# Appendix B1

## Construction Traffic Management Plan

The Northern Road Upgrade –
Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park

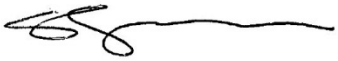
November 2018

NSW GOVERNMENT

## Document control

| | |
|---|---|
| File name | TNR Upgrade OACEMP Appendix B1 - CTMP V3 |
| Report name | The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park<br>Construction Traffic Management Plan |

## Approval and authorisation

| Plan reviewed by: | Plan reviewed by: | Plan endorsed by: |
|---|---|---|
|  |  |  |
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| *01/11/2018* | *01/11/2018* | *01/11/2018* |
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## Revision history

| Revision | Date | Description |
|---|---|---|
| 0 | 08/06/2018 | Draft for consultation |
| 1 | 22/08/2018 | Updated in response to DP&E, ER and consultation comments<br>Issued for DP&E approval |
| 2 | 15/10/2018 | Final updated in response to DP&E comments |
| 3 | 01/11/2018 | Final updated in response to DP&E correspondence |

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# Glossary / Abbreviations

| Term | Expanded text |
|---|---|
| ADT | Average daily traffic |
| CCS | Community Communication Strategy |
| CEMP | Construction Environmental Management Plan |
| CMS | Complaints Management System |
| CoA | Condition of approval |
| Compliance audit | Verification of how implementation is proceeding with respect to an OACEMP (which incorporates the relevant approval conditions) |
| CRM | Community Relations Manager |
| CSSI | Critical State Significant Infrastructure |
| CTMP | Construction Traffic Management Plan |
| DEOH | Defence Establishment Orchard Hills |
| DoEE | Commonwealth Department of the Environment and Energy |
| DP&E | NSW Department of Planning and Environment |
| EIS | Environmental Impact Statement |
| EMS | Environmental management system |
| Environmental aspect | Defined by AS/NZS ISO 14001:2015 as an element of an organisation's activities, products or services that can interact with the environment |
| Environmental impact | Defined by AS/NZS ISO 14001:2015 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects |
| Environmental incident | An unexpected event that has, or has the potential to, cause harm to the environment and requires some action to minimise the impact or restore the environment |
| Environmental objective | Defined by AS/NZS ISO 14001:2015 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve |
| Environmental Representative (ER) | A suitably qualified and experienced person independent of project design and Construction personnel employed for the duration of Construction. The principal point of advice in relation to all questions and complaints concerning environmental performance |
| Environmental target | Defined by AS/NZS ISO 14001:2015 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives |
| EPA | NSW Environment Protection Authority |
| EP&A Act | *NSW Environmental Planning and Assessment Act 1979* |
| EPBC Act | *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* |
| EPL | NSW Environment Protection Licence under the *Protection of the Environment Operations Act 1997* |

| Term | Expanded text |
|---|---|
| ERG | Environmental Review Group |
| EWMS | Environmental Work Method Statements |
| Federal-CoA | Condition of the Federal Department of the Environment and Energy Approval Decision |
| Hold Point | A point beyond which a work process must not proceed without express written authorisation from Roads and Maritime |
| Non-compliance | Failure to comply with the requirements of the Project approval or any applicable licence, permit or legal requirements |
| Non-conformance | Failure to conform to the requirements of Project system documentation including this OACEMP or supporting documentation |
| NSW-CoA | Condition of the NSW DP&E Infrastructure Approval |
| NSW Infrastructure Approval | The Infrastructure Approval for the Northern Road Upgrade issued by the New South Wales Government on 30 May 2018 |
| OACEMP | Overarching Construction Environmental Management Plan |
| OEH | NSW Office of Environment and Heritage |
| PMP | Pedestrian Movement Plan |
| Principal, the | NSW Roads and Maritime Services |
| Project, the | The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park |
| REMM | Revised Environmental Management Measure as provided in the Final EIS / SPIR |
| Roads and Maritime, RMS | NSW Roads and Maritime Services |
| ROL | Road Occupancy Licence |
| RTA | Roads and Traffic Authority (former) |
| SEARs | Secretary's Environmental Assessment Requirements |
| Secretary | Secretary of the NSW Department of Planning and Environment, or delegate |
| SPIR | Submissions and Preferred Infrastructure Report |
| SZA | Speed Zone Authorisation |
| TCP | Traffic Control Plan |
| TMC | Transport Management Centre |
| TNR | The Northern Road |
| VMP | Vehicle Movement Plan |
| VMS | Variable Message Sign |
| VSLS | Variable Speed Limit Signs |
| WHS | Work Health and Safety |

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# 1 Introduction

## 1.1 Context

This Construction Traffic Management Plan (CTMP) forms part of the Overarching Construction Environmental Management Plan (OACEMP) for The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park (the Project).

This CTMP has been prepared to address the requirements of:

- the NSW Minister's Infrastructure Approval dated 30 May 2018 and Federal Minister for the Environment and Energy's Approval dated 15 June 2018.
- the environmental management measures listed in *The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park NSW Environmental Impact Statement / Commonwealth Draft Environmental Impact Statement* (EIS) (prepared by Jacobs for Roads and Maritime, 2017) as amended by *The Northern Road Upgrade – Mersey Road, Bringelly to Glenmore Parkway, Glenmore Park Submissions and Preferred Infrastructure Report* (SPIR) (prepared by Jacobs for Roads and Maritime, 2017)
- Roads and Maritime specifications
- all applicable legislation.

Construction of the Project will be undertaken in three stages:

- Stage 4 - Mersey Road, Bringelly, to Eaton Road, Luddenham
- Stage 5 - Littlefields Road, Luddenham, to Glenmore Parkway, Glenmore Park
- Stage 6 - Littlefields Road, Luddenham to Eaton Road, Luddenham.

An overview of the Project, including the extent of the Project stages, is shown on Figure 1-1 and Figure 1-2.

Each stage will be delivered in a separate Construction package that will include all activities needed to complete the stage. Details of the proposed Project staging, including Construction activities and submission of corresponding environmental plans, strategies and protocols, is documented in the Project Staging Report.

The Construction Contractors will develop stage-specific environmental management documentation to address the operational control requirements outlined in the OACEMP that apply to the stages that they are delivering. Stage specific CTMPs will be updated, tailored, and finalised by the Contractors. Roads and Maritime will review the Contractors' CTMPs for compliance with the approved OACEMP.

It should be noted that the CTMP is also referred to in the Project environmental documents as:

- Traffic and transport CEMP Sub-plan
- Traffic Management Plan
- Traffic and Transport Management Plan

A full list of alternative and interchangeable sub-plan names is included in Appendix A5 of the OACEMP.

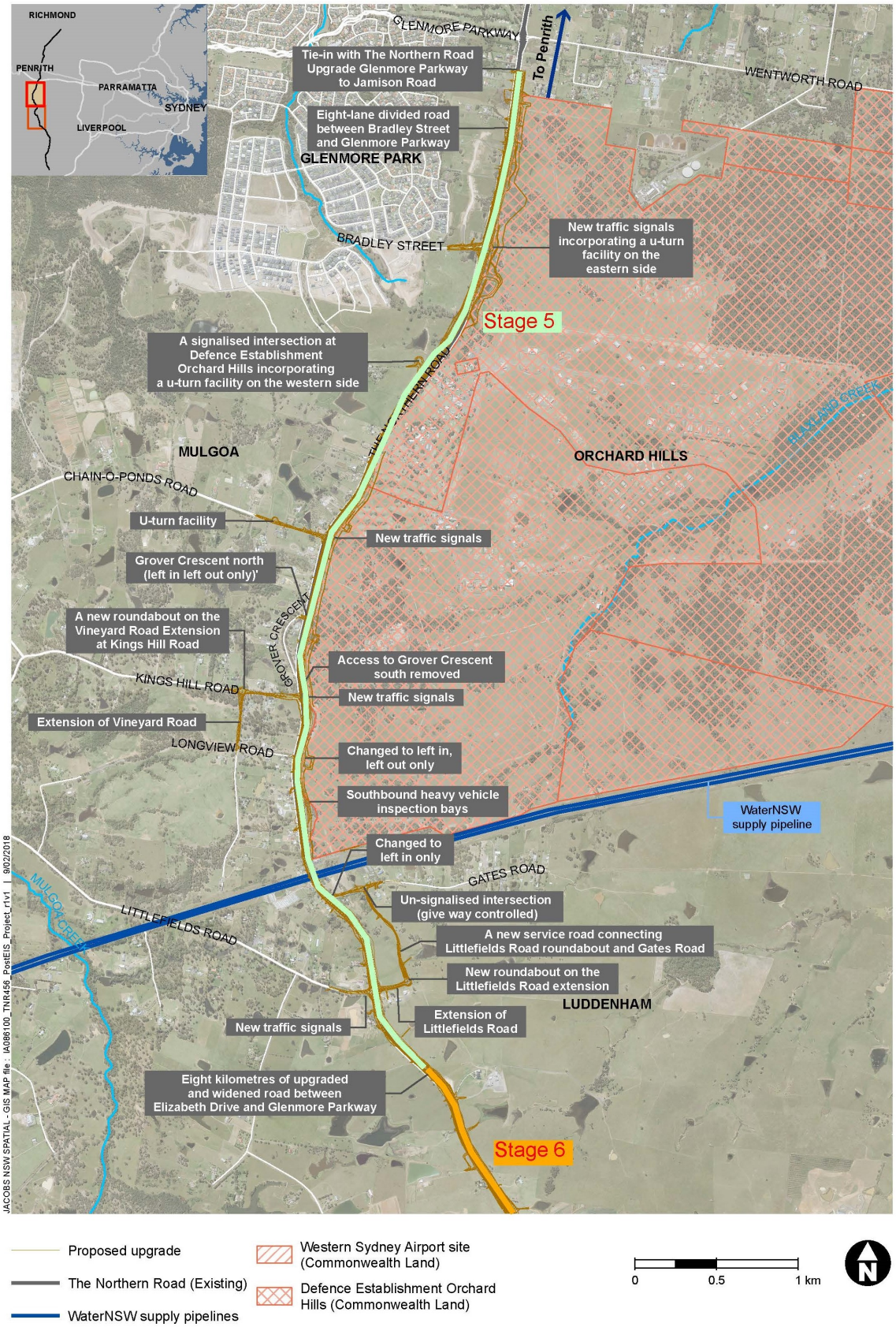


**Figure 1-1: Overview of the Project (northern section)**

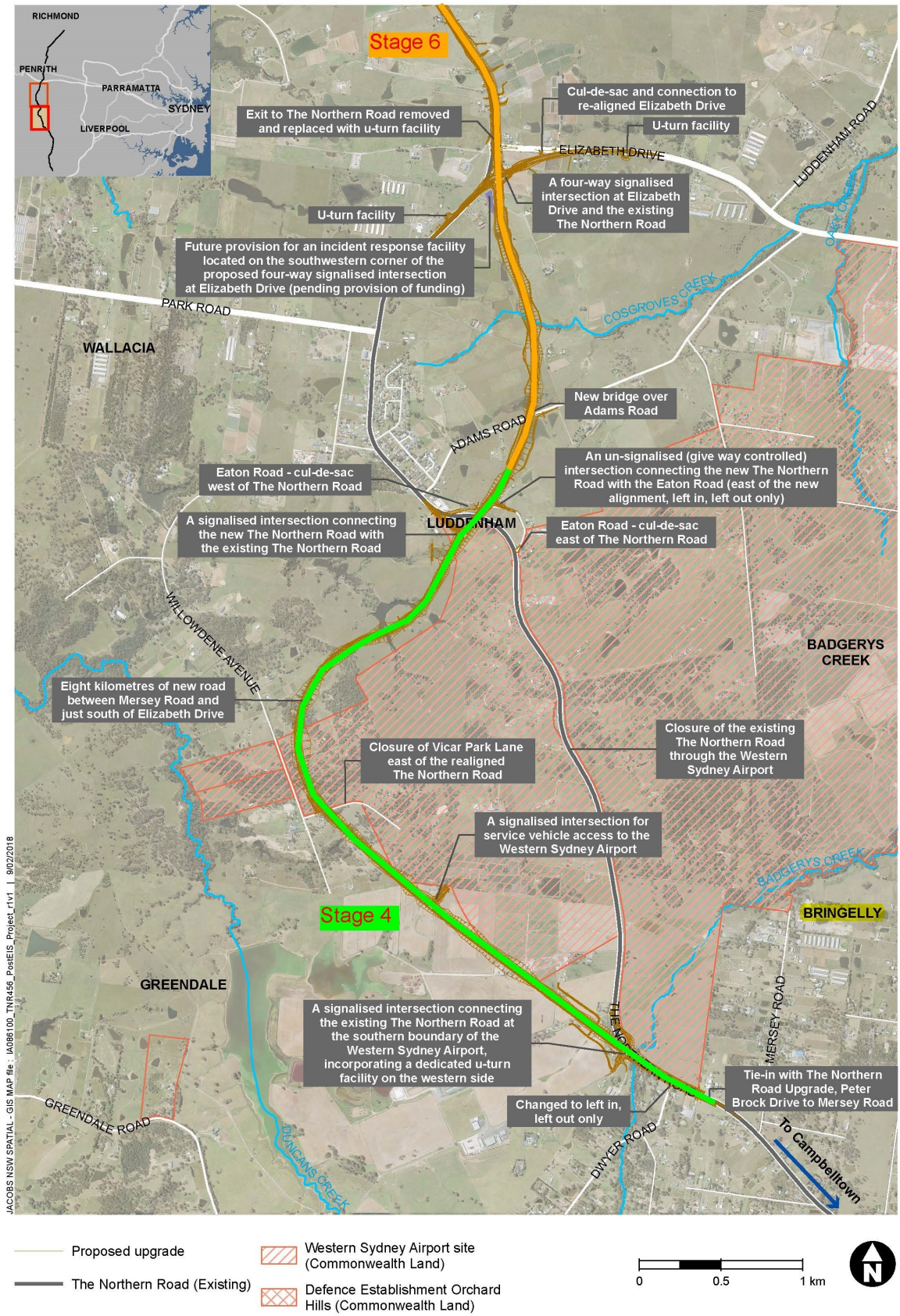


**Figure 1-2: Overview of the Project (southern section)**

## 1.2 Background

The EIS assessed the potential traffic and transport impacts during the Construction of the Project.

As part of EIS development, a detailed traffic and transport assessment was prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued by the NSW Department of Planning and Environment (DP&E) and the Commonwealth EIS Guidelines issued by the Federal Department of the Environment and Energy (DoEE). The traffic and transport assessment was included in the EIS as Appendix G.

Further consideration of traffic and transport impacts was undertaken subsequent to exhibition of the EIS. Consideration of the Project design refinements against the outcomes of the traffic and transport assessment carried out for the EIS was provided in Section 5.1.1 of the SPIR. Revised environmental management measures (REMMs) were provided within the SPIR. Where applicable, the REMMs from the SPIR have been included in this CTMP.

