Scoping Report

Tomago Battery Energy Storage System

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Prepared for – AGL Macquarie Pty Ltd – ABN: 18 167 859 494

Table of Contents

List of Figures

List of Tables

Executive Summary

Background

AGL Macquarie Pty Ltd (AGLM), a wholly owned subsidiary of AGL Energy Limited (AGL), is seeking development consent to construct, operate and maintain a battery energy storage facility (BESS) with a peak capacity of up to 500 megawatts (MW) and storage of up to 2,000 megawatt-hours (MWh) at Tomago (the Project). The Tomago BESS would provide a range of network services to augment the reliability of energy supply within the newly established Hunter-Central Coast Renewable Energy Zone (REZ). In addition, the Project would provide storage and firming capacity to the National Energy Market (NEM), as well as provide additional services to assist grid stability, including frequency control ancillary services.

The Project is classified as State Significant Development (SSD). This Scoping Report has been prepared for the Project to support a request for Secretary's Environmental Assessment Requirements (SEARs). The SEARs would guide the preparation of an Environmental Impact Statement (EIS) to support the SSD application (SSDA) for the Project as required under Division 4.7 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

The Site

The proposed BESS facility is located on Part Lot 5 and Lot 6 DP1286735 (the Site) and is bounded by the Pacific Highway to the north and Old Punt Road to the south-east. The Site is within the Port Stephens Local Government Area (LGA) and is located on land zoned IN1 General Industrial under the *Port Stephens Local Environmental Plan 2013* (LEP).

The Site has previously been used for rural activities, including grazing and agricultural purposes. There is a derelict single storey residential dwelling located on the northern edge of Lot 21 DP1286735, adjacent to and with street access to the Pacific Highway. At the time of writing, this portion of land has been recently compulsorily acquired by TfNSW and the derelict dwelling will be demolished as part of the M1 Pacific Highway upgrade project (referred throughout as the M1 Extension Project). Some isolated trees have been retained on the Site, while patches of native vegetation are generally confined to the boundaries. The Site is relatively flat, with a slight gradient towards the east and west. Several bitumen, dirt and gravel access paths have been cleared across the Site.

The Site has already been separately approved for construction of the Newcastle Power Station (SSD-9837). The Site was extensively studied and assessed during the consultation and approval of that project.

The Project

The Project comprises a BESS facility that would store electricity from the grid, release electricity during periods of high demand and provide other ancillary services. Key features of the Project would include but not be limited to:

- Construction and operation of a BESS with a nominal supply capacity of up to 500 MW and storage of up to 2,000 MWh (construction of the Project may be carried out in stages).
- An above ground, below ground, or a combination of both transmission connection/s between the proposed BESS and one of the neighbouring substations. The proposed transmission connection would be located across Lots 7, 8, 24, 25 and 28 DP1286735, Lot 104 DP1125747 and Lot 3 DP808004. The BESS would connect to either:
    - 132 kV substation located on Lot 101 DP1125747; or
    - 330 kV substation located on Lot 3 of DP808004, and Lots 102 and 103 DP1125747.
- Other ancillary infrastructure and services required for the Project, such as internal access roads, construction laydown areas, switchyards, control and related operational buildings and structures. A potential additional construction laydown area has been considered within AGL's nearby existing Newcastle Gas Storage Facility (NGSF) located at Lot 1203 DP 1229590, as shown in **Figure 1-1**.

Final detailed design and subsequent optimised location of construction laydown areas will be dependent on the results of grid studies within the network.

The Project would result in significant benefits to the State and local community. Some key benefits include:

- Improved network security and diversified energy supply and storage within New South Wales (NSW).
- Support for increased renewable power generation during daytime peak periods, placing downward pressure on wholesale electricity prices in accordance with the NSW Integrated System Plan.
- Creation of up to approximately 200 direct jobs during the peak of Project construction phase, and up to approximately six ongoing jobs during operation.
- Diversification of skills and employment assisting the transition of the Hunter economy.

Assessment of impacts

The identification of issues to be addressed in the EIS has been undertaken through a risk-based approach in accordance with the *State significant development guidelines – preparing a scoping report* (DPE, 2021). This process involved reviewing previous reports, undertaking some investigations (including site inspections), and desktop searches of proprietary environmental databases between November 2022 and January 2023 to identify key issues and sensitive areas. The matters that have been identified for further detailed assessment during the preparation of the EIS are:

- Biodiversity
- Soils, groundwater and contamination
- Surface water and flooding
- Aboriginal heritage
- Noise and vibration
- Traffic and transport
- Hazards and risk.

Other matters to be considered in the EIS are air quality, non-Aboriginal heritage, socio-economic impacts, visual amenity and waste management.

In assessing the Project, the key focus would be avoidance and minimisation of potential impacts on the environment and local communities, where practicable and feasible, when taking into consideration engineering constraints and cost implications. The EIS assessment would also develop mitigation and management measures to minimise identified potential impacts to the environment during construction and/or operation of the Project. Consultation with stakeholders and the local community would continue throughout the Project assessment, detailed design, construction and operation phases.

Purpose of this document

This document provides a description of the Project taking into consideration its relevant strategic context. It presents a preliminary environmental risk-based assessment undertaken during scoping of the Project to identify the relevant matters to be addressed in the EIS.

This document has been prepared in support of an application for SEARs for the Project.

1.0 Introduction

1.1 Overview

AGL Macquarie Pty Ltd (AGLM), a wholly owned subsidiary of AGL Energy Limited (AGL), is seeking development consent to construct, operate and maintain a Battery Energy Storage System (BESS) with a capacity of up to 500 megawatts (MW) and up to 2,000 megawatt hours (MWh) (the Project). The proposed location of the BESS (the Site) is at 1940 Pacific Highway within Part Lot 5 and Lot 6 in DP 1286735. The Project would also involve the installation of a transmission connection between either the 132 kilovolts (kV) substation (on Lot 101 DP1125747) or the 330 kV substation (on Lot 3 DP808004, and Lots 102 and 103 DP1125747). Both of these substations are located in close proximity to the south-east of the Site. The Site, construction laydown areas, and the transmission line corridors constitute the Project Area (refer to **Figure 1-1**).

Some key features of the Project would include (but not be limited to):

- Construction and operation of a BESS with a nominal demand capacity of up to 500 MW and storage of up to 2,000 MWh (construction of the Project may be carried out in stages).
- An above ground, below ground, or a combination of both transmission connection/s between the proposed BESS and one of the neighbouring substations. The proposed transmission connection would be located across Lots 7, 8, 24, 25 and 28 DP1286735, Lot 104 DP1125747 and Lot 3 DP808004. The BESS would connect to either:
  - 132 kV substation located on Lot 101 DP1125747; or
  - 330 kV substation located on Lot 3 of DP808004, and Lots 102 and 103 DP1125747.
- Other ancillary infrastructure and services required for the Project, such as internal access roads, switchyards, laydown areas control and related operational buildings and structures. A potential additional construction laydown area has been considered within AGL's nearby existing Newcastle Gas Storage Facility (NGSF) located at Lot 1203 DP 1229590, as shown in **Figure 1-1**.

Key components of the Project would include:

- Batteries located within battery enclosures and associated infrastructure including but not limited to inverters and a combination of high, medium and low voltage transformers
- Cabling and collector units
- High voltage substation, with associated infrastructure including high voltage transformers and other equipment to meet Generator Performance Standards (e.g., harmonic filters and/or synchronous condensers, as required)
- Connection to an existing electrical switchyard
- Temporary and permanent control, office and maintenance buildings, switch rooms, site access, internal roads, construction and equipment laydown areas and car parking
- Other associated and ancillary infrastructure, including for example, fire suppression, drainage and stormwater management, security fencing, lighting, and CCTV.

BESS projects are considered electricity storage projects defined as '*electricity generating works*' under *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP) as a building or place used for the purpose of electricity storage. Clause 2.36 of Transport and Infrastructure SEPP states that development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed non-residential zone. The Site is located within the IN1 General Industrial land use zone, which is a prescribed non-residential zone under clause 2.35 of Transport and Infrastructure SEPP. On this basis, the Project is permissible with development consent on the Site.

Division 4.7 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) defines development that is State Significant Development (SSD) and notes that development can be declared

as such by an Environmental Planning Instrument (EPI). Under the State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP), '*electricity generating works'* are deemed SSD if they have a capital investment value (CIV) of more than $30 million. The Project is defined as '*electricity generating works*' and based on projects of a similar size and scale, the Project will have a CIV significantly greater than $30 million and is therefore considered SSD.

Section 4.12(8) of the EP&A Act states that a 'development application for SSD is to be accompanied by an EIS prepared by or on behalf of the applicant in the form prescribed by the regulations'. Section 59 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation) sets out the requirements of an EIS and requires that the EIS comply with the SEARs for the Project. This Scoping Report has been prepared to request SEARs for the Project.

1.2 The applicant

Proudly Australian for more than 185 years, AGL supplies energy and other essential services to residential, small and large scale businesses and wholesale customers. AGL operate Australia's largest private electricity generation portfolio, with a total installed capacity of 10,330 MW. This accounts for approximately 20% of the total generation capacity within Australia's National Electricity Market (NEM).

AGL is an Australian publicly-listed company involved in the generation and retailing of electricity and gas for residential and commercial use. AGL generates energy from a range of sources including thermal power, natural gas, gas storage, and from renewables, including wind, hydroelectricity and solar. AGL is the largest ASX-listed investor in renewable energy and markets its natural gas, electricity and energy-related products and services to approximately 4.3 million customers.

AGLM is owned by AGL and forms a key component of the company's existing generation portfolio. The AGLM landholding and generation assets were acquired from the former NSW Government owned Macquarie Generation, in September 2014. AGLM is the applicant for this Project.

1.3 Purpose of this report

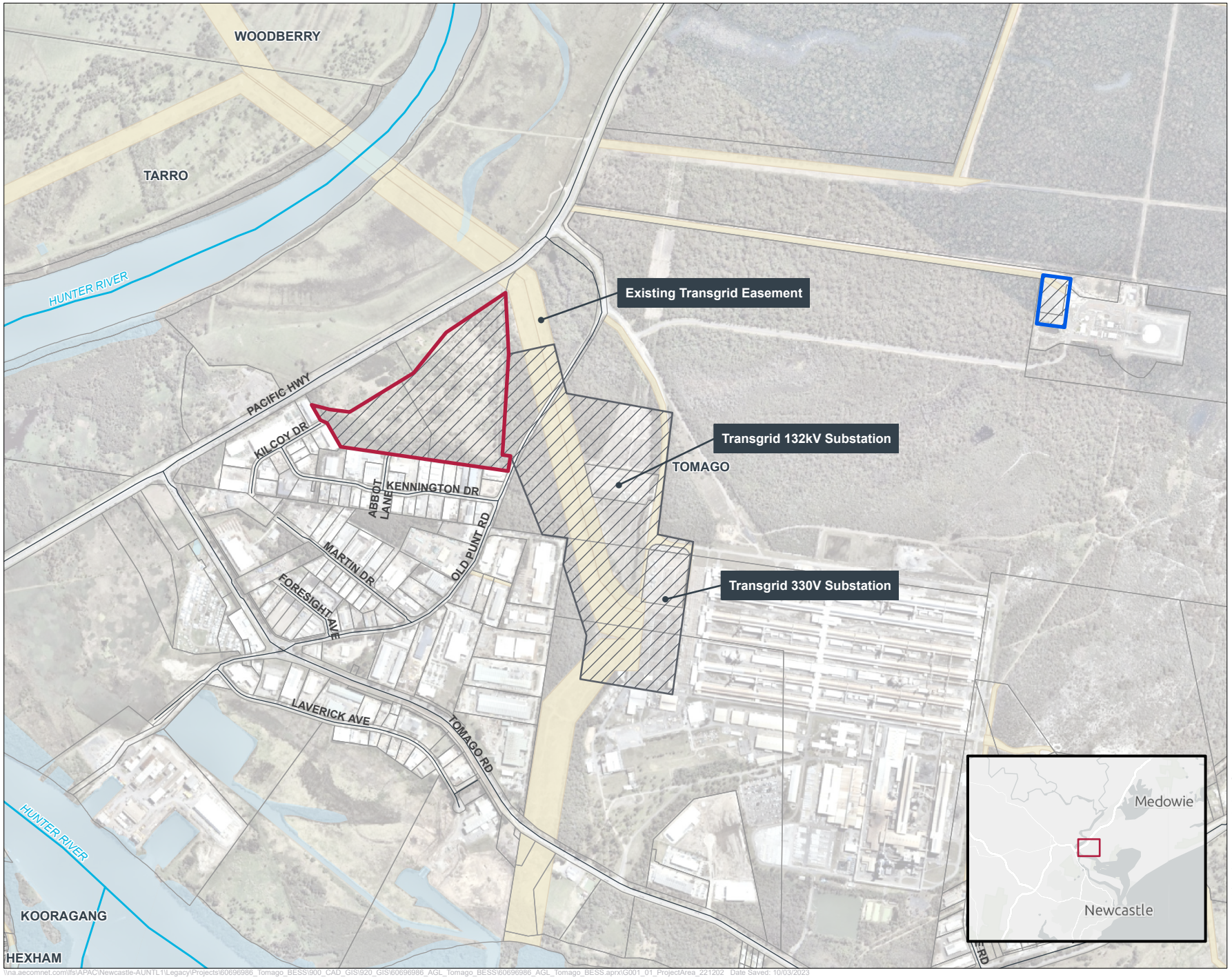
This document provides a description of the Project and presents the strategic context of the Project. It presents a preliminary risk-based assessment to identify key and other matters that will be addressed in the EIS. The purpose of this report is to present the findings of the risk-based assessment to NSW Department of Planning and Environment (DPE) in order to receive SEARs for the Project.

1.4 Document structure

This Scoping Report has been prepared in accordance with *State significant development guidelines – preparing a scoping report* (DPE, 2021), in support of an application for SEARs for the Project.

This Scoping Report provides an outline of the Project and identifies the key environmental matters that will be assessed as part of the EIS, following the issue of the SEARs. This Scoping Report includes the following chapters:

- **Chapter 1.0**: Introduction to the Project
- **Chapter 2.0**: Strategic context for the Project, identifying the key strategic issues that are likely to be relevant to the Project
- **Chapter 3.0**: Description of the Project
- **Chapter 4.0**: Overview of the statutory requirements for the Project
- **Chapter 5.0**: Summary of the community engagement that has been undertaken, and a description of the activities that will be carried out during the preparation of the EIS
- **Chapter 6.0**: Identification of the matters that will require further assessment within the EIS, and the approach to assessing each of these matters
- **Chapter 7.0:** Conclusion
- **Chapter 8.0:** References.



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Legend

- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Water Body
- Transmission Line Easement
- Cadastral Boundary
- Watercourse
- Road

FIGURE 1-1: TOMAGO BESS SITE AND PROJECT AREA

Source: Nearmap, 2022.

2.0 Strategic context

2.1 Introduction

This chapter of the Scoping Report has been prepared in accordance with section 3.2 of the *State significant development guidelines – preparing a scoping report* (DPE, 2021). It provides a high-level analysis of the key strategic issues that are considered likely to be relevant to the Project, including:

- A summary of key government strategies and policies that provide strategic support for the Project (refer to **Section 2.2**)
- An analysis of the key features of the Site and surrounds that could affect or be affected by the Project (refer to **Section 2.3**)
- Summary of land ownership and any agreements that the Applicant has entered into with other parties (refer to **Section 2.3.5**)
- Whether the Project is likely to generate cumulative impacts with other relevant future projects in the area (refer to **Section 2.4**).

The level of detail provided within this chapter of this Scoping Report is proportionate to the importance of the strategic context and tailored towards informing the setting of the SEARs for the Project.

2.2 Strategic planning

2.2.1 Australia's Long Term Emissions Reduction Plan

Australia's whole-of-economy Long-Term Emissions Reduction Plan is focussed on technology and sets out how Australia will achieve net zero emissions by 2050 (DCCEEW, 2022a). One of the key principles of the plan is keeping energy prices down with affordable and reliable power. The plan outlines how government will:

- Drive down the cost of low emissions technologies (including battery storage)
- Deploy these technologies at scale
- Help regional industries and communities seize economic opportunities in new and traditional markets
- Work with other countries on the technologies needed to decarbonise the world's economy.

The Technology Investment Roadmap (TIR) is the foundation of the Long-Term Emissions Reduction Plan and sets a process to develop and deploy low emissions technologies (including battery storage). By focusing government investment, it aims to make these emerging technologies cost competitive with existing high emission technologies (DCCEEW, 2022b). Importantly, the TIR includes a requirement to prepare Low Emissions Technology Statements (LETS), which review, refine and evaluate the government's investment in low carbon emission technologies (DCCEEW, 2021).

The current LETS (2021) include energy storage as an existing priority technology for government investment. Specifically, the LETS indicates that broad deployment of electrical energy storage will facilitate further integration of low-cost solar and wind electricity in the grid. The LETS states that energy storage will provide network security services and a source of reliable, dispatchable electricity. This should help reduce pressure on electricity prices by meeting peaks in consumer demands.

The Project would be consistent with the principles of the high priority technologies outlined in the Long-Term Emissions Reduction Plan, as stated above.

2.2.2 Integrated System Plan

The Integrated System Plan (ISP) is a whole-of-system plan that provides a coordinated generation and transmission investment plan to transition the NEM over the next 30 years. The Australian Energy Market Operator (AEMO) updates the ISP every two years and the most recent ISP for the NEM was published in June 2022.

Under the 'Step Change' scenario, identified in the 2022 ISP as the most likely scenario, the NEM will need to cater for significant investment in generation capacity, storage, firming generation and transmission augmentation as coal generation withdraws through to 2050.

The 2022 ISP predicts under the Step Change scenario that withdrawal of 23 GW of coal capacity will occur (14 GW by 2030) and 45 GW / 620 GWh of new battery and hydro storage (distributed and utility scale), able to respond to a dispatch signal, will be required to help firm the renewable energy sources entering the market. There will also be an increased need for the network to shift electricity from where it is produced to where it is needed to maximise the value of geographic diversity and efficiently share resources across the NEM.

The Sydney Ring project in the ISP aims to increase the transfer capacity into the Sydney, Newcastle and Wollongong areas by approximately 5,000 MW. It has been identified to have an immediate commencement to support the Renewable Energy Zone (REZ) development in the NSW Electricity Infrastructure Roadmap and maintain reliability of supply for NSW consumers (discussed further in **Section 2.2.4**).

The Sydney Ring is an actionable NSW project for delivery in 2027-2028, having been a future ISP Project in the 2020 ISP and an actionable ISP project in the Draft 2022 ISP.

The Sydney Ring project is predicted to contribute roughly $3.4 billion in net market benefits and will assist in maintaining reliability of supply for NSW consumers following the closure of coal power stations in the Newcastle area. Based in the immediate vicinity of Newcastle this Project, being a grid scale energy storage system, would provide additional grid security within the NEM following the decreased reliance on coal-fired electricity generation, being consistent with the objectives of the Sydney Ring project.

2.2.3 NSW Electricity Strategy

The NSW Electricity Strategy is the NSW Government's plan for a reliable, affordable, and sustainable electricity future. The strategy outlines three approaches for the NSW government to meet these objectives:

- Support the market to deliver reliable electricity at the lowest price, while protecting the environment
- Set an Energy Security Target to ensure that the State has sufficient generation capacity to cope with unexpected generator outages during periods of peak demand, such as during heat waves, and
- Ensure the State has sufficient powers to deal with an electricity emergency if one arises.

The strategy outlines the cheapest and most efficient way to develop a modern and complex energy system to replace coal-fired generators is to build a mix of low-cost renewables, gas-fired generators and other storage options, such as batteries and pumped hydro. The Project, being a grid scale energy storage system, would support the transition of the NSW energy grid to a modern complex energy system in line with the objectives of the NSW Electricity Strategy.

2.2.4 NSW Electricity Infrastructure Roadmap

The NSW Electricity Strategy (DPIE, 2019) is to be implemented through the NSW Electricity Infrastructure Roadmap (DPIE, 2020). It envisions a modern electricity system in NSW built on the following five pillars:

1. *"Driving investment in regional NSW: supporting our regions as the State's economic and energy powerhouse.*
2. *Delivering energy storage infrastructure: supporting stable, long-term energy storage in NSW.*
3. *Delivering Renewable Energy Zones: co-ordinating regional transmission and renewable generation in the right places for local communities.*
4. *Keeping the grid secure and reliable: backing the system with gas, batteries or other reliable sources as needed.*

5. *Harnessing opportunities for industry: empowering new and revitalised industries with cheap, reliable and low emissions electricity".*

The *Electricity Infrastructure Investment Act 2020* was passed in late 2020. The Project is wholly in keeping with the vision of the NSW Electricity Infrastructure Roadmap in that it represents a private regional investment, delivers energy storage, is appropriately zoned and uses existing transmission infrastructure, provides security to the NEM and provides cost effective and reliable electricity with negligible additional emissions.

AGL has a clearly articulated plan to achieve decarbonisation of its generating assets by 2050 wholly aligned with the NSW Climate Change Policy Framework and not inconsistent with the Climate Transition Action Plan (AGL, 2022). This Project is a key component of AGL's plans to manage the transition to decarbonisation and net-zero emissions while responding to the requirements of the market in relation to reliable and affordable electricity.

2.2.5 Hunter Regional Plan 2041

The Hunter Regional Plan 2041 (the Regional Plan) is a 20-year land use plan prepared under the EP&A Act. The Regional Plan applies to the nine Local Government Areas (LGAs) of the lower Hunter (including Port Stephens), as well as the Councils within the Upper Hunter. The Regional Plan sets the strategic land use framework for continued economic growth and diversification in one of Australia's most diverse and liveable regions. The plan aims to unlock sustainable growth opportunities and investments, as well as housing choice and lifestyle opportunities to retain the Hunter's position as a leading regional economy in Australia. The Regional Plan includes four principles, which include:

- Growth – Support a net zero emissions economy and foster employment growth, competitiveness and innovation
- Community – Promote places to be together by weaving nature into our towns and cities which have welcoming and safe streets and public spaces
- Resilience – Reduce risks associated with place-based shocks and stresses to improve the community's ability to withstand, recover from and adapt to changes and become more resilient
- Equity – Ensure communities are safe and healthy with residents having opportunities for economic advancement, housing choices and a secure retirement.

To support the delivery of these core principles, the Regional Plan contains nine objectives, which are enforced through several strategies. Of relevance to this Project is Objective 1 and Objective 7, being:

- Objective 1: *"Diversify the Hunter's mining, energy and industrial capacity"*
- Objective 7: "*Reach net zero and increase resilience and sustainable infrastructure"*

Each objective, and the relevance to the Project, is described in further detail below.

Objective 1: *Diversify the Hunter's mining, energy and industrial capacity*

The Hunter is an economic powerhouse, driven by the mining, energy and manufacturing sectors. The Hunter-Central Coast is one of at least five REZs in NSW. The development of the REZ will take advantage of existing transmission infrastructure, transport links, water resources and a skilled workforce. To support the delivery of the Hunter and Central Coast, the Regional Plan includes Strategy 1.2, which states:

> *Following completion of the Hunter 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 REZ.*
> - *The proximity of sensitive land uses to ensure sensitive land uses do not encroach on activities within the REZ.*

The Project is located in close proximity to two substations owned and operated by Transgrid and is within the Tomago Industrial precinct (as discussed in **Section 2.3**). The Project would support the energy requirements of future employment growth in the area, contributing to further industrial development of the Tomago area and achieving the objectives of the Hunter REZ. Being within an

existing industrial setting and close to transmission infrastructure ensures the Project is consistent with Objective 1 under the Regional Plan.

Objective 7: *Reach net zero and increase resilience and sustainable infrastructure*

The *NSW Electricity Infrastructure Roadmap* sets out the NSW Governments 20-year plan for the generation, storage, firming and transmission infrastructure needed for clean, cheap and reliable power (discussed in **Section 2.2.4**). The Regional Plan supports the delivery of the *NSW Electricity Infrastructure Roadmap* through the identification of opportunities to grow emerging industries in areas ready to accommodate this change. The areas identified within the Regional Plan include:

- Liddell and Bayswater power stations regionally significant growth area
- **Tomago industrial area** (emphasis added), and
- Eraring Power Station.

The Project is located at 1940 Pacific Highway, within the Tomago Industrial Area (refer to **Figure 1-1**). The Project, being a grid scale energy storage system, would support the transition of the NSW energy grid to a modern complex energy system in line with the objectives of the *NSW Infrastructure Roadmap* and Objective 7 of the Regional Plan.

2.2.6 Greater Newcastle Metropolitan Plan 2036

The Greater Newcastle Metropolitan Plan 2036 (GNMP) sets out strategies and actions that will drive sustainable growth across the LGAs (including Port Stephens LGA), which together make up Greater Newcastle. Furthermore, the GNMP helps to achieve the vision set in the Regional Plan (discussed in **Section 2.2.5**) for the Hunter to be the leading regional economy in Australia with a vibrant new metropolitan city at its heart.

