

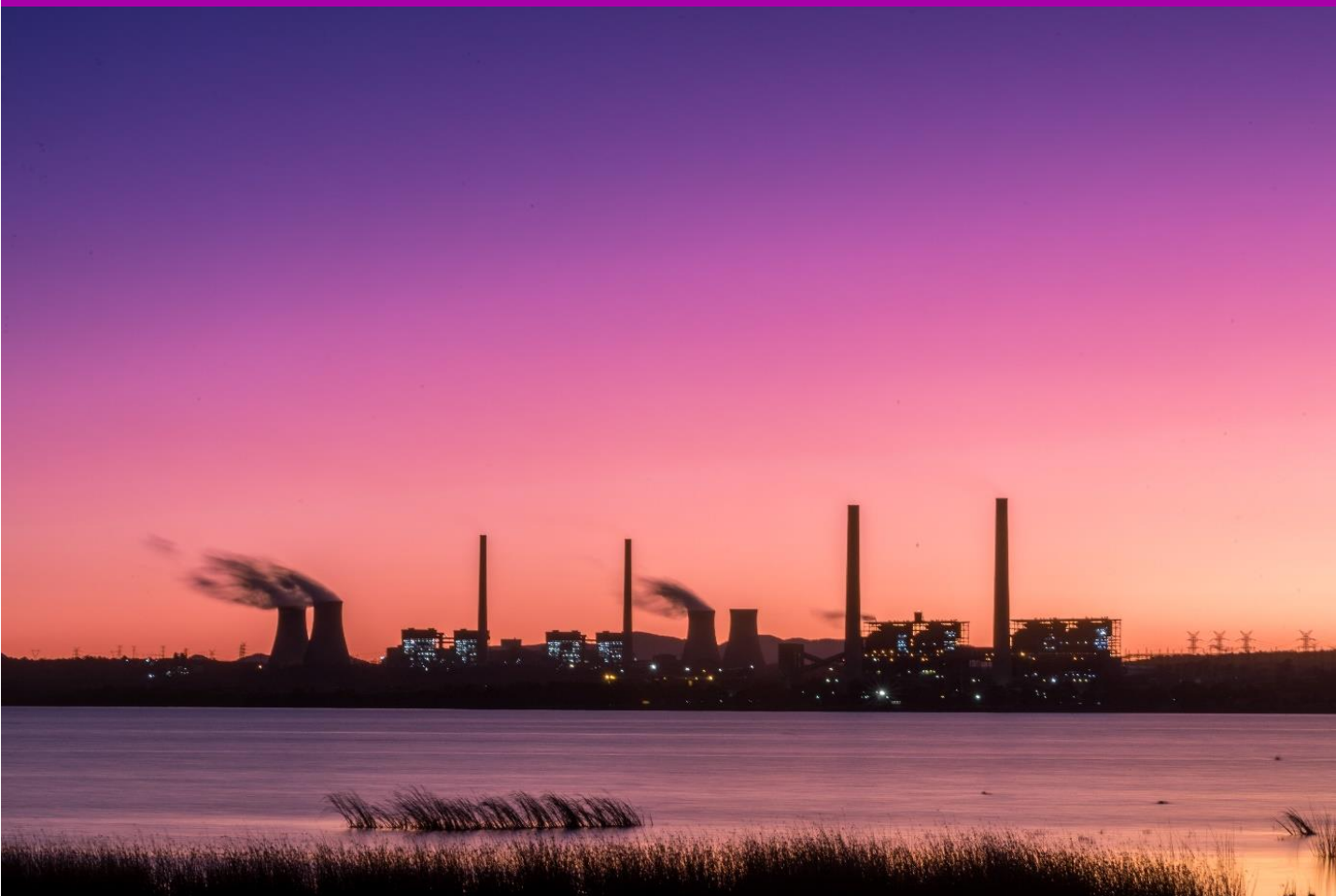


Challenging today.
Reinventing tomorrow.

Stage 3 Bayswater Ancillary Works - Traffic Management Plan

AGL Macquarie Limited

SSD Post Approval Documentation
8 December 2023



Stage 3 Bayswater Ancillary Works - Traffic Management Plan

Client name: AGL Macquarie Limited
Project name: SSD Post Approval Documentation
Client reference: AGL **Project no:** IS479000
Version: B **Project manager:** Cynthia do Nascimento
Date: 8 December 2023 **Prepared by:** Emma van Haandel
File name: Traffic Management Sub Plan_Rev B

Document history and status

Version	Date	Description	Author	Checked	Reviewed	Approved
Rev A	17/11/2023	Initial Draft	E. van Haandel	A. Callis	C. do Nascimento	P. Horn
Rev B	08/12/2023	Final Draft	E. van Haandel	C. do Nascimento	C. do Nascimento	P. Horn

Distribution of copies

Version	Issue approved	Date issued	Issued to	Comments

Jacobs Australia Pty Limited

Level 4, 12 Stewart Avenue
Newcastle West, NSW 2302
PO Box 2147
Dangar, NSW 2309
Australia

T +61 2 4979 2600
F +61 2 4979 2666
www.jacobs.com

© Copyright 2023 Jacobs Australia Pty Limited. All rights reserved. The content and information contained in this document are the property of the Jacobs group of companies ("Jacobs Group"). Publication, distribution, or reproduction of this document in whole or in part without the written permission of Jacobs Group constitutes an infringement of copyright. Jacobs, the Jacobs logo, and all other Jacobs Group trademarks are the property of Jacobs Group.

NOTICE: This document has been prepared exclusively for the use and benefit of Jacobs Group client. Jacobs Group accepts no liability or responsibility for any use or reliance upon this document by any third party.