## 1.3 Environmental management system overview

The overarching Environmental Management System (EMS) for the Project is described in Section 3 of the OACEMP. The Contractors delivering the Project will have certified EMSs consistent with the overarching EMS described in the OACEMP. The Contractors will develop stage-specific CTMPs in accordance with the OACEMP and their EMS.

This overarching CTMP forms part of the environmental management framework for the Project, as described in Section 3.3 of the OACEMP.

The Contractors will be required to develop, as part of their stage-specific CTMPs, detailed strategies and plans to address specific requirements of the conditions of approval and REMMs identified in this overarching CTMP. The purpose of these environmental management documents in regard to minimisation and management of traffic and transport impacts associated with the Project is outlined in Section 6 of this CTMP.

The documentation to be prepared by the Contractors for their CTMPs includes:

- Traffic Staging Plans
- Vehicle Movement Plans (VMPs)
- Traffic Control Plans, including signage strategy (TCPs)
- Pedestrian Movement Plans (PMPs)
- Traffic Incident Management Plans

The Contractors will prepare the documentation with stage specific information and include the documents in their CTMPs. Roads and Maritime will review the Contractors' documentation to confirm consistency with the requirements of this CTMP and specifications.

Management measures identified in this CTMP may also be incorporated into site or activity specific Environmental Work Method Statements (EWMS). EWMS incorporate appropriate mitigation measures and controls and identify key procedures to be used concurrently with the EWMS. A template EWMS for use by the Contractors is provided in Appendix A9 of the OACEMP.

EWMS will be prepared by the Contractor Environmental Site Representatives and reviewed by the Roads and Maritime Environmental Manager (or delegate) and independent Environmental Representative (ER) prior to the commencement of the Construction activities to which they apply. Construction personnel undertaking a task governed by an EWMS will undertake the activity in accordance with the mitigation and management measures identified in the EWMS.

Used together, the OACEMP, strategies, procedures and EWMS form management guides that clearly identify required environmental management actions for reference by Roads and Maritime and its Contractors.

The review and document control processes for this CTMP are described in Section 6.7 and 6.8 of the OACEMP.

### 1.3.1 CTMP preparation, endorsement and approval

This overarching CTMP has been prepared to satisfy the NSW and Federal conditions of approval (CoA) in relation to traffic and transport management during Construction of the Project.

This CTMP will be reviewed by the Roads and Maritime Senior Project Manager and the Senior Environment Officer and endorsed by the ER prior to submission to the Secretary of the Department of Planning and Environment (DP&E) for approval in accordance with NSW-CoA C7.

The CTMP will be submitted to the Secretary for approval no later than one month prior to commencement of Construction of the Project, or as otherwise agreed by the Secretary.

In accordance with NSW-CoA C8, Construction of the Project will not commence prior to approval by the Secretary of the CTMP.

## 1.4 Consultation

### 1.4.1 Consultation for preparation of the CTMP

This CTMP has been developed in consultation with Penrith City Council and Liverpool City Council as required by NSW-CoA C4(a). The draft CTMP was provided to Penrith City Council and Liverpool City Council in June 2018.

In accordance with NSW-CoA A8, where a CoA requires consultation with identified parties, details of the consultation undertaken, matters raised by the parties, and how the matters were considered will be documented in the relevant sub plan. The evidence of the consultation undertaken for the preparation of this CTMP, including documentation of the engagement with the parties and a summary of issues raised and responses, is provided in Annexure A. Appendix A8 to the OACEMP documents all consultation undertaken for the preparation of the OACEMP.

### 1.4.2 Ongoing consultation during Construction

Ongoing consultation between Roads and Maritime and its Contractors, and stakeholders, the community and relevant agencies regarding the management of traffic and transport impacts will be undertaken during the Construction of the Project as required. The process for the consultation will be documented in the Community Communication Strategy (CCS).

In accordance with NSW-CoA E41, unencumbered access to private property will be maintained during Construction unless otherwise agreed with the landowner in advance. A landowner's access that is physically affected by the Project will be reinstated to at least an equivalent standard, in consultation with the landowner and at no cost to the landowner.

During Construction of the Project, measures will be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties, as required by NSW-CoA E57. Alternative pedestrian access, vehicular access, and parking arrangements, and signage to direct customers to these businesses and affected properties, will be developed by the Contractors in consultation with affected businesses. These arrangements will be outlined in the Contractors' CTMPs and implemented prior to the disruption occurring. Signage and direction to businesses will be provided before, and for the duration of, any disruption during the Construction in accordance with NSW-CoA E58.

Consultation requirements under the EIS and SPIR for traffic and transport issues identified in the REMMs are listed in Table 1-1.

**Table 1-1: Consultation requirements identified in the EIS and SPIR**

| REMM | Consultation requirements identified in the EIS and SPIR |
|---|---|
| T-1 | A Construction Traffic Management Plan (CTMP) would be developed, approved, implemented and monitored as part of the project. The TMP would:<br>• Maintain continuity of access to local roads and properties, particularly along the existing alignment of The Northern Road (may require temporary u-turn facilities). Where access is affected, RMS would consult with residents for alternative access arrangements.<br>• Develop a communication plan to advise local residents and businesses of any changes to traffic conditions during Construction.<br>• Consult with bus operators regarding temporary bus stop relocations during Construction and proposed bus stops during Operation. |
| T-2 | Staging plans to be prepared in consultation with adjoining contractors and for each stage of the upgrade. |
| T-4 | Access to properties along affected roads would be maintained during Construction. The need for any alternative and/or temporary access arrangements would be agreed with affected property managers/owners. |
| T-5 | Roads and Maritime will consult with Councils regarding the requirements for upgrade of local roads. |
| T-6 | Roads and Maritime will consult further with all utility providers on required access and consents for utility corridors prior to Construction. |
| SE-15 | Where temporary changes to property access are required, alternate access should be determined in consultation with affected property owners and tenants. |
| CI-1 | Consultation would be undertaken with local communities potentially affected by the impacts of multiple projects in addition to the project. |

| REMM | Consultation requirements identified in the EIS and SPIR |
|---|---|
| CI-2 | Where relevant, consultation would be undertaken with proponents of other nearby developments to increase the overall awareness of project timeframes and impacts. |
| CI-3 | Construction traffic management plans for this project should be developed in consultation with plans for other projects to assist in spreading the traffic load over the network and to minimise Construction traffic being concentrated on any one particular route. |

# 2 Purpose and objectives

## 2.1 Purpose

The purpose of this CTMP is to describe how impacts on traffic and transport will be managed during Construction of the Project.

## 2.2 Objectives

The key objective of the CTMP is to ensure that traffic and transport impacts due to Construction of the Project are minimised. To achieve this objective, the Contractors will:

- implement appropriate controls and procedures during Construction activities to address potential traffic impacts along the Project corridor
- minimise the overall impacts on road users
- maintain access for the local community, transport operators and businesses
- regularly inform road users and local communities in relation to changed traffic conditions or access
- implement appropriate measures to address the requirements of the conditions of approval outlined in Table 3-1 and the revised environmental management measures detailed in Table 6-1
- implement appropriate measures to comply with all relevant legislation and other requirements as described in Section 3.1 of this CTMP.

## 2.3 Targets

Targets for the management of traffic and transport impacts during the Project are to:

- achieve full compliance with relevant legislative requirements and the conditions of approval
- ensure safe and continuous traffic movement for Construction workers and the general public
- maintain the capacity of existing roads where possible during Construction in order to minimise road user delays
- maintain continuity of access to local roads and properties
- undertake appropriate consultation with impacted residents and businesses and stakeholders
- implement traffic control operations to minimise delays to road users taking into consideration traffic volumes including peak times of the day and seasonal traffic
- avoid road occupancy where possible
- plan all Construction vehicle movements to minimise disruption to traffic flow on roads within the Project area and surrounds
- minimise impacts on, and complaints from, the community and stakeholders.

# 3 Environmental requirements

## 3.1 Relevant legislation and guidelines

### 3.1.1 Legislation and regulatory requirements

Legislation relevant to traffic and transport includes:

- *Roads Act 1993*
- *Transport Administration Act 1988.*

Identified regulatory requirements include:

- approved and valid Road Occupancy Licences (ROL)
- approved relevant Speed Zone Authorisations (SZA)
- Australian Road Rules.

Relevant provisions of the above legislation are identified in the register of legal requirements included in Appendix A1 of the OACEMP.

### 3.1.2 Guidelines and standards

The main guidelines, specifications and policy documents relevant to this CTMP include:

- Roads and Maritime QA Specification G1 – Job Specific Requirements for The Northern Road Upgrade
- Roads and Maritime QA Specification G10 – Traffic Management
- Roads and Maritime QA Specification G36 – Environmental Protection (Management System)
- *Traffic Control at Worksites Manual* (Roads and Traffic Authority (RTA), 2010)
- *Guide to Road Safety Audit Practices* (RTA, 2011)
- *NSW Speed Zoning Guidelines* (RTA, 2011)
- *Guide: Signposting* (RTA, 2007)
- *NSW Bicycle Guidelines* (RTA, 2005)
- *Road Design Guide* (Roads and Maritime, 2015)
- *Technical Direction TDT 2014/006 Variable Speed Limit Signs* (Roads and Maritime, 2014)
- *Technical Direction TDT 2013/06 Provision of Variable Message Signs on motorways for on-road presentation of real time travel time information* (Roads and Maritime, 2013)
- *Road Occupancy Manual* (Transport Management Centre, 2015)
- *Tourist Signposting guide* (Roads and Maritime and Destination NSW, 2012)
- *Guide to Road Design – Parts 1-7* (Austroads, 2009)
- *Guide to Road Safety - Parts 1-9* (Austroads, 2009)
- *Guide to Road Design Part 6A: Paths for Walking and Cycling* (Austroads, 2017)

- *Austroads Road Safety Audit Second Edition 2002: Checklist 4. Pre-opening scheme audit*
- *Austroads Road Safety Audit Second Edition 2002: Checklist 5: Roadwork traffic scheme audit*
- *Austroads Road Safety Audit Second Edition 2002: Checklist 6: Existing roads: road safety audit*
- *Austroads Traffic Engineering Practice – Part 14*
- *Australian Standard AS1742.3-2009 Traffic control devices for works on roads*
- *Australian Standard AS 4852.2-2009 Variable message signs*
- *Australian Standard AS1742 Parts 1 to 14, Manual of uniform traffic control devices*
- *Australian / New Zealand Standard – AS/NZS3845:1999 Road Safety Barrier Systems.*

Roads and Maritime specifications are a key source of environmental protection management processes relevant to this CTMP. The specifications set out environmental protection requirements, including Hold Points, that must be complied with by the Construction Contractors during Construction of the Project. A Hold Point is a point beyond which a work process must not proceed without express written authorisation from Roads and Maritime.

## 3.2 Conditions of approval

This overarching CTMP provides a consistent approach to address the requirements of both the State and Federal approvals in the one document. The Project is located on both NSW and Federal (Stages 4 and 5 only) land. However, the NSW Infrastructure Approval conditions apply to both NSW and Federal land within the Project. The Federal approval conditions also apply to both NSW and Federal land within the Project. The extent of Federal land located in the vicinity of the Project is shown on Figure 1-1 and Figure 1-2.

The State (NSW-CoA) and Federal (Federal-CoA) conditions of approval relevant to this CTMP and their applicability to each stage of the Project are listed in Table 3-1. A cross reference is also included to indicate where the condition is addressed in this CTMP or other project management documents.

**Table 3-1: Conditions of approval relevant to the CTMP**

| CoA no. | Condition requirements | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|
| | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | Cth | NSW | Cth | NSW | NSW | |
| **Federal conditions of approval** | | | | | | | |
| Federal-CoA 1 | The approval holder must undertake the action, including those parts of the action that occur on Commonwealth Land, in accordance with all conditions in the NSW Infrastructure Approval. | ✓ | ✓ | ✓ | ✓ | ✓ | This CTMP |
| Federal-CoA 11 | The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement all management plans required by this approval, and make them available upon request to the DoEE. Such records may be subject to audit by the DoEE or an independent auditor in accordance with section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the DoEE's website. The results of audits may also be publicised through the general media. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 7.10 |
| **State conditions of approval** | | | | | | | |
| NSW-CoA A8 | Where the conditions of this approval require consultation with identified parties, details of the consultation undertaken, matters raised by the parties, and how the matters were considered must accompany the strategies, plans, programs, reviews, audits, protocols and the like submitted to the Secretary. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 1.4<br>Annexure A – Consultation correspondence |
| NSW-CoA C4(a) | The following **CEMP Sub-plans** must be prepared in consultation with the relevant government agencies identified for each **CEMP Sub-plan** and be consistent with the **CEMP** referred to in **Condition C1:** | | | | | | |
| | Traffic and transport Relevant Councils | ✓ | ✓ | ✓ | ✓ | ✓ | Section 1.4<br>Annexure A – Consultation correspondence |

| CoA no. | Condition requirements | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|
| | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | Cth | NSW | Cth | NSW | NSW | |
| NSW-CoA C5 | The **CEMP Sub-plans** must state how: | | | | | | |
| | (a) the environmental performance outcomes identified in the documents listed in **Condition A1**, as modified by these conditions, will be achieved; | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6 |
| | (b) the mitigation measures identified in the documents listed in **Condition A1** as modified by these conditions will be implemented; | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6 |
| | (c) the relevant terms of this approval will be complied with; | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6 |
| | (d) the identification of the relevant environmental specific training and induction processes for Construction personnel; and | ✓ | ✓ | ✓ | ✓ | ✓ | Section 7.5 |
| | (e) issues requiring management during Construction, as identified through ongoing environmental risk analysis, will be managed. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6<br>OACEMP Appendix A2 |
| NSW-CoA C6 | The **CEMP Sub-plans** must be developed in consultation with relevant government agencies identified in **Table 3** of **Condition C4.** Where an agency(ies) request(s) is not included, the Proponent must provide the Secretary justification as to why. Details of all information requested by an agency to be included in a **CEMP Sub-plan** as a result of consultation**,** including copies of all correspondence from those agencies, must be provided with the relevant **CEMP Sub-Plan**. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 1.4<br>Annexure A – Consultation correspondence |
| NSW-CoA C7 | Any of the **CEMP Sub-plans** may be submitted to the Secretary along with, or subsequent to, the submission of the **CEMP** but in any event, no later than one (1) month before commencement of Construction. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 1.3.1 |

