



Hunter Power Project

Traffic Management Plan

| Approved Version 7

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Hunter Power Project

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Revision	Date	Description	Author	Reviewed	Approved
Final	20 December 2021	Final	A Alcock	M Mansour P Horn M Luger	K Ivanusic
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Amended Final	25 February 2022	Amended Final	A Alcock	M Luger	K Ivanusic

The initial revisions of this management plan were prepared by Jacobs and Snowy Hydro and approved by the Department for the Hunter Power Project. Details of the review process are detailed in the document history table above. Subsequent versions of the approved management plan have been updated by Snowy Hydro and endorsed by the Department's approved Environmental Representative. The reasons for, and key changes to the management plan are detailed in the table below.

Approved management plan version history

Approved version	Date	Description of changes	Author	Date endorsed by ER
1	18 January 2022	Previously referred to as Amended Final 2 and endorsed by the Department and the ER	A Alcock	25 February 2022
2	29 June 2022	Document updated in response to approval of the Out of Hours Work Consistency Assessment and the Land Use Consistency Assessment. Changes made to the Traffic Management Plan relate to the change in construction hours and the use of the Precinct 3B area which is a block of vacant land located to the south of the Project Site layout that is proposed to be used for additional parking and laydown areas. The document was issued for the ER to review.	I Strachan	NA
3	17 August 2022	The management plan was updated in response to ER review comments on the version 2 document.	R Vazey	18 August 2022
4	19 December 2022	Addition of Section 4.5 and Appendix D to allow for increases in heavy vehicle numbers outside of standard hours to align with the Department's approval of the out of work hours for continuous concrete pours, and some slight changes to wording in Sections 5.2, 6, 7.2 and Tables 6.1, 7.2 and 8.1.	R Vazey, A van der Kroft and M Luger	11 January 2023

Approved version	Date	Description of changes	Author	Date endorsed by ER
5.1	3 April 2023	Addition of OSOM Transport Management Plan as Appendix E and also to align with Modification 1 to the Infrastructure Approval	A van der Kroft	6 April 2023
6	15 January 2024	Document updated in response to the approval of Modification 2 on 18 November 2023.	A van der Kroft	13 February 2024
7	10 December 2024	Updated to include commissioning activities	A van der Kroft	18 December 2024

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Glossary of terms

Term	Definition
Department	Same meaning as Department under the EP&A Act
EPA Regulation	Environmental Planning and Assessment Regulation 2000
Mitigation	Action to reduce the severity of an impact
Principal Contractor	The Contractor engaged by Snowy Hydro Limited, who has management and control over the construction and commissioning stages of the Project, and who will plan, manage, monitor and coordinate Health, Safety and Environment activities
Program	Surface and groundwater monitoring program
Project	The Hunter Power Project; formerly referred to as the Kurri Kurri Power Station Project
Project Site	The area of land that is directly impacted on by the development, including access roads, and areas used to store construction materials
Proponent	Snowy Hydro Limited
Secretary	Planning Secretary under the EP&A Act, or nominee
Secretary's Approval	A written approval from the Secretary and/or delegate
Sensitive Receptor	A location where people are likely to work or reside; this may include a dwelling, school, hospital, office or public recreational area (EPA 2016)
Significant	Greater than 20% concentration value difference between impact site and reference site

Abbreviations

Term	Definition
AS	Australian Standard
CEMS	Construction Environmental Management Strategy
CTMP	Construction Traffic Management Plan
DECC	Department of Environment, Climate Change (NSW)
EIS	Environmental Impact Statement
EPA	Environment Protection Authority (NSW)
EP&A Act	Environmental Planning and Assessment Act 1979
km/hr	Kilometres per hour
LOS	Level of Service
NSW	New South Wales
OSOM	Oversize overmass
pcu	Passenger car units
PE	Personal Protective Equipment
TfNSW	Transport for New South Wales
TMP	Traffic Management Plan

1. Introduction

1.1 Background and purpose

Snowy Hydro Limited (Snowy Hydro) (Proponent) are developing a gas fired power station near Kurri Kurri ('Project'), New South Wales (NSW) – see Figure 1-1. The Project involves the construction and operation of an open cycle gas turbine power station and electrical switchyard, together with other associated infrastructure.

The major supporting infrastructure that is part of the Project will be a 132 kilovolt (kV) electrical switchyard located within the Project Site – see Figure 1-2 and Figure 1-3. Other supporting infrastructure elements of the Project include:

- Storage tanks and other water management infrastructure
- Fire water storage and firefighting equipment such as hydrants and pumps
- Maintenance laydown areas
- Diesel fuel storage tank(s) and truck unloading facilities
- Site access roads and car parking
- Office/administration, amenities, workshop/storage areas
- A provisional stormwater basin
- Car parking, site access roads, fabrication and laydown areas located within Precinct 3B, shown on Figure 1-2
- Temporary Worker Accommodation Facility, shown on Figure 1-2

The initial phase of construction to prepare the site and install environmental controls commenced in early 2022. Towards the end of construction, each turbine and all ancillary equipment in turn will be commissioned cold. Following this, will be hot commissioning of each turbine on diesel as well as on natural gas.

This Transport Management Plan (TMP) forms part of the Construction Environmental Management Strategy (CEMS) for the Hunter Power Project (the Project). This TMP has been prepared to address the requirements of the Infrastructure Approval conditions as Modified on 1 March 2023 and 16 November 2023, the commitments listed in the Hunter Power Project Environmental Impact Statement (EIS) and applicable legislation.

This TMP interfaces with the CEMS and other associated management plans, which together describe the proposed overall management system for the construction and commissioning of the Project.

A Transport (Traffic) Management Plan is a requirement of the Infrastructure Approval Condition B48 and has been prepared in consultation with Council and Transport for NSW (TfNSW). The TMP must be approved by the Secretary prior to commencing construction. This TMP addresses traffic management associated with construction and commissioning only. As per Infrastructure Approval Condition C21 – staged plans, Snowy Hydro will develop an operational TMP for approval by the Secretary prior to commencing operations.

This TMP is applicable to the construction and commissioning phases of the Project and has been prepared to:

- Outline the measures to be implemented to comply with the Condition B48 of the Infrastructure Approval
- Describe the measures to ensure commitments in the EIS in relation to traffic and transport are implemented
- Describe how traffic, transport and access arrangements are to be managed during the construction and commissioning of the Project to minimise impacts on the surrounding road network and community.

Snowy Hydro commits to implementing the approved Traffic Management Plan.

A key objective of the TMP is to enable the construction and commissioning of the Project in accordance with the Project Environmental Impact Statement (EIS), Minister for Planning and Public Space's Conditions of Approval for the Project (CoA) and Environmental Mitigation Measures (EMM).

1.2 Project location

The Project Site address is 1 Hart Road, Loxford, NSW and part of an Industrial Estate under development. Access to the property is via Hart Road and the property is approximately 1.0 km from the M15 Hunter Expressway as shown in Figure 1-1 and Figure 1-2. A layout of the Project is provided in Figure 1-2 with the Project location and Project Area, including Precinct 3B following the approval of Modification 1 on 1 March 2023 and the Temporary Worker Accommodation Facility following the approval of Modification 2 on 16 November 2023. A description of the location and existing conditions relevant to this TMP are set out in Section 3.

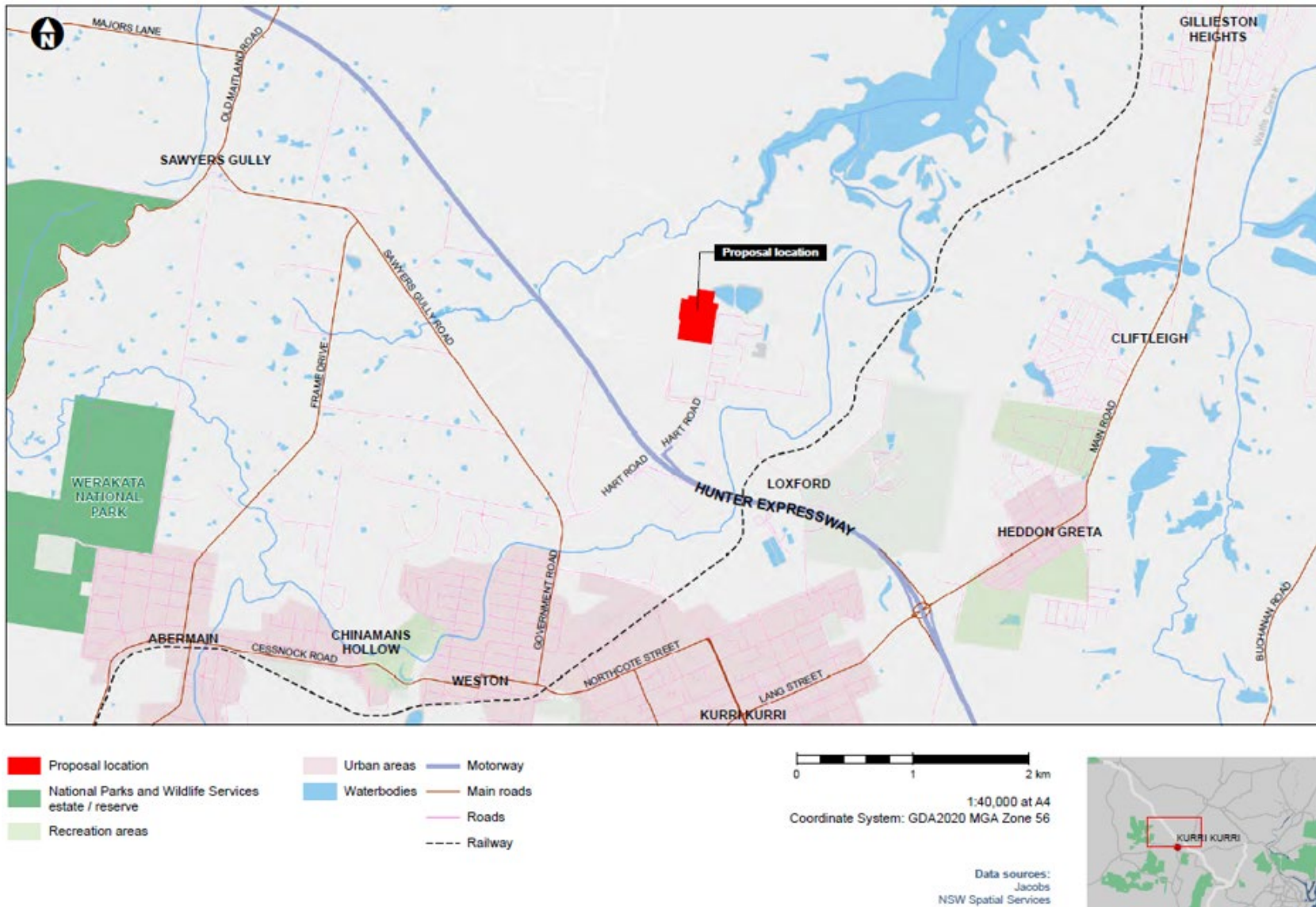


Figure 1-1 Project Location (regional)

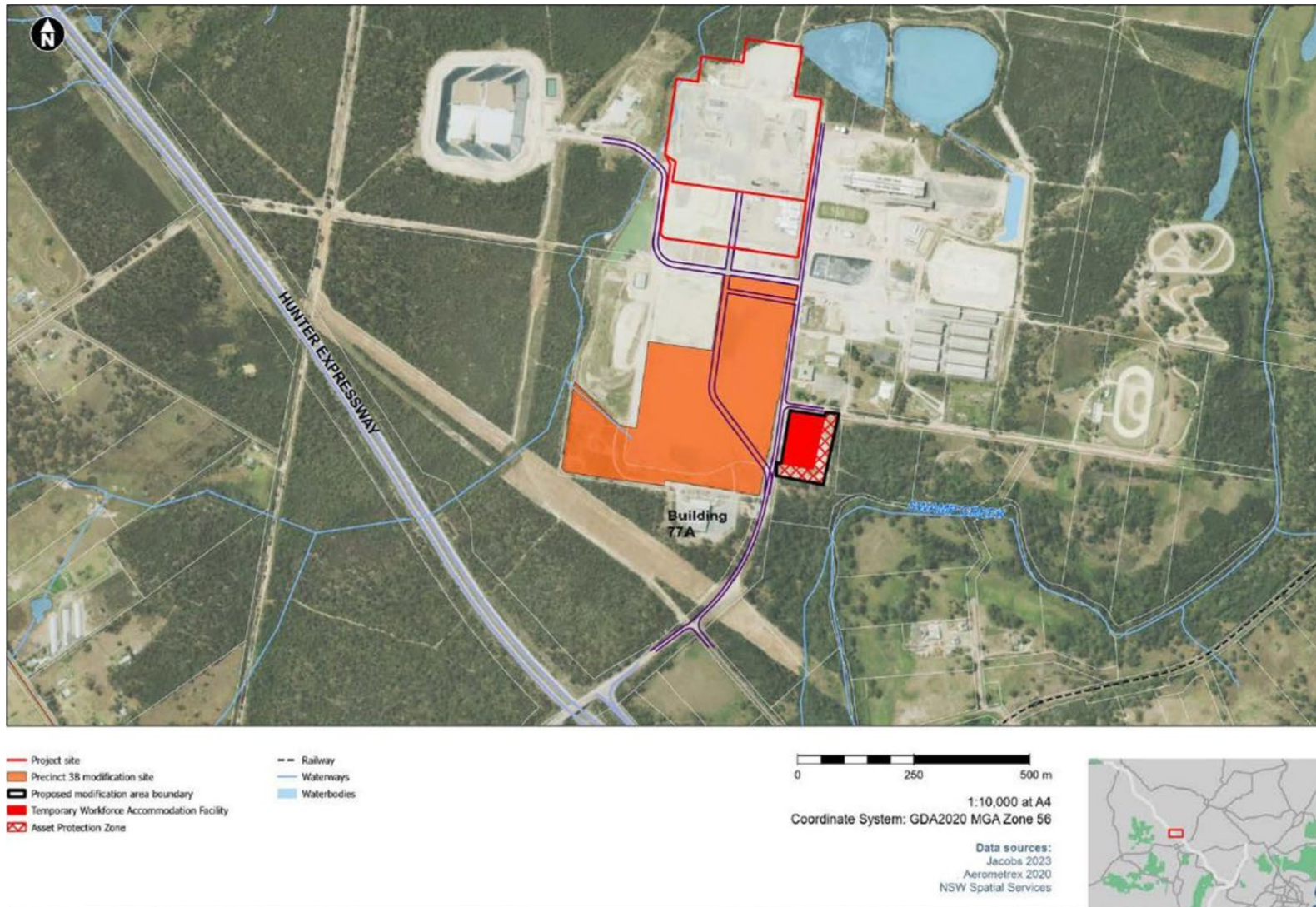


Figure 1-2 Project location (local)

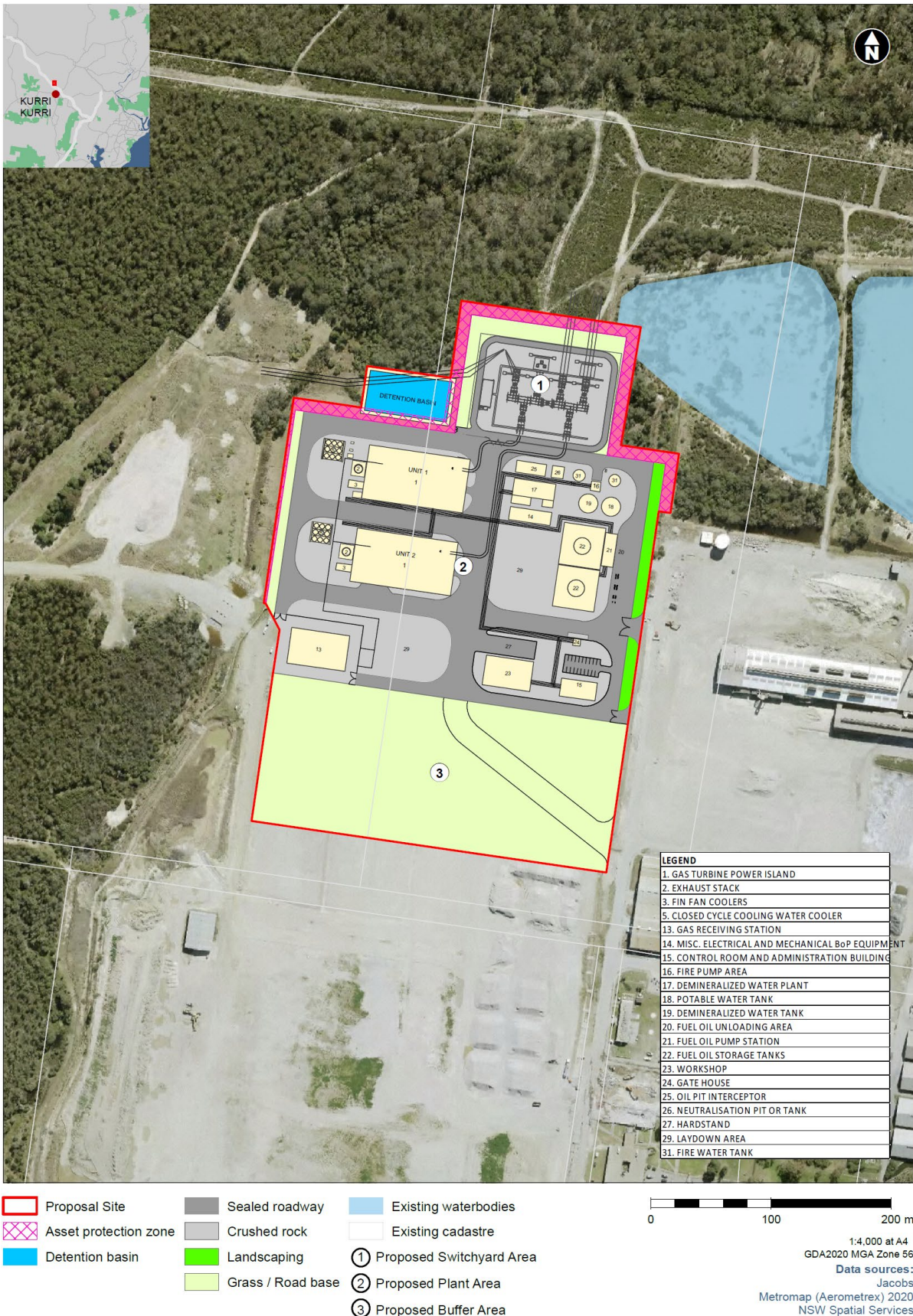


Figure 1-3 Site layout

1.3 Construction activities and program

The Project construction activities are outlined in Table 1-1.

Table 1-1 Construction activity summary

Construction stage	Construction activity per program	Activity details
Pre-construction/site establishment	Site access, civil works, and road construction to establish site	<ul style="list-style-type: none"> ● Installation of environmental controls, which may include temporary sheds, amenities, fencing, erosion and sediment controls, laydown/stockpiling areas, site surveys and, initial internal road building ● Construction of reinforced concrete pavement to support heavy vehicles (up to B-double size) ● Internal road layout design to account for turning paths of large vehicles, cranes, and articulated vehicles, so that movements in and out can be made in a forward direction ● Roadworks and hardstand areas to be constructed for car parking, delivery/laydown areas <p>Where required, bunded areas for delivery, handling, and storage of fuel and other hazardous material will be constructed</p>
Construction	Switchyard site preparation -	Clearing of vegetation
Site establishment and construction	Earthworks to prepare the Project Site and construction areas	<ul style="list-style-type: none"> ● Initial site clearing and grading works. Earthworks may involve small amounts of cut and fill to achieve the necessary design levels across the site ● Establishment of Precinct 3B under lease from Regrowth and Hydro Aluminium for parking and laydown areas ● Trenching for underground utilities and services will be installed such as stormwater, water and sewer reticulation, electrical cables, and (internal) gas pipes between the gas receiving station and the gas turbine locations ● Preparation and construction of foundations. Deep piling is expected to support the heaviest infrastructure such as the gas turbines, generator and the main step-up transformers while shallower piling or pad type foundations will underpin the foundations where the proposed surface loads are less (e.g. site office/administration buildings, car park). Final numbers and depth of foundation piles will be subject to detailed design, as is the piling method (i.e. bored; driven; vibration piling) ● Reinforced concrete slabs will be constructed in certain pavement areas, with other areas being surfaced with crushed rock or other suitable materials

Construction stage	Construction activity per program	Activity details
Construction	Balance of plant, switchyard construction, & turbine installation	<ul style="list-style-type: none"> • Delivery of oversize overmass plant from Newcastle Port such as the gas turbines • Installation of major plant items associated with the gas turbines including all above ground civil, mechanical, electrical plant equipment • Installation of electrical switchyard • Use of car parking, site access roads, fabrication and laydown areas within Precinct 3B • Construction and occupation of 200 bed Temporary Workforce Accommodation Facility
Commissioning	Commissioning and testing	<ul style="list-style-type: none"> • Program of testing and certification of all Project components, systems, and processes to demonstrate the Project can operate to the required standards before commencing operation • Commissioning comprises two phases: <ul style="list-style-type: none"> ○ Cold commissioning – has standard construction activities ○ Hot commissioning – has activities associated with setting up the operational plant and testing it according to a range of scenarios
Post-construction/demobilisation	Demobilisation	<ul style="list-style-type: none"> • Removal of construction equipment, site fencing and construction compounds • Installation and establishment of landscaping • Demobilisation of Temporary Workforce Accommodation Facility and relinquishment of area to landowner

1.4 Objectives of transport management

The development of this TMP has been guided by the following traffic management principles:

- Provide a safe environment for all road users
- Minimise disruptions to all road users and surrounding properties
- Maintain access for emergency services
- Keep road users, transport operators, emergency services and local communities informed in relation to changed traffic conditions.

1.5 Environmental targets

The environmental targets for the Project are identified in section 8 of the Construction Environmental Management Strategy (CEMS), with monitoring identified in the Construction Monitoring Program with the CEMS, which will also refer to this management plan for specific details of monitoring processes. It is noted that environmental performance targets are not required by condition of approval B48 for this Traffic Management Plan.

1.6 Associated management plans

There are interrelationships with other plans that provide associated information relevant to environmental management of traffic impacts. This is primarily the:

- Construction Environmental Management Strategy (CEMS) – demonstrates systems and procedures to ensure that controls are established and maintained to manage the potential environmental impacts, compliance, and performance through the construction and commissioning phases of the Project in accordance with applicable legislative requirements. It utilises information gathered in the planning phase through to the operational phase to ensure information continuity and transfer between the Proponent, Principal Contractor, and all teams working on each phase of the Project. Legislation and regulations related to the Project are also referenced within the CEMS
- Construction Noise Management Plan – which provides a procedure for Out of Hours Work (OOHW) which may be utilised in the instance of Oversize Overmass (OSOM) deliveries to the Project Site.

1.7 Relationship between Principal Contractor and Snowy Hydro

Snowy Hydro is responsible for the preparation of the Construction Environment Strategy and management plans under the Infrastructure Approval. The Principal Contractor has primary responsibility for implementation of those plans for the actions that involve site management and environmental mitigation measures. This is enacted through contractual requirements between SHL and the Principal Contractor.

Reporting obligations to the Department, and conditions that apply outside of site management are Snowy Hydro's responsibility, such as retirement of biodiversity credits or pre-construction road dilapidation surveys.

Due to this interaction and measures that will require the input from both Snowy Hydro and the Principal Contractor, such as Out of Hours Work, a close working relationship needs to be maintained between Contractors and Snowy Hydro.

1.8 Authors qualifications

A suitable qualified and experienced author prepared this TMP. The author's qualifications for the management plan were provided to the Department on 17 January 2022, and acknowledgement received from the Department Post-Approvals Team on 17 January 2022. Subsequent to the Department's approval of the TMP, further updates have been affected by Snowy Hydro as per Version History.

2. Legislative Context

2.1 Legislation

This TMP has been prepared in accordance with the legislation applicable to traffic and transport management in New South Wales, including:

- *Roads Act 1993*
- *Road Transport Act 2013*
- *NSW Environmental Planning and Assessment Act 1979*
- *State Environmental Planning Policy (Infrastructure) 2007*
- *NSW Road Noise Policy*
- *Heavy Vehicle National Law (NSW) (2013 No 42a)*

Relevant provisions of the above legislation are detailed in Appendix A of the CEMS.

2.2 Standards and guidelines

The following standards and guidelines have been referred to during the development of this TMP:

- Austroads Guide to Traffic Management
- Austroads Guide to Temporary Traffic Management
- TfNSW Traffic Control at Worksites Technical Manual (2020)
- TfNSW Supplements to Austroads Guide to Temporary Traffic Management (2020)
- Australian Standard AS1742- Manual of Uniform Traffic Control Devices.

2.3 Infrastructure Approval conditions

The overall traffic management requirements identified in the Infrastructure Approval conditions are listed in Table 2-1.

The conditions requirements for this TMP, as per the Infrastructure Approval as modified on the 1 March 2023, are listed in Table 2-2. A cross reference is also included to indicate where the conditions are addressed in this TMP.

