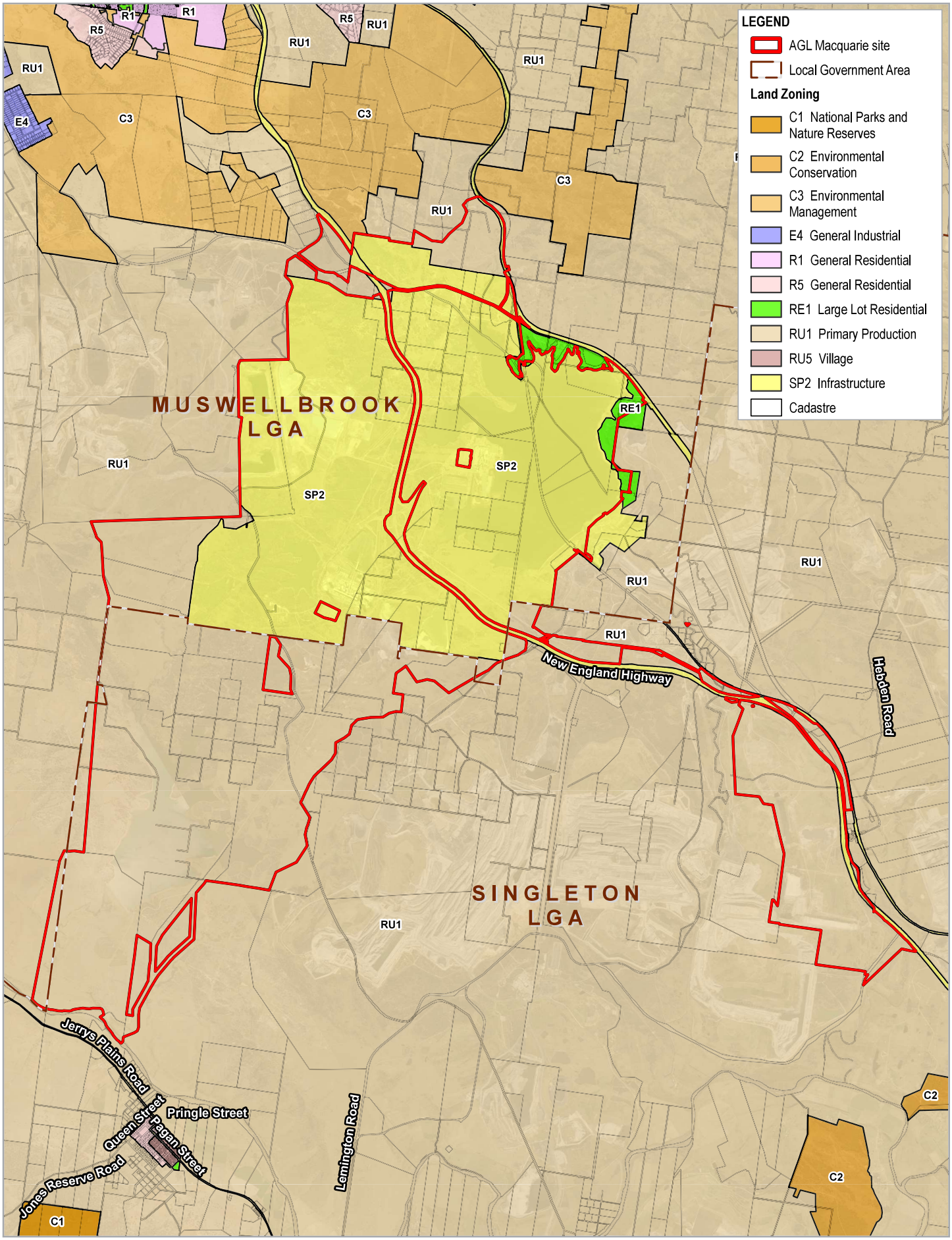
AGL has undertaken preliminary consultation with Council in relation to repurposing the site. Initial discussion with Council indicated that a range of additional permitted uses could be applied to the SP2 zone to meet current market interest.

Council provided preliminary comments identifying three (3) alternative pathways to amend the MLEP 2009 to permit additional compatible land uses subject to development consent being obtained. In an email sent on 30 June to GHD, Council advised that its order of preference for the three (3) options was as follows:

1. *Option 1 – "A new Additional Local Provision in MLEP 2009 with a key sites map*
2. *Option 2 – An additional permitted use in Schedule 1 of MLEP 2009.*
3. *Option* 3 – *Insert new objectives and permitted land uses into the current SP2 Infrastructure zone".*

After further discussion with AGL, it was determined that a more strategic approach was required in alignment with the Regional Plan and the AGL Macquarie Land Use Study Summary Report prepared by AECOM 2022. The investigation of opportunities and constraints across the SP2 zone including the LPS site and surplus areas of the Bayswater site would result in an overarching vision for the roll out of future development. It was considered the above options could still be applied to the entire SP2 zoned site to stimulate investment in the short, medium and long term.

At the commencement of this process, Council agreed to lodge the Planning Proposal on behalf of AGL and manage the tracking through the Gateway Determination phase, public exhibition and making of the LEP.



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Current LEP zoning

FIGURE 1.3

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Data source: LPI: DTDB, 2019. AGL: Project data, 2020. LPI: DTDB, 2019. DPIE: Land zones, 2023. Metromap Tile Service: Aerial imagery, 05/09/2023
Created by: rvillalon

2. The proposal

2.1 Proposed concept

2.1.1 Options

Three alternative options have been considered to amend the MLEP 2009 to permit additional compatible land uses on the site as outlined below. AGL considers that Option 1 should be adopted for the Planning Proposal based on the justification provided.

2.1.1.1 Option 1 - A new additional Local Provision in the *Muswellbrook Local Environmental Plan 2009* with a key sites map and/or an Agreed Infrastructure Threshold Limit

Planning Circular PS 21-012 issued 2 December 2021, provides as follows in relation to Local Provisions:

> *"Local provisions refer to any LEP content (e.g., clauses, objectives, additional permitted or prohibited land uses) that is not part of the standard instrument. Local provisions may be prepared by councils to address matters that are relevant to their local area, and which are not covered by provisions in the standard instrument.*
>
> *Local provisions may not deal with planning matters that are addressed by mandatory provisions (whether compulsory or optional) in the standard instrument. The inclusion of local provisions should be justified, e.g., in the context of a local or regional strategy. Matters that might be covered by local provisions include:*
>
> - *issues that are the subject of State or regional planning guidance requiring councils to develop tailored provisions that are appropriate to their local area.*
> - *local environmental or hazard 'overlays' that apply in addition to zones.*
> - *defining local design objectives or neighbourhood character; and*
> - *other provisions that reflect the outcomes of local strategic planning and consultation.*
>
> *All local provisions must be consistent with relevant State or regional planning guidance and the mandatory provisions in the standard instrument".*

This option seeks to include an additional Local Provision as follows:

> *"7.11 Development on land associated with the Integrated Industrial Energy Hub–*
>
> *(1) The objectives of this clause are as follows:*
>
> *(a) to facilitate the ongoing transition of Power Station Sites from coal fired power station operations to a broader range of employment generation activities which support the renewable energy transition and an integrated industrial energy hub.*
>
> *(b) to facilitate development that is related to the special characteristics of the site and recognise the site constraints, the available infrastructure and ongoing evolution of uses as technology and the economy changes.*
>
> *(2) This clause applies to land identified as an " Integrated Industrial Energy Hub" on the Key Sites Map or to an agreed infrastructure threshold limit.*
>
> *(3) Despite clause 2.3, development consent may be granted to development for the purpose of:*
>
> *Emergency services facility: Environmental protection works; Electricity generating works; Flood mitigation works; Freight transport facility; Industries; Industrial training facilities; Information and education facilities; Kiosk; Research stations; Roads; Rural industries; Sewage reticulation systems; Sewage treatment plants; Warehouse or distribution Centre; Water recycling facilities; Water supply systems;*

(4) Development consent must not be granted to development on land referred to in subclause (2) unless the consent authority is satisfied that:

a. there are no significant land use conflicts between the proposed development and the land uses conducted on the remainder of the site; and

b. The uses relate to the special characteristics of the site and do not compete with land uses in general industrial areas in the Shire ".

This option would necessitate the development of a Key Sites Map and is recommended as the preferred option over Option 2 and Option 3 below. This option provides an opportunity to define development controls for the Integrated Industrial Energy Hub and set a vision for this particular type of place-based development.

There is potential to align with DPE's work within the Hunter Region. Further detailed controls to manage future development could then be prepared and incorporated into the Muswellbrook Development Control Plan (DCP).

2.1.1.2 Option 2 - An additional permitted use in Schedule 1 of the *Muswellbrook Local Environmental Plan 2009*

This option seeks to amend the LEP to include an additional permitted use in Schedule 1 of the LEP. The proposed wording would be as follows:

"Development on certain land at New England Highway, Muswellbrook

(1) This clause applies to the land identified as SP2 zoned land on the LEP Map.

(2) Development for the following purposes are permitted with development consent:

Emergency services facility; Environmental protection works; Electricity generating works; Flood mitigation works; Freight transport facilities; Industries; Industrial training facilities; Information and education facilities; Intensive livestock agriculture; Intensive plant agriculture; Kiosk; Research stations; Roads; Rural industries; Sewage reticulation systems; Sewage treatment plants; Warehouse or distribution Centre; Water recycling facilities; Water supply systems;"

This option would also necessitate the development of a Key Sites Map. This option is recommended as a 'fall back' option if Option 1 is not adopted. However, Option 1 is recommended as preferred as the inclusion of clause objectives makes clear that the intent of the additional permissible uses is to support the renewable energy transition and an integrated industrial energy hub.

2.1.1.3 Option 3 - Insert new objectives and permitted land uses into the current SP2 Infrastructure zone of the *Muswellbrook Local Environmental Plan 2009*

This option seeks to amend the LEP to insert a new objective and permitted land uses into the current SP2 Infrastructure zone, as per the below.

Note: Red text is mandatory under the LEP Template, black text is in the existing LEP, grey highlight is new text.

Zone SP2 Infrastructure

Direction. *The following must be included as either "Permitted without consent" or "Permitted with consent" for this zone:*

Aquaculture

Roads

1 Objectives of zone

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.
- To recognise existing railway land and to enable future development for railway and associated purposes.
- To prohibit advertising hoardings on railway land.

- To recognise major roads and to enable future development and expansion of major road networks and associated purposes.
- To recognise existing land and to enable future development for utility undertakings and associated purposes.
- To facilitate development for agribusiness, electricity generating works, manufacturing and industry and other uses that are in keeping with the special characteristics of the site, that minimise any adverse impacts on surrounding land and implements the transition of the site from the purpose shown on the Land Zoning Map to other uses that generate employment.

2 Permitted without consent

Nil

3 Permitted with consent

Aquaculture; Emergency services facility; Environmental protection works; Electricity generating works; Flood mitigation works; Freight transport facilities; Industries; Industrial training facilities; Information and education facilities; Intensive livestock agriculture; Intensive plant agriculture; Kiosk; Research stations; Roads; Rural industries; Sewage reticulation systems; Sewage treatment plants; The purpose shown on the Land Zoning Map, including any development that is ordinarily incidental or ancillary to development for that purpose; Warehouse or distribution Centre; Water recycling facilities; Water supply systems;

4 Prohibited

Any other development not specified in item 2 or 3

Option 3 is not recommended as it would apply to all land zoned SP2 Infrastructure under the LEP and not just AGL's landholdings. Option 3 is not supported as it may allow for inappropriate land uses to occur in other SP2 zones within the Muswellbrook LGA that are identified for a specific operating purpose.

2.1.2 Land use definitions

The land use table in the LEP, and SP2 zoning maps typically nominate defined land uses as per the Standard Instrument. In this circumstance, the LEP Zoning Maps nominate 'Power Station'. At the time the site was initially zoned under the LEP, 'Power Station' was characterised as development for the purpose of a 'public utility undertaking':

> ***"public utility undertaking** means any of the following undertakings carried on or permitted to be carried on by or by authority of any Public Service agency or under the authority of or in pursuance of any Commonwealth or State Act—*
>
> *(a) railway, road transport, water transport, air transport, wharf or river undertakings,*
>
> *(b) undertakings for the supply of water, hydraulic power, electricity or gas or the provision of sewerage or drainage services,*
>
> *and a reference to a person carrying on a public utility undertaking includes a reference to a council, electricity supply authority, Public Service agency, corporation, firm or authority carrying on the undertaking".*

As BPS and LPS ceased to be publicly owned in 2014 and the definitions in the LEP have expanded in line with the Standard Instrument, the 'Power Station' use nominated on the LEP Zoning Map is now also characterised as development for the purpose of 'electricity generating works':

> *"**electricity generating works**" means a building or place used for the purpose of:*
>
> *(a) making or generating electricity, or*
>
> *(b) electricity storage*

The Scoping Proposal seeks Council's support to the insertion of broader land uses, as opposed to the specifically defined activities outlined above, and would represent a more flexible and intelligent planning outcome.

To afford the proponent flexibility, ensure optimal repurposing of the site, minimise the need for future Planning Proposals, and ensure consistency with the Objects of the EP&A Act (in particular Objects 1.3 (a), (b), and (c)), possible land use definitions that would provide the most flexibility have been considered for the Proposal.

Industry is a 'parent' land use definition that would provide the most flexibility for the future reuse of the site.

The LEP provides the following definition for an 'industrial activity' which is used in defining the parent classification 'industry' and its child definitions:

> ***"industrial activity** means the manufacturing, production, assembling, altering, formulating, repairing, renovating, ornamenting, finishing, cleaning, washing, dismantling, transforming, processing, recycling, adapting or servicing of, or the research and development of, any goods, substances, food, products or articles for commercial purposes, and includes any storage or transportation associated with any such activity".*

The LEP defines 'Industry' as follows:

> ***"industry** means any of the following—*
>
> *(a) general industry,*
>
> *(b) heavy industry,*
>
> *(c) light industry,*
>
> *but does not include—*
>
> *(d) rural industry, or*
>
> *(e) extractive industry, or*
>
> *(f) mining".*

Each of the 'child' definitions of 'industry' are reproduced from the LEP below:

> ***"general industry** means a building or place (other than a heavy industry or light industry) that is used to carry out an industrial activity.*
>
> ***Note—***
>
> *General industries are a type of industry—see the definition of that term in this Dictionary."*
>
> ***"heavy industry** means a building or place used to carry out an industrial activity that requires separation from other development because of the nature of the processes involved, or the materials used, stored or produced, and includes—*
>
> *(a) hazardous industry, or*
>
> *(b) offensive industry.*
>
> *It may also involve the use of a hazardous storage establishment or offensive storage establishment.*
>
> ***Note—***
>
> *Heavy industries are a type of industry—see the definition of that term in this Dictionary."*
>
> ***"light industry** means a building or place used to carry out an industrial activity that does not interfere with the amenity of the neighbourhood by reason of noise, vibration, smell, fumes, smoke, vapour, steam, soot, ash, dust, waste water, waste products, grit or oil, or otherwise, and includes any of the following—*
>
> *(a) high technology industry,*
>
> *(b) home industry,*
>
> *(c) artisan food and drink industry,*

(d) creative industry.

Note—

Light industries are a type of industry—see the definition of that term in this Dictionary".

Dependent on the nature of the activities undertaken, 'hazardous industry' may also be an applicable land use:

*"**hazardous industry** means a building or place used to carry out an industrial activity that would, when carried out and when all measures proposed to reduce or minimise its impact on the locality have been employed (including, for example, measures to isolate the activity from existing or likely future development on other land in the locality), pose a significant risk in the locality—*

(a) to human health, life or property, or

(b) to the biophysical environment.

Note—

Hazardous industries are a type of heavy industry—see the definition of that term in this Dictionary".

Given that 'hazardous industry' is a child definition of 'heavy industry' which is in itself a child definition of 'industry', where 'industry' is permitted with consent, 'hazardous industry' would also be permitted with consent (unless either 'heavy industry' or 'hazardous industry' are expressly prohibited, which is not required here given the nature of the site).

'Rural industry' is a separate type of 'industry':

*"**rural industry** means the handling, treating, production, processing, storage or packing of animal or plant agricultural products for commercial purposes, and includes any of the following—*

(a) agricultural produce industries,

(b) livestock processing industries,

(c) composting facilities and works (including the production of mushroom substrate),

(d) sawmill or log processing works,

(e) stock and sale yards,

(f) the regular servicing or repairing of plant or equipment used for the purposes of a rural enterprise."

Amending the SP2 zone to broaden industry related uses permissible with consent is considered to be in the public interest, given these activities are required to support the transition to clean and renewable fuel sources, including by enabling the recycling and reuse of materials. All future development would continue to be assessed on its merits as part of a robust Development Application in accordance with Part 4 of the EP&A Act.

2.2 Proposed land use and locations

2.2.1 Land uses

The Proposal advocates a flexible approach toward future land uses based on the type of development that meets compliance thresholds. These thresholds may relate to additional vehicle movements onto the New England Highway, site intensification, potable water use and employment generation.

Although the Regional Plan 2041 identified a range of uses from industrial to agribusiness, the site is well serviced and suited to support compatible uses that are compatible and will support an Integrated Industrial Energy Hub based on an established road network and energy infrastructure links to the State's energy network. A feasibility assessment will determine the suitable locations for particular development types based on operational characteristics and thresholds such as employment generating and traffic.

As the site will be moving away from being a single occupier, utility provider to a Hub with many occupiers, discrete uses that support businesses and workers will also be required to be developed on the site over time.

2.2.2 Locations

The aim of the Planning Proposal is to maintain a flexible approach to future development within the SP2 zone, until the BPS closes and is rehabilitated, and the zone can be reviewed and changed to more suitable zones. Land suitability assessment can be analysed by applying mapping overlays and comparing suitable options. A multi criteria analysis (MCA) is required to be undertaken to filter development location options based on site attributes and environmental and physical characteristics. The MCA will consider the feasibility of locations to accommodate development opportunities and provide a transparent framework that can be applied to a planning place making approach.

The overlay of the key features with mapping analysis will determine existing constraints for redevelopment and identify land parcels suitable for re-purposing, as well as trends which shape short, medium- and long-term demand for suitable land uses.

2.3 Planning proposal timing

The anticipated timeline for the assessment of the Planning Proposal is as follows:

Table 2.1 Project Timing

Stage	Timeframe
Scoping Meeting	2 weeks from date Scoping Proposal is provided to Council
Preparation of Planning Proposal and Submission of Planning Proposal	4 weeks post the Scoping Proposal pre-lodgement
Council Meeting	Next available meeting date after submission of the Planning Proposal to Council
Commencement/ Gateway Determination	2 weeks after Council Meeting
Government Agency Consultation	In accordance with Statutory timeframes
Public Exhibition	In accordance with Statutory timeframes
Consideration of Submissions	TBD
Post-exhibition consideration of Submissions	TBD
Draft and Finalise LEP	TBD
LEP Made	TBD
Plan forwarded to the DPE for notification	TBD

2.4 Development Contribution Plans

Development Contributions would apply to any future development applications lodged for any of the additional land uses in accordance with Schedule 2 of the Muswellbrook Shire Section 94A Development Contributions Plan 2009 and any relevant S7.12 contributions plans.

The initial Priority Sites and proposed uses have been selected on the basis that they will not require Council to provide any supporting infrastructure but are capable of being accommodated within the existing road network and of being serviced at no cost to Council.

3. Strategic merit

3.1 Hunter Regional Plan 2041

The recently prepared Hunter Regional Plan 2041 (Regional Plan 2041) sets a 20-year strategic land use planning framework for the Hunter region.

The 2041 vision includes:

- *"A wide range of employment opportunities.*
- *The region is climate resilient and energy and resource efficient. Leadership in reaching net zero emissions represents a key guiding principle for all regional decision-making.*
- *Infrastructure investment supports freight, health, education and waste services, and agribusiness and tourism, while building resilience to global economic cycles and climate change.*
- *A skilled science, technology and engineering workforce is engaged in advanced manufacturing, mining and digital technologies".*

The provision of an Integrated Industrial Energy Hub will meet the vision of the Regional Plan 2041. The Planning Proposal will be consistent with Objectives 1 and 7 inclusive of the Performance Outcomes, Strategy, and related Actions which are reproduced in Appendix A.