| CoA no. | Condition requirements | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|
| | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | Cth | NSW | Cth | NSW | NSW | |
| NSW-CoA C8 | Subject to the provisions in this condition relating to staging Construction must not commence until the **CEMP** and all **CEMP Sub-plans** have been approved by the Secretary. The **CEMP** and **CEMP Sub-plans**, as approved by the Secretary, including any minor amendments approved by the ER must be implemented for the duration of Construction. Unless otherwise agreed by the Secretary where the CSSI is being staged, Construction of a stage is not to commence unless the CEMP and the CEMP Sub-plans referred to above cover those stages or the Secretary has approved a specific CEMP and sub-plans for that stage. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 1.3.1 |
| NSW-CoA E28 | Construction vehicles arriving at the project site and Construction compounds outside the standard Construction hours described in **Condition E23** must not queue with idling engines. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1, Contractors' Vehicle Management Plans |
| NSW-CoA E41 | Unencumbered access to private property must be maintained during Construction unless otherwise agreed with the landowner in advance. A landowner's access that is physically affected by the CSSI must be reinstated to at least an equivalent standard, in consultation with the landowner. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.9 |
| NSW-CoA E53 | The CSSI must be designed and operated to meet relevant road design standards, and ensure it does not adversely impact network connectivity, or the safety and efficiency of the road network in the vicinity of the CSSI | ✓ | ✓ | ✓ | ✓ | ✓ | Section 7.8<br>Contractors' Vehicle Management Plans |
| NSW-CoA E54 | Vehicles used in the delivery of the project must not use local roads unless no suitable alternatives are available. Where the use of local roads is proposed, these must be identified in a **Traffic and Transport CEMP Sub-plan.** | ✓ | ✓ | ✓ | ✓ | ✓ | Sections 5.3.3, 6.1<br>Contractors' Vehicle Management Plans |

| CoA no. | Condition requirements | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|
| | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | Cth | NSW | Cth | NSW | NSW | |
| NSW-CoA E55 | A **Road Dilapidation Report** must be prepared by a suitably qualified person for local roads (and associated infrastructure) proposed to be used by Construction vehicles for works associated with the CSSI before the commencement of use by such vehicles. Copies of the **Road Dilapidation Report** must be provided to the relevant Council within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by project vehicles. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.14<br>Road Dilapidation Reports (separate documents) |
| NSW-CoA E56 | If damage to roads occurs as a result of the Construction of CSSI, the Proponent must rectify the damage so as to restore the road to at least the condition it was in pre-works, unless otherwise agreed by the relevant Councils. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.14<br>Road Dilapidation Reports (separate documents) |
| NSW-CoA E57 | During delivery of the CSSI, measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Alternative pedestrian access, vehicular access, and parking arrangements, and signage to direct customers to these businesses and affected properties, must be developed in consultation with affected businesses. Such arrangements must be outlined in the **Traffic and Transport CEMP Sub-plan** and implemented prior to the disruption occurring. | ✓ | ✓ | ✓ | ✓ | ✓ | Sections 6.6, 6.7, 6.9, 6.10, CCS, Contractors' Pedestrian Management Plans, Contractors' Signage Strategies (in TCP) |
| NSW-CoA E58 | Signage and directions to businesses must be provided before, and for the duration of, any disruption during the Construction of the CSSI. | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.6, Contractors' Signage Strategies (in TCP) |
| NSW-CoA E59 | Operational signage must be provided along the project alignment to inform motorists of services and council and community assets within the vicinity of the CSSI including Luddenham village, community facilities and tourist areas in accordance with the *Guide: Signposting* (RTA July 2007) and *Tourist Signposting Guide* (RMS and Destination NSW 2012). | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.6, Contractors' Signage Strategies (in TCP) |

# 4 Existing conditions

## 4.1 Existing road network

The Northern Road provides a key north-south connection in south-western Sydney, stretching from Narellan, west of Campbelltown, via Penrith to Bligh Park south-east of Richmond. The road corridor intersects with a number of regional motorway, arterial and collector roads such as Richmond Road, Great Western Highway, M4 Motorway, Elizabeth Drive, Bringelly Road, and Camden Valley Way.

### 4.1.1 Regional road network

At a regional level, The Northern Road and Elizabeth Drive are the key north-south and east-west road traffic routes.

The Northern Road between Mersey Road, Bringelly and Glenmore Parkway, Glenmore Park generally comprises a two-lane rural road on a single carriageway. North of Glenmore Parkway, on approach to the M4 Western Motorway, The Northern Road widens to two lanes in each direction. The Northern Road speed limit is generally 80 km/h between Mersey Road and Glenmore Parkway, reducing to a limit of 60 km/h through Luddenham town centre.

Elizabeth Drive is a rural local road. It is a two-lane undivided carriageway with a speed limit of 80 km/h. Elizabeth Drive is 10 m wide with unsealed shoulders and intersects with The Northern Road at a roundabout.

### 4.1.2 Local road network

A number of local roads within the Project area connect with The Northern Road, including:

- Mersey Road - a rural road consisting of a two-lane undivided carriageway with no sign-posted speed limit
- Dwyer Road - a rural collector road with a two-lane undivided carriageway signposted at 80 km/h
- Eaton Road - a two-lane unsealed road with no sign-posted speed limit
- Adams Road - a rural collector road that consists of a two-lane undivided carriageway signposted at 70 km/h
- Park Road - a rural local road with a two-lane undivided carriageway signposted at 80 km/h
- Littlefields Road - a rural collector road with a two-lane undivided carriageway signposted at 80 km/h
- Gates Road - a rural collector road consisting of a two-lane undivided carriageway signposted at 60 km/h
- Vineyard Road - a rural local road of a one-lane carriageway with no sign-posted speed limit
- Longview Road - a rural collector road of one-lane with no sign-posted speed limit
- Kings Hill Road - a rural collector road with a two-lane undivided carriageway signposted at 70 km/h

- Chain-O-Ponds Road - a rural collector road with a two-lane undivided carriageway signposted at 70 km/h
- Defence Establishment entry - a private road connection with The Northern Road providing access to the Defence Establishment Orchard Hills (DEOH)
- Bradley Street - a collector road consisting of a two-lane undivided carriageway with no sign-posted speed limit.

### 4.1.3 Heavy vehicles and freight

The Northern Road provides a significant regional north-south freight route. The section of The Northern Road between Mersey Road and Glenmore Parkway allows B-doubles up to 26 m and vehicles 4.6 m high. Elizabeth Drive to the east of The Northern Road and Park Road to the west are also routes for B-doubles up to 26 m. The heavy vehicle routes through the Project area are shown in Figure 4-1.

Heavy vehicles contribute 11-19% to daily traffic volumes along The Northern Road between Mersey Road and Glenmore Parkway, being generally higher to the north of Elizabeth Drive.

## 4.2 Crashes

There have been 121 crashes recorded in The Northern Road between Mersey Road and Glenmore Parkway over a five year period ending in 2014. In total, there were five crashes that resulted in fatalities, 57 crashes that resulted in injuries and 59 crashes where no injuries were reported. The number of reported crashes has remained relatively consistent over the five year period.

The crash data indicates that the majority of crashes occurred during the day, with a cluster of crashes occurring during the afternoon peak from 3:00 pm – 6:00 pm. Rear-end collisions comprised the highest proportion of crashes.


**Figure 4-1: B-Double routes in the vicinity of the Project area**

*Source:* *http://www.rms.nsw.gov.au/business-industry/heavy-vehicles/maps/restricted-access-vehicles-map/map/index.html accessed 6/6/2018*

## 4.3 Existing road network performance

### 4.3.1 Existing traffic volumes

Traffic surveys undertaken between November 2014 and July 2015 measured average daily traffic (ADT) along The Northern Road and the local road network. The ADT volumes are summarised in Table 4-1. The data indicates that on average, daily traffic volumes decrease from north to south along The Northern Road. Traffic volumes along Elizabeth Drive are similar to those along The Northern Road. Traffic volumes do not vary between the AM peak and PM peak.

**Table 4-1: Average daily traffic volumes in the Project road network (2014 – 2015)**

| Road / location | Between | ADT (vehicles/day) | AM peak 1 hr (8:00 – 9:00am) | PM peak 1 hr (4:30 – 5:30pm) |
|---|---|---|---|---|
| The Northern Road | Glenmore Parkway and Bradley Street | 21,982 | 1,601 | 1,878 |
| | Chain-O-Ponds Rd and Kings Hill Road | 17,499 | 1,285 | 1,563 |
| | Littlefields Rd and Elizabeth Drive | 15,206 | 1,097 | 1,371 |
| | Elizabeth Drive and Park Road | 15,737 | 1,096 | 1,397 |
| Bradley Street | West of The Northern Road | 6,832 | 534 | 541 |
| DEOH Access | East of The Northern Road | 1,513 | 168 | 66 |
| Chain-O-Ponds Road | West of the Northern Road | 290 | 27 | 16 |
| Kings Hill Road | West of the Northern Road | 2,532 | 219 | 186 |
| Longview Road | East of the Northern Road | Not available | 13 | 15 |
| Gates Road | East of the Northern Road | Not available | 19 | 25 |
| Littlefields Road | West of the Northern Road | 1,752 | 131 | 144 |
| Elizabeth Drive | East of the Northern Road | 11,534 | 849 | 919 |
| Park Road | West of the Northern Road | 6,342 | 470 | 501 |
| Adams Road | East of the Northern Road | Not available | 134 | 161 |
| Dwyer Road | South of the Northern Road | Not available | 50 | 74 |

### 4.3.2 Capacity of the existing The Northern Road

Car travel time surveys along The Northern Road indicate that vehicles generally travel at speeds slower than the signposted speed limits. Delays at roundabouts, traffic turning right at priority intersections and delays caused by cars being unable to overtake heavy vehicles contribute to reduced travel speeds.

Queuing at the intersection of The Northern Road and Bradley Street is attributed to the current development of the Glenmore Park residential subdivision. Delays at this intersection are expected to increase following completion of the subdivision development. This issue is being temporarily addressed as part of the development, prior to the upgrade of the intersection as part of the Project.

## 4.4 Public transport network

### 4.4.1 Bus

Public bus route number 789 is operated by the Busways company in the Project area. This service operates as a peak hour only service, with services twice per day on weekdays and no services on weekends or public holidays.

Bus route number 789 provides transport between Penrith and Luddenham, with the majority of its route travelling along The Northern Road. There are 14 existing bus stops associated with this bus service on The Northern Road within the Project area. The existing bus stops and proposed locations for relocated and new bus stops are shown in Figure 4-2 and Figure 4-3.

Bus route 781, also operated by Busways, operates between St Marys and Penrith crosses the Northern Road at Glenmore Parkway, just north of the Project. This service is also only a peak hour service, with services twice per day on weekdays and no services on weekends or public holidays.

## 4.5 Pedestrian and cycling network

Pedestrian paths along The Northern Road within the Project area are limited to a short section of footpath on the western side of The Northern Road between Roots Avenue and the service station near Park Road at Luddenham.

There are no existing cycle paths in the Project area. The Roads and Maritime Cycleway Finder classifies The Northern Road as a high difficulty on-road environment for cyclists.