Table 2-1 Infrastructure approval conditions – traffic management requirements

Condition	Requirement(s)	Where addressed
B47(a)	maintain all, roads and utility-related infrastructure on site in a safe and serviceable condition;	Section 6
B47(b)	provide sufficient parking on site for all vehicles;	Section 4.4, 5, 6
B47(c)	ensure heavy vehicles entering and leaving the site have loads covered or contained;	Section 6
B47(d)	minimise dust and/or sediment being tracked onto Hart Road and the public road network;	Section 6.1
B47(e)	minimise the traffic noise impacts of the development;	Section 4, Appendix A

Condition	Requirement(s)	Where addressed
B47(f)	keep the public informed of any road or infrastructure upgrades, disruptions to traffic, the closure of roads or other infrastructure, oversized overmass vehicle use, peak construction periods, and any emergencies; and	Section 7
B47(g)	manage traffic flow around the work sites, construction compounds and the Temporary Workforce Accommodation Facility.	Section 6

Table 2-2 Infrastructure approval conditions – Traffic Management Plan

Condition	Requirement(s)	Where addressed
B48	<ul style="list-style-type: none"> ▪ Prior to the commencement of construction, unless the Secretary agrees otherwise, the Proponent must prepare a Traffic Management Plan in consultation with Council and TfNSW for the development and to the satisfaction of the Secretary ▪ The Proponent must implement the approved Traffic Management Plan. 	This document
B48(a)	<ul style="list-style-type: none"> ▪ describe the measures that would be implemented to comply with the transport management requirements in condition B47 above; 	Table 2-1
B48(b)	<ul style="list-style-type: none"> ▪ include details of the transport route to be used for all construction and operational traffic; 	Section 4.3 and Section 4.4
B48l	<ul style="list-style-type: none"> ▪ include details of the measures that would be implemented to minimise traffic safety issues and disruption to local users of the transport route/s during construction and operations; 	Section 6 & Appendix C
B48(d)	<ul style="list-style-type: none"> ▪ include oversized overmass requirements and management; 	Section 6.11 and Appendix E
l(e)	<ul style="list-style-type: none"> ▪ include a driver's code of conduct that addresses: <ul style="list-style-type: none"> ▪ travelling speeds; ▪ driver fatigue; ▪ procedures to ensure that drivers adhere to the designated transport route's; and ▪ procedures to ensure that drivers implement safe drive practise; 	Section 6.2 and Appendix A
B48(f)	<ul style="list-style-type: none"> ▪ include a program to: <ul style="list-style-type: none"> ▪ record and track vehicle movements; and ▪ monitor the effectiveness of these measures; 	Section 6.3, Section 7.5 and Section 8
B48(g)	<ul style="list-style-type: none"> ▪ include a protocol for undertaking independent dilapidation surveys to assess the existing condition of Hart Road, prior to and following construction and decommissioning activities; 	Section 6.5
B48(h)	<ul style="list-style-type: none"> ▪ include measures to ensure that there are no more than 80 light vehicle movements per hour through the Main Road and Hunter Expressway interchange associated with the development in the morning and afternoon peak periods respectively during the construction period, including a protocol for the monthly verification of the origin of light vehicle movements in the morning and afternoon peak period; 	Section 4.3.1
B48(i)	<ul style="list-style-type: none"> ▪ describe measures to investigate opportunities to promote the use of shuttle buses and car-pooling during the construction period. 	Section 4.3.1

2.4 Consultation

The Infrastructure Approval requires the TMP is prepared in consultation Cessnock City Council and TfNSW and to the satisfaction of the Secretary. The following table outlines the consultation steps that were undertaken during the plan’s development and the outcomes of that consultation.

Traffic Management Plan was revised and updated to reflect the changes due to Modification 1 being approved on the 1 March 2022. The updated version (1.5) prepared in consultation with Cessnock City Council and TfNSW as detailed in the table below.

Refer to Appendix C for the consultation responses summarised in Table 2-3.

Table 2-3 Consultation undertaken during the development of this TMP

Version	Agency	Feedback	Response & section reference
1	TfNSW	TfNSW responded the “the following comments are provided for your consideration concerning your submitted draft TMP: Management and Mitigation Measures <ul style="list-style-type: none"> OSOM vehicle movements that require adjustments to the State Road network and infrastructure (e.g. TCS, signage etc.) will require separate TfNSW consultation / approval. TfNSW requests a copy of the Dilapidation Report too please. TfNSW strongly encourages the promotion of car-pooling for the passenger vehicle class” 	<ul style="list-style-type: none"> TfNSW consultation and approval will be required for OSOM vehicle movements that require adjustments to the State Road Network (Section 4.3.3) A copy of the Hart Road Dilapidation report was provided to TfNSW Noted, this is addressed in Appendix A.
1	Cessnock City Council	Council consulted with the Principal Development Engineer and they “have no comments on the plans (Transport and Water)”.	Noted.
5.1	TfNSW	I confirm that we have no further comment upon the submitted revised draft TMP.	Noted.
5.1	Cessnock City Council	I have reviewed the tracked changes and confirm that Cessnock City Council has no objection to the proposed changes.	Noted.

3. Existing Conditions

3.1 Road network

The road network near the Project Site includes the M15 Hunter Expressway and Hart Road. The Hunter Expressway is a motorway providing connectivity between the M1 Pacific Motorway at the Newcastle Link Road interchange at Cameron Park and the New England Highway at Lower Belford. Near the Project Site, the Hunter Expressway is a four-lane, two-way dual carriageway road with a posted speed limit of 110 kilometres per hour.

Hart Road is accessible from the Hunter Expressway via on and off-ramps to and from the east only. To access Hart Road from the west, traffic must travel to an interchange located at the intersection of the Hunter Expressway and Main Road, approximately 3 km southeast of the Project Site and enter the Hunter Expressway in the eastbound direction. Site observations identified that traffic volumes at the Hart Road interchange are generally low.

Hart Road is a connector road that facilitates access between industrial and recreational land uses at Loxford and the Hunter Expressway as well as to local roads at Weston and Kurri Kurri. Near the Project Site, the posted speed limit is 70 kilometres per hour. Dickson Road is a local two-lane, two-way no-through road that connects Hart Road to the industrial and recreational land uses to the east of the Project Site.

The average annual weekday traffic volumes on the Hunter Expressway are shown in Table 3-1. Heavy vehicles account for approximately 13 per cent of the total traffic volume travelling along the Hunter Expressway.

Table 3-1 Average annual weekday total traffic volumes on Hunter Expressway

	2018	2019	2020
Eastbound (vehicles per weekday)	16,607	17,275	16,442
Westbound (vehicles per weekday)	16,824	17,043	16,389
Total	33,431	34,318	32,831

Source: Transport for NSW Traffic Volume Viewer (October 2021)

Near the Project Site, the Hunter Expressway and Hart Road both permit 25/26 m B-double and 4.6 m high vehicles. The Hunter Expressway and Hart Road are also part of the oversize overmass load carrying vehicles network (which permits eligible vehicles operating under the Multi-State Class 1 Load Carrying Vehicles Mass Exemption Notice and the Multi-State Class 1 Load Carrying Vehicles Dimension Exemption Notice), with the travel condition that vehicles or combinations exceeding 3.2 m in width are not permitted to travel from Monday to Friday from 5:00 am to 9:00 am and from Monday to Friday from 4:00 pm to 6:00 pm (except on State-wide public holidays).

3.2 Public transport network

No public transport services operate on Hart Road or the Hunter Expressway in the vicinity of the Project Site.

3.3 Pedestrian and cycling network

No formal off-road pedestrian or cycling facilities are provided on Hart Road or the Hunter Expressway. Site observations identified that pedestrian and cycling volumes are generally zero or very low in the vicinity of the Project Site.

3.4 Existing road safety

Vehicle crash data for the Hunter Expressway and Hart Road was sourced from Transport for NSW's CrashLink database (Transport for NSW, 2020). The crash records comprise self-reported crashes in the most recent five-year period of available data from 1 April 2015 to 1 March 2020.

Key crash statistics include:

- In the five-year period from 1 April 2015 to 1 March 2020, a total of 24 crashes were recorded
- 75 per cent of all crashes resulted in an injury
- No fatal crashes were recorded during the five-year period
- The most common crash type involved vehicles travelling in opposite directions (38 per cent of all crashes) followed by vehicles travelling in the same direction (29 per cent of all crashes)
- 25 per cent of crashes occurred in wet surface conditions and 42 per cent of crashes occurred in dark lighting conditions
- Crash rates are low on roads forming part of the proposed access route.

Crashes by injury severity are shown in Table 3-2. Crashes by surface and lighting conditions are shown in Table 3-3. Crash rates per 100,000 vehicles are shown in Table 3-4.

Table 3-2 Crashes by injury severity from 1 April 2015 to 1 March 2020

Road	Number of crashes					
	Fatal	Serious injury	Moderate injury	Minor injury	Non-casualty	Total
Hunter Expressway between Hart Road and Main Road (including ramps)	0	1	6	3	3	13
Hart Road between Government Road and Dickson Road	0	1	5	2	3	11
Total	0	2	11	5	6	24

Table 3-3 Crashes by surface and lighting conditions from 1 April 2015 to 1 March 2020

Road	Wet surface conditions	Dark lighting conditions ¹
Hunter Expressway between Hart Road and Main Road (including ramps)	5 (38%)	5 (38%)
Hart Road between Government Road and Dickson Road	1 (9%)	5 (45%)
Total	6 (25%)	10 (42%)

Table 3-4 Crash rates per 100,000 vehicles on the Hunter Expressway from 1 April 2015 to 1 March 2020

Location	Fatal and serious injury crash rate per 100,000 vehicles	Casualty crash rate per 100,000 vehicles
Hunter Expressway between Hart Road and Main Road (including ramps)	0.002	0.024

¹ Crashes occurring in dark lighting conditions includes crashes occurring in darkness or at dawn or dusk.

4. Construction and Commissioning Works

4.1 Construction and commissioning program

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

- 7:00am to 6:00 pm Monday to Sunday, inclusive of Public Holidays

Exceptions to conducting construction activities outside of these hours, for example between 6:00pm and 7:00am, may occur for the following activities in accordance with the Infrastructure Approval Condition B31:

- Activities that cause noise levels LAeq(15minute) no more than 5dB above Rating Background Level at any residence in accordance with the Interim Construction Noise Guideline (DECC, 2009), and no more than the Noise Management Levels specified in Table 3 of the Interim Construction Noise Guideline (DECC, 2009) at other sensitive land uses
- For the delivery of material required by the police or other authorities for safety reasons
- Where it is required in an emergency to avoid the loss of lives, property, and/or to prevent environmental harm
- As approved with prior written approval of the Secretary, outlined in Condition B32.

Cold commissioning activities are expected to take place during standard construction hours, or under an exemption. However, if cold commissioning activities are required outside of these hours they would be subject to, or included in, a variation of construction hours in accordance with Condition B32.

Hot commissioning would also generally take place during standard construction hours but would also take place during the evening and night. As the activity is more akin to operations, it will be undertaken in accordance with the Noise Limit Conditions in Condition B21 (and EPL Condition L4.1) with commissioning activities possible during the day, evening and night periods.

4.2 Traffic generating activities

The Project construction and commissioning activities are summarised in Section 1.3 and some of these activities will generate traffic. This will mainly be limited to:

- Light vehicles for staff and contractor movements, refer further to Section 4.3.1
- Heavy vehicles for the delivery of materials, refer further to Section 4.3.2
- Oversize and overmass (OSOM) vehicles to move plant such as the gas turbines from the Port of Newcastle to the Project Site, refer further to Section 4.3.3.

During construction, all vehicular access to the Project Site will be via the Hunter Expressway and Hart Road. Site access off Hart Road is deemed satisfactory given the following:

- The site access is already established at this location, thus there will be no need for additional civil works and disruption due to the construction of a new or additional driveway elsewhere.
- The roads used to access the site are sealed and currently cater for heavy vehicle movements associated with the adjacent industrial land uses.

4.3 Construction and commissioning traffic

4.3.1 Light vehicles

Light vehicles will be used to transport staff to the Project site and for minor activities such as inspections and movement of light equipment. The expected distribution of light vehicles during the morning and afternoon peak hours is shown in

Figure 4-2 and Figure 4-3, respectively. Vehicle movements contained in these figures are based on the 400 one-way light vehicle movements modelled for the project EIS, a doubling of which to 800 was subsequently approved on 1 March 2023 as a part of Modification 1. Extrapolation of the data contained in Figure 4-2 and 4-3 indicates that a total of 160 light vehicle movements associated with the project are expected through the Main Road and Hunter Expressway (Kurri Kurri) Interchange per day, 80 each in the morning and afternoon peaks.

In order to ensure that no more than 80 light vehicles per hour associated with the development are accessing the Kurri Kurri Interchange, a monthly survey will be undertaken of the origin and timing of light vehicles arriving to and leaving the project site. The Principal Contractor will be requested to provide a deidentified list of all personnel who presented to site on a randomised day of each month from their electronic workforce management system. This list will include the workers suburb of residence in addition to the time they arrived to and left site as indicated by login and logout times. This data will be interrogated to approximate the number of light vehicles per hour through the Interchange.

In the event that a monthly survey indicates that the number of light vehicles associated with the project is approaching 80 per hour, some or all of the following actions will be undertaken;

- Workers will be directed to take alternate routes to avoid accessing the Kurri Kurri Interchange
- Carpooling will be encouraged
- Shuttle busses will be provided for personnel originating from Singleton/Maitland directions
- Shift start times will be staggered

In any case, the Principal Contractor will be tasked with promoting car-pooling as well as identical and partial ride sharing to their staff and contractors. Opportunities to do so will include but not be limited to encouragement of carpooling during shift pre-start meetings on a regular basis. In addition to this, the Principal Contractor will investigate the option of providing shuttle busses or other group transport for their workers. Where appropriate, the Principal Contractor will also direct work groups from contracted companies to travel to and from site via carpool arrangement or shuttle bus.

The number of one-way light vehicle movements associated with the project was further increased to 920 per day as part of the approval of Modification 2 on 18 November 2023. This increase is not anticipated to impact on the usage of the Kurri Kurri Interchange during morning and afternoon peaks given that the additional movements are made up of drive in drive out workers who will be accommodated at the Temporary Worker Accommodation Facility. Given that these workers will have a roster which alternates 10 day on site and 4 days off site, they will generally only travel to site and from site once a fortnight outside of the peak morning or peak evening times.

4.3.2 Heavy vehicles

The following heavy vehicle movements are expected to be generated during the construction of the Project. Where efficiencies and more effective transport options and/or machinery are available these will also be utilised with timing of their use adjusted in accordance with the Project schedule:

- Heavy rigid: transport of bulk materials including gravel, concrete (or components including sand, gravel and cement)
- Semi-trailer (2 and 3-axle): delivery of structural, mechanical and electrical equipment (other than those requiring oversize transport), temporary offices and lunchrooms
- B double: fuel supply for first fill and commissioning
- Cranage: assumed two mobile all terrain cranes, one large crawler for peak construction (between September 2022 and May 2023) and two mobile Franna cranes. Two mobile Franna cranes otherwise during other parts of construction
- Heavy machinery: sourced locally and transported via low-loader. Assumed to remain onsite for the duration of individual assignments (e.g. earthmoving equipment).

Bulk materials, equipment and heavy machinery required to construct the Project are expected to originate from the east, including from the Port of Newcastle. All heavy vehicles will be required to travel via heavy vehicle-approved roads and will enter and exit the site via the Hunter Expressway and Hart Road, as shown in Figure 4-4. As outlined in Section 3.1, the Hunter Expressway and Hart Road both permit 25/26 m B-double and 4.6 m high vehicles.

Details of concrete trucks required for the discrete continuous concrete pours are described in Section 4.5.

4.3.3 Oversized overmass vehicles (OSOM)

Approximately 10 two-way OSOM vehicle movements are expected to be required during the construction phase to transport certain oversized equipment from the Port of Newcastle to the Project Site. A OSOM Transport Management Plan was prepared to address OSOM vehicles and is included in this document as Appendix E.

OSOM vehicle movements that require adjustments to the State Road network and infrastructure will require separate TfNSW consultation and approval in accordance with their request documented in Section 2.4.

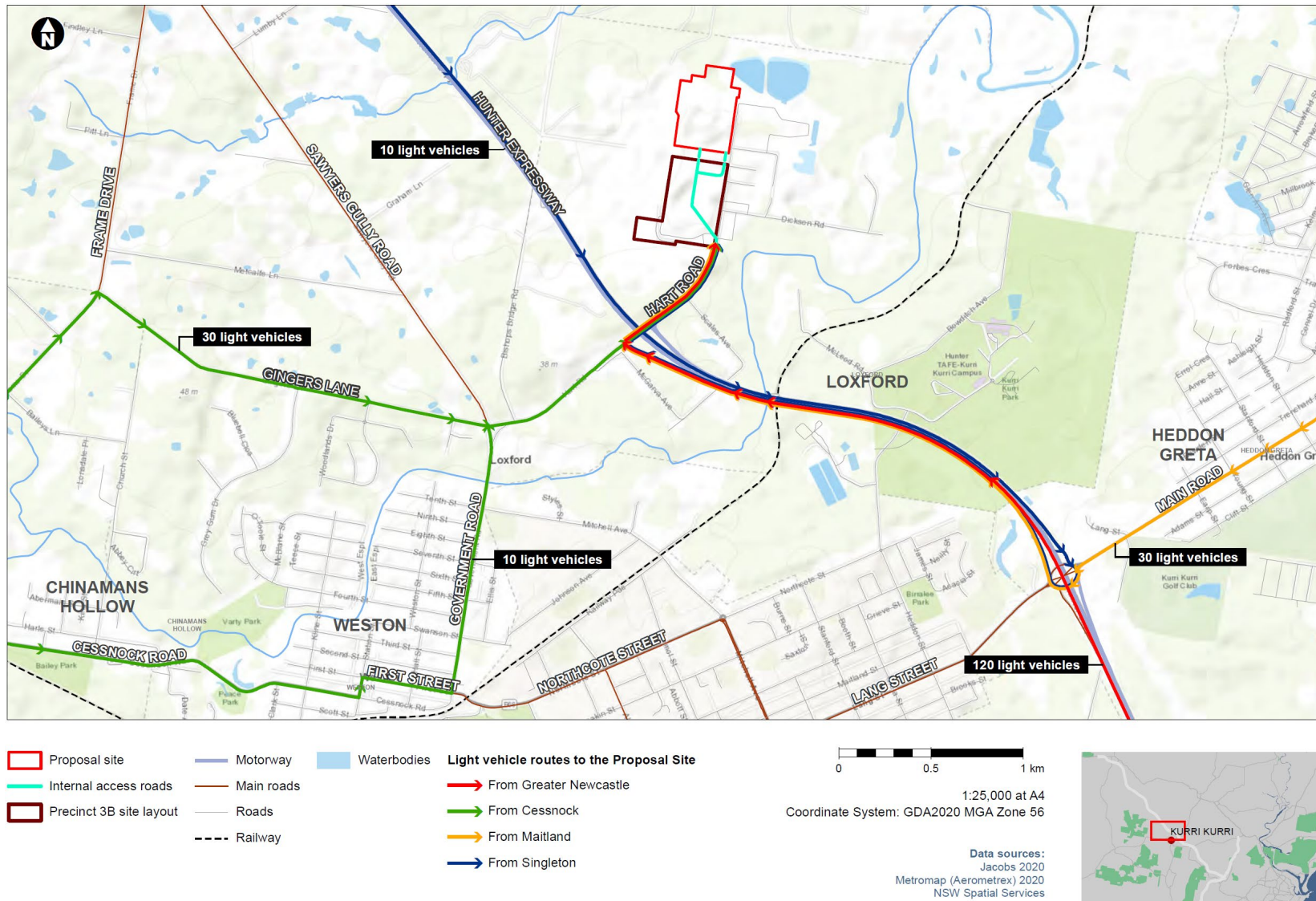


Figure 4-1 Light vehicle routes to the site – Weekday AM peak hour

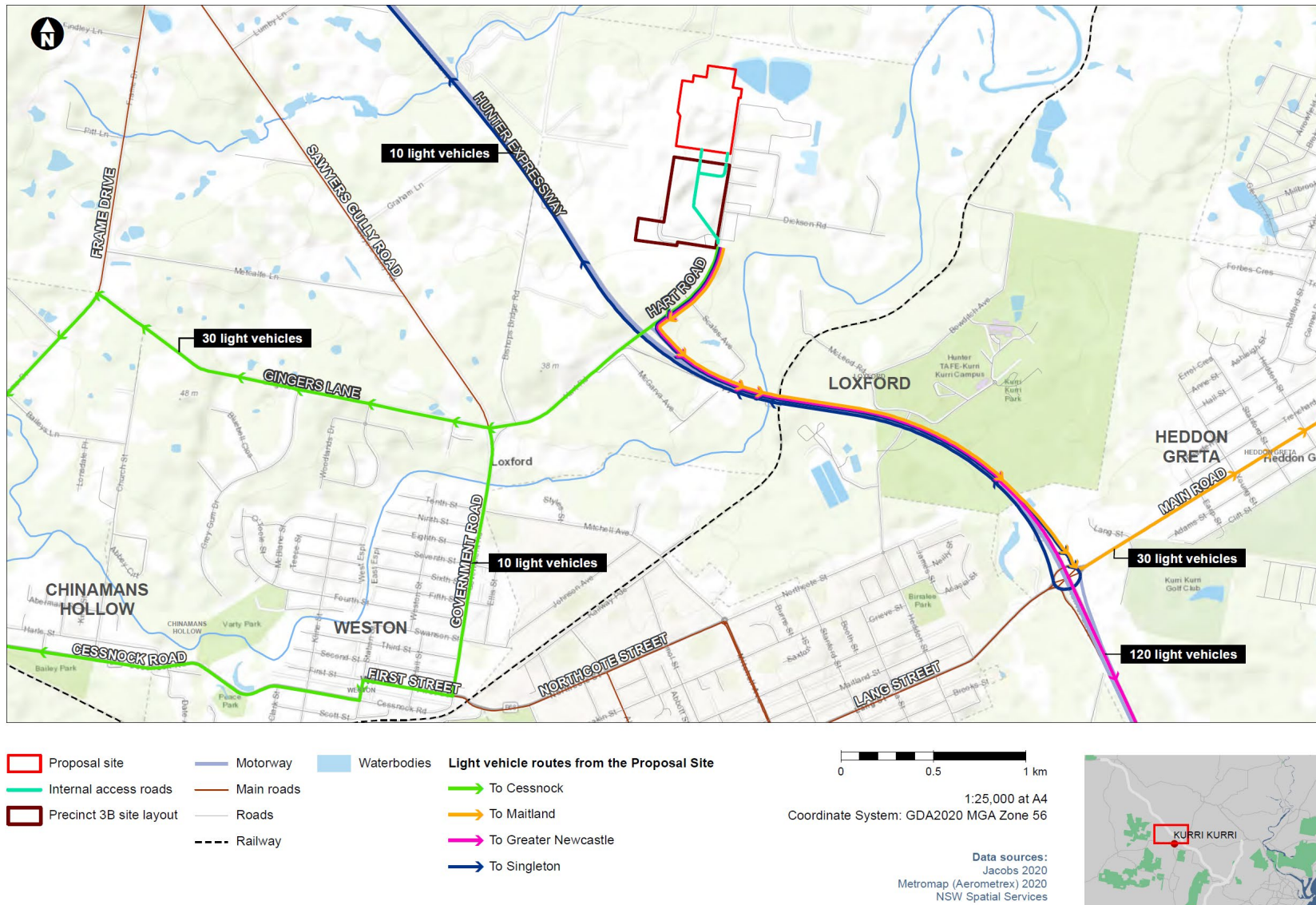


Figure 4-2 Light vehicle routes from the site – Weekday PM peak hour

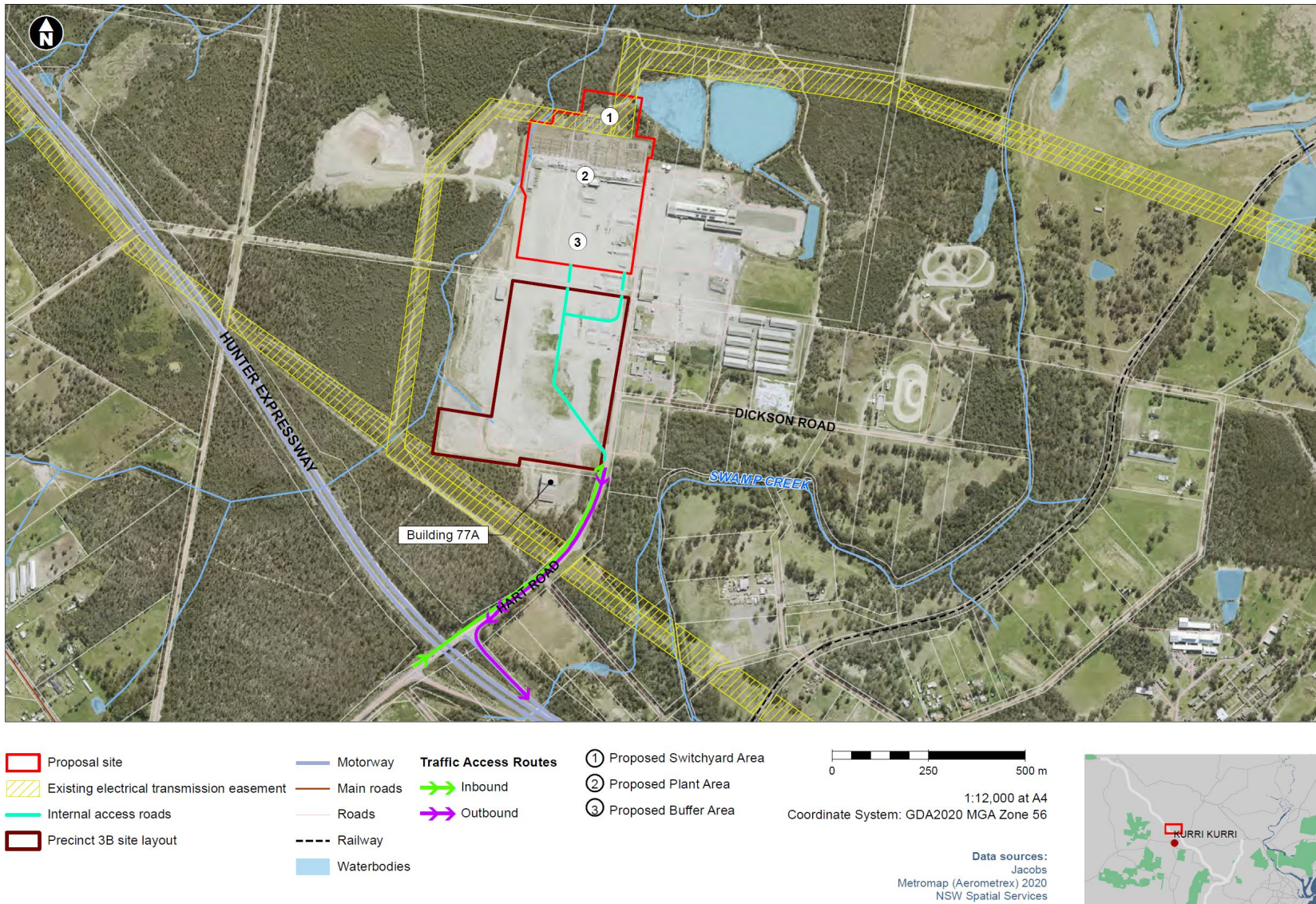


Figure 4-3 Heavy vehicle access routes

4.3.4 Traffic volumes and timing

A summary of the anticipated traffic volume associated with the Project is provided in Table 4-1. During peak construction periods, a peak of 400 one-way light vehicle movements is expected during the hours prior to shift commencement (5:30 am to 6:30 am) and after shift end (4:30 pm to 5:30 pm). A peak of 120 one-way heavy vehicle movements per day (i.e. 60 inbound trips and 60 outbound trips), spread across standard construction hours, is expected to occur between July 2022 and May 2023.