Future development of the SP2 zone is identified within the Bayswater and Liddell Regionally Significant Growth Area as indicated in Figure 24 of the Regional Plan 2041 located in Appendix B is identified as an "integrated industrial energy hub".

The closure of Liddell power station in 2023 and Bayswater in 2030-2033 will provide opportunities to co-locate other employment generating activities within the SP2 zone. The site offers both rail and highway access, water and infrastructure assets. It suits jobs in the manufacturing, waste, freight, and hydrogen. Circular economy opportunities should be investigated when planning for the site.

3.2 Local Strategic Planning Statement 2020 - 2040

The Muswellbrook Local Strategic Planning Statement October 2020 (LSPS) is part of a hierarchy of strategic land use planning documents and implements the actions in the Regional Plan and Council's own priorities as set out in the Muswellbrook Community Strategic Plan and other adopted strategies and actions.

The LSPS identifies the Liddell site as planned for closure and states as follows:

> *"Existing network infrastructure connects Liddell and Bayswater to the National Grid, providing the Shire with a strategic advantage to attract investment in renewable energy and storage".*

The following LSPS planning priorities listed in Table 3.1 align with the intent of the Planning Proposal.

Table 3.1 LSPS Planning Priorities

Vision	Detail
Planning Priority 1: Our Shire embraces technology and innovation	Council supports leading edge businesses growing and consolidating in Muswellbrook Shire as a mechanism toward supporting the Shire's transition to broader employment diversification.
Planning Priority 2: We plan for the transition of mine and power station sites before their closure	Mines and power stations occupy large tracts of land with infrastructure and topography that would be. suitable for alternative uses over time, to replace employment opportunities that may not exist in the future.

Vision	Detail
Planning Priority 3: The mineral resource and power generation industry is productive, accountable and considerate of surrounding land uses.	Coal mining, river sand extraction and quarrying for hard rock and shale are major components of the economy of the Shire. The two coal fired power stations are expected to close long-term, but new power generating activities, such as wind, solar, pumped hydro and biofuels are expected to be commissioned. Groups from the mining, quarrying and agricultural and visitor economy sectors have expressed a desire for certainty on the location of these different activities, enabling more confidence in investment decisions. Many of these activities are classed as State Significant Development (SSD) but Council has a strong role in advocating for appropriate land use planning decisions by the State Agencies.

Each of these Priorities has planning principles that Council will apply when making decisions. The Proposal will provide a detailed assessment of the Proposal against the priorities and associated planning principles. In summary the Proposal is aligned with the relevant Priorities and can demonstrate adherence to the associated principles.

3.3 Muswellbrook Shire Council Community Strategic Plan 2022-2032

"Energy prosperity" is identified as the first goal in the Muswellbrook Shire Council Community Strategic Plan 2022-2032 (CSP). Strategy 1.2 of this goal is to:

> *"Diversify the economy, facilitate the development of intensive agriculture, innovative manufacturing, health services and other growth industries"*.

The CSP states that Council, the NSW Government and Energy Producers can help with achieving this goal. The CSP states that this goal aligns with the then draft Regional Plan to:

> *"Diversify the economy, facilitate the development of intensive agriculture, innovative manufacturing, health services and other growth industries".*

In summary, the Proposal is consistent with the CSP, which aligns with the LSPS and Regional Plan 2041.

4. Site-specific considerations

4.1 Existing development

The SP2 zoned site currently supports the former LPS site and operational BPS. The former LPS site is in the process of being decommissioned. The BPS will continue to operate until 2033 when it has been scheduled for closure. The broader AGL site is dominated by mining and power generation. Local land use is dominated by large-scale infrastructure associated with both Liddell and Bayswater, as well as open cut mining activities at Ravensworth, Mount Arthur, Hunter Valley Operations, Liddell Coal Mine and the Maxwell Project. Agricultural clearing for the purposes of grazing is also present within and surrounding the broader AGLM landholding.

4.2 Surrounding development and uses

The SP2 zoned site is located in the Upper Hunter Valley and set amongst land uses dominated by power generation, coal mining, and rural lands supporting livestock grazing. The SP2 zoned site 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. Open cut coal mining is the dominant landscape feature to the south-east and west of the site.

The regional centres of Muswellbrook and Singleton 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 SP2 zone site is in proximity to existing road, rail and electricity transmission infrastructure and regional employment hubs, and 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 to support an integrated industrial hub.

4.3 Site features and constraints

4.3.1 Hydrology

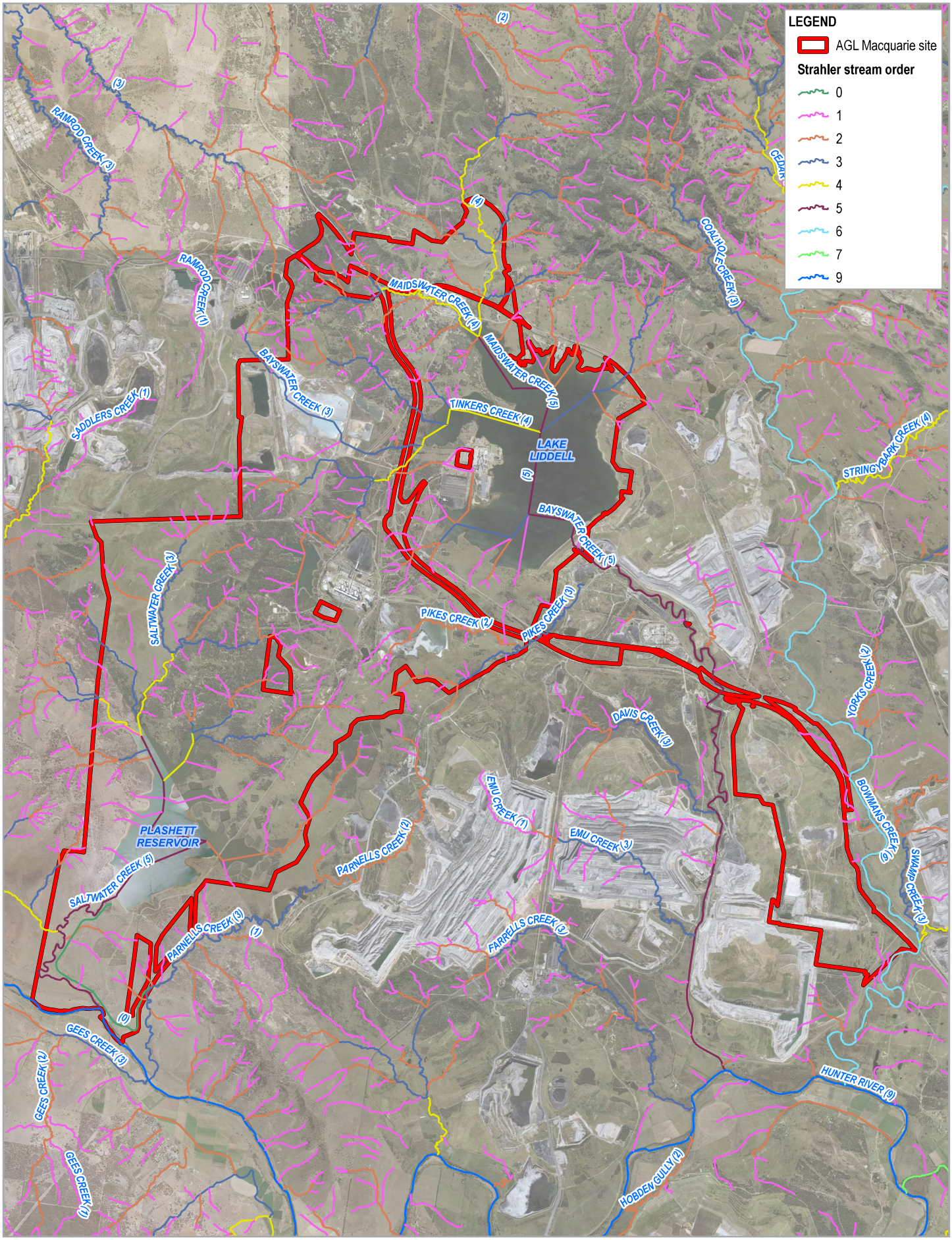
There has been no recorded flooding of this area and as such no mapping pursuant to the MLEP 2009. Figure 4.1 depicts the project site in relation to mapped waterways. Future DA's will also need to consider the proposed activities in relation to mapped waterways pursuant to the *Water Management Act 2000.* Any future development application would require an assessment of the impacts on the proposal on hydrology.

4.3.2 Scenic and culturally important landscapes

The SP2 Zone is located within an area dominated by mining and power generation. The landscape is heavily influenced by industrial activity. Local land use is dominated by large-scale infrastructure associated with the power stations and open cut mining activities at Ravensworth Mine Complex, Mount Arthur Coal, Hunter Valley Operations, Liddell Coal Mine and the former Drayton Mine. Agricultural clearing for the purposes of grazing is also present within and surrounding the AGL landholding.

There are limited sensitive receivers or social infrastructure in the locality of the SP2 Zone. The closest social infrastructure is the Lake Liddell Recreation Area approximately 2 km north of the Battery and Decoupling areas across Lake Liddell. The nearest residential receiver is the Lake Liddell Recreation Area's owner's residence, located approximately 2.5 km north of the Battery and Decoupling areas. While the nearest sensitive receiver to BAW footprint is along at Jerrys Plains, approximately 700 metres (m) to the south of the Project.

Visual impacts are likely to be negligible given the separation between the SP2 zone and other land uses.



Paper Size ISO A4

0 0.5 1 1.5 2 2.5 3 3.5

Kilometres

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

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GHD

AGL Macquarie Pty Limited
AGL Future Land Use and Enabling Works
Scoping Proposal

Project No. **12562257**
Revision No. **0**
Date **14/09/2023**

Stream order mapping

FIGURE 4.1

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Print date: 14 Sep 2023 - 13:49

Data source: LPI: DTDB, 2019. AGL: Project data, 2020. LPI: DTDB, 2019. DPI: Strahler stream order, 2023. Metromap Tile Service: Aerial imagery, 05/09/2023
Created by: rvillalon

4.3.3 Ecological characteristics and values

The SP2 zone site is located within a highly disturbed landscape that does not possess large expanses of intact native vegetation and generally has a low ecological value. As most of the development site is in pre-existing developed areas, or areas which were previously cleared for grazing, direct impacts to terrestrial biodiversity has been largely avoided and/or minimised.

Vegetation in the Upper Hunter is characterised by forest and open woodland of White Box, Forest Red Gum, Narrow-leaved Ironbark, Grey Box, Grey Gum, Spotted Gum, rough-barked Apple and extensive stands of Swamp Oak in upper reaches and foothills. River Oak and River Red Gum are characteristic of vegetation along streams and drainage lines.

The limited amount of native vegetation (mostly rehabilitation or regrowth) that would be disturbed is of poor to moderate quality and threatened species habitats are limited. No areas of land that the Minister for Energy and Environment has declared as an area of outstanding biodiversity value in accordance with section 3.1 of the BC Act would be affected. Importantly, the areas proposed for clearing would be refined during detailed design and reviewed as part of the pre-clearing process.

4.3.4 Heritage

An Aboriginal Cultural Heritage Assessment (ACHAR) was prepared by Kleinfelder Australia Pty Ltd for the LPS EIS. Further investigation of the SP2 zone will be required to support a Planning Proposal. In addition, any future DA will require further site-specific assessment to support the proposed development.

A desktop search of the site was undertaken using the NSW State Heritage Inventory and no State Heritage items, or interim heritage orders apply to the site.

4.3.5 Access and transport

The AGL landholding is connected to the surrounding road network via an access road and grade-separated interchange to and from the New England Highway.

The key surrounding roads are:

New England Highway – The New England Highway is an 878 km highway that links Newcastle to Brisbane. The highway also provides connections with the Pacific Highway and the D'Aguilar Highway, facilitating access to Sydney and Queensland, respectively. Near the Project site, the New England Highway is dual carriageway with two lanes in each direction and a central median. The posted speed limit is 100 kilometres per hour (km/h) in the section of road near the power stations.

Liddell and Bayswater Interchange and Access Road – Liddell and Bayswater are accessible from the New England Highway via an interchange with an unnamed east-west access road. The interchange consists of one northbound entry ramp, one northbound exit ramp, one southbound entry ramp and two southbound exit ramps which generally provide grade-separated access to Liddell and Bayswater. The access road is a single carriageway road with one lane in each direction. The road has no sign posted speed limit; therefore, the speed limit defaults to the rural default speed limit of 100 km/h (NSW Government, 2014).

Between the Project site and Port of Newcastle, the road network also consists of a number of motorways and state roads including Maitland Road, John Renshaw Drive and Hunter Expressway. These roads carry moderate volumes of traffic, including heavy vehicles from Port of Newcastle throughout the Hunter Region, and form part of the approved 25/26m B-double network and oversized over mass (OSOM) load carrying vehicle networks.

No public transport services operate on the road network near the Project. No formal off-road pedestrian or cycling facilities are provided on the road network near the Project.".

In summary, access for the Proposal is considered suitable. A Traffic Impact Assessment (TIA) will be prepared for the Proposal. Further, any Development Application would include a TIA to determine expected generated volumes.

4.3.6 Services (water, wastewater, stormwater etc) and utilities (gas, NBN etc)

Based on the former land use, it is unlikely that additional infrastructure will be required to service the proposed activities. Where any upgrades to existing service provision is required, this can be dealt with via future development applications.

Battery storage and Renewable Energy Zone (REZ)

The remediated LPS site is proposed to support a 500 MW battery to manage the transition to a renewable energy transmission hub that will connect with the New England REZ and Hunter-Central Coast REZ.

4.3.7 Ambient noise environment

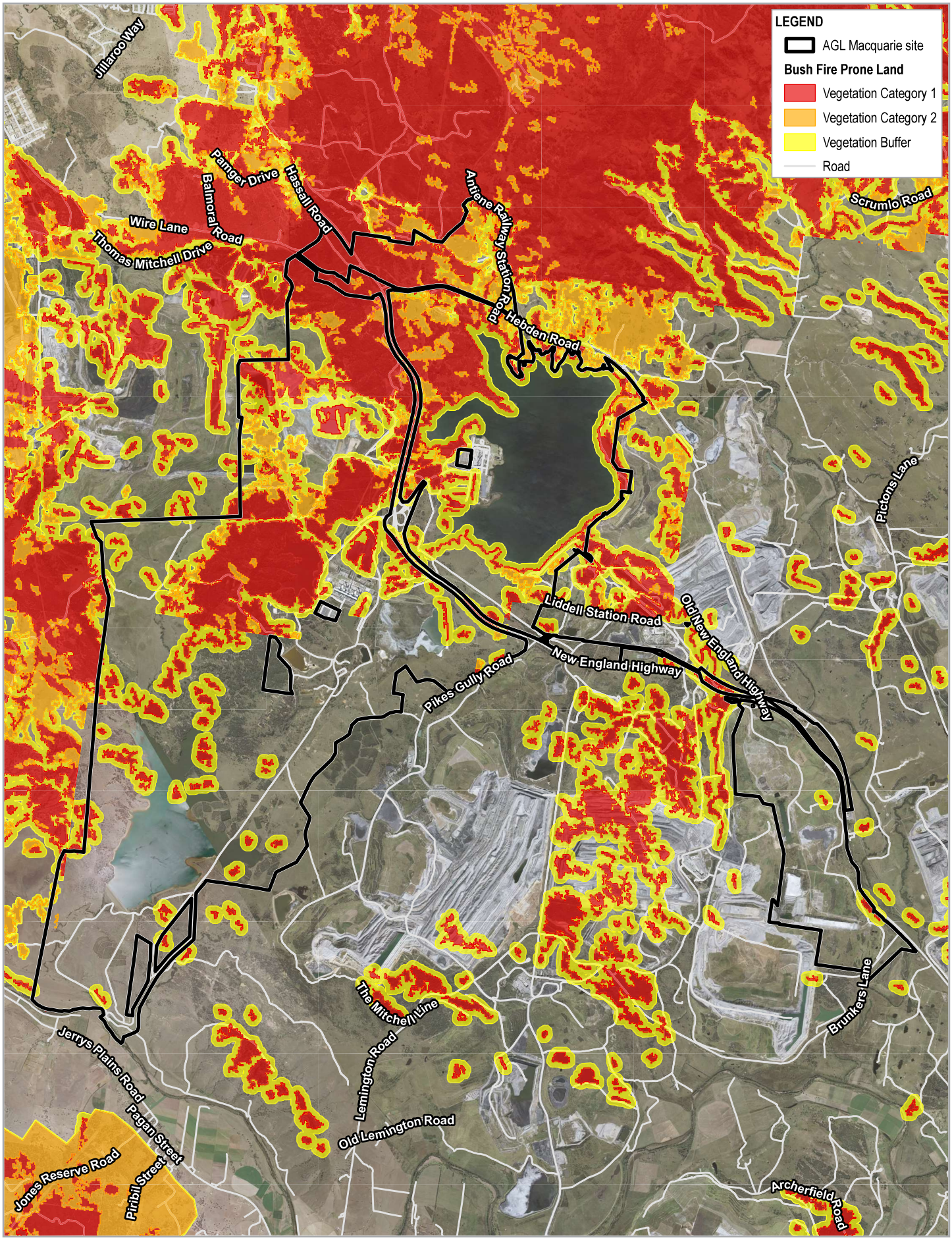
The local noise environment is impacted by surrounding land uses including power generation, coal mining, livestock grazing and rural living. Other noise sources include transport related impacts associated with the Main North Railway Line and the New England Highway. Any future development application would be assessed on its merits in relation to acoustic impacts.

4.3.8 Bushfire prone land

The site is mapped as Bushfire Prone Land as shown in Figure 4.2. A Bushfire Assessment Report will be prepared for any future development application, however given the proposed industrial land uses, it is unlikely that this would be an absolute constraint.

4.3.9 Contaminated land

The additional uses would be classified as commercial/industrial, in line with the current power station use of the site. Any future development application will be required to provide an assessment of the specific change in use proposed against the provisions of *State Environmental Planning Policy (Resilience and Hazards) 2021* to confirm that any remediation required will be carried out prior to any new use commencing.



Paper Size ISO A4

0 0.5 1 1.5 2 2.5 3 3.5

Kilometres

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

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GHD

AGL Macquarie Pty Limited
AGL Future Land Use and Enabling Works
Scoping Proposal

Project No. 12562257
Revision No. 0
Date 14/09/2023

Bushfire Mapping

FIGURE 4.2

\\ghdnet\ghd\global\Archive\22\2022\Newcastle\Projects\22\12516133\GIS\Maps\12562257\Scoping_Report.aprx\12562257_S005_BushfireMapping
Print date: 14 Sep 2023 - 13:48

Data source: LPI: DTDB, 2019. AGL: Project data, 2020. LPI: DTDB, 2019. NSW Rural Fire Service: Bush fire prone land, 2023. Metromap Tile Service: Aerial imagery, 05/09/2023
Created by: rvillalon

5. Outcomes

5.1 Preliminary environmental considerations

The SP2 zoned land is known to contain environmental constraints and would require further assessment to identify site options to support future development. Additional technical investigations may include the following:

- Biodiversity Assessment
- Bushfire Impact Assessment
- Contamination assessment
- Traffic Impact Assessment
- Aboriginal Cultural Heritage Assessment
- Heritage Assessment
- Preliminary consultation with key stakeholders including agency representatives

The following agencies may need to be consulted to ensure compliance is achieved throughout the staged development of the SP2 zone:

- Department of Planning and Environment
- Regional NSW
- Transport for NSW
- Energy NSW
- Heritage NSW
- Mining Resources NSW
- NSW Rural Fire Service
- NSW Emergency Services
- Water NSW
- Environmental Protection Authority

A collaborate approach will ensure a State and Local considerations are addressed and accommodated in the planning process.

5.2 Feasible site options

A multi criteria analysis is required to be undertaken to understand feasibility options where future development may potentially occur. This strategic approach will provide short, medium and long term options to support future development.