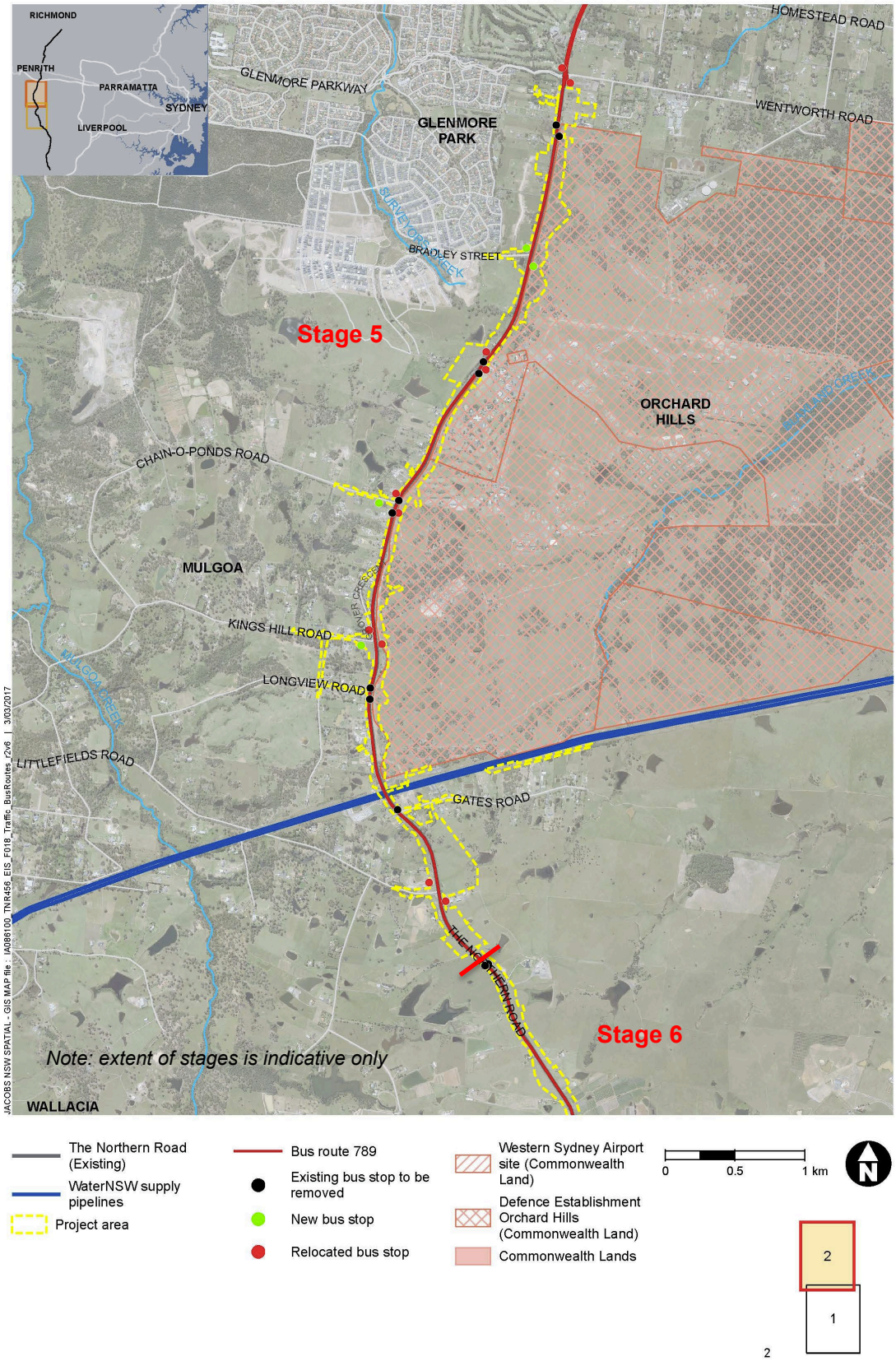


**Figure 4-2: Bus route 789 and bus stops in the Project area (northern section)**

*Source: EIS (Roads and Maritime, 2017)*

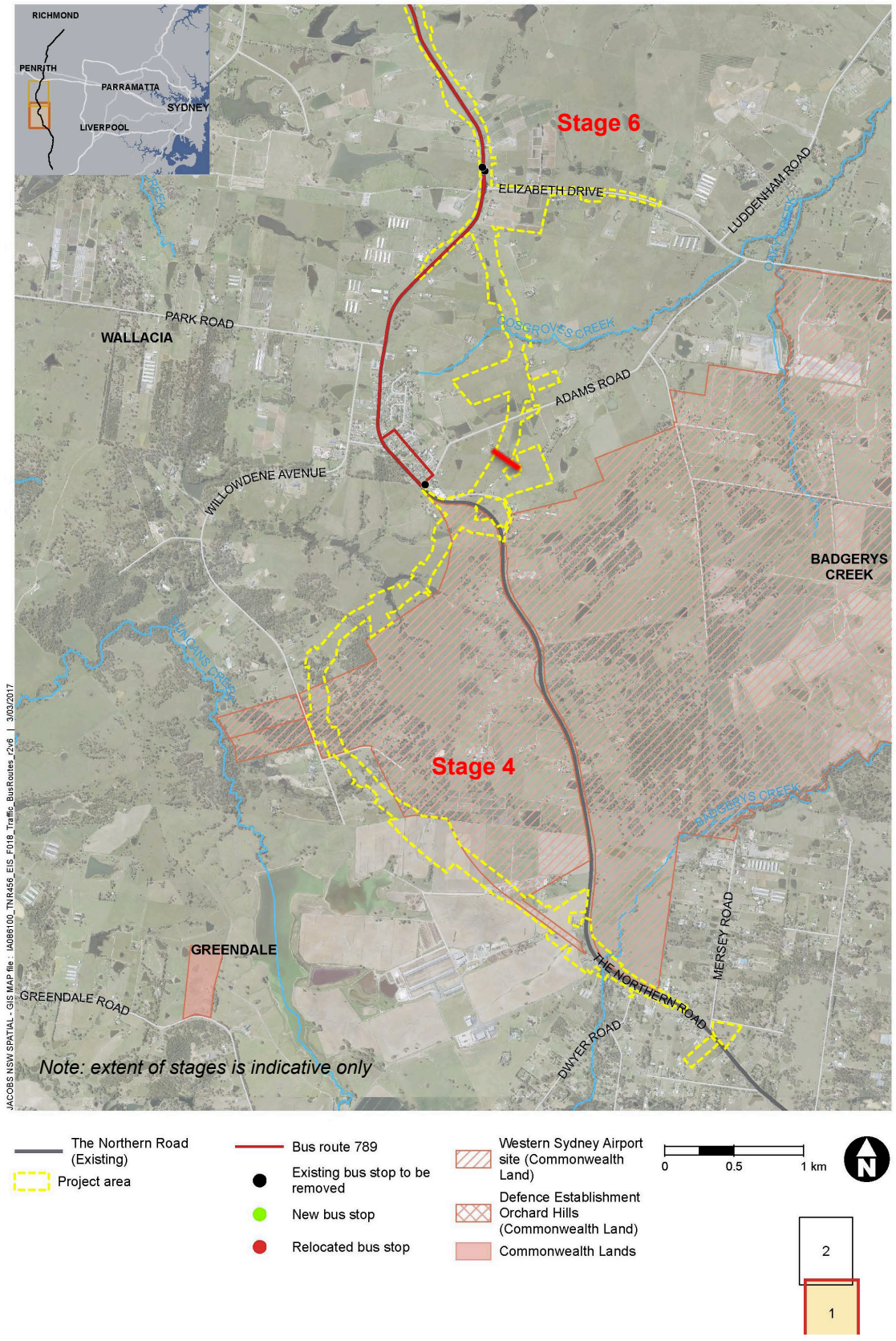


**Figure 4-3: Bus route 789 and bus stops in the Project area (southern section)**

*Source: EIS (Roads and Maritime, 2017)*

# 5 Construction traffic impacts

## 5.1 Traffic generating activities

An increase in traffic volumes is expected during Construction of the Project as a result of commuting workers and management staff to Construction sites, deliveries of equipment and the haulage of materials to and from the work sites.

The main traffic generating Construction activities comprise:

- materials (including spoil) haulage by heavy vehicles
- delivery of civil, concrete and paving materials
- movements of Construction equipment
- light vehicle movements (vans, utility pick-ups) associated with Construction staff and contractors.

The following will be required to support these Construction activities:

- traffic diversions for general traffic and for buses
- temporary relocation of bus stops
- speed limit restrictions around Construction zones.

## 5.2 Construction traffic impacts

The Project is expected to have minimal impact on the capacity of The Northern Road during Construction. There will be a temporary increase in traffic volumes during Construction as a result of commuting workers and management staff to sites, deliveries of equipment and the haulage of materials to and from the work sites.

Construction activities may result in the following impacts:

- increased travel times due to road works restrictions and reduced speed limits around Construction sites
- increased travel times due to increased truck and construction machinery movements
- increased travel times due to traffic diversions
- increased travel times due to temporary traffic calming measures
- temporary partial closure of roads and altered property access during Construction
- potential safety issues relating to increased heavy vehicle movements
- temporary changes to bus access arrangements, including stop relocation, resulting in increased walk distance for certain customers.

A preliminary estimate of Construction traffic movements associated with the Project results in the following estimates:

- 40 site management personnel working within the office may be required at the peak of Construction for each stage of the Project

- 230 employee light vehicle movements per day on average will be generated during peak Project Construction periods
- 100 heavy vehicle movements per day on average will be generated during peak Project Construction periods
- 62 light vehicle movements in peak hour (morning and afternoon) on average for any one worksite will be generated by construction workers during peak Project Construction periods.

The increase in average daily traffic volumes due to the Project will be less than a 5% increase in traffic over the day. The impact on traffic on The Northern Road and Elizabeth Drive is expected to be minimal.

## 5.3 Construction routes

### 5.3.1 Hours of work

Generally, Construction work will be undertaken during standard Construction working hours:

- 7:00 am to 6:00 pm Monday to Friday
- 8:00 am to 1:00 pm Saturday
- at no time on Sunday or public holidays.

There may be some requirement to undertake work outside standard working hours in order to minimise disruption to traffic. These works may include, but are not limited to:

- establishment of traffic control signs or devices
- implementation of traffic switches
- works that are impractical to undertake during the day due to disruption to traffic
- utility works.

Out of hours works will meet the requirements of NSW-CoA E26. The Contractors will implement management measures to minimise impacts to noise sensitive receivers and road users due to work outside standard working hours.

### 5.3.2 Ancillary facility access

A number of ancillary facilities are required for Construction of the Project. The locations of the proposed ancillary facilities assessed in the EIS and their access points are shown in Figure 5-1. The final type, location and number of ancillary facilities will be determined by the Construction Contractors and identified in their stage-specific Ancillary Facilities Management Plans, prepared as part of the Contractors' CEMPs.

The Northern Road will be the access point for the majority of the ancillary facilities, however there will be requirement for the use of some local roads by construction and light vehicles for work associated with local road upgrades.

### 5.3.3 Local road use

Local roads in the Project area that will be accessed by both construction and light vehicles include:

- Penrith City Council:
  - Bradley Street, Glenmore Park
  - Chain-O-Ponds Road, Mulgoa
  - Gates Road, Luddenham
  - Grover Crescent, Mulgoa
  - Kings Hill Road, Mulgoa
  - Longview Road, Mulgoa
  - Vineyard Road, Mulgoa
  - Littlefields Road, Mulgoa
- Liverpool City Council:
  - Eaton Road, Luddenham
  - Vicar Park Lane, Luddenham.
  - Elizabeth Drive, Luddenham (LCC/PCC)
  - Dwyer Road, Bringelly

No heavy vehicle access will be allowed on Willowdene Avenue. Light vehicle access only will also be required for Adams Road, as well as local roads around Luddenham town centre. Construction vehicle access may be required on Adams Road during bridge Construction.

Table 5-1 provides details of the local roads to be used for Construction of the Project, including the type of access and justification as to why use of the road is required. The use of the local roads identified in Table 5-1 for Construction of the Project has been identified in accordance with the requirements of NSW-CoA E54. These roads were identified and assessed in the EIS.

**Table 5-1: Local road use for the Project**

| Local road | Access required | Justification for use and why there are no alternatives |
|---|---|---|
| Bradley Street, Glenmore Park | • Construction (heavy and light) vehicle access<br>• Not a haulage route beyond the limit of works | • Access required to complete local road upgrade and tie-in under approved project scope |
| Chain-O-Ponds Road, Mulgoa | • Construction (heavy and light) vehicle access<br>• Not a haulage route beyond the limit of works | • Access required to complete local road upgrade and tie-in under approved project scope |

| Local road | Access required | Justification for use and why there are no alternatives |
|---|---|---|
| Gates Road, Luddenham | • Construction (heavy and light) vehicle access<br>• Not a haulage route beyond the limit of works | • Access required to complete local road upgrade and tie-in under approved project scope<br>• Haulage route is required to construct the new Gates link road between Gates Road and Littlefields Road. However the main access for this work would be from The Northern Road |
| Grover Crescent, Mulgoa | • Construction (heavy and light) vehicle access<br>• Not a haulage route beyond the limit of works | • Access required to complete local road upgrade and tie-in under approved project scope<br>• To access existing utilities and undertake utility relocation work |
| Kings Hill Road, Mulgoa<br>Longview Road, Mulgoa<br>Vineyard Road, Mulgoa | • Construction (heavy and light) vehicle access<br>• Identified as haulage route in EIS, not beyond the limit of works | • Access required to complete local road upgrade and tie-in under approved project scope<br>• Haulage route is required to construct a new link road (extension of Vineyard Road) between Kings Hill Road and Longview Road |
| Littlefields Road, Mulgoa | • Construction (heavy and light) vehicle access<br>• Not a haulage route beyond the limit of works | • Access required to complete local road upgrade and tie-in under approved project scope |
| Eaton Road, Luddenham | • Construction (heavy and light) vehicle access<br>• Not a haulage route beyond the limit of works | • Access required to complete local road upgrade and tie-in under approved project scope<br>• Early access to the Stage 4 site compound until other temporary traffic control is constructed as outlined in the Ancillary Facility Management Plan |
| Vicar Park Lane, Luddenham | • Construction (heavy and light) vehicle access<br>• Not a haulage route beyond the limit of works | • To complete the close of access to the Project boundary |
| Dwyer Road, Bringelly | • Construction (heavy and light) vehicle access<br>• Not a haulage route beyond the limit of works | • Access required to complete local road upgrade and tie-in under approved project scope |

| Local road | Access required | Justification for use and why there are no alternatives |
|---|---|---|
| Willowdene Avenue, Luddenham | • Light vehicles only | • Early access required to the alignment until the main alignment is fenced and creek crossings constructed |
| Adams Road, Luddenham | • Identified as haulage route in EIS from Adams Road to the existing The Northern Road<br>• Haulage will be up to the approved load limit of the road | • Access required to the alignment until haulage is possible along the main alignment<br>• Access to the proposed Stage 6 ancillary facility (as identified in the EIS) prior to the main alignment being constructed to the north and south |

Traffic movements to and from ancillary facilities are expected to have limited or minor impacts to the local road network, with the overall increase in average daily traffic volumes due to the Project expected to be less than 5%. Light vehicle movements will comprise the majority of the Construction traffic movements for ancillary sites.

All other access routes for ancillary facilities located on greenfield sites adjacent to new sections of road to be constructed will be through the work sites at those locations.

Local roads will not be included in any Traffic Management Plans for State Road traffic detours.

### 5.3.4 Haulage routes

Heavy vehicle movements to and from and within (where applicable) the site will be via The Northern Road and the M4 Western Motorway, as well as via Elizabeth Drive and the M7 Motorway. Heavy vehicle routes for the Project that were identified and assessed in the EIS are shown on Figure 5-1 and Figure 5-2. The use of local roads by heavy vehicles will be limited to those local roads identified in Section 5.3.3.

Where a change to the heavy vehicle routes identified in Figure 5-1 and Figure 5-2 is justified on the basis that there is no other reasonable or feasible alternative, the Contractors will be required to consult with Liverpool City Council and Penrith City Council, as relevant, to determine the potential impacts associated with the proposed change and any additional controls required. The Contractors will prepare a Consistency Assessment to ensure that the proposed modification to heavy vehicle routes is consistent with the approved Project, and meets the requirements of the EIS, as amended by the SPIR. Minimum criteria to be met by the Contractors where an alternative heavy vehicle route is identified is provided in Section 6.1.2. The Consistency Assessment will be reviewed by the Roads and Maritime Project Manager and Environmental Manager (or delegate) and endorsed by the ER.