Table 4-1 Construction traffic volumes and timing

Vehicle class	Total one-way vehicle movements over duration of construction period	Maximum one-way vehicle movements (per day)	Timing		Indicative project dates ²
Passenger	144,000	800	5:30 am to 6:30 am	3:30 pm to 4:30 pm	February 2022 – December 2023
Heavy rigid	9,900	100	7:00 am to 3:00 pm		February 2022 – May 2023
Semi-trailer	400	20	7:00 am to 3:00 pm		July 2022 – May 2023
B-double	240	12	8:00 am to 4:00 pm		May 2023 – December 2023
Oversize overmass	20	2	Off-peak (most likely travelling overnight)		September 2022 – November 2022
Cranage	10	4	Off-peak period		July 2022 – May 2023
Heavy machinery (via low loader)	40	4	Off-peak period		February 2022 – May 2023
Total	154,610				

4.4 Construction worker parking

All parking will be accommodated on-site or on adjacent properties by agreement with the land holder (Hydro Aluminium Kurri Kurri Pty Ltd) / Industrial Estate Developer). Snowy Hydro has a ‘Licence to Occupy’ agreement for ‘Building 77A’ and surrounds in place with the Partnership of McCloy Loxford Land and Dowmere commencing on 15th January 2021 and expiring on 9th January 2024 for the land folio identifiers 16/1082775 and 3/456769, which includes the uses of offices and worker parking described in this section, as well as a licence for the use of Precinct 3B for construction worker parking, material laydown and hard-standing, see Figure 4-5. This area forms part of Hydro Aluminium’s existing Environmental Protection Licence 1548 premises and the permitted use includes access and parking. The intention is not to have parking in the Buffer Land portion of the Project Site as not doing so will improve management of construction workforce safety. It is noted that the parking around building 77A is currently an established asphalt parking area which is utilised by the 80 office based workforce from Snowy Hydro, UGL, APA, AECOM and Mitsubishi Heavy Industries.

4.5 Out of Hours Continuous Concrete Pours

Application was made to the Department on 30 November 2022 for a variation of construction hours for the purposes of completing two continuous concrete pours for the pile caps of the turbine footings for the power island as well as 10 smaller continuous concrete pours. Approval for this activity was received on 14 December 2022, which included

² Project dates assume commencement of construction in February 2022.

consideration of the construction traffic noise associated with the pours. The application, noise impact assessment and the Department approval for this work are all provided in Appendix D.

In order to complete the continuous concrete pours, as approved, an increase in heavy vehicle movements to and from site is required for the purposes of delivering the required amount of concrete. The proposed construction traffic volumes are shown in Table 4-2. It is also noted that this traffic represents the worst-case movements for the proposed concrete pour works based on the pile caps for the turbine footings. The subsequent works have been predicted to utilise approximately half the traffic detailed in Table 4-2.

Table 4-2 Additional traffic volumes and timing for continuous concrete pours

Traffic	Vehicle type	Day (7am – 10pm)		Night (10pm – 7am)	
		Northbound	Southbound	Northbound	Southbound
Construction Traffic	Light	-	-	-	-
	Heavy	50	50	270	270



Figure 4-4 Precinct 3B site layout

5. Assessment of Potential Impacts

A traffic and transport assessment was completed as part of the EIS to assess potential traffic and transport impacts associated with the Project. The impact assessment has been reviewed following the confirmation of construction activities and is detailed below.

5.1 Impacts on road network performance

5.1.1 Level of service definitions

The criteria for evaluating the performance of the Hunter Expressway are shown in Table 5-1 and is based on the volume-to-capacity ratio values stipulated in the *Guide to Traffic Management Part 3: Transport Study and Analysis Methods* (Austroads, 2020).

Table 5-1 Level of Service definitions for uninterrupted traffic flows

Level of Service (LOS)	Volume to capacity ratio (v/c) ¹	Description
A	0.33	LOS A describes free-flow operations. FFS prevail on the freeway or multi-lane highway, and vehicles are almost completely unimpeded in their ability to manoeuvre within the traffic stream.
B	0.51	LOS B represents reasonably free-flow operations, and FFS on the freeway or multi-lane highway is maintained. The ability to manoeuvre within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high.
C	0.74	LOS C provides the flow conditions with speeds near the FFS of the freeway or multi-lane highway. Freedom to manoeuvre within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.
D	0.91	LOS D is the level at which speeds begin to decline slightly with increasing flows, with density increasing more quickly. Freedom to manoeuvre within the traffic stream is seriously limited, and the drivers experience reduced physical and psychological comfort levels.
E	1.00	LOS E describes operation at or near capacity. Operations on the freeway or multi-lane highway at this level are highly volatile because there are virtually no usable gaps within the traffic stream, leaving little room to manoeuvre within the traffic stream. Any disruption to the traffic stream, such as vehicles entering from a ramp or an access point or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic stream.
F	>1.00	LOS F describes unstable flow. Such conditions exist within queues forming behind bottlenecks. The projected flow rate can exceed the estimated capacity of a given location.

¹Based on a free flow speed of 110 kilometres per hour

Source: *Guide to Traffic Management Part 3: Transport Study and Analysis Methods* (Austroads, 2020)

5.1.2 Operational capacity of a motorway

Section 4.2.2 in *Motorway Design Guide: Capacity and Flow Analysis* (Roads and Maritime Services, 2017) sets out the operational capacities of a motorway based on a free flow speed 100 of kilometres per hour and a grade of three per cent. The capacity values are presented in Table 5-2.

Table 5-2 Operational capacity of a motorway

Motorway control	Operational capacity (pcu/hour/lane)
Unmanaged motorway	1,800

Source: *Motorway Design Guide: Capacity and Flow Analysis* (Roads and Maritime Services, 2017)

As discussed in Section 3.1, the Hunter Expressway is a four-lane, two-way dual carriageway road. Accordingly, the Hunter Expressway can be assumed to have an operational capacity of approximately 3,600 passenger car units per hour in each direction.

5.1.3 Performance results

Hourly traffic volumes on the Hunter Expressway were sourced from TfNSW’s Traffic Volume Viewer. The traffic volumes, classified into light and heavy vehicles, were converted into passenger car units (pcu) to account for the relative effect of each vehicle class on capacity and road space. A pcu factor of 2.0 has been adopted to convert heavy vehicles to passenger car units in accordance with section 4.3.1 in the *Roads and Maritime Motorway Design Guide: Capacity and Flow Analysis* (Roads and Maritime Services 2017).

To account for background traffic growth from the most recent year of available data (2020) to the peak year of construction activity (2023), the traffic volumes were scaled using a 1.10% annual growth factor. This growth factor is based on the historical traffic growth trends observed on the Hunter Expressway between 2016 and 2020.

Forecast hourly traffic volumes on the Hunter Expressway during the peak year of construction activity are shown in Figure 5-1. The maximum traffic volume is expected to be 1,740 pcu per hour in the eastbound direction and 1,520 pcu per hour in the westbound direction.

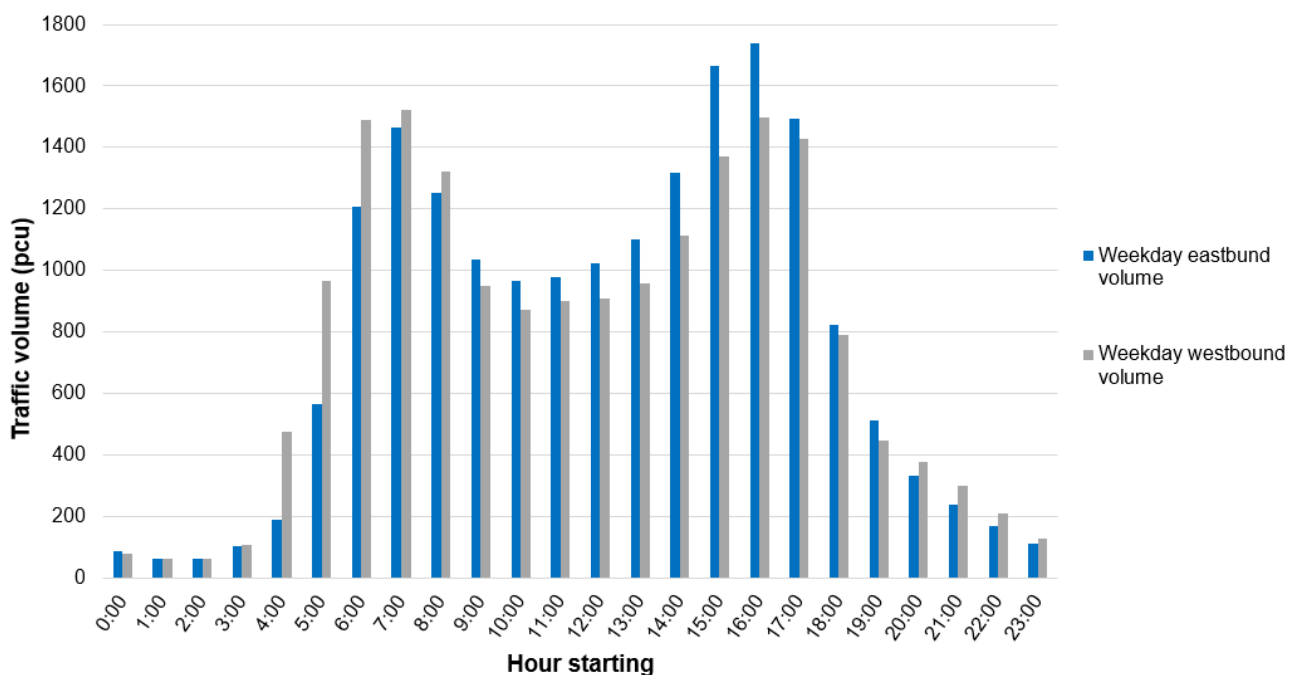


Figure 5-1 Forecast Hunter Expressway average weekday traffic volumes in passenger car units (2023)

Source: *Transport for NSW Traffic Volume Viewer* (Transport for NSW, 2020)

During the peak period of construction, the morning and evening peak hours of construction traffic generation would be the hour prior to shift commencement (5:30 am to 6:30 am) and after shift end (3:30 pm to 4:30 pm). A peak of 100 one-way passenger car unit movements is expected during each peak hour.

The Level of Service results for the ‘without Project’ and the ‘with Project’ scenarios are presented in Table 5-3. The results indicate that the Hunter Expressway would perform at a LoS B in 2023 without traffic associated with the construction of the Project. Under the ‘with Project’ scenario, the Hunter Expressway is expected to continue to perform at a LoS B. This indicates the Hunter Expressway has capacity to accommodate the additional construction traffic without significantly impacting the operation of the road.

No impacts to road access are expected as no public roads are proposed to be closed during construction of the Project.

Table 5-3 Level of Service results (2023)

Scenario	Direction	Maximum hourly traffic volume (pcu)	Volume to capacity ratio (v/c)	LoS
Without Project	Eastbound	1,740	0.48	B
	Westbound	1,520	0.42	B
With Project	Eastbound	1,840	0.51	B
	Westbound	1,620	0.45	B

5.2 Impacts on parking

The Project will not have an impact on public parking as all parking will be accommodated on-site or in the Precinct 3B and Building 77A parking areas.

5.3 Impacts on public transport

The Project will not have an impact on public transport services as no public transport services operate in the vicinity of the Project Site.

5.4 Impacts on pedestrians and cyclists

The Project will not have an impact on pedestrians or cyclists as no formal off-road pedestrian or cycling facilities are provided on Hart Road or the Hunter Expressway.

5.5 Impacts on road safety

As outlined in Section 4.4.4, the construction of the Project is expected to generate up to 82,600 additional vehicle movements on the road network. These additional traffic movements have the potential to impact road safety.

Table 5-4 shows the estimated number of crashes on the Hunter Expressway based on historical crash rates (refer to Section 3.4) under the 'without Project' and the 'with Project' scenarios. As shown in Table 5-4, the additional traffic movements associated with the construction of the Project are likely to have a minor effect on the number of crashes on the Hunter Expressway.

Table 5-4 Number of potential crashes on the Hunter Expressway based on historical crash rates

Scenario	Number of potential crashes resulting in a fatal or serious injury ¹	Number of potential crashes resulting in a casualty ¹
Without Project	0.48	4.79
With Project	0.48	4.81

¹Assuming a Project duration of 2.5 years

All construction vehicles will enter and exit the Hunter Expressway using the existing on and off-ramps. These ramps are designed to facilitate safe vehicle movements by allowing vehicles to accelerate / decelerate without affecting the main flow of traffic. Measures to minimise the impacts of the Project on road safety are provided in Section 6.

5.6 Impacts on road condition

The increase in heavy vehicle and OSOM movements has the potential to impact the condition of Hart Road. Measures to minimise road damage and deterioration are provided in Section 6.

5.7 Impacts on emergency services

Emergency vehicle access to the Project Site and adjacent properties will be maintained at all times. As such, emergency services will not be impacted by construction of the Project.

6. Management and mitigation measures

6.1 Overview of measures

The main impact of the Project is expected to be an increase in light and heavy vehicle movements on the Hunter Expressway and Hart Road. As discussed in Section 5.1, this is not likely to affect the performance of the roads given the available spare capacity of the network to accommodate additional traffic volumes. However, additional construction traffic has the potential to impact road safety on roads forming part of the proposed site access routes. To minimise impacts, the management and mitigation measures outlined in Table 6-1 will be implemented. Where relevant, additional details have been provided under separate sub-sections of this chapter.

There are currently no roads or utility-related infrastructure within the site. Previous infrastructure will be dismantled, demolished, remediated, prior to Snowy Hydro taking ownership. For clarity, all roads and utility-related infrastructure constructed for the project will be maintained in a safe and serviceable condition. All infrastructure outside of the site boundary will be maintained in accordance with the conditions of approval and management measures below, through dilapidation surveys and restoration needs as identified by those surveys.

Mitigation measures including those from the EIS are set out in Table 6-1 below.

Table 6-1 Traffic and transport management measures, including EIS mitigation measures

ID	Management measure	Timing	Responsibility
Construction traffic			
T1	A community engagement plan will be established and implemented to inform other road users about the construction works and of any potential disruptions resulting from construction traffic and transport (refer to Section 7.2)	Pre- construction and throughout construction	Principal Contractor
T2	Regular liaison with each group using the industrial area in the vicinity of the Project Site will be carried out to manage traffic interactions and associated traffic safety. Including the Principal Contractor, Hydro Aluminium and their sub-contractors, Regrowth (site developer)	Pre- construction and throughout construction and commissioning	Principal Contractor
T3	All drivers will be required to adhere to the Driver Code of Conduct (refer to Section 6.2)	Throughout construction and commissioning	Principal Contractor
T4	Vehicles will be required to enter and leave the Project Site in a forward direction where possible, to minimise collision and safety risks	Throughout construction and commissioning	Principal Contractor
T5	The loading and unloading of trucks will be planned to ensure each individual truck haulage capacity is optimised to reduce the total number of truck movements	Pre- construction and throughout construction	Principal Contractor
T6	Haulage routes will be designated and communicated to all truck drivers to ensure truck movements to and from the Project Site are as efficient as possible. All heavy vehicles will be required to follow the designated haulage routes	Throughout construction	Principal Contractor
T7	Heavy vehicle movements to and from the Project Site will be scheduled to minimise traffic disruption to the surrounding road network. This may include, but is not limited to: <ul style="list-style-type: none"> ▪ Scheduling the movement of construction material, equipment and waste to occur outside of peak periods ▪ Scheduling heavy vehicle deliveries to be evenly dispersed as far as practical to minimise convoying or platoons and queuing outside the Project Site Peak traffic on Hart Road will be reviewed and if required, measures to address any traffic congestion will be implemented.	Throughout construction and commissioning	Principal Contractor
T8	Records of the number of heavy vehicles entering or leaving the site each day for the duration of the construction works will be maintained to ensure that the maximum number of heavy vehicle movements is adhered to	Throughout construction	Principal Contractor

ID	Management measure	Timing	Responsibility
T9	All loading /unloading activities will occur within the Project Site	Pre- construction and throughout construction and commissioning	Principal Contractor
T10	Dedicated and demarcated parking areas for light and heavy vehicles will be provided and vehicles associated with the Project will not be permitted to park on the surrounding public road network	Pre- construction and throughout construction	Principal Contractor
T11	All workers and delivery drivers will be advised of access routes and the designated site entry points prior to mobilisation/visiting site to ensure correct access is maintained and to minimise confusion and potential hazards	Throughout construction	Principal Contractor
Road safety			
T12	Public roads and access points will not be obstructed by any materials, vehicles, skip bins or the like, under any circumstances	Throughout construction and commissioning	Principal Contractor
T13	Specific warning signs will be installed adjacent to the entrance to the Project Site to warn existing road users of entering and exiting traffic	Pre- construction	Principal Contractor
T14	Subject to agreement with Council, 'Trucks Turning' warning signs will be installed on Hart Road where appropriate around the intersection of the Hart Road / Hunter Expressway interchange to advise existing road users of the increased heavy vehicle volumes (refer to Section 6.4)	Pre- construction	Principal Contractor
T15	Heavy vehicles will be equipped with systems to improve vehicle safety, visibility and the detection of vulnerable road users	Throughout construction	Principal Contractor
T16	Internal roads will be constructed as all-weather purpose roads and road inspections will be undertaken following an adverse weather event (refer to Section 6.7 and Section 6.8)	Pre- construction and commissioning	Principal Contractor
Road condition			
T17	An inspection and maintenance program for Hart Road and the Hunter Expressway will be established to ensure local road conditions are maintained in an appropriate and safe state	Pre- construction and commissioning	Principal Contractor / Snowy Hydro
T18	A weight monitoring process for heavy vehicles will be developed and implemented to prevent the overloading of vehicles and the subsequent damage and / or accelerated deterioration of road pavement	Pre- construction and throughout construction	Principal Contractor
T19	Independent dilapidation surveys will be undertaken prior to and following the construction of the Project assess impacts to the condition of Hart Road	Pre- construction and post-construction	Snowy Hydro
T20	Heavy vehicles entering and leaving the site will have loads covered or contained. All vehicle movements will be done so as to minimise dust and/or sediment being tracked onto Hart Road	Throughout construction	Principal Contractor

ID	Management measure	Timing	Responsibility
T21	All vehicles leaving the site will be cleaned of materials that may fall on the roadway before they are allowed to leave the site, which will utilise a wheel wash / a rumble grid, , and site exits will be sealed or protected with aggregate.	Throughout construction	Principal Contractor
T22	No tracked vehicles will be permitted or required on any public paved roads	Throughout construction	Principal Contractor
<p>Mitigation Measures referenced in the EIS</p> <p><i>Note: there is significant duplication between the conditions</i></p>			
EIS Ref TT1	<p>A Construction Traffic Management Plan will be prepared and implemented by the Principal Contractor. The CTMP will include:</p> <ul style="list-style-type: none"> ▪ Confirmation of haulage routes ▪ Access to construction sites including entry and exit locations ▪ Times of transporting to minimise impacts on the road network ▪ Measures to minimise the number of workers using private vehicles ▪ Employment of standard traffic management measures to minimise short term traffic impacts expected during construction ▪ Management of oversized vehicles ▪ Site specific traffic control measures (including signage) to manage and regulate traffic movement ▪ Relevant traffic safety measures including driver induction, training, safety measures and protocols ▪ Identify requirements for, and placement of, traffic barriers. ▪ Requirements and methods to consult and inform the local community of impacts on the local road network due to the development-related activities ▪ Consultation with Transport for NSW and Council ▪ Consultation with the emergency services to ensure that procedures are in place to maintain safe, priority access for emergency vehicles ▪ A response plan for any construction related traffic incident ▪ Monitoring, review and amendment mechanisms. 	<p>Where addressed: this Whole Traffic Management Plan</p> <p>Pre- construction and throughout construction</p>	Principal Contractor / Snowy Hydro
EIS Ref TT2	<p>To manage oversize overmass (OSOM) vehicle movements, a permit will be sought from the NHVR and a separate OSOM Transport Management Plan will be prepared and will include:</p> <ul style="list-style-type: none"> ▪ Identification of route ▪ Measures to provide an escort for the loads ▪ Times of transporting to minimise impacts on the road network 	<p>Where addressed: Section 4.3 and Appendix E</p> <p>Pre- construction and throughout construction</p>	Principal Contractor

ID	Management measure	Timing	Responsibility
	<ul style="list-style-type: none"> ▪ Communication strategy and liaising with emergency services and police. 		
EIS Ref TT3	Affected parties including emergency services will be notified in advance of any disruptions to traffic and restriction of access impacted by the Proposal’s construction activities.	Where addressed: Section 6.4 Section 6.10 Throughout construction	Principal Contractor / Snowy Hydro

6.2 Driver Code of Conduct

To assist in achieving safe outcomes during construction, a Driver Code of Conduct has been prepared and is included in Appendix A. The purpose of the Driver Code of Conduct is to minimise the impact of individual driver behaviours on all users of the public roads forming part of the site access routes. The Driver Code of Conduct outlines acceptable behaviour for all vehicle drivers in connection with the project, including:

- General requirements including site induction requirements
- Travelling speeds and safe driving practices, particularly through residential areas and school zones
- Fatigue management
- Adherence to designated transport routes and heavy vehicle noise
- Public complaint resolution and penalties and disciplinary action.

Prior to involvement in the project, vehicle drivers will be required to read the Driver Code of Conduct and acknowledge their compliance with it throughout their involvement in the project. The expectations of the Driver Code of Conduct will be established in the project induction and will be reiterated through pre-starts.

Heavy vehicle haulage routes will be communicated to haulage contractors during the procurement stage and requirements of the Drivers Code of Conduct, route use and compliance included in their contracts.

The Driver Code of Conduct includes an element of fatigue management. This includes the requirements for drivers on the project to manage their fatigue, be suitably rested and for operators of heavy vehicles to comply with the Chain of Responsibility legal requirements under the National Heavy Vehicle Law (Heavy Vehicle (Adoption of National Law) Act 2013). The fatigue management standards including those outlined in the Chain of Responsibility will be consistent with the standards outlined in the Fatigue Management Plan.

Contractors will develop their own safe driver practices driver induction, refer to the example of a Driver Code of Conduct protocol provided in Appendix A.

6.3 Site deliveries

6.3.1 Logistics

The Principal Contractor will appoint personnel with responsibilities for the oversight of deliveries to the Project Site.

Delivery vehicles will arrive at the Project Site at a specific time of day in order to satisfy safety concerns and minimise any impacts to the road network. Haulage of materials and equipment to the site will be scheduled to arrive and depart from the site at different times coinciding with the construction program. Vehicles will be scheduled to avoid conflict with local traffic. Furthermore, the varying origins of the haulage movements and limited number of deliveries to site each day will limit the potential for haulage vehicles to form convoys or platoons.

