



## Hunter Power Project Traffic Management Plan

| Amended Final 2  
18 January 2022



## Hunter Power Project

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## Glossary of terms

Term	Definition
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 control over the construction phase 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
DPIE	Department of Planning, Industry and Environment (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) proposes to develop 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.

Construction activities are anticipated to commence early 2022 and the Project is intended to be operational by the end of 2023.

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, 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 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 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 phase of the Project and has been prepared to:

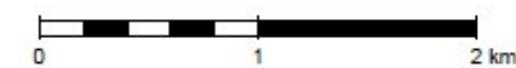
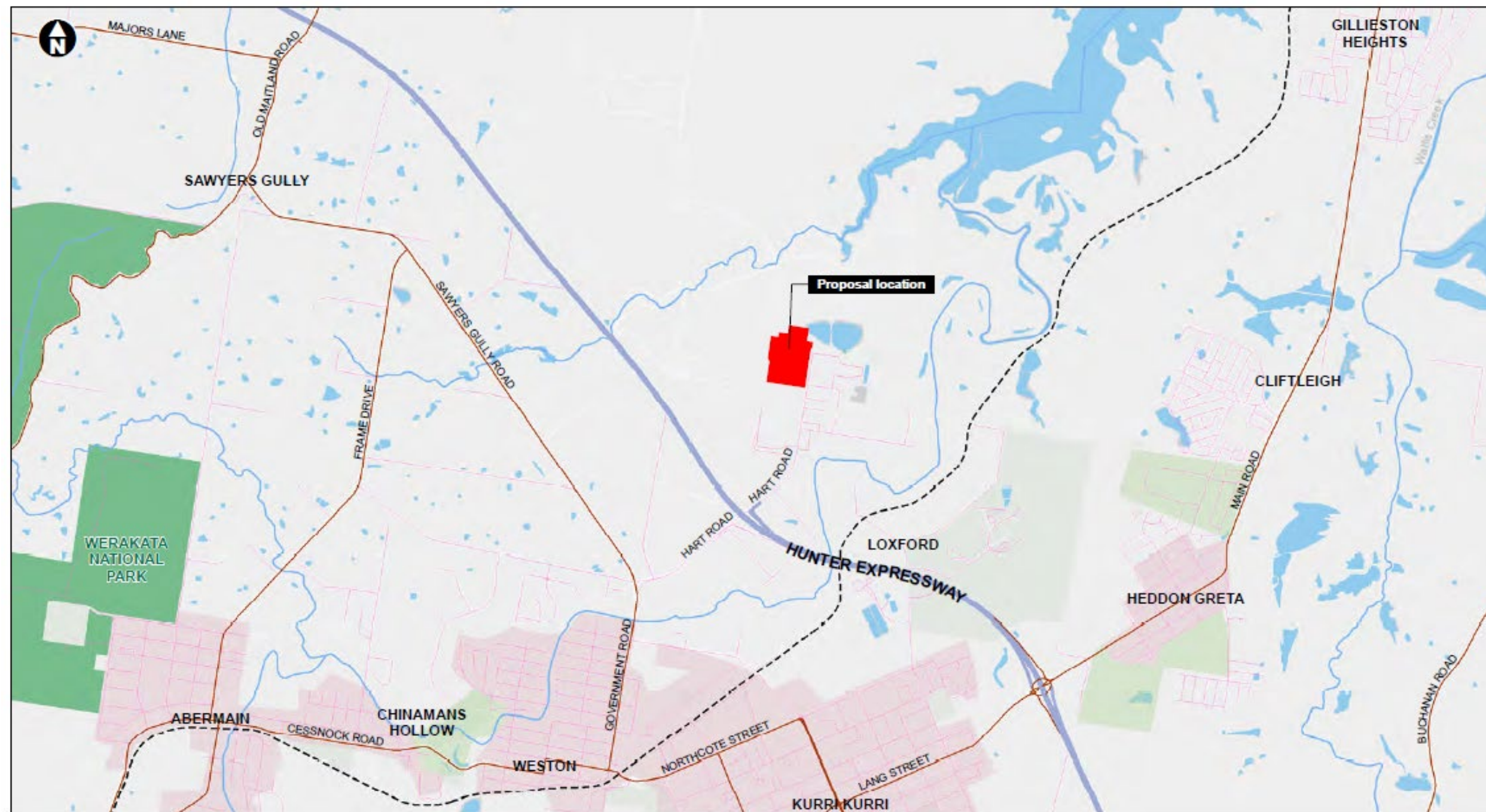
- Outline the measures to be implemented to comply with the Condition B48 of the Infrastructure Approval
- Describe the measures to ensure commitments in the EIS in relation to traffic and transport are implemented
- Describe how traffic, transport and access arrangements are to be managed during the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

## 1.2 Snowy Hydro commits to implementing the approved Traffic Management Plan. Project location

The Project Site address is 73 Dickson 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 description of the location and existing conditions relevant to this TMP are set out in section 3.