Contents

Acronyms and abbreviations.....	v
1. Introduction.....	6
1.1 Purpose and scope.....	7
1.2 Project overview.....	7
1.2.1 Project elements.....	8
1.3 Site location.....	10
1.4 Related reports and plans.....	13
2. Regulatory requirements	14
2.1 Relevant legislation and conditions.....	14
2.1.1 Additional requirements	14
2.2 Standards and guidelines.....	15
3. Performance criteria.....	16
4. Existing environment	17
4.1 Site access	17
4.1.1 Heavy vehicle access.....	17
4.2 Existing traffic volumes.....	17
4.3 Crash history.....	18
5. Traffic impacts	20
5.1 Construction hours	20
5.2 Traffic generation and distribution	20
5.3 Intersection level of service and queue length.....	20
5.4 Road safety	21
6. Traffic control measures.....	22
6.1 Training	24
7. Traffic monitoring	25
8. Compliance management.....	26
8.1 Roles and responsibilities	26
8.2 Inspections.....	26
8.3 Incidents and complaints.....	26
8.4 Document review and update	26

Tables

Table 1. LBBAWP Stages.....	6
Table 2. Traffic Management - Consent requirements for SDD 8889679	6
Table 3. LBBAWP EIS - Traffic and Transport management requirements	14
Table 4. Traffic criteria.....	16
Table 5. LoS definitions.....	20
Table 6. Environmental management measures - Traffic.....	22
Table 7. Traffic management monitoring plan	25

Figures

Figure 1. Project location	11
Figure 2. Project area	12
Figure 3. Average weekday hourly traffic volumes (2019) for the New England Highway	18
Figure 4. Liddell and Bayswater interchange with the New England Highway	19

Acronyms and abbreviations

Term	Definition
AGLM	AGL Macquarie Pty Limited
Bayswater	Bayswater Power Station
BAW	Bayswater Ancillary Works
CEMP	Construction Environment Management Plan
CTMP	Construction Traffic Management Plan
DPE	Department of Planning and Environment
DPIE	Department of Planning, Industry, and Environment
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPL	Environment Protection Licence
LBBAWP	Liddell Battery and Bayswater Ancillary Works Project
LoS	Level of Service
MW	Megawatt
NEM	National Electricity Market
NSW	New South Wales
OSOM	Oversize over mass
Project	Stage 3 Bayswater Ancillary Works
Roads Act	<i>Roads Act 1993</i>
SEAR	Secretary's Environmental Assessment Requirements
SEPP SRD	State Environmental Planning Policy (State and Regional Development) 2011
SSD	State Significant Development
TfNSW	Transport for New South Wales
TMP	Traffic Management Plan

1. Introduction

Jacobs Australia Pty Limited (Jacobs) were commissioned by AGL Macquarie Pty Limited (AGLM) to prepare a Traffic Management Plan (TMP) for the Stage 3 Bayswater Ancillary Works (hereafter referred to as “BAW” or “the Project”) to be undertaken at Bayswater Power Station (Bayswater) as part of the Liddell Battery and Bayswater Ancillary Works Project (LBBAWP). These works will allow Bayswater to maintain supply to the National Energy Market (NEM) until its planned closure in 2035, and ultimately improve the environmental performance of the plant with no change to coal consumption - with electricity, emissions, and ash generation remaining consistent.

The LBBAWP is classified as a State Significant Development (SSD) under the *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD) and it is subject to Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) which requires an Environmental Impact Statement (EIS) to be prepared in accordance with the NSW Department of Planning and Environment (DPE) Secretary’s Environmental Assessment Requirements (SEARs).

AGL submitted the LBBAWP EIS in March 2021. The Development Consent (SSD 8889679) was issued by the DPE on the 8th of March 2022. The LBBAWP is being undertaken in the staged approach shown in Table 1, approved by DPE on the 18th of October 2022.

Table 1. LBBAWP Stages

Stage
Stage 1 - Liddell decoupling works
Stage 2 - Liddell battery energy storage system and associated works
Stage 3 - Bayswater Ancillary Works

This Traffic Management Plan (TMP) has been developed to address the SDD 8889679 development consent condition C1(e)(i) issued for the LBBAWP by the Planning Secretary for the NSW DPE. This condition requires a subplan to manage the environmental impacts of emissions to air during construction.

Relevant conditions are outlined in Table 2.

Table 2. Traffic Management - Consent requirements for SDD 8889679

Consent requirement	Section/reference
C1. Prior to commencing construction, the Applicant must prepare an Environmental Management Strategy for the development to the satisfaction of the Secretary. This strategy must: (e) include: (i) the following subplans: • soil, stormwater, water quality, flood and spoil management; • construction and decommissioning noise, including an out-of-hours works protocol; • air quality management; • contamination, including an unexpected finds protocol; • waste management; and • traffic.	This TMP

Consent requirement	Section/reference
A11. Unless the Applicant and the applicable authority agree otherwise, the Applicant must: (a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full costs associated with relocating, any public infrastructure that needs to be relocated as a result of the development. This condition does not apply to the upgrade and maintenance of the road network, which is expressly provided for in the conditions of this consent.	Section 6
A12. The Applicant must ensure that all plant and equipment used on site, or in connection with the development, is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Section 6
B12. The Applicant must: (a) ensure that noise generated by any construction is managed in accordance with the <i>Interim Construction Noise Guideline</i> (DECC, 2009), or its latest version; and (b) take all reasonable and feasible steps to minimise noise from construction and operational activities.	Section 6

1.1 Purpose and scope

The purpose of this TMP is to:

- Summarise the potential impacts of construction on the local road network as assessed in the LBBAWP EIS (Jacobs, 2021)
- Identify the controls to be implemented to minimise construction traffic impacts
- Maintain compliance with the conditions of SSD 8889679, Environmental Protection Licence (EPL) 779, and legislation relating to traffic management.

The LBBAWP is staged and this TMP specifically addresses the Stage 3 BAW as identified in Section 1.2.1 and described in the EMS (hereafter referred to as “the Project”). The TMP and accompanying EMS for Stage 1 and Stage 2 works are available on the [AGLM Website](#) for public reference following DPE approval.

Works undertaken by the Project Principal Contractor and any appointed sub-contractors must comply with the environmental management measures outlined in Section 6 of this NMP.

1.2 Project overview

AGL Macquarie Pty Limited (AGLM) own and operate the Bayswater power station (Bayswater) which is approved to generate up to 2,740 megawatts (MW), the now retired (April 2023) 2,000 MW Liddell power station (Liddell), the 50 MW Hunter Valley Gas Turbines and associated ancillary infrastructure systems.