Elements that will be monitored include:

- Keeping records of the number of heavy vehicles accessing the site each day
- Ensuring that the maximum number of heavy vehicle movements per day is adhered to
- Maintaining a schedule of upcoming deliveries, including materials that are being delivered and timing
- Minimum daily communication with relevant transport companies.

6.3.2 Site delivery procedures

Delivery personnel will be required to comply with the following measures upon arrival to the Project Site:

- Drivers are to report to Site Office for identification

- Drivers are to be directed to designated material laydown or storage or delivery areas at Precinct 3B, between the Hunter Power Project Office and the Construction Site
- All delivery drivers must comply with minimum site Personal Protective Equipment (PPE) requirements
- To minimise confusion and potential hazards, site plans with access points clearly identified will be distributed to all suppliers and updated as required
- Public roads will not be used as a waiting area for trucks delivering or awaiting to pick up materials, they will be directed to utilise the parking and laydown area in Precinct 3B.




6.4 Road signage

As outlined in AS1742.3 Manual of uniform traffic control devices, appropriate road signage will be used to warn traffic of potential heavy vehicle turning movements into and out of the Project Site at Hart Road. Signage will also be used where appropriate around the intersection of the Hunter Expressway / Hart Road interchange to alert drivers of heavy vehicles associated with the Project using Hart Road.

W5-22, W8-207(L) and W8-207(R) posted signs will be displayed at a distance of 150 to 350 metres from the site access point and intersections to provide approaching traffic with sufficient warning. These warning signs are shown in Table 6-2.

The road authority (TfNSW or Council) will be consulted, and the necessary approvals sought prior to the inception of road signage. The installation of signs will be conducted in accordance with Australian standards. Signs will be removed once construction works are complete.

Table 6-2 Proposed warning signs

Sign	Display
W5-22	
W8-207(L)	
W8-207(R)	

6.5 Dilapidation report

Prior to commencement of construction, a pre-construction dilapidation report will be prepared in accordance with Austroads guidelines to document the existing condition of Hart Road between the Hunter Expressway and the Project Site.

The report will be prepared by an independent agency and will involve a visual inspection of any existing damage on the above road. The inspection will focus on structural and drainage aspects, such as potholes, visible rutting at wheel paths, cracking and surface deformation or depression. Photos and location referencing of existing damage will be converted into a pre-construction dilapidation report. The pre-construction dilapidation report was submitted to TfNSW and Cessnock Council on the 22nd of February 2022.

On completion of the Project, a post-construction dilapidation survey will be undertaken, and a report will be prepared to

determine whether construction of the Project has caused sections of Hart Road to deteriorate. The post-construction dilapidation report will be submitted to the Cessnock Council and will also be copied to TfNSW as per their request.

Should damage to local roads occur as a result of implementation of this TMP, the damage will be assessed against the initial dilapidation report and where agreed, repairs will be completed in consultation with Cessnock Council.

6.6 Dirt management

In accordance with TfNSW requirements, all vehicles transporting loose materials will have the entire load covered and/or secured to prevent any large items, excess dust or dirt particles depositing onto the roadway during travel to and from the site.

Further to covering/securing the load to prevent deposits onto the roadway, all vehicles leaving the Project Site will be cleaned of any materials that may fall on the roadway to minimise the risk of dirt and debris on local roads. All subcontractors must be inducted by the Principal Contractor to ensure that the procedures are met for all vehicles entering and exiting the construction site. The Principal Contractor will take all necessary steps to rectify any road deposits caused by site vehicles.

6.7 Road improvement works

Prior to the installation of major plant items, internal roads within the Project Site will be constructed from stabilising materials such as gravel or reinforced concrete pavement to safely accommodate heavy vehicles movements (up to B-double size). The internal road layout design will account for the turning paths of the largest vehicle to enable movements in and out of the site to be made in a forward direction. paths of the largest vehicle to enable movements in and out of the site to be made in a forward direction.

No public road upgrades are proposed or required as part of the Project.

6.8 Adverse weather events

Adverse weather events present potential safety concerns to road users during construction. All employees will be inducted and made aware of potential weather impacts on the roads forming part of the site access routes. Risks will be assessed daily by monitoring weather forecasts.

Impacts will be managed by including weather forecasts and relevant management strategies in daily planning. Management measures will include speed reductions, use of fog lights during periods of low visibility, cessation of works and advising suppliers of potential adverse weather and likely site shutdowns. These will also be included in the Drivers Code of Conduct.

6.9 Dangerous goods

The Australian Code for the Transport of Dangerous Goods by Road and Rail, Edition 7.7 October 2020 will be strictly adhered to if chemicals, hazardous materials and other dangerous goods are required to be transported during any stage of the construction works.

6.10 Emergency services

Liaison will be maintained with emergency services throughout the construction period and a 24-hour contact will be made available for 'out of hours' emergencies and access. Emergency services will be advised of all planned changes to traffic arrangements prior to applying the changes. Advice will include information about upcoming traffic disruptions, anticipated delays to traffic, OSOM vehicle deliveries, or extended working hours.

The Project team will assist with emergency access to the Project Site in the event of an emergency on site.

6.11 Oversize overmass vehicle management

An initial oversize overmass (OSOM) plan prepared as part of the Feasibility Study and summarised in the EIS. It outlined a preferred route and demonstrated that it was possible to transport large / heavy pieces of equipment (such as the gas turbine, generator, generator step-up transformer, exhaust stack segments and large electrical switchrooms) from the Port of Newcastle (Mayfield #4 Wharf) to the Project Site. It is estimated that approximately 20 OSOM vehicle movements in total (e.g. 10 inbound trips and 10 outbound trips) will be required during the construction phase. OSOM vehicle movements are expected to occur overnight.

The likely OSOM vehicle route was assessed against the *NSW OSOM load carrying vehicles network map* (Transport for NSW, 2020). The most likely OSOM vehicle route is shown in Figure 6-1. This route will exit the Port of Newcastle via the A43 Industrial Drive, perform a U-turn at Old Maitland Road on the Pacific Highway, enter the A37 Newcastle Inner City Bypass at Sandgate, before joining the A15 Newcastle Link Road at Jesmond, onto the M15 Hunter Expressway and exiting the Expressway (most likely needing to utilise the centre crossover approximately 600 m east of the off ramp and travel 'contra-flow' under traffic management conditions for a short distance) and turning right onto Hart Road.

It is anticipated that OSOM loads will be staged on Precinct 3B, enabling long combination semi-trailers and prime movers to leave the public roads in the vicinity of the Construction Site. Precinct 3B will be utilised to reconfigure truck and trailer combinations prior to the return journey from the Construction Site to the point of commencement.

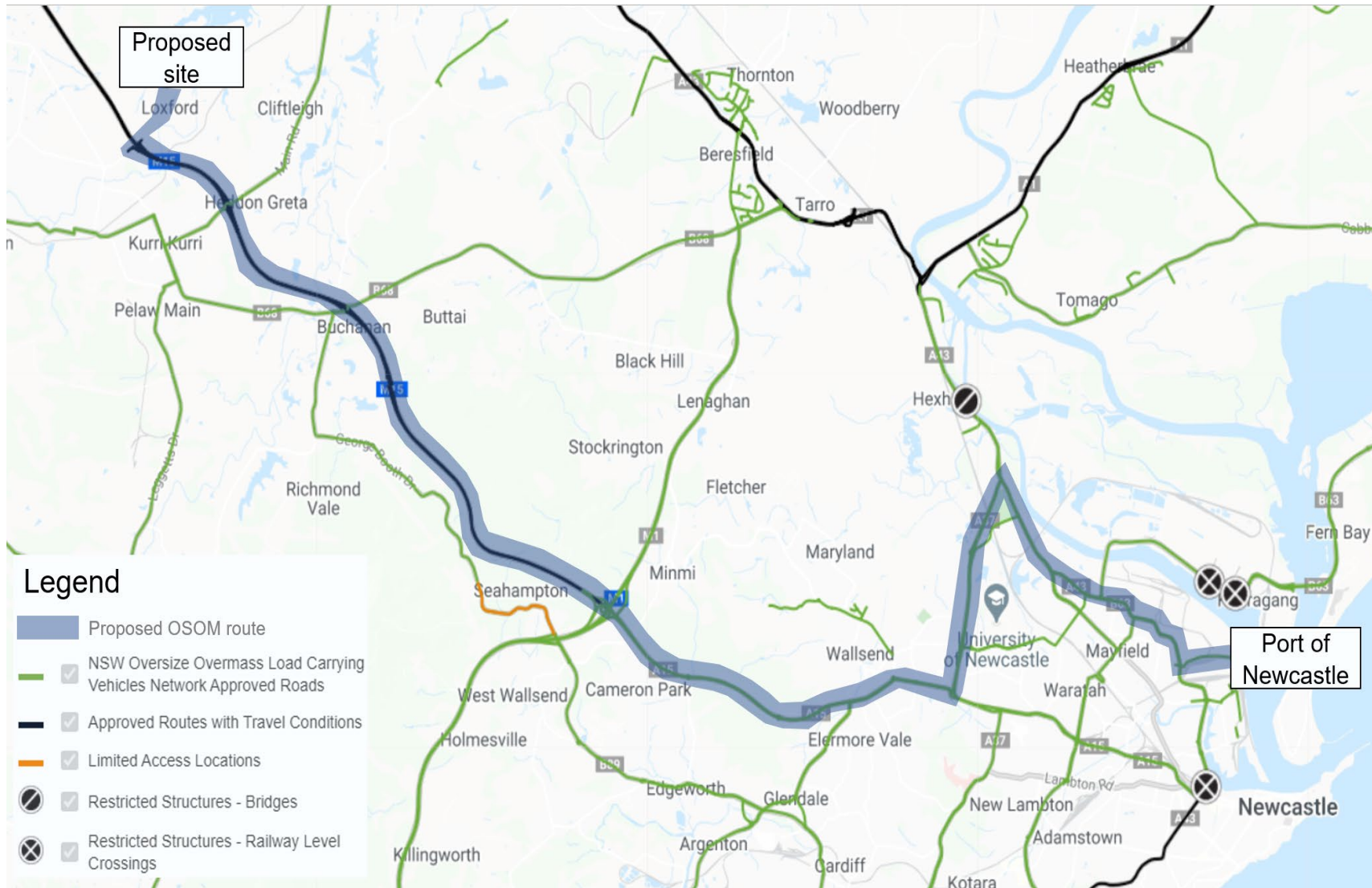


Figure 6-1 Proposed OSOM vehicle route

OSOM vehicle movements will be required to comply with the following:

- *Additional Access Conditions: Oversize and overmass heavy vehicles and loads* (Transport For NSW, 2020) including pilot or escort requirements
- Request from Transport for NSW regarding requirement for consultation and approval for OSOM vehicle movements that require adjustments to the State Road Network, as per Section 2.4
- Preparation and adherence to a separate OSOM Transport Management Plan, given in Appendix E, as the OSOM movement is classified as high-risk due to the total combination weight
- Full route survey assessment including review of allowable heights, bridge/overpass capacities, etc, included in the OSOM Transport Management Plan in Appendix E
- Requirements of National Heavy Vehicle Regulator (NVHR) OSOM Permits, or any other required Permits
- State-wide oversize holiday curfews
- Rail Infrastructure Manager approval (if the proposed route is required to travel over a railway level crossing).

The OSOM Transport Management Plan identifies risks and seeks to minimise impacts to the wider road network. The plan covers:

- Identification of route
- Escort measures and procedures
- Times of transporting to minimise impacts on the road network
- Communication strategy and liaising with emergency services and police.

7. Compliance Management

7.1 Roles and responsibilities

The roles and responsibilities of Snowy Hydro, the Principal Contractor and sub-contractors, as they related to the implementation and review of the CEMS and associated plans, are outlined in Section 7.3 of the CEMS.

All parties involved with the Project must comply with this overall TMP for which Snowy Hydro is accountable for compliance to the Department.

All contractors engaged by Snowy Hydro (and their sub-contractors) will be required to comply with the Infrastructure Approval conditions and this TMP. To demonstrate this, each Contractor engaged by Snowy Hydro will be contractually required to prepare specific subplans demonstrating how compliance will be achieved and how traffic management will be conducted for their aspects of the Project.

7.2 Induction and training

All staff employed on or attending the Project Site (including Contractors and sub-contractors) will be required to undergo a site induction and training as outlined in Section 7.4 in the CEMS, and which will include safe driver practices.

7.3 Inspections

Inspections will be performed regularly by the Principal Contractor to identify actual or potential traffic-related risks and non-conformances. A visual inspection of the site and site entrances will be performed daily as part of the daily workplace inspection. In addition, documented weekly inspections of the site, site entrances and surrounding public roads will be undertaken as part of the weekly environmental site inspection. Table 7-1 details the proposed traffic and transport inspection regime.

Table 7-1 Transport inspection schedule

Inspection type	Activities	Frequency	Responsibility	Documentation	Construction phase
Daily workplace inspection	<ul style="list-style-type: none"> ▪ Visual inspection of the site, site entrances and signage 	Daily	Principal Contractor	None	All construction
Environmental site inspection	<ul style="list-style-type: none"> ▪ Inspection of internal roads and the surrounding public road network for signs of deterioration and maintenance requirements ▪ Inspection of traffic signage to ensure they are: <ul style="list-style-type: none"> - clearly visible - mounted securely - performing their function in directing traffic and alerting road users of heavy vehicles 	Weekly	Principal Contractor	Inspection report	All construction

Inspection type	Activities	Frequency	Responsibility	Documentation	Construction phase
	<p>and potential safety issues</p> <ul style="list-style-type: none"> Inspection of site entrances to ensure they are clear, free of overgrowth and a clear line of sight is provided for vehicles exiting the Project Site 				
Road condition survey	<ul style="list-style-type: none"> Inspection of any existing damage on Hart Road and Hunter Expressway as detailed in Section 6.5 	As required	Principal Contractor	Dilapidation reports	Pre-construction and post-construction
Adverse weather event inspection	<ul style="list-style-type: none"> Inspection of internal roads and the surrounding public road network following periods of heavy rain or an adverse weather event 	As required	Principal Contractor	Inspection report	All construction

Any non-conformances identified through the inspection process will be managed in accordance with Section 7.7.1 of the CEMS and the contractual obligations between Snowy Hydro and the respective contractor. Where the inspection identifies deterioration of any public road such that it is deemed hazardous to construction and/or public road users, the Principal Contractor will notify Snow Hydro and relevant road authorities including TfNSW and the local council. The damage will be rectified as agreed and within agreed to timeframes.

7.4 Community and stakeholder engagement

Stakeholders and community members affected by the Project will be notified in accordance with the procedures outlined in Section 6.2 of the CEMS. In addition, any complaints received regarding traffic or road safety will be managed in accordance with the procedure outlined in the Section 6.3 of the CEMS and referred to the Project team to investigate and/or respond. As detailed in this assessment the overall increase in traffic movements related to the construction workforce are expected to be minimal in the context of the surrounding traffic environment.

The community will be kept informed through direct communication tools (Table 7-2 identifies the communication tools to be used), however, it is noted that there are no road upgrades planned for the construction phase of the project. Restoration of any dilapidation will occur, and such restoration will be part of the operational phase of the Project.

All directly affected neighbours will be notified prior to the scheduled OSOM movement, and prior to the movement itself, by direct communication tools if they are affected by OSOM movements. This includes letters, letter box drops, and also by door knocking for the closest neighbours. Outside of OSOM movements there will be no closure of public roads in relation to the Project.

The construction progress and associated expected peak traffic periods will be kept up to date on the Snowy Hydro public website. The community in the vicinity of the site will be informed of how to access this site prior to commencement of construction activities.

Table 7-2 Communications tools

Communication tool	Information / purpose
Project webpage	<ul style="list-style-type: none"> ▪ General Project / Location ▪ Commencement of construction ▪ Major milestones ▪ Change to traffic conditions ▪ Disruption to access or utilities ▪ Any other activity that may impact the community, businesses, or key stakeholders
Letters	<ul style="list-style-type: none"> ▪ Addressed mail containing information to particular households, businesses, or individuals who may be impacted by construction activities
Advertising	<ul style="list-style-type: none"> ▪ Paid notices in local newspaper publications to advise of project updates (e.g. construction initiation, key milestones)
Media releases	<ul style="list-style-type: none"> ▪ Proactive media statements to provide project updates and address concerns
Letterbox drop	<ul style="list-style-type: none"> ▪ Unaddressed mail containing information about the Project
Subscribed communications	<ul style="list-style-type: none"> ▪ Regular construction updates to subscribers through letterbox drops/letters, email inboxes, and posted on the project website ▪ Regular construction updates will also be provided to all local MP's and Council's via email.
Traffic updates	<ul style="list-style-type: none"> ▪ To advise public of any road closures or other traffic issues such as OSOM loads that may impede traffic
Variable message signs	<ul style="list-style-type: none"> ▪ Electronic variable message sign during major construction activities including traffic impacts to provide advanced notice to road users of traffic changes.
Community signage	<ul style="list-style-type: none"> ▪ To be installed on gate entries to construction site

7.5 Auditing and monitoring

Internal and independent audits will be undertaken to assess traffic management compliance with the approved TMP, Infrastructure Approval conditions and other relevant approvals, licenses and guidelines. Details of the audit process and requirements are provided in Section 7.7 of the CEMS.

The Principal Contractor for each area of the Project Site will develop a monitoring program that address the requirements of this TMP, including the inspections identified in Table 7-1 and the mitigation measures identified in Table 6-1. The monitoring commitment as set out in the Monitoring Program in the CEMS is reproduced below in Table 7-3.

Table 7-3 Monitoring actions

Trigger	What needs to be monitored	Monitoring activity	Who will complete
Prior to	Road condition	A pre-construction dilapidation report will	Principal Contractor

Trigger	What needs to be monitored	Monitoring activity	Who will complete
commencement of construction or transport of materials to the Project site		be prepared in accordance with Austroads guidelines to document the existing condition of Hart Road between the Hunter Expressway and the Project Site. Copy of the report to TfNSW.	
Throughout the construction period	Heavy vehicle numbers	Daily records of the number of heavy vehicles entering or leaving the site for the duration of the construction works will be maintained	Principal Contractor

7.6 Incident management

Traffic incidents will be managed in accordance with the incident management process outlined in section 7.4 of the CEMS. That is, a traffic incident, will be treated as an incident within the Project processes.

In the event of a traffic incident that has the potential to impact public road users, relevant authorities will also be contacted as soon as safe and practical. Depending on the nature of the incident, relevant authorities may include emergency services (Police, Ambulance, Fire and Rescue NSW), Transport for NSW and local councils. Ongoing updates from the site of incident will be provided to authorities as requested.

7.7 Staging and review of management plans

The Department's approval for the staging of management plans into construction and operation phases was provided on 22 December 2021 and is appended to this Plan as Appendix B.

Regular reviews of management documentation will also occur and after certain events. The triggers for further review of this Management Plan include:

- (a) the submission of an incident report under condition C6;
- (b) the submission of an audit report under conditions C15 to C19;
- (c) the approval of any modification to the conditions of this approval;
- (d) a direction of the Secretary (Department of Planning Industry and Environment) under condition A2 of Schedule 2;
- (e) as initiated by the Principal Contractor or Snowy Hydro; or
- (f) upon the advice of the Environmental Representative.

Where revisions are made, then within 4 weeks of the review the revised document will be submitted to the Secretary for approval, unless otherwise agreed with the Secretary, or within the scope of the Environmental Representative role as set out in condition A23.

7.8 Non-compliance notification

In the instance of a non-compliance, the Secretary will be notified in writing via the Major Projects website within seven days after the Proponent becomes aware of any non-compliance. Refer to section 7.5 of the CEMS for non-compliance notification processes.

The Principal Contractor must notify Snowy Hydro whenever it is aware of a non-compliance, and Snowy Hydro will lodge the notification with the Department.

8. Review and Improvement

8.1 TMP monitoring and continuous improvement

TMP reviews will be undertaken to ensure traffic management measures are implemented as approved and remain relevant to the project. The objectives of a TMP review are to:

- Ensure that due consideration has been given to traffic management planning, risk identification and mitigation
- Ensure that the work site and surrounding road network is operating safely
- Ensure site access/egress arrangements and heavy vehicle haulage routes are still appropriate
- Identify and record discrepancies and non-compliances and make recommendations for rectification
- Determine the cause or causes of discrepancies and non-compliances
- Verify the effectiveness of implemented corrective and preventative actions.

A TMP review will be performed in accordance with Section 7.10 of the CEMS and / or Table 8-1 below.

Table 8-1 TMP review types and considerations

Type of review	Frequency	Considerations
Scheduled review	As per the requirements outlined in the CEMS	<ul style="list-style-type: none"> ▪ Suitability of site access/egress arrangements ▪ Suitability of heavy vehicle haulage routes ▪ Performance of the surrounding road network ▪ The road network is operating safely / Road safety ▪ Suitability of construction vehicle parking provisions ▪ Any departures or variations to ensure they have been documented and managed
Change generated review	Prior to the implementation of changes to: <ul style="list-style-type: none"> ▪ Peak construction vehicle volumes ▪ Heavy vehicle haulage routes ▪ Site access arrangements 	<ul style="list-style-type: none"> ▪ Suitability of site access/egress arrangements ▪ Suitability of heavy vehicle haulage routes ▪ Performance of the surrounding road network ▪ The road network is operating safely / Road safety ▪ Suitability of construction vehicle parking provisions ▪ Any departures or variations resulting from the changed conditions to ensure they have been documented and approved
Post-incident or near miss review	Following a traffic-related incident or near miss	<ul style="list-style-type: none"> ▪ Causal and / or contributory factors ▪ Management measures to avoid a recurrence of the event and / or mitigate risk

8.2 TMP updates and amendments

The processes described in Section 8.1 may result in the need to revise this TMP. It will be the Principal Contractor’s responsibility to maintain and amend the TMP throughout the construction of the Project and communicate any changes to Snowy Hydro and other relevant stakeholders.

Any revisions and/or updates to the TMP will be recorded and managed in accordance with procedures outlined in Section 7 of the CEMS. As described in Section 6.11, the OSOM Transport Management Plan given in Appendix E will be provided to the Secretary for approval prior to any OSOM works.

The process for review of management plans under the Infrastructure Approval is detailed in the Construction Environmental Management Strategy (CEMS). This includes the triggers for document reviews, the approval process with the Department, and detail on the Environmental Representative responsibilities including changes that can be endorsed by the ER without the Department's approval.

Appendix A – Example Safe Driver Practices - Driver Code of Conduct

Driver Code of Conduct

The Driver Code of Conduct is to ensure that light and heavy drivers adhere to safe driving practices. All employees and contractors are to abide by responsible driving and adhering to the Code of Conduct.

All employees and contractors are to abide by the contractual requirements with Snowy Hydro, and Snowy Hydro's Life Saving Rules.

1. General requirements

Light and heavy vehicle drivers hauling to and from the project Site must:

- Have undertaken a site induction carried out by a suitably qualified employee
- Hold a valid driver's licence for the class of vehicle that they are operating and carry a current driver's licence while operating a vehicle
- Operate the vehicle in a safe manner to, from and within the site in accordance with all road rules pertaining to the vehicle, particularly in residential areas or at school zones
- Comply with the direction of authorised site personnel when within the site.

All incidents, hazards and near misses, whether resulting in an injury or not, must be reported to site management immediately. This includes incidents, hazards and near misses which have occurred on or while travelling to and from the site.

Regular toolboxes will be held to outline the potential hazards of travel on the designated routes including locations with increased collision risk, damaged road infrastructure, potential noise impacts and school zones.

2. Light and heavy vehicle speed

Light and heavy vehicle drivers are to be made aware of two types of speeding:

- Where a vehicle driver travels faster than the posted speed limit
- Where a vehicle driver travels within the posted speed limit but at a speed which is inappropriate for road conditions e.g. rain, fog, unsealed roads.

All vehicle drivers are to observe the posted speed limits to comply with Australian Road Rules. Drivers must adjust their speed appropriately to suit the road environment and weather conditions. Drivers must adjust their speed appropriately through residential areas and school zones.

3. Light and heavy vehicle driver fatigue

Site personnel fatigue will be managed via the following:

- Unless under exceptional circumstances, work periods will not exceed 12 hours
- Any extension of this period will require the approval of site management and where possible alternative transport shall be arranged
- The monitoring of fatigue experienced by employees working extended hours will rely not only on reporting by employees, but also on observation and assessment by site managers
- Carpooling and bus management will be considered to ensure the drivers are within the 12-hour timeframe to manage fatigue.

Under the *Heavy Vehicle Driver Fatigue Reform* (National Transport Commission 2008), all drivers of trucks and truck combinations over 12 tonne GMV (except for Ministerial Exemption Notices that may apply) are required to operate under one of three fatigue management schemes:

- Standard Hours of Operation
- Basic Fatigue Management
- Advanced Fatigue Management.

All heavy vehicle operators are to be aware of their adopted fatigue management scheme and operate within its requirements.

4. **Adherence to designated transport routes**

Light and heavy drivers must follow the designated transport routes agreed upon with site personnel to and from the Project Site. Heavy vehicles must travel only on heavy vehicle-approved roads and must access the site from Barrier Highway, Reid Street and/or Union Bend Road.