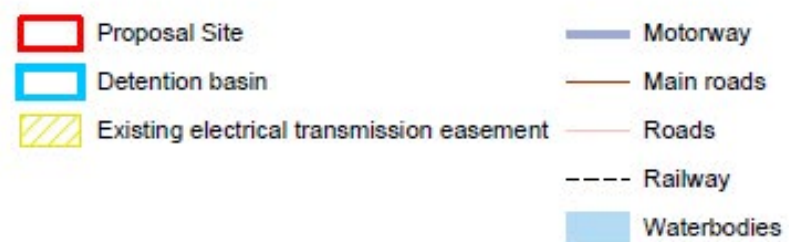
1:40,000 at A4  
Coordinate System: GDA2020 MGA Zone 56

Data sources:  
Jacobs  
NSW Spatial Services



Figure 1-1: Project Location (regional)





- ① Proposed Switchyard Area
- ② Proposed Plant Area
- ③ Proposed Buffer Area

0 250 500 m

1:12,000 at A4

Coordinate System: GDA2020 MGA Zone 56

Data sources:  
Jacobs  
Metromap (Aerometrex) 2020  
NSW Spatial Services



Figure 1-2: Project Location (local)



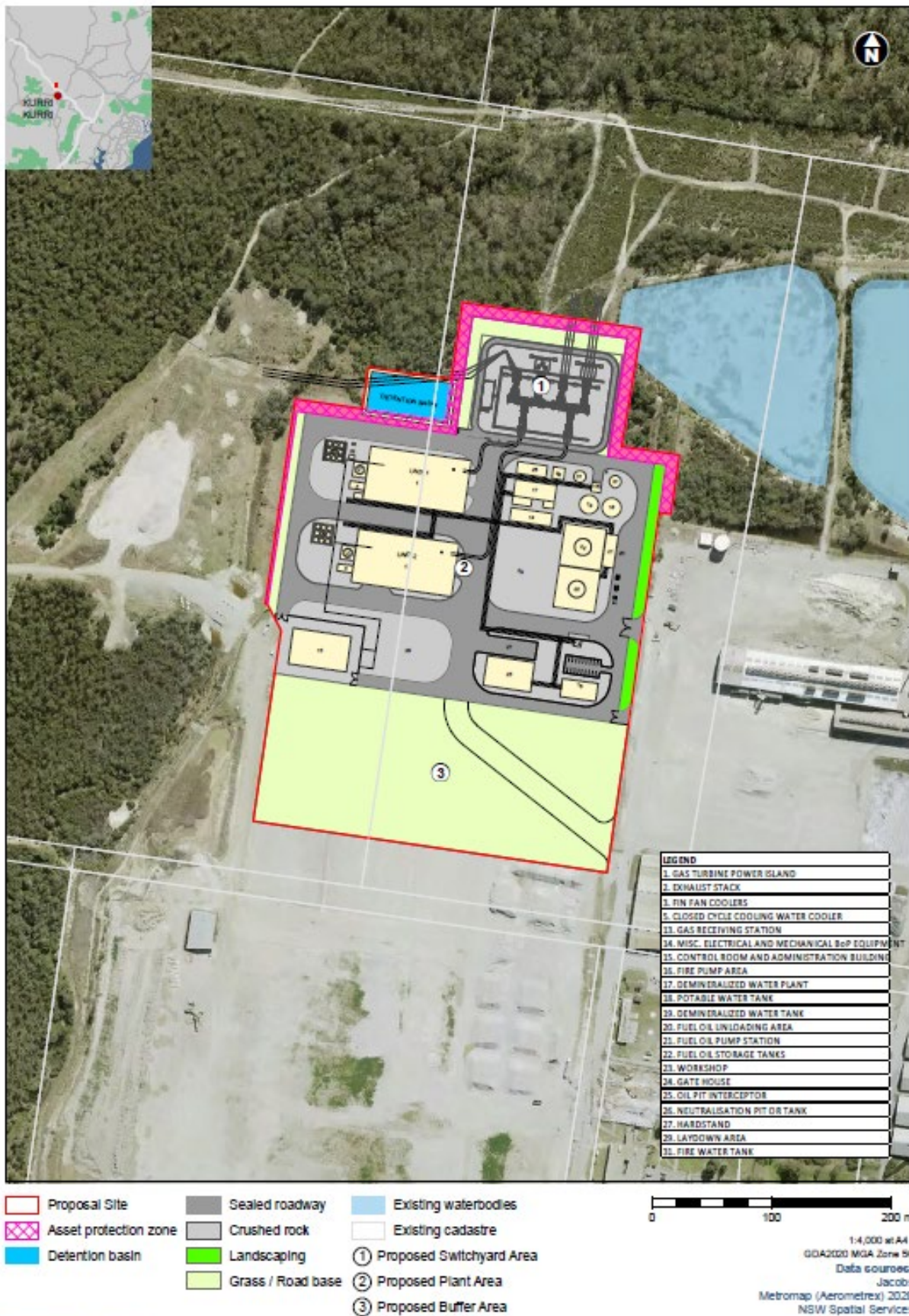


Figure 1-3: Site layout

### 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"> <li>• 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</li> <li>• Construction of reinforced concrete pavement to support heavy vehicles (up to B-double size)</li> <li>• 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</li> <li>• Roadworks and hardstand areas to be constructed for car parking, delivery/laydown areas</li> <li>• Where required, bunded areas for delivery, handling, and storage of fuel and other hazardous material will be constructed</li> </ul>
Construction	Switchyard site preparation -	<ul style="list-style-type: none"> <li>• Clearing of vegetation</li> </ul>
Site establishment and construction	Earthworks to prepare the Project Site and construction areas	<ul style="list-style-type: none"> <li>• Initial site clearing and grading works. Earthworks may involve small amounts of cut and fill to achieve the necessary design levels across the site</li> <li>• 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</li> <li>• 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)</li> <li>• Reinforced concrete slabs will be constructed in certain pavement areas, with other areas being surfaced with crushed rock or other suitable materials</li> </ul>