The GNMP identifies Tomago as a catalyst area with an immediate focus for employment and infrastructure investment. A target of 700 additional jobs by 2036 would see local employment increase from 7,800 to 8,500 jobs. The GNMP recognises Tomago industrial area as a significant advanced manufacturing and industrial area. The Project would support the energy requirements of future employment growth in the area, contributing to further industrial development of the Tomago area and achieving the objectives of the GNMP.

2.3 Site setting

2.3.1 Regional context

The Project is located within the Port Stephens LGA, in the Hunter region of NSW. The Port Stephens LGA has an area of 979 square kilometres and in 2021 Australian Bureau of Statistics (ABS) census the population was estimated to be 76,414. The closest town centre to the proposed Project Area is Raymond Terrace, which is located about five kilometres to the northwest. The Project Area is located approximately 15 km north-west of the Newcastle CBD. **Figure 2-1** shows the location of the Project Area within the broader regional context.

The main employment industries within Port Stephens LGA are manufacturing, public administration, and retail. Closer to the Project Area is the Tomago Aluminium Smelter, Department of Defence, Royal Australian Air Force (RAAF) Base Williamtown, and the Newcastle Airport.

Major transport routes within the local area are the Pacific Highway (M1) which is adjacent to the Site and the New England Highway approximately 2.3 km south of the Site at its nearest point.

The Ramsar-listed Kooragang Nature Reserve and Hunter Wetlands Centre are approximately 2.7 km south-southeast of the Site.

The gazetted area of the Tomago Sand Beds, a subterranean water aquifer maintained by Hunter Water Corporation, is immediately adjacent to the eastern side of the Site. Part of the proposed transmission connection would be within the bounds of the Tomago Sand Beds gazetted area, however outside of the restricted area.

2.3.2 Project Area

The Project Area constitutes the Site, transmission corridors (as required to connect the BESS to either the nearby 132 kV or 330 kV existing Transgrid substations), construction laydown areas within the Site, and a construction laydown area nearby, possibly at AGL's existing NGSF.

The Site for the BESS facility is located off Old Punt Road, Tomago (as described in **Section 2.3.3**).

The proposed transmission connection would be located across Lots 7, 8, 24, 25 and 28 DP1286735, Lot 104 DP1125747 and Lot 3 DP808004. This land allows for the connection of the BESS to either the 132 kV substation (on Lot 101 DP1125747) or the 330 kV substation (on Lot 3 DP808004, and Lots 102 and 103 DP1125747). These substations are located to the south-east of the Site.

A potential construction laydown area has been considered at AGL's NGSF in the immediate vicinity of the Project located at Lot 1203 DP 1229590 to the north-east of the Site. The area is paved (as part of the construction of the NGSF) and has been used as a contractor carpark from time to time. No clearing or earthworks are required to establish the laydown area at NGSF.

A figure showing the extent of the Project Area is provided in **Figure 1-1**.

2.3.3 The Site

The Site is located on Part Lot 5 and Lot 6 DP1286735, parts of which have been compulsorily acquired by Transport for NSW (TfNSW) pursuant to a Government Gazette notice for the M1 Extension Project (SSI-7319). Therefore, the Site will soon be bounded to the north by Lots 20 and 21 of DP1286735 which consist of vacant land previously used for rural activities and a vacant derelict single storey residential dwelling which will be demolished by TfNSW for the M1 extension project (refer to **Figure 2-2**). In the future, Lots 20 and 21 of DP1286735 will be developed as part of the M1 Extension Project (refer to **Section 6.10**). Once the M1 extension project is complete, the northern boundary of the Site will be the upgraded.

Old Punt Road borders the Site to the south-east and an existing general industrial precinct is located immediately adjacent to the south of the Site. Vacant rural land borders the Site to the west and north east.

The Site is within the Port Stephens LGA and is located on land zoned IN1 General Industrial under the *Port Stephens LEP 2013* (Port Stephens LEP). A map showing the zoning of the Site and the surrounding area is provided in **Figure 2-2**.

The Site has previously been used for rural activities, including grazing and agricultural purposes. Some isolated trees have been retained on the Site, while patches of native vegetation are generally confined to the boundaries. The land is relatively flat, with a slight gradient towards the east and west. A number of access paths have been cleared across the Site. Sensitive receivers located within 1 km of the Site has been illustrated in **Figure 2-3**.

2.3.4 Surrounding land use

Residential

There is no residentially zoned land in the Project Area. The nearest residentially zoned land is approximately 2 km northwest of the Project at Woodberry in the Maitland LGA. The nearest residentially zoned land in the Port Stephens LGA is approximately 5 km north of the Project at Heatherbrae. **Figure 2-3** shows the locations of sensitive receivers within 1 km of the Project Area.

As noted in **Section 2.3.3** above, there is a single unoccupied dilapidated residential dwelling adjacent to the Site, on Tomago Road near its intersection with the Pacific Highway. This existing dilapidated residential dwelling is located on land that has been recently compulsorily acquired by TfNSW for the M1 Extension Project. There is another occupied residence on Tomago Road, currently owned by Tomago Aluminium Company Pty Ltd (TAC) which is located approximately 500 m southwest of the Project Area on land zoned C2 Environmental Conservation. There is also a residence associated with the Motto Farm Stud approximately 1.4 km north of the Project on land zoned RU2 Rural Landscape. Sweetwater Grove, an over 55s residential village is located approximately 700 m south from the Project Area on the opposite side of the Tomago Industrial estate.

Industrial land and infrastructure

Major industrial infrastructure near the Project includes AGL's NGSF, Transgrid's switchyards and associated transmission and distribution lines, and the Tomago Aluminium Smelter. These are all located on land zoned IN1 General Industrial under the Port Stephens LEP.

A range of other industries within the IN1 General Industrial zoned land and within proximity of the Project includes:

- Transportation and haulage
- Metal fabrication and galvanising
- Manufacturing
- Commercial construction
- Petrochemical
- Self-storage.

Land to the north-east of the Site is zoned SP1 Special Activities under the Port Stephens LEP. This land is owned by Hunter Water Corporation and is zoned SP1 Special Activities which is a zone designed to protect the water catchment areas.

The Pacific Highway runs adjacent to the Site to the north within an area zoned SP2 Infrastructure under the Port Stephens LEP. Land zoned SP2 Infrastructure provides for infrastructure (and related uses). The land located to the west of the Site is currently reserved for the future development of the M1 Extension Project (discussed further in **Section 2.4**).

Recreational and environmental land

There is no recreational or environmental land within the Project Area. The nearest recreational zoned land is the Hunter River, approximately 500 m northwest of the Project Area. The Hunter River is zoned W2 Recreational Waterway under the Port Stephens LEP. Publicly accessible sites located in the Tomago and Motto-Farm areas include the Hunter Region Botanic Gardens and the Hunter Wetlands National Park. The Botanic Gardens are approximately 800 m north of the Project Area and the nearest point of the National Park is approximately 2 km to the south of the Project Area.

The nearest environmental zoning is land to the west adjacent to the Hunter River, zoned C2 Environmental Conservation. The objective of the C2 Environmental Conservation land use zone is to protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values, and to prevent development that could have an adverse effect on those values. The Project Area is not anticipated to impact on recreational or environmental conservation land.

Agricultural land

There is no agricultural land in the Project Area. Land to the north and west of the Project Area is zoned RU2 Rural Landscape under the Port Stephens LEP and is currently being used for grazing purposes. This land is located between the Hunter River and the Pacific Highway, on the other side of the highway from the Site. The objective of this zoning is to provide for agricultural land uses, encourage primary industry production, and maintain the rural landscape character.

2.3.5 Land ownership and agreements

Land adjacent to the northern boundary of the Site is the subject of a recent compulsory acquisition by TfNSW for the M1 Extension Project. The acquisition of this land, will not affect the Project as there is sufficient space on the Site to accommodate the Project.

The BESS facility would be located on land that is owned by AGLM. The electrical transmission corridor is proposed to be located on land owned by TAC, which would be accessed by agreement between TAC and AGLM). In addition, the transmission corridor is required to traverse Old Punt Road, a local road managed by Port Stephens Council. Where the Project interfaces with the M1 Extension Project, AGLM will work with TfNSW to ensure the transmissions connection works align with TfNSW's activities.

Finally, the Project requires connection to either the 132 kV or 330 kV substation, both of which are owned by Transgrid. **Figure 2-4** shows the Project relative to the land ownership within and outside the Project Area.

2.4 Description of related development

The Minister for Planning and Public Spaces granted AGL approval for the Newcastle Power Station (NPS) on 15 March 2021 (SSI 9837). The NPS was declared Critical State Significant Infrastructure (CSSI) on 12 December 2018 under Section 5.13 of the EP&A Act. The NPS was declared CSSI by the Minister for Planning and Public Spaces due to its potential to:

- Increase the dispatchable energy capacity of NSW and help to mitigate significant short to medium term energy security risks to the east coast electricity market due to the scheduled closure of the Liddell coal-fired power station in 2022/2023.
- Facilitate NSW's transition to a low carbon emissions-based economy, consistent with the *NSW Renewable Energy Action Plan* and *NSW Climate Change Policy Framework*.
- Increase competition in the electricity market and attract additional investment and jobs in NSW.

The NPS was approved to be located across approximately 90.59 hectares (ha), on what is now Lots 5, 6, 20, 21 and 28 DP1286735 (previously known as Lot 2 and Lot 3 DP1043561) (the NPS site), and Lots 7, 8, 9, 18, 19, 24, 25 and 26 DP1286735, Lots 1201, 1202 and 1203 DP1229590 (a number of these lots were previously known as Lot 4 DP 10434561 and Lot 202 DP1173564) (electrical transmission lines and gas pipelines).

AGL is exploring an alternative to the construction and operation of the approved NPS, through the installation of a BESS, being the Project the subject of this Scoping Report (refer to **Chapter 3.0**). Given that the Project and the NPS propose to occupy the same Site (refer to **Section 2.3.3**), neither of the projects would be able to operate concurrently. On this basis, AGL will only develop one of the proposed options, being either:

- The Project that is the subject of this Scoping Report, or
- The approved NPS (SSI 9837).

AGL expects that the development consent granted for the Project would be appropriately conditioned requiring the proponent to clearly nominate whether it will proceed with the development, construction and operation of either the BESS Project or the approved NPS project. The relationship between the Project and the approved NPS project will be further discussed in the EIS.

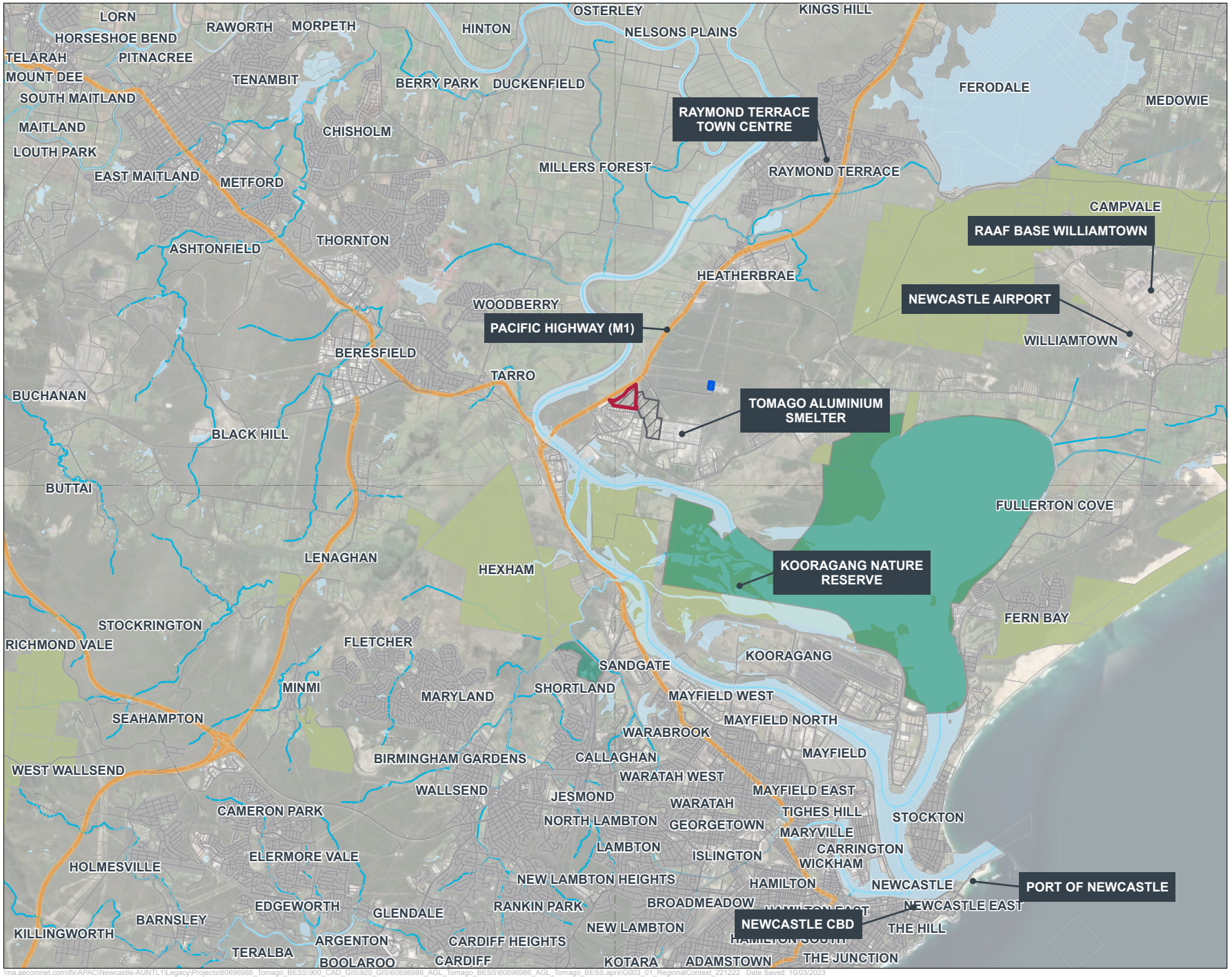
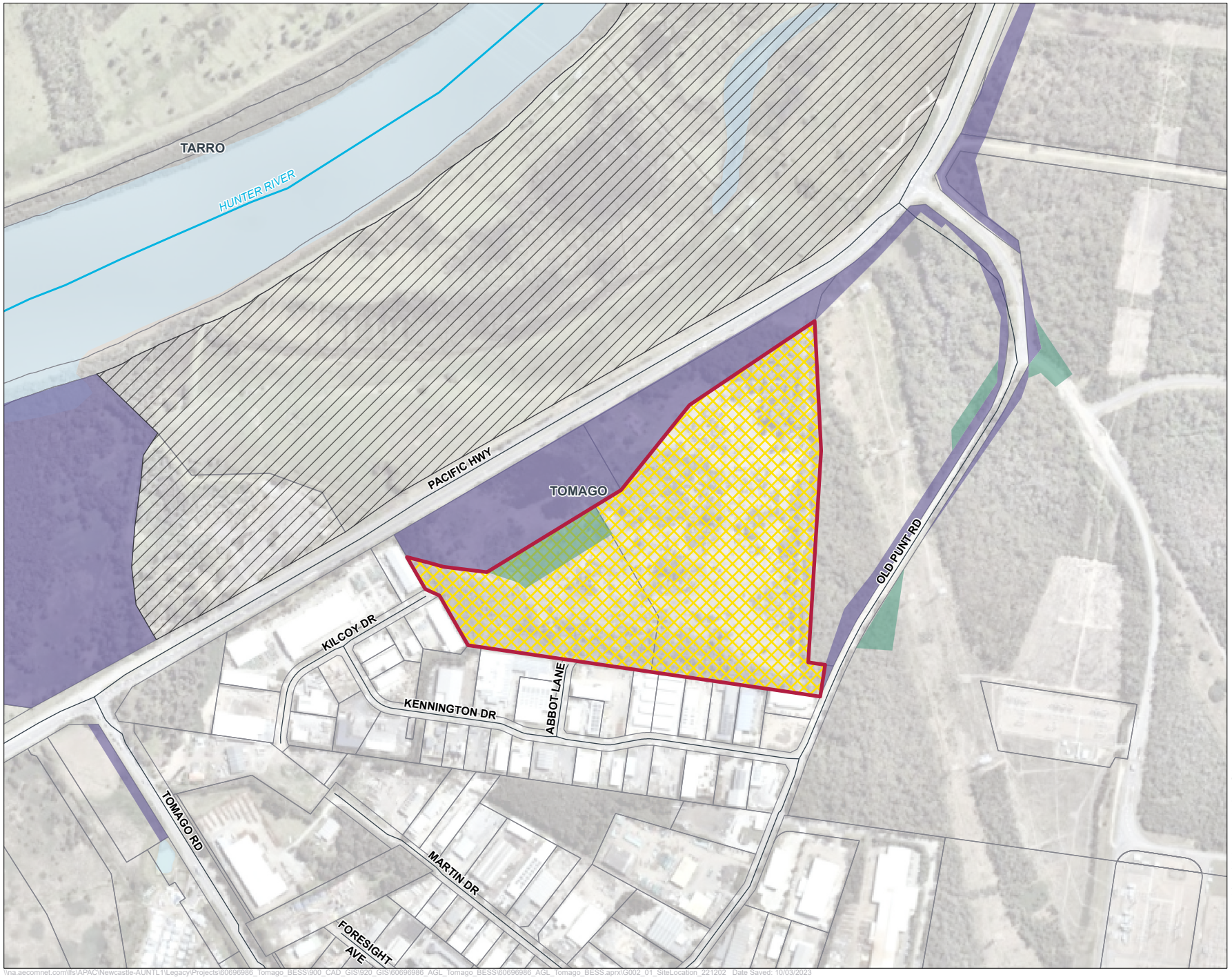


FIGURE 2-1: REGIONAL CONTEXT

Source: Nearmap, 2022.



AECOM

N

0 100 200 m

Legend

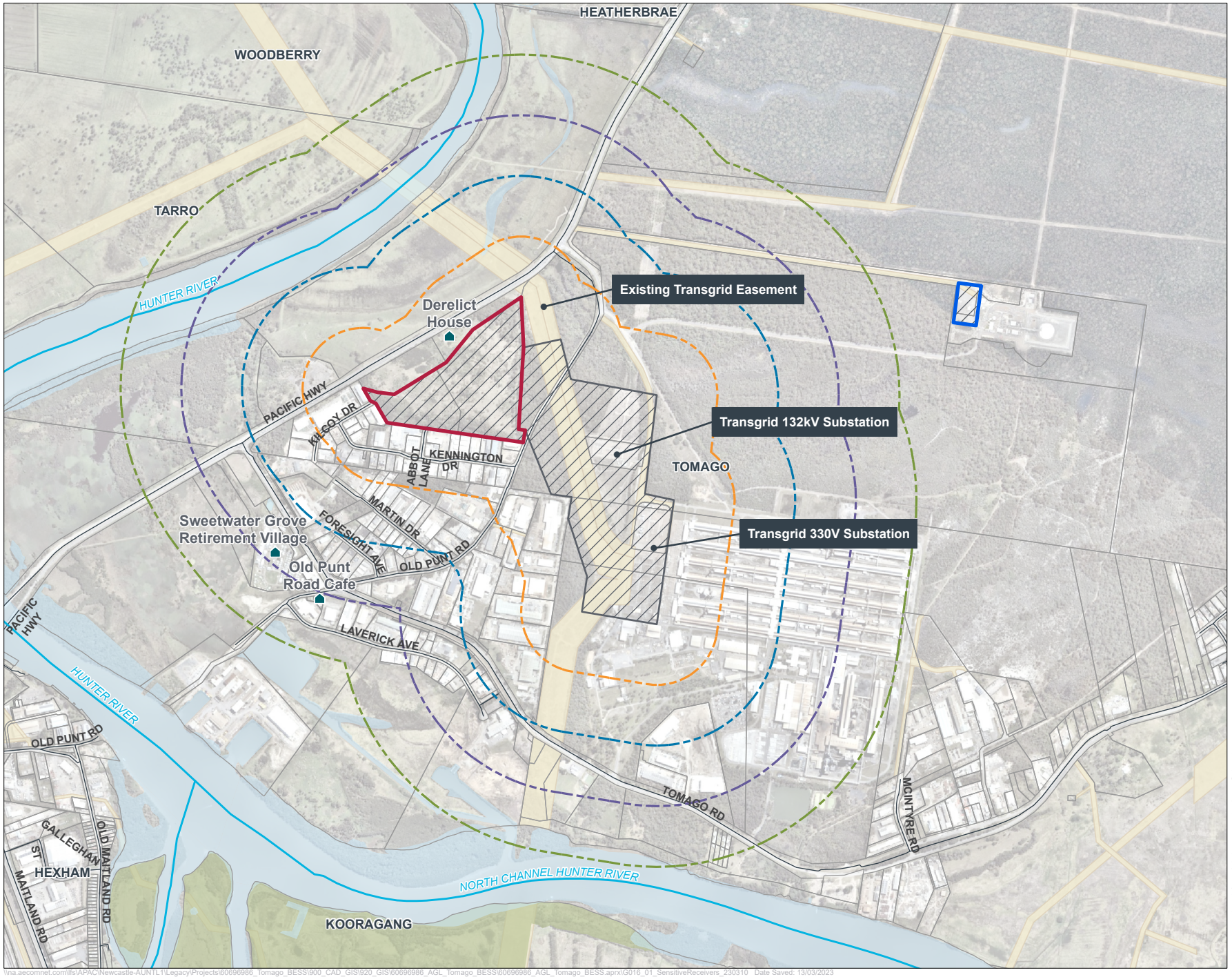
- The BESS Site
- Project Area
- Water Body
- Cadastral Boundary
- Watercourse
- Road

Properties Impacted by TfNSW Acquisiton or Temporary Lease

- Land Acquired by TfNSW
- TfNSW Temporary Lease Area
- Project Land Owned by TfNSW

FIGURE 2-2: THE SITE

Source: Nearmap, 2022.



AECOM

N

0 200 400 m

Legend

- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- 250m Buffer
- 500m Buffer
- 750m Buffer
- 1000m Buffer
- Cadastral Boundary
- Transmission Line Easement
- NPWS Reserve
- Water Body
- Watercourse
- Road
- Sensitive Receivers

FIGURE 2-3: SURROUNDING SENSITIVE RECEIVERS

Source: Nearmap, 2022.

AECOM

N

0 200 400 m

Legend

- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Transmission Line Easement
- Cadastral Boundary

Land Owner

- AGL Energy Ltd
- AGL Macquarie Pty Ltd
- Hunter Water Corporation
- Tomago Aluminium Company
- Transgrid

Properties Impacted by TfNSW Acquisiton or Temporary Lease

- Land Acquired by TfNSW
- TfNSW Temporary Lease Area
- Project Land Owned by TfNSW

FIGURE 2-4: LAND OWNERSHIP

Source: Nearmap, 2022.

3.0 The Project

3.1 Project overview

The Project comprises a BESS facility that would store electricity from the grid, release electricity during periods of high demand and provide other ancillary services.

Some key features of the Project would include but not be limited to:

- Construction and operation of a BESS with a nominal capacity of up to 500 MW and up to 2,000 MWh (construction of the Project may be carried out in stages).
- An above ground, below ground, or a combination of both transmission connection/s between the proposed BESS and one of the neighbouring substations. The proposed transmission connection would be located across Lots 7, 8, 24, 25 and 28 DP1286735, Lot 104 DP1125747 and Lot 3 DP808004. The BESS would connect to either:
  - 132 kV substation located on Lot 101 DP1125747; or
  - 330 kV substation located on Lot 3 of DP808004, and Lots 102 and 103 DP1125747.

Key components of the Project would include:

- Batteries located within battery enclosures and associated infrastructure including but not limited to inverters and a combination of high, medium and low voltage transformers
- Cabling and collector units
- High voltage substation, with associated infrastructure including high voltage transformers and other equipment to meet Generator Performance Standards (e.g., harmonic filters and/or synchronous condensers, if required)
- Connection to an existing electrical switchyard
- Temporary and permanent control, office and maintenance buildings, switch rooms, site access, internal roads, laydown areas and car parking
- Other associated and ancillary infrastructure, including, for example, fire suppression, drainage and stormwater management, security fencing, lighting, and CCTV.

Further details regarding the Project specifics are provided in the following sections of this Scoping Report. These details are subject to further review during the preparation of the EIS and the detailed design phase. Whilst the construction of the Project may be carried out in stages, the Scoping Report and EIS will consider and address the environmental impacts associated with the Project as a whole.

3.1.1 Battery storage technology and plant

While the BESS technology provider is yet to be determined, the BESS is likely to consist of containerised or stacked batteries with associated control systems, inverters, heating, ventilation and air conditioning units, transformers, and control rooms.

The majority of the facility is anticipated to be approximately 10 m in height with the exception of the transmission line landing gantry and lightning masts, which could be up to 30 m tall. Expected component heights would be confirmed during design development of the Project and will be discussed in the EIS. Batteries are expected to be mounted on footings and be containerised or otherwise enclosed. Environment and safety controls for management of hazardous substances suitable for the selected technology would be provided in accordance with applicable regulatory guidelines.