5. **Safety in residential areas and school zones**

Drivers are required to be aware and show care when driving through residential areas and near schools, including between the morning (8:00am to 9:30am) and afternoon (2:30pm to 4:00pm) periods. Drivers are to be mindful of children being dropped off and picked up at bus stops and at schools during these periods. Drivers are to comply with 40km/h speed limit for traffic passing a school bus as well as within school zones. Drivers are to give pedestrians a wide berth and be aware of the pedestrians' safety, road users' safety and their own safety at all times.

Construction vehicle movements will be managed to minimise movements during periods of higher traffic volumes and outside of school pick up and drop off periods.

6. **Heavy vehicle noise**

If possible, heavy vehicle drivers will not use compression brakes near residential areas as compression brakes can cause excessive noise, especially at night. Compression braking throughout residential areas is only to be used if required for safety reasons. When driving near residential areas, a reduction in speed is recommended to minimise the need to use compression brakes.

All heavy vehicles must be fitted with audible reversing alarms for the safety of all personnel. However, audible reversing alarms can be noisy and heavy vehicle drivers will minimise reversing near residential areas.

7. **Public complaint resolution**

To assist in the orderly resolution of complaints, site management will keep a register itemising all reported incidents relating to complaints in regard to heavy vehicle driver conduct external to the site.

Snowy Hydro will also keep a complaints register in the Consultation Manager database, and record of incidents in its event management platform.

The incident register is to include:

- 1) Date of the complaint
- 2) Time of the complaint
- 3) Name of the complainant (if available)
- 4) How the complaint was received
- 5) Detailed description of the complaint (including location, driver/heavy vehicle details)
- 6) What/when actions were taken to resolve the issue
- 7) The reply to the person/organisation that made the complaint.

Once site management is satisfied that the complaint is substantiated, an investigation of the location and causes of the complaint will be undertaken. Following investigation of the issue, site management will provide feedback to the complainant that details the investigations undertaken, the result of the investigation and measures implemented to ensure that operations remain compliant. A description of any follow-up investigations and the response provided to the complainant will also be recorded in the Complaints Register upon closure of the issue.

Appendix B – Management Plan Staging



Ian Smith
Approvals Manager – Hunter Project
Snowy Hydro Limited
PO Box 332
Cooma, NSW, 2630

22/12/2021

Dear Mr. Smith

Hunter Power Project (SSI-12590060) Management Plan Staging

I refer to the Management Plan Staging request submitted in accordance with Condition C21 of Schedule 2 of the Infrastructure Approval for the Hunter Power Project (SSI-12590060).

The Department has carefully reviewed the document and notes that Snowy Hydro propose to submit the Management Plans in two stages, construction and operation.

Accordingly, the Secretary has approved the staged submission of Management Plans for the Hunter Power Project.

Please note, a full set of revised Management Plans, consistent with relevant Conditions of Approval, must be submitted and approved prior to the commencement of Operations.

If you wish to discuss the matter further, please contact Wayne Jones on (02) 6575 3406.

Yours sincerely

A handwritten signature in black ink, appearing to be 'SOD', written over a light blue horizontal line.

Stephen O'Donoghue
Director Resource Assessments

As nominee of the Secretary

Appendix C – Consultation Records

The consultation responses on this TMP are provided below from Cessnock Council and TfNSW.

snowyhydro

Ian Smith <ian.smith@snowyhydro.com.au>

RE: Hunter project management plan feedback

Sarah Hyatt <Sarah.Hyatt@cessnock.nsw.gov.au>
To: Ian Smith <ian.smith@snowyhydro.com.au>, Peter Giannopoulos <Peter.Giannopoulos@cessnock.nsw.gov.au>
Cc: "Luger, Mike" <Mike.Luger@jacobs.com>

24 November 2021 at 15:18

Hi Ian,

As discussed this morning, Council does not have any specific comments in relation to the Traffic Management Plan and Water Management Plan sent through for review.

If there are any changes to these documents, Council is happy to provide further input where required.

Kind regards,



Sarah Hyatt Acting Team Leader Development Services
62-78 Vincent St | PO Box 152 | Cessnock NSW 2325
p 02 4993 4219
www.cessnock.nsw.gov.au



Integrity, Respect, Teamwork, Accountability and Excellence

I acknowledge Aboriginal people as the traditional custodians of the land on which Cessnock City Council offices and operations are located, and pay my respects to Elders past, present and future.

From: Masa Kimura <Masa.Kimura@transport.nsw.gov.au>

Sent: Wednesday, 24 November 2021 9:07 AM

To: Luger, Mike <Mike.Luger@jacobs.com>

Subject: [EXTERNAL] RE: Hunter Power Station: request to comment on draft Traffic Management Plan

Hi Mike,

The following comments are provided for your consideration concerning your submitted draft TMP:

Management and mitigation measures

OSOM vehicle movements that require adjustments to the State Road network and infrastructure (e.g. TCS, signage etc.) will require separate TfNSW consultation / approval.
TfNSW requests a copy of the Dilapidation Report too please.
TfNSW strongly encourages the promotion of car-pooling for the passenger vehicle class

Regards,

Masa Kimura
Development Services Case Officer
Community and Place | Region North
Regional & Outer Metropolitan Division
Transport for NSW

T 02 4908 7688
M 0407 707 999
E development.north@transport.nsw.gov.au
A 6 Stewart Avenue, Newcastle West 2302



Transport
for NSW



Angela VanDerKroft <angela.vanderkroft@snowyhydro.com.au>

RE: Snowy Hydro Limited - Hunter Power Project - Traffic Management Plan

Peter Giannopoulos <Peter.Giannopoulos@cessnock.nsw.gov.au>

13 April 2023 at 13:07

To: Angela van der Kroft <angela.vanderkroft@snowyhydro.com.au>, Sarah Hyatt <Sarah.Hyatt@cessnock.nsw.gov.au>, Sue Page <Sue.Page@cessnock.nsw.gov.au>

Cc: Isaac Strachan <isaac.strachan@snowyhydro.com.au>

Dear Angela

I have reviewed the tracked changes and confirm that Cessnock City Council has no objection to the proposed changes.

Yours faithfully



Peter Giannopoulos Team Leader Development Services

62-78 Vincent St | PO Box 152 | Cessnock NSW 2325

p 02 4993 4112

www.cessnock.nsw.gov.au



Integrity, Respect, Teamwork, Accountability and Excellence

I acknowledge Aboriginal people as the traditional custodians of the land on which Cessnock City Council offices and operations are located, and pay my respects to Elders past, present and future.



Angela VanDerKroft <angela.vanderkroft@snowyhydro.com.au>

RE: Snowy Hydro Limited Hunter Power Project Traffic Management Plan

1 message

Development North <Development.North@transport.nsw.gov.au>

19 April 2023 at 11:10

To: Angela van der Kroft <angela.vanderkroft@snowyhydro.com.au>, Development North <Development.North@transport.nsw.gov.au>
Cc: Damien Pfeiffer <Damien.Pfeiffer@transport.nsw.gov.au>, Isaac Strachan <isaac.strachan@snowyhydro.com.au>

Hi Angela,

I confirm that we have no further comment upon the submitted revised draft TMP.

An important note is that TfNSW does not approve these type of documents, rather provides input into it preparation only. When approved, could you forward a copy for our records please.

Regards,

Masa Kimura

Development Services Case Officer

Regional and Outer Metropolitan

Development Services

Transport for NSW

T 1300 207 783 M 0407 707 999 E masa.kimura@transport.nsw.gov.au

transport.nsw.gov.au

6 Stewart Avenue, Newcastle NSW 2302

Locked Bag 2030, Newcastle NSW 2302

Working days Monday to Friday, 8:00am – 3:30pm



Transport
for NSW

Appendix D – Out of Hours Work for Concrete Pours

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30 November 2022

Mr Jack Turner
Senior Environmental Assessment Officer
Resource Assessments
Department of Planning and Environment

Dear Jack,

Subject: Hunter Power Project 12590060 – variation of construction hours

This application seeks the Secretary's approval for a variation of construction hours as provided for in terms of Condition B32. The same application is being made concurrently to the NSW Environment Protection Authority to vary EPL 21627.

Approval is sought to extend the Project's construction hours to undertake approximately 12 continuous concrete pours between January and March 2023 (although the last pours could be as late as June 2023), detailed below.

The application is for the following activities;

- Continuous concrete pours to form the pile caps for the two turbine footings for the power islands
- Approximately 10 additional smaller (shorter duration) continuous concrete pours
- Use of concrete boom pumping truck, concrete trucks, hand-held concrete vibrators, light vehicles, lighting towers and trowelling machines
- Up to 320 heavy vehicle (concrete truck) trips to deliver concrete to the site for each pour.

Justification for the request to working outside the standard construction hours on these 12 occasions is that it can take up to 16 hours to pour the concrete and the work needs to take place when temperatures are cool enough (evenings, night time and mornings) to prevent the concrete from drying and curing too quickly.

In order to address the approval conditions and substantiate this application, supporting information is provided.

- 'Concrete Pour Noise and Vibration Impact Assessment –_with Appendices' by Jacobs. This assessment is specific to this application, and also includes the noise impact assessment completed during the EIS submissions phase as demonstration of methodology and that the Noise Construction Guidelines have been addressed.
- Evidence of consultation with potentially affected receivers is also attached, including
 - 'Letter to receivers - construction hours - Nov 2022'. Which contains a letter to Tennelle Mitchell (the only receptor with a predicted exceedance of the project's NMLs) and an example of the letter provided to the other potentially affected receivers for which no exceedances are predicted.

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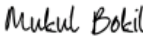
- 'Consultation log - construction hours - Nov 2022'. Which is an extract from the Consultation Manager database for the Project summarising the direct communication by the Snowy Hydro Community Manager with the receivers.

As the exact timing of the concrete pours depends on numerous factors including the weather, it is not possible to commit to specific times and dates. However, Snowy Hydro have committed to contacting each of the receptors 48 hours prior to commencing the work and will also undertake noise monitoring during the first concrete pour to confirm modelling predictions.

In addition to the proposed out of hours work application, this application also seeks to relax the maximum number of heavy vehicles per day and timing of arrivals and departures for the days affected by the continuous concrete pours to allow for the additional concrete truck deliveries.

I appreciate your timely attention to this application, if any clarification is required, please contact Isaac Strachan on 0429 702 037 or isaac.strachan@snowyhydro.com.au.

Yours sincerely,

DocuSigned by:

84440C10BECF4CA...

Mukul Bokil
Project Director - Hunter Power Project

Memorandum



Hunter Power Project – Concrete Pour Noise and Vibration Impact Assessment

Date:	30 November 2022	Jacobs Group (Australia) Pty Limited
Project name:	Hunter Power Project	Level 4, 12 Stewart Avenue
Project no:	IS354501	Newcastle West, NSW 2302
Attention:	Isaac Strachan	PO Box 2147
Company:	Jacobs Group (Australia) Pty Ltd.:	Dangar, NSW 2309
Prepared by:	Sean Brennan, reviewed by Dave Davis and Mike Luger	Australia
Document no:	Final	T +61 2 4979 2600
		F +61 2 4979 2666
		www.jacobs.com

1. Introduction

UGL Limited, the Principal Contractor engaged by Snowy Hydro Ltd to construct the Project, intends to undertake continuous concrete pours to form the pile caps for the two turbine footings for the power islands as part of the Hunter Power Project. The concrete pours need to take place when the temperature is cool enough to prevent the cement from drying and curing too quickly, as this would internally generate heat that may result in strength reduction and cracking of the high strength concrete. Therefore during Summer the work needs to be undertaken during the evening and night time periods, outside of the Standard Construction Hours (Mon to Fri 7am to 6pm and Sat 8am to 1pm as approved in Infrastructure Approval Condition B30). In addition to the two turbine footings which will be poured separately most likely a few weeks apart, there would also be some 10 smaller (mainly shorter duration) continuous concrete pours undertaken during the first half of 2023. This noise and vibration impact assessment covers all 12 concrete pours but is based on the turbine footings as the worst case scenario.

Infrastructure Approval Condition B32 specifies the process for variation of construction hours. This is detailed in section 6.5 of the Construction Noise and Vibration Management Plan (Snowy Hydro and Jacobs, Feb 2022). The purpose of this Memorandum is to support the Out of Hours Work application to the Secretary of the Department of Planning and Environment, and the NSW Environment Protection Authority by:

- Identifying any noise and vibration impacts on nearby sensitive receivers as a result of the proposed out of hours works
- Predicting noise and vibration levels at the impacted receivers, including the amount by which the noise and vibration levels are above the applicable noise management level or vibration limit
- Identifying feasible and reasonable mitigation and management measures to address the predicted noise and vibration impacts
- Identifying appropriate noise and vibration monitoring locations to aid in managing the noise and vibration impacts while the works are being undertaken.

In order to understand the potential noise impacts resulting from the concrete pours, Snowy Hydro has requested Jacobs Group (Australia) Pty Ltd to develop a Construction Noise Impact Assessment Memo to determine the potential noise impacts of this activity.

2. Background

2.1 Surrounding land use

The land use surrounding the project was delineated in the *Hunter Power Project Environmental Impact Statement Appendix L: Noise Impact Assessment* (Jacobs, April 2021) and *Appendix G: Revised Noise and Vibration Assessment to the Response to Submissions Report* (Jacobs, July 2021) (attached as **Appendix C** to

Memorandum

this Memo). In the above reports, to aid in the development of noise criteria, the land surrounding the Proposal Site was divided into five Noise Catchment Areas (NCAs). These NCAs are detailed in **Table 2.1**, while the locations of the NCAs and nearest receivers are displayed in **Appendix A**.

Table 2.1 Noise catchment areas summary

Noise catchment area	Location	Approximate distance of nearest sensitive receiver from centroid of power island	Predominant land uses	Predominant background noise feature
NCA 1	Sawyers Gully (east of Sawyers Gully Road)	1,240 m	Rural Residential	Hunter Expressway, Environmental Noise
NCA 2	Western Loxford	1,150 m	Rural Residential, Light Industry	Hunter Expressway, Environmental Noise, Industrial Noise
NCA 3	Eastern Loxford	1,610 m	Rural Residential, Educational	Environmental Noise, Local Road Noise
NCA 4	Gillieston North	3,210 m	Farmland	Agricultural Noise, Environmental Noise
NCA 5	Sawyers Gully (west of Sawyers Gully Road)	1,955 m	Rural Residential	Environmental Noise, Local Road Noise

3. Construction noise criteria

3.1 Construction activities

The Noise Management Levels (NMLs) for the assessment of construction noise impacts were developed as part of the EIS process. The applicable NMLs for residential receivers are detailed in **Table 3.1**, and the NMLs for non-residential receivers are detailed in **Table 3.2**.

Table 3.1 Residential noise management levels

NCA	NML $L_{eq}(15 \text{ min})$ dB(A)			
	Day (during standard hours) 7:00 am – 6:00 pm Weekdays, 8:00 am – 1:00 pm Saturdays	Day (outside standard hours) 7:00 am – 6:00 pm Outside of Standard Hours	Evening 6:00pm–10:00pm	Night 10:00pm–7:00am
NCA 1	55	50	50	41
NCA 2	50	45	45*	43
NCA 3	48	43	43*	42
NCA 4	45**	40**	35**	35**
NCA 5	47	42	42*	40

* Criteria reduced so Evening criteria is not higher than Day Outside of Standard Hours (OoSH) criteria.

** Criteria derived from the NSW EPA "Noise Policy for Industry" (NPI)'s minimum assumed Rating Background Levels (RBL) (Table 2.1 of NPI).

Memorandum

Table 3.2 Non-residential noise management levels

Non-residential receiver type	Noise management level, $L_{Aeq(15min)}$ (applies when properties are being used)
Commercial	External Noise Level – 70 dB(A)
Industrial	External Noise Level – 75 dB(A)
Educational facilities	Internal Noise Level – 45 dB(A)
Hospital / Medical	Internal Noise Level – 45 dB(A)
Place of Worship	Internal Noise Level – 45 dB(A)
Passive Recreation	External Noise Level – 60 dB(A)
Active Recreation	External Noise Level – 65 dB(A)

3.2 Construction traffic

Road traffic noise impacts due to the construction of the Hunter Power Project were assessed against the following guidance from the application notes of the EPA’s “NSW Road Noise Policy” (RNP) (2011):

‘...for existing residences and other sensitive land uses affected by additional traffic on existing roads generated by land use developments, any increase in the total traffic noise level as a result of the development should be limited to 2 dB above that of the noise level without the development. This limit applies wherever the noise level without the development is within 2 dB of, or exceeds, the relevant day or night noise assessment criterion.’

In reference to the day or night assessment criterion above, the assessment refers to the following criterion provided in the RNP.

Table 3.3 Relevant Road Noise Policy assessment criteria

Road Category	Type of project/land use	Assessment criteria – dB(A)	
		Day (7am – 10pm)	Night (10pm – 7am)
Freeway/ arterial/sub-arterial roads	Existing residences affected by additional traffic on existing freeways/arterial/sub-arterial roads generated by land use developments	$L_{Aeq, (15 \text{ hour})}$ 60 dB(A)	$L_{Aeq, (9 \text{ hour})}$ 55 dB(A)

4. Concrete pour noise levels

4.1 Construction activities

Noise levels from the proposed work activities were predicted using the SoundPLAN 8.0 noise modelling software using the CONCAWE calculation method. To provide a conservative modelling estimate, the meteorological conditions used in the model assumed a noise-enhancing effect on the noise propagation. Full details of the modelling parameters are provided in *Appendix G: Revised Noise and Vibration Assessment to the Response to Submissions Report* (Jacobs, July 2021) (attached as **Appendix C** to this Memo).

No further assessment of vibration was undertaken as the EIS concluded that no vibration impacts were predicted due to the large distances between the works and the nearest receivers, nor has any of the equipment listed below been predicted to produce vibration impacts.

Memorandum

Sound power levels for the various noise sources during the works were determined by developing an inventory of noise producing equipment confirmed with the construction contractor. The sound power levels of each piece of equipment were estimated from sound power level data used in the EIS modelling and was supplemented with sound power levels provided in national and international standards and guidelines, as well as from a Jacobs measurement database. Conservatively, the modelling assumed that all plant within each work activity is operated simultaneously. The proposed equipment and sound power levels are displayed in **Table 4.1**. The locations of the concrete pours are displayed in **Appendix B**.

It is noted that the subsequent concrete pours will utilise similar equipment to those listed in Table 4.1, however the overall amount of equipment is expected to be less and duration of works is expected to be shorter.

Table 4.1 Concrete pour noise emissions – modelled sound power levels, SWL dB(A)

Work activity	Equipment	Number of equipment	Usage factor (percentage)	Individual equipment SWL, dB(A)	Overall SWL, dB(A)	
					Maximum $L_{Aeq, 15min}^*$	Instantaneous $L_{Amax, 15min}^*$
Concrete pours	Concrete Boom Pumping Truck	2	100%	107	116	116
	Concrete Truck (In Operation)	2	100%	106		
	Concrete Truck (Idle)	4	100%	103		
	Hand-Held Concrete Vibrators	6	100%	102		
	Car	1	75%	98		
	Lighting Towers	5	100%	95		
	Trowelling Machines	3	75%	92		

* Assumes all equipment is operating concurrently at the same location

4.2 Construction traffic

It has been identified that a significant number of truck movements would be required to facilitate the proposed concrete pours. As such, a traffic noise impact assessment has been undertaken to assess the impact of these movements.

Traffic volumes for the Hunter Expressway were derived from Transport for NSW traffic monitoring station HEX1& HEX2, as per *Hunter Power Project Response to Submissions Appendix G: Revised Noise Impact Assessment (Jacobs, July 2021)*. These traffic volumes have been provided in **Table 4.2**.

It is noted that Hart Road will be utilised as site access from the Hunter Expressway. However, noting the low levels of traffic on Hart Road between the Hunter Expressway and the project site, in addition to the large distances between Hart Road and the nearest receivers, it has been deemed highly unlikely that noise from construction traffic on Hart Road will lead to traffic noise impacts.

Table 4.2 Existing traffic volumes

Road	Vehicle type	Day (7am – 10pm)		Night (10pm – 7am)	
		Northbound	Southbound	Northbound	Southbound
Hunter Expressway	Light	7052	8370	2003	862
	Heavy	1378	1791	535	280

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The proposed construction traffic volumes have been displayed in **Table 4.3**. It is also noted that this traffic represents the worst-case movements for the proposed concrete pour works. The subsequent works have been predicted to utilise approximately half the traffic detailed in **Table 4.3**.

Table 4.3 Proposed construction traffic volumes

Traffic	Vehicle type	Day (7am – 10pm)		Night (10pm – 7am)	
		Northbound	Southbound	Northbound	Southbound
Construction Traffic	Light	-	-	-	-
	Heavy	50	50	270	270

5. Results

5.1 Construction noise

Predicted noise levels from the proposed work activities at the nearest residential receivers are detailed in **Table 5.1** below. Noise levels at the nearest non-residential receivers are displayed in **Table 5.2**.

As shown in **Table 5.1**, at all NCAs barring NCA 2, noise from the concrete pours has been predicted to be compliant with the NMLs of each time period and sleep disturbance criterion. At NCA 2, noise may be up to 2 dB(A) greater than the night NML and L_{Aeq} sleep disturbance criteria. It should be noted that only the two nearest receivers in the NCA (6 and 10 Dawes Avenue) have been predicted to experience noise greater than the night NML and L_{Aeq} sleep disturbance criteria. Additionally, as per Table 4.1 of the *Noise Policy for Industry (NPI)* (NSW EPA, 2017), a noise level 2 dB(A) over the NMLs and criteria would be considered a 'negligible' noise exceedance, not easily detectable as greater than a noise level equal to the night NML.

Noise levels at non-residential receivers was found to remain below with the applicable NMLs.

As stated in **Section 4.1**, subsequent concrete pours have been predicted to both require less equipment and take place over a shorter duration than these works. Due to the already marginal levels of noise over the NMLs and L_{Aeq} sleep disturbance criteria, it is not anticipated that the subsequent concrete pours would produce noise impacts greater than those presented **Table 5.1** and **Table 5.2**, and likely would be below the NMLs and sleep disturbance criterion as well.

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Table 5.1 Construction noise impacts at residential receivers

Noise catchment area	Address	Predicted L _{Aeq} noise level dB(A)	Predicted L _{AMax} noise level dB(A)*	Noise management level / Sleep disturbance criteria (dB(A))						Noise level above NML / Sleep Disturbance criteria (dB(A))					
				Standard hours	Out of hours day	Out of hours evening	Out of hours night	Sleep disturbance (L _{Max})	Sleep disturbance (L _{AMax})	Standard hours	Out of hours day	Out of hours evening	Out of hours night	Sleep disturbance (L _{Max})	Sleep disturbance (L _{AMax})
NCA 1	Bishops Bridge Rd, Sawyers Gully	41	41	55	50	50	41	41	52	-	-	-	-	-	-
NCA 2	6 Dawes Ave, Loxford	45	45	50	45	45	43	43	53	-	-	-	2	2	-
NCA 3	20 Bowditch Ave, Loxford	39	39	48	43	43	42	42	52	-	-	-	-	-	-
NCA 4	464 Cessnock Rd, Gillieston Heights	27	27	45	40	35	35	40	52	-	-	-	-	-	-
NCA 5	15 Sawyers Gully Rd, Sawyers Gully	37	37	47	42	42	40	40	52	-	-	-	-	-	-

* Noise level based on the assumption that all equipment is used at the same location continuously over a representative 15 minute period.

Table 5.2 Construction noise impacts at non-residential receivers

Noise catchment area	Address	Receiver type	Predicted L _{Aeq} noise level dB(A)	Noise management level dB(A)	Noise level above NML (dB(A))
NCA 2	6 Dawes Ave, Loxford	Industrial	45	75	-
NCA 3	18 Bowditch Ave, Loxford	Commercial	39	70	-
	Kurri Kurri TAFE, Loxford	Educational	37	55	-

5.2 Construction traffic noise

Based on the traffic volumes displayed in **Section 4.2**, construction traffic noise impacts have been determined. These traffic noise levels have been provided in **Table 5.3**.

As displayed in the table, construction traffic along the Hunter Expressway has been predicted to increase traffic noise by approximately 0.1 dB(A) during the day, and 1.5 dB(A) during the night, below the traffic noise increase criteria of 2 dB(A). As such, it has been determined that the proposed construction traffic would not result in construction traffic noise impacts.

As stated in **Section 4.2**, this represents the worst case traffic scenario associated with the main concrete pour works. Subsequent concrete pours are predicted to require less concrete deliveries, hence construction traffic noise during the subsequent concrete pours has been determined to not pose a construction traffic noise risk.

Table 5.3 Construction traffic noise levels

Road	Day (7am – 10pm)			Night (10pm – 7am)		
	Existing traffic noise level (L _{Aeq,24h} dB(A))	Increase in traffic noise level (L _{Aeq,24h} dB(A))	Construction traffic noise level (L _{Aeq,24h} dB(A))	Existing traffic noise level (L _{Aeq,24h} dB(A))	Increase in traffic noise level (L _{Aeq,24h} dB(A))	Construction traffic noise level (L _{Aeq,24h} dB(A))
Hunter Expressway	62.7	0.1	62.8	61.0	1.5	62.5

6. Standard noise mitigation measures

As displayed in **Section 5.1**, noise from the undertaking of concrete pours has been predicted to be compliant at all receivers during all time periods, barring two minor exceedances at NCA 2. As such, to assist with managing noise impacts from the works, standard noise mitigation measures provided in the *Construction Noise and Vibration Guidelines* (CNVG) (RMS, 2016) can be applied where reasonable and feasible to further control noise from the activities. These are reproduced in **Table 6.1**.