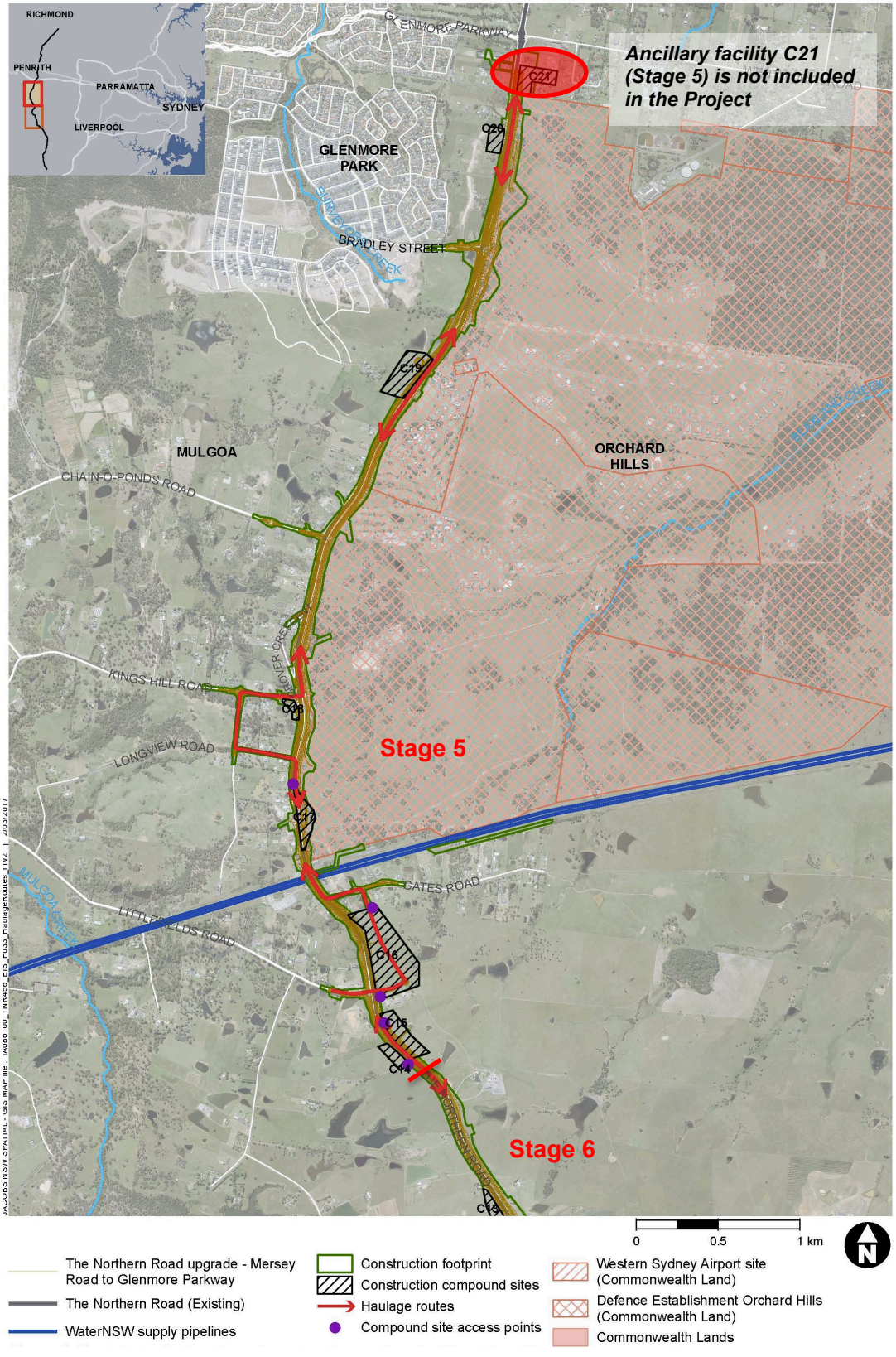


**Figure 5-1: Ancillary facility locations and heavy vehicle routes for the Project (northern section)**

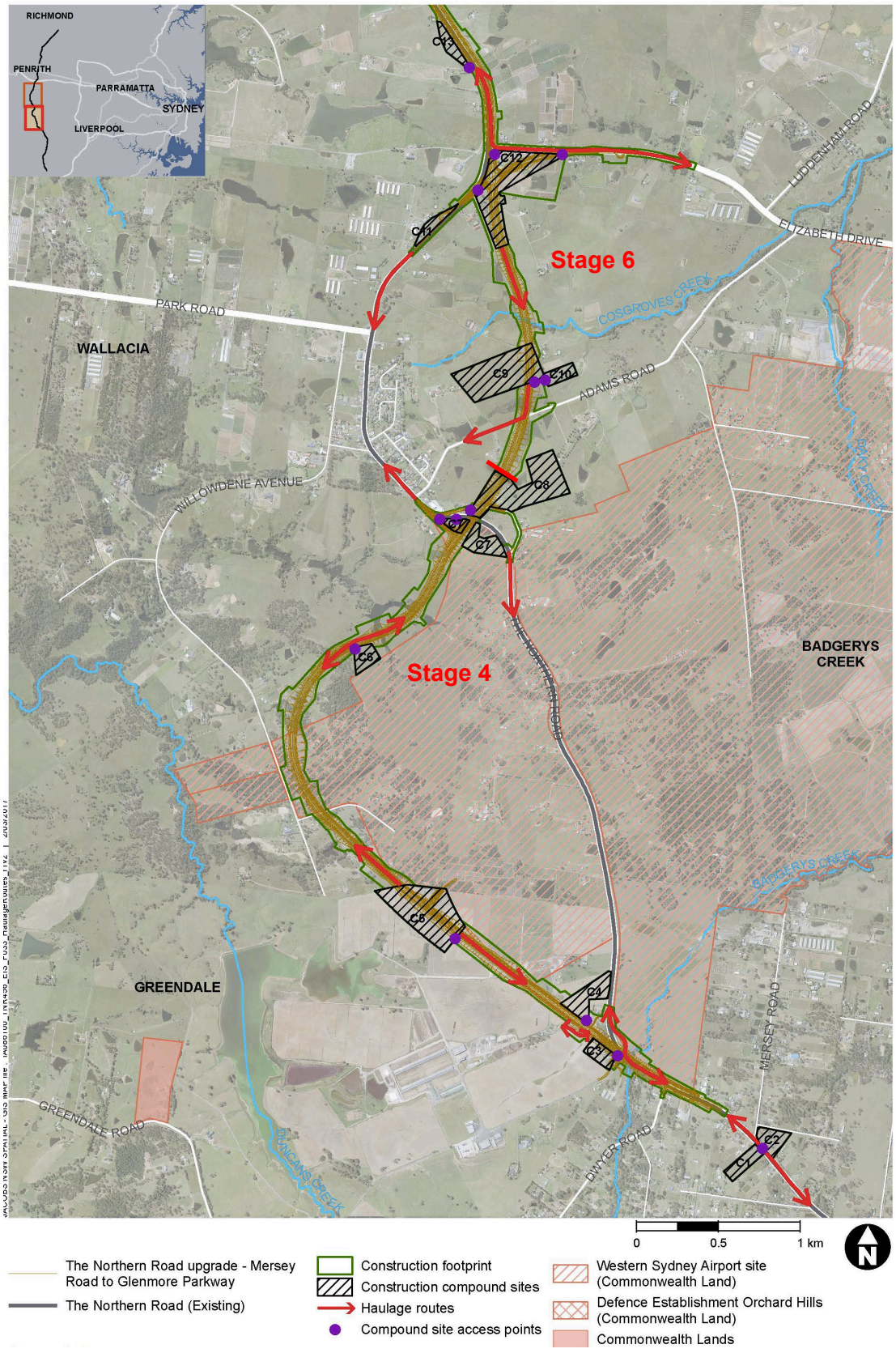


**Figure 5-2: Ancillary facility locations and heavy vehicle routes for the Project (southern section)**

## 5.4 Public transport

Construction of the Project will directly impact bus route 789, and potentially bus route 781, however the level of disruption is expected to be low. Bus travel times may increase due to reductions in travel speeds when travelling through Construction activity areas. Temporary relocations of some bus stops along The Northern Road will be required and alternative access routes will be implemented for relocated bus stops. Safe crossing points with sufficient lighting for the changed locations will be provided for bus commuters.

Construction Contractors will consult with the bus operator (Busways) regarding the relocation of bus stops prior to commencement of Construction. Local residents and businesses will be informed of any changes to bus operations and access during Construction. Consultation and communication with affected bus operators and the community will be in accordance with the CCS.

## 5.5 Pedestrian and cyclist access

Construction of the Project will affect pedestrian and cyclists, who may be required use temporary alternative paths where sections of The Northern Road are inaccessible. Due to the staged approach of Construction, temporary arrangements are likely to be in place for up to three years.

## 5.6 Property access

Access to properties will be maintained during Construction at all times, unless otherwise agreed with property owners and businesses, to limit the duration of any impacts.

## 5.7 Parking

Parking for Construction personnel will be provided at ancillary facilities. No impact on surrounding public parking areas is expected due to the Project.

## 5.8 Road safety

Construction activity along The Northern Road is likely to have the following impacts on road safety:

- increased risk of loss of traction or control on temporary pavement surfaces
- increased risk of conflicts between cars, trucks and Construction vehicles
- reduced lane widths and increased proximity to barriers increasing risk of collisions
- increased risk of driver distraction around Construction activities
- decreased visibility of temporary line marking and other traffic control measures
- increased risk of collision at Construction site egress points.

## 5.9 Emergency services

Construction of the Project has the potential to cause delays to response times for emergency services. Delays due to Construction activities, queuing traffic and reduced speed limits may disrupt emergency services. Procedures to minimise the impacts to emergency services during Construction are incorporated into this CTMP.

## 5.10 Cumulative construction traffic

Potential cumulative construction impacts may occur from the aggregated effect of other developments preparing for or starting Construction, including cumulative traffic disruptions to road users travelling along The Northern Road and connecting local roads within the Project area. Projects that may contribute to cumulative traffic impacts due to location, timeframe and project size include:

- The Northern Road upgrade between Glenmore Parkway and Jamison Road
- M4 Smart Motorway civil work
- Bringelly Road upgrade Stage 1 and 2.

Traffic generated by additional heavy vehicle and light vehicles during the construction of these projects will result in higher than normal car and truck movements on The Northern Road and Elizabeth Drive.

In addition, construction of the proposed M12 Motorway and Western Sydney Airport is likely to commence following completion of the Project, resulting in continuous construction activity in the area surrounding the Project for up to five years when considered together.

# 6 Environmental mitigation and management measures

A range of environmental requirements and management measures are identified in the EIS and SPIR, the conditions of approval and relevant Roads and Maritime documents. Specific measures and requirements to address traffic and transport impacts are provided in Table 6-1.

**Table 6-1: Traffic and transport revised environmental management measures**

| ID | Measure / requirement | When to implement | Responsibility | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | | | Cth | NSW | Cth | NSW | NSW | |
| **Construction impacts** | | | | | | | | | |
| T-1 | A Construction Traffic Management Plan (CTMP) would be developed, approved, implemented and monitored as part of the project. The TMP would: | Pre-Construction Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | This CTMP |
| | • Outline the general principles and procedures for the development of specific construction traffic control plan (TCPs), taking into consideration where possible other construction works utilising similar haulage and access routes | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1 |
| | • Ensure safe and continuous traffic movement for construction workers and the general public | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1 Contractors' TCPs |
| | • Maintain the capacity of existing roads where possible | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1 Contractors' TCPs and VMPs |
| | • Identify the requirements for temporary speed restrictions where traffic may pose a safety risk to workers | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.5 |
| | • Maintain continuity of access to local roads and properties, particularly along the existing alignment of The Northern Road (may require temporary u-turn facilities). Where access is affected, RMS would consult with residents for alternative access arrangements | Construction | Contractor Traffic Manager / Contractor CRM | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.9 |
| | • Details of access to construction sites including measures to prevent construction vehicles queuing on public roads | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.3.3 |

| ID | Measure / requirement | When to implement | Responsibility | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | | | Cth | NSW | Cth | NSW | NSW | |
| | • Provide temporary traffic control where necessary | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.2 Contractors' TCPs |
| | • Provide appropriate warning and signage for traffic in the vicinity of work areas | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Sections 6.2 and 6.6, Contractors' TCPs, Signage Strategies (in TCP) |
| | • Include methods to minimise road user delays such as undertaking works around live traffic including tie-in and bridge work outside of peak periods | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.3.3 |
| | • Undertake Construction activities off-line where possible to minimise the requirement to operate temporary traffic control and reduced speed zones | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.4 |
| | • Develop a communication plan to advise local residents and businesses of any changes to traffic conditions during Construction | Pre-Construction/ Construction | Contractor Traffic Manager / Contractor CRM | ✓ | ✓ | ✓ | ✓ | ✓ | Section 7.2, CCS |
| | • Consult with bus operators regarding temporary bus stop relocations during Construction and proposed bus stops during operation. | Pre-Construction/ Construction | Contractor Traffic Manager / Contractor CRM | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.8, CCS |
| | • Ensure the use of local roads by heavy vehicles to access temporary ancillary facilities would be limited as far as is reasonably practicable. | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1 |

| ID | Measure / requirement | When to implement | Responsibility | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | | | Cth | NSW | Cth | NSW | NSW | |
| **Construction staging** | | | | | | | | | |
| T-2 | Staging plans to be prepared in consultation with adjoining contractors and for each stage of the upgrade. | Pre-Construction/ Construction | Contractor Construction Manager / Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1.1 Contractors' Traffic Staging Plans |
| **Road damage** | | | | | | | | | |
| T-3 | Undertake a Pre-Construction dilapidation survey of local roads used for Construction. Defects caused by Construction activities would be rectified prior to completion of Construction | Pre-Construction | Contractor Construction Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.14 |
| **Property access** | | | | | | | | | |
| T-4 | Access to properties along affected roads would be maintained during Construction. The need for any alternative and/or temporary access arrangements would be agreed with affected property managers/owners | Construction | Contractor Traffic Manager / Contractor CRM | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.9 |
| T-6 | Roads and Maritime will consult further with all utility providers on required access and consents for utility corridors prior to Construction | Pre-Construction/ Construction | Roads and Maritime Project Manager / Contractor Construction Manager | ✓ | ✓ | ✓ | ✓ | ✓ | CCS (separate document) |

| ID | Measure / requirement | When to implement | Responsibility | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | | | Cth | NSW | Cth | NSW | NSW | |
| **Local road upgrades** | | | | | | | | | |
| T-5 | Roads and Maritime will consult with Councils regarding the requirements for upgrade of local roads. | Pre-Construction | Contractor Construction Manager / Roads and Maritime Project Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 1.4, Annexure A, CCS (separate document) |
| **Construction noise impacts** | | | | | | | | | |
| NV-2 | Viable mitigation measures that would be expected to be deployed by the Construction Contractor once the final Construction sequencing and scheduling is known include: | Construction | Contractor Traffic Manager | | | | | | Appendix B3 CNVMP |
| | • Restricting heavy vehicle movements, heavy deliveries and loading and unloading processes to daytime periods and to areas well away from receivers | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1 |
| | • Haulage routes will be located as far away as possible from residential receivers, where this is reasonable and feasible | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1 |
| | • Loading and unloading will be carried out away from sensitive receivers, where practicable | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.1 |
| **Business and economic activity** | | | | | | | | | |
| SE-12 | Access to existing businesses would be provided on a continuous basis throughout the Construction of the project. | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Sections 6.8, 6.9 |

| ID | Measure / requirement | When to implement | Responsibility | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | | | Cth | NSW | Cth | NSW | NSW | |
| **Access and connectivity** | | | | | | | | | |
| SE-14 | The Traffic Management Plan would include a signage strategy (consistent with Roads and Maritime policy) to provide guidance to passing patrons on access to shops, services and businesses during Construction | Construction | Contractor Traffic Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Sections 6.1, 6.2 and 6.6, Contractors' Signage Strategies (in TCP) |
| SE-15 | Access to properties would be provided on a continuous basis throughout the Construction of the Project. Where temporary changes to property access are required, alternate access should be determined in consultation with affected property owners and tenants. | Construction | Contractor Traffic Manager / Contractor CRM | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.9 |
| SE-16 | Access for pedestrians and cyclists near Construction works would be maintained, including consideration of pedestrian access needs for elderly people, children and people with disability. | Construction | Contractor Traffic Manager / Contractor CRM | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.7<br>Contractors' Pedestrian Movement Plans |
| **Cumulative impacts** | | | | | | | | | |
| CI-1 | Consultation would be undertaken with local communities potentially affected by the impacts of multiple projects in addition to the project. | Construction | Roads and Maritime Community and Stakeholder Advisor / Contractor CRM | ✓ | ✓ | ✓ | ✓ | ✓ | Section 7.2 |
| CI-2 | Where relevant, consultation would be undertaken with proponents of other nearby developments to increase the overall awareness of project timeframes and impacts. | Construction | Contractor Traffic Manager / Contractor Construction Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 7.2 |

| ID | Measure / requirement | When to implement | Responsibility | Applicability | | | | | Reference |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Stage 4 | | Stage 5 | | Stage 6 | |
| | | | | Cth | NSW | Cth | NSW | NSW | |
| CI-3 | Construction traffic management plans for this project should be developed in consultation with plans for other projects to assist in spreading the traffic load over the network and to minimise construction traffic being concentrated on any one particular route. | Construction | Contractor Traffic Manager / Contractor Construction Manager / Roads and Maritime Project Manager | ✓ | ✓ | ✓ | ✓ | ✓ | Section 6.15 |

## 6.1 Construction traffic management

### 6.1.1 Traffic Staging Plans

The Project will be delivered in three stages. The Contractors responsible for delivering each stage will prepare Traffic Staging Plans as part of their stage-specific CTMPs. The purpose of the Traffic Staging Plans is to show how traffic will be managed through the Project area to ensure the safety of Construction site personnel and road users.