The BESS is intended to have an operational life of up to 50 years and, depending on the selected technology components, may be replaced and/or upgraded to extend this timeframe. Following the end of economic life, above ground components would be removed and re-purposed where possible and land rehabilitated and recontoured, if and as required.

A control and office building with separate amenities, switch rooms, workshop area and a warehouse to support the Project operation and maintenance activities would also most likely be included as part of

the Project. The proposed workshop area would most likely be used to perform maintenance and repairs on equipment and components relating to the BESS, while the warehouse would most likely be used to store spare items and items ancillary to the operation and maintenance of the Project such as equipment and materials.

A formalised access point off Old Punt Road would be constructed to allow for the construction and maintenance of the Project. A secondary access point will be constructed by TfNSW in the northern corner of the Site to provide emergency access and egress to the on ramp of the M1 Pacific Highway. Telecommunications as well as potable and wastewater connections would be required. No water would be required for cooling; however, potable water would likely be required for firefighting purposes.

3.1.2 Transmission connection

A high voltage electricity transmission line is proposed to connect the BESS to the NEM. The transmission connection would be installed either above or below ground (or a combination of both). The transmission connection would connect the BESS to either:

- 132 kV substation located on Lot 101 DP1125747 (Transgrid 132 kV Tomago Substation), or
- 330 kV substation located on Lot 3 of DP808004 and Lots 102 and 103 DP1125747 (Transgrid 330 kV Tomago Substation).

The proposed transmission line would require the construction of associated infrastructure, including potentially a transmission line landing gantry at the Site and connections at the preferred substation. The transmission connection would be located across Lots 7, 8, 24, 25 and 28 DP1286735, Lot 104 DP1125747 and Lot 3 DP808004. An easement would be required to support the operation of the transmission corridor once a preferred alignment is confirmed. Works to connect the transmission line to the BESS HV Substation and to either the 132 kV or 330 kV substation would also be required. AGL will consult with the landowner(s), TfNSW and other parties benefitted by existing easements along the proposed transmission corridor to determine the preferred alignment and to minimise potential construction impacts.

3.1.3 Vehicular access

The area around Tomago is serviced by a road network well suited to heavy haulage vehicles due to the surrounding industrial land uses. Old Punt Road is a sealed single lane, two-way council owned road. Old Punt Road connects to the Pacific Highway approximately one kilometre to the north of the Site.

During construction and operation, vehicular access to the Site would be via a newly established access point off Old Punt Road. Parking would be provided on Site.

In addition, TfNSW has agreed to provide AGLM with a secondary access point in the northern corner of the Site to provide emergency access ingress and egress to the M1 Pacific Highway on-ramp as part of the M1 Extension Project.

3.1.4 Operational workforce and hours

Once constructed, the Project would operate 24 hours a day, seven days a week. It is anticipated that the Project would require up to approximately six staff during operation on an intermittent basis. The BESS would typically be managed remotely and staffed as required during both planned and unplanned maintenance periods.

3.2 Project Construction

3.2.1 Construction Overview

It is currently anticipated that construction of the Project would take up to 24 months, starting in Q2 2026 and being completed in 2028, although construction may be carried out in stages.

It is anticipated that up to 200 construction staff would be required to complete the construction works.

Construction works would be likely to involve:

- Installation of erosion and sediment controls and site fencing

- Installation and maintenance of environmental controls
- Development/upgrade of site access and internal/external access roads
- Benching to form the BESS pad, switchyard area/s, and construction laydown areas
- Concrete works associated with equipment and building foundations/footings, including placement of pre-cast concrete panels
- Trenching and installation of cables at the BESS and high voltage switchyard
- Connections to surrounding utilities as required
- Structural works to support BESS facilities
- Construction of supporting structures, e.g., office building, workshop, switch rooms and warehouse
- Delivery, installation and electrical fit-out of BESS and transformers
- Construction of transmission connection between BESS and preferred 132kV/330kV substation which include works to install the connection above ground or below ground to connect to the substation
- Testing and commissioning activities; and
- Removal of construction equipment and rehabilitation of construction areas.

Construction of laydown areas may also be required on land in proximity to the Site. There is potential for an additional laydown area within the NGSF located at Lot 9 DP 1286735 to the east of the Site (**Figure 1-1**). The area has been previously cleared and paved as part of the construction of the NGSF and was used as a contractor carpark at that time. No clearing or earthworks are required to establish the laydown area. Further options for construction laydown areas will be explored as part of the detailed design and will be factored into the development of the EIS.

3.2.2 Construction plant and equipment

Table 3-1 provides an indicative list of the plant and equipment that would be used to construct the Project. The equipment list would be further refined during detailed design.

Table 3-1 Indicative plant and equipment for construction

Equipment to be used during construction	
Enabling works and prefabrication	
Front end loaders	Excavators
Dump trucks	Graders
Road trucks	Compactors
Water Trucks	
Structural, civil, mechanical and electrical works	
Front end loaders	Dump trucks
Road trucks	Excavators
Graders	Scrapers
Concrete trucks and pumps	Compactors and rollers
Elevated work platforms	Scrapers
Cranes	Backhoe
Concrete saws and grinders	Generators
Water trucks	

Equipment to be used during construction	
Commissioning	
Elevated work platforms	Generators
Cranes	
Finishes and demobilisation	
Road trucks	Backhoe
Water Trucks	Compactors

3.3 Decommissioning

At the end of the Project's design life or agreed timetable, the batteries would either be disposed of and recycled at a suitably approved disposal facility, or subject to confirmation, be returned to the original equipment manufacturer for refurbishment and recycling. The Project Area would be rehabilitated and/ or recontoured as required.

3.4 Estimated Capital Investment Value

The total estimated CIV for the Project is anticipated to be greater than $30 million. The CIV would be confirmed prior to submission of the EIS.

3.5 Project objectives

The objectives of the Project are as follows:

- Provide firming capability to support existing and new renewable energy projects in the newly established Hunter and Central Coast REZ, and throughout the NEM.
- Support the transition of the existing Liddell Power Station to an Integrated Energy Hub for the Hunter region
- Support economic development within NSW, through the creation of up to approximately 200 direct jobs during the construction phase, and up to approximately six jobs during operation
- Where applicable, provide dynamic voltage control services to help correct and/or stabilise the wider transmission network.

3.6 Alternatives considered

Alternatives to the Project have been considered at a site and overall project level and these considerations would continue to be developed throughout the Project design stages to ensure necessary requirements are met, and can avoid or minimise any potential environmental, social and/or economic impacts. Following a constraints and opportunities analysis, the following alternatives have been considered:

- The "do nothing approach"
- Site location alternatives
- BESS technology and provider alternatives.

Each alternative is explored in further detail below.

3.6.1 The "do nothing" approach

The 'do nothing' approach would involve not constructing and operating a BESS at or near Tomago. This option would likely result in potential energy disruption issues, noting the future planned closure of Liddell, Bayswater and Eraring coal-fired power stations. Without the Project, the projected future increase in demand for energy throughout the Port Stephens (and broader Hunter Region) would not be adequately addressed. The 'do nothing' option would not meet the objectives of the Project (refer to

Section 3.5) or the demands on the NEM (refer to **Section 2.2**) and is therefore not considered a feasible option.

3.6.2 Site location

As discussed in **Section 2.4**, the Site has been the subject of an EIS and was subsequently granted approval (SSI 9837) for the NPS. The attributes of the selected Site that make the location optimal for development of a project for “electricity generating works” (including storage) remain pertinent to this Project. Many of the key location requirements for battery energy storage are in existence at this selected Site, including:

- Proximity to the high voltage electricity transmission network and high electricity demand centres
- Capacity of the transmission network to deliver electricity stored without constraint
- Availability of suitably zoned land with compatible existing land uses surrounding the Site (refer to **Section 4.3**)
- Access for the delivery of heavy construction loads
- Availability of skilled construction and operational workforce.

A range of potential sites for the Project were investigated. This review of sites considered key selection parameters including siting of the BESS in proximity to the point of energy generation, as well as the option to construct the BESS in proximity to the point of energy distribution. Constructing the Project in proximity to the existing Transgrid substation (either the 132 kV or 330 kV) would likely reduce disruptions to energy supply, thus aiming to achieve the Project objectives of enhancing the utilisation, reliability and efficiency of renewable energy within the newly established Hunter and Central Coast REZ.

3.6.3 BESS technology

Alternative options for the most suitable battery technology for the Project to meet capacity and other requirements are currently being determined. The preferred option currently being considered consists of Lithium-Ion batteries in the form of containerised or otherwise enclosed battery arrangements. The typology and layout of the battery energy storage units would be confirmed during the design process.

3.7 Project benefits

The Project is expected to significantly benefit the State and the local community. Some key benefits associated with the Project include:

- Improved network security and diversified energy generation and storage offering within NSW
- Alignment with Commonwealth and NSW policy positions (discussed in **Section 2.2**)
- Support for increased renewable power generation during daytime peak periods, placing downward pressure on wholesale electricity prices in accordance with the ISP (discussed in **Section 2.2.2**)
- Creation of up to approximately 200 direct jobs during Project construction phase, and up to approximately six jobs during operation
- Diversification of skills and employment which helps to promote growth and transition of the local community during the construction and operational phases.

Batteries are becoming an integral part of the electricity market's response to the withdrawal of coal fired power stations from the market and as such are playing an increasingly important role by providing firm capacity to support intermittent renewable generation, whilst improving the strength of the network.

4.0 Statutory context

4.1 Environmental Planning and Assessment Act 1979

4.1.1 Overview

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2021* (the EP&A Regulation) provide the framework for land use planning and development control in NSW. The EP&A Act and the Regulation is supported by a number of Environmental Planning Instruments (EPIs), which include State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs).

Part 4 of the EP&A Act establishes a framework for assessing development that requires consent and categorises development as either '*exempt development'*, *'complying development*', '*development that requires consent'*, or '*prohibited development'*. The term '*development*' is defined under section 1.5 of the EP&A Act.

4.1.2 Planning approval pathway

BESS projects are considered electricity storage projects defined as '*electricity generating works*' under *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP) as a building or place used for the purpose of electricity storage. Clause 2.36 of the Transport and Infrastructure SEPP states that development for the purpose of electricity generating works may be carried out by any person with consent on any land in a prescribed non-residential zone. The Site is located within the IN1 General Industrial land use zone, which is a prescribed non-residential zone under clause 2.35 of the Transport and Infrastructure SEPP. On this basis, the Project is permissible with development consent on the Site.

Division 4.7 of the EP&A Act defines development that is State Significant Development (SSD) and notes that development can be declared as such by an EPI. Pursuant to the *State Environmental Planning Policy (Planning Systems) 2021* (Planning Systems SEPP), '*electricity generating works*' are deemed to be SSD if they have a CIV of more than $30 million. This Project will have a CIV in excess of $30 million.

Section 4.12(8) of the EP&A Act states that a "*development application for State significant development is to be accompanied by an environmental impact statement prepared by or on behalf of the applicant in the form prescribed by the regulations.".* Part 8, Division 2 of the EP&A Regulation sets out the requirements of an EIS and requires that the content of an EIS is '*subject to the environmental assessment requirements that relate to the EIS'*. Environmental assessment requirements are typically sought through a request for SEARs submitted to the DPE.

In line with section 4.5 of the EP&A Act, the consent authority for the Project would be the NSW Minister for Planning or the Independent Planning Commission (in the case of greater than 50 public objections to the application, local council objection, and/or reportable political donations made by the proponent in the two years prior to lodgement). As noted in section 4.40 of the EP&A Act, SSD applications are evaluated and determined in line with the requirements of section 4.15 of the EP&A Act. Matters for consideration include relevant EPIs, likely impacts to the built and natural environment and social and economic impacts, submissions made on the application, site suitability and the public interest.

Sections 4.41 and 4.42 of the EP&A Act identify authorisations that are not required for a SSD, and authorisations that cannot be refused, if necessary, for carrying out a SSD, respectively.

A summary of the approval requirements that may relate to the Project has been provided in **Table 4-1**.

Table 4-1 outlines each of the approvals referred to in section 4.42 of the EP&A Act and their applicability to the Project. These approvals, if required, cannot be refused if they are necessary for carrying out the SSD.

Table 4-1 Relevant approvals required under section 4.42

Approval	Comment
An aquaculture permit under section 144 of the *Fisheries Management Act 1994*	The Project would not involve aquaculture. Therefore, no aquaculture permit would be required.
An approval under section 15 of the *Mine Subsidence Compensation Act 1961*	The Project is not located within a mine subsidence district. An approval under section 15 of the *Mine Subsidence Compensation Act 1961* would not be required.
A mining lease under the *Mining Act 1992*	The Project does not include any mining activities. A mining lease would not be required.
A production lease under the *Petroleum (Onshore) Act 1991*	The Project would not involve petroleum production.
An Environment Protection Licence (EPL) under Chapter 3 of the *Protection of the Environment Operations Act 1997* (for any of the purposes referred to in Section 43 of that Act)	A review of Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) was conducted, and the Project would not include any scheduled activities. Consequently, an EPL is not required.
Consent under Section 138 of the *Roads Act 1993*	The Site is located on Old Punt Road. Old Punt Road is a local road owned and managed by Port Stephens Council. The Project would require a new access point to connect the facility to the road network at Old Punt Road. Consultation with Port Stephens Council to confirm the requirements of creating a new access road will be undertaken and if required a consent under section 138 of the *Roads Act 1993* would be obtained. A secondary emergency access ingress/egress point will be provided in the northern corner of the Site by TfNSW as part of the M1 Extension Project. This access point will connect the Site to the on-ramp of the M1.
A licence under the *Pipelines Act 1967*	No pipelines would be required for the Project and therefore a licence would not be required.

The need for other approvals or authorisations, in addition to those referred to in section 4.42 of the EP&A Act, would be addressed in the EIS.

4.2 State Environmental Planning Policies

The following SEPPs are considered relevant to the Project:

- *State Environmental Planning Policy (Planning Systems) 2021*
- *State Environmental Planning Policy (Biodiversity and Conservation) 2021*
- *State Environmental Planning Policy (Resilience and Hazards) 2021*
- *State Environmental Planning Policy (Transport and Infrastructure) 2021.*

Each relevant SEPP is discussed in further detail below.

4.2.1 State Environmental Planning Policy (Planning Systems) 2021

The Planning Systems SEPP applies to the whole of NSW.

Chapter 2 of the Planning Systems SEPP relates to State and Regional development with the aim to identify development that is significant to the State. Part 2.2 of the Planning Systems SEPP relates to development that is declared SSD. Pursuant to clause 2.6(1) of the Planning System SEPP, development is declared to be SSD for the purposes of the EP&A Act if:

a. *The development on the land concerned is, by the operation of an environmental planning instrument, not permissible without development consent under Part 4 of the [EP&A] Act, and*

b. *The development is specified in Schedule 1 or 2 [of the Planning Systems SEPP]*

As discussed in **Section 4.1.2**, the Project is declared as SSD under clause 2.6 of the Planning Systems SEPP. Furthermore, clause 2.10 of this SEPP states that Development Control Plans (DCPs) do not apply to SSDs.

4.2.2 State Environmental Planning Policy (Biodiversity and Conservation) 2021

The chapters of SEPP (Biodiversity and Conservation) relevant to the Project, include:

- Chapter 2 Vegetation in non-rural areas
- Chapter 3 Koala habitat protection 2020
- Chapter 4 Koala habitat protection 2021.

The application of each chapter is discussed in further detail below.

Chapter 2 Vegetation in non-rural areas

Chapter 2 of the Biodiversity and Conservation SEPP relates to vegetation in non-rural areas. The aims of Chapter 2 are the protection of the biodiversity values of trees and other vegetation in non-rural areas of the State and the preservation of the amenity of non-rural areas of the State through preserving trees and other vegetation.

The Biodiversity and Conservation SEPP applies to Port Stephens LGA, and land use zones contained under clause 2.3, which includes land zoned IN1 General Industrial.

Clause 2.6(1) of this SEPP states that '*a person must not clear vegetation in any non-rural area of the State to which Part 3 (now Part 2.3) applies without the authority conferred by a permit granted by the council*'. In addition, Clause 2.6(2) further states that '*a person must not clear native vegetation in any non-rural area of the State that exceeds the biodiversity offset scheme threshold without the authority conferred by an approval of the Native Vegetation Panel under Part 2.4.'*

Part 2.3 of the Biodiversity and Conservation SEPP applies to vegetation in any non-rural area of the State that is declared by a development control plan to be vegetation to which [Part 2.3] applies. As detailed in the presiding section related to the Planning Systems SEPP, the Project constitutes SSD and as such the development control plan does not apply. By extension, the requirement to consider vegetation under the Port Stephens Council Development Control Plan (DCP) is not applicable.

For completeness however, Clause 2.6(2) of this SEPP provides guidance regarding the clearing of vegetation in non-rural areas that requires authority under the Policy. Of importance to this Project, Clause 2.6(2) under this SEPP states:

> *A person must not clear native vegetation in any non-rural area of the State that exceeds the biodiversity offset scheme threshold without the authority conferred by an approval of the Native Vegetation Panel under Part 2.4.*

An investigation will be undertaken in accordance with the Biodiversity Assessment Method (BAM) to determine whether the Project exceeds the Biodiversity Offset Scheme (BOS) threshold. In the event the BOS is triggered, a Biodiversity Development Assessment Report (BDAR) will be prepared to accompany the EIS.

Chapter 3 Koala habitat protection 2020

The aim of Chapter 3 under the Biodiversity and Conservation SEPP is to encourage the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free-living population over their present range and reverse the current trend of population decline. As stated in clause 3.3, this Chapter of the SEPP applies only to land zoned RU1 Primary

Production, RU2 Rural Landscape and RU3 Forestry, within LGAs specified in Schedule 2 of Chapter 4 of the Biodiversity and Conservation SEPP. The Project Area is zoned IN1 General Industrial. As such, the provisions contained under Chapter 3 of the Biodiversity and Conservation SEPP do not apply to the Project.

Chapter 4 Koala habitat protection 2021

The aim of Chapter 4 under the Biodiversity and Conservation SEPP is to encourage the conservation and management of areas of natural vegetation that provide habitat for koalas to support a permanent free-living population over their present range and reverse the current trend of koala population decline. As stated within clause 4.4, Chapter 4 of the Biodiversity and Conservation SEPP applies to each LGA listed in Schedule 2, which includes Port Stephens LGA.

Port Stephens Council prepared a Comprehensive Koala Plan of Management, which was published in June 2002 (Port Stephens Council, 2002). As Port Stephens Council has an approved Koala management plan in place, reference is made to clause 4.8 of the Biodiversity and Conservation SEPP, which provides guidance regarding the *"development assessment process – approved koala plan of management for land".*

Of interest to this Project is clause 4.8(2), which states:

> *(2) the council's determination of the development application must be consistent with the approved koala plan of management that applies to the land*.

As mentioned in **Section 4.1.2**, pursuant to section 4.5(a) of the EP&A Act, the consent authority for the purpose of SSD is the Minister for Planning (or Independent Planning Commission). When considering the application of Chapter 4 of the Biodiversity and Conservation SEPP, clause 4.8(2) refers to "*Council's determination*". By virtue of the Minister for Planning being the relevant consent authority, a *prima facie* interpretation of clause 4.8 infers that SSD is exempt from the application of Chapter 4 of the Biodiversity and Conservation SEPP.

Notwithstanding the above, any impacts to koalas and potential habitat species would be considered in accordance with the requirements of the *Biodiversity Conservation Act 2016* (BC Act); with the outcomes addressed in the EIS and supported through the production of a BDAR (discussed further in **Section 4.4.6**).

4.2.3 State Environmental Planning Policy (Resilience and Hazards) 2021

The objective of the *State Environmental Planning Policy (Resilience and Hazards) 2021* (Resilience and Hazards SEPP) is to provide state-wide planning approach to resilience and hazards. The chapters of Resilience and Hazard SEPP relevant to the Project, include:

- Chapter 2 Coastal management
- Chapter 3 Hazardous and offensive development
- Chapter 4 Remediation of Land.

The application of each chapter is discussed in further detail below.

Chapter 2 Coastal management

The aim of this chapter is to promote an integrated and co-ordinated approach to land use planning in the coastal zone in a manner consistent with the objectives of the *Coastal Management Act 2016*. Portions of the Investigation Area are located within:

a. Coastal Wetlands (and Coastal Wetland proximity areas)

b. The Coastal Environment Area

c. The Coastal Use Area.

Figure 6-1 shows the land within the Project Area that is impacted by Chapter 2 of the Resilience and Hazards SEPP.

As shown in **Figure 6-1**, there are portions of land adjacent to the northern boundary of the Site that are mapped as land within the Coastal Environment Area. Clause 2.10(1) under the Resilience and Hazards SEPP states that "*Development consent must not be granted to development on land that is within the coastal environment area unless the consent authority has considered whether the proposed development is likely to cause an adverse impact on the following—*

(a) the integrity and resilience of the biophysical, hydrological (surface and groundwater) and ecological environment,

(b) coastal environmental values and natural coastal processes,

(c) the water quality of the marine estate (within the meaning of the Marine Estate Management Act 2014), in particular, the cumulative impacts of the proposed development on any of the sensitive coastal lakes identified in Schedule 1,

(d) marine vegetation, native vegetation and fauna and their habitats, undeveloped headlands and rock platforms,

(e) existing public open space and safe access to and along the foreshore, beach, headland or rock platform for members of the public, including persons with a disability,

(f) Aboriginal cultural heritage, practices and places,

(g) the use of the surf zone.

In addition, pursuant to clause 2.10(2), "*Development consent must not be granted to development on land to which this section applies unless the consent authority is satisfied that—*

(a) the development is designed, sited and will be managed to avoid an adverse impact referred to in subsection (1), or

(b) if that impact cannot be reasonably avoided—the development is designed, sited and will be managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

While the Project Area is not within the Coastal Environment Area, the EIS will consider the matters of consideration contained under clause 2.10(1) & (2) of the Resilience and Hazards SEPP with regards to potential indirect impacts resulting from the Project.

Chapter 3 Hazardous and offensive development

The aim of this chapter is to ensure that in considering any development application to carry out potentially hazardous or offensive development, the consent authority has sufficient information to assess whether the development is hazardous or offensive and to impose conditions to reduce or minimise any adverse impact (among others).

Part 3 under Chapter 3 of the Resilience and Hazards SEPP applies to industrial developments that are considered "*potentially hazardous or offensive industry*". The definition of a potentially hazardous industry and potentially offensive industry is provided in clause 3.2 of the Resilience and Hazards SEPP.

Development that constitutes a potentially hazardous industry must be accompanied by a Preliminary Hazard Analysis (PHA). For completeness, clause 3.12 sets out the matters that the consent authority must consider including:

"(a) current circulars or guidelines published by the Department of Planning relating to hazardous or offensive development, and

(b) whether any public authority should be consulted concerning any environmental and land use safety requirements with which the development should comply, and

(c) in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and

(d) any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application), and

(e) any likely future use of the land surrounding the development."

For development proposals classified as '*potentially hazardous industry'* the SEPP (and DPE's *Hazardous and Offensive Development Application Guidelines – Applying SEPP 33* (January 2011)) establish a test by way of a preliminary screening assessment and PHA to determine the risk to people, property and the environment. The EIS would include an assessment of the potential hazards and risk of the Project in accordance with the requirements of the Resilience and Hazards SEPP.

Chapter 4 Remediation of Land

The objective of Chapter 4 is to provide a state-wide planning approach to the remediation of contaminated land, where the purpose of remediation of contaminated land is to reduce the risk of harm to human health or any other aspect of the environment. Pursuant to clause 4.6(1), "a *consent authority must not consent to the carrying out of any development on land unless-*

(a) it has considered whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose."

Furthermore clause 4.6(2) states that "*before determining an application for consent to carry out development that would involve a change of use on any of the land specified under subclause (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land guidelines.*".

The EIS would consider contamination risks (based on historic land use and other relevant matters) and appropriate mitigation measures for managing and dealing with any potential contaminated material that may be encountered on site during construction works (but which would not preclude the intended land use).

4.2.4 State Environmental Planning Policy (Transport and Infrastructure) 2021

The aim of Chapter 2 of the Transport and Infrastructure SEPP is to facilitate the effective delivery of infrastructure across the State.

The application of this Chapter is discussed in further detail below.

Chapter 2 Infrastructure

The Site is zoned IN1 General Industrial under the Port Stephens LEP. This land use zone is defined as a '*prescribed non-residential zone'* for the purpose of electricity generating works. Under clause 2.36 of the Transport and Infrastructure SEPP, the Project is considered permissible with consent at the Site.

Clause 2.48 of the Transport and Infrastructure SEPP relates to determination of development applications that are likely to affect an electricity transmission or distribution network. Specifically, clause 2.48(1) states that "*this section applies to a development application… for development comprising or involving any of the following:*

(a) The penetration of ground within 2m of an underground electricity power line or an electricity distribution pole or within 10m of any part of an electricity tower,

(b) Development carried out-

a. *Within or immediately adjacent to an easement for electricity purposes (whether or not the electricity infrastructure exists), or*

b. *Immediately adjacent to an electricity substation, or*

c. *Within 5m of an exposed overhead electricity power line.*

(c) [not relevant]

(d) Development involving or requiring the placement of power lines underground, unless an agreement with respect to the placement underground of power lines is in force between the electricity supply authority and the council for the land concerned."