AGL has publicly announced its intention to transition towards a low-carbon future and respond to the requirements from the NEM and customers. Bayswater is expected to operate through to 2035 and then is intended to be retired. AGL has committed to closing all coal fired generation assets in its portfolio by 2050.

AGLM is undertaking works that will facilitate the efficient, safe, and reliable continuation of electricity generating works from the Bayswater and Liddell sites through the LBBAWP, of which this Project is a sub-stage. The overarching LBBAWP involves the following:

- **Decoupling Works:** Alternative network connection arrangements for the Liddell 33 Kilovolt (kV) Switching Station that provides electricity to infrastructure required for the ongoing operation of Bayswater and associated ancillary infrastructure and third-party industrial energy users.
- **Liddell Battery (the Battery):** The installation of a grid connected Battery Energy Storage System with capacity of up to 500 MW and 2 GWh.
- **Bayswater Ancillary Works:** Works associated with the ongoing operation of Bayswater which includes (but is not limited to) upgrades to ancillary infrastructure such as pumps, pipelines, conveyor systems, roads and assets to enable maintenance, repairs, replacement, expansion or demolition.
- **Consolidated consents:** A modern consolidated consent for the continued operation of Bayswater through the voluntary surrender and consolidation into this application of various existing development approvals required for the ongoing operation of AGLM assets.

The Project includes Stage 3 BAW works as listed in Section 1.2.1.

1.2.1 Project elements

The purpose of the Stage 3 BAW Project is to respond to the ongoing operational and maintenance requirements of Bayswater, as well align with modern office and site requirements. The proposed works and expected construction staging include:

1. **Shortening of the MA1B Conveyor** as the conveyor is no longer required to transport coal from the Mt Arthur Coal Mine. Works are anticipated to be completed over a 3-month period and involve approximately 25 construction personnel.
Proposed works would include:
 - (a) Construction of a new concrete foundation adjacent to the existing Antiene Check Weigh Bin
 - (b) Modification to ancillary power, water and communications infrastructure
 - (c) Establishment of spillage control and capture and water management infrastructure
 - (d) Removal of redundant conveyor belts and associated conveyor stringer, purlins, idler rollers footing piers, electrical cabling, pull wires and roof sheeting
 - (e) Rehabilitation of areas no longer required for operational purposes.
2. **Refurbishment of River Road** including complete surface removal, repairs will be made to the underlying layers (subgrade) and levelling and reconstruction of approximately 3 kilometres (km) of the dual lane River Road from its junction with the Bayswater Access Road to the Bayswater tank farm. Anticipated to be completed over a 2-month period and involve approximately 50 contract personnel. No change expected to scope or footprint of the current roadway. Staging is expected to occur within the construction footprint, with traffic diverted to a single lane when works are to occur (no additional disturbance area).
Proposed works include:
 - (a) Current road surface removal
 - (b) Repairs to the underlying layers and levelling
 - (c) Construction of the new road surface.
3. **Formalisation of Waste Storage Area** for hydrocarbons, oils, and greases generated onsite, with a total storage capacity of approximately 20 Kilolitres (kL). This includes environmental controls such as bunding, runoff management and roofing. A fully containerised / self-bunded solution is proposed to be established in a pre-bunded concrete hard stand area (already existing).

4. **Construction of a small diameter brine concentrator return water pipeline** (approximately 3 km long) to return brine from the brine concentrator decant basin to the brine concentrator. Minimal earth works are expected to be required. Installation of additional HDPE pipe approximately 50 mm diameter. To be laid on earth surface adjacent to existing pipeline (within 1 m of existing pipeline). No additional works outside of pipeline installation are expected. Anticipated to be completed over a 1-month period and to involve approximately 20 contract personnel.
5. **Replacement of the existing emergency power system** with a new system. The new system would include three 415 V diesel generators with two located outside the existing diesel generator building that would connect to the existing 6.6 kV network via 415 V / 6.6 kV step up transformers. The third diesel generator would remain connected to the 1/2 end 415 V diesel generator switchboard via a change-over switch such that power can be supplied from the third diesel generator or via the 6.6 kV network. The existing diesel generator building would have all redundant equipment removed allowing the building to be repurposed. Anticipated to be completed over a 2-month period and to involve approximately 5 contractor personnel.
6. **Formalisation of the contractor area** involving upgrades to the current informal contractor area established between Bayswater turbine hall and coal handling yards including electrical works, earthworks, road grading, sealing, drainage improvements and establishment of carparks and offices for use during maintenance shutdowns.
7. **Installation of auxiliary infrastructure** such as maintenance storage areas, laydown, car parks, security gatehouse upgrades, washdown facilities, car wash, equipment wash, and a drive through hard stand area. These are to be equipped with appropriate civil design, drainage, coal settlement bund, oil water separator and water transfer to contaminated water bund to the east of proposed area. Works associated with security gatehouse, laydown and storage are currently seen as maintenance and upkeep of existing infrastructure.
8. **Establishment of a cultural heritage storage area** for heritage items salvaged during earthworks. This will be a temporary containerised solution available for use as required. It is expected that the containers would be trucked in to site and placed on to a disturbed area on the inner footprint at Bayswater. The storage containers would be removed from site once the cultural heritage items are relocated. This would occur after construction is completed and be carried out in agreement with the RAPs.
9. **Refurbishment of the Administration Building** including redesign and upgrade of workspaces, kitchens and amenities.

The proposed works include:

- (d) removal of internal walls to create more open plan office space and lunchrooms, effectively repurposing some areas within the existing building
- (e) conversion of an existing toilet into a disabled compliant toilet
- (f) installation of a cabin lift in the existing to improve accessibility, noting that the only means of accessing the first floor currently is via stairs
- (g) replacement of two existing doors with an automatic opening door
- (h) installation of small internal roof electronic beacons to enable assisted office navigation for seeing or hearing-impaired persons
- (i) modification of kitchen spaces to increase accessibility, by lowering fittings and improving cabinetry and
- (j) widening of concrete paths and installation of handrails to enable wheelchair access.

The Social club will be pursued under a stand-alone Development Application at a later stage on a separate parcel of land.