Construction stage	Construction activity per program	Activity details
Construction	Balance of plant, switchyard construction, & turbine Installation	<ul style="list-style-type: none"> <li>• Installation of major plant items associated with the gas turbines including all above ground civil, mechanical, electrical plant equipment</li> <li>• Installation of electrical switchyard</li> </ul>
Commissioning	Commissioning and testing (excluded from construction scope)	<ul style="list-style-type: none"> <li>• 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</li> </ul>
Post-construction/demobilisation	Demobilisation	<ul style="list-style-type: none"> <li>• Removal of construction equipment, site fencing and construction compounds</li> <li>• Installation and establishment of landscaping</li> </ul>

## 1.4 Principles 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.

## 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 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 6.1
B47(b)	provide sufficient parking on site for all vehicles;	Section 4.4
B47(c)	ensure heavy vehicles entering and leaving the site have loads covered or contained;	Section 6.1
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; and	Appendix A
B47(f)	keep the public informed of any road or infrastructure upgrades, disruptions to traffic, the closure of roads or other infrastructure, oversize overmass vehicle use, peak construction periods, and any emergencies.	Section 1.1

Table 2-2: Infrastructure approval conditions – Traffic Management Plan

Condition	Requirement(s)	Where addressed
B48	<ul style="list-style-type: none"> <li>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</li> <li>The Proponent must implement the approved Traffic Management Plan.</li> </ul>	This document
B48(a)	<ul style="list-style-type: none"> <li>describe the measures that would be implemented to comply with the transport management requirements in condition B47 above;</li> </ul>	See above
B48(b)	<ul style="list-style-type: none"> <li>include details of the transport route to be used for all construction and operational traffic;</li> </ul>	Section 4.3 and Section 4.4
B48(c)	<ul style="list-style-type: none"> <li>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;</li> </ul>	Section 6
B48(d)	<ul style="list-style-type: none"> <li>include oversize overmass requirements and management;</li> </ul>	Section 6.11
B48(e)	<ul style="list-style-type: none"> <li>include a driver's code of conduct that addresses:               <ul style="list-style-type: none"> <li>travelling speeds;</li> <li>driver fatigue;</li> <li>procedures to ensure that drivers adhere to the designated transport route's; and</li> <li>procedures to ensure that drivers implement safe drive practise;</li> </ul> </li> </ul>	Section 6.2 and Appendix A
B48(f)	<ul style="list-style-type: none"> <li>include a program to:               <ul style="list-style-type: none"> <li>record and track vehicle movements; and</li> <li>monitor the effectiveness of these measures;</li> </ul> </li> </ul>	Section 6.3, Section 7.5 and Section 8
B48(g)	<ul style="list-style-type: none"> <li>include a protocol for undertaking independent dilapidation surveys to assess the existing condition of Hart Road, prior to and following construction and decommissioning activities;</li> </ul>	Section 6.5



## 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.

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

Agency	Feedback	Response & section reference
TfNSW	<p>TfNSW responded the "the following comments are provided for your consideration concerning your submitted draft TMP:</p> <p>Management and Mitigation Measures</p> <ul style="list-style-type: none"> <li>OSOM vehicle movements that require adjustments to the State Road network and infrastructure (e.g. TCS, signage etc.) will require separate TfNSW consultation / approval.</li> <li>TfNSW requests a copy of the Dilapidation Report too please.</li> <li>TfNSW strongly encourages the promotion of car-pooling for the passenger vehicle class"</li> </ul>	<ul style="list-style-type: none"> <li>TfNSW consultation and approval will be required for OSOM vehicle movements that require adjustments to the State Road Network (Section 4.3.3)</li> <li>A copy of the Hart Road Dilapidation report will be provided to TfNSW</li> <li>Noted, this is addressed in Appendix A.</li> </ul>
Cessnock City Council	Council consulted with the Principal Development Engineer and they "have no comments on the plans (Transport and Water)".	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
<b>Total</b>	<b>33,431</b>	<b>34,318</b>	<b>32,831</b>

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
<b>Total</b>	<b>0</b>	<b>2</b>	<b>11</b>	<b>5</b>	<b>6</b>	<b>24</b>

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

Road	Wet surface conditions	Dark lighting conditions <sup>1</sup>
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%)
<b>Total</b>	<b>6 (25%)</b>	<b>10 (42%)</b>

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

<sup>1</sup> Crashes occurring in dark lighting conditions includes crashes occurring in darkness or at dawn or dusk.

## 4. Construction Works

### 4.1 Construction hours and program

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

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

Exceptions to conducting construction activities outside of these hours may occur for the following activities in accordance with the Infrastructure Approval Condition B31:

- Activities that cause noise levels LAeg(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.