Before determining an application to which clause 2.48 relates, the consent authority must:

(a) Give written notice to the electricity supply authority for the area in which the development is to be carried out, inviting comments about potential safety risks, and

(b) Take into consideration any response to the notice that is received within 21 days after the notice is given.

The Project would involve the development partially within an existing electricity easement, as well as connection to an existing substation (either Transgrid's 132 kV or 330 kV substations, refer to **Chapter 3.0**). Throughout the preparation of the EIS, consultation with the electricity supply authority (Transgrid), pursuant to the Community and Stakeholder Engagement Plan (discussed in **Chapter 5.0**), would continue. Furthermore, it is noted that following lodgement of the EIS, DPE will refer the application to Transgrid to invite comments which would be responded to as part of the Response to Submissions Report.

Clause 2.119 of the Transport and Infrastructure SEPP relates to development in or adjacent to road corridors and road reservations. The objectives of this clause are:

(a) to ensure that new development does not compromise the effective and ongoing operation and function of classified roads, and

(b) to prevent or reduce the potential impact of traffic noise and vehicle emission on development adjacent to classified roads.

Pursuant to clause 2.119(2), *the consent authority must not grant consent to development on land that has a frontage to a classified road unless it is satisfied that-*

(a) where practicable and safe, vehicular access to the land is provided by a road other than the classified road, and

(b) the safety, efficiency and ongoing operation of the classified road will not be adversely affected by the development as a result of-

a. the design of vehicular access to the land, or

b. the emission of smoke or dust from the development, or

c. the nature, volume or frequency of vehicles using the classified road to gain access to the land, and

(c) the development is of a type that is not sensitive to traffic noise or vehicle emissions, or is appropriately located and designed, or includes measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development arising from the adjacent classified road.

As mentioned in **Section 2.3**, the Pacific Highway (M1) traverses along the northern boundary of the Site. The Pacific Highway (M1) is a classified road under the *Roads Act 1993*. As such, the requirements under clause 2.119 of the Transport and Infrastructure SEPP must be considered as part of this Project. The EIS will address the matters of consideration contained under clause 2.119(2) of the Transport and Infrastructure SEPP and consultation with TfNSW will continue with regards to the interaction of this Project and the Pacific Highway (M1) and where works for the M1 Extension Project (SSI-7319) affect Old Punt Road.

4.3 Port Stephens Local Environmental Plan 2013

The Project Area is located on land that is zoned IN1 General Industrial by the Port Stephens LEP (refer to **Figure 4-2**). The objectives of the IN1 General Industrial land use zone, as stated in the LEP are:

- *To provide a wide range of industrial and warehouse land uses*
- *To encourage employment opportunities*

- *To minimise any adverse effect of industry on other land uses*
- *To support and protect industrial land for industrial uses.*

As stated in **Section 4.1.2**, the Project is characterised as "*electricity generating works*", which is not listed as a type of development that is permissible with consent under the LEP. However, permissibility for the Project is achieved through the application of clause 2.36 of the Transport and Infrastructure SEPP (refer to **Section 4.2.4**).

In addition to permissibility the following principal development standards and local provisions under the LEP have been considered:

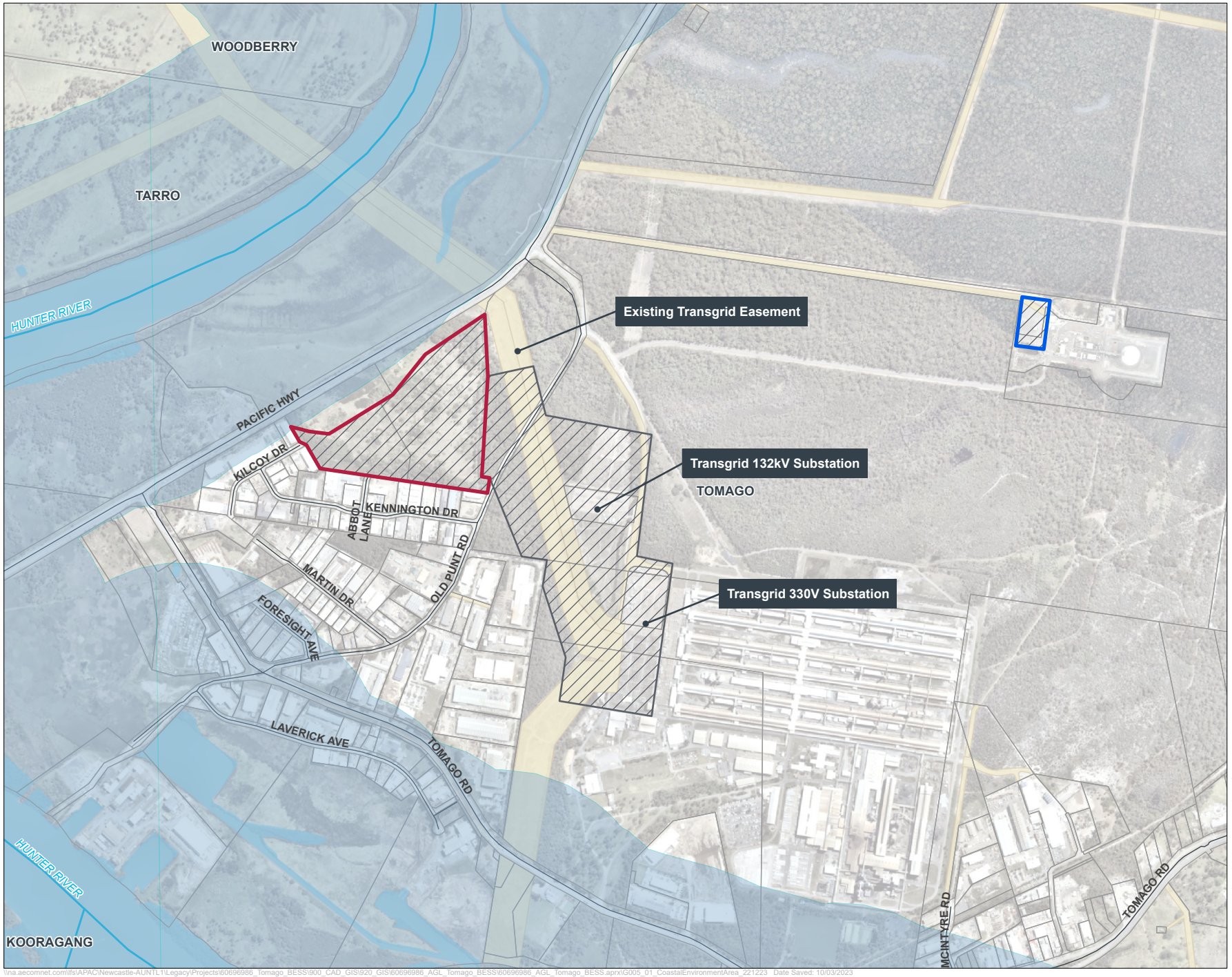
- Clause 4.1 Minimum subdivision lot size
- Clause 4.3 Height of buildings
- Clause 4.4 Floor space ratio
- Clause 5.10 Heritage conservation
- Clause 5.21 Flood planning
- Clause 7.1 Acid sulfate soils
- Clause 7.8 Drinking water catchments
- Clause 7.9 Wetlands.

A discussion of these provisions and the relevance to the Project has been provided in **Table 4-2**.

Table 4-2 LEP provisions

LEP provision	Compliance
Clause 4.1 Minimum subdivision lot size	The Site has a minimum lot size of 40 hectares (ha) under the LEP (refer to **Figure 4-3**). The Project does not involve subdivision. As such, the matters of consideration contained under clause 4.1 of the LEP will not apply to the Project.
Clause 4.3 Height of buildings	The Site does not have a maximum building height under the LEP. As such, this principal development standard does not apply to the Project. No further consideration is afforded to clause 4.3 of the LEP.
Clause 4.4 Floor space ratio	The Site does not have a floor space ratio under the LEP. As such, this principal development standard does not apply to the Project. No further consideration is afforded to clause 4.4 of the LEP.
Clause 5.10 Heritage conservation	The Site is not mapped under the LEP to contain any objects, items or sites of heritage significance. Notwithstanding however, a search of the Aboriginal Heritage Information System (AHIMS, 2022) for the Project Area in December 2022 identified 20 registered Aboriginal Sites within the map extent, some of which are located within the Project Area. The EIS will be supported by an Aboriginal Cultural Heritage Assessment Report (ACHAR) (discussed further in **Section 6.5**).
Clause 5.21 Flood planning	The Site is mostly located above the flooding planning level within the southern extent bordering minimal risk flood prone land (refer to **Figure 4-4**). **Section 6.4** provides further discussion regarding the environmental context of the Site with regards to potential flooding impacts. The EIS will consider the relevant matters of consideration contained under clause 5.21 of the LEP with regards to the Project.
Clause 7.1 Acid sulfate soils	The Site is mapped under the LEP to be potentially impacted by Class 3 and 4 Acid Sulfate Soils (as shown in **Figure 4-5**). The EIS will consider the relevant matters of consideration contained under clause 7.1 of the LEP with regards to the Project.

LEP provision	Compliance
Clause 7.8 Drinking water catchments	The eastern boundary of the Site constitutes the boundary of the drinking water catchment as mapped under the LEP (being the Tomago Sand Beds). While the Site is not impacted by this provision, it is important to note that the transmission connection/s would traverse across land that is mapped within the drinking water catchment (refer to **Figure 4-6**). As such, the EIS will consider the relevant matters of consideration contained under clause 7.8 of the LEP with regards to the Project.
Clause 7.9 Wetlands	The southern extent of the Site is mapped under the LEP to be land impacted as wetlands (refer to **Figure 4-7**). The EIS will consider the relevant matters of consideration contained under clause 7.9 of the LEP with regards to the Project.



AECOM

N

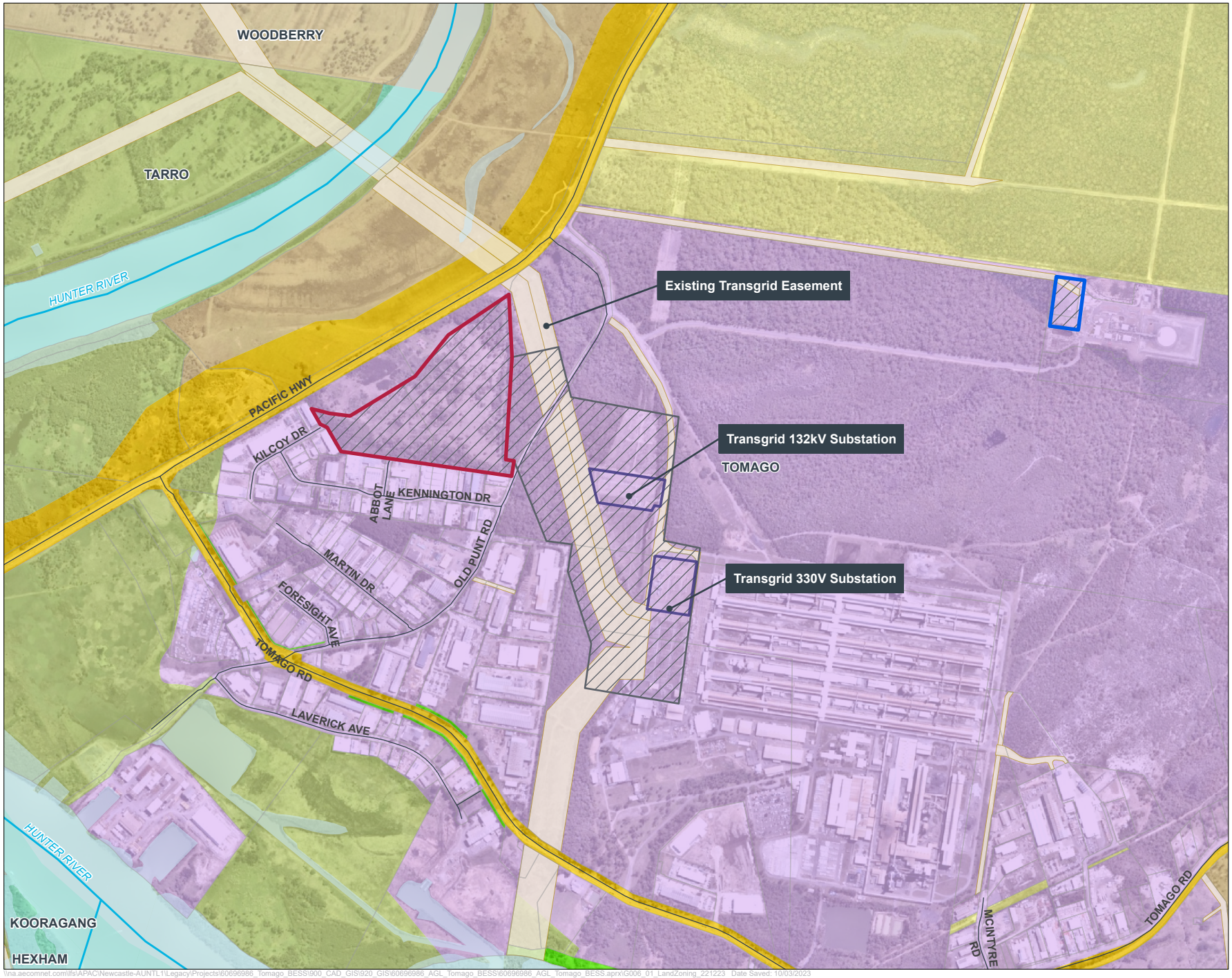
0 200 400 m

Legend

- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Coastal Environment Area
- Water Body
- Easement
- Cadastral Boundary
- Watercourse
- Road

FIGURE 4-1: COASTAL ENVIRONMENT AREA

Source: Nearmap, 2022.



AECOM

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0 200 400 m

Legend

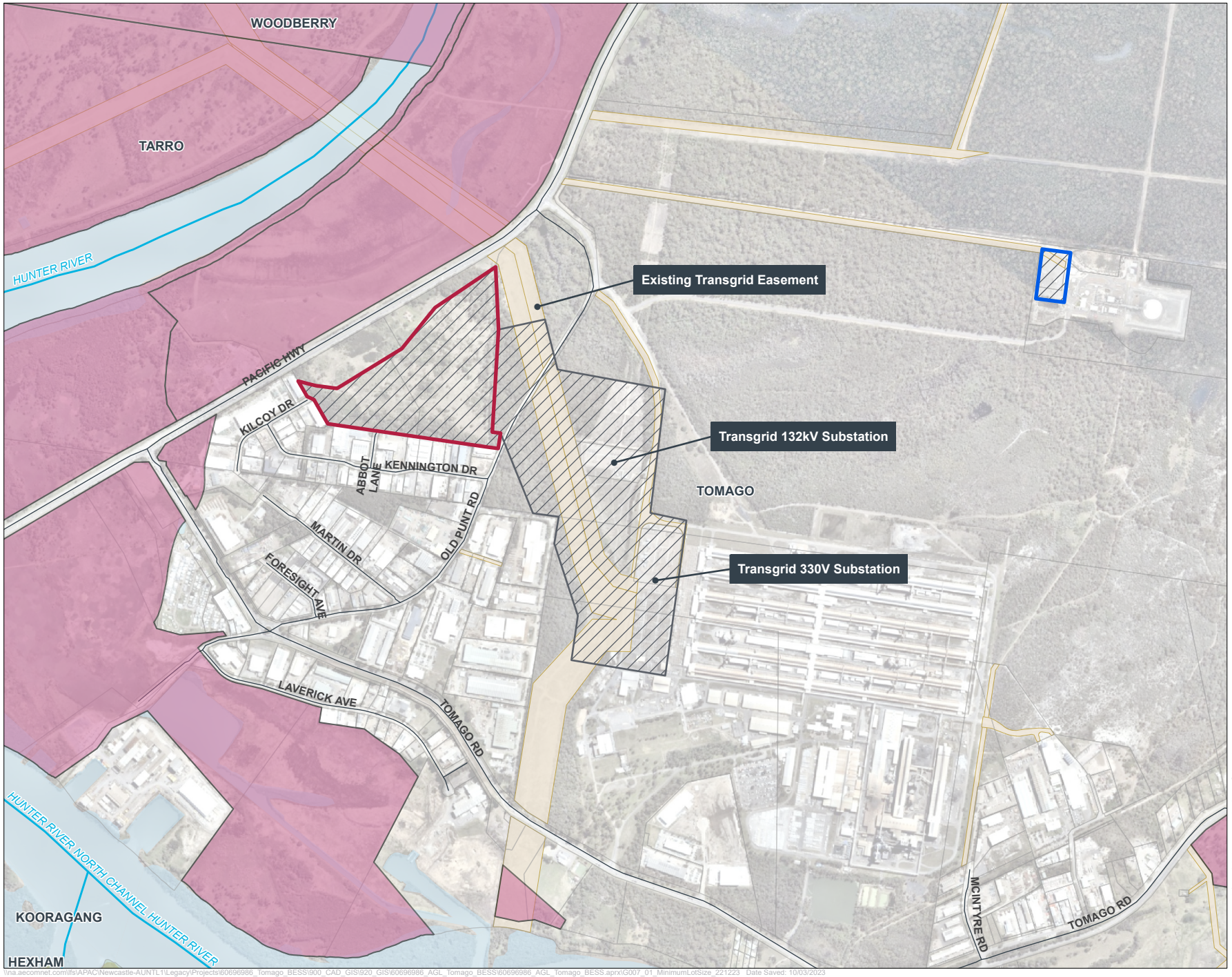
- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Substations
- Cadastral Boundary
- Water Body
- Transmission Line Easement
- Watercourse
- Road

Land Zones

- IN1 General Industrial
- RE1 Public Recreation
- RU1 Primary Production
- RU2 Rural Landscape
- SP1 Special Activities
- SP2 Infrastructure
- W1 Natural Waterways
- W2 Recreational Waterways
- C2 Environmental Conservation

FIGURE 4-2: LAND ZONING MAP

Source: Nearmap, 2022.



AECOM

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Legend

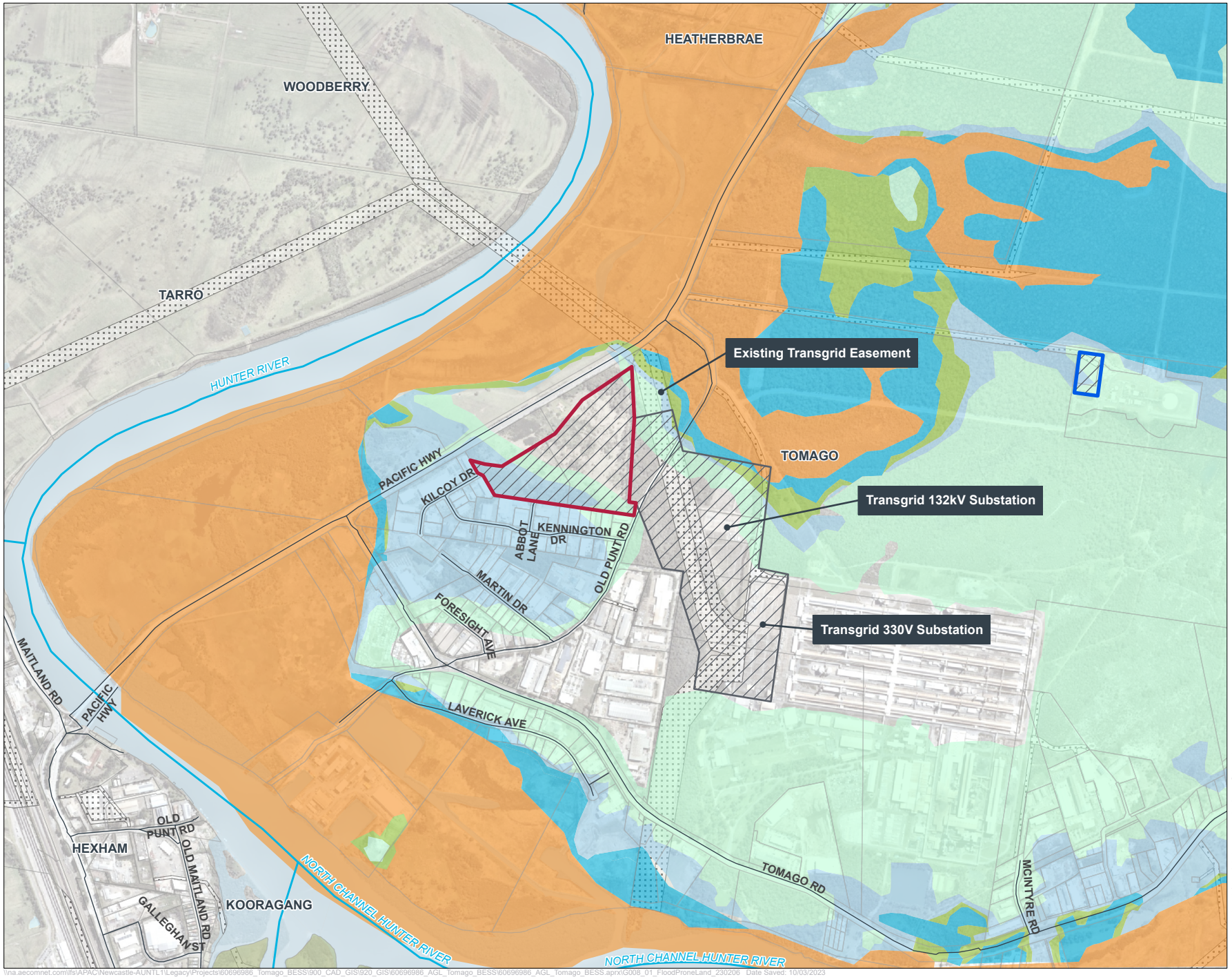
- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Water Body
- NPWS Reserve
- Easement
- Cadastral Boundary
- Watercourse
- Road

Minimum Lot Size

- 10 - 49.9 ha

FIGURE 4-3: MINIMUM LOT SIZE

Source: Nearmap, 2022.



AECOM

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Legend

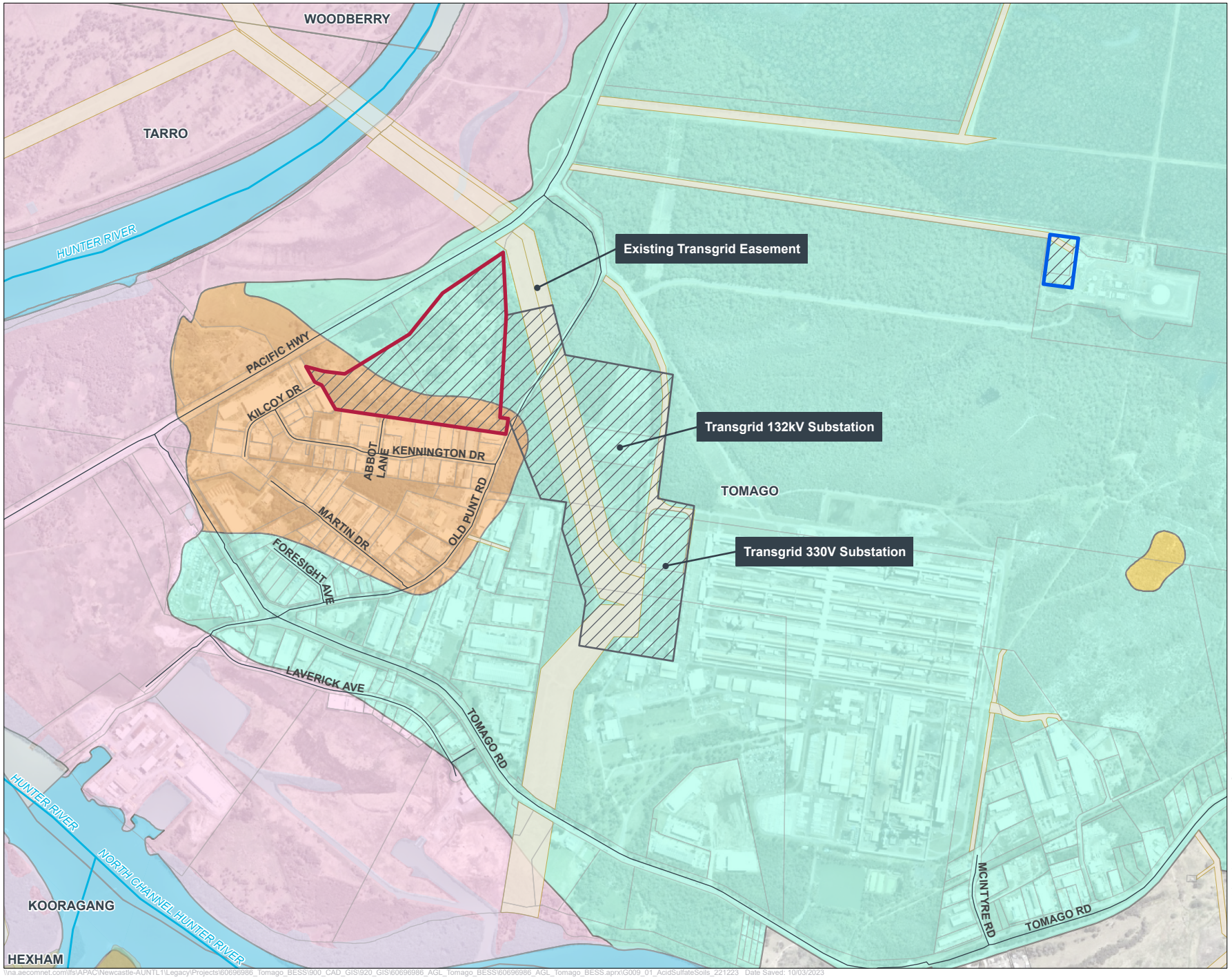
- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Cadastral Boundary
- Water Body
- NPWS Reserve
- Easement
- Watercourse
- Road

Flood Hazard Categories (Port Stephens Council 2016)

- Minimal Risk Flood Prone Land
- Low Hazard Flood Storage Area
- Low Hazard Flood Fringe Area
- High Hazard Flood Storage Area
- High Hazard Floodway Area

FIGURE 4-4: FLOOD PRONE LAND

Source: Nearmap, 2022, Port Stephens Council.