1.3 Site location

The Project is located within the 10,000 hectares (ha) AGLM landholding, which encompasses Bayswater, Liddell, the Ravensworth rehabilitation area, Lake Liddell and surrounding buffer lands. The AGLM landholding is located approximately 15 kilometres (km) south-east of Muswellbrook, 25 km north-west of Singleton, and approximately 165 km west northwest of Sydney in NSW. The location of the AGLM landholding is shown in Figure 1.

The Project footprint is located within and surrounding Bayswater, as shown in Figure 2. Bayswater is accessible from the New England Highway via an interchange with an unnamed east-west access road. The access road is a single carriageway road with one lane in each direction.

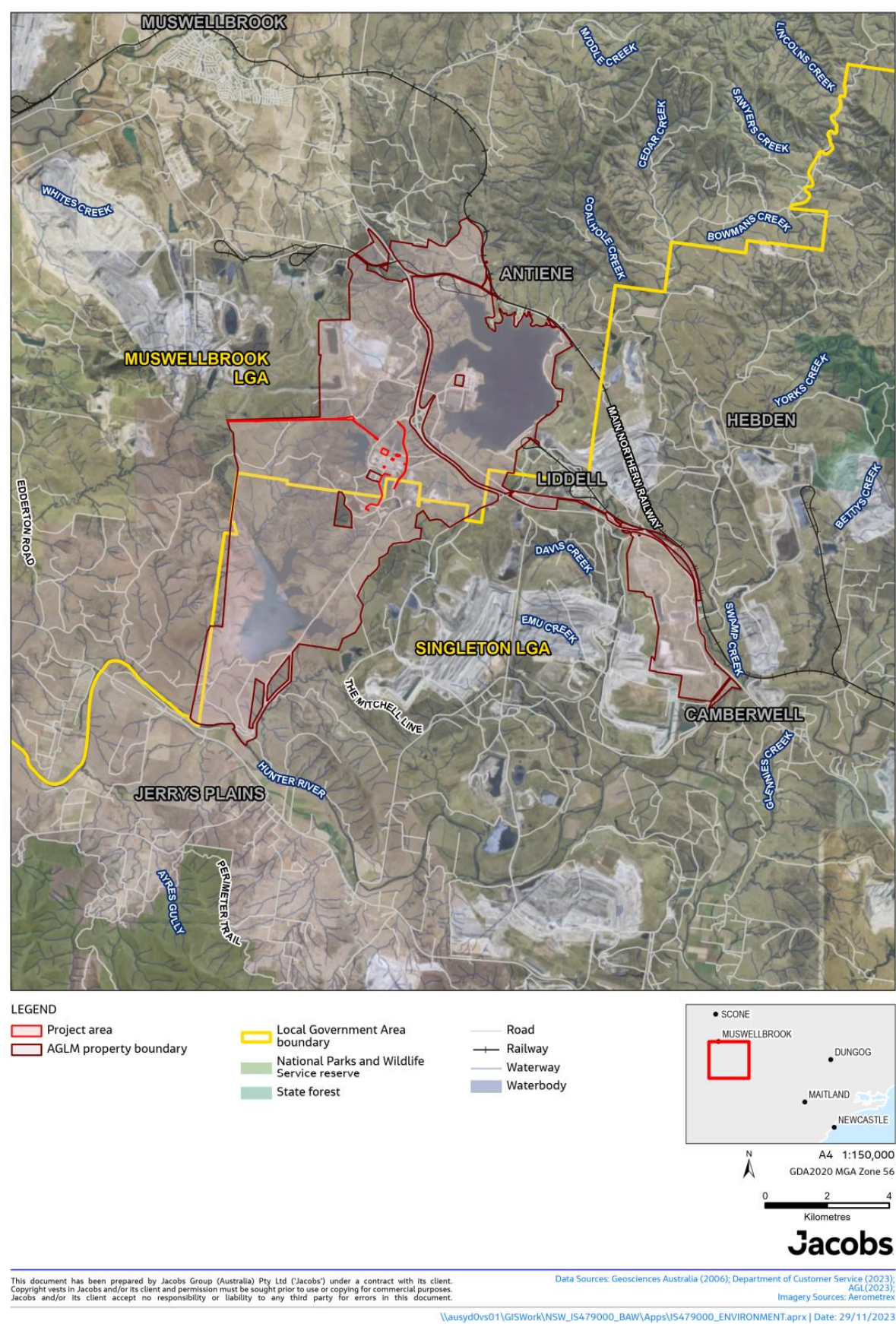


Figure 1. Project location

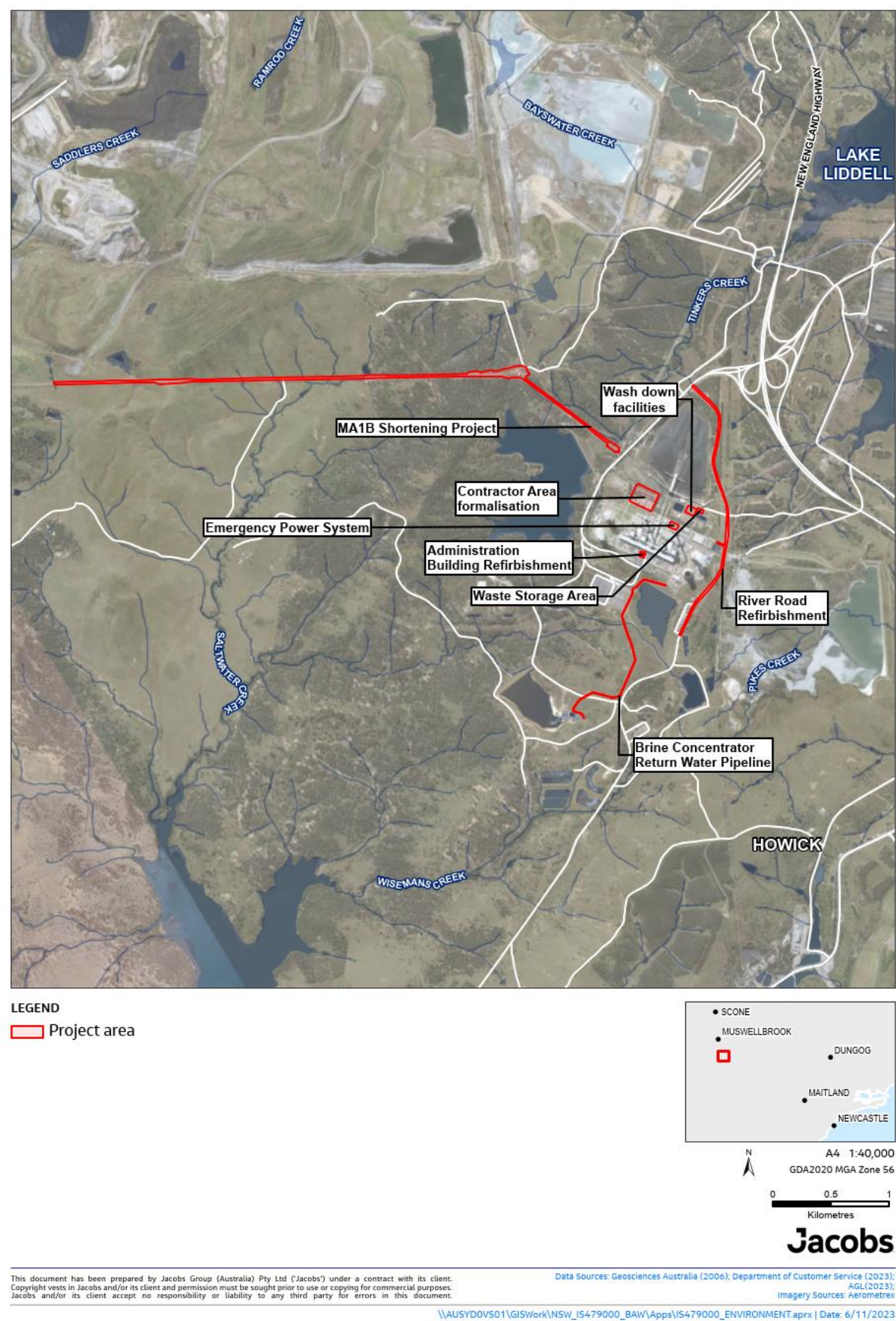


Figure 2. Project area

1.4 Related reports and plans

There are environmental assessments, management plans and monitoring programs for existing and proposed operations within the AGLM landholdings. The following documents are considered related and may need to be read in conjunction with this TMP:

- Traffic and Pedestrian Management Procedure (AGLM-HSE-PRO-008.04.02)
- Liddell Battery and Bayswater Ancillary Works Project EIS: Appendix C - Traffic and Transport Assessment (Jacobs, 2021)
- Bayswater WOAOW Environmental Management Strategy (Jacobs, 2022).

2. Regulatory requirements

2.1 Relevant legislation and conditions

Legislation relevant to managing traffic impacts includes:

- *Roads Act, 1993 (NSW)* (Roads Act)
 - The Roads Act regulates the carrying out of certain activities on public roads, provides the classification of roads, declares Transport for NSW (TfNSW) and other public authorities as roads authorities and establishes procedures for opening and closing public roads.
- *Road Transport Act, 2013 (NSW)*
 - The *Road Transport Act 2013* aims to consolidate in one Act most of the existing statutory provisions concerning road users, road transport and the improvement of road safety in this jurisdiction.
- *State Environmental Planning Policy (Transport and Infrastructure), 2021 (NSW)*
 - The *State Environmental Planning Policy (Transport and Infrastructure) 2021* aims to facilitate the effective delivery of infrastructure across the State.
- *Heavy Vehicle National Law, 2013 No. 42a (NSW)*
 - The *Heavy Vehicle National Law 2013 (No. 42a)* aims to establish a national scheme for facilitating and regulating the use of heavy vehicles on the road.
- *Work Health and Safety Act, 2011*
 - The *Work Health and Safety Act 2011* provides a national framework to secure the health and safety of workers. Matters which fall under the WHS Act are prescribed in the *Work Health and Safety Regulation, 2017*.