Table 6.1 EIS and ICNG standard noise mitigation measures

Reference	Mitigation measure	Timing
NVIA1	Wherever possible and safe, limit works to standard hours of construction.	During construction
NVIA2	Select low-noise plant and equipment. Ensure equipment mufflers operate in a proper and efficient manner.	Prior to and during construction
NVIA3	Where possible, use quieter and less vibration emitting construction methods.	During construction
NVIA4	Only have necessary equipment on-site and turn off when not in use.	During construction
NVIA5	Where possible, concentrate noisy activities at one location and move to another as quickly as possible.	During construction
NVIA6	Vehicle movements, including deliveries outside standard hours, should be minimised and avoided where possible.	During construction
NVIA7	All plant and equipment is to be well maintained and where possible, fitted with silencing devices.	Prior to and during construction

Memorandum

Reference	Mitigation measure	Timing
NVIA8	Use only the necessary size and powered equipment for tasks.	During construction
NVIA9	Implement training to induct staff on noise sensitivities	Prior to and during construction
NVIA10	Where possible, consider the application of less intrusive alternatives to reverse beepers such as 'squawker' or 'broadband' alarms.	During construction
NVIA11	Consider the installation of temporary construction noise barriers or earth mounds for concentrated, noise-intensive activities.	During construction
NVIA12	Where practicable, install enclosures around noisy mobile and stationary equipment as necessary.	During construction
NVIA13	Where possible, avoid simultaneous operation of two or more noisy plant close to receivers. The offset distance between noisy plant and sensitive receivers should be maximised.	During construction
NVIA14	Plan traffic flow, parking and loading/unloading areas to minimise reversing movements.	Prior to and during construction
NVIA15	Complete routine monitoring to evaluate construction noise levels and evaluate whether the mitigation measures in place are adequate or require revision.	During construction
NVIA16	Where reasonable and feasible, intermittent noise sources such as blow off valves and reversing beepers and squawkers should be limited to the greatest extent possible.	During construction

7. Monitoring

Due to the generally negligible exceedances predicted to result from the concrete pours, it has been determined that no additional monitoring over and above that described in Section 7.2 of the Construction Noise and Vibration Management Plan would be required or has been proposed.

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8. Conclusion

As displayed in **Section 5**, noise from the concrete pours has been predicted to be compliant with the NMLs of each time period and sleep disturbance criterion at all but two (2) receivers. At NCA 2, noise may be up to 2 dB(A) greater than the night NML and L_{Aeq} sleep disturbance criteria. It should be noted that only the two nearest receivers in the NCA (6 and 10 Dawes Avenue) have been predicted to experience noise greater than the night NML and L_{Aeq} sleep disturbance criteria.

Such a level of noise greater than the NMLs could be considered negligible as described in the NPI, which would not be easily detectable as greater than a noise level equal to the night NML. Regardless, the standard mitigation measures given in the CNVG (RMS, 2016) are recommended to be applied where reasonable and feasible to manage noise impacts from the works.

It should be noted that the noise predictions have been based on a combination of worst-case conditions including:

- All noise sources operating concurrently at maximum individual noise emissions
- All noise sources located in closest proximity to each receiver
- Noise-enhancing meteorological conditions in all directions, increasing noise levels at all receivers.

The above worst-case noise modelling assumptions are considered to be a conservative approach and while this may provide for the determination of conservative noise levels, actual construction noise levels should be lower than have been predicted in this assessment.

It was also found that construction traffic noise levels would not exceed the existing traffic noise levels by 2 dB(A), and hence would not pose a construction traffic noise impact.

Given the predicted noise levels from the concrete pours and traffic, and noting that the subsequent concrete pours will require less concrete deliveries, in addition to lasting a shorter duration, it has been predicted that the subsequent concrete pours would not result in noise levels greater than those of this assessment, and potentially less than the NMLs.

Department of Planning and Environment



Our ref: SSI-12590060-PA-50

Ian Smith
Project Manager – Hunter Power Project
Snowy Hydro Limited
Monaro Highway
Cooma, NSW, 2630

14/12/2022

Subject: Hunter Power Project (SSI-1259006) Additional Construction Hours

Dear Mr Smith

I refer to your letter dated 30 November 2022 seeking extended construction hours for the Hunter Power Project (SSI 12590060) in accordance with Condition B32, Schedule 2 of the infrastructure approval.

The Department understands that additional construction hours are sought for 12 discrete periods of up to 16 hours each between 1 January 2023 and 31 March 2023. Approval is sought to extend the project's construction hours to undertake concrete pours and associated activities, which are likely to be required in the evenings, night time and early morning due to temperature constraints. The specific activities include:

- Continuous concrete pours to form the pile caps for the two turbine footings for the power islands.
- Approximately 10 additional smaller (shorter duration) continuous concrete pours.
- Use of concrete boom pumping truck, concrete trucks, hand-held concrete vibrators, light vehicles, lighting towers and trowelling machines.
- Heavy vehicle (concrete truck) trips to deliver concrete to the site for each pour.

The Department notes that the letter also requests the approval of increased maximum daily heavy vehicle movements for the project due to the additional heavy vehicle movements required for the concrete pours.

The Department notes that these increased movements have been included in a separate application to modify the infrastructure approval (SSI 12590060 – Mod-1). However, the construction traffic noise associated with these movements has been considered by the Department as part of its assessment of the additional hours application. The Department notes it is Snowy Hydro's responsibility to manage daily heavy vehicle movements within the limits in the project approval.

The Department has carefully reviewed this letter, attached Noise and Vibration Impact Assessment and evidence of consultation with potentially affected receivers. The Department notes that the construction activities would be compliant with the relevant Noise Management Levels at all but two receivers. At these two receivers there would be an exceedance of up to 2dB(A) of the night-time NML sleep disturbance criteria. The Department notes efforts have been made to consult with affected landowners and no response has been received to date.

Accordingly, the Secretary accepts the request to vary construction hours between 1 January 2023 until 31 March 2023 subject to the following requirements

- Only the specific work scopes listed can be undertaken.

- For each of the 12 concrete pours, written notice must be provided to surrounding potentially affected residential receivers consulted when preparing the request, prior to work occurring outside the normal construction hours. The written notice must:
 - a) identify the location, duration, and activities to occur outside normal construction hours;
 - b) provide a telephone contact number of the construction site manager during the extended construction hours.
- If any complaint is received, appropriate mitigation measures are to be identified, and the Department and the complainant are to be immediately informed of the measures that will be implemented to address the complaint. Should any further complaints be received regarding works in the extended construction hours, this approval to extend the works hours may be revoked by the Department.
- Attended monitoring must be undertaken during the first concrete pour for the turbine footings to validate model predictions.
- A record of any complaints made, or non-compliances identified during monitoring, regarding works undertaken during extended construction hours must be provided to the Department within 24 hours of the complaint/non-compliance.
- All work is to be undertaken in accordance with the requirements of Condition B32 of Schedule 2 and all additional noise mitigation measures proposed in the Noise and Vibration Impact Assessment be adopted and implemented

The Secretary does not approve the request to increase the maximum daily heavy vehicle movements described in the letter.

If you wish to discuss the matter further, please contact Jack Turner on 02 9995 5387

Yours sincerely



Stephen O'Donoghue
Director
Resource Assessments
As nominee of the Planning Secretary

Appendix E – OSOM Transport Management Plan

TRANSPORT MANAGEMENT PLAN

CLIENT: HITACHI TRANSPORT

PROJECT: HUNTER POWER PROJECT

SHIPMENTS: MITSUBISHI GAS TURBINES

PORT OF IMPORT: MAYFIELD #4 BERTH NEWCASTLE

DELIVERY POINT: HART ROAD LOXFORD

23/02/2022 REV 00

Rev.	Date	Change	Responsible	Checked
00	15/02/22	Route Assessed	C Andrews	✓
00	22/02/22	Report compiled	W Andrews	✓
00	23/02/22	Report completed	W Andrews	✓

1.0 Introduction

This document describes observations and previous experience on route and explains the transport of power generation equipment from Mayfield, NSW to Loxford, NSW.

This Route study took place on 15.02.22

2.0 Evaluation

1	No Cost
2	Some Work
3	Urgent Modification
4	Extreme Amount of Work

(Mark below boxes with an X)

		1	2	3	4
A	Harbour	N/A			
B	Road Modification	X			
C	Road Furnishings	X			
D	Trees	X			
E	Site Entrance	X			
F	Bridge Calculations		X		
G	Traffic Control		X		

3.0 Project data.

Date of latest Route Study. 15/02/22

Survey undertaken by. (Rex J Andrews P/L)

Project name. Hunter Power Project

Route. Mayfield NSW to Loxford NSW Australia

Shipments. Mitsubishi Gas turbines

Main components to be transport.

2 x Generator stators (11.1l x 4.7w x 4.7h x 314T)

2 x Lower Cylinders (11.9l x 5.6w x 3.5h x 151T)

2 x Rotor and turbines (12.4l x 4.3w x 3.6h x 117T)

2 x Generator rotors (15.8l x 1.5w x 2.0h x 71T)

2 x Inlet casings (7.2l x 5.4w x 2.9h x 65T)

4.0 Transport combinations and escort requirements.

2 x Generator stators (11.1l x 4.7w x 4.7h x 314T)

Transport configuration. Block truck with 16x8-16x8 Beamset + 5 x backup prime movers.

Overall dimensions: 150.0l x 6.5w x 5.4h x 658.0T.

Escort requirement: 3 x NSW Police, 4 x Company pilots.

2 x Lower Cylinders (11.9l x 5.6w x 3.5h x 151T)

Transport configuration. Block truck with 14x8 Platform trailer + 2 x backup prime movers.

Overall dimensions: 70.0l x 6.0w x 5.2h x 283.5T.

Escort requirement: 2 x NSW Police, 4 x Company pilots.

2 x Rotor and turbines (12.4l x 4.3w x 3.6h x 117T)

Transport configuration. Block truck with 12x8 Platform trailer + 1 x backup prime mover.

Overall dimensions: 48.0l x 6.0w x 5.2h x 229.0T.

Escort requirement: 1 x NSW Police, 3 x Company pilots.

2 x Generator rotors (15.8l x 1.5w x 2.0h x 71T)

Transport configuration. Block truck with 10x8 Platform trailer.

Overall dimensions: 30.0l x 5.9w x 5.2h x 174.5T.

Escort requirement: 3 x Company pilots.

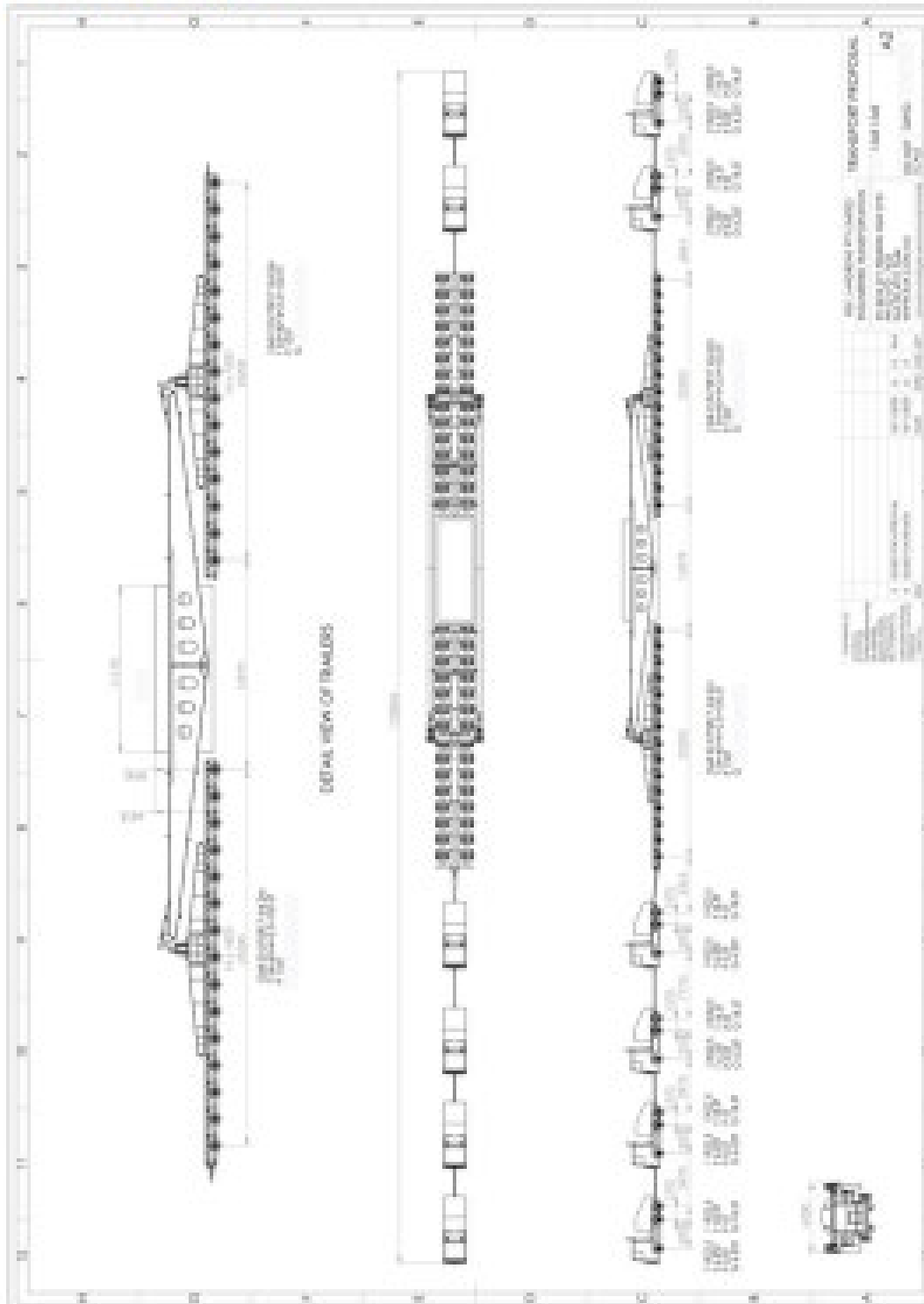
2 x Inlet casings (7.2l x 5.4w x 2.9h x 65T)

Transport configuration. Block truck with 8x8 Platform trailer.

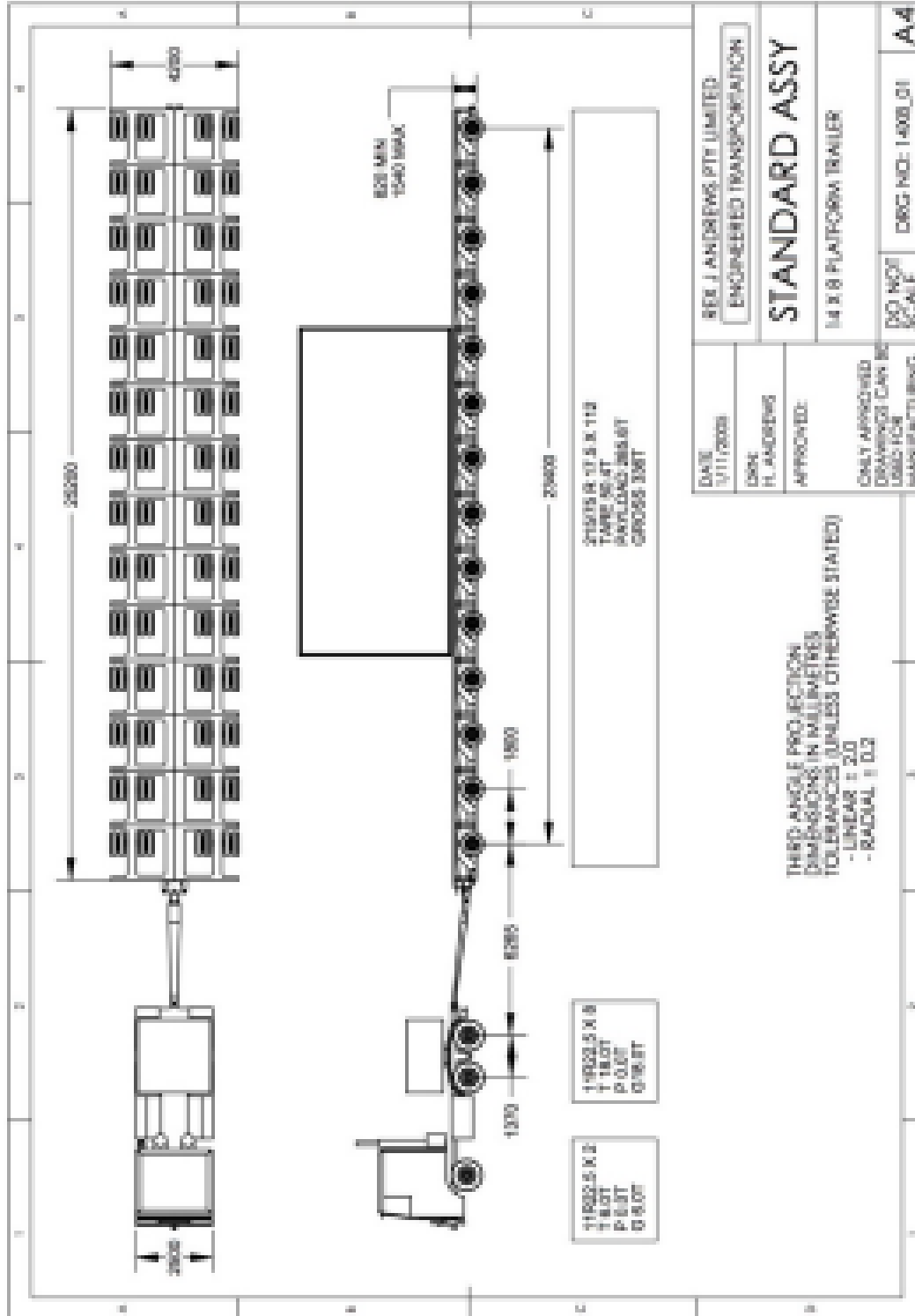
Overall dimensions: 30.0l x 5.9w x 5.2h x 144.5T.

Escort requirement: 3 x Company pilots.