AECOM

N

0 200 400 m

Legend

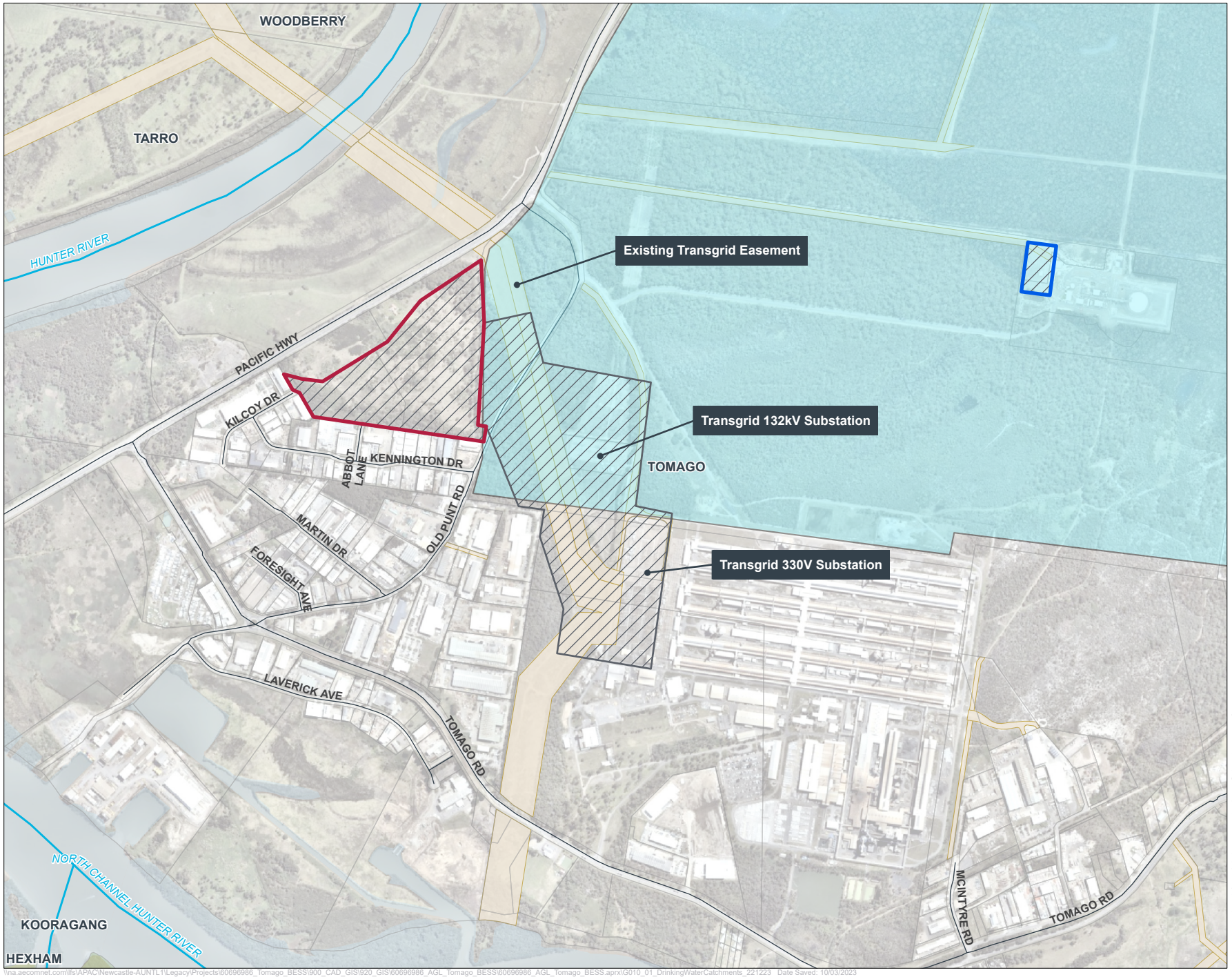
- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Water Body
- NPWS Reserve
- Easement
- Cadastral Boundary
- Watercourse
- Road

Acid Sulfate Soils

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5

FIGURE 4-5: ACID SULFATE SOILS

Source: Nearmap, 2022.



AECOM

N

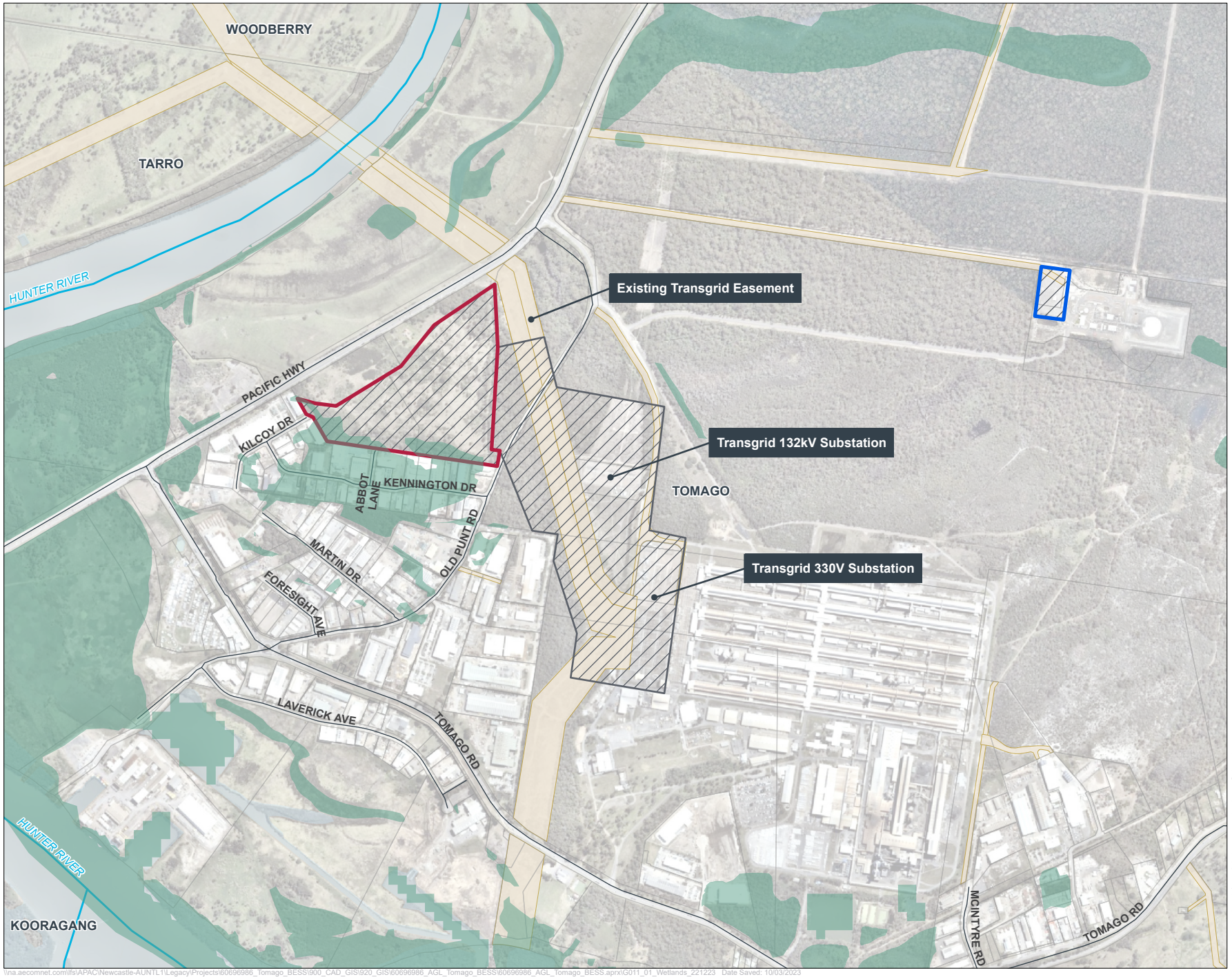
0 200 400 m

Legend

- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Hunter Water Drinking Water Catchment
- Water Body
- NPWS Reserve
- Easement
- Cadastral Boundary
- Watercourse
- Road

FIGURE 4-6: DRINKING WATER CATCHMENT

Source: Nearmap, 2022.



AECOM

N

0 200 400 m

Legend

- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Wetlands
- Water Body
- Easement
- Cadastral Boundary
- Watercourse
- Road

FIGURE 4-7: WETLANDS

Source: Nearmap, 2022.

4.4 Other relevant NSW legislation

4.4.1 Aboriginal Land Rights Act 1983

The *Aboriginal Land Rights Act 1983* (ALR Act) was established to provide land rights to Aboriginal persons, as well as provide for representative Aboriginal Land Councils to vest land in those Councils. The ALR Act, is administered by the NSW Department of Aboriginal Affairs and establishes a compensatory regime, which recognises that land is of spiritual, social, cultural and economic importance to Aboriginal people. The ALR Act established the NSW Aboriginal Land Council (NSWALC) and a network of over 120 Local Aboriginal Land Councils (LALCs) and requires these bodies to:

- *Take action to protect the culture and heritage of Aboriginal persons in the LALC's area, subject to any other law*
- *Promote awareness in the community of the culture and heritage of Aboriginal persons in the LALC's area.*

LALCs constituted under the ALR Act can make claims in respect of '*claimable Crown land*'. The Registrar of the ALR Act must maintain the Register of Aboriginal Land Claims under section 166 of the ALR Act. All land claims that have been made under the ALR Act are recorded in the Register. Noting that the lots within the Project Area are privately owned (with exception to the Council road reserve) it is unlikely that there is an active Aboriginal Land Claim over the Project Area.

4.4.2 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act), administered by the Environment, Energy and Science (EES) Group of the DPE, is the primary legislation for the protection of Aboriginal cultural heritage in NSW. The NPW Act gives the Chief Executive responsibility for the proper care, preservation and protection of 'Aboriginal objects' and 'Aboriginal places', defined as follows:

- An *Aboriginal object* is any deposit, object or material evidence (that is not a handicraft made for sale) relating to Aboriginal habitation of the area that compromises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction (and includes Aboriginal remains).
- An *Aboriginal place* is a place so declared by the Ministers under section 84 of the NPW Act because in the opinion of the Minister, the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.

An Aboriginal Heritage Impact Permit (AHIP) is required under section 90 of the NPW Act before harming or desecrating an Aboriginal object, otherwise, such action is an offence under the NPW Act. Despite this, under section 4.41 of the EP&A Act, an AHIP is not required for SSD. Instead, potential impacts to Aboriginal heritage are typically managed under Aboriginal Cultural Heritage Management Plans (ACHMPs), required under relevant conditions of consent.

4.4.3 Water Management Act 2000

The *Water Management Act 2000* (WM Act) establishes a framework for managing water in NSW. Section 91 of the WM Act discusses activity approvals and notes that there are two types of approvals, namely controlled activity approvals and aquifer interference approvals.

The WM Act specifies certain activities as controlled activities when carried out on waterfront land. This is defined as within 40 metres of the banks of a river, lake or estuary (or are prescribed by the regulations). A controlled activity approval for this Project would not be required by virtue of Section 4.41 of the EP&A Act. This section of the EP&A Act specifies certain approvals that are not required for SSD, including an activity approval under section 91 of the WM Act. Despite this provision, this section of the EP&A Act does not remove the requirement for obtaining an aquifer interference approval. Separate exemptions under the *Water Management (General) Regulation 2018* may apply to the requirement for an aquifer interference approval or water access licence.

4.4.4 Protection of the Environment Operations Act 1997

The objects of the POEO Act contained in section 3 include to rationalise, simplify, and strengthen the regulatory framework for environment protection. Chapter 3 of the POEO Act outlines the specific circumstances under which an environment protection licence (EPL) must be obtained.

Schedule 1 of the POEO Act provides a list of activities for which an EPL would be required. Clause 17 of Schedule 1 lists general electricity works as a scheduled activity where they exceed the capacity to generate 30 MW. The Project does not involve the generation of electricity. Instead, the Project stores and releases electricity that has already been generated elsewhere. Accordingly, an EPL is not required for the Project.

4.4.5 Contaminated Land Management Act 1997

The general object of the *Contaminated Land Management Act 1997* (CLM Act) is to establish a process for investigating and (where appropriate) remediating land that the EPA considers to be contaminated enough to require regulation under Division 2 of Part 3 of the CLM Act. A search of the NSW EPA contaminated land database (undertaken on 12 December 2022) confirmed that the Project Area is not listed as a notified contaminated site under the CLM Act. Nonetheless, investigations conducted to date have identified that there is a low to moderate risk that ground contamination is present at the Site as a result of previous land use activities (Aurecon, 2019). A qualitative assessment will be undertaken to support the EIS, which would be based on existing ground investigation data for the Project Area.

Section 60 of the CLM Act also includes a 'duty to notify' where significant contamination is identified. This section would be relevant if any previously unidentified contamination is encountered that exceeds notification thresholds.

4.4.6 Biodiversity Conservation Act 2016

The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development (described in section 6(2) of the *Protection of the Environment Administration Act 1991*).

Section 7.9(2) of the BC Act states that a development application for SSD is to be accompanied by a BDAR (as defined under section 7.1 of the BC Act), unless both the Planning Secretary and the EPA determine that the proposed development is not likely to have any significant impact on biodiversity values. Further guidance is provided under section 7.9(3) of the BC Act, which denotes that the EIS, which accompanies any such application, is to include the biodiversity assessment required by the environmental assessment requirements (i.e. SEARs). A BDAR will be prepared to support the Project, with the outcomes of this assessment summarised in the EIS.

4.4.7 Roads Act 1993

An objective of the *Roads Act 1993* (Roads Act) is to confer certain functions (in particular, the function of carrying out road work) on Transport for NSW (TfNSW) and on other roads authorities, among others. Section 7 of the Roads Act defines the respective road authorities depending on the classification of the road. Of relevance to this Project is Old Punt Road, which is a local road under the Roads Act. The Council of a LGA is the roads authority for all public roads within the area, other than:

- *Any freeway or Crown Road, and*
- *Any public road for which some other public authority is declared by the regulations to be the roads authority.*

Section 138 of the Roads Act relates to works and structures, whereby *a person must not erect a structure or carry out a work in, on or over a public road… otherwise than with the consent of the appropriate road's authority*. The Project will require works within road reserve areas. In addition, construction of the electricity transmission infrastructure that crosses over Old Punt Road may require consent under Section 138. Consultation with Port Stephens Council and, where appropriate with TfNSW, will continue with respect to the consent required for works within the Old Punt Road corridor.

4.4.8 Heritage Act 1977

The *Heritage Act 1977* (NSW) aims, among other things, to promote an understanding of heritage, encourage conservation and provide for protection of NSW State heritage. State and/or local heritage significance can relate to historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values of a place, building, work, relic, moveable object or precinct. No heritage items were identified under the NSW State Heritage Register or Port Stephens LEP within the Project Area.

4.5 Commonwealth legislation

4.5.1 Airports Act 1996 and Airports (Protection of Airspace) Regulations 1996

The Airports Act 1996 (Airports Act) and the Airports (Protection of Airspace) Regulation 1996 (Airports Regulation) establish a framework for the protection of airspace at and around airports. As the Newcastle Airport and RAAF Williamtown base do not meet the definition of "*airports*" to which Part 12 of the Airports Act applies, the Airports Act and Airports Regulation do not apply to the Newcastle Airport.

Notwithstanding the above, the Project would involve the potential use of temporary cranes during construction. Guidance related to the operation of cranes and tall structures in the vicinity of Newcastle Airport is provided by the Civil Aviation Safety Authority (CASA), pursuant to *AC 139-07(2) – CASA Advisory Circular – Reporting of Tall Structures* (Advisory Circular). The Advisory Circular provides instructions to seek approval from the Air Base Command Post (ABCP) to erect a crane or tall structure (exceeding 30 m above ground level) within 15 km of Newcastle Airport. The Project Area is located approximately 10 km south-west of Newcastle Airport. As such, the requirements of the Advisory Circular will be considered.

Pursuant to section 9 of the Advisory Circular, all applicants are to provide a completed application to the ABCP at least two business days prior to the intended use of the crane or erection of the tall structure.

AGL will consult with the ABCP with respect to the potential impact on the Newcastle Airport and Williamtown RAAF base operations that may result from the use of cranes during Project construction.

4.5.2 Environment Protection and Biodiversity Conservation Act 1999

Section 18 of the *Environment Protection and Biodiversity Act 1999* (EPBC Act) requires a proponent of a development or activity to obtain approval from the Commonwealth Minister for the Environment when undertaking an activity which is likely to cause a significant impact to a Matter of National Environmental Significance (MNES). MNES include threatened species or ecological communities listed under the EPBC Act.

If the Project is likely to significantly impact on a MNES, a referral to the Commonwealth Minister for the Environment would be required to determine whether the Project is a controlled action or can be undertaken in a particular manner to adequately mitigate potential impacts. If the Project constitutes a controlled action the activity will be subject to further assessment before a determination is made by the Commonwealth Minister for the Environment regarding whether the activity can be carried out, generally subject to conditions.

A search of the EPBC Act Protected Matters Search Tool was undertaken on 15 December 2022 for a 10 km buffer around the Project Area. The search identified one Wetland of International Importance, seven threatened ecological communities, 95 threatened flora and fauna species, and 77 listed migratory species with potential to occur within 10 km of the Project Area.

The results of the Protected Matters search for MNES within 10 km of the Project Area is provided in **Table 4-3**. The Protected Maters search report can be viewed in **Appendix B**.

Table 4-3 MNES within 10 km of the Project Area

MNES	MNES within 10km of the Project Area
World Heritage Properties	None
National Heritage Place	None

MNES	MNES within 10km of the Project Area
Wetlands of International Importance	1
Great Barrier Reef Marine Park	None
Commonwealth Marine Area	None
Listed Threatened Ecological Communities	7
Listed Threatened Species	95
Listed Migratory Species	77

As part of the preliminary EIS activities, a review of the potential impacts of the Project would be undertaken. Following the review of potential impacts, as a pro-active and precautionary measure, a referral will be made to DCCEEW under the EPBC Act to determine whether the Project constitutes a controlled action.

4.5.3 Native Title Act 1993

The *Native Title Act* 1993 (NT Act) provides for the recognition and protection of native title for Aboriginal peoples and Torres Strait Islanders. The NT Act recognises native title for land over which native title has not been extinguished and where persons are able to establish continuous use, occupation or other classes of behaviour and actions consistent with a traditional cultural possession of those lands. The NT Act also makes provision for Indigenous Land Use Agreements (ILUA) to be formed, as well as a framework for notifying native title stakeholders for certain future acts on land where native title has not been extinguished.

A search of the *National Native Title Tribunal Register* was undertaken on 12 December 2022 using the National Native Title Tribunal online system. The search returned no active or historic claims associated with the Project Area. As all land within the Project Area is either freehold or the subject of a 'previous exclusive possession act', native title rights will not be impacted by the Project.

5.0 Engagement

5.1 Introduction

AGL seeks to establish and maintain authentic relationships with the community and interested stakeholders through consultation and effective communications from an early stage of the Project. This is to ensure the community are meaningfully included during the feasibility, planning and development phases. AGL will inform the local community and stakeholders at key milestones as the Project progresses, with the aim to demonstrate the commitment to transparency and accountability.

The Project is not expected to generate significant stakeholder interest due to the anticipated low level of impact. AGL has existing strong relationships with key local stakeholders due to ongoing community relations activities from the Newcastle Power Station project (SSI-9837), and AGL's Newcastle Gas Storage Facility near the Site. Stakeholder engagement would be targeted to informing neighbours and key local stakeholders of the assessment process and anticipated Project activities. Questions would be identified and addressed throughout the design and environmental assessment process.

The objectives of AGL's community engagement relating to the Project are to:

- **Communicate and engage with community members at an early stage** to ensure the community feel meaningfully included during the feasibility, planning and development phase.
- **Inform the local community and stakeholders** of upcoming milestones or key decision points, demonstrating our commitment to transparency and accountability.
- **Educate the local community and stakeholders** through providing adequate explanations and information regarding how batteries contribute to the renewable energy transition.
- **Minimise negative sentiment** by identifying potentially impacted groups and individuals and working with them authentically to address their concerns.
- **Establish a strong social licence to operate** by understanding and meeting community expectations.
- **Understand how AGL can positively contribute to the community** for the lifespan of the project and beyond, with engagement activities each year.
- **Meet regulatory community engagement requirements** required for the development application process.

Section 5.2 below outlines the consultation that has been completed to date. **Section 5.3** outlines the proposed consultation that would take place as part of the preparation of the EIS. The outcomes of consultation outlined under **Section 5.3** will be included in the EIS and relevant technical studies.

5.2 Engagement carried out

Table 5-1 Scoping Report Consultation activities

Stakeholder	Date	Comments
Department of Planning and Environment (DPE)	December 2022	DPE welcomed the update and had no further comment.
	February & March 2023	AGL provided DPE with a draft Scoping Report on 15 February 2023. Comments were received by AGL on 3 March 2023 and a meeting held to discuss these comments on 8 March 2023. Relevant comments have been addressed in this Scoping Report.
Department of Climate Change, Energy, the Environment and Water (DCCEEW)	January 2023	DCCEEW welcomed the update and had no further comment.

Stakeholder	Date	Comments
Transgrid	October 2022 and ongoing	A Connection Enquiry has been submitted to Transgrid. AGL will remain in discussions to determine and agree the preferred connection point to the nominated substation.
Tomago Aluminium Company (TAC)	January 2023	Project briefing provided and there was no further comment.
Transport for NSW (TfNSW)	January 2023 - March 2023	Project briefing provided and fact sheet issued. The key item for discussion related to Compulsory Acquisition and the requirement for secondary emergency access providing ingress/egress to the Pacific Highway. The existing ingress/egress point to the Pacific Highway will be impacted by the M1 Extension Project as TfNSW proposed to compulsory acquire the land where the access point was to be located. However, the issue was resolved by agreement as part of the compulsory acquisition process, with TfNSW committing to replacing the lost access point with a new one. The location of the new access point is reflected in the agreed Property Adjustment Plans. AGL and TfNSW will continue to consult regarding both projects.
Federal Member for Paterson, Meryl Swanson MP	February 2023	Project briefing provided and there was no further comment
NSW State Member for Port Stephens, Kate Washington MP	February 2023	Project briefing provided and there was no further comment
Port Stephens Council (PSC) Mayor and General Manager	January 2023	Welcomed the update and requested AGL provide a briefing to the Councillors when the Project is on public exhibition. No further comment.
PSC Commercial investment Manager	January 2023	Project briefing provided and confirmed they will progress necessary land matters with AGL
Worimi Local Aboriginal Land Council	February 2023	Project briefing provided and there was no further comment
Neighbours: 135 Oakfield Rd Woodberry, 838 Tomago Road Tomago, 8 Old Punt Road, OPR Old Punt Road Tomago, 2163 Pacific Hwy Heatherbrae, Kennington Road Industries 1,4,3 6,8,11,12,13,15, 19,21,28,30.	February 2023	Fact sheets delivered and no further comments received
Neighbour: 819 Tomago Rd, Tomago (Sweetwater Grove Over 55s Village)	February 2023	Project briefing provided and fact sheets delivered and there was no further comment
Lot 54 DP 270494	February 2023	Project briefing emailed and fact sheet delivered and there was no further comment
Hunter Water	December 2022	Project briefing provided and there was no further comment
Newcastle Airport	January 2023	Project briefing provided and there was no further comment

Stakeholder	Date	Comments
Hunter Botanic Gardens	February 2023	Project briefing provided and now working with surrounding landowners to share information regarding the threatened *Grevillea parviflora subsp. parviflora* in the area
Department of Defence	January 2023	Briefing note emailed and there was no further comment
CASA	January 2023	Project briefing provided and there was no further comment
NSW Indigenous Chamber of Commerce	February 2023	Project briefing provided and there was no further comment
PSC – Koala Steering Committee	December 2022	SteerCo requested AGL provide a Project briefing at an upcoming Committee meeting (scheduled for 10 May 2023)
Hunter Business Chamber	February 2023	Project briefing provided and there was no further comment
Maitland City Council – Mayor	February 2023	Introduced Project and offered Project briefing and there was no further comment received
Newcastle Council – Mayor and Chief Executive Officer (CEO)	February 2023	Project briefing with comments received including expressing interest for local manufacturers and employment opportunities to be explored as well as wanting the Project to start as soon as possible
AGLM Community Dialogue Group meeting including the following stakeholders: • Muswellbrook Shire Council – General Manager and Environment Manager Planning • Singleton Council – Mayor, Manager Strategy and Director Organisation and Community • Upper Hunter Shire Council – Mayor and Director Environmental and Community Services • Muswellbrook Chamber of Commerce and Industry – President • Singleton Business Chamber – President • Wonnarua Nation Aboriginal Corporation – CEO • Wanaruah Local Aboriginal Land Council – CEO • Lake Liddell Recreation Area Trust – Chair • Lake Liddell Recreation Area – Manager • Individual Community Representatives x 3	March 2023	Project briefing provided and there was no further comment

5.3 Engagement to be carried out

5.3.1 Community and Stakeholder Engagement Plan

AGL will develop a Community and Stakeholder Engagement Plan (CSEP) for the EIS once SEARs are received. The outcomes of consultation will be included in the EIS and relevant technical studies. The purpose of the CSEP is to ensure ongoing engagement and effective communication with key stakeholders and the community.