The Minister's Conditions of Approval for the LBBAWP, relevant to the TMP, are listed in Table 1.

2.1.1 Additional requirements

Additional environmental requirements established in the EIS are detailed in Table 3.

Table 3. LBBAWP EIS - Traffic and Transport management requirements

Reference	Management measure	Timing
TT1	The haulage contractor will prepare and implement a Construction Traffic Management Plan (CTMP) for oversized overmass (OSOM) vehicle movements, which will include: ▪ Identification of the routes ▪ Measures to provide an escort for the loads ▪ Times of transporting to minimise impacts on the road network ▪ Communication of strategy and liaising with emergency services and police.	Pre-construction and construction
TT2	An oversized vehicle permit will be sought for all oversized overmass movements where required. The OSOM movements would be in accordance with the permit requirements and be outside of peak traffic periods where possible.	Pre-construction and construction
TT3	The CEMP and general site induction will inform construction and operational personnel of the risk of collisions, particularly with animals during rain or periods of low light.	Construction and operation

2.2 Standards and guidelines

The key standards and guidelines relevant to this TMP are:

- *Guide to Traffic Management* (Austroads, 2020)
 - The *Guide to Traffic Management* provides comprehensive traffic management guidance for practitioners involved in traffic engineering, road design and road safety.
- *Guide to Temporary Traffic Management* (Austroads, 2021)
 - The *Guide to Temporary Traffic Management* details contemporary temporary traffic management practice for application in Australia and New Zealand. It provides guidance for the planning, design and implementation of safe, economical and efficient temporary traffic management designs.
- *Traffic Control at Worksites Technical Manual* (TfNSW, 2022)
 - The *Traffic Control at Worksites Technical Manual* provides the requirements for temporary traffic management at Transport construction and maintenance work sites in line with recent industry and national practice updates.
- *AS 1742 - Manual of Uniform Traffic Control Devices*
 - This Standard covers the signs used for regulating, warning and guiding road users. It specifies the sign classifications and the numbering system used and sets out the basic design of signs in terms of colour and shape coding.

3. Performance criteria

High level targets for the traffic and transport are set for the Project, described in Table 4. These are based on legislative requirements (SSD 8889679 and EPL 779) and AGLM's commitment to the continuous improvement of their environmental performance.