The Contractors' Traffic Staging Plans will include, but not be limited to, road design drawings showing traffic lane configurations to be provided for traffic passing through the Construction sites, including details of road alignment and geometry, intersection layouts, provision for buses and cyclists, work areas and pedestrian areas, drainage, signs and pavement markings.

### 6.1.2 Construction vehicle management

***Vehicle movements***

The Contractors will manage Construction vehicle movements to ensure the safe passage of all forms of traffic through and around the Project area during Construction. Vehicle movements will be planned to ensure that there is no reduction in the traffic capacity of The Northern Road and all roads adjacent to the Project area. Traffic management will be planned in coordination and consultation with the Transport Management Centre (TMC). Construction vehicle movements may include:

- deliveries of material, supplies, plant or equipment
- material haulage
- movement of Construction site personnel.

Through traffic on either existing roads or detour routes will be maintained where possible during Construction activities to minimise the impact on traffic flows on The Northern Road and other public roads. Construction deliveries will be timed to occur outside peak traffic periods where possible, to minimise impacts on the road network.

Detailed Traffic Control Plans (TCPs) will be prepared by the Contractors to identify measures that will be installed to warn traffic and guide it around or past the Construction sites. TCPs may be in the form of written documents and/or diagrams. TCPs will incorporate Vehicle Movement Plans (VMPs) and Pedestrian Movement Plans (PMPs) as relevant. TCPs will also identify any property or business access issues related to Construction.

TCPs will be submitted to the Roads and Maritime Project Manager for approval at least three working days before the commencement of any activity which affects traffic conditions for a particular section of the Project. TCPs will be prepared in consultation with the TMC, all relevant stakeholders including Penrith City Council, Liverpool City Council and local bus companies. The Contractors will coordinate their stage-specific TCPs with each other and also consider those already in place at any other project concurrently under construction within the vicinity of the Project to ensure that no additional delay is caused to road users. The Contractors will monitor traffic movements and modify Construction activities and/or traffic control arrangements in the event that delays or congestion occurs as a result of the traffic control arrangements in place.

Emergency services will be notified in advance of changes to traffic conditions (e.g. partial or total road closures).

The Contractors will prepare VMPs as part of their CTMPs. VMPs will be integrated with TCPs as relevant. VMPs generally consists of diagrams that illustrates the travel paths for vehicles entering, leaving or crossing the traffic flow. VMPs describe measures to ensure the safety of pedestrians and local traffic associated with Construction. They identify access points, traffic movement routes, turning areas and parking areas for Construction vehicles, delivery vehicles and workforce vehicles.

VMPs will be planned in consideration of the location of sensitive receivers, with provision for sufficient vehicle parking and turning areas to ensure there is no queueing of vehicles with idling engines outside of standard hours. Construction site personnel will be trained on start up and shut down processes for Construction vehicles and plant to minimise noise impacts on sensitive receivers.

***Haulage routes***

Heavy vehicle routes and ancillary facility access points to be used for Construction of the Project are shown on Figure 5-1 and Figure 5-2.

The Contractors will undertake detailed planning of haulage routes and vehicle turning movements during preparation of the Contractors' CTMPs. The Contractors' CTMPs will include an indicative assessment and impact of the number and timing of additional Construction vehicle traffic movements on the haulage routes identified in Figure 5-1 and Figure 5-2 that will be generated by Construction of each stage of the Project that the Contractors are responsible for delivering. . The Contractors' CTMPs will include detailed maps illustrating haulage routes between material source sites and ancillary sites, details of the haulage route roads, direction of travel, access points to ancillary facilities and Construction sites, locations of any sensitive receivers and any limitations of the haulage route. Where possible, vehicle and plant movements, including turning areas, will be within the limit of the works and will be identified in the Contractors' TCPs. Restrictions on the use of local roads by Construction vehicles are detailed in 5.3.3. Regular toolbox talks will be conducted to ensure that all Project personnel are aware of haulage routes and vehicle movement flows for Construction sites.

Haulage routes will be planned to restrict heavy vehicle movements, heavy deliveries, and loading and unloading processes to daytime periods and to locations at a suitable distance from sensitive receivers to minimise disturbance. Reduced speed limits for haulage routes across Construction sites will be imposed in order to minimise noise and emissions and to provide increased safety across the sites for personnel. The Contractor Foreman will ensure that all haulage vehicles that are transporting materials to and from Construction sites have their loads secured and covered to prevent spillage or emissions.

In the event that the Contractors identify potential alternative haulage routes or Construction access tracks on the basis that there is no other reasonable or feasible alternative, the Contractors will prepare a Consistency Assessment for submission to Roads and Maritime and the ER. The assessment will provide evidence that the use of alternative haulage routes or access tracks is justified and that impacts are generally in accordance with the approved Project and the EIS, as amended by the SPIR, as per NSW-CoAs A1 and A2. Alternative

haulage routes or Construction access tracks will, as a minimum, meet the following requirements:

- be located on relatively flat ground to minimise soil and water quality impacts
- be located as far away as possible from residential receivers, where this is reasonable and feasible
- be located where there is easy and safe access to the Construction site
- will have no impact upon matters listed under the EPBC Act or *Biodiversity Conservation Act 2016*
- will result in no additional vegetation clearing (over and above that approved as part of the Project).

For haulage routes or access tracks located outside the Construction footprint, further environmental assessment and approval may be required.

The planning of haulage routes will occur in consultation with Penrith City Council and Liverpool City Council.

### 6.1.3 Ancillary facilities traffic management

A number of ancillary facilities are required to support the Construction of the Project. The locations of the approved ancillary facilities for each stage of the Project are shown in Appendix A4 and will be confirmed by the Contractors and detailed in their Ancillary Facility Management Plans. Access to ancillary facilities will generally be via the existing sections of The Northern Road. The use of the local roads identified in Section 5.3.2 by construction vehicles to access ancillary facilities will be monitored and minimised as far as possible.

Traffic management for ancillary facilities will be planned to minimise effects on existing traffic flows. Dedicated light and heavy vehicle turning areas and temporary traffic management measures, if required, will be developed and detailed in the Contractors' VMPs.

## 6.2 Traffic control signs and devices

Traffic control devices include signs, traffic signals, pavement markings, traffic islands, and other devices used to regulate, warn and/or guide road users. Traffic control devices for the Project include:

- safety barriers
- pavement markings and signs
- portable VMS
- temporary traffic signals
- radar activated speed signs
- temporary speed zones
- lighting towers.

Traffic control signs and devices required during Construction will be identified by the Contractors in TCPs and implemented in accordance with the Traffic Control at Worksites

manual (RTA, 2010). The Contractors will obtain all necessary approvals for traffic control devices used on the Project.

## 6.3 Temporary roadways and detours

### 6.3.1 Traffic switches

Traffic switches will be required at different locations within the vicinity of the Project. Traffic switches will be planned and designed in accordance with relevant Roads and Maritime specifications, Australian Standards and Austroads guidelines. The Contractors will prepare a TCP for each traffic switch implemented. The TCP will describe the traffic control devices to be used for the traffic switch. Traffic switches will only be used where the usual construction workforce will be on site for a minimum of two days.

Approval for traffic switches will be obtained from Roads and Maritime and the relevant local Council. The Emergency Services and local community will be informed of upcoming traffic switches.

An independent safety audit of the traffic switch and inspection of all traffic switch control devices and related infrastructure will be carried out prior to its implementation.

### 6.3.2 Lane adjustments, reduced shoulders and detours

Temporary adjustments to lanes, road shoulders or traffic detours will be designed in accordance with Roads and Maritime specifications and guidelines and the *Traffic Control at Worksites Manua*l (RTA, 2010) by a suitably qualified designer who is experienced in the design of roads to Roads and Maritime standards.

All signage, safety barriers or other traffic control devices must be in place prior to opening traffic to the temporary roadway or traffic detour.

Local Roads (refer Section 5.3.3) will not be identified for State Road traffic detours in any Traffic Management Plans.

### 6.3.3 Road user delay management

Road user delays due to the Project will be minimised through the design of TCPs and the planning of Construction activities and road occupancy.

The Contractors will develop and implement delay minimisation strategies to minimise road user delays in their stage-specific CTMPs. The measures will be designed to minimise traffic disruptions for road users, particularly during peak periods, minimise the amount of road closed to traffic at any one time, and maintain access and road user awareness of changes in traffic conditions and delays.

A traffic queue means the situation where the traffic is backed up on a roadway either stationary or moving at a rate much slower than the designated posted traffic speed limit signage. Traffic queues caused by road occupancies or Construction activities, measured visually along a single lane in any direction along The Northern Road or any local road will not exceed 200 m in length. If traffic queues reach this limit, the responsible traffic controller will be required to remove the cause of the delay until the flow of traffic returns to free flow conditions. The Contractor Traffic Managers will monitor, measure and record traffic queue

lengths. The results of the queue length monitoring will be included in the weekly reports submitted to the Roads and Maritime Project Manager in accordance with Specification G10.

## 6.4 Road occupancy

### 6.4.1 Road Occupancy Licence

Construction of the Project may require closing of shoulders and lanes on either the existing, temporary or new pavements of The Northern Road or connecting local roads. A ROL will be obtained by the Contractors if an existing road is to be used in such a way that it affects traffic flow within the vicinity of the Project works. Road occupancies include:

- shoulder occupancies and/or closures
- lane occupancies and/or closures
- any occupation of the Construction site by site personnel (including sub-contractors), equipment or plant that requires a traffic control plan
- any other event, including utility works, that causes delays to traffic flows.

Road occupancies involving closure of any shoulder or auxiliary lane will provide a minimum of one travel lane in each direction at all times during the road occupancy.

Applications for ROL will be prepared by the Contractor in accordance with the *Road Occupancy Manual* (TMC, 2015) and will comply with the road safety and traffic management principles, objectives and targets outlined in this CTMP. Applications will be submitted to the TMC at least 10 working days before the planned commencement of the work activity that requires road occupancy. The submission will include a description of the work to be conducted, design drawings if relevant, a program of the works, a TCP, vehicle management plan, details of SZA submission (if applicable), and contact details of the Contractor Traffic Manager or delegate. The TCP associated with the ROL will be submitted to Roads and Maritime for approval at least 10 working days prior to commencement of the ROL.

The Contractors will develop a travel time monitoring program to measure compliance with the ROL. Reporting on compliance with ROLs will be included in the weekly reports prepared for the Roads and Maritime Project Manager.

The Contractor Traffic Manager or delegate will advise the TMC on 1300 725 886 when closing and reopening traffic lanes, quoting the relevant ROL number. Copies of approved ROLs will be retained at the location of the relevant road occupancy and on-site.

The Contractors will provide the Roads and Maritime Project Manager with a weekly forecast of the proposed road occupancies for the following week. In preparing forecasts for ROLs, the Contractors will liaise with other contractors undertaking adjacent concurrent works which may involve road occupancies in order to minimise cumulative impacts associated with multiple road/shoulder closures. This includes, but is not limited to, the following projects concurrently under construction:

- Bringelly Road Upgrade Stage 2- King Street to The Northern Road
- The Northern Road Upgrade Stages 2 and 6
- adjacent property and land developers.

### 6.4.2 Periods for implementation of road occupancies

Road occupancy will not be implemented for single lane closures in two-lane carriageway during the following time periods:

- 5.00 am to 10.00 am Monday to Friday (except public holidays)
- 2:30 pm to 8.00 pm Monday to Friday (except public holidays)
- 1.00 pm to 7.00 pm Saturday (except public holidays)
- 9.00 am to 7.00 pm Sunday (except public holidays)
- from 6.00 am on the day prior to a declared public holiday until 6.00 pm on the day following the public holiday
- the last weekday before and the first weekday after NSW Public School Holidays

Road occupancy will not be implemented for full carriageway closure (in a single direction or both directions) at any time.

## 6.5 Speed management

Temporary speed zones may be implemented to assist in controlling the speed of traffic through roadwork sites. A reduced roadwork speed zone will only be implemented where it is warranted. The Contractor Traffic Managers will assess whether roadwork speed zones are necessary to assist in controlling vehicle speeds.

Roadwork speed limits and zoning in road occupancies must comply with Traffic Control at Work Sites manual (RTA, 2010) and the NSW Speed Zoning Guidelines (RTA, 2011).

The key principles for the effective implementation of roadwork speed limits are:

- they are self-enforcing or will be enforced
- they are not used alone but with other traffic control signs and devices
- they are not used in place of more effective means of traffic controls
- they are only to be used while roadworks are in progress or there are temporary safe road conditions.

The Contractors will apply for SZA prior to implementation of temporary speed zones, as part of the ROL application process described above.

The Contractors will maintain the signposted speed regime along The Northern Road, except where an approved ROL is in place. Speed restrictions of 60 km/h during ROL periods will be imposed where Construction works are being carried out directly adjacent to the traffic lanes. Temporary speed restrictions to 40 km/hr may be permitted for short periods during ROL periods wherever temporary traffic conditions require speed reduction for safety.

The Contractor Traffic Managers will retain copies of all approved SZAs on site and provide a copy to NSW Police and Liverpool City Council or Penrith City Council, as relevant. The Contractors will maintain a record of times when temporary speed zoning signs are in place.

The community will be informed of any SZA to be implemented via advertising and signage.

## 6.6 Signposting and delineation

Disruption to local businesses due to Construction will be minimised by providing signage to direct road users and the community to local businesses, tourist and other services and Council and community facilities in the Project area or areas affected by the Project. Where motorist, pedestrian or cyclist access to businesses or other properties is restricted due to Construction activities, signage will be implemented in consultation with affected businesses and property owners in accordance with NSW-CoA E57, Section 1.4.2 of this CTMP and the approved CCS for the Project.

The Contractors will make all arrangements with all affected business owners or persons in relation to the impacts and consequences of disruption due to Construction activities, prior to any disruption occurring. The Contractors will involve affected business and property owners in close proximity to the Project in the design and planning of Construction activities and provide adequate notification and consultation to ensure appropriate signage and access requirements. Prior to any anticipated disruption due to Construction, the Contractors' Community Relations Managers (CRMs) will conduct face-to-face meetings with affected businesses and properties to determine a satisfactory alternate signposted route or entry point. Where appropriate, regular meetings with affected businesses will be scheduled to discuss requirements for access and signage prior to Construction commencing. Businesses in the Project area that have been identified as requiring such consultation are outlined in the approved CCS and include Leppington Pastoral Company, businesses at Luddenham Town Centre and the Defence Establishment at Orchard Hills.