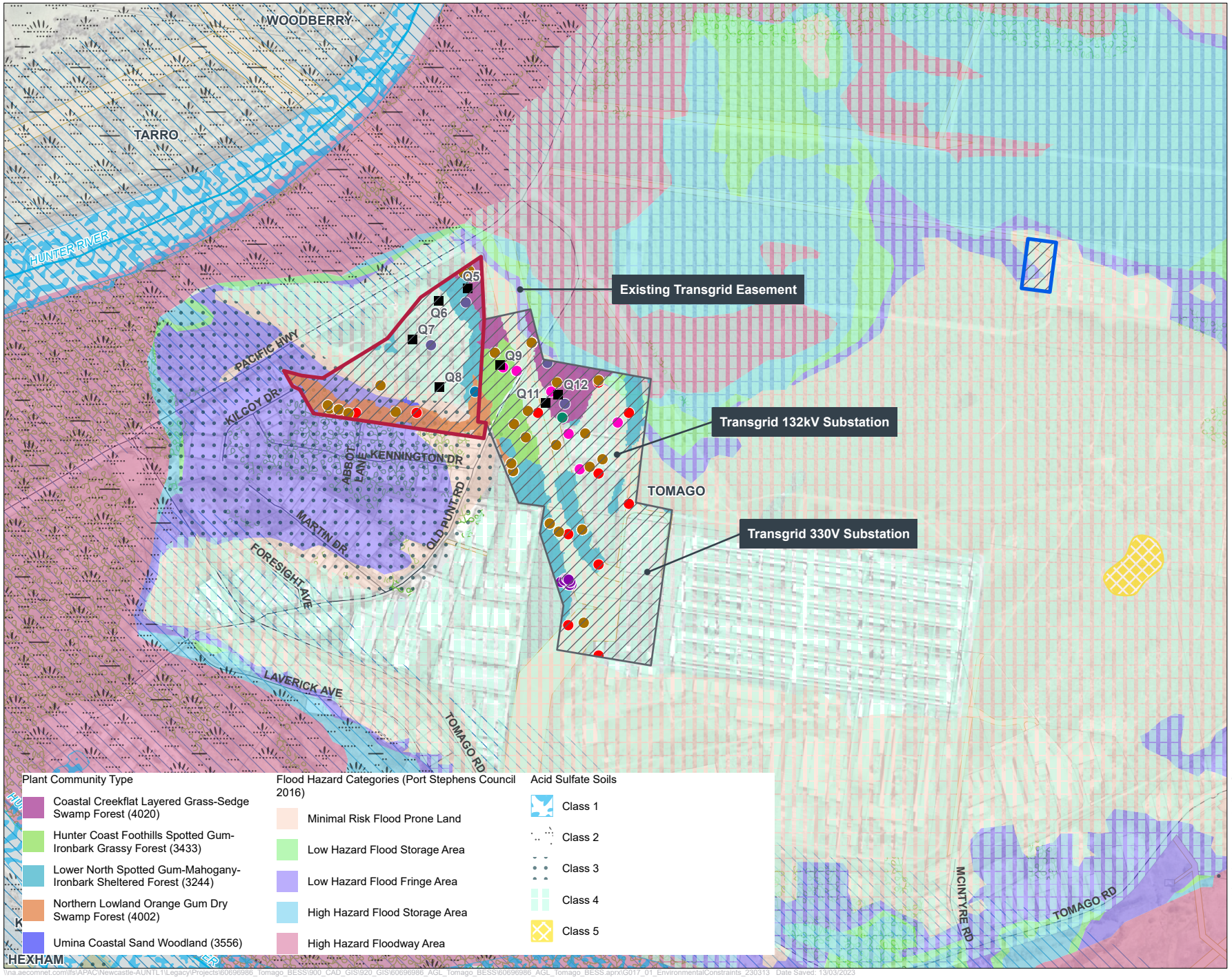
5.3.2 Agency consultation

Agency consultation will be undertaken with the relevant stakeholder groups identified within the CSEP (refer to **Section 5.3.1).** Details of the engagement carried out, and the outcomes of the consultation will be included in the EIS.

6.0 Proposed assessment of impacts

6.1 Introduction

The identification of issues to be addressed in the EIS has been undertaken through a risk-based approach in accordance with the *State significant development guidelines – preparing a scoping report* (DPE, 2021). This process involved reviewing previous reports, undertaking limited investigations (such as site inspections), and desktop searches of proprietary environmental databases between November 2022 to January 2023 to identify key issues and sensitive areas. A summary of the key environmental matters identified during the risk assessment is provided in **Section 6.2**, through to **Section 6.8**. Other matters for consideration are identified in **Section 6.9.** A copy of DPE's Scoping Worksheet is provided in **Appendix A**. The intent of the discussion is to demonstrate an understanding of the relevant environmental matters and the need for further assessment, as well as the requirement for the implementation of mitigation measures for these matters. An overview of the environmental constraints is shown on **Figure 6-1**.



AECOM

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Legend

- The BESS Site
- Project Area
- Proposed Construction Laydown Area
- Wetlands
- Coastal Environment Area
- Transmission Line Easement
- Water Body
- Road
- Watercourse
- Plot Transect
- Dead Stag
- Hollow-bearing Tree
- Nest
- Grevillea

BioNet Records

- Endangered, Protected
- Protected
- Vulnerable
- Vulnerable, Protected

FIGURE 6-1: ENVIRONMENTAL CONSTRAINTS

Source: Nearmap, 2022.

6.2 Biodiversity

A BDAR was prepared for the Site by Kleinfelder Australia Pty Ltd in 2019 for the purposes of the NPS. The findings of this BDAR have been summarised in this Scoping Report providing an understanding of the existing environment and identifying potential impacts that may result from the Project.

6.2.1 Existing environment

The Project Area is located on a small ridge in a relatively flat landscape between 4 to 16 m above sea level. It is located on the boundary of two bioregions – the Sydney Basin Region to the west and North Coast Region to the east. The Project Area consists of remnant and managed native vegetation, managed grassland/ shrubland and a wetland area with varying degrees of condition and disturbance history. Refer to **Figure 6-1** for an overview of the biodiversity values within the Project Area. The Ramsar listed Hunter Wetlands National Park is located about 2 km south of the Site. Seven plant community types (PCTs) were surveyed to be present within and surrounding the Project Area (Kleinfelder, 2019). They include:

- PCT 1590: Spotted Gum - Broad-leaved Mahogany - Red Ironbark shrubby open forest
- PCT 1646: Smooth-barked Apple - Blackbutt - Old Man Banksia woodland on coastal sands of the Central and Lower North Coast
- PCT 1071: *Phragmites australis and Typha orientalis* coastal freshwater wetlands of the Sydney Basin
- PCT 1725: Swamp Mahogany – Broad-leaved Paperbark – Swamp Water Fern – Plume Rush swamp forest on the coastal lowlands of the Central Coast and Lower North Coast
- PCT 1235: Swamp Oak swamp forest of the coastal lowlands of the NSW North Coast Bioregion
- PCT 1724: Broad-leaved Paperbark – Swamp Oak Saw Sedge swamp forest on coastal lowlands of the Central Coast and Lower North Coast
- PCT 1568: Blackbutt - turpentine – Sydney Blue Gum mesic tall open forest on ranges of the Central Coast.

Importantly, the 2019 BDAR only identified two PCTs within the Project Area, being (PCT 1590 and PCT 1646). One Endangered Ecological Community (EEC), '*Lower Hunter Spotted Gum – Ironbark Forest'*, was previously identified within the Project Area (Kleinfelder, 2019). The field survey undertaken by Kleinfelder to inform the BDAR (2019) identified 138 flora species (109 native and 29 exotic), including three threatened species, being:

- *Eucalyptus parramattensis subsp. Decadens* (Earp's Gum)
- *Maundia triglochinoides*
- *Grevillea parviflora subsp. Parviflora.*

Importantly however, only three individual *Eucalyptus parramattensis subsp. Decadens* (Earp's Gum) were recorded within the Project Area. These trees form part of a much larger population which occurs to the east and south of the NGSF that is located to the north-east of the Project Area. During the field surveys, Kleinfelder also identified a total of 45 fauna species (43 native and two introduced), including five threatened species (one bird and four mammals). The fauna identified comprised of 21 bird, 19 mammal, four amphibian and one reptile species. The threatened fauna species identified included:

- Masked Owl (*Tyto novaehollandiae*)
- Little Bentwing bat (*Miniopterus australis*)
- Eastern freetail bat (*Miniopterus australis*)
- Squirrel Glider (*Petaurus norfolcensis*)
- Grey-headed Flying-fox (*Pteropus poliocephalus*)
- Koala (*Phascolarctos cinereus*) (species habitat only).

Koalas have not been observed on the Site. The potential habitat trees are scattered, non-preferred species on Industrial land, and should not be broadly affected by the Project. Only the Squirrel Glider was observed within the Project Area, with other species observations occurring within the wider locality of the survey area.

6.2.2 Potential impacts

The Project and the Project Area contain a variety of biodiversity values and a range of threatened biota. The construction and operation of the Project would have the potential to impact on the biodiversity of the area. The following impacts upon biodiversity have been considered as having potential to occur during the construction and operation of the Project:

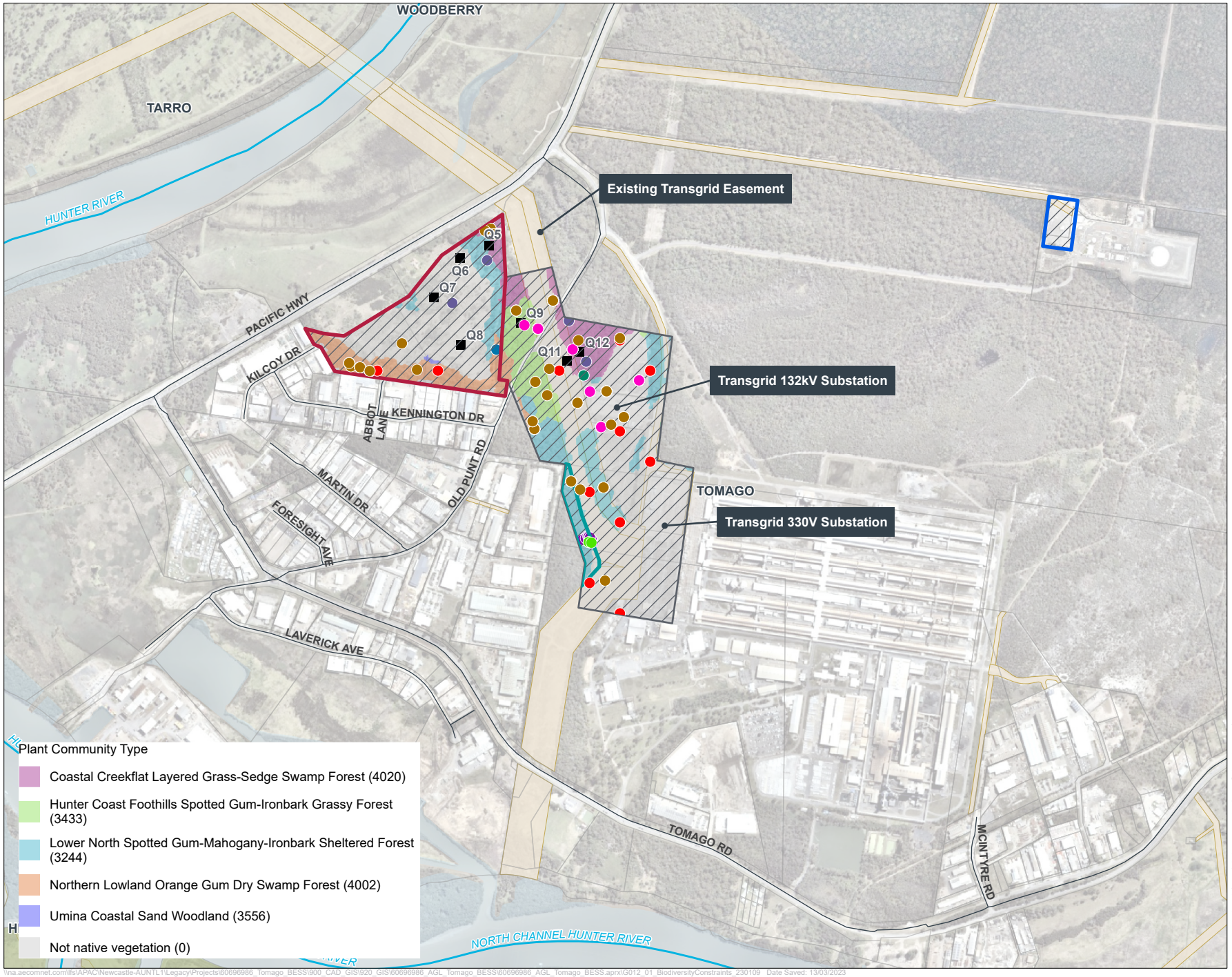
- Vegetation disturbance due to clearing for the Project
- Habitat disturbance and fragmentation due to vegetation removal as part of construction
- Disturbance of habitat and impact to the Hawks Nest and Tea Gardens endangered koala population, noting that Hawks Nest and Tea Gardens are over 60 km by road from the Site
- Introduction and spread of invasive species and weeds.

As shown in **Figure 6-2**, the Project Area has included an area where surface works would be avoided as this land contains known records of *Grevillea parviflora subsp. Parviflora.* This avoidance area has not been omitted from the Project Area, as whilst surface works that could impact the native vegetation in this area would be prohibited, subsurface works (e.g. the potential directional drilling of the transmission connection) could still occur as part of the Project.

6.2.3 Assessment approach

The assessment of the potential impacts of the Project on ecological values would be completed in line with the BAM and would be documented within a BDAR as required by the BC Act. This would build on the preliminary biodiversity work undertaken to inform the NPS and this Scoping Report. The biodiversity impacts will be assessed in accordance with section 7.9 of the BC Act and the BAM and documented in a BDAR. The biodiversity assessment will include the following:

- Additional site survey, as required, to meet the requirements of the BAM (DPE, 2021). Where surveys are not able to be conducted in a suitable season, species credit matters would be assumed to be present. Identification and description of the flora and fauna species, habitat, populations and ecological communities that occur, or are likely to occur.
- Assessment of any direct and indirect impacts of the project on flora and fauna species, populations, ecological communities and their habitats, and groundwater dependant ecosystems.
- Assessment of impacts prescribed by the *Biodiversity Conservation Regulation 2017*, and assessment of the potential for serious and irreversible impacts.
- Assessment of the significance of the impacts of the Project on species, ecological communities, and populations, and any groundwater dependant ecosystems listed under the Commonwealth EPBC Act, and the *Fisheries Management Act 2000* that occur, or are considered likely to occur.
- Identification of measures to avoid, minimise and mitigate impacts.
- Calculation of the number and type of ecosystem and species credits required to offset residual impacts of the Project in accordance with the BAM.



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Legend

- The BESS Site
- Project Area
- Avoidance Area
- Proposed Construction Laydown Area
- Substations
- NPWS Reserve
- Water Body
- Transmission Line Easement
- Cadastral Boundary
- Watercourse
- Road
- Plot Transect
- Dead Stag
- Hollow-bearing Tree
- Nest
- Grevillea

BioNet Records

- Endangered, Protected
- Protected
- Vulnerable
- Vulnerable, Protected

FIGURE 6-2: BIODIVERSITY AVOIDANCE AREA

Source: Nearmap, 2022.

6.3 Soils, groundwater and contamination

6.3.1 Existing environment

Soils

The Project is mapped under the Port Stephens LEP as predominantly Class 4 Acid Sulfate Soils (ASS) where there would be a low risk of ASS above 4 m below ground level.

The Project is located within the northern section of the Sydney Basin. The Australian Soil Map Classification (DPE, 2020) identifies soils in the vicinity of the Project Area as being Dermsols, which generally have structured B2 horizons, and are a heavy, sandy loam with a clay content of up to 15%.

The geology of the surrounding area comprises of sandstone and siltstone with underlying coal seams. The soil landscape of the Project Area, as identified in the eSpade viewer (DPE, 2022), is mainly mapped 'Beresfield' landscape, and northern boundary of the Site is mapped as 'Tea Gardens'. Both landscapes are known for seasonal water logging and for being highly acidic.

Groundwater

The Project is located within the Hunter Valley alluvial aquifer formation, and within the Hunter River Catchment 'Estuary Zone' where the Lower Hunter Water Plan (2014) applies. The hydrogeology of the locality is characteristic of clays, silts, sands and gravels, and a shallow water table.

A groundwater specialist study (Aurecon, 2019) identified a portion of the Site is located within the south-western edge of the Tomago Sand beds catchment area. The Tomago Sand beds are a natural groundwater aquifer which is recharged by rainfall infiltration and supplements the potable water supply for the Newcastle region. This groundwater catchment zone is the same catchment zone as the RAMSAR listed Kooragang Nature Reserve. However, based on existing studies (Aurecon, 2019), the groundwater flow from the Site is not expected to flow toward the RAMSAR listed wetlands.

Existing groundwater boreholes identified the geology beneath the Project Area is dominated by bedrock, and the groundwater flow has a low migration rate. Existing assessment indicates the groundwater depth within the Project Area is 1.5 metres below ground level (mbgl).

There are a few areas of mapped high to medium potential for Groundwater Dependant Ecosystems (GDEs) within the Project Area which may rely on shallow groundwater availability (BoM, 2022).

Existing assessments (Environmental Strategies, 2018) identified various water quality characteristics within groundwater samples across the Project Area including:

- Detection of several chemicals of potential concern (CoPC)
- High concentrations of copper
- Elevated chromium and zinc levels
- Electrical conductivity indicated groundwater was fresh to brackish
- pH levels were generally low ranging from 3.4 to 5.

Contamination

A review of the EPA register of notified contaminated sites (2022) indicates there are two contaminated sites within 1 km of the Project, including RZM and Balcombe Sweat Furnace.

6.3.2 Potential impacts

The following impacts upon soils, groundwater and contamination have been considered as having potential to occur during the construction and operation of the Project:

- Excavations, earth movement and vegetation removal may cause soil erosion and sedimentation (including the potential for sediment laden run-off)
- Vehicle movement may cause soil compaction, or disturbance and dispersion of soil including dust generation

- Potential for chemical and fuel spills during construction and/or operation, which may result in localised contamination of soils and groundwater
- Transport of pollutants offsite by contaminated groundwater, including potentially the Tomago Sand Beds.

6.3.3 Assessment approach

Investigations conducted to date have identified that there is a low to moderate risk that ground contamination is present at the Site as a result of previous land use activities (Aurecon, 2019).

The previous detailed site investigation (DSI) (Aurecon 2019), prepared for the NPS, would be relied upon to support the soil, groundwater and contamination assessment in the EIS. This DSI provides existing ground condition data for the Project Area. The assessment in the EIS would be prepared in accordance with the *Contaminated Land Guidelines: Consultants Reporting on Contaminated Land* (NSW EPA 2020), and the *National Environment Protection Measure* (Assessment of Site Contamination) (NEPC 2013) where relevant. Relevant details of the investigations and reliance on previous contamination assessments for the Project Area, which relate to the existing environmental conditions or have the potential to affect receivers will be documented in the EIS. Measures to manage potential contamination risks will be identified, if required.

A qualitative assessment of potential erosion and sedimentation impacts would also be completed. This assessment would discuss key potential impacts and outline management approaches. In line with the Blue Book (Landcom, 2004).

6.4 Surface water and flooding

6.4.1 Existing environment

Climate

The Project is located within a temperate climatic region, where there is a ‘wet’ (January to June) and ‘dry’ (July to December) season (BoM 2022). The average annual rainfall is 1067 mm.

Surface water

The Site is located approximately 500 m south-east of the Hunter River, a major low-land meandering estuarine river which discharges into the Tasman Sea through Newcastle Port. The surrounding land uses to the Hunter River and within the Hunter River catchment are generally disturbed or cleared landscapes comprising of rural, mining, industrial and urban developments.

The surface water and hydrology assessment identified several adjacent industrial sites south of the Project with potential sources of contamination (Aurecon, 2019). Existing surface water quality data (Aurecon, 2019) suggests the water quality within the surrounding wetland ponds and drainage lines typically comprise of:

- High inorganic nutrient levels
- High concentration of dissolved metals (zinc, copper, manganese)
- Fine suspended materials (including total organic carbon).

The Project Area is approximately 2 km south-east of the Hunter Estuary Wetland, which is RAMSAR listed. There is Resilience and Hazards SEPP mapped Coastal Wetlands located approximately 400 m west of the Project Area, which align with the Hunter River. The Port Stephens LEP also contains mapped areas of wetland. There is a small portion of wetland within the southern border of the Site.

Flooding

The Project Area is located at 4 m to 16 m Australian height datum (AHD). Surface water flows from the highest point in the northern part of the Site to a drainage line on either side (south to south-west, and north-east) as identified in existing studies (Aurecon, 2019). Neither drainage line directly flows into the Hunter River. One discharges through a LEP mapped wetland and the other flows to or into the surrounding industrial estate stormwater drainage toward the Hunter River (refer to **Figure 6-2**).

The Hunter River is the main flooding risk to the locality during high rainfall events, with one of largest recorded flooding events in 1955 having a peak flood level of 4 m AHD (Aurecon, 2019). A small portion of the southern and northern extents of the Site are located within the Port Stephens LEP Flood Planning area, characterised with a low to moderate flood hazard (refer to **Figure 6-1**).