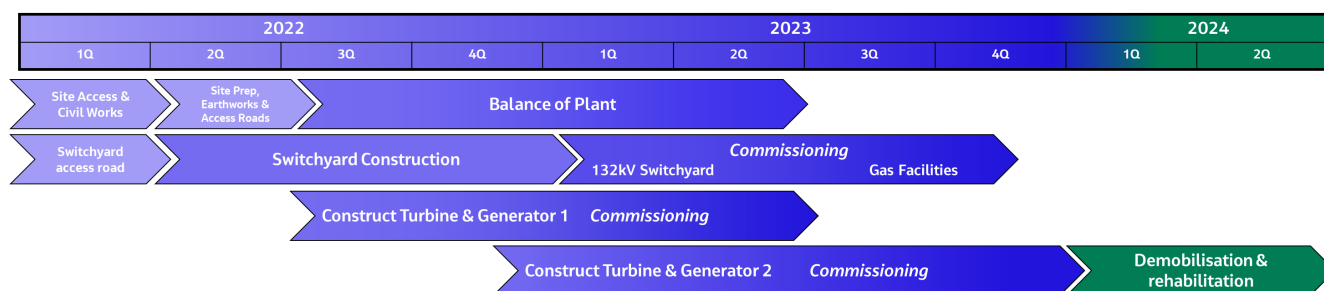


Figure 4-1: Construction program

### 4.2 Traffic generating activities

The main traffic generating activities associated with the construction of the Project are summarised in Section 1.3.

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 traffic

#### 4.3.1 Light vehicles

Light vehicles will be used to transport staff to the construction site and for minor construction 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.

Group transport for workstreams as well as partial ride sharing will be implemented by the Principal Contractor.

#### **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.

#### **4.3.3 Oversized overmass vehicles (OSOM)**

Approximately 10 two-way oversized 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 as part of the EIS to address OSOM vehicles.

In addition to the OSOM Transport Management Plan, OSOM vehicle movements that require adjustments to the State Road network and infrastructure will require separate TfNSW consultation and approval.