The site options will form a concept masterplan that will require a roll out of development to fully realise the capability of the SP2 zone. Development phases will relate to the site availability based on the feasibility options and any demolition of existing infrastructure, redundant land use/infrastructure, or resolution of other constraints like contamination.

5.3 Place based strategy

The development of place strategy will aim to make efficient use of infrastructure, help align state and local investment and lead to stronger place-based planning. Place strategies will help provide certainty to community on areas of significant change and identify infrastructure to enable the cost-effective delivery of new homes and jobs. The preparation of a place-based strategy will be the responsibility of DPE.

5.4 Recommendations

This Scoping Proposal has been prepared in accordance with the DPE's Local Environmental Plan Making Guidelines Scoping Proposal template, and addresses all information required for Council to consider the Proposal at a pre-lodgement meeting. This Scoping Proposal makes the following recommendations:

- Option 1 is preferred, as it defines the proposed activities may occur (subject to the granting of development consent) and requires a proposal to be consistent with the objectives of the clause, which aligns with the Strategic Planning framework. This option provides for local development control.
- Option 2, also defines the land where the proposed activities may occur, however does not include an objective. This option does not provide detailed development control to support the identified land uses and the future development of the land. It is not a local provision and therefore does not retain local control.
- Option 3 defines for land uses for the zone; however, it does not provide sound development control for the SP2 zoned land. It would enable the lodgement of a DA for the proposed activities/land uses to be submitted on all SP2 zoned land for identified infrastructure purposes which could potentially cause land use conflict. Notwithstanding, such a DA/DA's may not be capable of complying with the proposed new objective. This option provides the most risk.
- Option 1 provides an opportunity to define development controls for the SP2 zone and set a vision for this particular type of place-based development and is recommended as preferred over Option 2 and Option 3. There is potential to align with DPE's work within the Hunter Region. Further detailed controls to manage future development could then be prepared and incorporated into Muswellbrook Development Control Plan (DCP).
- Option 1 represents an intelligent planning outcome that will provide for the reuse of the project site/s consistent with the suite of Strategic Planning Documents applicable to the site, and thus has Strategic Merit.

Appendix A

Hunter Regional Plan 2041

Hunter Regional Plan 2041 - Objectives and performance outcomes

Objective	Performance Outcome	Strategy
OBJECTIVE 1: Diversify the Hunter's mining, energy and industrial capacity	Any planning proposal or local strategic planning statement that does not comply with a strategy in this objective must demonstrate how the following performance outcomes will still be achieved: 1. Power stations and coal mines facilitate diverse job opportunities on their land either during operation or following closure, with land uses responsive to the characteristics of the locality. 2. Employment lands provide a variety of employment uses and diversify the employment base. 3. Employment lands close to inter-regional links support freight, logistics and industries which benefit from connections to inter-regional or global markets. 4. Employment lands close to renewable energy zones support manufacturing related to renewables and energy intensive industries and clustering of business which supports those activities. 5. Circular economy industries and facilities are in appropriate sites. 6. New employment lands are serviced, manage biodiversity impacts and are situated to avoid land use conflict. 7. Employment lands are retained and safeguarded by limiting the encroachment of sensitive land uses.	**Strategy 1.1** Planning proposals for mine or power station sites identified as regionally significant growth areas will be supported by a place strategy which demonstrates how the proposal will: – maximise employment generation or will attract visitors to the region – make use of voids and/or site infrastructure such as rail loops, hard stand areas, power, water and road access – support the growth of adjoining industrial areas or settlement areas – enhance corridors within the landscape such as biodiversity corridors or disused infrastructure corridors – complement areas with special amenity value such as critical industry clusters, open space, villages and residential areas – have considered the existing and likely future uses of adjoining land and avoid land use conflict – align with any specific guidance in the district planning priorities section of this plan **Strategy 1.2** Following completion of the Hunter– Central Coast REZ, local strategic planning should consider: – opportunities to leverage new employment in related manufacturing and energy intensive industries that benefit from proximity to the energy infrastructure within the renewable energy zone – the proximity of sensitive land uses to ensure sensitive land uses do not encroach on activities within the REZ. **Strategy 1.3** Local strategic planning should consider: – how existing employment land areas, including those that provide urban services, will be retained unless opportunities for urban renewal arise through the relocation of industry – if there is sufficient supply of vacant, serviced employment land providing capacity for a range of different sized employment enterprises • the employment land needs for the local government area and identify flexible planning and development control frameworks to support their growth – opportunities to facilitate growth in logistics, circular economy, new economic enterprises and industries and their supply chains – the suitability of transport interchanges and bypasses for employment lands in consultation with Transport for NSW – lands around the interchanges of the M1 Pacific Motorway and Pacific Highway should be used for employment activities that benefit from easy access to key markets such as manufacturing, logistics and warehousing • the proximity of sensitive land uses and ensure they do not encroach upon these areas. **Strategy 1.4** Planning proposals for new employment lands will demonstrate they: – are located in areas which will not result in land use conflict – can be adequately serviced and any biodiversity impacts are manageable – respond to the employment land needs identified for that local government area.

Appendix B

Local Strategic Planning Statement 2020 - 2040

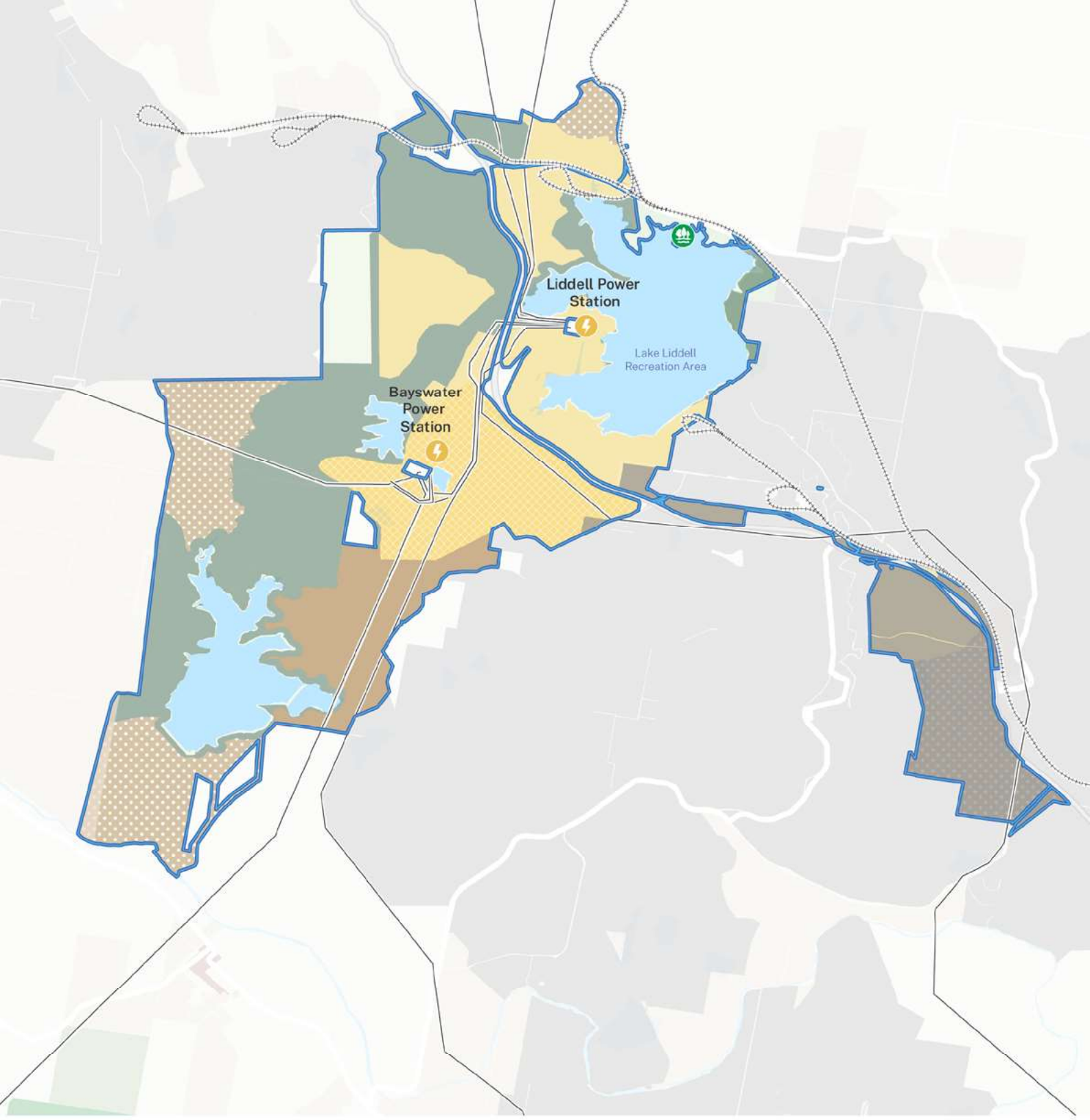


Figure 24: Liddell and Bayswater regionally significant growth area

ghd.com

The Power of Commitment

Appendix B

AHIMS Search

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 12611463

Client Service ID : 865718

Rochelle Barclay

230 Harbour Drive
Coffs Harbour New South Wales 2450

Attention: Rochelle Barclay

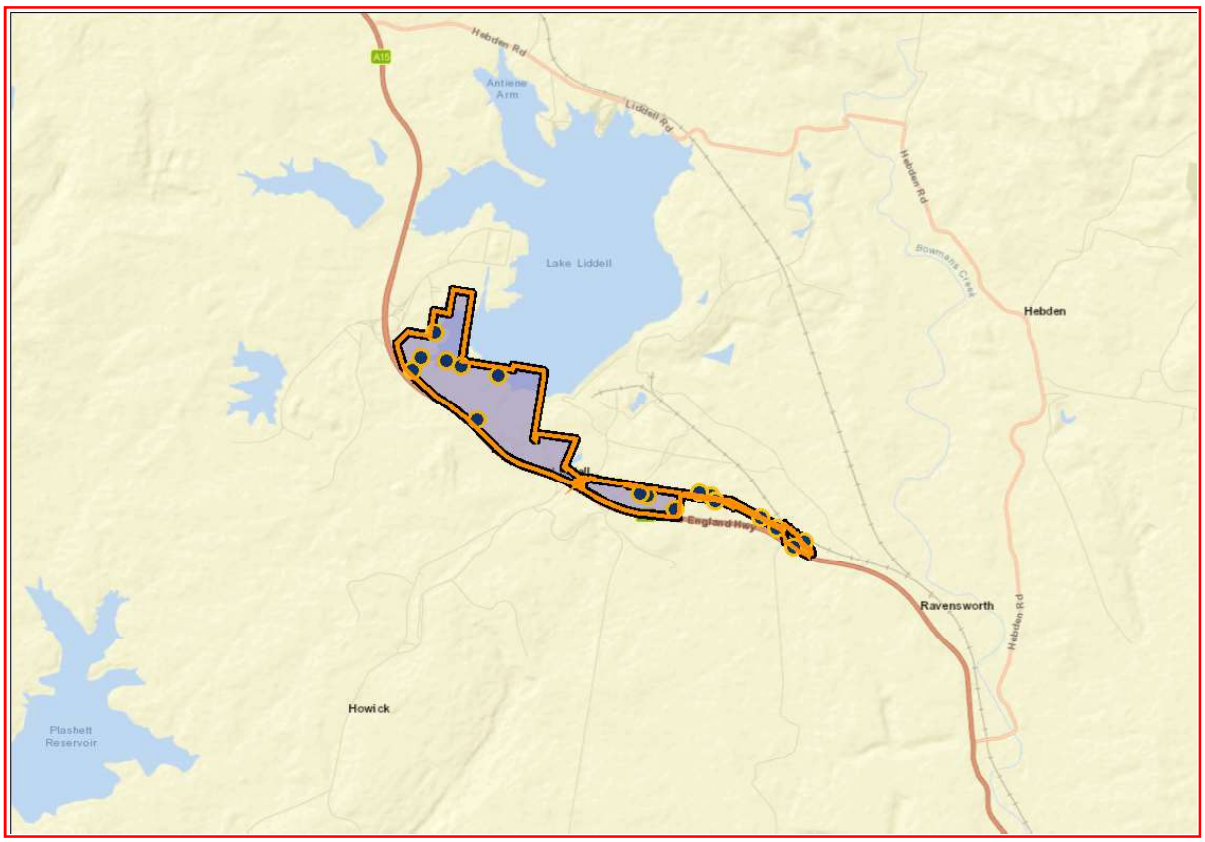
Email: rochelle.barclay@ghd.com

Date: 20 February 2024

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 601, DP:DP1019325, Section : - with a Buffer of 50 meters, conducted by Rochelle Barclay on 20 February 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

18	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 12611463

Client Service ID : 865714

Rochelle Barclay

230 Harbour Drive
Coffs Harbour New South Wales 2450

Attention: Rochelle Barclay

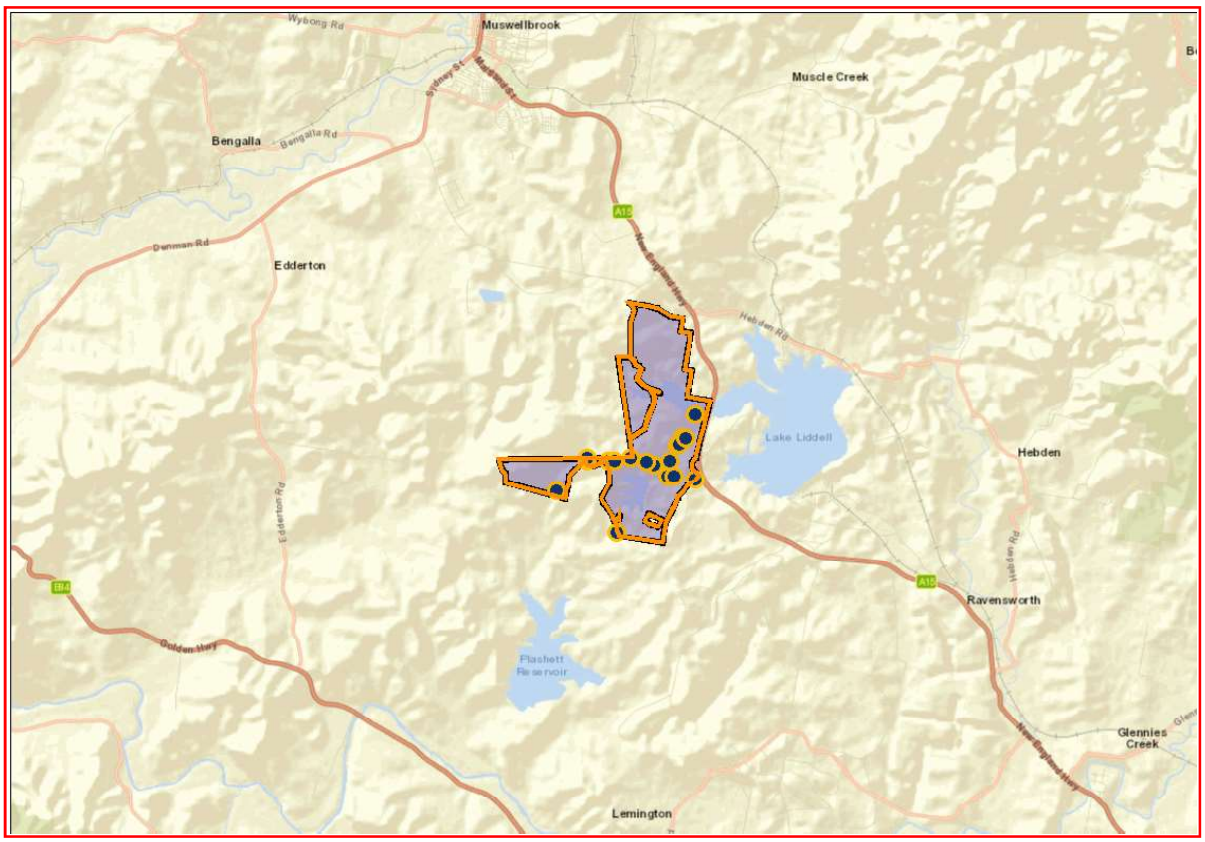
Email: rochelle.barclay@ghd.com

Date: 20 February 2024

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 2, DP:DP1095515, Section : - with a Buffer of 50 meters, conducted by Rochelle Barclay on 20 February 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



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Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

Appendix C

Bushfire Risk Management Plan

1. Bushfire Risk Management Plan

AGLM-HSE-PRO-010.01.00

Bushfire Risk Management Plan

Table of Contents

Bushfire Risk Management Plan

1 Introduction

The purpose of this procedure (plan) is to summarise the AGL Macquarie Bush Fire Risk Management Plan, which covers the property in and around the Bayswater and Liddell Power Stations.

The following plan has been developed to effectively manage the bushfire risk, which the AGL Macquarie land holdings and surrounding properties are exposed to, in such a manner as to meet the requirements of the Rural Fires Act 1997 and amendments and the Rural Fires Regulation 2013.

The plan requires review every two years to ensure that adequate measures are in place before the next fire season. It is considered necessary that the plan be reviewed and in place by September of the reviewing year so that the plan will be in place prior to the commencement of the declared bush fire danger period. The declared bush fire danger period normally commences 1 October and concludes 31 March the following year. However, the Commissioner of the NSW Rural Fire Service may declare variations to starting and finishing dates for specific local government areas.

The land belonging to AGL Macquarie differs, as well as the surrounding land, in terms of vegetation type and use. Therefore, the fire management plan needs to address the variation that exits.

The methods and techniques required to manage the risks associated with fire include the following:

- Passive management
- Management of access to perimeter lands
- Fuel Load reduction by clearing
- Maintenance of grassed zones; and
- Liaison with surrounding landholders.

AGL Macquarie is obliged under the Rural Fire Act 1997 and amendments to have in place a plan to reflect bushfire management. There are also the requirements to comply with the following:

- Protection of the Environment Operations (POEO) Act 1997
- Environmental Planning and Assessment Act 1979
- Protection of the Environment (Clean Air) Regulation 2016
- Local Land Service Act 2013
- Biodiversity Conservation Act 2016
- Commonwealth Environment Protection and Biodiversity Conservation Act 1999; and,
- To consider the environmental effects associated with bushfire management strategies, specifically the need to obtain a bushfire hazard reduction certificate for a ground fuel reduction burn-off.

Additionally, the Muswellbrook Shire Bushfire Management Plan (2011) requires AGL Macquarie to update and review the Bayswater and Liddell Bushfire Risk Management Plan.

The fire management plan must consider two important features:

- Strategies involving the protection of life and property
- Strategies involving preserving the activities occurring on the land such as wildlife conservation, grazing and the built environment

The perimeter lands around the power stations and dams in the buffer zones are being managed in such a way that the natural environment is being protected and some selected areas are being used for grazing. However, the neighbouring properties exhibit a wide variation in use.

These uses include:

- Residential
- Coal mines
- Farming
- Road and rail transportation
- Public recreation

Fire management practices must aim to protect the bio-diversity throughout the perimeter lands. Individual sections of the land may require different strategies for fire control as a reflection of the type of vegetation present and the type of activities being undertaken on the neighbouring properties.

As part of the strategy, records of all fires, which occur on AGL Macquarie lands are kept and can be used to ascertain if a cycle involving fire frequency or likelihood exists. Fire records are retained within the myHSE reporting system.

2 Scope

This Procedure applies to AGL Macquarie land holdings for Bushfire Risk Management. The principle locations are Liddell and Bayswater Power Stations along with Ravensworth Void Rehabilitation areas, Ravensworth and Antiene Rail Coal Unloaders, and Barnard River Pumping Station.

The protocols outlined in this Procedure are intended to apply to all works carried out on site by AGL Macquarie employees and contractors.