Table 4. Traffic criteria

Aspect	Target	Indicator	Timeframe
General	All control measures listed in this TMP are to be implemented, as required.	Number of non-conformances with this TMP.	Ongoing
Road safety	No incidents or injuries to workers and/or the public or damage to property as a result of construction related traffic and transport.	Number of incidents.	Ongoing
Disruptions	Disruptions to external road users and surrounding community to be minimised, so far as reasonably practicable.	Number of complaints, written warnings, or infringement notices.	Ongoing
Emergency service access	Maintain access for emergency services at all times (i.e. zero obstructions).	Number of reported obstructions.	
Training & Awareness	All personnel working on behalf of AGLM to complete the Site Induction, which will include environmental awareness components.	Percentage of workforce personnel that have completed the Site Induction prior to beginning work on the Project.	Ongoing
	All personnel required to control traffic on public roads are suitably trained and qualified.	Percentage of workforce personnel undertaking traffic control duties that have completed the required course.	Ongoing

4. Existing environment

4.1 Site access

The AGLM landholding is connected to the surrounding road network via an access road and grade-separated interchange to and from the New England Highway, as shown in Figure 4. The key surrounding road is the New England Highway, which is a national highway linking Newcastle to Brisbane. Near the Project site, the New England Highway is dual carriageway with two lanes in each direction and a central median. The speed limit on public roads in the vicinity of the Project area is 100 kilometres per hour (km/h).

The Project site is accessible from the New England Highway via an interchange with an unnamed east-west access road. The access road is a single carriageway road with one lane in each direction. The road has a sign posted speed limit of 60 km/h.

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

4.1.1 Heavy vehicle access

Between the Project site and Port of Newcastle, where main Project components are expected to originate, the road network also consists of several motorways and state roads, carrying moderate volumes of traffic, including heavy vehicles. These form part of the approved 25/26 m B-double network and OSOM load carrying vehicle networks, and include the New England Highway, the unnamed east-west access road, Maitland Road, John Renshaw Drive and the Hunter Expressway.

Heavy vehicles travel to the site via the New England Highway and the Liddell and Bayswater interchange which leads to the unnamed east-west access road.

4.2 Existing traffic volumes

Assessment undertaken for the EIS obtained traffic volumes for the New England Highway from the TfNSW permanent count station (ID 6153) located to the south of the Project site, approximately 200 m north of Rix's Creek Lane, Rix's Creek. In 2019, the average weekday traffic volumes were approximately 14,500 vehicles per day, with 24 % of this volume being heavy vehicles.

As shown in Figure 3, the peak hour traffic volume on the highway was about 1,037 vehicles per hour in each direction across the two lanes. Peak traffic hours can be seen to occur in the hours starting 5:00am and 5:00pm, for the morning and evening peaks respectively. Traffic volumes on the New England Highway were similar in the morning and evening peak hours.

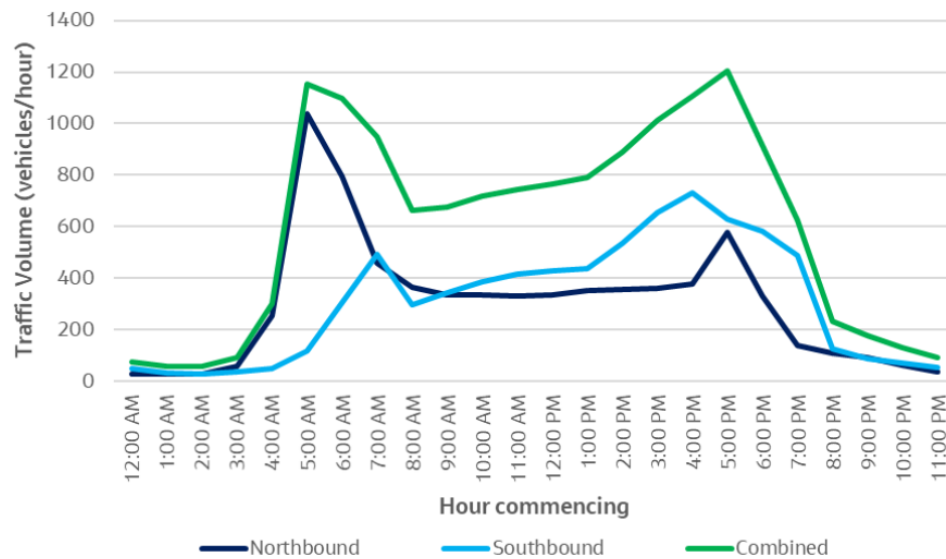


Figure 3. Average weekday hourly traffic volumes (2019) for the New England Highway (TfNSW Traffic Volume Viewer, November 2020)

Traffic volumes for the Liddell and Bayswater interchange and access road were obtained from traffic surveys undertaken on 22 May 2018, and are assumed to be representative of present-day volumes. At the interchange, the morning peak hour was 6:00am – 7:00am and the evening peak hour was 5:30pm – 6:30pm. Most of the traffic generated by the site travels to and from the south, with only a small volume of traffic travelling between Bayswater and Liddell. Heavy vehicle volumes at the interchange make up between 5 to 10 % of the total volume of traffic.

4.3 Crash history

Crash data was provided by TfNSW in November 2020 for the most recent full five-year period of available data from January 2015 to December 2019 indicated that, three crashes occurred on the New England Highway and one crash occurred at the interchange. Two crashes involved striking a kangaroo or straying stock (most common crash type), and the other two crashes occurred in darkness while raining