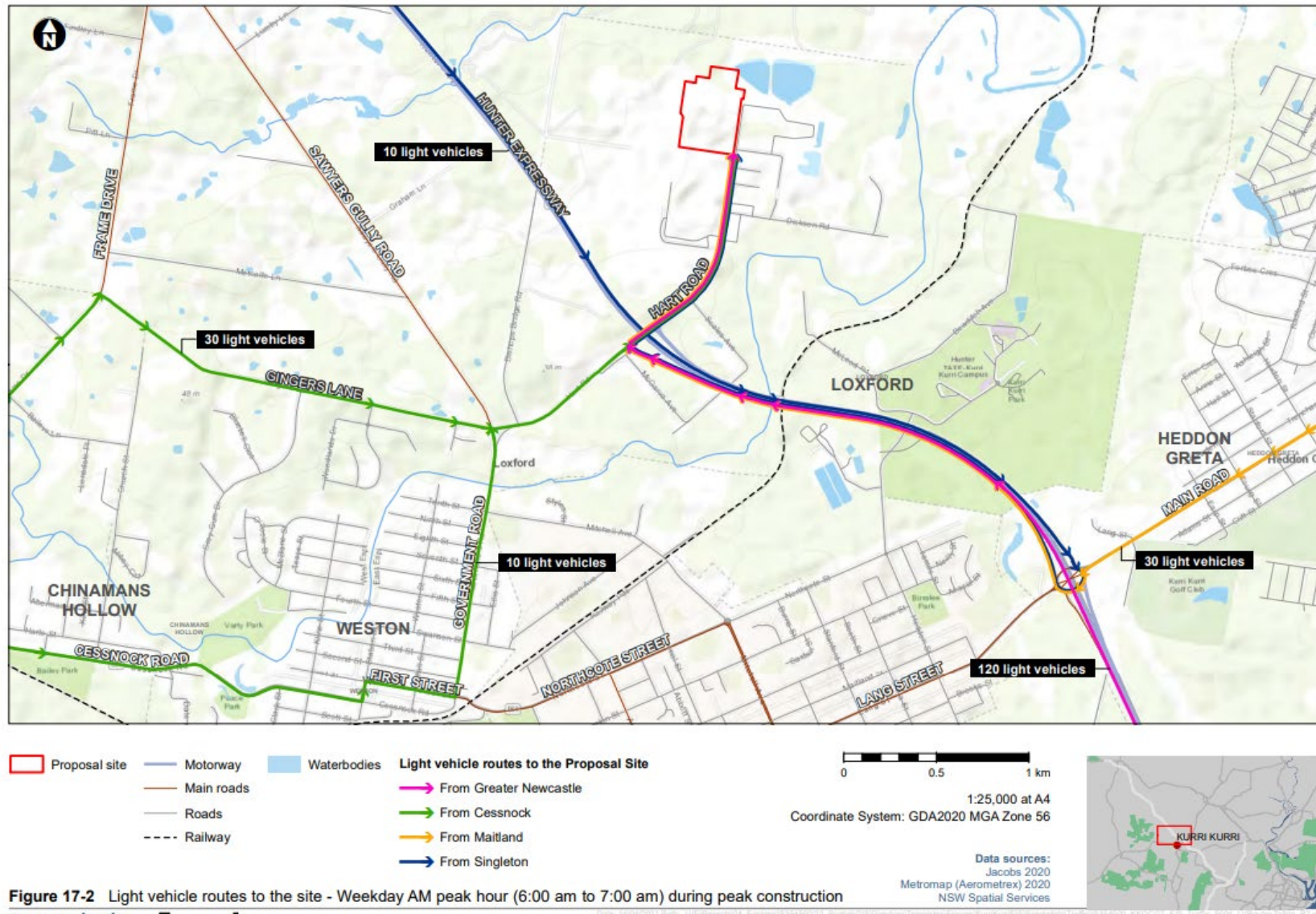


Figure 4-2: Light vehicle routes to the site – Weekday AM peak hour



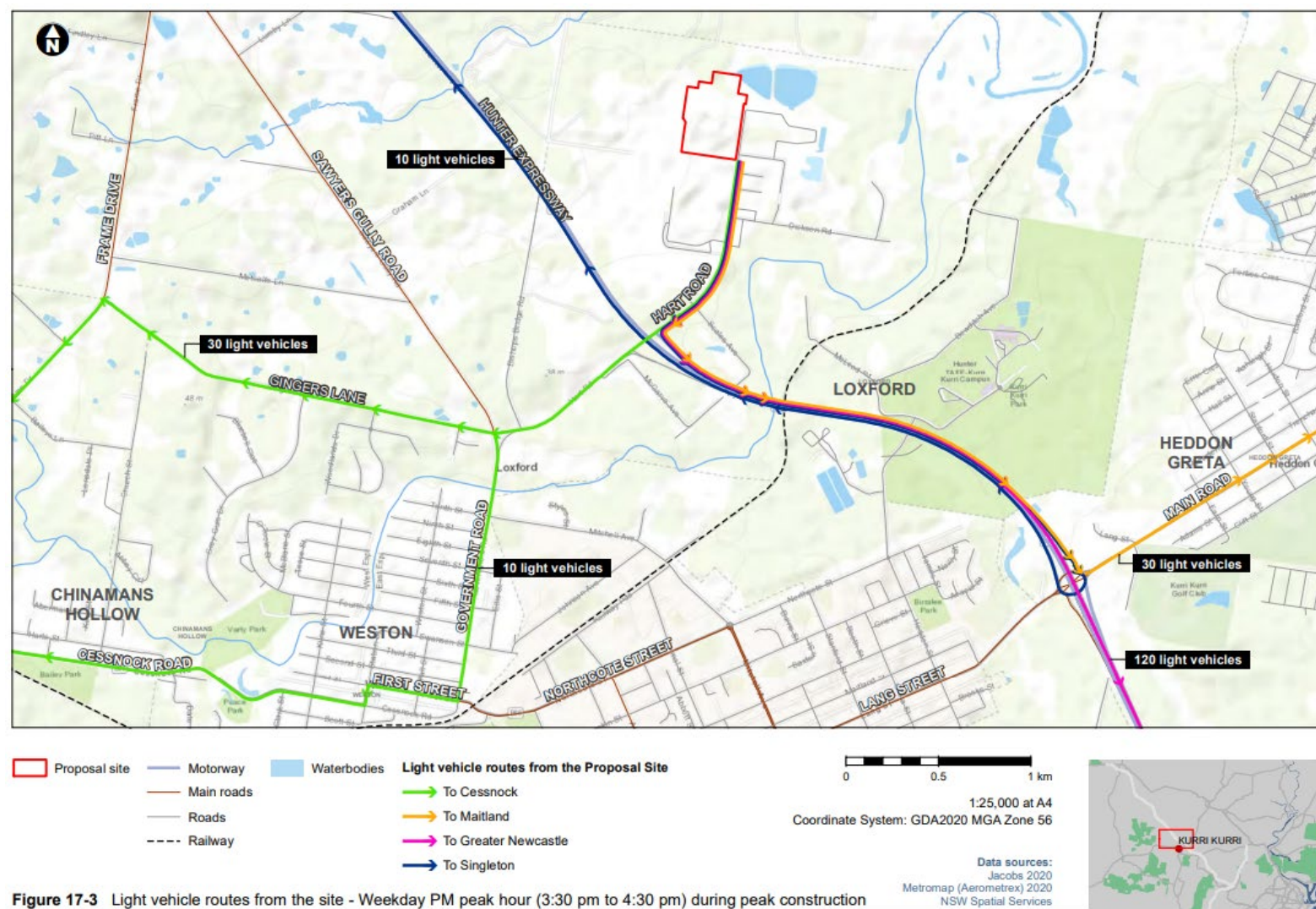


Figure 4-3: Light vehicle routes to the site – Weekday PM peak hour





Figure 4-4: Heavy vehicle access routes

#### 4.3.4 Construction traffic volumes and timing

A summary of the anticipated traffic volume associated the construction of the Project provided in Table 4-1. During peak construction periods, a peak of 100 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 (3:30 pm to 4:30 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		Project dates (approx.) <sup>2</sup>
Passenger	72,000	200	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
<b>Total</b>	<b>82,610</b>				

#### 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 agreement in place with Hydro Aluminium for the use of 'Building 77A', for offices and worker parking. This area forms part of Hydro Aluminium's existing Environmental Protection Licence 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, however, there is the potential for temporary parking in the Buffer Land area. Please see Figure 4-3 which identifies the Buffer Land as Area '3', and also the location of Building 77A. It's noted that the parking around building 77A is currently an established asphalt parking area, shown in the picture below this paragraph, and in relation to the Hunter Expressway and Hart Rd for context.

<sup>2</sup> Project dates assume commencement of construction in February 2022.





Building 77A and  
surround parking

Hart Rd  
Hunter Expressway

## 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 is 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) <sup>1</sup>	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.

<sup>1</sup>Based 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.