3 Accountabilities and Responsibilities

3.1 General Manager AGLM

Shall ensure that:

- Authority is delegated to enable implementation, monitoring and review of the Bushfire Risk Management Plan
- Adequate resources are available for the implementation and enforcement of the Bushfire Risk Management Plan

3.2 Heads of Generation

Shall ensure that:

- Resources are allocated to identify risks in the workplace associated with bushfire and to implement appropriate risk control measures

3.3 Head of Engineering

Shall ensure that:

- Resources are allocated to update and maintain the Bushfire Risk Management Plan including fuel loading assessment, as required

3.4 Head of Fuel and Services

Shall ensure that:

- Compliance with the Bushfire Risk Management Plan is monitored and reported on prior to the beginning of the nominated bushfire season to the senior leadership team on the completion of the maintenance plans
- Adequate resources are made available to implement controls as detailed in the Bushfire Risk Management Plan
- Adequate resources are made available to review, develop and update Trigger Action Response Plan in relation to Bushfire, in consultation with site Health and Safety Business Partner along with site Emergency Response Team
- Ensure the firefighting equipment are well maintained and the maintenance plans in relation to this are completed
- Adequate resources are made available to assist to ensure access to AGL Macquarie property is managed and monitored for ease of access.

3.5 Health and Safety Business Partner

Shall ensure that:

- The bushfire risk, in consultation with the Head of Generations is managed appropriately
- Technical support is provided to employees and contractors in relation to bushfire risk
- Information is conveyed to employees and contractors about the presence of bushfire risk
- Resources are allocated to assist with updating and maintaining Bushfire Risk Management Plan, in consultation with the Environment Business Partner
- Adequate resources are made available to review, develop and update Trigger Action Response Plan in relation to Bushfire, in consultation with Head of Fuel and Services
- The Total Fire Ban Days (TOBAN) exemption and any changes within the government gazette schedule are reviewed regularly in consultant with Production Managers
- Bushfire related concerns that have been discussed in WHS meetings, myHSE reports and/or through other means are raised with the Head of Generations

3.6 Environment Business Partner

Shall ensure that:

- Adequate resources are available to assist with implementing controls as detailed in the Bushfire Risk Management Plan, in consultation with the Health and Safety Business Partner
- Technical support is provided to employees and contractors in relation to management of bushfire risk

3.7 Production Managers

Shall ensure that:

- Procedures for the emergency response for all bushfire related incidents are effectively managed in consultation with Health and Safety Business Partner
- Site employees and contractors are informed when bushfire management related work is undertaken by means of broader communications

3.8 Maintenance Managers

Shall ensure that:

- The work management policies and procedures identify the requirements of housekeeping around the assets to manage the bushfire related risk
- The TOBAN day when declared are strictly followed and appropriate procedures are developed to manage the requirements and to seek site specific exemptions
- Ensure the firefighting equipment are well maintained and the maintenance plans in relation to this are completed in timely manner

3.9 Workers

Shall ensure that:

- Any concerns/faults/incidents relating to Bushfire Risks are reported to their Team Leader. Reports are to be recorded in myHSE.
- All policies, Procedures and instructions as stipulated in this Bushfire Risk Management Plan are complied with.

4 The Assessment of Bushfire Risk

AGL Macquarie land holdings have been divided into 6 zones reflecting the stations and dams within the respective zone. These zones are further divided into individual units based on locality, accessibility and more importantly the amount, type, and degree of similarity of vegetation that exists. Ground fuel loadings are derived based on the method used by the rural fire brigades for these areas of similar vegetation. For the purposes of any bushfire management practice, fuel loadings assessments should be undertaken during early autumn and are to be done by qualified bush fire engineer or equivalent.

The calculation of the ground fuel loading is important as it gives the estimation of how much fuel hazard reduction is required in certain areas before the next official bushfire season.

The natural features on any landscape dictate the rate of fuel accumulation and the risk posed to life and the built environment. These features are:

- Composition of vegetation
- Area of the bushland or grassland
- Aspect
- Slope of the terrain
- Type of the understorey

- Amount and type of leaf-litter
- Prevailing winds
- Amount and type of surface vegetation

A Risk Assessment can be accessed via this link JSEA Bush Fire Risk Management or viewed via the portal.

4.1 Access to AGL Macquarie Property

There are various keys required to gain access to AGL Macquarie property. The key series is the same in each fire management zone.

Individual access requirements for each zone are outlined in Section 5 of this plan.

Access keys are available from Security at Bayswater and Liddell Gatehouse buildings and from Shift Managers at both sites out of hours.

Drawing No BW805700 showing the AGL Macquarie land holding (Refer to Appendix 3) highlights the external property access gates which may be used for access in the event of a bushfire. The gates must be kept closed to ensure that cattle do not escape onto the main roads.

4.2 Roads within AGL Macquarie Property

All roads are to be kept in reasonable to good order and are negotiable by fire service tankers and by 4-wheel drive vehicles. Roads are inspected on an occasional basis and maintenance is undertaken by a contractor on a time-based routine or following adverse condition such as rainfall that results in deterioration.

4.3 Access to Water

Water is available from Plashett Dam, Freshwater Dam, CW Make-Up Dam, Liddell and Bayswater Ash Dam, and Liddell Cooling Water Dam. Access is available by tanker and the access is shown on Drawing No BW805700. Fire hydrants are located around the inner perimeters of the power stations, to allow for refilling of tankers if required.

Water for firefighting also gets made available in the form of fire trolley tanker towable by 4-wheel drive vehicles, contractors water tankers are also made available during the peak of the season as required and driven by the Trigger Action Response Plan (TARP).

4.4 Ploughed Fire Breaks

AGL Macquarie maintains number of ploughed fire breaks annually prior to the bushfire season – normally commencing on 1 October each year. Location of the Ploughed Fire Breaks are shown in Appendix 4.

5 The Fire Management Zones

There are six zones to be considered and each zone is divided up into the smaller units as previously stated. The zones are:

- Bayswater Power Station buffer zone - Yellow Colour
- Liddell Power Station buffer zone - Pink Colour
- Ravensworth Void Rehabilitation Site - Green Colour
- Ravensworth Rail Coal Unloader - Brown Colour
- Antiene Rail Coal Unloader - Red Colour
- Barnard River Pumping Station - Not Shown

The local zones are shown in sections 5.1 to 5.6 of this document and each zone is described in terms of its vegetation and topography. A further description relates to entry, exit and internal roads. With each zone description, included is the approximate area in hectares.

Note the requirement to obtain A Bushfire Hazard Reduction Certificate from the Rural Fire Service prior to undertaking new hazard reduction activities. Hazard reduction includes activities such as slashing and ploughing fire breaks and hazard reduction burning. It does not include fuel reduction by stock grazing or the annual maintenance of fire breaks.

Full details are provided in Section 6.

5.1 Bayswater Power Station Buffer Zone

This buffer zone is comprised of that area between the New England Highway to the North East of the station to the Hunter River to the South and Mt Arthur mining lease to the West.

Access to Bayswater Power Station is via the Main Security Gatehouse located at the entrance to the site, an SS 1 key is required to gain access to AGL Macquarie property off the New England Highway and other public roads.

The area has been divided into three units, prefixed by the letter 'B' as follows:

Area	Description	Risk
B1	The area on the Western side of the New England Highway which is generally vegetated with grass and tree cover. 1500 hectares	Risk is **HIGH** due to grass build-up and the possibility of fires being started by passing traffic
B2	The area South of the Station including grazing country on either side of the River Road for a distance of approximately 10 km to where it meets the Hunter River. 3000 hectares	Because of the slopes the risk is **HIGH** especially if a Westerly wind is blowing
B3	The area to the West of the Station including the MA 2B/3B conveyor formation which continues out to the Mt Arthur Mine lease. 25 hectares	Risk is **HIGH** due to topography. Access is good.

5.1.1 Control Measures

Contact the AGL Macquarie Environment team for requirements in relation to ground disturbance or vegetation clearing prior to any works.

2. Plough ~10m wide fire breaks along the inside the Highway boundary fence where possible prior to October each year.
3. Ensure access roads are in good order, with access readily available when necessary.
4. Control unwanted vegetation growth by means of slashing and/or weed spraying along the edges and under the coal conveyors.
5. Continue grazing leases to selected portions of land within the buffer zones to assist the fire hazard reduction.
6. Mow the downstream dam embankments every 2 - 3 years.
7. Ensure all shrub or tree growth within each transmission line easement and from under power lines is removed every 2-3 years. There has been history of fires being started by failure of components on power poles.
8. For Coal conveyors external to the main station plant; a fire break is to be maintained along each side of each conveyor and coal spillages at transfer points regularly removed to minimise the possibility of a bushfire or grass fire causing damage to the conveyors.
9. Ensure a fire break at least 3 metres wide is maintained around all remote electrical switchrooms/switchyards.
10. Ensure all grass around contractor's offices, workshops or storage compounds is removed on a regular basis by mowing/slashing and/or weed spraying and all firefighting equipment properly maintained to minimise the risk of a grass fire spreading through the area. All combustible material is to be stored in appropriate locations and contractor staff are to observe hot work procedures when working in these areas as required.

5.2 Liddell Power Station Buffer Zone

This buffer zone is comprised of that area between the Bayswater Power Station Buffer Zone to the South West of Liddell Power Station to Lake Liddell to the East and Drayton mining lease to the West.

Access to Liddell Power Station is via the Main Security Gatehouse located at the entrance to the site and entry to the Liddell Buffer zone requires an SS 1 key. Access to M3 Conveyor Drive will require a HS 4 key and Liddell Ash Dam a (BW) LD 17 key via the sliding gate.

This area has been divided into three areas with area given the prefix 'L' as follows:

Area	Description	Risk
L1	The North/East half of the buffer zone which includes the area East of the New England Highway between the Antiene road and the Pikes Gully turn-off intersection and includes the area around the Liddell Cooling Water Dam. 1500 hectares	Risk is **HIGH** due to grass cover and Westerly winds There is a possibility of fires being started by passing traffic.
L2	The Liddell Ash Dam and buffer zone is located on the Western side of the New England Highway and extends from the point opposite the Antiene Road Southward to the Bayswater Gatehouse just off the New England Highway and abuts to the Drayton Mine Lease to the West 1150 hectares	Risk is **HIGH** due to grasslands and Westerly winds. Possibility of fires being started by passing traffic.
L3	Includes the 'M' series conveyor corridor area from Pikes Gully intersection down to the Ravensworth Rail Unloader boundary fence. It also includes the corridor for the 'L' series conveyors to the New England Highway underpass and the area surrounding the Gas Turbines and 33 kV Switchyard 50 hectares	Risk is **HIGH** due to the grass cover as well as coal fines along the edge of the conveyor. There is a possibility of fires being started by passing traffic.

5.2.1 Control Measures

Contact the AGL Macquarie Environment team for requirements in relation to ground disturbance or vegetation clearing prior to any works.

1. Plough 10m wide firebreaks along the inside of the Highway boundary fence where possible prior to October each year.
2. Ensure access roads are in good order, with access readily available when necessary.
3. Control unwanted vegetation growth by means of slashing and/or weed spraying along the edges and under the coal conveyors.
4. Continue grazing leases to selected portions of land along the 'M' series conveyor and the areas North of the Station and around Gas Turbines and 33 kV Switchyard.
5. Mow the downstream dam embankments every 2-3 years.
6. Ensure all shrub or tree growth within each transmission line easement and from under power lines is removed on a regular basis.
7. For Coal conveyors external to the main station plant; a fire break is to be maintained along each side of each conveyor and coal spillages at transfer points regularly removed to minimise the possibility of a bushfire or grass fire causing damage to the conveyors.
8. Ensure a fire break at least 3 metres wide is maintained around all remote electrical switchrooms/switchyards.
9. Ensure all grass around contractor's offices, workshops or storage compounds is removed on a regular basis by mowing/slashing and/or weed spraying and all firefighting equipment properly maintained to minimise the risk of a grass fire spreading through the area. All combustible material is to be stored in appropriate locations and contractor staff are to observe hot work procedures when working in these areas as required.
10. Ensure all grass around the external plant workshop, including storage areas and around items stored in the Large Items Storage Area, are regularly mowed or slashed to minimise the risk of grass fires. All combustible material is to be stored in appropriate locations and staff are to observe hot work procedures when carrying out any work as detailed in PSSI 114 Safe Working in a Confined or Controlled Access Space and Hot Work in High Risk Areas.
11. Keep all gates securely locked at the South end of the 'M' series conveyors near Pikes Gully

5.3 Ravensworth Void Rehabilitation Site

The area is described as all that AGL Macquarie owned land that is included within the confines of the Ravensworth Void Rehabilitation Site.

At the Ravensworth Void Restoration Site, an RW or SS1 key is required to gain access off the from the (New) Lemington Road. All other gates internal to the site are generally unlocked.

The area has been split up into two discrete areas with area given prefix 'R' as follows:

Area	Description	Risk
R1	Areas 1A, 1B, 2A, 2B, 3A, 3B and 4A Approximately 60% of the site has been rehabilitated by grassing and tree planting. With the introduction of bio-solids the grass cover is extremely good. 600 hectares	Risk is **HIGH** due to grass growth. Neighbouring property could be affected. Possibility of fires starting from passing traffic on the highway boundary.
R2	Pockets of Spontaneous combustion on the site require continued action to ensure that it is actively controlled and does not pose a fire risk. These areas are treated with ash to smother the hot spots. 10 hectares	Risk is **HIGH** due to grass growth. Neighbours to the South could be affected.

5.3.1 Control Measures

Contact the AGL Macquarie Environment team for requirements in relation to ground disturbance or vegetation clearing prior to any works.

1. Continue grazing of all rehabilitated sections of the site on a rotating basis to ensure that all the grass growth is controlled and the fire hazard reduced.
2. Slash 10m wide grass along external boundary fences and in particular along the Highway boundaries.
3. Keep all interior gates in areas R1 closed but unlocked.
4. Continue actively managing spontaneous combustion.
5. Clearing of vegetation and tree growth from under power lines annually.
6. Ensure all shrub or tree growth within each transmission line easement and from under power lines is removed on a regular basis.

5.4 Ravensworth Rail Coal Unloader

Includes all the land within the external perimeter person-proof fence around the Coal Unloader Site which is located South-East of Liddell Power Station along the New England Highway.

At the Ravensworth Rail Unloader Site, a R4 key is required to gain access off the New England Highway. All other gates within the site are unlocked. Aurizon should be notified if an emergency exists.

This area has been divided into two areas with area given the prefix 'RU' as follows:

Area	Description	Risk
RU1	The general site is covered with vegetation and small clumps of tube stock trees. There are two earth mounds located along the inside of the southern perimeter fence and are sparsely planted with trees for screening purposes. 6 hectares	Can be **HIGH** due to the grass growth.
RU2	The AGL Macquarie land around the perimeter of the site is generally grassland with the occasional tree cover. 16 hectares	Risk can be **HIGH** due to varying vegetation and cleared zones.

5.4.1 Control Measures

Contact the AGL Macquarie Environment team for requirements in relation to ground disturbance or vegetation clearing prior to any works.

1. Plough the 10m wide fire breaks inside the boundary fence where possible prior to October each year
2. Slash & Brush Cut were practicable, portions of RU1 and RU2.
3. Clean up any spilt coal along the edges of the rail loop tracks.

5.5 Antiene Rail Coal Unloader

Includes all the land within and external to the perimeter person-proof fence around the Coal Unloader Site which is located North of Liddell Power Station along Hebden Road.

Access to the Antiene Rail Unloader Site located on Hebden Road can be gained either through the locked gate which uses an RC EA 123 key or alternatively access can be gained through the sliding gate at the front of the facility. The facility is fully fenced and has a sliding gate into the AC2 conveyor corridor which is 5.5kms long, or alternatively access to the conveyor corridor can be gained through the Bayswater Power Station end, this access will require Damstra pass to open the sliding gate or contact the Aurizon operations coordinator, access to the middle section of the conveyor line is off the New England Hwy in the event of an emergency an R4 key is required to unlock this gate. Aurizon should be notified if an emergency exists.

This area has been divided into two areas with area given the prefix 'AU' as follows:

Area	Description	Risk
AU1	The general site is covered with vegetation and small clumps of tube stock trees. There are two earth mounds located along the inside of the southern perimeter fence and are sparsely planted with trees for screening purposes. 10 hectares	Can be **HIGH** due to the grass growth.
AU2	The AGL Macquarie land around the perimeter of the site is generally grassland with a considerable amount of tree cover. 50 hectares	Risk can be **HIGH** due to varying vegetation and cleared zones.

5.5.1 Control Measures

Contact the AGL Macquarie Environment team for requirements in relation to ground disturbance or vegetation clearing prior to any works.

1. Plough the 10m wide fire breaks inside the highway boundary fence where possible prior to October each year
2. Slash & Brush cut were practicable, portions of AU1 and AU2.
3. Clean up any spilt coal along the edges of the rail loop tracks.
4. Continue cattle grazing to the property around the perimeter of the rail unloader

5.6 Barnard River Pumping Station

Includes land along the access road and all the land in and around perimeter of the main buildings and switchyard, which is an area of approximately 130 hectares.

At the Barnard River Pump Station, an SS1 key is required to gain access off the Scone-Nundle Road towards Orham Creek and Barnard River. Coordinates 31.655S, 151.505 E

This area has been divided into two areas with area given the prefix 'BR' as follows:

Area	Description	Risk
BR1	The general site containing pump station buildings, switchyard and water storage dams are contained within an area of approximately one square kilometre with a fire break separating the buildings from the surrounding vegetation which is predominantly uncleared natural bushland. 100 hectares	Risk can be **HIGH** due to the natural bushland surrounding the site.
BR2	The windy partly sealed access road into the site is approximately 15 km in length and is generally bordered either side by grassland and native bushland cover. 30 hectares	Risk can be **HIGH** due grass growth along the access road into the pumping station.

5.6.1 Control Measures

Contact the AGL Macquarie Environment team for requirements in relation to ground disturbance or vegetation clearing prior to any works.

5. Selectively trim overhanging trees on and along the access road into the pumping station and remove unwanted vegetation around the perimeter of the switchyards and buildings.
6. Reduce ground fuel-loading procedures annually.
7. Control vegetation around the perimeter of all buildings and internal area of electrical switchyards by whipper snipping and spraying.

6 Requirements of Fuel Hazard Reduction

6.1 Bushfire Hazard Reduction Certificates

Bush Fire Hazard Reduction Certificate (BFHR Certificate) is required for most fuel hazard reduction activities. This is applicable to only newly identified activities.

These include:

- Hazard reduction burning
- Slashing, ploughing, pruning and any other mechanical reduction of fuel loads.

The NSW Rural Fire Service provides the required Certificate. This ensures that AGL Macquarie will address the requirements of the Environmental Planning and Assessment Act, 1979 and the Rural Fires Act, 1997.

To obtain a BFHR Certificate an application needs to be completed and submitted to the RFS Fire Control Centre at Bulga. A copy of the application form is shown in Appendix B. The application form is also available on the RFS website, www.rfs.nsw.gov.au. The application form will need to be signed by AGL Macquarie General Manager (equivalent to the owner).

The application needs to be accompanied by:

- A copy of this plan
- A map showing location of existing infrastructure and buildings,
- Dams, road tracks, conveyor systems and pipelines
- Vegetation types.

6.2 Rural Fire Service Contact

Contact information for the Bulga Fire Control Centre is:

- Address 2161 Putty Road Bulga 2330
PO Box 3111 Singleton 2330
- Phone 02 6575 1200
- Phone After Hours Duty Officer 02 6575 1222
- Fax 02 6575 1290
- Email Huntervalley.Team@rfs.nsw.gov.au

Local RFS brigades

Local volunteer brigades are located as follows:

- Muswellbrook Shire – Edinginglassie (Muswellbrook), Mangoola (Denman), Hebden
- Singleton Shire – Jerrys Plains, Glennies Creek

All initial contact for emergencies should be through 000. For routine matters, direct inquiries in the first place to the Bulga Fire Control Centre. RFS resources will be directed to AGL Macquarie property by the Fire Control Centre.

7 Total Fire Bans

7.1 Emergency Hot Works

Generally, it is an offence to light or maintain a fire in the open during declared total fire ban days (TOBAN). This includes any activity that can result in sparks or naked flames capable of starting a fire. Accordingly AGL Macquarie may not undertake routine activities such as hot works or welding on a TOBAN day.