Stage 3 Bayswater Ancillary Works - Traffic Management Plan

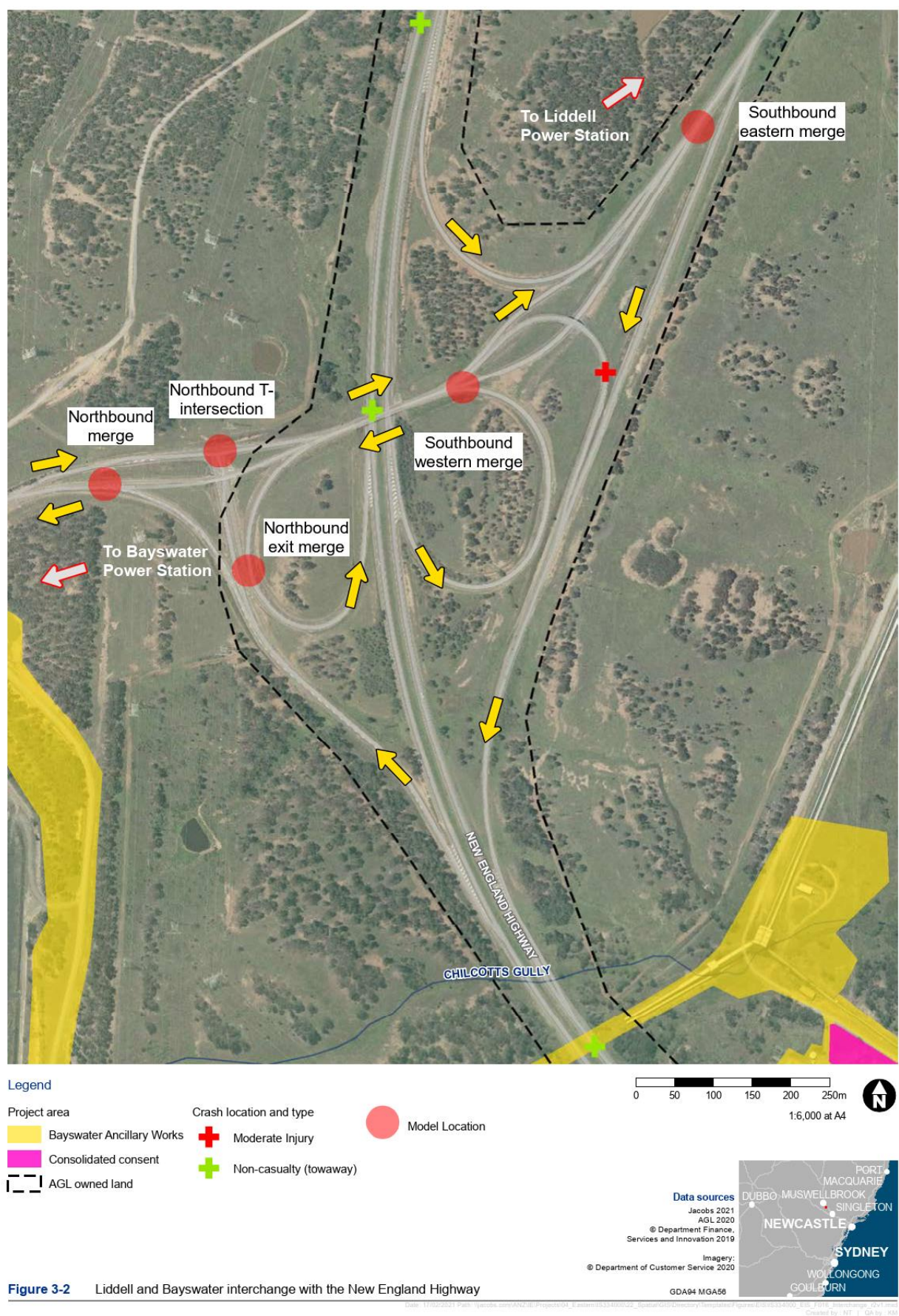


Figure 4. Liddell and Bayswater interchange with the New England Highway

5. Traffic impacts

Construction activities undertaken for the Project will generate traffic associated with the haulage and delivery of construction materials and equipment, transport of the construction workforce, and general site activities.

The additional traffic volumes required for the Project are expected to have a minimal impact on the road network and operation of the New England Highway.

5.1 Construction hours

The majority of construction work will be undertaken during standard construction hours, which are defined as:

- 7:00am to 6:00 pm Monday to Friday, inclusive
- 8:00 am to 1:00 pm on Saturday
- At no time on Sunday or Public Holidays

As a worst-case scenario, it is assumed that all light vehicle movements would occur within one hour before shift start and one hour after shift end.

The majority of heavy traffic movements would occur between 6:00am to 7:00pm, and it is assumed that movements would be distributed evenly throughout the day across standard construction hours.

5.2 Traffic generation and distribution

As defined in the EIS, Stage 3 BAW would require an additional 100 workers travelling to Bayswater, generating an expected 100 two-way light vehicle movements per day. Furthermore, an additional 50 two-way heavy vehicle movements are expected to be generated per day.

The traffic distribution of vehicles generated by the Project is assumed to be similar to the existing proportion of vehicles travelling to the site each day. Assessment undertaken for the EIS showed that approximately 60% of vehicles access the site from the south and approximately 40% access the site from the north.

The use of OSOM vehicles is not anticipated for the Project, however these may be required due to unforeseen circumstances / emergency management.

5.3 Intersection level of service and queue length

The criteria for evaluating the operational performance of intersections is defined in Table 5 and comes from the Guide to Traffic Generating Developments (Roads and Traffic Authority, 2002). For priority sign-controlled intersections, the criteria for evaluating the performance of intersections is based on the worst delay across all legs of the intersection during the peak hour. This average vehicle delay is equated to a corresponding level of service (LoS) from A (best) to F (worst). For rural roads, the desired LoS is C.

Table 5. LoS definitions

LoS	Average delay (seconds/vehicle)	Give way and stop signs
A	Less than 15	Good operation
B	15 to 28	Acceptable delays and spare capacity
C	29 to 42	Satisfactory, but accident study required
D	43 to 56	Near capacity and accident study required

LoS	Average delay (seconds/vehicle)	Give way and stop signs
E	57 to 70	At capacity, requires other control mode
F	Over 70	Extreme delay, traffic signal or other major treatment required

Modelling undertaken for the EIS determined the four key constraint intersections on the New England Highway exit ramps and the interchange currently operate at LoS A with abundant spare capacity, and that peak scenario queue lengths are expected to be very low and are not expected to extend into, nor impact motorway operation.

In addition, there is excess capacity to accommodate the cumulative additional traffic generation on the New England Highway without having a large impact on the operation of the highway.