Temporary way-finding signage to guide motorists, pedestrians or cyclist seeking businesses or other properties that are affected by Construction will be installed prior to disruption caused by changes to the road network or traffic systems. Any temporary signage provided will have no adverse impacts on access to the business or property, and entry points will be maintained as close as possible to existing entry points. Signage will be developed in consultation with affected businesses and properties and consistent with the *Guide: Signposting* (RTA, 2007) and *Tourist Signposting Guide* (Roads and Maritime and Destination NSW, 2012). The Contractors will undertake regular inspections of way-finding signage to ensure its effectiveness.

The details of controls for maintaining access will be provided as part of the Contractors' TCPs, which will include a Signage Strategy that identifies the types and locations for signage that will be implemented. The Signage Strategy will be developed in consultation with affected local businesses and properties, Penrith City Council and Liverpool City Council, and other relevant authorities. The Signage Strategy will be developed in accordance with *Guide: Signposting* (RTA, 2007) and *Tourist Signposting Guide* (Roads and Maritime and Destination NSW, 2012) to outline the measures to be implemented to minimise disruption and access to businesses and properties in the Project area due to Construction. The Signage Strategy will include:

- a review of existing signage along the Project corridor, which may include:
    - private and commercial signage
    - street signage
    - visitor information signage
    - tourist directional signage

  - parking, pedestrian and public transport facilities signage
- the principles to be adopted for the signage strategy, such as:
  - principles for signage design – ensuring signs are highly visible, clear and easy to understand, of appropriate size and style
  - principles for signage placement – positioned in accordance with relevant Australian Standards, clearly legible to motorists, pedestrians and cyclists and without causing an obstruction, positioned at eye level for motorists, minimising clutter in the roadway
- the implementation program for the strategy, which will detail the methods and timing for following steps:
  - audit of existing signage
  - consultation with stakeholders
  - identification of locations where signage will be required
  - liaise with local businesses, properties, the relevant local Council and Roads and Maritime to design and arrange signage
  - removal of existing signage, if required
  - installation of signage, which will occur progressively in consultation with affected stakeholders and prior to any disruption from Construction
- a monitoring and maintenance program for signage to ensure signs are effective and remain fit for purpose, including:
  - development and maintenance of a database of installed signage, including sign location, type and installation date
  - audit program of signage installed to assess its effectiveness, including consultation with affected business and property owners
  - inspections as part of the weekly environmental inspections to check for damage or removal of signage installed
  - a process for cleaning or replacement of signage as soon as feasibly practicable where vandalism, damage or removal occurs.

During Construction, the Contractors will maintain ongoing timely communication with affected businesses and properties on Project timing, changes to traffic conditions and access arrangements. This will include notice on timing and duration of activities and potential localised impacts. Information will be provided to, and sought from, affected business and property owners via various methods, including letterbox drops, face-to-face meetings, community information events and meetings, and the Project website. Further details are provided in the CCS.

## 6.7 Pedestrians and cyclists

### 6.7.1 Pedestrians

Key pedestrian movements (formal and informal) along The Northern Road and all intersecting roads, where safe, reasonable and feasible, will be maintained during Construction. The Contractors will prepare PMPs as part of the Contractors' CTMPs in accordance with *Guide to Road Design Part 6A: Paths for Walking and Cycling* (Austroads,

2017). The PMPs will consist of diagrams showing the allocated travel paths for Construction site personnel and pedestrians around or through Construction sites.

Where Construction work areas restrict access to existing footpaths or crossings, alternative routes will be developed. Where pedestrian access to businesses or properties is affected by Construction, arrangements for alternative pedestrian access, and way-finding signage if requested, to affected businesses or properties will be developed by the Contractor CRMs in consultation with business or property owners prior to any disruption occurring, in accordance with the requirements of NSW-CoA E57, the ongoing consultation outlined in Section 1.4.2 and the approved CCS for the Project.

The pedestrian facilities at these locations to be outlined in the PMPs include:

- fit for purpose, all weather sealed temporary footpaths
- upgraded pram-appropriate surfacing for paths located near schools and childcare centres
- signposting and devices to guide pedestrians or site personnel along allocated walkways or paths
- defined work areas to ensure pedestrians avoid travelling between any safety barrier system and live traffic.

Details of diversions or changes to pedestrian movement will also be included in TCPs implemented during Construction.

The Contractors will undertake regular monitoring of footpaths or walkways to assess condition and identify any hazards.

### 6.7.2 Cyclists

The Northern Road provides an important recreational and club cycle route. The Contractors will maintain a standard of cyclist facilities equal to that of pre-Construction condition. Changes to cyclist movements or facilities will be outlined in diagrams and notes included in TCPs. Any temporary cycle paths or cycle crossings will be designed in accordance with the *Guide to Road Design Part 6A: Paths for Walking and Cycling* (Austroads, 2017) and *NSW Bicycle Guidelines*.

The following cyclist movement management measures will be included in the Contractors' TCPs:

- clear and appropriate signage to inform cyclists of changed traffic conditions
- safety provisions, such as signposting, bollards and barriers where necessary
- provision of shoulders for cyclists in front of any temporary barriers if alternative provisions (suitable for a club cycle route, including alignment and grades) are not provided
- provisions to ensure the surface and cleanliness of shoulders are appropriate and maintained throughout Construction.

The Contractors will undertake regular inspections and monitoring of cyclist facilities during Construction to ensure that the safety of cyclists is maintained.

## 6.8 Public transport

Construction activities and traffic management measures have the potential to cause disruption to bus route 789 along The Northern Road. The Contractors will consult with the Busways bus company prior to commencement of Construction to advise of activities that will impact bus operations and to agree suitable locations to relocate bus stops and access points along the route, where required.

The Contractors will also liaise with local schools and bus proprietors to ensure that appropriate facilities are made available for buses to stop, particularly for school children during school terms. Measures to ensure awareness and safety will include:

- clear signage directions to and for relocated bus stops
- pedestrian facilities to enter and exit the buses
- safe pedestrian access across active roadways and construction zones to bus stops
- temporary indented bus bays of appropriate size and that do not restrict traffic flow on The Northern Road
- bus turning points on The Northern Road.

Consultation will be undertaken in accordance with the Project CCS.

The Contractor Traffic Managers will invite bus operators to attend weekly traffic control and stakeholder meetings that will occur for the duration of the Project.

## 6.9 Property access

Access to all properties will be maintained during Construction unless otherwise agreed by the relevant business owner, property owner or occupier.

The CRMs will consult with property or business owners identified as being potentially impacted by traffic management arrangements, as required by NSW-CoA E57. Consultation will occur four weeks prior to the commencement of any Construction works that will affect property or business access in accordance with the requirements of Specification G10 and the approved CCS for the Project. The purpose of the consultation is to inform property or business owners of the extent and timing of the Construction works that will affect access, identify temporary alternative access arrangements or other management measures and determine any special arrangements required. The Contractor CRMs will maintain regular communication with affected property or business owners during the period that Construction impacts access.

Disruption to property access will be minimised by:

- providing all-weather access arrangements for vehicles required to cross active Construction sites to access properties
- maintaining existing parking arrangements at bus stops
- ensuring continuity of services to properties such as garbage collection and mail delivery
- ensuring awareness of Construction workers to access arrangements, including movement of Construction vehicles near property access points
- maintaining existing turn movements to all properties and businesses.

## 6.10 Parking

The locations for Construction site offices will be determined by the Contractors for each stage in the Contractors' CTMPs and Ancillary Facility Management Plans. The Contractors' VMPs will include provisions for appropriate off-road areas for Construction traffic parking, including for workforce parking and site visitors. VMPs will describe access locations and safe entry and exit to and from all such parking areas.

Parking arrangements for businesses and properties are not anticipated to be impacted by the Project, including at Luddenham Town Centre. However, where any specific requirements are identified during consultation with affected businesses and properties, the Contractors will implement appropriate arrangements, including providing temporary signage, for parking.

## 6.11 Emergency services

Prior to and during preparation of the EIS for the Project, consultation was undertaken with the following Emergency Services authorities:

- NSW Fire and Rescue
- NSW Rural Fire Service
- Nepean Local Area Command
- NSW Police Force
- State Emergency Service
- NSW Ambulance Service.

Construction is anticipated to have only a minor impact on emergency vehicles because vehicle access along The Northern Road will be maintained. However, consultation with emergency services providers will continue throughout Construction of the Project to ensure impacts on emergency services operations are avoided. Emergency services will be kept fully informed of all changed traffic conditions throughout the Construction stages of the Project. The Contractors' Traffic Managers will arrange for representatives of the Emergency Services to attend weekly traffic control and stakeholder meetings to ensure they remain informed of current or upcoming changes to traffic conditions.

The Contractor Traffic Managers and/or Contractor CRMs will notify the emergency services providers when access to properties or traffic routes is expected to be impeded for any period of time. Signage will be implemented to ensure that all Construction and adjusted property accesses are clearly signposted.

## 6.12 Special events

A special event in traffic management terms is defined as any planned activity that is wholly or partially conducted on a road, requires multiple agency involvement, requires special traffic management arrangements and may involve large numbers of participants and/or spectators. Special events may include:

- local festivals and celebrations
- annual local events
- sporting events
- parades and marches
- daylight savings changes
- seasonal variations in traffic volumes
- NSW holiday periods.

Where special events are expected to generate additional vehicle or pedestrian traffic in the area affected by Construction of the Project, the Contractors will co-operate with the event organiser, Roads and Maritime, local Councils and other authorities to facilitate traffic and pedestrian flows on the existing road network or adjacent to the Construction sites.

The Contractors will also liaise with Liverpool City Council and Penrith City Council in relation to upcoming traffic generating special events when planning any traffic arrangements to avoid any conflict with Construction activities.

## 6.13 Incident management and response

Roads and Maritime is responsible for the management of unplanned traffic incidents on NSW roads in coordination with NSW Police. If requested, the Contractors will provide support to Roads and Maritime or Emergency Services agencies when emergencies or unplanned incidents occur within or adjacent to a Construction site.

The Contractors will nominate a contact person, such as the Contractor Traffic Manager, to be available at all times if an emergency or disruptive unplanned incident occurs within the boundary of any Construction area subject to a TCP. The nominated contact person will respond within one hour to after-hours callouts from the TMC or Police.

For non-emergency disruptive incidents, the Contractor Traffic Manager or delegate will attend the location of the traffic incident and assess if corrective actions are required to be undertaken or resources provided by the Contractor. This assessment will occur in coordination with Emergency Services agencies, if in attendance. The Contractors will maintain a record of communications with the TMC and Police and all traffic incidents attended.

### 6.13.1 Management of unplanned incidents

The Contractors will immediately notify the Roads and Maritime Project Manager (or delegate) of any traffic–related incident occurring within the Construction site or at other locations affected by Construction. The TMC will also be notified immediately if a traffic incident occurs during working hours.

In the event of an unplanned traffic incident, the Contractor Traffic Managers will:

- rectify any damage to safety barriers, signs or other road assets to make the roadway safe
- remove or reposition traffic control devices and/or remove debris that interferes with traffic flow (under the direction of Roads and Maritime or Police), in the event that a traffic incident occurs in a section of the roadway that is under Construction
- liaise with and respond to requests from the Roads and Maritime or Police related to clearing The Northern Road
- ensure there is sufficient access to labour, plant and materials as necessary to immediately provide basic early traffic control, undertake repairs or remove debris, and replace any damaged barriers or signs, to a minimum sufficient level of safety to allow reopening of the affected area to traffic
- ensure the area is restored to the full and compliant safety level within a minimum amount of time
- arrange recovery of any Construction vehicle if in the event of breakdown that occurs en-route or within Construction sites or ancillary facilities.

The Contractor Traffic Managers will prepare a report for each traffic-related incident. The report will include photographs of the road approaches at 10 m intervals starting from at least 200 m each side of the incident site, including photographing the location of all relevant safety devices and signs, and any recommended corrective actions to prevent further incidents. The report will be submitted to Roads and Maritime Project Manager within two days of the occurrence of the incident.

### 6.13.2 Traffic Incident Management Plan

The Contractors will prepare a Traffic Incident Management Plan as part of the Contractors' CTMPs. The Traffic Incident Management Plan will be developed in consultation with the TMC and Liverpool City Council and Penrith City Council, as relevant.

## 6.14 Road maintenance

The Contractors will maintain existing or temporary roads used by Construction traffic during the Project. Maintenance activities will include repairing potholes, removing debris and overgrown vegetation, cleaning kerbs and gutters and re-applying line-marking.

The Contractors will co-operate with Roads and Maritime, Liverpool City Council and Penrith City Council and its personnel or contractors in carrying out maintenance of existing roads outside the Project area.

The Contractors will engage suitably qualified consultants to prepare a Road Dilapidation Reports for the local roads and associated infrastructure to be used by Construction vehicles during each Project Construction stage. The reports will include, as a minimum:

- identification of the structural condition of local roads likely to be used by Construction traffic, including deflection test results
- identification of the structural condition of footpaths and utilities in the vicinity of the Construction sites
- photographs showing pre-Construction road footpath and utility condition.

The Dilapidation Reports will be provided to Liverpool City Council and Penrith City Council, as relevant, within three weeks of completing the road dilapidation surveys and at least one month before the use of the local roads (listed in Section 5.3.3) by Construction vehicles.

The Contractors will be responsible for ensuring that any damage to roads as a result of works associated with Construction of the Project is rectified so as to restore the road to at least the condition it was pre-Construction, unless otherwise agreed by the relevant Council.

## 6.15 Management of cumulative traffic impacts

Due to the staged nature of Construction of the Project, it will be necessary to ensure coordination between the Contractors to minimise traffic disruption and delays along the length of The Northern Road and connecting local roads.

The Contractor traffic management representatives for each stage of the Project will participate in weekly traffic co-ordination meetings to discuss Construction work programs and interface issues such as adjacent traffic control operations, vehicle movement plans, maintenance activities and incident management. Traffic management representatives from other road projects concurrently under construction will be invited to attend the weekly meetings, if required. The weekly meetings will be attended and facilitated by the Roads and Maritime Project Manager.

# 7 Compliance management

## 7.1 Roles and responsibilities

The Project organisational structure and overall roles and environmental responsibilities are outlined in Section 5.1 of the OACEMP.