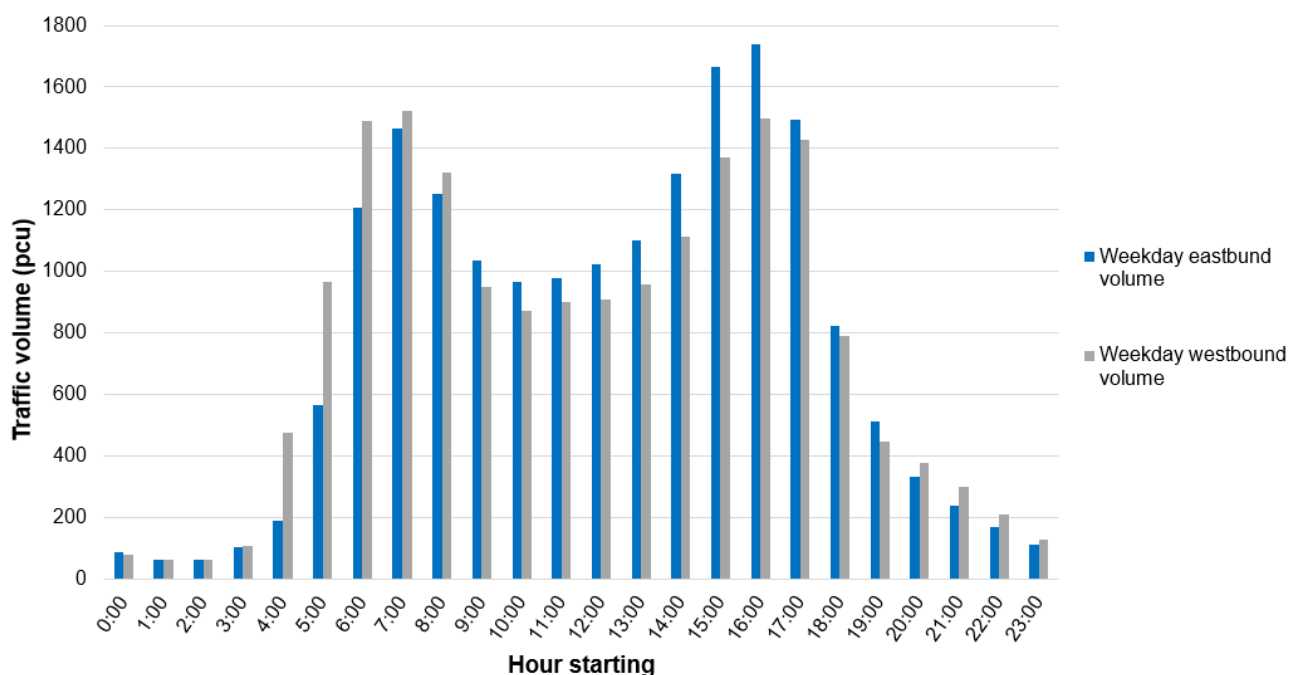


Figure 5-1: Forecast Hunter Expressway average weekday traffic volumes in passenger car units (2023)

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 as agreed with Hydro Aluminium/ Industrial Estate developer.

## 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 <sup>1</sup>	Number of potential crashes resulting in a casualty <sup>1</sup>
Without Project	0.48	4.79
With Project	0.48	4.81

<sup>1</sup>Assuming 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.

Table 6-1: Traffic and transport management measures

ID	Management measure	Timing
<b>Construction traffic</b>		
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
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
T3	All drivers will be required to adhere to the Driver Code of Conduct (refer to Section 6.2)	Throughout construction
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
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
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
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"> <li>Scheduling the movement of construction material, equipment and waste to occur outside of peak periods</li> <li>Scheduling heavy vehicle deliveries to be evenly dispersed as far as practical to minimise conveying or platoons and queuing outside the Project Site</li> </ul> Peak traffic on Hart Road will be reviewed and if required, measures to address any traffic congestion will be implemented.	Throughout construction
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

ID	Management measure	Timing
T9	All loading /unloading activities will occur within the Project Site	Pre- construction and throughout construction
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
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
<b>Road safety</b>		
T12	Public roads and access points will not be obstructed by any materials, vehicles, skip bins or the like, under any circumstances	Throughout construction
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
T14	'Trucks Turning' warning signs will be installed on both approaches to the intersection of Hart Road / Hunter Expressway interchange to advise existing road users of the increased heavy vehicle volumes (refer to Section 6.4)	Pre- construction
T15	Heavy vehicles will be equipped with systems to improve vehicle safety, visibility and the detection of vulnerable road users	Throughout construction
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
<b>Road condition</b>		
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
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
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
T20	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 Project Site. All vehicle movements will be done so as to minimise dust and/or sediment being tracked onto Hart Road	Throughout construction
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	Throughout construction
T22	No tracked vehicles will be permitted or required on any public paved roads	Throughout construction



## 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.

## 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 light and heavy vehicles accessing the site each day
- Ensuring that the maximum number of light and heavy vehicle movements per day is adhered to
- Maintaining a schedule of next day and 2-day forecast of all deliveries, including inventory 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
- 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
- Roads will not be used as a waiting area for trucks delivering or awaiting to pick up materials.




### 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 on the Hunter Expressway to alert drivers of heavy vehicles entering and exiting roadway.

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.

TfNSW 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 will be submitted to the relevant road authority (Cessnock Council).