5.4 Road safety

The additional traffic generation by the construction of the Project is unlikely to have an impact on future crash frequency. In addition, modelled future year peak scenario queue lengths are expected to be very low and are not expected to extend into nor cause safety issues on the New England Highway.

While an increase in construction related traffic may impact on perceptions of road safety for some individuals, this is unlikely to impact the overall community perception of road safety.

6. Traffic control measures

Control measures and mitigation strategies elected to reduce traffic and transport risks associated with the Project are described in Table 6.

Table 6. Environmental management measures - Traffic

Reference	Management measure	Timing	Responsibility
TMP1	The haulage contractor will prepare and implement a CTMP for any planned OSOM vehicle movements, which will include: ▪ Identification of the routes ▪ Measures to provide an escort for the loads ▪ Times of transporting to minimise impacts on the road network ▪ Communication of strategy and liaising with emergency services and police.	Pre – Construction	Prior to and during construction
TMP2	An oversized vehicle permit will be sought for all OSOM vehicle movements where required. The OSOM movements would be in accordance with the permit requirements and be outside of peak traffic periods where possible.	Pre – Construction	Principal Contractor
TMP3	All roadways and/or access ways to be used by vehicles or any other mobile plant will be design in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Pre – Construction	Principal Contractor
TMP4	AGLM Site Speed Limits are established, signed and communicated as per the AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Pre – Construction	Principal Contractor
TMP5	Traffic Control Signage will be installed and maintained at AGLM detailing the road rules in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Pre – Construction	Principal Contractor
TMP6	Designated loading and unloading zones will be established in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Pre – Construction	Principal Contractor
TMP7	All persons required to control traffic shall be suitably trained and qualified. and receive appropriate information and instruction regarding the AGLM Traffic Management Plan.	Pre – Construction	Principal Contractor
TMP8	The Site Induction will inform construction and operational personnel of the risk of collisions,	Construction	Principal Contractor

Stage 3 Bayswater Ancillary Works - Traffic Management Plan

Reference	Management measure	Timing	Responsibility
	particularly with animals during rain or periods of low light.		
TMP9	Applicant must ensure that all plant and equipment used on site, or in connection with the development, is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Construction	Principal Contractor
TMP10	Site Driving Rules will be applicable to all personnel on-site, in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Construction	Principal Contractor
TMP11	All personnel are required to drive to the designated traffic flows appointed for this site in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Construction	Principal Contractor
TMP12	Right of Way Rules for vehicles and pedestrians will be applicable to all personnel on-site, in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Construction	Principal Contractor
TMP13	An external security provider will ensure prevention of unauthorized vehicles in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Construction	Principal Contractor
TMP14	Parking protocols for vehicles and mobile plant are to be followed where practicable, as outlined in AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Construction	Principal Contractor
TMP15	Drivers and operators are responsible for undertaking pre-start inspections of their vehicle/ equipment prior to the use of such equipment and to notify their supervisor of any defects recorded in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure. All defects will be entered into SAP.	Construction	Principal Contractor
TMP16	All vehicles will be maintained and driven in accordance with AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Construction	Principal Contractor
TMP17	Transportation of Materials will follow processes outlined in AGLM-HSE-PRO-007.04.02 Traffic and Pedestrian Management Procedure.	Construction	

6.1 Training

Construction workers who attend the Project site may be required to undergo training and awareness programs regarding traffic management, designated traffic flows, and parking protocols. Compulsory training will be determined by AGLM and will be developed and delivered by the Principal Contractor. Training delivered by the Principal Contractor will be subject to approval and auditing by AGLM to ensure it aligns with AGL induction requirements and fulfils the conditions of SSD 8889679.

Delivery of training may include:

- Toolbox Talks
- Work Inductions
- Meetings lead by the Environment Team
- Posters and educational items.

Training should detail:

- The contents of this TMP
- Legislation and legislative requirements pertaining to traffic management
- Nearby sensitive locations
- Complaint and enquiry reporting
- Management measures listed in the EIS and this TMP
- Specific responsibilities regarding the mitigation measures.

Training will be undertaken in accordance with Section 7.4 of the Stage 3 Bayswater Ancillary Works EMS.

7. Traffic monitoring

A recommended monitoring and inspection plan is provided in Table 7. Monitoring requirements for the Project are listed in Section 10 of the Stage 3 Bayswater Ancillary Works EMS.

Table 7. Traffic management monitoring plan

Monitoring	Frequency	Responsibility	Records
<i>Environmental site inspection:</i> ▪ Inspection of internal roads for signs of deterioration and maintenance requirements ▪ Inspection of traffic signage installed for the Project to ensure they are: - Clearly visible and mounted securely - Performing their function in directing traffic and alerting road users of heavy vehicles to potential safety issues ▪ Inspection of site entrances to ensure they are clear, free of overgrowth, and a clear line of site is provided for vehicles exiting the site.	Weekly	Principal Contractor	▪ Weekly Environmental Inspection Checklist
<i>Adverse weather event inspection:</i> Inspection of internal roads following periods of heavy rain or an adverse weather event.	As required	Principal Contractor	▪ Inspection checklist

8. Compliance management

8.1 Roles and responsibilities

Roles and responsibilities are outlined in Section 7.3 of the Stage 3 Bayswater Ancillary Works EMS.

8.2 Inspections

Inspections of the Project site will occur as outlined in Section 7.6 of the Stage 3 Bayswater Ancillary Works EMS.

8.3 Incidents and complaints

Incident management will be managed in accordance with the process outlined in Section 7.5 of the Stage 3 Bayswater Ancillary Works EMS.

Complaints and enquiries will be managed in accordance with the process outlined in Section 6.3 of the Stage 3 Bayswater Ancillary Works EMS.

8.4 Document review and update

All strategies, management plans, and programs that are produced to meet the SSD 8889679 development consent requirements will be regularly reviewed as part of a continual improvement process to ensure they remain current and relevant to the Project.

It is a requirement of the EMS that the associated plans, studies and strategies are reviewed and updated within three months of the following events, including:

- The submission of an environmental incident report
- The submission of an audit report
- The approval of any modification to the conditions of the development consent
- A direction of the DPE Planning Secretary.

Document and records management for the Project is described in Section 7 of the Stage 3 Bayswater Ancillary Works EMS.