6.4.2 Potential impacts

The Project has the potential to impact upon surface water during construction and operation. The following surface water impacts have been considered as having potential to occur during construction and/ or operation of the Project:

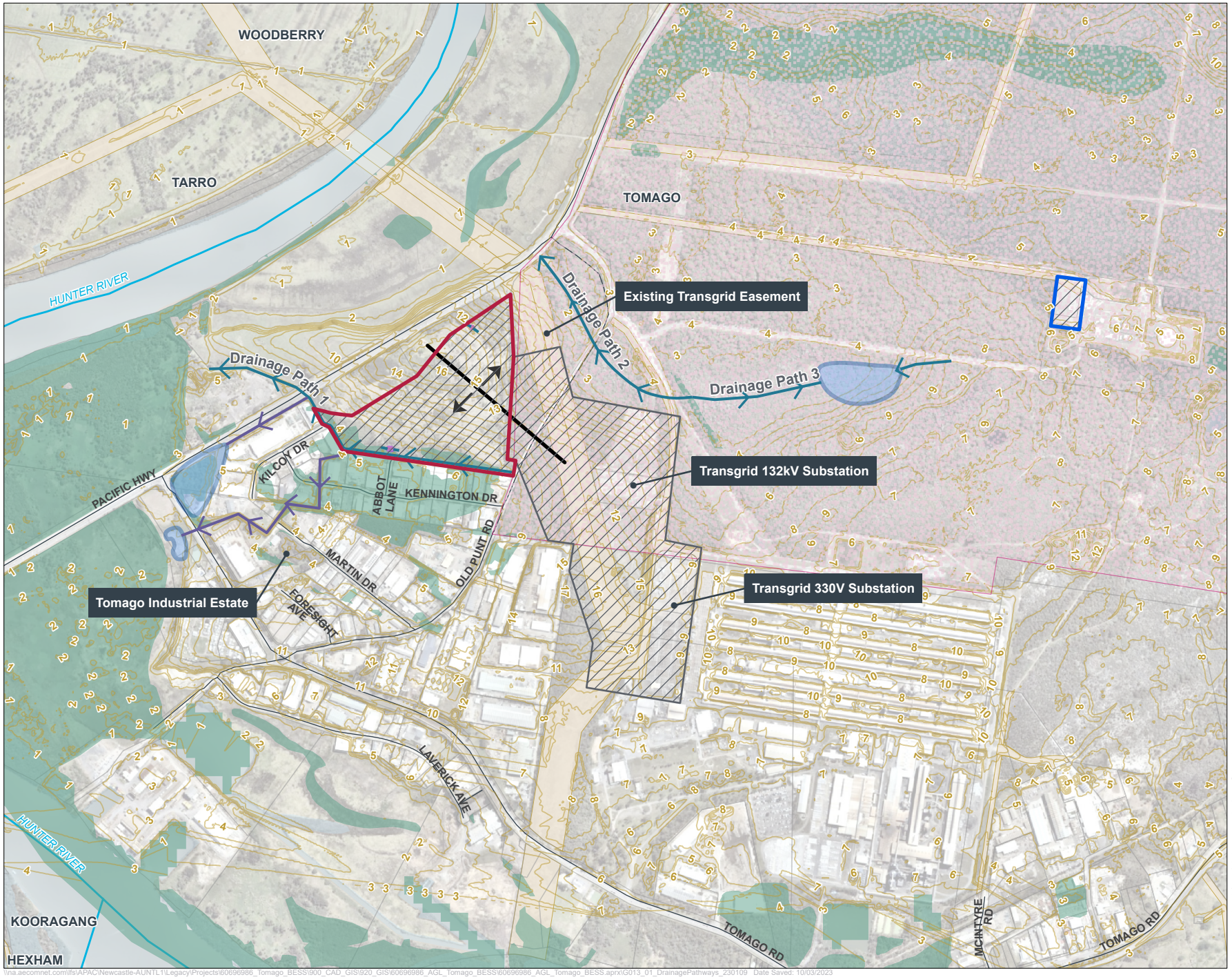
- Accidental spill or discharge of chemicals or hydrocarbons, such as fuels and oils in vehicles and/ or equipment with the potential to contaminate surface water and/or groundwater
- Erosion of soil and sedimentation through run off and transport of eroded sediments to waterways particularly during high rainfall events
- Flooding during construction of the transmission connection has the potential to result in erosion and associated water quality impacts, including within the Hunter drinking water catchment.

6.4.3 Assessment approach

Potential impacts to surface water quality and flooding on surrounding land, including impediments to the flow of water will be considered in the EIS. The impact assessment would include:

- A surface water impact assessment and flood risk assessment to identify potential water quality impacts and stormwater retention requirements
- An assessment of the Project and measures required to achieve a neutral or beneficial effect (NorBE) water quality.

The above assessments would be informed and undertaken in accordance with the project SEARs and the EIS would also identify recommendations for management and/or mitigation of potential impacts.



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Legend

- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Dams/ Seep Areas
- Saturated Area
- Tomago Sandbeds
- Wetlands
- Water Body
- Easement
- Cadastral Boundary
- Drainage Path
- Secondary Drainage Path
- Drainage Path Divider
- Drainage Path Direction
- 1m Contour
- Watercourse
- Road

FIGURE 6-3: DRAINAGE PATHWAYS

Source: Nearmap, 2022.

6.5 Aboriginal heritage

6.5.1 Existing environment

The Project is located within the Worimi Local Aboriginal Land Council area. The Site has been cleared and disturbed in the past, however, as it is at a relatively high point in the landscape, and given there are waterways nearby, there is the potential for Aboriginal heritage to be present.

The investigation area for the electrical transmission routes includes undisturbed areas and existing cleared easements.

A Search of the Aboriginal Heritage Information System (AHIMS, 2022) for the Project Area in December 2022 identified 20 registered Aboriginal Sites within the map extent, some of which are located within the Project Area.

Existing assessment (ERM, 2019b) identified various isolated finds, artefacts and a Potential Archaeological Deposit (PAD) within the Site. Furthermore, the significance of the identified cultural heritage items were not considered to hold more than a low social, historical or aesthetic significance for local Aboriginal People.

6.5.2 Potential impacts

The construction of the Project would have the potential to impact on the Aboriginal heritage of the area. The following impacts on Aboriginal heritage have been considered as having potential to occur during the construction of the Project:

- Disturbance of Aboriginal sites
- Unexpected or unidentified heritage items may be uncovered.

6.5.3 Assessment approach

The Aboriginal Cultural Heritage Assessment Report (ACHAR) would be prepared to meet the requirements of the SEARs. The SEARs are expected to require an assessment of the Aboriginal heritage values of the Project Area in accordance with Heritage NSW's *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* and *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*. Accordingly, archaeological survey of the Project Area and an assessment of cultural values would be undertaken, with the outcomes of the ACHAR summarised in the EIS.

6.6 Noise and vibration

6.6.1 Existing environment

The existing ambient noise sources are from vehicles on the Pacific Highway, Tomago Road and Old Punt Road, aircraft using Newcastle Airport, Tomago Aluminium Smelter and from local community activity and surrounding biodiversity. The majority of the land uses surrounding the Project Area include industrial or road infrastructure.

The sensitive receivers to the construction and operation of the Project are:

- Industrial receivers around 5 km of the Project Area
- Residential and temporary accommodation receivers from 450 m
- From 1.2 km a mix of residential, commercial and industrial receivers in various suburbs including Heatherbrae, Woodberry, Tomago and Hexham.

6.6.2 Potential impacts

The following noise and vibration impacts have been considered as having potential to occur during construction and operation of the Project:

- Construction noise associated with earthworks and construction activities
- General operational noise from the Project (including battery HVAC, transformers and inverters)

- Additional traffic associated with construction (although this is likely to be minor in comparison to the Pacific Highway).

6.6.3 Assessment approach

A noise and vibration assessment would be undertaken for the EIS, to confirm potential impacts and to avoid or minimise significant impacts. The EIS will include an assessment of the potential noise and vibration impacts of the Project with reference to the *Noise Policy for Industry* (EPA, 2017), *Interim Construction Noise Guideline* (Department of Environment, Climate Change and Water 2019) and *NSW Road Noise Policy* (DECCW, 2011).

6.7 Traffic and transport

6.7.1 Existing environment

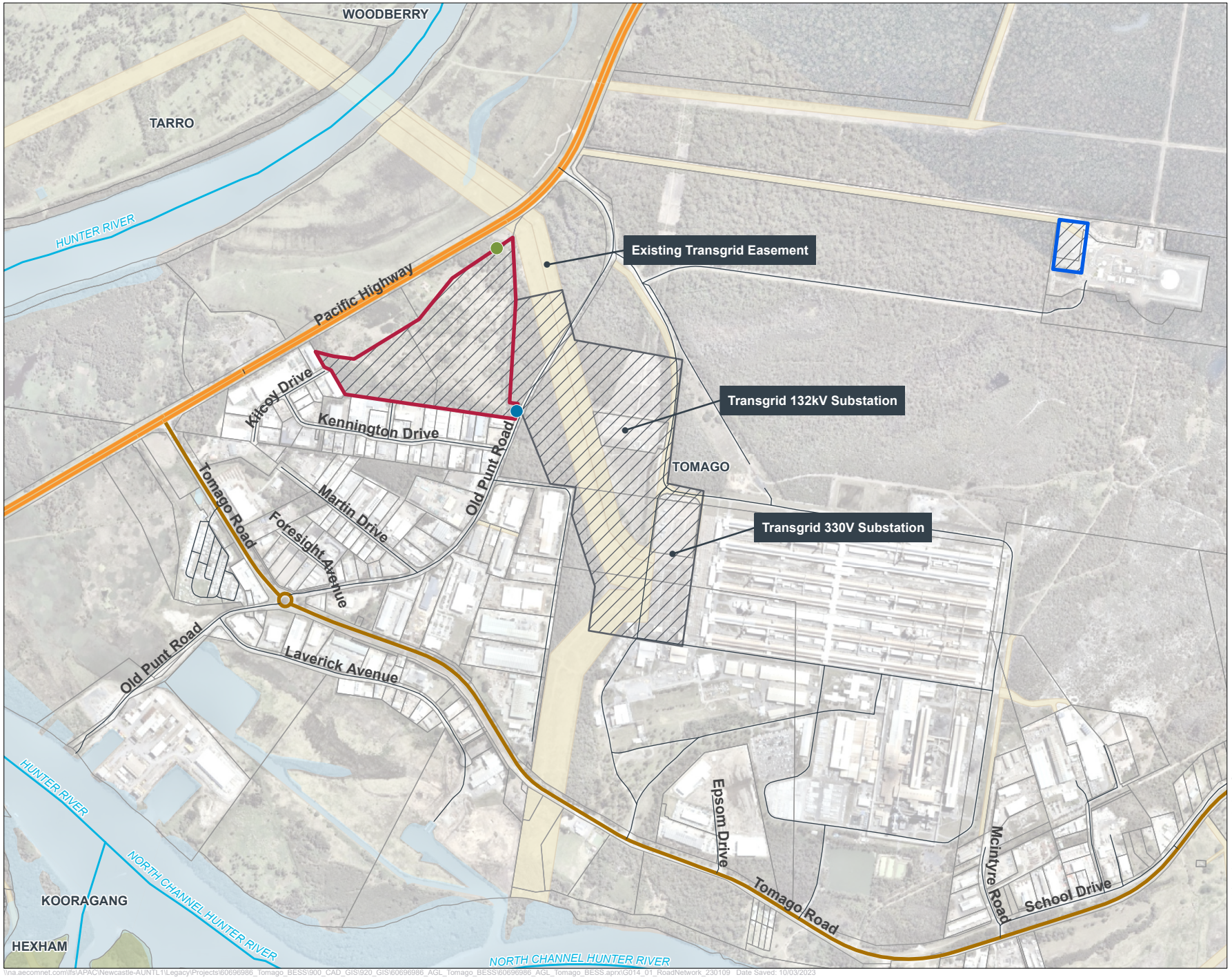
The Project is located adjacent to the Pacific Highway (M1). The Project Area is accessible from Old Punt Road. The Pacific Highway (M1) forms part of the major transport connection between Sydney and Queensland. Tomago Road is a State road, which connects Nelson Bay Road and the Pacific Highway (M1), and Old Punt Road provides access to the Tomago industrial precinct from the Pacific Highway (M1) and Tomago Road. **Figure 6-3** shows the local network that surrounds the Project Area and the indicative access points (primary and secondary) to the Site. Upgrades to be undertaken by TfNSW to the M1 Pacific Highway along the northern boundary of the Project Area have been recently approved. The potential cumulative impacts associated with this upgrade are discussed in Section **6.10**.

The surrounding road network was identified in a Traffic Impact Assessment for the NPS (SECA Solution, 2019), which noted:

- There are no dedicated pedestrian or cycling facilities on the local roads
- There is no formal on street/off-street parking near the Project Area
- Historically, the intersections nearby the Project Area on the Pacific Highway have a low number of collision incidents
- The Pacific Highway (M1) and Old Punt Road (including the intersection) is designed to cater for oversized and over mass vehicles
- Hunter Valley Bus Service (140) is the only bus service that operates between Raymond Terrace and Newcastle
- The nearest railway station is 2.3 km away at Hexham.

SECA Solution (2019) previously assessed the performance of the intersection at the Pacific Highway and Old Punt Road in respect of the NPS, and summarised the following observations:

- The intersection is controlled by signals with a right turn into and out of Old Punt Road which is controlled on demand
- Current delays and congestion are very low
- At peak periods generally between 7 am and 8 am, southbound traffic can queue up to 300 metres. This queue dissipates within one phase of the signals with this only occurring every 3-4 minutes typically in the peak periods. The traffic signal timings at this location are vehicle activated and the signal timings adjust to reflect the varying traffic demands through this intersection
- The queue for the right turns in and out of Old Punt Road are typically one vehicle only and all vehicles tend to clear the lights in one phase.



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Legend

- The BESS Site
- Proposed Construction Laydown Area
- Project Area
- Water Body
- NPWS Reserve
- Easement
- Cadastral Boundary
- Watercourse
- Motorway
- Primary Road
- Local Road
- Primary Access Point
- Secondary Access Point

FIGURE 6-4: EXISTING ROAD NETWORK

Source: Nearmap, 2022.

6.7.2 Potential impacts

The Project has the potential to impact upon traffic in the region during construction and operation. The following traffic and access impacts during construction of the Project have been identified:

- Increased traffic generation due to the importation of equipment and materials as well as construction employees and contractors
- Potential road damage due to heavy vehicle use
- Potential to temporarily increase traffic congestion
- The proposed electricity transmission routes may require works within public roads, which would have the potential to disrupt local traffic in the area.

No road upgrades are proposed as part of the Project and feedback received from TfNSW and Port Stephens Council to date has not indicated any requirements for potential road upgrades to facilitate the Project.

Operation of the Project (operational and maintenance aspects) would be unlikely to require a large number of site workers and as such is not expected to significantly impact the capacity of the local road network.

6.7.3 Assessment approach

A traffic and transport assessment would be undertaken for the EIS to identify and understand traffic impacts as well as to identify appropriate mitigation measures (as required). The assessment would be informed and undertaken in accordance with the Project SEARs. Further consultation with TfNSW on the design development of the M1 Extension Project would be considered in the development of the Project and also addressed as part of the cumulative impact assessment.

6.8 Hazards and risk

6.8.1 Existing environment and potential impacts

Bushfire

Bush fire prone land (BFPL) is land that is identified by the local council that can support or is subject to bushfires that requires specific management strategies to reduce the risk of bushfire occurrence or spread. The Project would be located on land that is mapped as BFPL by the Port Stephens Council, under the Port Stephens LEP. No relevant fire history has been recorded at the Site.

The Project Area is mapped as BFPL Category 1 across Lot 7 DP 1286735 and towards the eastern and southern boundaries of Lot 6 DP 1286735 which includes a vegetation Buffer Zone towards its centre.

BESS risks

Installation, commissioning, and operation of battery energy storage can present hazards associated with overheating, fire, hazardous chemicals and gas emissions.

The design and installation of the battery system will be undertaken in accordance with relevant Australian Standards and guidelines and will be operated in accordance with the manufacturers requirements. Appropriate fire identification and plant segregation would be incorporated into the design.

A site operational management plan will be prepared by the service provider detailing information regarding procedures to be implemented in the event of a fire. Consultation will be undertaken with the relevant authorities during the EIS preparation.

Electromagnetic fields

Electricity powerlines, substations, transformers and other electrical sources, such as common electrical appliances and wiring, all emit electric and magnetic fields (EMF). The Australian Radiation Protection and Nuclear Safety Agency (ARPNSA) considers that for substations and transformers, the magnetic fields at distances of five to ten metres away are generally indistinguishable from typical background levels in the home.

Transmission line connections from the Project to the switchyard would generate EMF. However, as the Site is a controlled site and entry would be limited to authorised personnel trained in these hazards and hazard avoidance, human health risks from EMF are unlikely.

6.8.2 Assessment approach

A Preliminary Hazard Assessment (PHA) and bushfire risk assessment would assess potential hazards from the BESS facility and to or from bushfires, respectively. Relevant controls to reduce the likelihood and/or consequence of these hazards would be identified to ensure risks are acceptable. The Project's detailed design will look to minimise risk from hazards through spacing and buffers as appropriate including for fire-fighting access as appropriate and in accordance with guidance for BESS developments.

6.9 Other matters

This section provides an overview of other environmental matters that, based on existing information and description of the Project, would require limited or no further assessment in the EIS.

Table 6-1 Summary of relevant information for issues and other environmental matters

Environmental matter	Existing environment	Potential impacts	Level of assessment/ assessment approach
Non-Aboriginal heritage	A search of the State Heritage Register and Port Stephens LEP was undertaken to determine the location of registered or known non-Aboriginal heritage items within or near the Project Area. There are no registered or known non-Aboriginal heritage sites within or adjacent to the Project Area. A non-Aboriginal Heritage Assessment (NAHA) was undertaken by ERM (2019), which included the Site. The NAHA determined there were no non-Aboriginal heritage features or items in located throughout the Site (and broader Project Area). It is considered unlikely that the Project Area contains historic heritage values that reach the threshold for local or state historic significance. Ultimately, the historical archaeological potential of the Project Area is very low.	Owing to the historical usage of the Site, construction and operation of the Project would not result in direct or indirect impact to known items of historic heritage.	No further assessment related to historic heritage is considered necessary to support the Project and EIS.
Socio-economic impacts	The Project is located within the Port Stephens LGA, which has a population of approximately 76,414 (ABS 2021) and is part of the broader Hunter region. The major population centre of Port Stephens is Raymond Terrace, which is located	A preliminary social impact scoping exercise has been undertaken to identify the likely social impacts and benefits of the Project. This involved an initial desktop assessment in the form of a Social Impact Assessment Scoping Worksheet, as provided by the *Social Impact Assessment*	A 'minor' social impact assessment (commensurate with the nature and location of the Project) would be prepared in accordance with the *Social Impact Assessment*

Environmental matter	Existing environment	Potential impacts	Level of assessment/ assessment approach
	approximately 5 km north-west of the Project Area. The major industries of employment are Defence, supermarket and grocery stores, aged care residential services, takeaway food and drink services, hospitals and retail. The Project is not located in an area noted for tourism or agriculture.	*Guideline for State Significant Development Projects* (DPE, 2021). The complete worksheet can be viewed at **Appendix C**. The following social and economic impacts have been considered as having potential to occur during the construction and operation of the Project. **Positive**: • The employment of a construction workforce of up to 200 jobs. • Some job creation during the operation of the Project. • Benefits to nearby businesses such as increased passing trade from construction workers and business trade opportunities during operation and maintenance activities. **Negative**: • Temporary disruptions to road users and potential changes to access for businesses. • Visual impact on the surrounding area (albeit industrial). • Impacts to nearby residents and businesses from construction activity such as increased noise and vibration, dust, and construction traffic.	*Guideline for State Significant Development Projects* (DPE, 2021).
Air quality and greenhouse gases	A search of the National Pollutant Inventory (NPI) maintained by DCCEEW, undertaken on 15 December 2022 using a 5 km radius from the Project Area identified nine sources emitting 32 air pollutants within the 2020-2021 reporting period. Other existing sources of air	Excavation has the potential to generate dust resulting in short term, localised impacts to air quality during construction. The operation of construction machinery has the potential to generate emissions to air from vehicle, plant and equipment exhausts. These emissions are	A qualitative air quality assessment would be undertaken to identify potential dust mitigation measures during construction.

Environmental matter	Existing environment	Potential impacts	Level of assessment/ assessment approach
	pollution would include vehicle emissions and emissions from nearby commercial and industrial activities, such as Tomago Aluminium Smelter.	considered negligible. Operational emissions would be limited in nature. In all instances except for a major incident, greenhouse gas would be mainly limited to emissions associated with construction and maintenance and would be negligible.	
Visual amenity	The visual character of the Project Area is dominated by industrial operations to the south and sparsely distributed rural-residences to the north and west. The Site is at a relatively higher topography to the surrounding area at 4-16 metres AHD. The surrounding topography is relatively flat with gently rolling hills to Beresfield in the west, towards Fullerton Cove in the east, Raymond Terrace in the north and the suburbs of Newcastle (Sandgate) in the south. Other major infrastructure within 10 kilometres of the Site includes the NGSF and Tomago Aluminium Smelter, Transgrid Tomago 132 kV and 330 kV substations, Pacific Highway, electrical transmission and distribution lines, Grahamstown Water Treatment Plant and the Kooragang Island Port.	The following visual impacts have been considered as having potential to occurring during construction of the Project: • Construction facilities, including portable structures and laydown areas. • Excavations and earthworks. • Construction machinery. • Civil works to facilitate access and easements. • Dust and reduced air quality from construction works. Construction impacts would be temporary and limited to the length of the construction period and the sensitivity of potential receivers. No residential receivers are likely to have views of the Site. Boundary vegetation at the Site currently blocks most transient views, and, as such, no significant visual impacts are expected during construction. During operation, the BESS facility would be an additional industrial facility on the edge of an industrial commercial estate. The Site boundary currently contains mature boundary vegetation which would screen most views. On this basis no significant visual impacts are expected.	The EIS would include a qualitative visual impact assessment to confirm that the Project would not be visible from surrounding sensitive receivers.

Environmental matter	Existing environment	Potential impacts	Level of assessment/ assessment approach
Waste management	Not applicable	Waste would be generated by the Project during both construction and operation, including: • Construction waste • Green waste from clearing • General rubbish during operation and construction	The EIS would provide an assessment of the waste generated during the construction and operation of the Project.

6.10 Cumulative impacts

Cumulative impacts of the Project would be assessed in the EIS. The assessment would focus on residual impacts from the Project that have the potential to generate cumulative impacts with other proposed but not yet operational projects in the vicinity.

Searches of the DPE Major Projects database were undertaken on 15 December 2022 and 9 March 2023 to identify SSD and SSI projects within the vicinity of the Project that may be relevant for the EIS cumulative impact assessment. The projects that were identified are discussed in **Table 6-2**.

Table 6-2 Relevant existing/ future projects for cumulative impact assessment

Project	Assessment stage	Relevance
Newcastle Power Station	Determination	AGL received approval to construct and operate the Newcastle Power Station on the Site (SSI-9837) in March 2021. The relationship between the Project and the NPS has been discussed in **Section 2.4**. No cumulative impacts would occur.
M1 Extension Project	Determination	The M1 extension to Raymond Terrace (SSI-7319), and associated interchange with Old Punt Road, would result in significant changes to local traffic flows. The extensions would see traffic volumes along the Pacific Highway decrease significantly, with an improvement in the operational efficiency of the existing intersections with Tomago Road and Old Punt Road with the Pacific Highway. A portion of land owned by AGLM has been compulsorily acquired by TfNSW (refer to **Section 2.3.3**). This acquisition will not impact the Project Area. The land that has been acquired is part of Lots 20 and 21 in DP1286735 and is being acquired by TfNSW to construct an interchange between Old Punt Road and the Pacific Highway M1 extension to Raymond Terrace (SSI 15_7319). As part of the M1 Extension Project, TfNSW has agreed to provide to AGLM a secondary emergency access point for the Project. Parts of the Project Area and land adjacent to Old Punt Road (which overlap the existing transmission line easement) have also been compulsorily acquired by TfNSW for the same purposes of the M1 Extension Project. The Site will be situated outside of the area subject to the recent compulsorily acquisition by TfNSW.
Tomago Resource Recovery Facility	SEARs Issued	Recycled Concrete Products Pty Ltd (RCP) submitted a Scoping Report to DPE to request SEARs for a resource recovery facility at 509 Tomago Road, Tomago. The resource facility would be capable of receiving and processing up to 250,000 tonnes of general solid waste (non-putrescible) per year consisting of construction waste such as soils, concrete, bricks, tiles etc. Heavy vehicle transport routes for the RCP project are likely to occupy Tomago Road, which could result in a cumulative impact on traffic on this road if the

Project	Assessment stage	Relevance
		construction programs for the Project and RCP project overlap. The potential for a cumulative traffic impact will be confirmed following a review of the traffic impact assessment for the resource facility, which is not yet available.

The Project may generate cumulative noise and traffic impacts with the M1 Extension Project, especially during construction of both projects. The noise and traffic assessments would include consideration of potential cumulative impacts, and these would be summarised in the EIS in accordance with the Cumulative Impacts Assessment Guidelines for State Significant Development Projects (DPE, 2021).

7.0 Conclusion

AGL is seeking development consent for the Project as SSD under Division 4.7 of the EP&A Act in order to construct and operate a BESS with a capacity of approximately 500 MW and storage of up to 2,000 MWh at a Site within the Tomago industrial precinct. The Project would involve the installation of a transmission connection between either the 132 kV or 330 kV substations, both located to the east of the Site. The Site and the transmission line corridor/s constitute the Project Area.

This Scoping Report has been prepared in accordance with *State significant development guidelines – preparing a scoping report* (DPE, 2021), in support of an application for SEARs for the Project.

The matters that have been identified for further detailed assessment during the preparation of the EIS are:

- Biodiversity
- Soils, groundwater and contamination
- Surface water, flooding and water use
- Aboriginal heritage
- Noise and vibration
- Traffic and transport
- Hazards and risk.

Other matters that will be considered in the EIS are:

- Air quality
- Socio-economic impacts
- Visual amenity
- Waste management.

In assessing the Project, the key focus would be avoidance and minimisation of potential impacts on the environment and local communities, where practicable and feasible, when taking into consideration engineering constraints and cost implications. The assessment would also identify mitigation and management measures to minimise potential impacts on the environment during construction and operation of the Project. Consultation with stakeholders and the local community would continue throughout the Project assessment, design and construction phases.

It is requested that DPE confirm the Project as SSD and issue SEARs to enable an EIS to be prepared.