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 will be constructed from 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.

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.

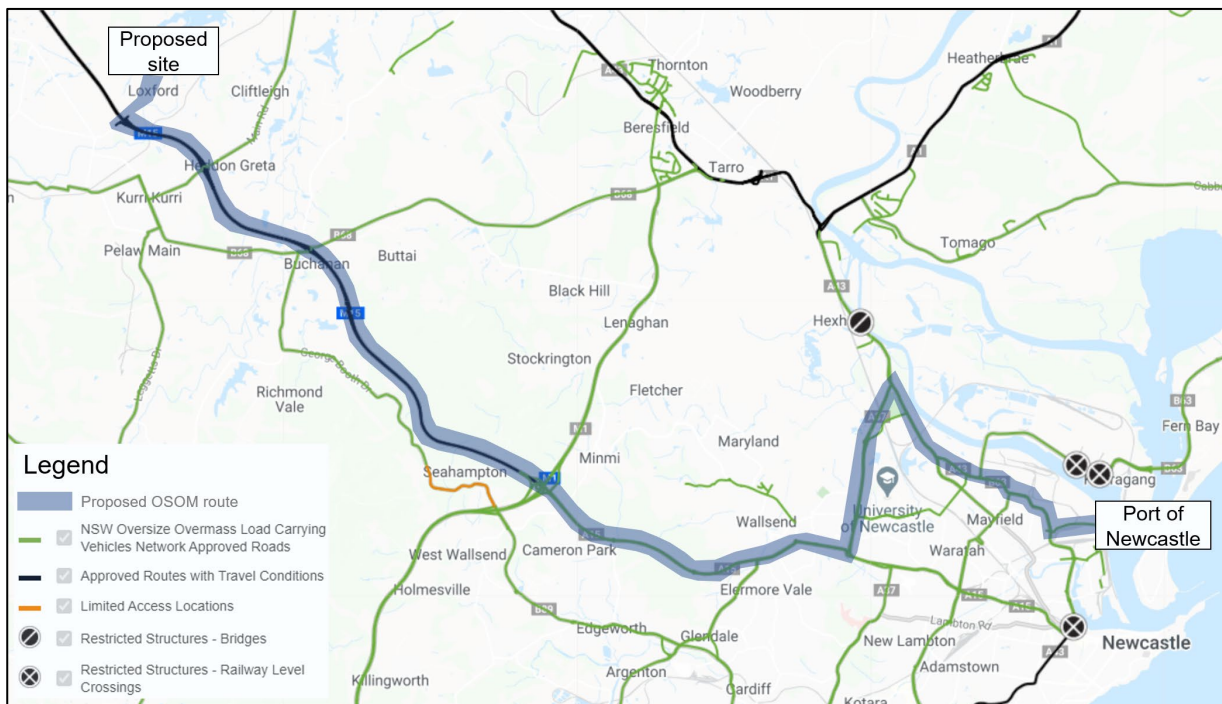


Figure 6-1: Proposed OSOM vehicle route

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
- Preparation and adherence to a separate OSOM Transport Management Plan 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.
- State-wide oversize holiday curfews
- Rail Infrastructure Manager approval (if the proposed route is required to travel over a railway level crossing).

To manage these OSOM vehicles, a permit will be sought from the National Heavy Vehicle Regulator (NHVR). As part of the permit application, the original equipment manufacturer (Mitsubishi Heavy Industries) will develop an OSOM Transport Management Plan and determine the most suitable route based on the OSOM vehicle dimensions and mass in consultation with Snowy Hydro, the NHVR, Transport for NSW and other agencies.

The OSOM Transport Management Plan will identify risks and minimise impacts to the wider road network. The plan will cover as a minimum:

- 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.

For the reasons provided above, this construction TMP does not address the OSOM requirement of Condition B48(d), but as per Infrastructure Approval Condition C21 – staged plans, an OSOM Transport Management Plan will be provided to the Secretary for approval prior to any OSOM works.

## **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 of Planning, Infrastructure and the Environment (DPIE).

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.

### **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"> <li>Visual inspection of the site, site entrances and signage</li> </ul>	Daily	Principal Contractor	None	All construction
Environmental site inspection	<ul style="list-style-type: none"> <li>Inspection of internal roads and the surrounding public road network for signs of deterioration and maintenance requirements</li> <li>Inspection of traffic signage to ensure they are: <ul style="list-style-type: none"> <li>clearly visible</li> <li>mounted securely</li> <li>performing their function in directing traffic and alerting road users of heavy vehicles and potential safety issues</li> </ul> </li> <li>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</li> </ul>	Weekly	Principal Contractor	Inspection report	All construction
Road condition survey	<ul style="list-style-type: none"> <li>Inspection of any existing damage on Hart Road and Hunter Expressway as detailed in Section 6.5</li> </ul>	As required	Principal Contractor	Dilapidation reports	Pre-construction and post-construction
Adverse weather event inspection	<ul style="list-style-type: none"> <li>Inspection of internal roads and the surrounding public road network following periods of heavy rain or an adverse weather event</li> </ul>	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"> <li>General Project / Location</li> <li>Commencement of construction</li> <li>Major milestones</li> <li>Change to traffic conditions</li> <li>Disruption to access or utilities</li> <li>Any other activity that may impact the community, businesses, or key stakeholders</li> </ul>
Letters	<ul style="list-style-type: none"> <li>Addressed mail containing information to particular households, businesses, or individuals who may be impacted by construction activities</li> </ul>
Advertising	<ul style="list-style-type: none"> <li>Paid notices in local newspaper publications to advise of project updates (e.g. construction initiation, key milestones)</li> </ul>
Media releases	<ul style="list-style-type: none"> <li>Proactive media statements to provide project updates and address concerns</li> </ul>
Letterbox drop	<ul style="list-style-type: none"> <li>Unaddressed mail containing information about the Project</li> </ul>
Subscribed communications	<ul style="list-style-type: none"> <li>Monthly construction updates to subscribers through letterbox drops/letters, email inboxes, and posted on the project website</li> <li>Monthly construction updates will also be provided to all local MP's and Council's via email.</li> </ul>
Traffic updates	<ul style="list-style-type: none"> <li>To advise public of any road closures or other traffic issues such as OSOM loads that may impede traffic</li> </ul>
Variable message signs	<ul style="list-style-type: none"> <li>Electronic variable message sign during major construction activities including traffic impacts to provide advanced notice to road users of traffic changes.</li> </ul>
Community signage	<ul style="list-style-type: none"> <li>To be installed on gate entries to construction site</li> </ul>