However, the work at AGL Macquarie being Critical Infrastructure in nature, the Bayswater and Liddell Power Stations are covered under the Standing Government Gazette Exemption Schedules, specifically Schedule 6. These schedules were implemented in early 2018, and also some businesses like ours to meet the requirements of a Total Fire Ban Day (TOBAN), without the additional requirement seeking an exemption under Schedule 18.

AGL Macquarie individuals maintain responsibility to check specific TOBAN Orders to ascertain whether standard exemptions have been approved on each day of a TOBAN. Each time a TOBAN day is declared, the Gazette is re-published on the NSW Government Legislation website, **https://legislation.nsw.gov.au/#/notifications** as well as a " TOBAN ORDER". That Order will have in it, a list of Schedules that are approved to go ahead during that TOBAN. It is envisaged it will remain the same the majority of time, but in the event we need to essentially "suspend" an exemption schedule due to extreme weather conditions, we will publish it here. A full copy of the standing exemptions and imposed conditions are detailed in the **NSW Government Gazette**.

Any exemption is likely to be subject to the following conditions:

- Adequate firefighting equipment is immediately available at the site of the works to prevent escape of any fire, spark or incandescent material from the site
- Prior to proceeding with any work, contact the Bulga Fire Control Centre to provide details.

It should be noted that, notwithstanding the exemption, the local controller may impose additional conditions which may include a direction that the proposed activity be suspended.

8 Action of Person Discovering a Fire

If a fire is reported on AGL Macquarie property, the Shift Manager at Bayswater or Liddell Power Stations must be notified, as they become the Emergency Controller in this situation. On being advised of a fire the Shift Manager will activate Emergency Responders trained in respond to wildfire to the scene and if required call in outside assistance. Refer to the AGLM Emergency Response Plan for detailed actions required in the event of a bushfire (ALGM-HSE-PLN-010.02).

All fires must be reported to the PCR – Emergency Number 5555 or

- 6542 0555 – Bayswater
- 6542 1555 – Liddell

Advise the following information:

- Site and exact location of fire and plant affected
- Type of fuel, if known
- A description of the size or extent of the fire
- Any person(s) injured or trapped

9 Definitions

Term	Definition
PSSI	Power Station Standing Instructions
TARP	Triggered Action Response Plan
Contractor	a Company engaged by a AGL Macquarie to undertake licensed asbestos removal work.
Employee Health and Safety Representative	An elected employee responsible for representing employees within a designated work group on matters relating to occupational health and safety.
Shall ensure that	Must ensure, so far as is reasonably practicable
Work Health and Safety Committee	An elected group of employees responsible for representing employees on matters relating to occupational health and safety within AGL Macquarie
TOBAN	Total Fire Ban
Critical Infrastructure	Power Stations, Transmission Lines, Electrical Switchyards etc.

10 Referenced Documents

Document Number	Document Title
Legislation	NSW Work Health and Safety Act 2011
	NSW Work Health and Safety Regulation 2017
AS/NZS 1715:2009	Selection, Use and Maintenance of Respiratory Protective Equipment
AS/NZS 1716:2012	Respiratory Protective Devices
AGLM-HSE-PRO-004.02	Permit to Work Procedure.

11 Appendix 1 – List of Maintenance Plans for Bushfire Risk Management Zones

New routines to be raised

Buffer Zones	Zones ID	Maintenance Items
Bayswater Power Station	Yellow	Fuel loading assessment of the nominated area
		Plough 10m wide fire breaks along the inside the Highway boundary fence
		Inspect access roads condition and carryout repairs as necessary
		Vegetation control by slashing/weed spraying along the edges and under coal conveyors
		Electrical easements - inspect and arrange for removal of all shrub or tree growth within and under each transmission line
		Electrical easements - inspect and maintain fire breaks at least 3m wide around switchrooms/switchyards
		Inspect and arrange for vegetation control around contractor's area
Liddell Power Station	Pink	Fuel loading assessment of the nominated area
		Plough 10m wide fire breaks along the inside the Highway boundary fence
		Inspect access roads condition and carryout repairs as necessary
		Vegetation control by slashing/weed spraying along the edges and under coal conveyors
		Electrical easements - inspect and arrange for removal of all shrub or tree growth within and under each transmission line
		Electrical easements - inspect and maintain fire breaks at least 3m wide around switchrooms/switchyards
		Inspect and arrange for vegetation control around contractor's area
		Grazing leases to selected portions of land along the 'M' series conveyor and the areas North of the Station and around Gas Turbines and 33 kV Switchyard

Buffer Zones	Zones ID	Maintenance Items
Ravensworth Void	Green	Fuel loading assessment of the nominated area
		Grazing of all rehabilitated sections of the site on a rotating basis to ensure that all the grass growth is controlled, and the fire hazard reduced
		Slash 10m wide grass along external boundary fences and in particular along the Highway boundaries
		Electrical easements - inspect and arrange for removal of all shrub or tree growth within and under each transmission line
Ravensworth Rail Coal Unloader	Brown	Fuel loading assessment of the nominated area
		Plough 10m wide fire breaks along the inside the Highway boundary fence
		Vegetation control by slashing/brush cutting
		Inspect and arrange for clean up any coal spilt along the edges of the rail loop tracks
Antiene Rail Coal Unloader	Red	Fuel loading assessment of the nominated area
		Plough 10m wide fire breaks along the inside the Highway boundary fence
		Vegetation control by slashing/brush cutting
		Inspect and arrange for clean up any coal spilt along the edges of the rail loop tracks
		Grazing leases around the perimeter of the rail unloader
Barnard River Pumping Station	No Colour	Fuel loading assessment of the nominated area
		Selectively trim overhanging trees on and along the access road into the pumping station and remove unwanted vegetation around the perimeter of the switchyards and buildings
		Control vegetation around the perimeter of all buildings and internal area of electrical switchyards by whipper snipping and weed spraying

List of current routines for vegetation inspection and maintenance

Maint Item	Maint Item text
Bayswater Power Station	
8029397	BW Z00 U0 6M ASH DAM VEGE MAINT
8036951	BW Q01 6M U0 ASH DAM VEG MAINT
8041184	BW Z00 12M PLASHETT VEGE INSP
8041185	BW Z00 12M PIKES GULLY DAM VEGE INSP
8041186	BW Z00 12M FRESHWATER DAM VEGE INSP
8041187	BW Z00 12M LAKE LIDDELL VEGE INSP
8041188	BW Z00 12M BC HOLDING POND VEGE INSP
8041189	BW Z00 12M BC DECANT BASIN VEGE INSP
8041223	BW Z00 3M BC HOLDING POND VEGE MNT
8041224	BW Z00 3M PASAVEER VEGE MNT
8041225	BW Z00 3M COAL PLANT VEGE MNT
8041226	BW Z00 3M 1 / 2 END INTERNALS VEGE MNT
8041227	BW Z00 3M 3 / 4 END INTERNALS VEGE MNT
8041228	BW Z00 3M RIVER RD TO LSP VEGE MNT
8041229	BW Z00 3M RIVR RD TO HP PMP VEGE MNT
8041230	BW Z00 3M RIVR RD HP TO LP PMP VEGE MNT
8041231	BW Z00 3M PLASHETT VEGE MNT
8041232	BW Z00 3M PIKES GULLY ASH DAM VEGE MNT
8041233	BW Z00 3M BAD TO GUARDHOUSE VEGE MNT
8041234	BW Z00 3M GRD HSE TO INTCHNGE VEGE MNT
8041235	BW Z00 3M MT ARTHUR CONVEYOR VEGE MNT
8041236	BW Z00 3M SAVOY HILL VEGE MNT
8041237	BW Z00 3M FRESHWATER DAM VEGE MNT
8041238	BW Z00 3M LAKE LIDDELL VEGE MNT
8041239	BW Z00 3M H2 CONV TO HOWICK VEGE MNT
8041240	BW Z00 3M BC DECANT BASIN VEGE MNT
8041241	BW Z00 3M SWITCHYARDS VEGE MNT
8041270	BW Z00 24M PLASHETT VEGE SURVEY
8041271	BW Z00 24M PIKES GULLY DAM VEGE SURVEY
8041272	BW Z00 24M BC HOLDING POND VEGE SURVEY
8041273	BW Z00 24M BC DECANT BASIN VEGE SURVEY
8041274	BW Z00 24M FRESHWATER DAM VEGE SURVEY
8041275	BW Z00 24M LAKE LIDDELL VEGE SURVEY
8041276	BW Z00 3M PLASHETT VEGE MONITOR

Maint Item	Maint Item text
8041277	BW Z00 4M PIKES GULLY DAM VEGE MONITOR
8041278	BW Z00 6M FRESHWATER DAM VEGE MONITOR
8041279	BW Z00 3M LAKE LIDDELL VEGE MONITOR
8041280	BW Z00 6M BC HOLDING POND VEGE MONITOR
8041281	BW Z00 6M BC DECANT BASIN VEGE MONITOR
8036919	BW Q01 6M U0 DAMS PLASHETT VEG MAINT
8036941	BW Q01 6M U0 DAM CW MAKE UP VEG MAINT
8036943	BW Q01 6M U0 DAM FRESHWTR VEG MAINT
8036945	BW Q01 6M U0 DAM LAKE LDDL VEG MAINT
8036947	BW Q01 6M U0 DAM BRINE DCANT VEG MAINT
8036949	BW Q01 6M U0 DAM BRINE HOLDG VEG MAINT
8037501	BW Q00 3M U1/2 DSL GEN DAY TNK VEGE MNT
8037517	BW Q00 3M U3/4 DSL GEN DAY TNK VEGE MNT
Barnard River Pumping Station	
8020727	BW B00 4Y U0 132KV OH LN ARIEL MAINT
8042583	BW Q00 U0 1Y BARNARD RIVER SYS INSP
8042584	BW Q00 U0 5Y BARNARD RIVER SYS INSP
Liddell Power Station	
8036954	LD Q01 6M U0 ASH DAM VEG MAINT
8041203	LD Z00 3M STAT INNER PERIMETER VEGE MNT
8041204	LD Z00 3M LAKE ROAD VEGE MNT
8041205	LD Z00 3M INTERCHANGE VEGE MNT
8041206	LD Z00 3M CANAL ROAD VEGE MNT
8041207	LD Z00 6M SEWAGE PLANT VEGE MNT
8041208	LD Z00 3M CW PUMPS VEGE MNT
8041209	LD Z00 3M M SERIES CONVEYORS VEGE MNT
8041210	LD Z00 3M GAS TURBINES VEGE MNT
8041211	LD Z00 3M STOCKYARD CONVEYORS VEGE MNT
8041212	LD Z00 3M SOLAR PLANT VEGE MNT
8041213	LD Z00 3M STOR BAY RD/COAL PLNT VEGE MNT
8041214	LD Z00 3M GRAVEYARD VEGE MNT
8041215	LD Z00 3M TINKERS CREEK VEGE MNT
8041216	LD Z00 3M SWYD ROAD/OPER CPARK VEGE MNT
8041217	LD Z00 3M PIPE BEHIND TRANSGRID VEGE MNT
8041218	LD Z00 3M EMBANKMENTS VEGE MNT
8041219	LD Z00 3M LAKE LIDDELL VEGE MNT
8041220	LD Z00 3M LAKE LIDDELL VEGE MONITOR

Maint Item	Maint Item text
8041221	LD Z00 12M LAKE LIDDELL VEGE INSP
8041222	LD Z00 24M LAKE LIDDELL VEGE SURVEY
8036954	LD Q01 6M U0 ASH DAM VEG MAINT
8041203	LD Z00 3M STAT INNER PERIMETER VEGE MNT

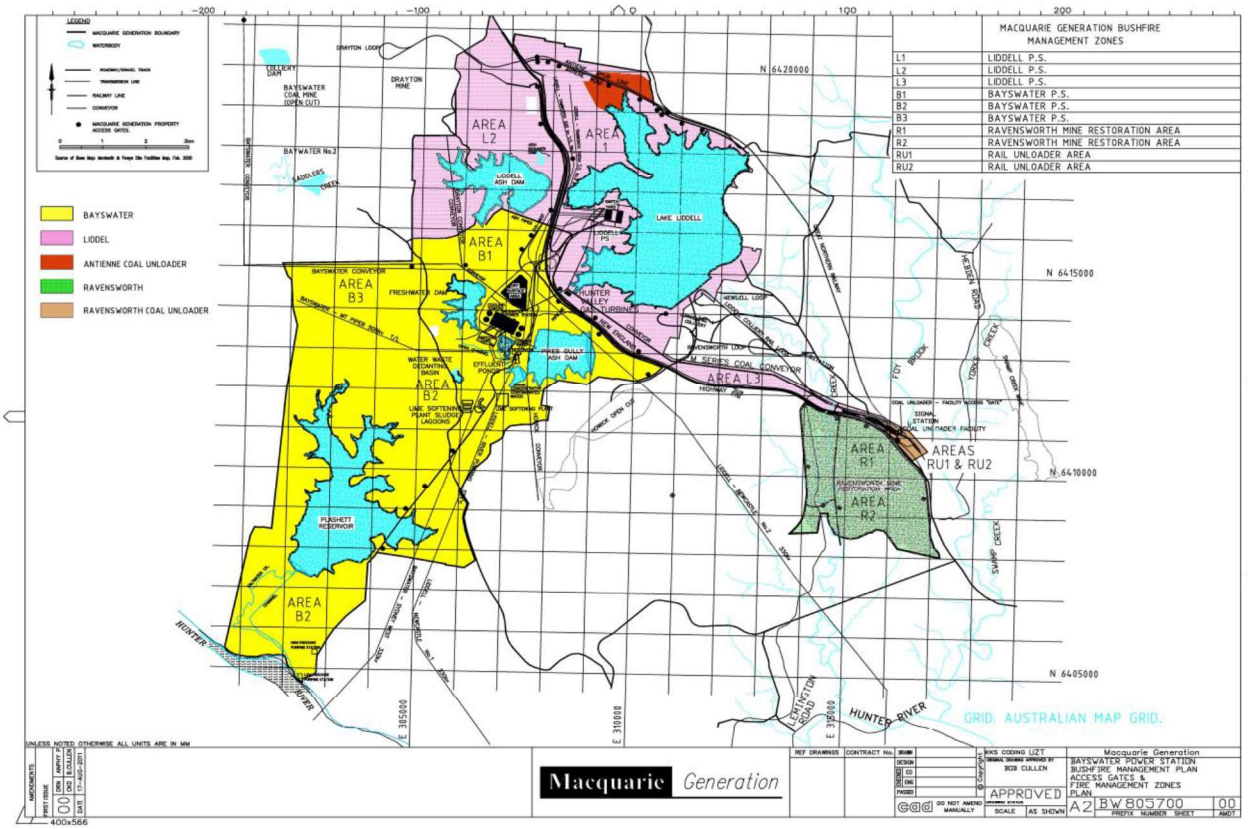
12 Appendix 2 – Trigger Action Response Plan (TARP)

Fire Danger TARP 27102020JH.docx

The TARP gets revised every year.
Attached is the TARP for 2020-21 Bushfire Season

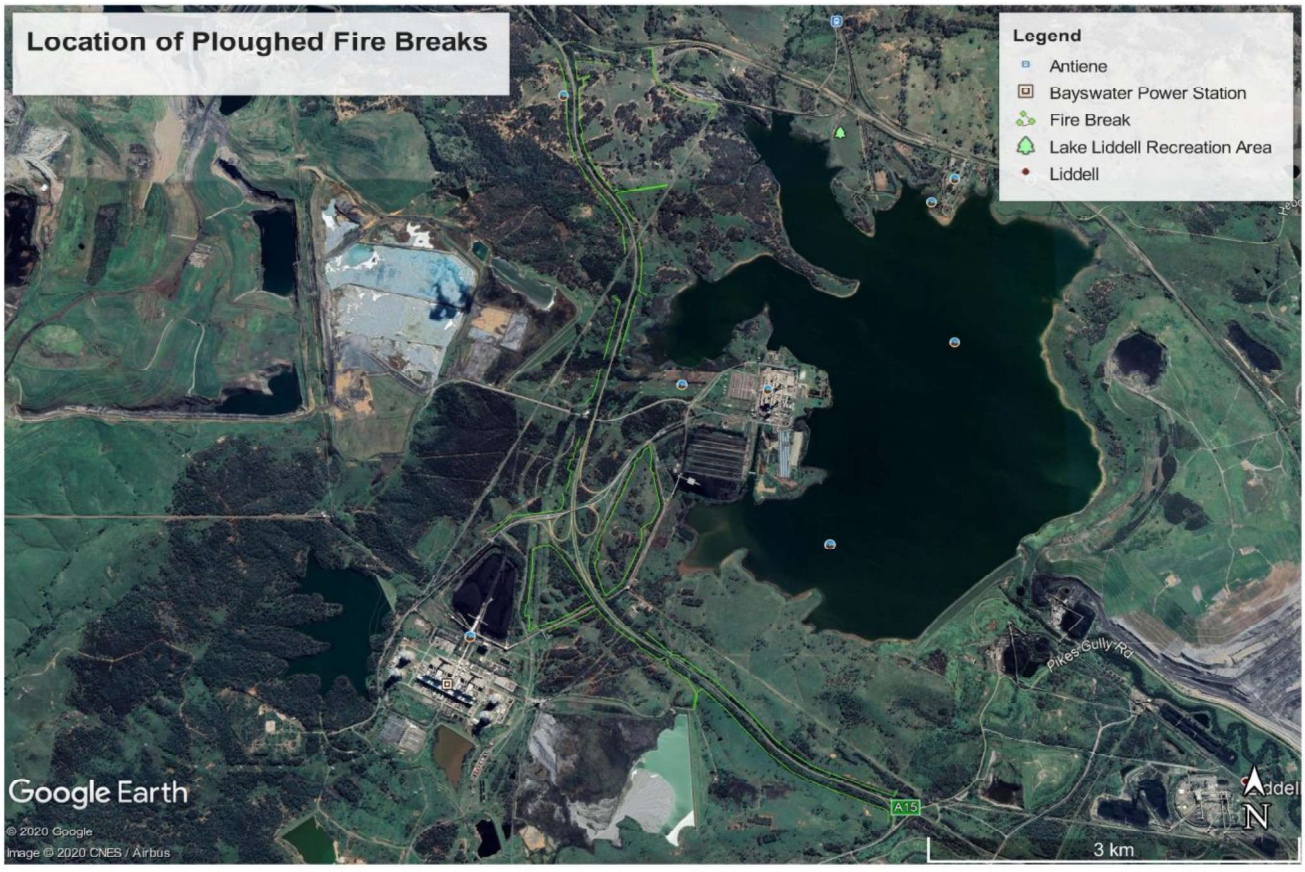
13 Appendix 3 – Bushfire Management Plan Access Gates and Fire Management

805700.pdf



14 Appendix 4 – Location of Ploughed Fire Breaks

Location of
Ploughed Fire Break



15 Appendix 4 – Plan Improvement Areas

Areas for Improvement	Action Plan
Development of new maintenance plan as identified in Appendix 1	D2 120006623 Task 6
Update BW 805700 or development of new map identifying, - All access gates to the property - All grazing areas - Water fill points - Secondary emergency egress paths	D2 120006623 Task 7

16 Appendix 5 – Fuel Loading Assessment Report 2020

Fuel Loading Assessment Report.p

Appendix D

Traffic Assessment

AGL Future Land Use and Enabling Works

Traffic Assessment

AGL Macquarie Pty Ltd

4 April 2024

The Power of Commitment

Project name		AGL Planning Proposal – Bayswater and Liddell Power Station					
Document title		AGL Future Land Use and Enabling Works | Traffic Assessment					
Project number		12624330					
File name		12624330-REP_Broader Employment Transition Area Planning Proposal Report_ Appendix D_Rev 1.docx624330-REP_Bayswater and Liddell Power Stations_TIA.docx					
Status Code	Revision	Author	Reviewer		Approved for issue		
			Name	Signature	Name	Signature	Date
S4	0	J Yoo / M Lucas	C Steinbach	Christophe Steinbach	S Lawer		05/04/24

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[Compliance statement]

→ The Power of Commitment

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Terms and abbreviations

Abbreviation	Description
AGL	AGL Pty Ltd
AGLM	AGL Macquarie Pty Limited
AGTM	Austroads Guide to Traffic Management
AS	Australian Standard
AS/NZS	Australian and New Zealand Standard
BAW	Bayswater Ancillary Works
BPS	Bayswater Power Station
CSSI	Critical State Significant Infrastructure
DPE	Department of Planning & Environment
DoS	Degree of Saturation
EIS	Environmental Impact Statement
EP&A	Environmental Planning and Assessment
GHD	GHD Pty Ltd
h	Hour
HV	Heavy vehicle
km	Kilometres
LAD	Liddell Ash Dam
LGA	Local Government Area
LOS	Level of Service
LPS	Liddell Power Station
LV	Light vehicle
ln	Lane
m	Metres
NHVR	National Heavy Vehicle Regulator
NSW	New South Wales
OSOM	Oversize Overmass
pc	Passenger car units
Rehabilitation	Includes recontouring of landforms and revegetation, and excludes all remediation
RSPCA	Royal Society for the Prevention of Cruelty to Animals
SEARs	Secretary's environmental assessment requirements
SSD	State Significant Development
tcu	Through car units
TfNSW	Transport for New South Wales
TIA	Transport Impact Assessment
VCR	Volume Capacity Ratio
vpd	Vehicles per day
vph	Vehicles per hour
WIRES	Wildlife Information and Education Service

1. Introduction

1.1 Project background and overview

AGL Macquarie Pty Ltd (AGL) has engaged GHD Pty Ltd (GHD) to prepare an initial Planning Proposal (the Proposal). The Proposal seeks an amendment to *Muswellbrook Local Environmental Plan 2009* (the LEP) to permit compatible additional uses at the Bayswater and Liddell Power Station sites (the site).