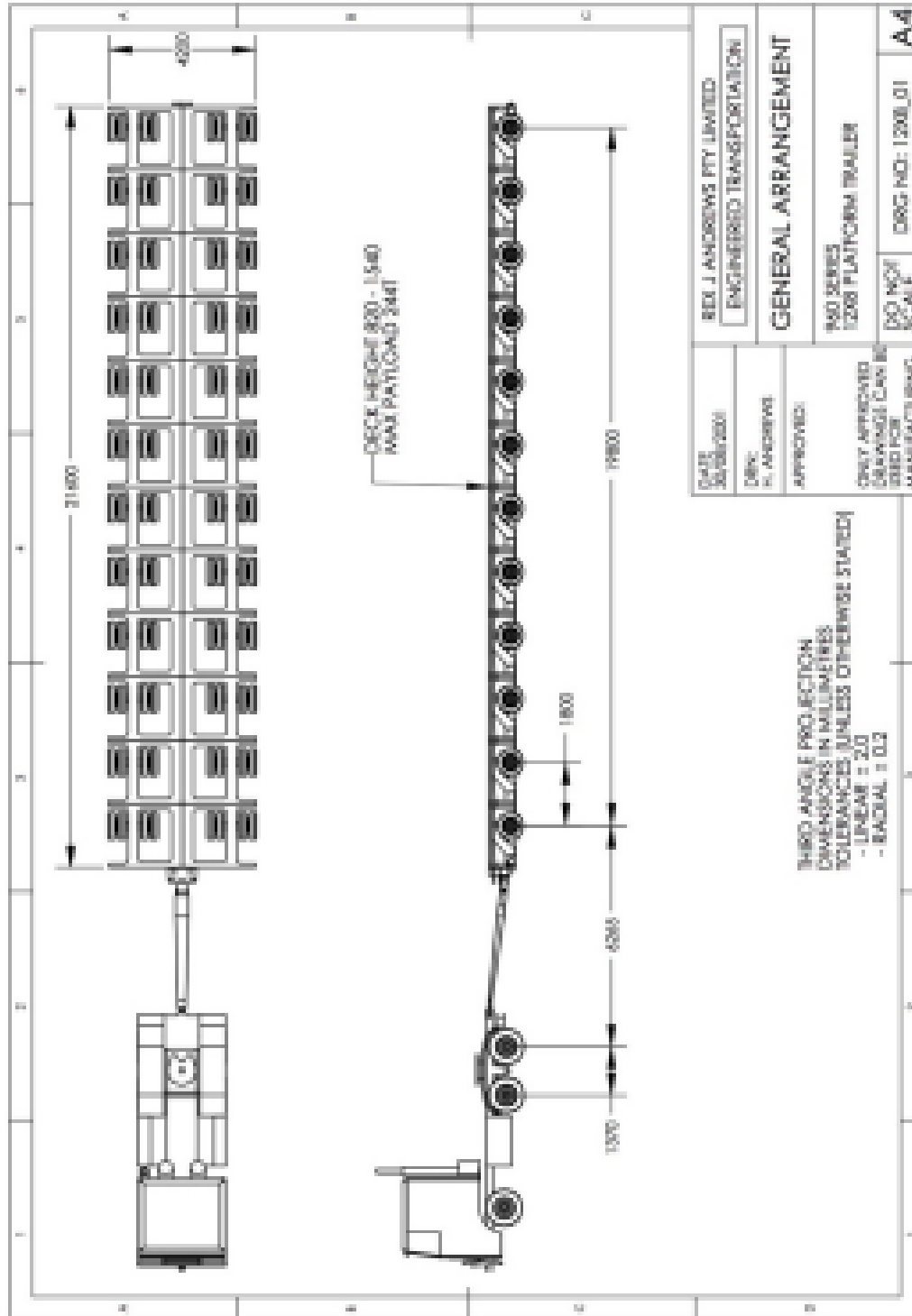
5.0 Transport Drawings.
Beamset example



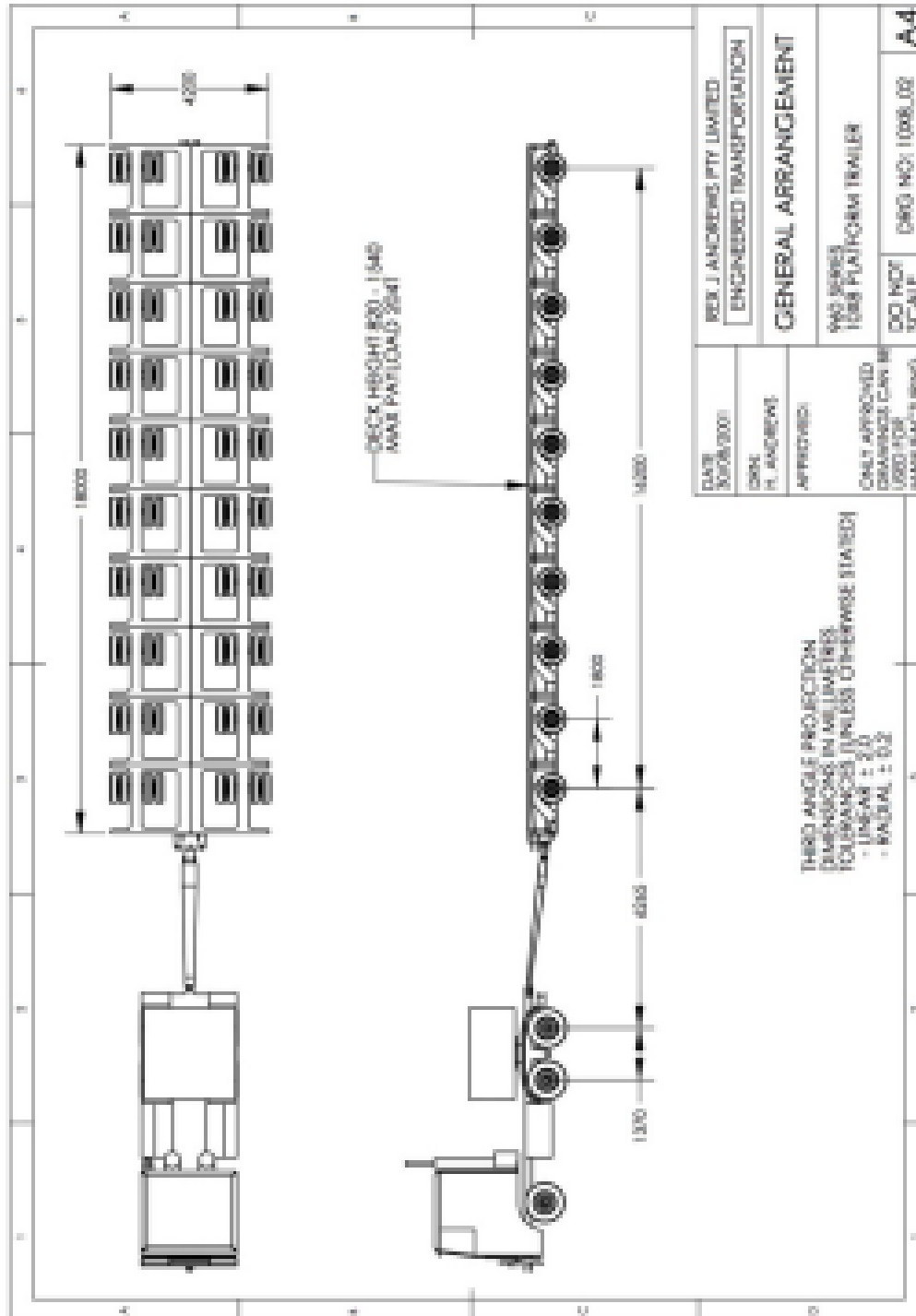
14x8 Platform trailer



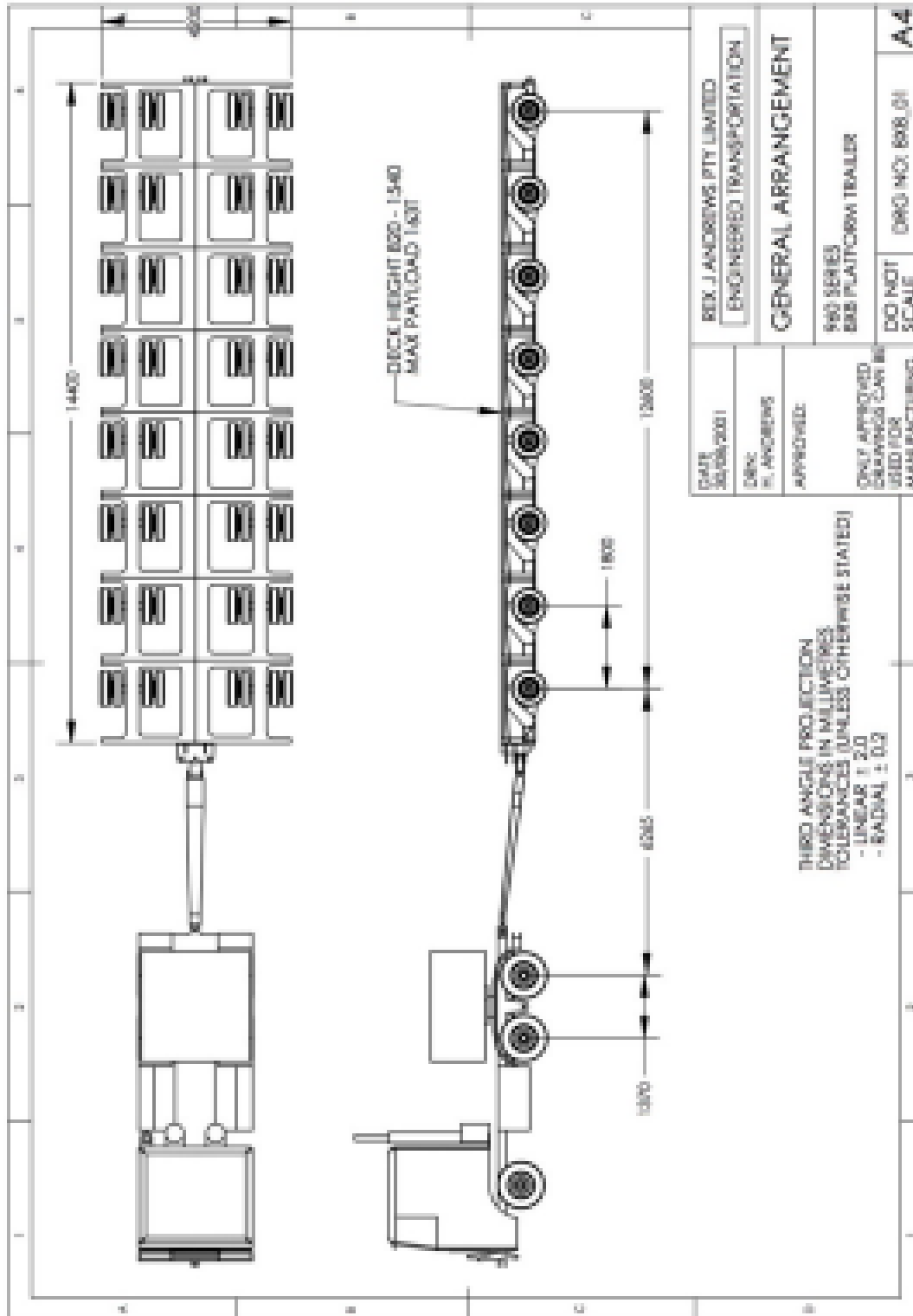
12x8 Platform trailer



10x8 Platform trailer



8x8 Platform trailer



6.0 Transport Route.

ROUTE: Newcastle Port (Mayfield #4 berth) to Loxford, 41.5 kilometres:

This route took us via Selwyn Street, George Street, Industrial Drive, Maitland Road, Old Maitland Road, Maitland Road, Newcastle Inner City Bypass, Newcastle Road, Thomas Street, Newcastle Link Road, Hunter Expressway, Hart Road.

GPS LINK: <https://goo.gl/maps/skC1x2jtZiFWbbJ4A>

7.0 Transport conditions

The following are the conditions and pinch points for this route:

- No unnecessary noise to be made before 7.00am.
- A prestart meeting to be held between the truck drivers, Pilots & Police before loads depart.
- If for any reason communications fail between any of the pilot, escort or load vehicle occurs, the load is to cease until such time as it can be re-established.
- Loads are to travel between Mayfield and Loxford between the hours of 9:00pm and 5:00am.
- Loads that leave prior to 12:00am will need to be approved for travel by TfNSW and NSW Police.
- Client to give adequate access for load to access Hunter Power Plant.
- Roadwork's to be checked with RMS 7 days prior to leaving and relayed to client with any potential problems.
- Loads to traverse bridge structures as per TfNSW bridge investigation report.
- Load to travel at an average speed of 20 km p/hr. However, the load will slow down for bridge crossings, corners and inclines/declines.
- Portable VMS board to travel with the beamset.
- Traffic control required for the beamset to cross to the incorrect side of the Hunter Expressway.
- Permits/Approval letters from state government authorities to access their networks on this route are to be carried with load.
- Permits/Approval letter from Local councils to access their networks on this route are to be carried with load.
- Permits/Approval letter from Electrical/Communication authorities to pass under their networks on this route are to be carried with load.

8.0 Fatigue scheduling: Beamset



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PO Box 271, Penrith NSW 2151
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Newcastle
14 Yilm Close, Bensfield NSW 2221
Ph: 02 4996 1700 Fax: 02 4996 1744
E-mail: newcastle@rja.com.au

Trip Schedule

Schedule Details: Hunter Power Project
16x3-16x8 Beamset from Mayfield to Loxford

Job No: 20402275
Date: 23/03/2022 1:47:07 pm
Written By: Warwick Andrews
Consulted: Carl Andrews

Schedule Notes:

- This Schedule has been written based on values known at the time for good driving conditions and no known fatigue related issues prior to starting the trip.
- Do not drive to the schedule if you feel tired. Stop, revive, survive.
- No attempt should be made to make up for lost time on a schedule.
- Please modify all times according to your real start time.
- You must still fill in your Logbook, exactly as the hours you have worked.

Please work with the Scheduler who wrote this to make the schedule better for all.

Start	End	Hr	Day	Rin	avg	Type	Location	Notes
12:01am	8:45pm	20.73	1	0	0	Rest	Mayfield	Minimum 7 hour rest break
8:45pm	9:00pm	0.25	1	0	0	Working	Mayfield	Taxibox and prestart
9:00pm	11:58pm	2.98	1	13	3	Driving	Mayfield to Inner City Bypass	Loaded travel
12:00am	2:00am	2.00	2	7	4	Driving	Inner City Bypass to Lake Road	Loaded travel
2:00am	2:15am	0.25	2	0	0	Post Rest	Lake Road	15 Minute rest break
2:15am	5:00am	2.75	2	28	9	Driving	Lake Road to Loxford	Loaded travel
5:00am	5:30am	0.30	2	0	0	Working	Loxford	Prepare load to be parked up at site.
5:30am	11:58pm	18.48	2	0	0	Rest	Loxford	Minimum 7 hour rest break



Stop, Revive, Survive



Form A015 Schedule Report (Rex J Andrews Pty Ltd) - Page 1
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9.0 Transport approvals required

Approvals will need to be sought from the following departments.

- NHVR
- TfNSW
- TMC
- NSW Police
- Local councils
- Power service providers
- Telstra

10.0 Travel dates

TBC, Likely Q3 2022

11.0 Managing queued traffic behind the load.

During the journey the interaction with other road users will require management of queued traffic.

The protocol to provide queued traffic an opportunity to pass the load will be reliant on the rear pilot constantly monitoring the queue of traffic and relaying this information back to the convoy, the lead pilot / Police in conjunction with the driver will identify suitable areas that allow a safe passing point for the passing vehicles.

The lead escort / Police escort will also determine safe areas to halt the load to allow backed up vehicles to pass. Safe pull over areas can include turn off into Private Roads and/or other roads, pull over on the shoulder during over taking lanes, designated pull over/ rest stop areas or service stations, these areas will be a hardstand area, or an area wide enough for the escort to direct vehicles around the combination.

The load **MUST** pull over or slow to allow the backed-up vehicles to pass. Rear pilot will inform all other pilots and driver when there has been a lag from last pull over and if other cars have been following for a short distance, in this instance apply the passing protocol again, this will continue throughout the journey as required to ensure queued traffic do not experience excessive delays. The driver and pilots will also allow vehicles to pass at any opportunity that allows a safe area for this vehicle and its load to pull over safely and will.

12.0 Interacting with roadwork:

Roadworks to be checked prior to load departing. TINSW/TMC will provide RJA with a list of conflicts. RJA will contact each of these conflicts and seek approval to pass through their workzone.

The lead pilot will make contact with the road crews to advise of the nature of the load, size, dimensions, to establish if the load is ok to enter the work zone.

In this instance the convoy will work with all reasonable instructions from the road crew to coordinate the safe passage of the load through the affected areas.

Pilots, Police and local traffic controllers will work together to facilitate the necessary actions required to travel through the work zone.

13.0 Emergency Contacts & plans.

1st Point of contact: RJA Operations 0247217633

2nd Point of contact: Rex J Andrews's supervisor 24 hrs. (Carl Andrews 0419219890)

STANDARD EMERGENCY NUMBERS IF REQUIRED

- Main Emergency number (000)
 - NSW Traffic Operations (02 8882 1219)
 - TMC Operations room (1800 679782) or (1300725886)
 - Ausgrid (131388)
 - GRS Towing 1300 550 600
-
- In the event of an emergency situation, such as breakdown, the load will be moved to the left-hand lane/shoulder to ensure minimal traffic impacts; police and pilots (Under the direction of the police) will manage traffic flow. In such instances the TMC should be promptly advised so that all necessary warnings can be made.
 - Where a tow is required, the trailer will be unhooked from the prime mover and a standby truck be called. In such instances the TMC should be promptly advised so that all necessary warnings can be made.
 - If police decide that the movement should be suspended as a result of time or potential traffic impacts the trailer with the load will be moved to a safe parking location and the TMC will be notified.
 - In the event of bad weather, the driver is to notify the first point of contact before departing.
 - If the road is blocked between the pickup location and drop off location, then the load is not to depart.
 - Roadwork's to be checked with TfNSW 2 days prior to leaving and relayed to client with any potential problems.
 - Route to be checked with Live Traffic and TMC 2 days before travel and on the night of travel before departure

14.0 Emergency stopping / pulling up for rest areas:

In the event of an emergency or scheduled rest break, establish positive communications with all pilots and driver and identify the next suitable area to halt the load, rear pilot should remain 200 metres behind the load to warn approaching traffic.

Ensure the load is as far to the left as possible so as to not impede any traffic from passing.

If the breakdown is major and requires a mechanic to attend contact the TMC and advise them of the disruption to traffic. Minor repairs that can be rectified in a short time do not require the TMC to be advised.

In the event that road works are encountered on route lead pilot is to call in on the nominated UHF channel and advise the local traffic control of the inbound load and await approval to enter the work zone.

Follow normal traffic management procedures as out lined in: SOP_030 Traffic Management Procedures.

The suggested rest areas are an indication only and dependant on the local traffic movements and occupancy of these rest areas it may not be possible to get off the road.

In this instance the lead pilot should travel ahead to identify the next suitable area.

This methodology can also be adopted to allow built up traffic to pass by slowing the load down and easing into break down areas to allow traffic to pass before continuing on.

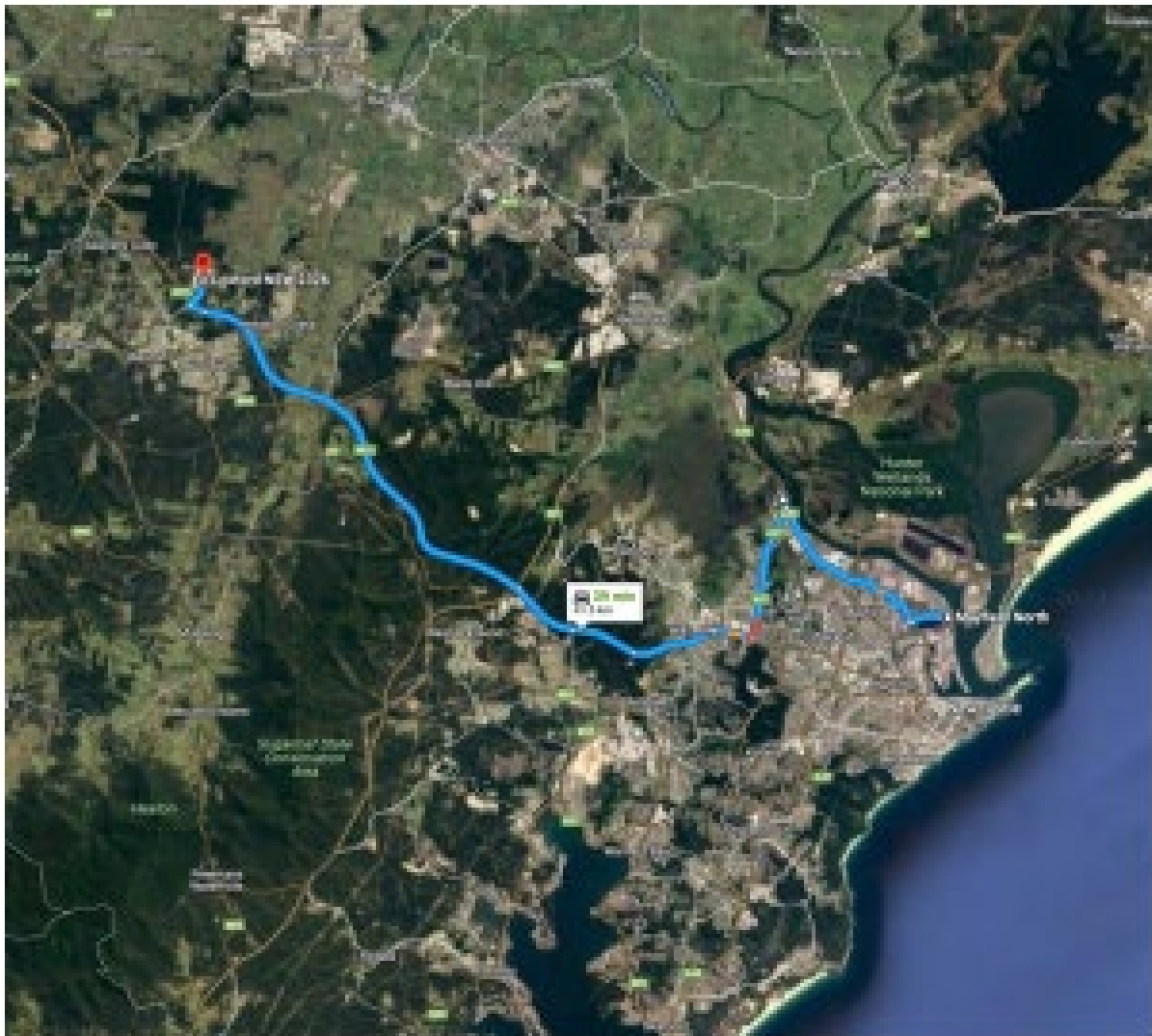
Listed in the index are Emergency parking areas on route.

15.0 Transport plan & pinch points: Mayfield to Loxford

ROUTE: Newcastle Port (Mayfield #4 berth) to Loxford, 41.5 kilometres:

This route took us via Selwyn Street, George Street, Industrial Drive, Maitland Road, Old Maitland Road, Maitland Road, Newcastle Inner City Bypass, Newcastle Road, Thomas Street, Newcastle Link Road, Hunter Expressway, Hart Road.

GPS LINK: <https://goo.gl/maps/skC1x2jtZiFWHbJ4A>



KEY	
PINCHPOINT	
CAUTION	
EMERGENCY PARKING	

KM Index	Location	Section of road	Current clearance	Procedure	Notes
0.0	Mayfield	Mayfield IH berth onto Selwyn Street GPS link: https://goo.gl/maps/LwPYN6Mdm	Length: 70.0 metres Width: 8.5 metres Height: N/A	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
0.4	Mayfield	Selwyn Street rail crossing GPS link: https://goo.gl/maps/WmshE54hK5r	Width: 9.0 metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
1.3	Mayfield	Selwyn Street onto Industrial Drive via George Street GPS link: https://goo.gl/maps/6XetWf8CrdD2	Length: 70.0 metres Width: 9.0 metres Height: N/A	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
5.5	Mayfield West	Industrial Drive onto Maitland Road GPS link: https://goo.gl/maps/KnS2hW3RzG2	Length: 50.0 metres Width: 9.0 metres Height: 5.8	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
8.0	Sandgate	Maitland Road U-turn procedure at Inner City Bypass intersection GPS link: https://www.google.com/maps/@33.811526,151.131111,15z	Length: 80.0 metres Width: 10.0 metres Height: N/A	Travel to the incorrect side of the road.	Load is to cross to incorrect side (Southbound lanes) of Maitland Road at the intersection of the Inner-City Bypass. Then travel on the incorrect side (Southbound Lanes) of Maitland Road through to Old Maitland Road. Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
8.4	Sandgate	Maitland Road onto Old Maitland Road GPS link: https://www.google.com/maps/@33.811526,151.131111,15z	Length: 50.0 metres Width: 7.0 metres Height: N/A	Left hand turn	Load is to turn from the southbound lanes on Maitland Road into Old Maitland Road. Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.

KM Index	Location	Section of road	Current clearance	Procedure	Notes
8.5	Sandgate	Old Maitland Road onto Maitland Road GPS link: https://goo.gl/maps/MBHTKxytHy14103?	Length: 50.0 metres Width: 7.0 metres Height: N/A.	Reverse back onto Maitland Road	The load is to reverse back onto the Southbound lanes of Maitland Road, before travelling south on the correct side of Maitland Road towards the Inner-City bypass. Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
9.0	Sandgate	Maitland Road onto Newcastle Inner City bypass GPS link: https://goo.gl/maps/2BQ7-8L0W133L711	Length: 80.0 metres Width: 10.0 metres Height: N/A.	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
9.0 to 13.8	Sandgate to Jeamond	Newcastle inner City bypass GPS link: https://goo.gl/maps/6L6CT0V8181832	HEIGHT: 5.45 metres	Travel directly ahead	The Newcastle inner city bypass has 4 structures that the load will travel under. The lowest of these is Janet Street which has a clearance of 5.45 metres in the left lane, and 5.7 metres in the right lane.
13.8	Jeamond	Newcastle inner City bypass GPS link: https://goo.gl/maps/51HcMfYarL4D33	Length: 80.0 metres Width: 7.0 metres Height: N/A.	Merge to the right	Load to be raised to travel around the roundabouts and lowered after the last roundabout at the intersection of the Newcastle Link Road and Mimi Road.
14.0	Jeamond	Newcastle inner City bypass onto Newcastle Road GPS link: https://goo.gl/maps/1M1UwY0wD46564	Length: 80.0 metres Width: 10.0 metres Height: N/A.	Right hand turn at the roundabout before taking the second exit onto Newcastle Road	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
15.5	Wallend	Newcastle Road onto the Thomas Street GPS link: https://goo.gl/maps/1187505vKT11818367	Length: 80.0 metres Width: 7.0 metres Height: N/A.	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
16.4	Wallend	Thomas Street GPS link: https://goo.gl/maps/9DMMUar8303v6T132	Length: 80.0 metres Width: 7.0 metres Height: N/A.	Merge to the left	Area to be used for 15-minute rest break.
16.5	Wallend	Thomas Street onto Newcastle Link Road GPS link: https://goo.gl/maps/5k6v3v88-1y66438	Length: 100.0 metres Width: 12.0 metres Height: N/A.	Travel directly ahead	No problems with this section of road.
19.0	Wallend	Newcastle Link Road at Transfield Avenue GPS link: https://goo.gl/maps/163MT661v83321	Length: 80.0 metres Width: 9.0 metres Height: N/A.	Travel directly ahead through the roundabout	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.

KM Index	Location	Section of road	Current clearance	Procedure	Notes
21.0	Cameron Park	Newcastle Link Road at Minmi Road GPS link: https://www.google.com/maps/@33.1146476,151.073144	Length: 80.0 metres Width: 9.0 metres Height: N/A	Travel directly ahead through the roundabout	Spooter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
23.0	Cameron Park	Newcastle Link Road onto the Hunter Expressway GPS link: https://www.google.com/maps/@33.1349262,151.07821	Length: 80.0 metres Width: 8.0 metres Height: 6.5 metres	Travel directly ahead	No problems with this section of road.
39.3	Loxford	The Hunter Expressway crossover GPS link: https://www.google.com/maps/@33.0812268,151.511518	35 Metres between the wire cable	Travel across to the incorrect side of the Expressway	Load is to travel through the centre crossover area between both of the centre wire cables. Beamer and 14x8 Platform trailer are the only loads that will require this procedure. Spooter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
40.5	Loxford	The Hunter Expressway onto Hart Road GPS link: https://www.google.com/maps/@33.069386,151.514515	Length: 70.0 metres Width: 10.0 metres Height: N/A	Travel across to the incorrect side of the Expressway	Loads to continue on the incorrect side of the Hunter Expressway and take the Hart Road onramp. Once at Hart Road the trailers will cross back to the correct side of the road. Spooter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
41.5	Loxford	Hart Road into Hunter Power Project GPS link: https://www.google.com/maps/@33.066814,151.517634	Length: TBC Width: TBC	Travel directly ahead into the site entrance	Site to make a suitable entrance for the swept path of this load. Spooter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.

0.0 Km's: Mayfield #4 berth onto Selwyn Street at Mayfield.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/aflwPYKuNdm>

COMPANY PILOT 1: Warn all eastbound traffic on Selwyn Street.

COMPANY PILOT 2: Warn all eastbound traffic on Selwyn Street.

COMPANY PILOT 3: Warn all westbound traffic on Selwyn Street.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from the post access road onto Selwyn Street.

ROAD MODIFICATIONS: Nil.

1.3 Km's: Selwyn Street onto Industrial Drive at Mayfield.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/gXeHvBtCp4D2>

COMPANY PILOT 1: Warn all southbound traffic on Industrial Drive.

COMPANY PILOT 2: Warn all eastbound traffic on George Street.

COMPANY PILOT 3: Warn all eastbound traffic on Selwyn Street.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Selwyn Street onto Industrial Drive via George Street.

ROAD MODIFICATIONS: Nil.

5.5 Km's: Industrial Drive onto Maitland Road at Mayfield West.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/Kn49dbWVG2qG2>

COMPANY PILOT 1: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 2: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Industrial Drive onto Maitland Road.

ROAD MODIFICATIONS: Nil.

8.0 Km's: Maitland Road crossover at the intersection of the Newcastle Inner City bypass at Sandgate.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/mcQGKpGdRuyCTPgr7>

COMPANY PILOT 1: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 2: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load is to cross to incorrect side (Southbound lanes) of Maitland Road at the intersection of the Inner-City Bypass. Then travel on the incorrect side (Southbound Lanes) of Maitland Road through to Old Maitland Road.

ROAD MODIFICATIONS: Nil.

8.4 Km's: Maitland Road onto Old Maitland Road at Sandgate.
Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/RGSB79x8xbvj4wqe6>

COMPANY PILOT 1: Warn all traffic in Old Maitland Road.

COMPANY PILOT 2: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 3: Warn all northbound traffic on Maitland Road.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load is to turn from the southbound lanes on Maitland Road into Old Maitland Road.

ROAD MODIFICATIONS: Nil.

8.5 Km's: Old Maitland Road onto Maitland Road at Sandgate.
Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/MHtTKSrgbtgGC4T37>

COMPANY PILOT 1: Warn all northbound traffic on Maitland Road.

COMPANY PILOT 2: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 3: Warn all northbound traffic on Maitland Road.