## 7.5 Auditing & 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 Figure 7-3.

Table 7-3: Monitoring actions

Trigger	What needs to be monitored	Monitoring activity	Who will complete
Prior to commencement of construction or transport of materials to the Project site	Road condition	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. Copy of the report to TfNSW.	Principal Contractor
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 Traffic incident management

Traffic incidents will be managed in accordance with the Section 7.5 of the CEMS, with process steps outlined below. In the event of a traffic incident that has the potential to impact public road users, relevant authorities will 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 the 22nd of December 2021, and is appended to this Plan.

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 Incident notification

The Principal Contractor will notify Snowy Hydro upon becoming aware of an incident, and Snowy Hydro will then notify the Secretary in writing via the Major Projects website immediately. The notification must identify the development (including the application number and the name of the development).

The key aspects the notification will address are:

- (a) the development and application number (12590060);
- (b) details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
- (c) how the incident was detected;
- (d) when the Proponent became aware of the incident;
- (e) any actual or potential non-compliance with conditions of approval;
- (f) what immediate steps were taken in relation to the incident;
- (g) further action(s) that will be taken in relation to the incident; and
- (h) a development contact for further communication regarding the incident. Unless otherwise stated in the incident notification, this is the Snowy Hydro Approvals Manager on 0409 840 165.

## 7.9 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. Snowy Hydro will lodge the notification.

The Principal Contractor must notify Snowy Hydro whenever it is aware of a non-compliance.

The key aspects a non-compliance notification will address are:

- (a) the development and application number (12590060);
- (b) the condition of approval that the development is non-compliant with;
- (c) the way in which the development does not comply;
- (d) the reasons for the non-compliance (if known); and
- (e) the corrective and preventative actions undertaken to address the non-compliance.

For clarity, a non-compliance which has been already been notified as an incident does not need to also be notified as a noncompliance to the Major Projects website.

## 7.10 Compliance reporting

Compliance Reports of the development will be carried out by Snowy Hydro with the support of the Principal Contractor, and also upon the advice of the Environmental Representative where applicable. Reporting is to be in accordance with, and upon the timing set out in, the *Compliance Reporting Post Approval Requirements (2020)* or subsequent version.

Snowy Hydro must make each Compliance Report publicly available within 60 days of submitting it to the Secretary.

There is an opportunity to request and agree an alternative reporting method and timing with the Secretary to those identified in this section. If sought, this is to be done by Snowy Hydro in consultation 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	Every 6 months or as outlined in the CEMS	<ul style="list-style-type: none"> <li>▪ Suitability of site access/egress arrangements</li> <li>▪ Suitability of heavy vehicle haulage routes</li> <li>▪ Performance of the surrounding road network</li> <li>▪ The road network is operating safely / Road safety</li> <li>▪ Suitability of construction vehicle parking provisions</li> <li>▪ Any departures or variations to ensure they have been documented and managed</li> </ul>
Change generated review	Prior to the implementation of changes to: <ul style="list-style-type: none"> <li>▪ Peak construction vehicle volumes</li> <li>▪ Heavy vehicle haulage routes</li> <li>▪ Site access arrangements</li> </ul>	<ul style="list-style-type: none"> <li>▪ Suitability of site access/egress arrangements</li> <li>▪ Suitability of heavy vehicle haulage routes</li> <li>▪ Performance of the surrounding road network</li> <li>▪ The road network is operating safely / Road safety</li> <li>▪ Suitability of construction vehicle parking provisions</li> <li>▪ Any departures or variations resulting from the changed conditions to ensure they have been documented and approved</li> </ul>
Post-incident or near miss review	Following a traffic-related incident or near miss	<ul style="list-style-type: none"> <li>▪ Causal and / or contributory factors</li> <li>▪ Management measures to avoid a recurrence of the event and / or mitigate risk</li> </ul>

### 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 7.8 and 7.9 of the CEMS. As described in Section 6.11, an OSOM Transport Management Plan will be provided to the Secretary for approval prior to any OSOM works.

## Appendix A. Example 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



Planning,  
Industry &  
Environment

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 'S O'Donoghue'.

Stephen O'Donoghue  
Director Resource Assessments

As nominee of the Secretary