AGL Macquarie Pty Ltd (AGL) owns the operating Bayswater Power Station (BPS) and the adjoining former Liddell Power Station (LPS) site. In line with the commitments in its Climate Transition Action Plan released in 2022, AGL ceased to operate LPS in April 2023 and has committed to close BPS by no later than 2033.

Once both the LPS and BPS closures occur, when structures are demolished and the site rehabilitated, AGL are committed to redeveloping the site into an integrated industrial Energy Hub. The proposed changes to the LEP will aim to provide a flexible approach to future development on the site in the short, medium, and long term to allow for a range of land uses to occur in accordance with state and local government expectations. Allowing the transition to commence prior to the closure of BPS, and as the LPS is rehabilitated, will reduce shocks to the social and economic conditions in the Upper Hunter.

The Hunter Regional Plan 2041 identifies the land owned by AGL as an opportunity to co-locate other employment generating activities on the Liddell and Bayswater site to establish an integrated industrial Energy Hub. The Liddell Future Land Use and Enabling Works Reporting prepared by GHD has also identified future opportunities within this overall locality. The availability of rail, highway access, and infrastructure offer developers an alternative site outside of existing urban areas.

AGL are currently working with Muswellbrook Shire Council (Council) and the Department of Planning and Environment (DPE) to investigate how this outcome can be delivered through place-based planning. The Regional Plan 2041 has suggested a number of employment generating land uses including manufacturing, waste, freight, hydrogen, data and agribusiness. Due to the nature of the site, industrial related uses are considered compatible with the existing character of the locality.

1.2 Purpose of this report

GHD was engaged by AGL to prepare a Traffic Assessment (TA) to support the preparation of the Proposal. The TA will identify the capacity and road network performance of existing traffic conditions and available capacity to facilitate development envisaged by the amendment of the LEP for an integrated industrial Energy Hub (Energy Hub). This report will:

– Describe the existing environment with respect to the project.
– Assess the capacity of the road network to accommodate the expected trip generation of the Energy Hub.
– Determine the potential size of the Energy Hub in accordance with the capacity of the adjoining road networks in accordance with Transport for NSW (TfNSW) trip generation rates.

1.3 Site details

AGL owns the expanse of land surrounding the BPS and LPS sites, as indicated in Figure 1.1. Local land use in proximity to the site predominantly consists of large-scale industrial infrastructure associated with both the Liddell and Bayswater power stations, as well as open cut mining activities at Ravensworth, Mount Arthur, Hunter Valley Operations, Liddell Coal Mine and the Maxwell project. Agricultural clearing for the purposes of grazing has also occurred within and surrounding the broader AGL landholding.

The site is located across two Local Government boundaries, being the Muswellbrook and Singleton LGAs. The site is surrounded by rural lands and is divided by the New England Highway. The closest social infrastructure development

and residential sensitive receiver is the Lake Liddell Recreation Area and the Lake Liddell Recreation Area's owner's residence, which is located approximately two kilometres north of the Liddell Core Investigation Area.

Figure 1.1 Area locality

Three specific sites have been identified to accommodate the land uses associated with Energy Hub, as displayed in Figure 1.2.

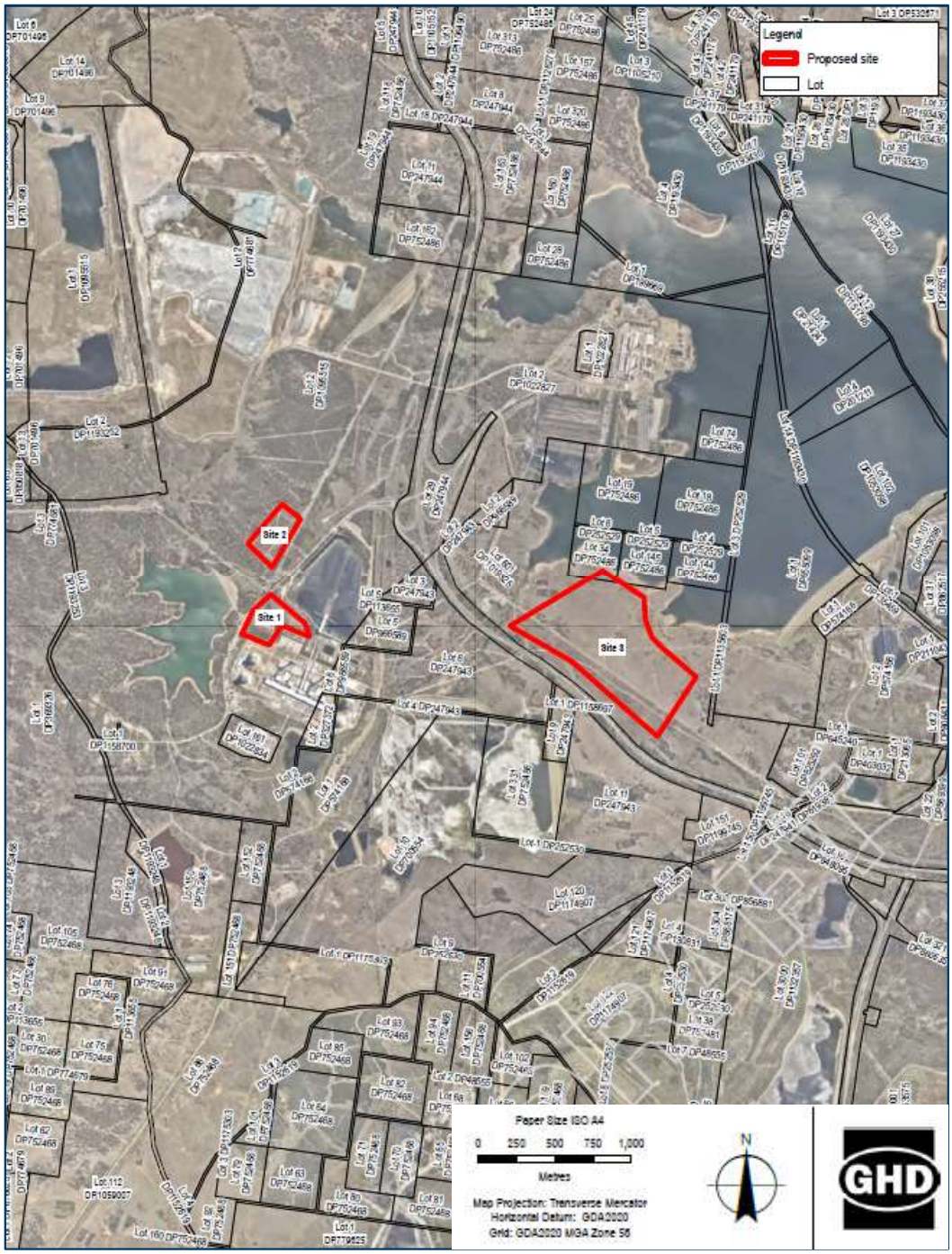


Figure 1.2 Energy Hub sites

As displayed in Figure 1.2:

– Site 1 and Site 2 are located on the western side of the New England Highway
– Site 3 is located on the eastern side of the New England Highway

1.4 Report structure

The report is structured as follows:

– Section 1 – provides an introduction to the Proposal.
– Section 2 – describes the legislative and policy context.
– Section 3 – describes the existing condition.
– Section 4 – provides a project description and assesses the capacity of the road network to accommodate vehicle activity associated with the Energy Hub (based on publicly available data).
– Section 5 – conclusion.

1.5 Study assumptions

The preparation of this assessment has relied on the following data sources and assumptions:

– Available traffic data for the intersections of interest has been sourced from the Transport Impact Assessment for Liddell Future Land Use and Enabling Works Project (the Liddell Future Land Use Transport Impact Assessment report) published by GHD in 2023.
– The quantum of future land uses is not currently known.
– Traffic volume data for the New England Highway was sourced from TfNSW count stations.
– The mid-block capacity of the New England Highway was determined in accordance with the Austroads Guide to Traffic Management Part 3: Transport Study and Analysis Method.
– The TfNSW rates associated with Business Parks was used to determine the trip generation of the Energy Hub
– The BPS will cease operation in 2033.
– Subsequent to the closure of the BPS, it has been assumed that 50 percent of the available capacity on the New England Highway will be utilised by the Energy Hub.
– The future traffic volumes on the New England Highway may be impacted by other changes in the Hunter Valley, i.e. the closure of coal mines and the reconfiguration of these sites.
– It has been assumed that upon operation:
    - 60 percent of vehicles associated with the Energy Hub will access/egress the site to and from the south
    - 40 percent of vehicles associated with the Energy Hub will access/egress the site to and from the north
– The assessment of existing conditions of the surrounding network is based on a desktop review of the following data sources:
    - Aerial photography by Google Maps / Nearmap / ArcGIS
    - Street view images by Google Maps
    - Road Crash data published by TfNSW Centre for Road Safety

In summary, the analysis included in this report is high level and based upon existing data sources. It is noted that the land uses associated with the Energy Hub will be subject to a specific application process i.e. Development Application and associated environmental assessments.

1.6 Limitations

This report has been prepared by GHD for AGL and may only be used and relied on by AGL for the purpose agreed between GHD and AGL as set out in this report.

GHD otherwise disclaims responsibility to any person other than AGL arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions, and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions, and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by AGL and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2. Background context

2.1.1 Hunter Regional Plan 2041

The recently prepared Hunter Regional Plan 2041 (Regional Plan 2041) sets a 20-year strategic land use planning framework for the Hunter Region.

The 2041 vision includes:

– *"A wide range of employment opportunities.*
– *The region is climate resilient and energy and resource efficient. Leadership in reaching net zero emissions represents a key guiding principle for all regional decision-making.*
– *Infrastructure investment supports freight, health, education and waste services, and agribusiness and tourism while building resilience to global economic cycles and climate change.*
– *A skilled science, technology and engineering workforce is engaged in advanced manufacturing, mining and digital technologies".*

The Regional Plan's place strategy for the Lidell and Bayswater Power Station sites includes:

– Plan renewable energy generation.
– Leverage access to energy and site infrastructure like rail and highway access.

The provision of an Integrated Industrial Energy Hub will meet the vision of the Regional Plan 2041. The closure of Liddell power station in 2023 and Bayswater in 2030-2033 will provide opportunities to co-locate other employment generating activities within the SP2 zone. The site offers both rail and highway access, water and infrastructure assets. The Energy Hub will support jobs in manufacturing, waste, freight, and hydrogen, and support planning priority 2:

– *Plan for alternative land uses for former power stations and mining sites.*

2.1.2 State Environmental Planning Policy (Transport and Infrastructure) 2021

Pursuant to Schedule 3 of *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&ISEPP) the project is generally considered to be traffic generating development, to be referred to Transport for NSW (TfNSW). Clause 2.121 of T&ISEPP specifies that a consent authority must give written notice to TfNSW of an application for traffic generating development before granting development consent and consider any response provided by TfNSW. Any future development application for development would be subject to Clause 2.121.

2.1.3 Liddell Future Land Use and Enabling Works Project Transport Impact Assessment (2023)

The Liddell Future Land Use Transport Impact Assessment report (which was prepared by GHD in 2023) outlines the transport impact of the decommissioning of the LPS. The assessment approach included a review of publicly available traffic count data and crash statistics as well as data collected by AGL regarding the operation of the grade separated New England Highway Interchange.

The Transport Impact Assessment included traffic survey data from 2018 for the New England Highway Interchange, as displayed in Figure 2.1 and Figure 2.2.

LPS has since been decommissioned and accordingly, the number of staff travelling to/from the power station has largely ceased.

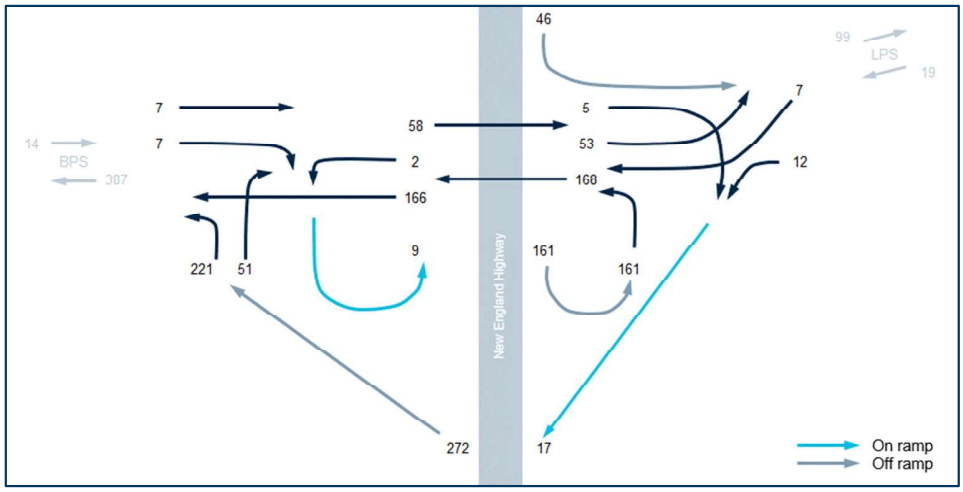


Figure 2.1 New England Highway / LPS and BPS interchange – Existing AM peak volumes (2018)

Source: Liddell Future Land Use and Enabling Works Project Transport Impact Assessment

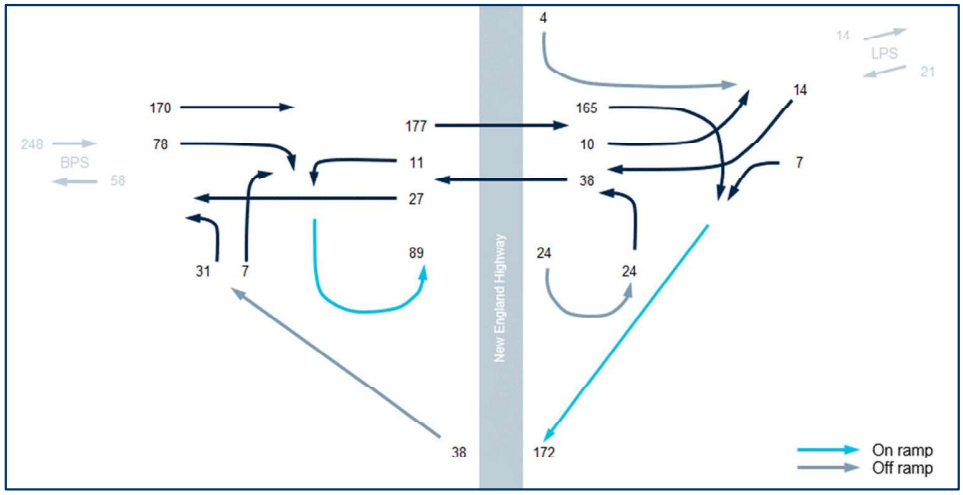


Figure 2.2 New England Highway / LPS and BPS interchange – Existing PM peak volumes (2018)

Source: Liddell Future Land Use and Enabling Works Project Transport Impact Assessment

The 2018 survey data indicates that the BPS is a major employer, generating approximately 400 trips in the AM peak hour and 306 trips in the PM peak hour.

Additionally, the Transport Impact Assessment included future year traffic volumes (2033) based on the removal of the LPS trips and the trips generated by the cumulative projects and land uses. These projects included Ravensworth Composting Facility and the Liddell Battery and Bayswater Ancillary Works.

The future year traffic volumes for the New England Highway Interchange for the AM and PM peak hours are displayed in Figure 2.3 and Figure 2.4, respectively.

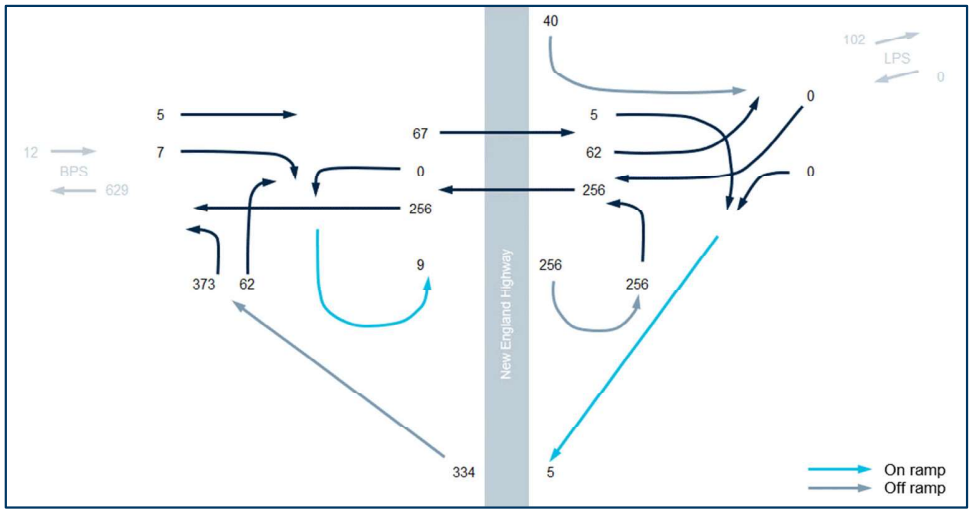


Figure 2.3 New England Highway / LPS and BPS interchange – Future AM peak volumes (2033)

Source: Liddell Future Land Use and Enabling Works Project Transport Impact Assessment – GHD 2023

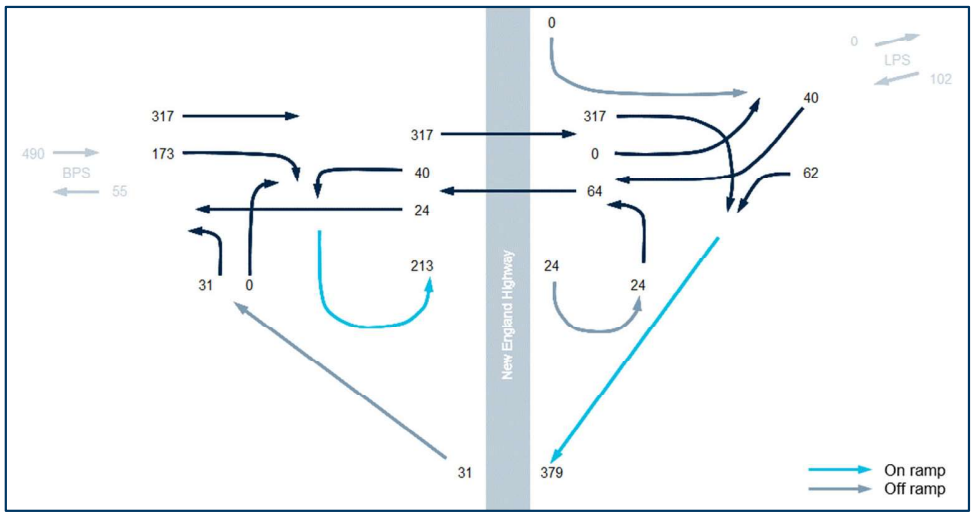


Figure 2.4 New England Highway / LPS and BPS interchange – Future PM peak volumes (2033)

Source: Liddell Future Land Use and Enabling Works Project Transport Impact Assessment – GHD 2023

It is noted that Figure 2.3 and Figure 2.4 indicate that the BPS is in operation, i.e. it does not account for its closure in the future.