8.0 References

Aboriginal Heritage Information Systems 2022, Aboriginal heritage basic search. Available at: https://www.environment.nsw.gov.au

AGL Limited. (2022). *Climate Transition Action Plan*. Issued September 2022. Retrieved from https://www.agl.com.au/content/dam/digital/agl/documents/about-agl/sustainability/ctap.pdf

AGL Limited. (2022). *Climate Transition Action Plan*. Issued September 2022. Available at: https://www.agl.com.au/content/dam/digital/agl/documents/about-agl/sustainability/ctap.pdf

Aurecon 2019, Groundwater Specialist Study, Newcastle Power Station

Aurecon 2019, Surface Water and Hydrology Specialist Study, Newcastle Power Station

Australian Bureau of Meteorology 2022, Climate Data Online. Available at: http://www.bom.gov.au/climate/data/?ref=ftr

Australian Bureau of Meteorology 2022, Groundwater Dependant Ecosystem Atlas (GDE Atlas). Available at: http://www.bom.gov.au/water/groundwater/gde/

CSIRO 2013, Australian Soil Resource Information System (2013). Available at: https://www.asris.csiro.au/themes/Atlas.html

DECC 2009, *Interim Construction Noise Guidelines*, Issued July 2009. Retrieved from https://www.environment.nsw.gov.au/resources/noise/09265cng.pdf

Environmental Strategies 2017, Phase 1 Preliminary Environmental Site Assessment – Tomago Development Site, NSW

Environmental Strategies 2018. Additional Pre-Existing Contamination Study – Tomago Development Site, NSW

ERM 2019, Non-Aboriginal Heritage Assessment

ERM 2019b, Newcastle Power Station Aboriginal Archaeological Survey Report, Sydney.

Landcom 2004. *Managing Urban Stormwater: Soils and construction*. 4th edition. Issued 1 March 2004.

NSW Department of Environment – Water (DPE – Water) 2014, Lower Hunter Water Plan. Available at: https://www.industry.nsw.gov.au/__data/assets/pdf_file/0012/213303/lower-hunter-water-plan.pdf

NSW Department of Planning and Environment (DPE) 2020, The Australian Soil Map Classification

Port Stephens Council 2014, Local Environmental Plan. Available at: https://legislation.nsw.gov.au/view/html/inforce/current/epi-2013-0755

Port Stephens Council. (2002). *Port Stephens Council Comprehensive Koala Plan of Management (CKPoM)*. Issued June 2022. Retrieved from https://www.portstephens.nsw.gov.au/environment/environmental-plans-and-strategies/comprehensive-koala-plan-of-management

Port Stephens Council. (2002). *Port Stephens Council Comprehensive Koala Plan of Management (CKPoM)*. Issued June 2022. Available at: https://www.portstephens.nsw.gov.au/environment/environmental-plans-and-strategies/comprehensive-koala-plan-of-management

SECA 2019, Newcastle Power Station Traffic Impact Assessment, SECA Solution, Newcastle.

Appendix A

Scoping summary table

Appendix A Scoping summary table

Level of assessment	Matter	Cumulative impact assessment	Engagement	Relevant government plans, policies, and guidelines	Scoping Report reference
Standard	Biodiversity	No	General	• Biodiversity Assessment Method (Department of Planning, Industry and Environment 2020)	**Section 6.2**
Standard	Soils, groundwater and contamination	No	General	• National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council 2011) • Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (Environment Protection Authority 2015) • Guidelines for the Assessment and Management of Groundwater Contamination (NSW Environment Protection Authority 2007)	**Section 6.3**
Standard	Surface water and flooding	No	General	• Managing Urban Stormwater: Soils and Construction – Volume 1 (Landcom 2004) • Australian and New Zealand guidelines for fresh and marine water quality (ANZECC & ARMCANZ 2000) • Acid Sulfate Soils Assessment Guidelines (Acid Sulfate Soils Management Advisory Committee 1998)	**Section 6.4**
Standard	Aboriginal heritage	No	Specific (with LALC)	• Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (Office of Environment and Heritage 2011) • Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment, Climate Change and Water 2010)	**Section 6.5**

Level of assessment	Matter	Cumulative impact assessment	Engagement	Relevant government plans, policies, and guidelines	Scoping Report reference
Standard	Noise and vibration	Yes	General	• Noise Policy for Industry (Environment Protection Authority 2017) • Interim Construction Noise Guideline (Department of Environment, Climate Change and Water 2019) • NSW Road Noise Policy (Department of Environment, Climate Change and Water 2011) • Assessing vibration: A technical guideline (Department of Environment, Climate Change and Water 2006)	**Section 6.6**
Standard	Traffic and transport	Yes	General	• Guide to traffic management Part 12: Integrated Transport Assessments for Developments (Austroads 2020)	**Section 6.7**
Standard	Hazards and risk	No	General	• Planning for Bushfire Protection (NSW Rural Fire Service 2019) • Assessment Guideline: Multi-Level Risk Assessment (Department of Planning and Infrastructure 2011)	**Section 6.8**
No further assessment	Non-Aboriginal heritage	No	General	• Assessing Significant for Historical Archaeological Sites and 'Relics' (Heritage Branch of the Department of Planning 2009)	**Section 6.9**
Standard (Minor)	Socio-economic	No	General	• Social Impact Assessment Guideline – For State Significant Developments (Department of Planning and Environment 2021)	
Standard	Air quality	No	General	• Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (Environment Protection Authority 2016)	
Standard	Visual amenity	No	General	• Guidelines for Landscape and Visual Impact Assessment – 3rd Edition (Institute of Environmental Management and Assessment 2013)	

Level of assessment	Matter	Cumulative impact assessment	Engagement	Relevant government plans, policies, and guidelines	Scoping Report reference
Standard	Waste management	No	General	• Waste Classification Guidelines Part 1: Classifying Waste (NSW Environment Protection Authority 2014) • NSW Waste Avoidance and Resource Recovery Strategy 2014-2021 (NSW Environment Protection Authority 2014)	

Appendix B

Protected matters search report

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 15-Dec-2022

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	7
Listed Threatened Species:	95
Listed Migratory Species:	77

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	123
Commonwealth Heritage Places:	1
Listed Marine Species:	100
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	6
Regional Forest Agreements:	1
Nationally Important Wetlands:	3
EPBC Act Referrals:	66
Key Ecological Features (Marine):	None
Biologically Important Areas:	6
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands) [Resource Information]

Ramsar Site Name	Proximity	Buffer Status
Hunter estuary wetlands	Within Ramsar site	In feature area

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community may occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species [Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area	In buffer area only
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
FISH			
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thunnus maccoyii			
Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
FROG			
Litoria aurea			
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area	In feature area
Mixophyes balbus			
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Uperoleia mahonyi			
Mahony's Toadlet [89189]	Endangered	Species or species habitat known to occur within area	In feature area
MAMMAL			
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis			
Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Notamacropus parma			
Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Petrogale penicillata			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus			
Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Angophora inopina			
Charmhaven Apple [64832]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Arthraxon hispidus			
Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Asperula asthenes			
Trailing Woodruff [14004]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Caladenia tessellata			
Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Commersonia prostrata			
Dwarf Kerrawang [87152]	Endangered	Species or species habitat known to occur within area	In feature area
Cryptostylis hunteriana			
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat known to occur within area	In feature area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diuris praecox Newcastle Doubletail [55086]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat known to occur within area	In feature area
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Eucalyptus parramattensis subsp. decadens Earp's Gum, Earp's Dirty Gum [56148]	Vulnerable	Species or species habitat known to occur within area	In feature area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Grevillea parviflora subsp. parviflora Small-flower Grevillea [64910]	Vulnerable	Species or species habitat known to occur within area	In feature area
Grevillea shiressii [19186]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area	In feature area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Prasophyllum sp. Wybong (C.Phelps ORG 5269) a leek-orchid [81964]	Critically Endangered	Species or species habitat may occur within area	In feature area
Pterostylis gibbosa Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rutidosis heterogama Heath Wrinklewort [13132]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known to occur within area	In feature area
Tetratheca juncea Black-eyed Susan [21407]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chelonia mydas			
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea			
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata			
Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
SHARK			
Carcharias taurus (east coast population)			
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only
Carcharodon carcharias			
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Rhincodon typus			
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini			
Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus			
Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In buffer area only
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Breeding may occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In buffer area only
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat likely to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area	In buffer area only
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area	In feature area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area	In buffer area only
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area	In buffer area only
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area	In buffer area only
Tringa brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Commonwealth Trading Bank of Australia		
Commonwealth Land - Commonwealth Trading Bank of Australia [11532]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Commonwealth Trading Bank of Australia [16019]	NSW	In buffer area only
Commonwealth Land - Commonwealth Trading Bank of Australia [11682]	NSW	In buffer area only
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [11680]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [11690]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [11600]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11700]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11671]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11672]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11619]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11622]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11681]	NSW	In buffer area only
Commonwealth Land - Telstra Corporation Limited [11618]	NSW	In buffer area only
Defence		
Commonwealth Land - Defence Service Homes Corporation [11679]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11675]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11524]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11698]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11640]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11692]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11693]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11691]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11697]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11696]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Service Homes Corporation [11695]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11694]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11699]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11617]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11616]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11615]	NSW	In buffer area only
Commonwealth Land - Defence Service Homes Corporation [11673]	NSW	In buffer area only
Commonwealth Land - Director of Defence Service Homes [11621]	NSW	In buffer area only
Defence - STOCKTON RIFLE RANGE [10057]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Defence Housing Authority [16171]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16170]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11585]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11584]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16173]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16172]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11548]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11547]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11546]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11544]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11543]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11545]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11540]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11542]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11541]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11570]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11572]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [11573]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11571]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11576]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11577]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11574]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11575]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11578]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11579]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15444]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11678]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15443]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11558]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16168]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16169]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16165]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16166]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [16167]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15442]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11526]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11527]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11550]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11557]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11552]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11551]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11554]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11559]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11556]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [11555]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11553]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11587]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15499]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11536]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11535]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11537]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11534]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11539]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11538]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11528]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11529]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11533]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11531]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11530]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [15501]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11525]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11564]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11565]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11560]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11561]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11566]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11567]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11590]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11581]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11588]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11583]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Defence Housing Authority [15484]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11498]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11586]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11580]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11563]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11562]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11569]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11589]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [11568]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [11487]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [11639]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [11486]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [11677]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [11676]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [11620]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [11683]	NSW	In buffer area only
Unknown		
Commonwealth Land - [15660]	NSW	In buffer area only
Commonwealth Land - [11599]	NSW	In buffer area only
Commonwealth Land - [11582]	NSW	In buffer area only
Commonwealth Land - [11684]	NSW	In buffer area only

Commonwealth Heritage Places [Resource Information]

Name	State	Status	Buffer Status
Historic			
Fort Wallace	NSW	Listed place	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In buffer area only
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Breeding likely to occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area overfly marine area	In buffer area only
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area overfly marine area	In buffer area only
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area overfly marine area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area	In buffer area only
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area overfly marine area	In feature area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area overfly marine area	In buffer area only
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area overfly marine area	In buffer area only
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area overfly marine area	In buffer area only
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area overfly marine area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area overfly marine area	In buffer area only
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area	In buffer area only
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area overfly marine area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area	In buffer area only
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area overfly marine area	In buffer area only
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area overfly marine area	In buffer area only
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Sternula albifrons as Sterna albifrons			
Little Tern [82849]		Breeding may occur within area	In buffer area only
Symposiachrus trivirgatus as Monarcha trivirgatus			
Spectacled Monarch [83946]		Species or species habitat likely to occur within area overfly marine area	In feature area
Thalassarche bulleri			
Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei as Thalassarche sp. nov.			
Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri			
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta			
Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita			
Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In feature area
Tringa brevipes as Heteroscelus brevipes Grey-tailed Tattler [851]		Roosting known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area overfly marine area	In feature area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area overfly marine area	In buffer area only
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area overfly marine area	In buffer area only
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In buffer area only
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In buffer area only

Whales and Other Cetaceans [Resource Information]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Blue Gum Hills	Regional Park	NSW	In buffer area only
Hexham Swamp	NRS Addition - Gazettal in Progress	NSW	In buffer area only
Hunter Wetlands	National Park	NSW	In buffer area only
Pambalong	Nature Reserve	NSW	In buffer area only
Tilligerry	State Conservation Area	NSW	In buffer area only
Worimi	Regional Park	NSW	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Hexham Swamp	NSW	In buffer area only

Wetland Name	State	Buffer Status
Kooragang Nature Reserve	NSW	In buffer area only
Shortland Wetlands Centre	NSW	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
M1 Motorway extension to Raymond Terrace, NSW	2018/8288		Approval	In feature area
Controlled action				
Cabbage Tree Road Sand Quarry, Williamtown, NSW	2016/7852	Controlled Action	Post-Approval	In buffer area only
Construction and Sequential Filling of Waste Emplacement Facility	2008/4652	Controlled Action	Post-Approval	In buffer area only
Former Rifle Range Residential Development, Popplewell Road, Fern Bay, NSW	2017/7993	Controlled Action	Proposed Decision	In buffer area only
Gas Transmission Pipeline	2011/5917	Controlled Action	Completed	In buffer area only
Gloucester Coal Seam Methane Gas Project	2008/4432	Controlled Action	Post-Approval	In buffer area only
Hunter River Port and Transport Corridor	2001/419	Controlled Action	Completed	In buffer area only
Hunter River south arm dredging	2003/950	Controlled Action	Post-Approval	In buffer area only
Kooragang Island Waste Emplacement Facility - Area 2 Closure Works, NSW	2016/7670	Controlled Action	Post-Approval	In buffer area only
Kooragang Wetland Rehabilitation Project	2007/3220	Controlled Action	Post-Approval	In buffer area only
Kurri Kurri Lateral Pipeline Project	2021/9113	Controlled Action	Assessment Approach	In buffer area only
Newcastle gas storage facility project	2010/5752	Controlled Action	Post-Approval	In feature area
Newcastle inner city bypass Rankin Park to Jesmond NSW	2015/7550	Controlled Action	Post-Approval	In buffer area only
Newcastle LNG export facility	2011/5915	Controlled Action	Completed	In buffer area only
Newcastle Power Station Project, Tomago, NSW	2019/8425	Controlled Action	Post-Approval	In feature area

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Northbank Enterprise Hub	2021/9058	Controlled Action	Guidelines Issued	In buffer area only
Northbank Enterprise Hub, Industrial and Business Park	2010/5660	Controlled Action	Completed	In buffer area only
Port Site and Materials Handling Development	2001/242	Controlled Action	Completed	In feature area
Protech Cold Mill Facility	2001/274	Controlled Action	Post-Approval	In feature area
Queensland Hunter Gas Pipeline, approximately 825 km in length	2008/4483	Controlled Action	Completed	In feature area
Remediation Works, Kooragang island waste facility emplacement facility NSW	2011/5920	Controlled Action	Completed	In buffer area only
River Dredging Operations	2001/249	Controlled Action	Completed	In feature area
Rutile and Zircon Mining on Stockton Rifle Range	2000/8	Controlled Action	Post-Approval	In buffer area only
Steel Mill	2001/231	Controlled Action	Completed	In buffer area only
Terminal 4 Coal Export Terminal Project, Kooragang Island	2011/6029	Controlled Action	Post-Approval	In buffer area only
Tomago Road Industrial Subdivision	2007/3343	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Abel Coal Project	2007/3695	Not Controlled Action	Completed	In buffer area only
Blue Gum Vista Estate Residential development off Minmi Road	2004/1507	Not Controlled Action	Completed	In buffer area only
construction of a hydrological control structure at the mouth of Wader Creek and	2002/780	Not Controlled Action	Completed	In buffer area only
Construction of a Jetty	2002/784	Not Controlled Action	Completed	In buffer area only
Controlling Water Levels in Shortland Wetlands	2010/5468	Not Controlled Action	Completed	In buffer area only
Expansion to Kooragang Coal Terminal	2007/3352	Not Controlled Action	Completed	In buffer area only
Fort Scratchley refurbishment works	2005/2283	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Fort Scratchley site remediation	2005/2075	Not Controlled Action	Completed	In buffer area only
Freeway North Business Park Sub-division and Industrial Development	2008/4569	Not Controlled Action	Completed	In buffer area only
Geological exploration and historical research of convict coal mines beneath For	2004/1421	Not Controlled Action	Completed	In buffer area only
Green & Golden Bell Frog Habitat Enhancement Project	2004/1795	Not Controlled Action	Completed	In feature area
Hexam Train Support Facility	2012/6285	Not Controlled Action	Completed	In buffer area only
Hexham Relief Roads Project	2012/6309	Not Controlled Action	Completed	In buffer area only
Hunter Natural Gas Pipeline	2004/1902	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Industrial and Residential Subdivision, Minmi and Black Hill, Lower Hunter	2008/4603	Not Controlled Action	Completed	In buffer area only
Kooragang Coal Terminal Arrival Roads Stage 2 Upgrade, Newcastle, NSW	2014/7229	Not Controlled Action	Completed	In buffer area only
Nelson Bay Rd and Seaside Blvd intersection development, Nelson Bay, NSW	2019/8433	Not Controlled Action	Completed	In buffer area only
Newcastle Inner City Bypass - Sandgate to Shortland	2007/3633	Not Controlled Action	Completed	In buffer area only
Proposed maintenance and manufacturing facility to support industrial activities	2007/3592	Not Controlled Action	Completed	In feature area
Queensland Hunter Gas Pipeline, approximately 833 km in length	2008/4620	Not Controlled Action	Completed	In feature area
Revised alignment Hunter Natural Gas Pipeline	2005/2470	Not Controlled Action	Completed	In buffer area only
Richmond Vale Rail Trail	2019/8568	Not Controlled Action	Completed	In buffer area only
sale of property located at 96, Hunter Street	2003/1097	Not Controlled Action	Completed	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Sandgate Rail Grade Separation	2005/1948	Not Controlled Action	Completed	In feature area
Shorebird and wader habitat rehabilitation	2001/457	Not Controlled Action	Completed	In buffer area only
Stockpiling of lump coal up to 40,000 tonnes	2003/1304	Not Controlled Action	Completed	In buffer area only
Tomago Aluminium Rod & Conductor Manufacturing Facility	2011/6085	Not Controlled Action	Completed	In buffer area only
Tomago to Tomaree Electricity Supply Upgrade	2003/1023	Not Controlled Action	Completed	In feature area
Tomago Trunk Watermain Upgrade	2008/4049	Not Controlled Action	Completed	In buffer area only
Tomago Wetland Rehabilitation Project	2011/5894	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Exploration Pilot Appraisal Program PEL 458	2011/6154	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Fort Wallace Residential Development Proposal, north of Newcastle, NSW	2017/7951	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Kooragang Island coal export terminal	2006/2987	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Kooragang Island Waste Emplacement Facility Closure Works	2012/6464	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Rehabilitation of Hexham Swamp	2003/1244	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Star of the South Offshore Surveys	2019/8525	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
TransGrid 132kV Power Transmission Line	2002/794	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action (particular manner)				
Wastewater Transfer Scheme	2011/5985	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only

Biologically Important Areas

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Tursiops aduncus			
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Foraging	Known to occur	In buffer area only
Seabirds			
Ardenna grisea			
Sooty Shearwater [82651]	Foraging	Likely to occur	In buffer area only
Ardenna pacifica			
Wedge-tailed Shearwater [84292]	Foraging	Likely to occur	In buffer area only
Ardenna tenuirostris			
Short-tailed Shearwater [82652]	Foraging	Likely to occur	In buffer area only
Sharks			
Carcharias taurus			
Grey Nurse Shark [64469]	Foraging	Known to occur	In buffer area only
Whales			
Megaptera novaeangliae			
Humpback Whale [38]	Foraging	Known to occur	In buffer area only

Bioregional Assessments

SubRegion	BioRegion	Website	Buffer Status
Hunter	Northern Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data are available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Appendix C

Preliminary social impact scoping worksheet

Social Impact Assessment (SIA) Worksheet

Project name: Tomago BESS

Date: 10/03/2023

CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		PREVIOUS INVESTIGATION OF IMPACT		CUMULATIVE IMPACTS		ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
what **social impact categories** could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact. NB. Where there are multiple stakeholder groups affected differently by an impact, or more than one impact from the activity, please add an additional row.	Is the impact expected to be **positive or negative**	Has this impact previously been investigated (on this or other project/s)?	If "yes - this project," briefly describe the previous investigation. If "yes - other project," identify the other project and investigation	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	Will the project activity (without mitigation or enhancement) cause a material social impact in terms of its: You can also consider the various magnitudes of these characteristics					Level of assessment for each social impact	What methods and data sources will be used to investigate this impact?			Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What **mitigation / enhancement measures** are being considered?
							extent i.e. number of people potentially affected?	**duration** of expected impacts? (i.e. construction vs operational phase)	**intensity** of expected impacts i.e. scale or degree of change?	**sensitivity** or vulnerability of people potentially affected?	**level of concern/interest** of people potentially affected?		Secondary data	Primary Data - Consultation	Primary Data - Research		
way of life	Potential disruptions to way of life for individuals and the community, caused by temporary disruptions to road users, and potential changes to access for businesses	Negative	Yes - other project	Newcastle Power Station Project EIS (SSI-9837)	Yes	M1 Pacific Highway extension to Raymond Terrace (SSI-7319)	No	No	Unknown	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	Not yet but will be investigated at the EIS stage	Management of traffic impacts as outlined within traffic and transport report, including preparation of a construction traffic management plan
surroundings	Potential visual impact on the surrounding area	Negative	Yes - other project	Newcastle Power Station Project EIS (SSI-9837)	Yes	M1 Pacific Highway extension to Raymond Terrace (SSI-7319)	No	No	No	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	Not yet but will be investigated at the EIS stage	Management of visual amentiy as outlined within other parts of the assessment e.g. noise. SIA specific mitigations to be developed as required. Discussions to be held with affected residents and businesses to understand impacts and consider further mitigations.
surroundings	Potential impacts on residents and businesses located close to construction activity due to increased noise and vibration, dust and construction traffic	Negative	Yes - other project	Newcastle Power Station Project EIS (SSI-9837)	Yes	M1 Pacific Highway extension to Raymond Terrace (SSI-7319)	No	No	Unknown	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	Not yet but will be investigated at the EIS stage	Management of noise impacts as outlined within other parts of the assessment. SIA specific mitigations to be developed as required. Discussions to be held with affected residents and businesses to understand impacts and consider further mitigations.
culture	Potential for minor changes to connections to Country for Aboriginal communities, natural values or heritage items, resulting in impacts to cultural elements which are valued by the community	Negative	Yes - other project	Newcastle Power Station Project EIS (SSI-9837)	Yes	M1 Pacific Highway extension to Raymond Terrace (SSI-7319)	No	No	Unknown	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	Not yet but will be investigated at the EIS stage	Consultation with Aboriginal stakeholders as part of development of the EIS
livelihoods	Potential benefits to businesses, including benefit from a net gain in passing trade (depending on the business location) during construction owing to the presence of construction workers	Positive	Yes - other project	Newcastle Power Station Project EIS (SSI-9837)	Yes	M1 Pacific Highway extension to Raymond Terrace (SSI-7319)	No	No	No	No	No	Not relevant	Not required	Not required	Not required	Not yet but will be investigated at the EIS stage	Consultation with business groups to understand local impacts of the development and how they may be enhanced
livelihoods	Potential benefits for local construction related businesses, such as construction recruitment agencies, construction companies and resource suppliers	Positive	Yes - other project	Newcastle Power Station Project EIS (SSI-9837)	Yes	M1 Pacific Highway extension to Raymond Terrace (SSI-7319)	No	No	No	No	No	Not relevant	Not required	Not required	Not required	Not yet but will be investigated at the EIS stage	Consultation with business groups to understand local impacts of the development and how they may be enhanced
decision-making systems	Community members may express dissatisfaction with their ability to influence the strategic decision making and construction methodology or planning for the project	Negative	No	-	No	Not required	No	No	No	No	Unknown	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	Not yet but will be investigated at the EIS stage	Consultaiton with interested community members and businesses as part of project development
surroundings	Potential reductions in amenity in the proximity of the BESS, such as visual and noise impacts	Negative	No	-	No	Not required	No	Yes	No	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	Not yet but will be investigated at the EIS stage	Management of impacts as outlined within other parts of the assessment e.g. noise and visual amenity. SIA specific mitigations to be developed as required. .
culture	Potential for minor changes to connections to Country for Aboriginal communities, natural values or heritage items, resulting in impacts to cultural elements which are valued by the community	Negative	No	-	No	Not required	No	Unknown	No	No	No	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	Not yet but will be investigated at the EIS stage	Consultation with Aboriginal stakeholders as part of development of the EIS
livelihoods	Potential benefits for businesses and community member's livelihoods, such as benefits to businesses associated with operation and maintenance of the BESS	Positive	No	-	No	Not required	No	No	No	No	No	Not relevant	Not required	Not required	Not required	Not yet but will be investigated at the EIS stage	Consultation with business groups to understand local impacts of the development and how they may be enhanced
decision-making systems	Once operational, the project would have limited impact upon people's ability to interact in decisions that affect them	Negative	No	-	No	Not required	No	No	No	No	Unknown	Minor assessment of the impact	Required	Limited - if required (e.g. local council)	Not required	Not yet but will be investigated at the EIS stage	Consultaiton with interested community members and businesses as part of project development