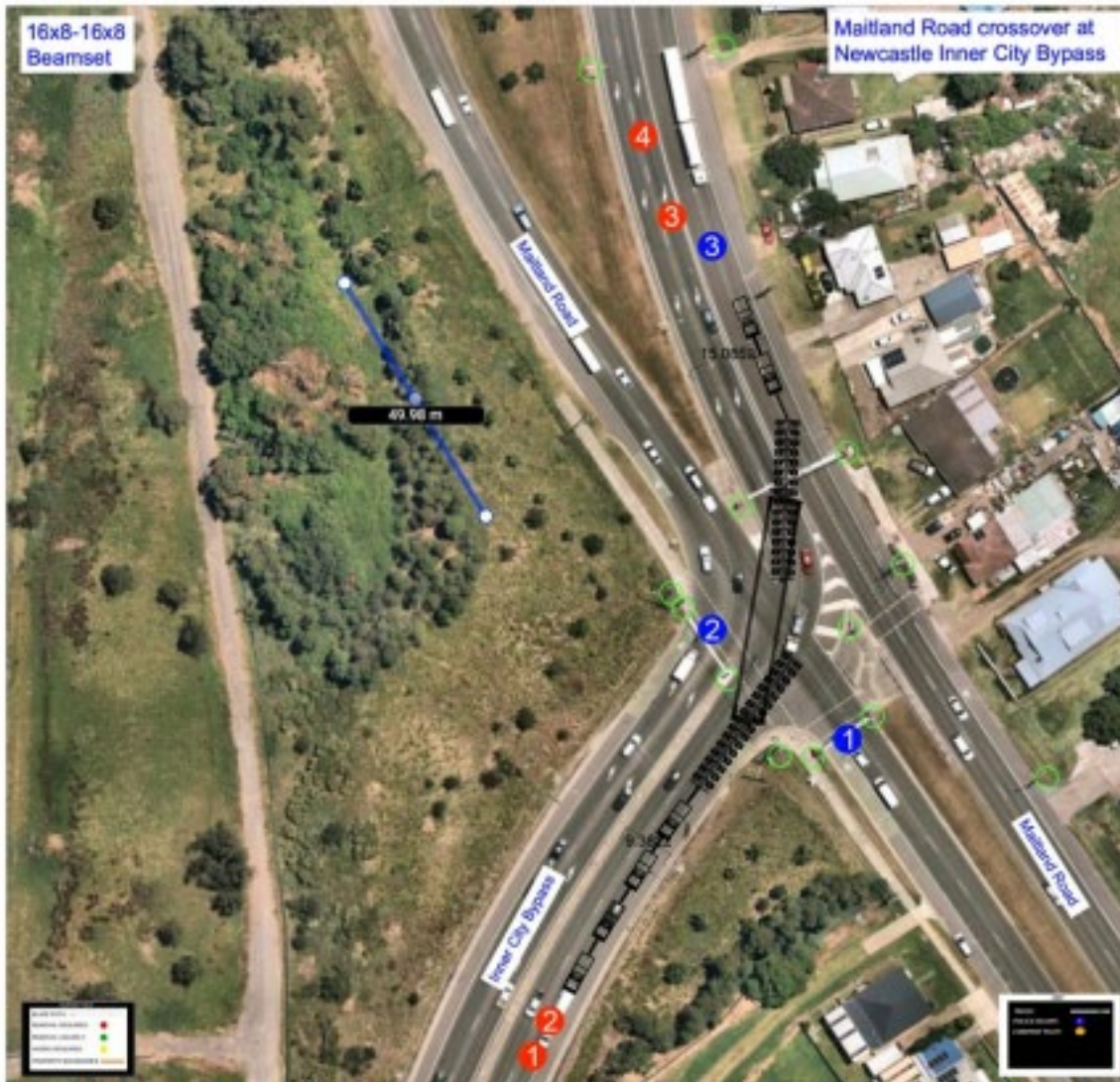
COMPANY PILOT 4: Warn all traffic in Old Maitland Road.

PINCHPOINT PROCEDURE: The load is to reverse back onto the Southbound lanes of Maitland Road, before travelling south on the correct side of Maitland Road towards the Inner-City bypass.

ROAD MODIFICATIONS: Nil.

9.0 Km's: Maitland Road onto Newcastle Inner City Bypass at Sandgate.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/WR97pBUPiG7ULd757>

COMPANY PILOT 1: Warn all Northbound traffic on Newcastle Inner City Bypass.

COMPANY PILOT 2: Warn all northbound traffic on Maitland Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Maitland Road onto Sandgate Road.

ROAD MODIFICATIONS: Nil.

14.0 Km's: Newcastle Inner City Bypass onto Newcastle Road at Jesmond.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/1MUmyjNyydDakRZx6>

COMPANY PILOT 1: Warn all eastbound traffic on Newcastle Road.

COMPANY PILOT 2: Warn all eastbound traffic on Newcastle Road.

COMPANY PILOT 3: Warn all westbound traffic on Newcastle Road.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Right hand turn at the roundabout before taking the second exit onto Newcastle Road

ROAD MODIFICATIONS: Nil.

15.5 Km's: Newcastle Road onto Thomas Street at Wallsend.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/1DCZxPpZT41REd8w7>

COMPANY PILOT 1: Warn all eastbound traffic on Newcastle Link Road.

COMPANY PILOT 2: Warn all eastbound traffic on Newcastle Link Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Left hand bend from Newcastle Road onto Thomas Street.

ROAD MODIFICATIONS: Nil.

19.0 Km's: Newcastle Link Road intersection of Transfield Avenue at Wallsend.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/noHnEkOTa641xHT49>

COMPANY PILOT 1: Warn all eastbound traffic on Newcastle Link Road.

COMPANY PILOT 2: Warn all eastbound traffic on Newcastle Link Road.

COMPANY PILOT 3: Warn all traffic in Transfield avenue.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Travel directly ahead through the roundabout.

ROAD MODIFICATIONS: Nil.

21.0 Km's: Newcastle Link Road intersection of Minmi Road at Cameron Park.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/mXYajNbe93622tcLA>

COMPANY PILOT 1: Warn all eastbound traffic on Newcastle Link Road.

COMPANY PILOT 2: Warn all eastbound traffic on Newcastle Link Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Travel directly ahead through the roundabout.

ROAD MODIFICATIONS: Nil.

39.3 Km's: Hunter Expressway crossover at Loxford.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/W31RT1ZGB3LeAlSm8>

TRAFFIC CONTROL: Traffic control plans to be put in place and traffic control to hold all eastbound traffic for 10 minutes while loads cross to the incorrect side of the expressway and travel through to Hart Road.

COMPANY PILOT 1: Warn all eastbound traffic on the Hunter Expressway.

COMPANY PILOT 2: Warn all eastbound traffic on the Hunter Expressway.

COMPANY PILOT 3: Stay 100 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 200 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Beamset and 14x8 trailers will need to cross onto the incorrect side of the expressway and travel on the incorrect side until the Hart Road onramp.

ROAD MODIFICATIONS: Nil.

40.5 Km's: Hunter Expressway onto Hart Road at Loxford.

Image 1:



GPS LINK FOR SECTION OF ROAD: <https://goo.gl/maps/uxCGot3fWqTXk5Jw5>

COMPANY PILOT 1: Warn all southbound traffic on Hart Road.

COMPANY PILOT 2: Warn all southbound traffic on Hart Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Loads to turn from the Hunter Expressway onramp onto Hart Road. Once onto Hart Road the load will continue directly ahead towards the Hunter Power project.

ROAD MODIFICATIONS: Nil.

16.0 Pinch Points

The following are the pinch points on this route:

- **REGULAR ROUTE ASSESMENTS:** Prior to the movement Rex J Andrews P/L is to contact TfNSW and local councils regarding any potential roadworks that road stakeholders would have taken place on the route during the proposed delivery dates. Driver/Supervisors are to have full contact details and communicate with these roadwork's managers while on route.
- **SWEPT PATH ANALYSIS:** This study shows all pinchpoint manoeuvres on route for the largest load and is a guide to show possible arrangements for traffic control at each of the pinchpoints.
- **BRIDGE CROSSINGS:** The loads are to travel over all structures as per the TfNSW bridge assessment for these movements.
- **NEWCASTLE:** The loads will need to undertake a U-turn on Maitland Road at Sandgate. All personnel are to be tool boxed on the methodology of these procedures.
- **HUNTER EXPRESSWAY:** The beamset and 14x8 platform trailers will need to cross over to the incorrect side of the expressway and travel through to Hart Road under Traffic Control. The remaining loads will be able to turn onto Hart Road from the correct side of the expressway.

PINCHPOINT PROCEDURES

Whilst some pinch points are known along the route demonstrating a method of negotiating each individual hazard would be flawed as traffic conditions are constantly changing.

It is crucial that appropriate measures are applied to avoid impact to road users and road infrastructure, the chosen route has been assessed and the load is capable of navigating the route, however local traffic conditions can create pinch points.

A pinch point is an area identified by the lead pilot and relayed to the convoy as having the potential to interfere with the swept path of the load, pinch points can be created by road furnishings, roundabouts, narrow sections of road, roadkill, corners, road works, parked vehicles, damaged pavement, this list is not exhaustive.

For the purposes of this traffic management plan identified pinch points will follow the following protocol.

The lead pilot must travel a sufficient distance in front of the load so as to survey the swept path required for the load, this will allow sufficient time to relay back road conditions or choke points to allow the driver to halt the load before causing congestion to other road users.

In the event of parked vehicles or local traffic conditions preventing the load from safely navigating the permitted route, the load cannot proceed until it is safe to do so.

The lead pilot will warn all oncoming traffic of the impending load, when the way forward for the transporter is established as being clear the load may proceed.

If built up queued traffic is behind the load, ensure that an opportunity to allow this traffic to pass is taken at the first safe opportunity.

The procedure for crossing bridges is reliant on only the load being on the bridge during the crossing, this will require a concentrated effort from the escort team to ensure that all vehicular traffic both in front of and behind the load are warned of the hazard.

It is crucial that pinch points are discussed at the toolbox briefing and that all parties are aware of the protocols in place.

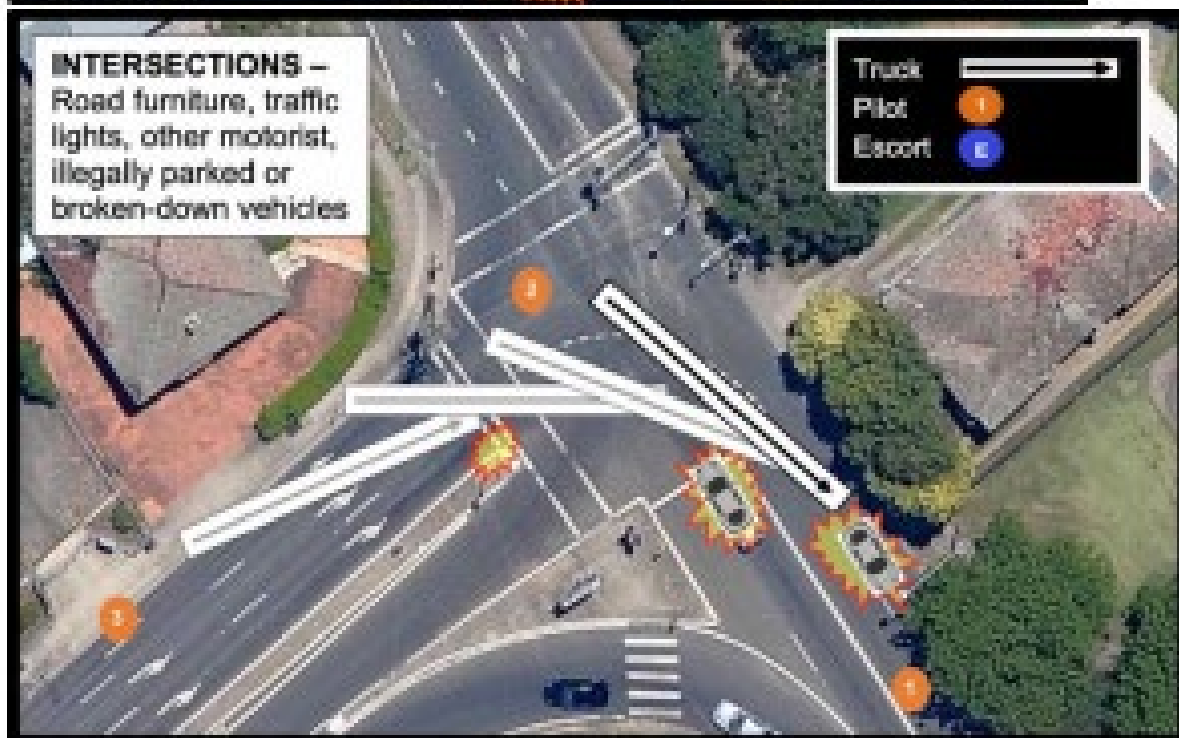
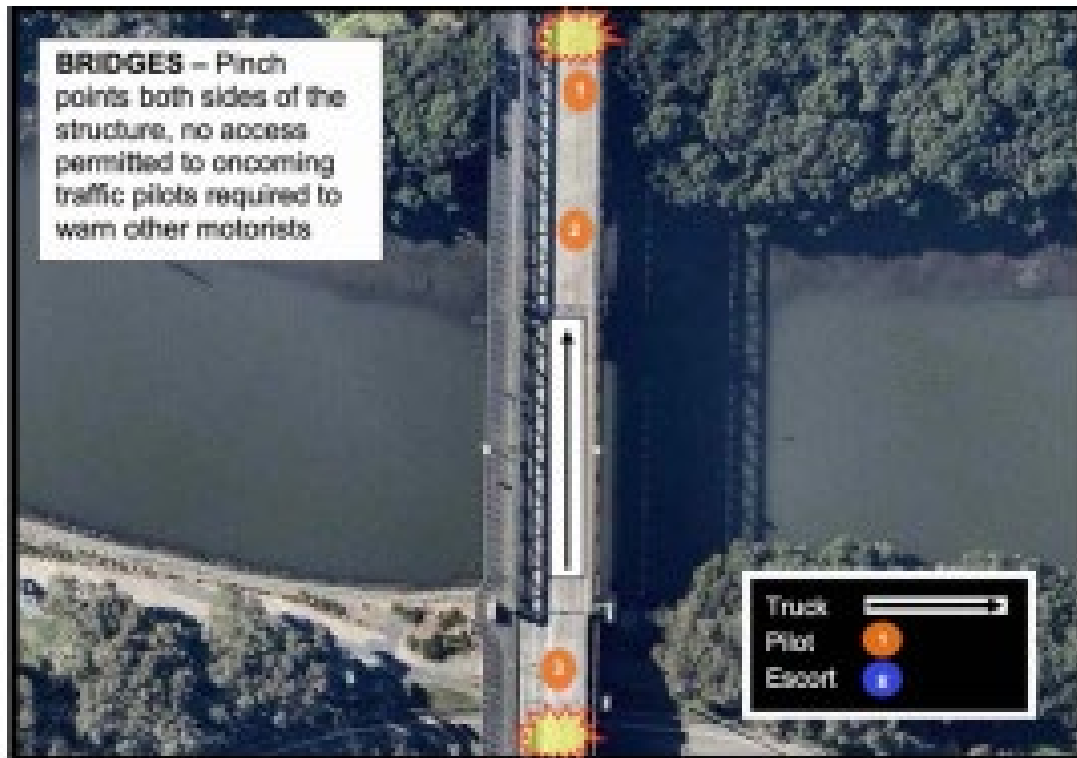
Drivers should familiarise themselves with the route including nominated bypasses for heavy vehicles along the route.

If there is any doubt as to the viability of accessing the permitted route the load must not continue until the way forward has been deemed appropriate.

For more detail analysis of coping with roadwork refer to section 11.

Examples of pinch points:







17.0 TMP Revisions:

Revision number	Revision Date	Author	Description of changes

18.0 References:

Australian Load Restraint Guide

Rex J Andrews P/L transport drawing

Hyosung transformer drawing

Rex J Andrews route survey # 335 REV00

Google Earth/Maps

Nearmaps

NHVAS Maintenance Management (NHVAS21193)

NHVAS Basic Fatigue Management (NHVAS21193)

19.0 TMP Review:

Final Review	Name	Signature	Date
TMP Checked by:	Warrick Andrews		
	Carl Andrews		
	Mark Sciberras		

Sign On: I confirm that I have received a hard copy of this TMP, I have read and understood the contents; by signing this document I acknowledge that I am now familiar with the identified pinch points, the route and the conditions relating to time of travel. I understand that prior to travel a supervisor may ask me questions specific to this TMP, in the event that I cannot demonstrate awareness of the conditions of the TMP I must delay my departure until I have reviewed its content.

Name	Role	Signature	Date	Company

Appendix F - Environmental Representative Endorsements



Suite 2.06, Level 2
29-31 Solent Circuit
Norwest, NSW 2153

Tel: 61 (02) 9659 5433
e-mail: hbi@hbi.com.au
Web: www.hbi.com.au

Ian Smith
Project Manager
Snowy Hydro Limited
Monaro Highway
Cooma, NSW, 2630

2 March 2022

REF: TMP FINAL AMENDED

Dear Ian,

RE: Hunter Power Project Traffic Management Plan Amended Final (25 February 2022)

I refer to Snowy Hydro Limited's (SHL) submission of the following document required by Condition B48 of the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) Infrastructure Approval (SSI 12590060) for review and endorsement by the Environmental Representative:

- Hunter Power Project, Snowy Hydro Limited Traffic Management Plan (TMP Amended Final, 25 February 2022).

It is noted that:

- The TMP has been developed by Jacobs Group Australia (Jacobs) on behalf of SHL for the works associated with the construction of the project and to address the specific traffic management requirements of the Infrastructure Approval.
- A letter dated 15 February 2022 was received from Department of Planning, Industry and Environment (DPIE) allowing review and endorsement by the Environmental Representative in accordance with A23 to occur after DPIE submission but prior to the commencement of construction. The TMP was approved by the DPIE on 25 January 2022.

Following the review, the document is considered to contain information required by the Conditions of Approval (SSI 12590060) in relation to the TMP (Condition B48). Noting the above, as the approved Environmental Representative for the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) and as required by Conditions A23(a), the Traffic Management Plan (TMP Amended Final, 25 February 2022) is endorsed.

Snowy Hydro Limited and their contractors must continue to obtain and comply with any relevant approval, licence or permit required for the works; complying with relevant Conditions of Approval as they relate to the works; and appropriate notifications being issued prior to the works.

Yours sincerely

A handwritten signature in black ink, appearing to read "Greg Byrnes".

Greg Byrnes
Environmental Representative – Hunter Power Project (Kurri Kurri Gas-Fired Power Station)



Suite 2.06, Level 2
29-31 Solent Circuit
Norwest, NSW 2153

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Isaac Strachan
Health, Safety and Environment Lead
Snowy Hydro Limited
Lot 3, Pier 8/9, 23 Hickson Rd
Walsh Bay NSW 2000

18 August 2022

REF: TMP VERSION 3

Dear Isaac,

RE: Hunter Power Project: Traffic Management Plan Approved Version 3 (17 August 2022)

I refer to Snowy Hydro Limited's (SHL) submission of the following revised document required by Condition B48 of the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) Infrastructure Approval (SSI 12590060) for review and endorsement by the Environmental Representative:

- Hunter Power Project: Traffic Management Plan Approved Version 3 (17 August 2022)

It is noted that:

- The TMP has been developed by Jacobs Group Australia (Jacobs) on behalf of SHL for the works associated with the construction of the project and to address the specific traffic management requirements of the Infrastructure Approval.
- A letter dated 15 February 2022 was received from the Department of Planning and Environment (DPE) allowing review and endorsement by the Environmental Representative in accordance with A23 to occur after DPE submission but prior to the commencement of construction. The TMP was approved by the DPE on 25 January 2022.
- This revision of the TMP includes the addition of Precinct 3B for parking and laydown

Following the review, the document is considered to contain information required by the Conditions of Approval (SSI 12590060) in relation to the TMP (Condition B48).

Noting the above, as the approved Environmental Representative for the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) and as required by Conditions A23(C), the revised Traffic Management Plan Approved Version 3 (17 August 2022) is endorsed.

Snowy Hydro Limited and their contractors must continue to obtain and comply with any relevant approval, licence or permit required for the works; complying with relevant Conditions of Approval as they relate to the works; and appropriate notifications being issued prior to the works.

Yours sincerely

A handwritten signature in black ink, appearing to read "Greg Byrnes", is written over a light grey rectangular background.

Greg Byrnes
Environmental Representative – Hunter Power Project (Kurri Kurri Gas-Fired Power Station)



Suite 2.06, Level 2
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Isaac Strachan
Health, Safety and Environment Lead
Snowy Hydro Limited
Lot 3, Pier 8/9, 23 Hickson Rd
Walsh Bay NSW 2000

11 January 2023

REF: TMP VERSION 4

Dear Isaac,

RE: Hunter Power Project: Traffic Management Plan Approved Version 4 (17 December 2022)

I refer to Snowy Hydro Limited's (SHL) submission of the following revised document required by Condition B48 of the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) Infrastructure Approval (SSI 12590060) for review and endorsement by the Environmental Representative:

- Hunter Power Project: Traffic Management Plan Approved Version 4 (17 December 2022)

It is noted that:

- The TMP has been developed by Jacobs Group Australia (Jacobs) on behalf of SHL for the works associated with the construction of the project and to address the specific traffic management requirements of the Infrastructure Approval.
- The TMP was approved by the DPE on 25 January 2022.
- This revision of the TMP includes amendments and additional assessments to allow for increases in heavy vehicle numbers during continuous concrete pours outside of standard hours.
- On the 14 December 2022 DPE provided conditional approval under condition B32 for the extended construction hours
- On the 4 January 2023 the EPA provided a Licence Variation to undertake the continuous concrete pours outside approved work hours

Following the review, the document is considered to contain information required by the Conditions of Approval (SSI 12590060) in relation to the TMP (Condition B48).

Noting the above, as the approved Environmental Representative for the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) and as required by Conditions A23(C), the revised Traffic Management Plan Approved Version 4 (17 December 2022) is endorsed.

Snowy Hydro Limited and their contractors must continue to obtain and comply with any relevant approval, licence or permit required for the works; complying with relevant Conditions of Approval as they relate to the works; and appropriate notifications being issued prior to the works.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Greg Byrnes', is placed over a light blue rectangular background.

Greg Byrnes
Environmental Representative – Hunter Power Project (Kurri Kurri Gas-Fired Power Station)



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Isaac Strachan
Health, Safety and Environment Lead
Snowy Hydro Limited
Lot 3, Pier 8/9, 23 Hickson Rd
Walsh Bay NSW 2000

6 April 2023

REF: TMP VERSION 5.1

Dear Isaac,

RE: Hunter Power Project: Traffic Management Plan Approved Version 5.1 (3 April 2023)

I refer to Snowy Hydro Limited's (SHL) submission of the following revised document required by Condition B48 of the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) Infrastructure Approval (SSI 12590060) as Modified on 1 March 2023, for review and endorsement by the Environmental Representative:

- Hunter Power Project: Traffic Management Plan Approved Version 5.1 (3 April 2023)

It is noted that:

- The TMP has been developed by Jacobs Group Australia (Jacobs) on behalf of SHL for the works associated with the construction of the project and to address the specific traffic management requirements of the Infrastructure Approval.
- The TMP was approved by the DPE on 25 January 2022.
- This revision of the TMP includes amendments to incorporate the modification (Mod 1) and the addition of a OSOM Transport Management Plan.

Following the review, the document is considered to contain information required by the Conditions of Approval (SSI 12590060) as Modified on 1 March 2023 in relation to the TMP.

Noting the above, as the approved Environmental Representative for the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) and as required by Conditions A23(C), the revised Traffic Management Plan Approved Version 5.1 (3 April 2023) is endorsed.

Snowy Hydro Limited and their contractors must continue to obtain and comply with any relevant approval, licence or permit required for the works; complying with relevant Conditions of Approval as they relate to the works; and appropriate notifications being issued prior to the works.

Yours sincerely

Greg Byrnes
Environmental Representative – Hunter Power Project (Kurri Kurri Gas-Fired Power Station)

www.hbi.com.au

Angela van der Kroft
Environmental Assurance Advisor
Hunter Power Project - Snowy Hydro Limited
Hart Road Loxford NSW 2326

18 December 2024

REF: TMP VERSION 7

Dear Angela,

RE: Hunter Power Project: Traffic Management Plan Approved Version 7 (10 December 2024)

I refer to Snowy Hydro Limited's (SHL) submission of the following revised document required by Condition B48 of the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) Infrastructure Approval (SSI 12590060), for review and endorsement by the Environmental Representative:

- Hunter Power Project: Traffic Management Plan Approved Version 7 (10 December 2024)

It is noted that:

- The TMP has been developed by SHL for the works associated with the construction of the project and to address the specific traffic management requirements of the Infrastructure Approval.
- The TMP was approved by the Department on 25 January 2022.
- This revised version of the TMP has been amended to incorporate the requirements of the commissioning phase.
-

Following the review, the document is considered to contain information required by the Conditions of Approval (SSI 12590060) in relation to the TMP (condition B48). Noting the above, as the approved Environmental Representative for the Hunter Power Project (Kurri Kurri Gas-Fired Power Station) and as required by Conditions A23(C), the revised Traffic Management Plan Approved Version 7 (10 December 2024) is endorsed.

Snowy Hydro Limited and their contractors must continue to obtain and comply with any relevant approval, licence or permit required for the works; complying with relevant Conditions of Approval as they relate to the works; and appropriate notifications being issued prior to the works.

Yours sincerely



Alex Gale
Environmental Representative – Hunter Power Project (Kurri Kurri Gas-Fired Power Station)