The Transport Impact Assessment also included SIDRA modelling of the grade separated New England Highway Interchange. The traffic performance accounted for the five key priority-controlled junctions within the New England Highway Interchange, as shown in Figure 2.5.

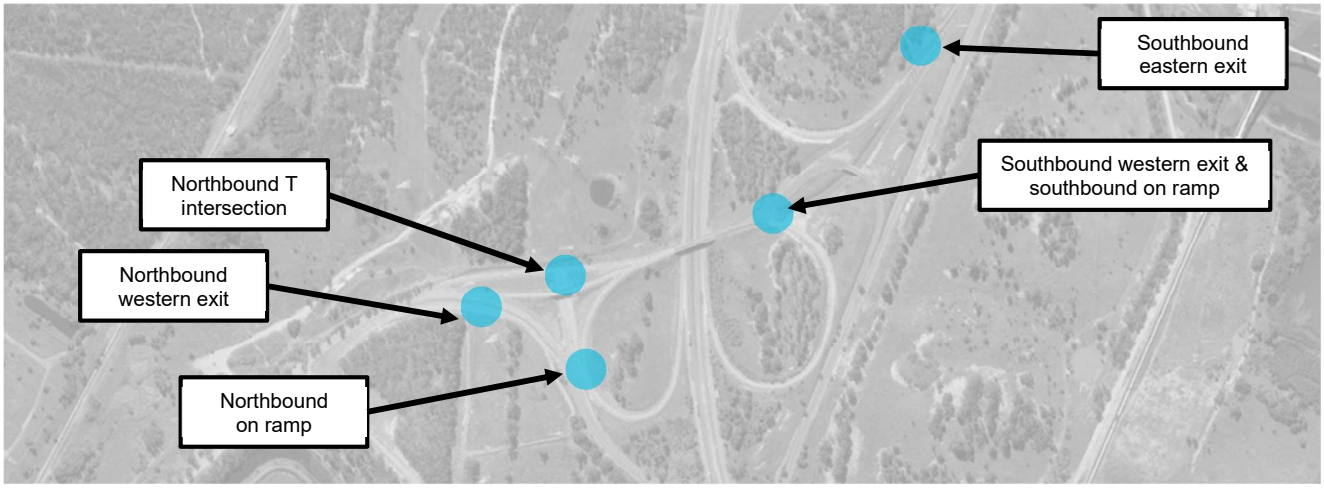


Figure 2.5 SIDRA modelling locations

Source: Liddell Future Land Use and Enabling Works Project Transport Impact Assessment – GHD 2023

The report indicated that the New England Highway Interchange is operating with a very good Level of Service (LoS A) with minor delays, and significant spare capacity, currently (2018) and in the future (2033).

2.1.4 Liddell Battery and Bayswater Ancillary works Project Traffic and Transport Assessment

The Liddell Battery and Bayswater Ancillary Works Project Traffic and Transport Assessment was prepared by Jacobs in 2021 to assess the impacts of a 500-megawatt Battery and associated works. The assessment accounted for cumulative impacts, including the Ravensworth Composting Facility and the Liddell Power Station closure and rehabilitation. The Traffic and Transport Assessment was completed in 2018 and included 2023 “future year” traffic volumes.

The future year traffic volumes (2023) for the New England Highway Interchange for the AM and PM peak hours are displayed in Figure 2.6 and Figure 2.7, respectively.

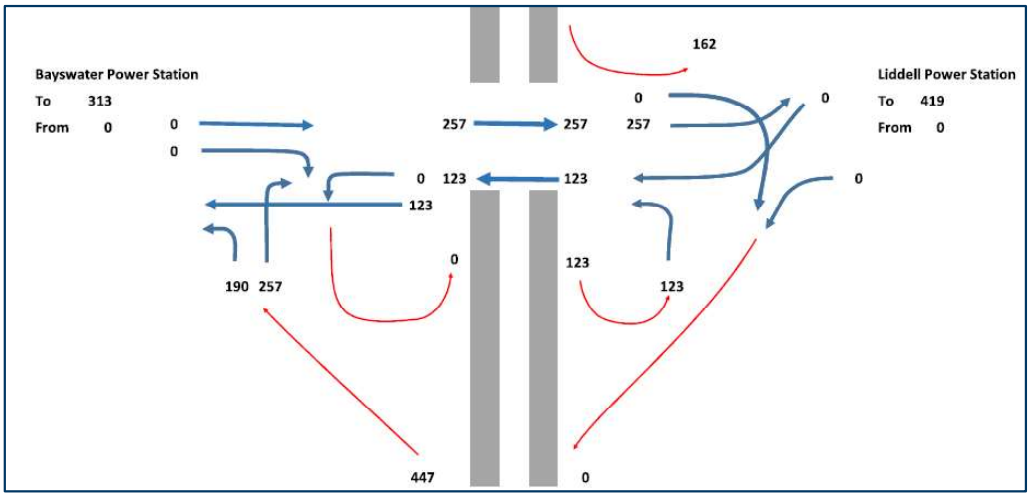


Figure 2.6 New England Highway / LPS and BPS interchange – Future AM peak volumes (2023)

Source: Liddell Battery and Bayswater Ancillary Works Project – Jacobs 2021

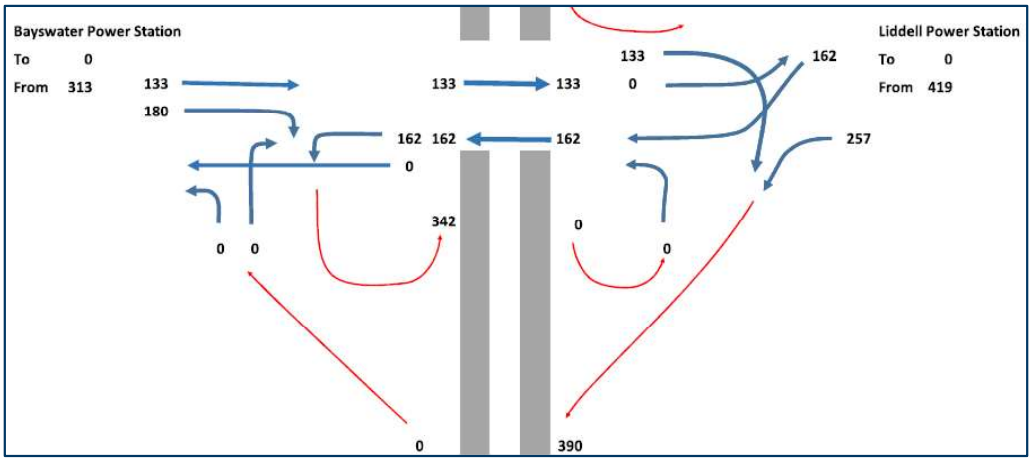


Figure 2.7 New England Highway / LPS and BPS interchange – Future PM peak volumes (2023)

Source: Liddell Future Land Use and Enabling Works Project Transport Impact Assessment – Jacobs 2021

SIDRA analysis based on the traffic volumes in Figure 2.6 and Figure 2.7 indicates that the New England Highway Interchange operates at LoS A, currently and for the future year scenario.

3. Existing road network

A map of the existing road network that includes The New England Highway, LPS and BPS access road and interchange, as well as the internal access road are shown below in Figure 3.1. The following subsections describe the roads in proximity to the Energy Hub.

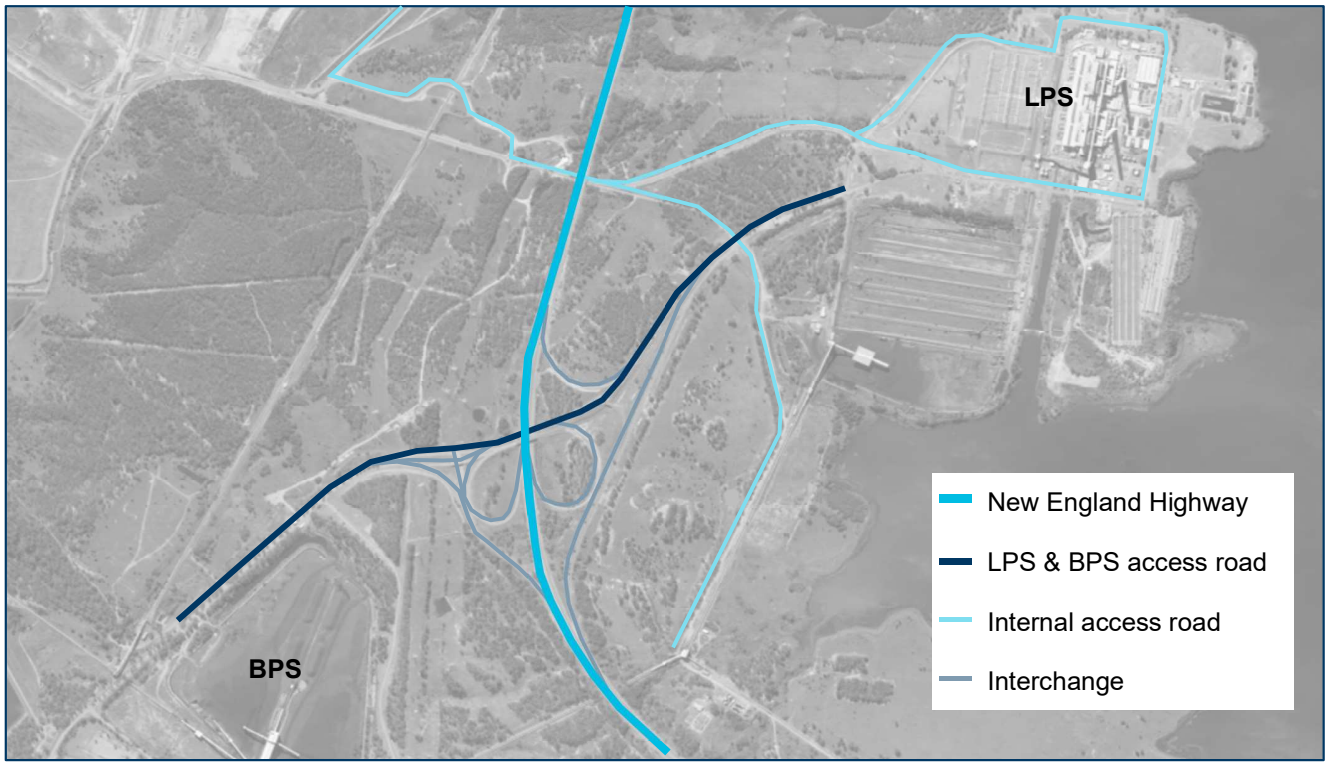


Figure 3.1 Existing Road network

Image source: Liddell Future Land Use and Enabling Works Project Transport Impact Assessment (2023) published by GHD

It is noted that the three Energy Hub sites are proposed to be accessed/egressed via the New England Highway Interchange, the LPS access road (Site 3) and BPS access road (Site 1 and Site 2).

3.1.1 New England Highway

The New England Highway is a TfNSW controlled arterial highway running generally north-south, connecting Toowoomba in Queensland to the north, to Hexham near Newcastle, to the south. The New England Highway has a typical posted speed limit of 100 km/h, with reduced speed limits through towns.

In the vicinity of the project, the New England Highway is a dual carriageway with two lanes in each direction and a central median. The New England Highway is an approved B-double and Oversize Overmass (OSOM) transport route.

The following observations of the New England Highway in the vicinity of the site are as follows:

– About 1.4 kilometres south of the interchange, New England Highway changes to one lane in either direction.
– About 400 metres north of the interchange, New England Highway changes to two northbound lanes and one southbound lane.
– About 3.3 kilometres north of the interchange, New England Highway changes to one lane in either direction.

3.1.2 Liddell and Bayswater access road

An unnamed access road runs generally southwest-northeast across the New England Highway, connecting the BPS and LPS. Where the New England Highway bisects the two power stations, a grade separated half clover interchange provides access to/from the highway from the access road.

The access road is a single carriageway road with one lane in each direction. The road has a posted speed limit of 60 km/h where it adjoins the New England Highway, reducing to a posted speed limit of 40 km/h where vehicles access the LPS, to the west at the access to the BPS is a posted speed limit of 20 km/h.

3.2 Public and active transport network

While the Hunter Main North Rail line runs north-south to the east of Liddell Lake, there are no public transport stations or stops within proximity of the Proposal. Furthermore, no formal off-road pedestrian or cycling facilities are provided on the road network near the project site.

3.3 Existing traffic volumes

Traffic volumes along the New England Highway were obtained from the TfNSW Traffic Volume Viewer. Volumes have been obtained from the:

– Counter No. 6154, 1.64 km south of Muscle Creek Road, approximately 11 km north of the LPS/BPS
– Counter No. 6153, 200 metres north of Rixs Creek Lane, approximately 28 km south of the LPS/BPS

Figure 3.2 Traffic counter locations
Image source: Liddell Future Land Use and Enabling Works Project Transport Impact Assessment (2023) published by GHD

The average weekday traffic volumes for site 6153 in 2022 are displayed in Figure 3.3

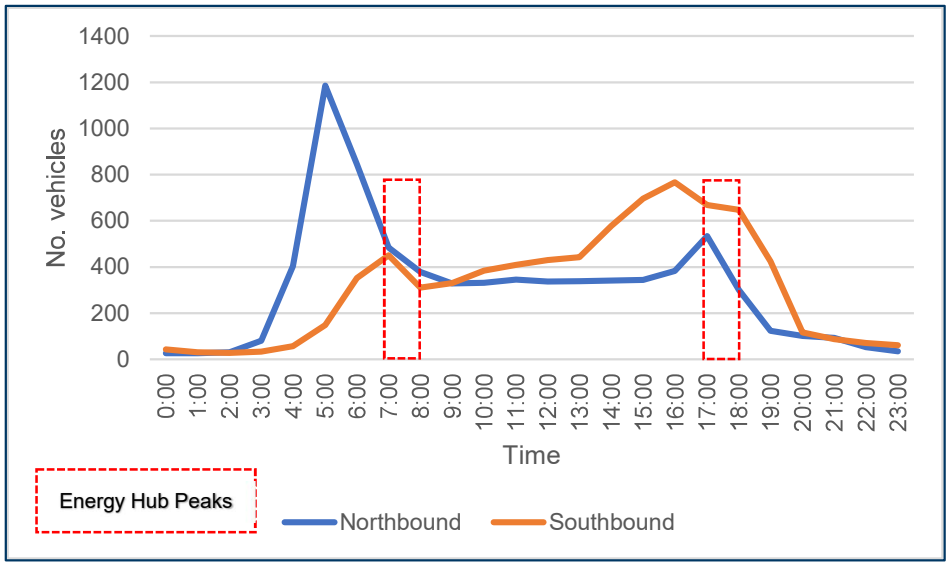


Figure 3.3 New England Highway traffic volumes – counter number 6153

Source: TfNSW

The data in Figure 3.3 indicates that on the New England Highway south of the Energy Hub site:

– Peak morning vehicle activity occurs between 5:00 am and 6:00 am (1,333 vehicles), during this period traffic volumes are predominantly northbound.

– Peak afternoon vehicle activity occurs between 5:00 pm – 6:00 pm (1,201 vehicles).

It is assumed that the peak morning vehicle activity is predominantly associated with workers accessing the mines in the Hunter Valley region. As detailed in Section 4.2.3, the peak hour morning activity associated with the Energy Hub, is likely to occur later (in the order of 7:00 am – 8:00 am). Further, it is assumed that the Energy Hub peak afternoon activity will coincide with the road network peak detailed in Figure 3.3.

The average weekday traffic volumes for site 6154 in 2022 are displayed in Figure 3.4.

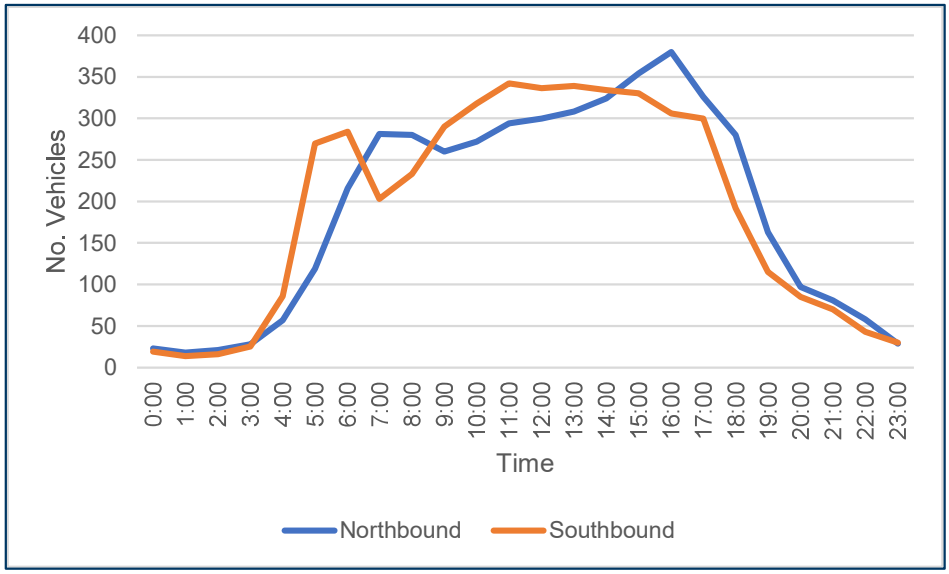


Figure 3.4 New England Highway traffic volumes – counter number 6154

The data in Figure 3.4 indicates that on the New England Highway north of the Energy Hub site:

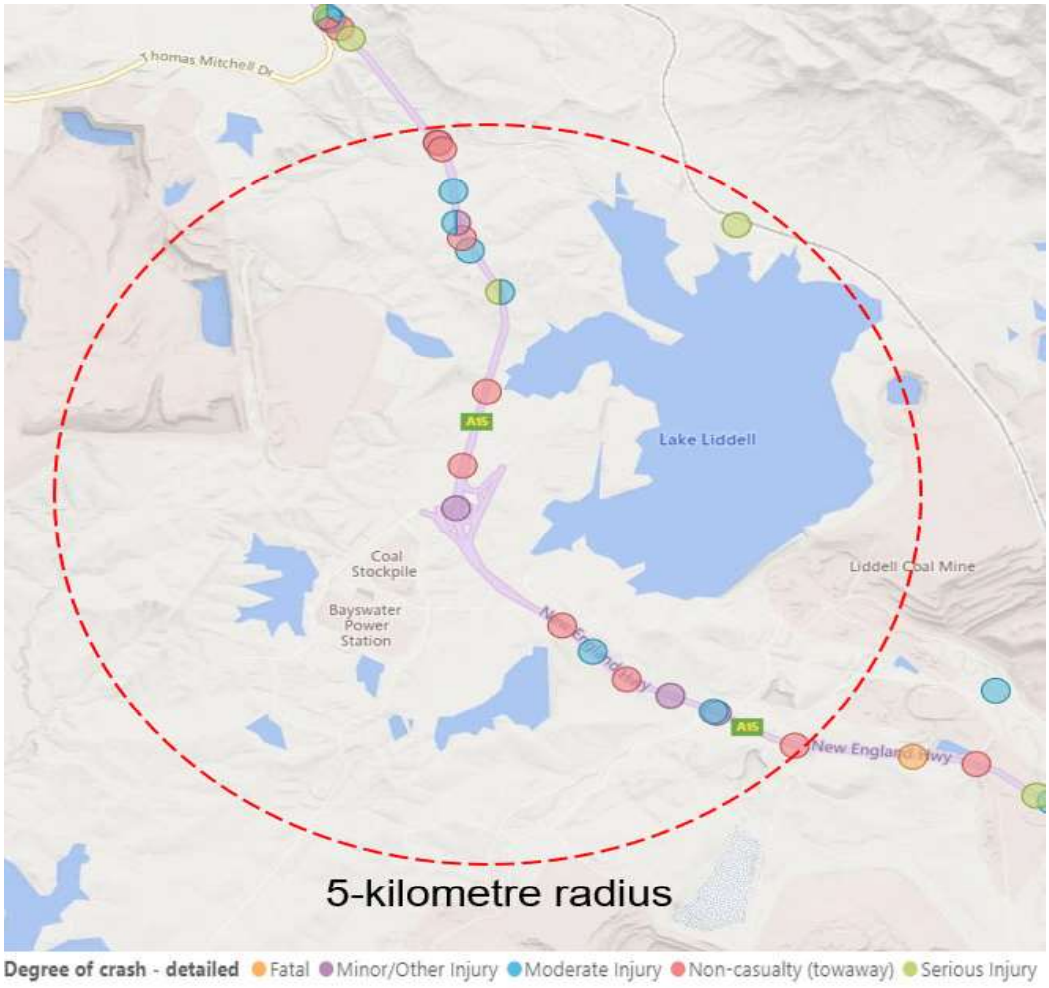
– Peak morning vehicle activity occurs between 11:00 am and 12:00 pm (636 vehicles).
– Peak afternoon vehicle activity occurs between 4:00 pm – 5:00 pm (686 vehicles).

The TfNSW count station data indicates that there are higher traffic volumes on the New England Highway south of the Energy Hub subject site compared to the north. Accordingly, the southern section of the New England Highway provides a greater constraint to the potential vehicle activity associated with the Energy Hub compared to the north.

It is noted that the Mt Arthur Coal Mine (which is the largest in NSW), which is located approximately ten kilometres north of the Energy Hub is expected to close in 2030, which will reduce the volumes of vehicles traversing the New England Highway in proximity to the Energy Hub.

3.4 Crash history

Road crash history for the five-year period from 2018 to 2022 was obtained from the TfNSW Centre for Road Safety. The area of assessment included the LPS and BPS access road and the New England Highway, approximately 5 km north and south of the interchange. Within the analysis period, there were a total of 21 recorded crashes. A map of crash incident locations is provided in Figure 3.5.



Source: NSW Road Crash Data 2018-2022 (TfNSW Centre for Road Safety, 2023), modified by GHD

Figure 3.5 Road crash incidents within a 5.0-km radius of the area of assessment

A summary of the road crash categories is provided in Figure 3.6. The predominant crash type category is *off-path, on curve or turning* (9 incidents), followed by off-path, on straight (6 incidents).

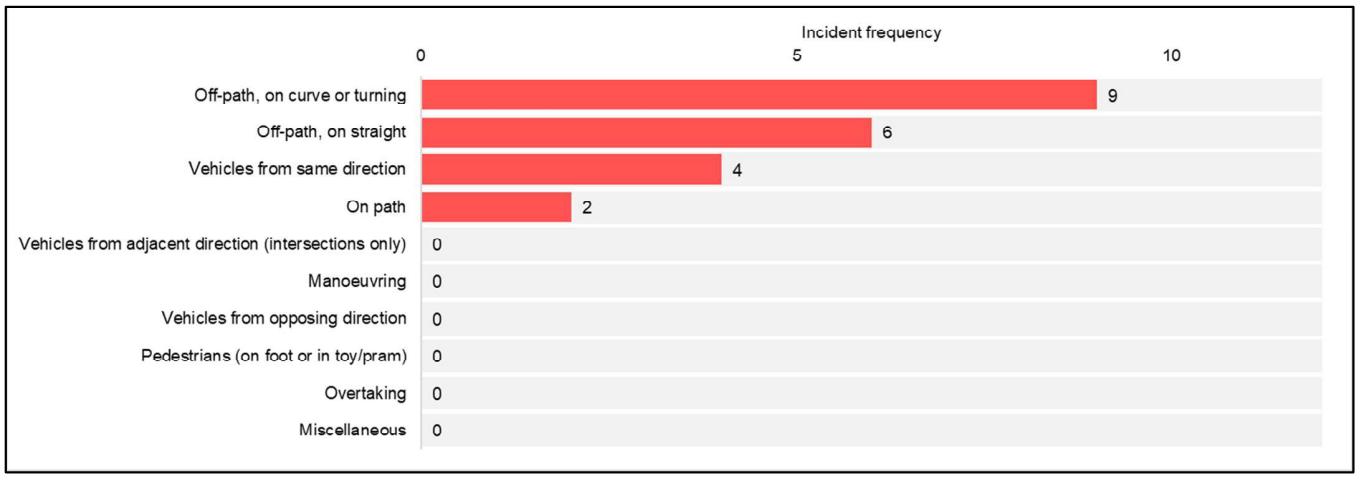


Figure 3.6 Incident frequency per road crash category

All crashes recorded within the last five years occurred on the New England Highway with the exception of one crash on Hebden Road (the northern eastern crash in the survey area). The majority of crashes are non-casualty injuries, which is 38 percent of reported crashes and followed by moderate injury by 24 percent. There were two serious injuries occurred during the night and dusk as the vehicles ran off the road.

Table 3.1 Degree of crashes within the area of assessment

Year	Degree of Crash					Total
	Non-casualty (towaway)	Minor/Other Injury	Moderate Injury	Serious Injury	Fatal	
2018	2	1	0	0	0	3
2019	1	0	2	0	0	3
2020	1	1	0	0	0	2
2021	3	2	3	1	0	9
2022	1	1	1	1	0	4
Total	8	5	6	2	2	21

4. Impact assessment

4.1 Future land uses

The intention of the Proposal is to seek an amendment to the LEP so as to permit compatible additional uses to support the ongoing clean energy transition and support an integrated industrial Energy Hub. Compatible future uses of the site that have been identified and are market dependent include:

– Energy generation and storage.
– Manufacturing of renewable energy components (i.e., solar panels).
– Recycling of renewable energy components (i.e. material recycling facilities for solar panels and/or lithium batteries).
– Manufacture of building materials using materials sourced from on-site such as coal ash from power station activities.
– Agricultural produce industry to support ongoing agricultural land uses in the region as coal fired power stations and mines progressively close.
– Ancillary activities and services to support the needs of businesses and workers.

Once both the LPS and BPS closures occur, when structures are demolished and the site rehabilitated, AGL are committed to redeveloping the site into an integrated industrial Energy Hub. The proposed changes to the MLEP 2009 will aim to provide a flexible approach to future development on the site in the short, medium and long term to allow for a range of industrial land uses to occur in accordance with state and local government expectations.

The 2041 Regional Plan supports the development of alternative land uses dependant on the characteristics of the site and its surrounds.

4.2 Capacity assessment

4.2.1 Trip generation rates

A high-level traffic impact assessment has been undertaken, to assess the extent the surrounding road network of the subject site to accommodate vehicle activity associated with the Energy Hub. The analysis has been based on:

– The operation of the grade separated New England Highway Interchange.
– The mid-block capacity of the New England Highway, assuming a single travel lane in either direction.

To determine the expected peak hour vehicle activity trip generation rates, reference has been made to the TfNSW Technical Direction (TDT 2013/04a) for “business parks”. TfNSW identifies business parks as:

Developments that permit a range of land-use types in an integrated complex. The developments generally incorporate a number of individual units of similar size. The developments typically include elements of industrial, manufacture, research, warehousing, office space, retail, commercial, refreshment and recreational activity. They are generally located in industrial areas and the uses within the park are generally to a scale appropriate for the anticipated workforce.

It is considered that the business park criteria are suitable to assess the expected traffic characteristics of the Energy Hub at a high-level as it would accommodate a number of related uses such as large format industrial development and associated office space.

For regional business parks, the trip rates in the Technical Direction are based on a series of surveys completed by TfNSW. For “regional” areas the Technical Direction specifies a range of trip rates as follows:

– AM peak hour 0.32 – 1.20 trips per 100 m^2 GFA.

– PM peak hour 0.39 – 1.30 trips per 100 m^2 GFA.

The outputs of the surveys are provided in Appendix E of the Technical Direction, and a summary of some sites are provided in Table 4.1.

Table 4.1 Business Park Data

Location	Tuggerah	Albion Park	Rutherford	Beresford	Port Stephens
Size m^2	136,737	42,899	29,766	89,291	19,881
No. factories	6	0	1	5	0
No. factories/warehouses	2	0	0	2	0
No. warehouses	41	13	5	23	3
No. offices	93	4	3	7	1
No. retailers	16	25	1	2	6
No. workshops	0	9	3	7	1
No. manufacturers	2	0	0	2	10
No. Other commercial	23	15	5	2	5
Trip Rate per 100 m^2 GFA	**0.92**	**0.97**	**0.58**	**0.56**	**0.39**

The data in Table 4.1 indicates that business parks with a significant portion of retail facilities have higher generation rates compared to those without them.

Given the location of the land and its suitability for large format industrial land uses, it is not expected to include a high proportion of retail facilities. Therefore, for the purpose of analysis, the yield analysis has been undertaken utilising a trip rate of 0.56 trips per 100m^2 similar to the industrial estate example in Beresford. This represents a more conservative assessment compared to the Port Stephens site.

4.2.2 Interchange review

As detailed in Section 2.1.3, the volumes for vehicles accessing/egressing the BPS and LPS in the future year scenario (subsequent to 2023) is as follows:

– Future AM peak hour:
  - BPS - 629 inbound and 12 outbound
  - LPS - 102 inbound and zero outbound
– Future PM peak hour:
  - BPS - 55 inbound and 490 outbound
  - LPS – zero inbound and 102 outbound

As detailed in Section 2.1.4, the Jacobs Traffic and Transport Assessment, the volumes for vehicles accessing/egressing the BPS and LPS in the future year (approximately 2023) scenario is as follows:

– Future AM peak hour:
  - BPS - 313 inbound and zero outbound
  - LPS - 419 inbound and zero outbound
– Future PM peak hour:
  - BPS - zero inbound and 313 outbound
  - LPS – zero inbound and 419 outbound

Based on the above, the highest peak hour volumes for the BPS is 641 trips (AM peak hour) and the LPS 419 trips (PM peak hour). Under both these scenarios the traffic modelling indicates that the New England Interchange will operate with a good level of service (LoS A) with minimal delays (refer to Section 2).

For the purpose of analysis, it has been assumed that once the BPS is closed in the future, the primary vehicle activity at the New England Interchange will be associated with the Energy Hub.

Therefore, the available data indicates that the New England Highway Interchange has a significant capacity to accommodate vehicle trips associated with the Energy Hub and operate with acceptable levels of service.

4.2.3 Mid-block assessment

The high level assessment to determine the potential yield of the LPS and BPS sites has also been undertaken based on the capacity of the New England Highway.

The Austroads Guide to Traffic Management Part 3: Transport Study and Analysis Method indicates that, corresponding to a LoS D and a free flow speed of 100 km/h, highways have a capacity of 1,980 vehicles/hour/lane (veh/h/ln).

To determine the future volumes (subsequent to the closure of the BPS) on the New England Highway, the following methodology has been adopted:

– The current traffic volumes have been sourced from a TfNSW count station.
– The portion of the current traffic volumes associated with the operation of the BPS/LPS have been sourced from the 2018 traffic counts detailed in Section 2.1.3.

As detailed in Section 3.3, on the New England Highway (south of the Energy Hub subject site), peak vehicle activity currently occurs between 5:00 am - 6:00 am and 5:00 pm – 6:00 pm. As stated previously:

– It is assumed that the 5:00 am - 6:00 am peak is associated with the operation of the Hunter Valley mines.
– A number of mines in the Hunter Valley are expected to close in the coming years, i.e. the Mt Arthur Coal Mine.

It is expected that the peak vehicle activity associated with the Energy Hub will occur between 5:00 am to 6:00am. For the purposes of analysis, it is assumed the peak vehicle activity associated with the Energy Hub will occur between 7:00 am – 8:00 am and 5:00 pm - 6:00 pm (which is generally consistent with the 2018 traffic survey detailed in Section 2.1.3).

The current traffic volumes associated with these peak hours, based on the outputs of the TfNSW count station - Counter No. 6153 located south of the Energy Hub, are detailed in Table 4.2.

Table 4.2 Peak hour volumes along New England Highway - 2022

	AM Peak 7:00 am – 8:00 am	PM Peak 5:00 pm – 6:00 pm
Northbound	483 vph	533 vph
Southbound	450 vph	668 vph
Total	**933 vph**	**1,201vph**

It is noted that a portion of these traffic volumes are currently associated with the operation of the BPS, which is expected to close prior to 2035.

The outputs of the 2018 traffic surveys detailed in Section 2.1.3 indicate that for the BPS:

– In the AM peak hour:
  - 221 vehicles access the BPS from the south
  - Seven vehicles egress the BPS to the south

– In the AM peak hour:
  - 31 vehicles access the BPS from the south
  - 170 vehicles egress the BPS to the south

The current vehicle activity associated with the BPS based on the outputs of the 2018 traffic surveys are displayed in Table 4.3.

Table 4.3 BPS peak hour volumes along New England Highway - 2022

	AM Peak 7:00 am – 8:00 am	PM Peak 5:00 pm – 6:00 pm
Northbound	221 vph	31 vph
Southbound	7 vph	170 vph
Total	**228 vph**	**201 vph**

It is noted that:

– Upon its closure, it is assumed that the BPS trips on the New England Highway will be replaced by vehicle activity associated with the operation of the Energy Hub.
– Accordingly, all of the BPS vehicle trips have been deducted from the 2022 traffic volumes on the New England Highway to determine the future traffic volumes (subsequent to the closure in 2035).
– The updated peak hour traffic volumes for the future year scenario on the New England Highway (excluding 50 percent of the current BPS peak hour trips) are displayed in Table 4.4.

Table 4.4 Peak hour volumes along New England Highway – subsequent to 2033

	AM Peak 7:00 am – 8:00 am	PM Peak 5:00 pm – 6:00 pm
Northbound	262 vph	502 vph
Southbound	443 vph	498 vph
Total	705 vph	1,000 vph

As detailed previously, Austroads Guidelines specify that highways have capacities of 1,980 veh/h/ln. Based on the expected future year vehicle activity detailed in Table 4.4, the future remaining capacity of the New England Highway is summarised in Table 4.5.

Table 4.5 Expected remaining capacity of New England Highway – subsequent to 2033

	AM Peak 7:00 am – 8:00 am	PM Peak 5:00 pm – 6:00 pm
Northbound	1,718 vph	1,478 vph
Southbound	1,537 vph	1,482 vph

The data in Table 4.5 indicates that:

– The least capacity for the New England Highway will occur in the AM and PM peak hours in the southbound travel lane.
– For the analysis of the potential size of the Energy Hub based on the remaining capacity of the New England Highway, it has been assumed that 50 percent of the remaining capacity on the New England Highway could be utilised by the Energy Hub.
– The assumed peak hour activity associated with the Energy Hub on the New England Highway (south of the Energy Hub) based on 50 percent of the available remaining capacity, subsequent to 2033 is displayed in Table 4.6.

Table 4.6 Energy Hub assumed peak hourly vehicle activity 50 percent scenario – subsequent to 2033

Scenario	Direction	AM Peak 7:00 am – 8:00 am	PM Peak 5:00 pm – 6:00 pm
50 percent of capacity	Northbound	859 vph	739 vph
	Southbound	769 vph	741 vph

It is noted that:

– In accordance with the available traffic data from the New England Highway count station (6153), it has been assumed that:
  - 40 percent of the vehicle activity associated with Energy Hub will access and egress it to/from the north.
  - 60 percent of the vehicle activity associated the Energy Hub will access and egress it to/from the south.
– Accordingly, it is assumed that the peak hourly vehicle activity detailed in Table 4.6 is associated with 60 percent of the overall vehicle activity at the Energy Hub.

Mid-block analysis has been undertaken utilising the PM southbound traffic flows as a "worst case" scenario to determine the potential size of the Energy Hub.

Accordingly, 741 vehicle trips in the PM peak hour is consistent with 132,000 m^2 / 13.2 hectares of development, i.e. 13.2 hectares @ 0.56 trips per 100 m^2 = approximately 740 trips.

Assuming that 132,000 square metres/ nine hectares constitute 60 percent of the overall Energy Hub, then the overall size of the Energy Hub, that could be accommodated on the New England Highway would be in the order of 220,000 square metres / 22 hectares of Gross Floor Area (GFA).

It is noted that upgrades to the road network, potentially including providing additional travel lanes on the New England Highway, south of the site, would support a further potential increase in the developable yield of the Energy Hub.

5. Summary

AGL are committed to redeveloping the site into an integrated industrial Energy Hub. The proposed changes to the LEP aim to provide a flexible approach to future development on the site in the short, medium, and long term to allow for a range of land uses to occur in accordance with state and local government expectations. Allowing the transition to commence prior to the closure of BPS, and as the LPS is rehabilitated, will reduce shocks to the social and economic conditions in the Upper Hunter.

Compatible future uses that have been identified but are market dependent include:

– Energy generation and storage.
– Manufacturing of renewable energy components (i.e., solar panels).
– Recycling of renewable energy components (i.e. material recycling facilities for solar panels and/or lithium batteries).
– Manufacture of building materials using materials sourced from on-site such as coal ash from power station activities.
– Agricultural produce industry to support ongoing agricultural land uses in the region as coal fired power stations and mines progressively close.
– Ancillary activities and services to support the needs of businesses and workers.

GHD was engaged by AGL to prepare a Traffic Assessment to support the preparation of the Proposal. The TA has identified the capacity and road network performance of existing traffic conditions and available capacity to facilitate development envisaged by the amendment of LEP for an integrated industrial Energy Hub (Energy Hub). This report has:

– Described the existing environment with respect to the project.
– Assessed the capacity of the road network to accommodate the expected trip generation of the Energy Hub.
– Determined the potential size of the Energy Hub in accordance with the capacity of the adjoining road networks in accordance with Transport for NSW (TfNSW) trip generation rates.

The preparation of this assessment has relied on the following data sources and assumptions:

– Available traffic data for the intersections of interest has been sourced from the Transport Impact Assessment for Liddell Future Land Use and Enabling Works Project (the Liddell Future Land Use Transport Impact Assessment report) published by GHD in 2023.
– The available data indicates that the New England Highway Interchange currently operates with a very good Level of Service with minor delays and spare capacity now and in the future, to 2033.
– The quantum of future land uses is not currently known.
– Traffic volume data for the New England Highway was sourced from TfNSW count stations.
– The mid-block capacity of the New England Highway was determined in accordance with the Austroads Guide to Traffic Management Part 3: Transport Study and Analysis Method.
– The TfNSW rates associated with Business Parks was used to determine the trip generation of the Energy Hub
– The BPS will cease operation in 2033.
– Upon its closure, it is assumed that the BPS trips on the New England Highway will be replaced by vehicle activity associated with the operation of the Energy Hub.
– Subsequent to the closure of the BPS, it has been assumed that 50 percent of the available capacity on the New England Highway will be utilised by the Energy Hub.
– The future traffic volumes on the New England Highway may be impacted by other changes in the Hunter Valley i.e. the closure of coal mines and the reconfiguration of these sites.

– It has been assumed that upon operation:
    - 60 percent of vehicles associated with the Energy Hub will access/egress the site to and from the south.
    - 40 percent of vehicles associated with the Energy Hub will access/egress the site to and from the north.
– It is noted that the Mt Arthur Coal Mine (which is the largest in NSW), which is located approximately ten kilometres north of the Energy Hub is expected to close in 2030, which will reduce the volumes of vehicles traversing the New England Highway in proximity to the Energy Hub.

In summary, the analysis included in this report is high level and based upon existing data sources. It is noted that the land uses associated with the Energy Hub will be subject to a specific application process i.e. Development Application and supporting environmental assessments.

In accordance with the available information and the listed assumptions, the overall size of the Energy Hub, that could be accommodated on the New England Highway would be in the order of 220,000 square metres / 22 hectares of GFA.

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