The Contractors will provide a Traffic Manager (dedicated resource) for each stage of the Project. The Contractors' Traffic Managers will hold a current Roads and Maritime Design and Inspect Traffic Control Plan (Orange Card) qualification and will be responsible for the overall management of traffic and road safety for the applicable stage of the Project, in accordance with Specification G10. The Traffic Managers' responsibilities include:

- maintaining current copies of the Traffic Incident Management Plans, TCPs (including signage strategy), VMPs, PMPs, Traffic Staging /Safety Plans, EWMS, ROLs and SZAs and their controlled documentation
- ensuring that the approved traffic control measures are established, implemented and maintained in accordance with the approved plans
- amending and updating the plans, as required, to ensure that they remain current as the work progresses
- carrying out regular inspections and auditing of the traffic control measures to ensure that they are effective and are being followed
- identifying locations and times where traffic congestion or unsafe conditions for vehicles, cyclists, pedestrians and workers are occurring, and providing recommendations for improvement
- providing technical advice to the Construction team relating to traffic engineering, traffic management and road safety issues
- developing traffic management strategies that comply with all Project requirements and relevant standards and guidelines
- assisting in the development of traffic staging and temporary works plans
- managing the development and approvals of all traffic control plans in accordance with G10 and Traffic Control at Worksite Manual
- liaising with all key internal and external stakeholders including Roads and Maritime, the TMC, NSW Police and the local councils on traffic management and safety issues
- facilitating traffic awareness and providing information for toolbox talks to site personnel
- being responsible for the implementation of ROLs including:
  - monitoring and quantifying the durations of traffic flow delays
  - monitoring, measuring and recording traffic queue lengths, including the maximum traffic queue lengths in each direction and the total occupancy stoppage time
  - maintaining and adjusting traffic control measures and devices to assist prevailing traffic flows, minimise lane and shoulder occupancies and any lost traffic flow capacity and minimise traffic flow delay durations and queuing
  - monitoring of over-dimension heavy vehicle movements

- being responsible for the implementation of SZAs and monitoring the implementation and operation of temporary roadwork speed limits
- monitoring installed traffic management schemes for their safe operation and use and ensuring defects or unsafe installations are amended
- managing the road safety auditing program of traffic management schemes in accordance with project requirements
- maintaining the quality assurance system associated with traffic management issues including preparation and storage of all necessary records
- reporting immediately to Roads and Maritime the occurrence of all delays, including those caused by incidents, to the free flow of traffic of greater than five minutes and/or traffic queue lengths greater than 500 m and as required under the conditions of the ROLs
- being contactable at all times (7 days per week and 24 hours per day) during the Construction phase of the Contractor's work to receive and answer traffic /incident related inquiries from Roads and Maritime, the TMC, local councils and the NSW Police
- producing records of all road occupancies and forward records of all traffic flow delays and durations, traffic queue lengths and other ROL related matters to Roads and Maritime upon request
- stopping work on any activity if it is considered to be necessary to prevent traffic incidents or to comply with the directions of Roads and Maritime, the TMC or NSW Police.

## 7.2 Communication

Roads and Maritime will prepare and implement a CCS in accordance with the requirements of NSW-CoA B1 to document the approach to stakeholder and community communications for the Project. The CCS will identify opportunities and tools for providing information and consulting with the community and stakeholders during the Construction of the Project. The Contractors will support the delivery of the CCS.

Traffic and transport management information will be communicated to the community and stakeholders in accordance with the principles and procedures outlined in the CCS including the following methods of communication:

- Project 24-hour telephone line – to address community enquiries concerning planned traffic arrangements including any temporary traffic switches
- display material – regularly updated displays including access information, temporary traffic arrangements, traffic disruptions, traffic restrictions and temporary detours/diversions
- letter notifications – notify local residents and businesses about Construction activities which will affect access or disrupt use of their premises at least five working days before commencing the work. The notification will advise the nature of the work, why it is necessary, indicate the expected duration plus any changes to arrangements for traffic or property access
- Project website – regular updates will include upcoming night works, changes to pedestrian/cyclist access and access to businesses, temporary traffic arrangements, traffic disruptions, traffic restrictions and temporary detours/diversions

- advertising – advertise in relevant newspapers significant traffic management changes, detours, traffic disruptions and work outside standard work hours.

The Contractor CRMs will provide timely, accurate, relevant and accessible information about changed traffic and access arrangements, potential delays to road users and local communities, and out of hours works, with provision for feedback through a complaints line during Construction.

Consultation will be undertaken with local communities potentially affected by the impacts of multiple projects in addition to the Project.

The CCS provides details on the requirements for coordination and communication between the Contractors working on the Project stages which will include:

- liaison meetings
- mailing list for all communications (including Community Updates)
- email communication
- Project briefings.

Where relevant, the Roads and Maritime Community and Stakeholder Engagement Advisor and the Contractor CRMs will undertake consultation with proponents of other nearby developments to increase the overall awareness of project timeframes and impacts.

Construction traffic management plans for the Project will be developed in consultation with plans for other projects to assist in spreading the traffic load over the network and to minimise construction traffic being concentrated on any one particular route.

Further detail about the CCS is provided in Section 5.5.3 of the OACEMP.

## 7.3 Complaints management

Roads and Maritime will develop a Complaints Management System (CMS) to document the overall approach to complaints management for the Project. The Contractors will adopt the requirements of the CMS, including reporting requirements. The CMS will include a Complaints Register which will record the details of all complaints relating to the Project.

Further detail about the CMS is provided in Section 5.5.3 of the OACEMP.

## 7.4 Traffic management risk assessment workshop

The Contractors will conduct a traffic management risk assessment workshop prior to the commencement of any traffic management works. The workshop will be attended by, as a minimum, the Contractor Construction Managers, Contractor Traffic Managers, the road designers, Roads and Maritime personnel involved in reviewing the Contractors' CTMPs, the Roads and Maritime Environmental Manager (or delegate), and representatives from Liverpool City Council and Penrith City Council, as appropriate.

The purpose of the workshop is to identify and address the risks associated with the road safety, traffic management and local road network issues specific to the Construction site.

The outcomes of the workshop will be documented in the Project Risk Registers prepared as part of the Contractors' CEMPs. The identified risks will be managed through the implementation of TCPs and other measures outlined in the Contractors' CTMPs.

## 7.5 Training

To ensure that this overarching CTMP is effectively implemented, all site personnel (including sub-contractors) will undergo site induction training that includes traffic and transport management issues prior to Construction commencing. The induction training will address elements related to traffic and transport management, including:

- existence and requirements of this overarching CTMP, the Contractor's CTMP and all plans and procedures prepared under the CTMPs
- relevant legislation, regulations and EPL conditions
- incident response, management and reporting
- road safety
- road occupancy
- standard Construction hours
- complaints response and reporting
- roles and responsibilities for traffic management
- requirements to maintain surrounding property access for residences, business owners, and their visitors, and to minimise disruptions to these properties for the duration of Construction
- temporary and interim traffic arrangements
- response procedure for dealing with traffic incidents.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in traffic and transport management or those undertaking an activity with a high risk of environmental impact. Site personnel will undergo refresher training at not less than six monthly intervals.

The ER will review and approve the induction and training program prior to the commencement of Construction and monitor implementation.

Daily pre-start meetings conducted by the Contractor Foreman will inform the site workforce of any environmental issues relevant to traffic and transport that could potentially be impacted by, or impact on, the day's activities.

Further details regarding staff induction and training are provided in Section 5.3 of the OACEMP.

## 7.6 Monitoring and inspection

Weekly (or fortnightly) and other routine inspections by the Roads and Maritime Environmental Manager (or delegate), Environmental Review Group (ERG) representatives and ER will occur throughout Construction. Detail on the nature and frequency of these inspections are documented in Section 6.1 of the OACEMP.

Specific requirements for inspection of traffic management will be carried out in accordance with the *Traffic Control at Work Sites Manual* (RTA, 2010). Contractor team members undertaking inspections must hold appropriate Traffic Control tickets (Yellow, Red or Orange Card). Inspections of temporary traffic controls during Construction will focus on monitoring compliance against TCP/VMPs and identifying safety hazards to enable implementation of corrective solutions. Requirements are summarised in Table 7-1.

**Table 7-1: Inspections and monitoring relevant to traffic and transport**

| Inspection / monitoring | Frequency | Responsibility |
|---|---|---|
| Traffic control plan inspection<br>Ensure all traffic control signs and devices are functioning and implemented in the correct location | Daily | Contractor Traffic Manager |
| Traffic management risk assessment checklist | Daily | Contractor Traffic Manager |
| Traffic control safety inspection<br>Ensure traffic control plans implemented are approved and Construction sites are operating safely | Monthly | Contractor Traffic Manager / Roads and Maritime Project Manager |
| ROL compliance monitoring | Weekly or as required for traffic switches | Contractor Traffic Manager |
| Road dilapidation inspection | Pre-Construction and immediately prior to Completion | Contractor Traffic Manager / Roads and Maritime Project Manager / Liverpool City Council |

Requirements and responsibilities in relation to monitoring and inspections, additional to those identified in Table 6-1 and Table 7-1 are documented in Section 7.1 and Section 7.2 of the OACEMP.

## 7.7 Incident planning and response

Response to incidents will be undertaken as described in Section 5.6 of the OACEMP and in accordance with the Environmental Incident Classification and Reporting Procedure (refer to Appendix A7 of the OACEMP).

## 7.8 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of traffic management measures, compliance with this CTMP, conditions of approval and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 6.4 of the OACEMP.

### 7.8.1 Road safety audits

Road safety audits will occur throughout the Construction of the Project. Road safety audits will be conducted by an independent Road Safety Auditor certified to level 3 in the Roads and Maritime Services Road Safety Auditor Register. Audits will be in accordance with the *Guide to Road Safety Audit Practices* (RTA, 2011). The Roads and Maritime Project Manager, will attend all road safety audits. Audit findings will be actioned as per the risk levels stipulated in the audit report, eg. high risks will require immediate action. Road safety audit reports will be provided to the Roads and Maritime Project Manager.

The Contractor Traffic Managers will be responsible for managing the road safety audit programs for the stages they are delivering. The Contractor Traffic Managers or representatives undertaking internal audits must be an Orange Card accredited TCP designer.

Table 7-2 outlines the road safety audit program.

**Table 7-2: Audit frequency and responsibility**

| Audit type | Frequency | Responsibility |
|---|---|---|
| Internal audit of temporary traffic arrangements | Monthly | Contractor Traffic Manager |
| External audit of temporary traffic arrangements | Six monthly | Independent auditor |
| Pre-opening audit of new roads and or major temporary traffic switches | As required | Independent auditor |

### 7.8.2 Traffic control and stakeholder meetings

The Contractors will arrange and attend weekly traffic control and stakeholder meetings with relevant stakeholders for the duration of Construction of the Project. As a minimum, stakeholders will include Roads and Maritime, Penrith City Council and Liverpool City Council (as relevant), Police, Emergency Services, school representatives, bus operators and any other relevant party. The Contractor Traffic Managers will be responsible for arranging and coordinating the weekly meetings and maintaining an action plan to close out any issues identified in the meetings.

## 7.9 Non-conformances

A non-conformance is the failure or refusal to comply with the requirements of project system documentation, including this CTMP. Any member of the Contractors' Project team may raise a non-conformance or improvement opportunity.

When a non-conformance is detected, the process described in Section 6.6 of the OACEMP will be implemented. The Contractor's Quality Plan will describe the process for managing non-conforming work practices and initiating corrective / preventative actions or system improvements in accordance with the process outlined in Section 6.6.1 of the OACEMP.

## 7.10 Reporting

Reporting requirements and responsibilities are documented in Section 6.5 of the OACEMP.

The Contractors will be required to maintain accurate records substantiating all Construction activities associated with the Project or relevant to the conditions of approval, including measures taken to implement this CTMP. Records will be made available to the DP&E and DoEE upon request, within the timeframe nominated in the request.

# 8 Review and improvement

## 8.1 Continuous improvement

Continuous improvement of this CTMP will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continuous improvement process will be designed to:

- identify areas of opportunity for improvement of traffic management
- identify environmental risks not already included in the risk register
- determine the cause or causes of non-conformances and deficiencies
- develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- verify the effectiveness of the corrective and preventative actions
- document any changes in procedures resulting from process improvement
- make comparisons with objectives and targets.

The Contractors will be responsible for ensuring Project environmental risks are identified and included in the risk register and appropriate mitigation measures implemented throughout the Construction of the Project as part of the continuous improvement process. The process for ongoing risk identification and management during Construction is outlined in Section 4.3.2 of the OACEMP.

## 8.2 CTMP update and amendment

The processes described in Section 6.8 of the OACEMP may result in the need to update or revise this CTMP. This will occur as needed.

Any revisions to this CTMP will be in accordance with the process outlined in Sections 1.6 and 6.8 of the OACEMP.

A copy of the updated CTMP and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure (refer to Section 1.5 of the OACEMP).

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# Annexure A – Consultation correspondence

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# 1 Introduction

Consultation with relevant stakeholders and Government agencies was undertaken as part of the development of this CTMP in accordance with the requirements of the Infrastructure Approval. The agencies required to be consulted under the Infrastructure Approval are listed in Table 1-1.

**Table 1-1: Consultation requirements under the Infrastructure Approval**

| NSW CoA | Relevant OACEMP Sub-plan | Agency to be consulted | Reference |
|---|---|---|---|
| C4(a) | Traffic and transport CEMP Sub-plan | Penrith City Council, Liverpool City Council | This CTMP |

The consolidated evidence of the consultation undertaken and comments relevant to the preparation of this CTMP is provided in this annexure. This annexure includes:

- documentation of the engagement with the parties identified in Table 1-1 that occurred prior to submitting the document to the Secretary for approval (Section 2)
- a log of the points of engagement or attempted engagement with the identified parties (Section 2) and a summary of the issues raised by them (Section 3)
- documentation of the follow-up with the identified parties where feedback has not been provided to confirm that they have no feedback or have failed to provide feedback after repeated requests (Section 2)
- an outline of the issues raised by the identified parties, a summary of how they have been addressed and a cross reference to the section of the CTMP where the issue has been addressed (Section 3)
- a description of the outstanding issues raised by the identified parties and the reasons why they have not been addressed (Section 4)
- copies of all consultation correspondence relevant to this CTMP (Attachment 1).

# 2. Documentation and log of the engagement and follow up

**Table 2-1: Requests for comment from Roads and Maritime**

| Organisation | Contact | Date | Correspondence Type | Description |
|---|---|---|---|---|
| Liverpool City Council | Charles Wiafe | 26/06/2018 | Letter and email | Request from Roads and Maritime for comment on the CTMP |
| | | 11/07/2018 | Follow up phone call, voicemail and email | |
| | | 26/07/2018 | Follow up phone call and voicemail | |
| | | 27/07/2018 | Follow up email | |

| Organisation | Contact | Date | Correspondence Type | Description |
|---|---|---|---|---|
| | | 02/08/2018 | Follow up phone call in which LCC agreed to respond by 09/08/2018 | |
| | | 14/08/2018 | Follow up phone call and voicemail | |
| Penrith City Council | Kristy Johnson | 26/06/2018 | Letter and email | Request from Roads and Maritime for comment on the CTMP |
| | | 12/07/2018 | Follow up phone call | |

**Table 2-2: List of responses**

| Organisation | Contact | Date | Correspondence Type | Description |
|---|---|---|---|---|
| Liverpool City Council | - | - | - | No response provided |
| Penrith City Council | Ari Fernando<br>Major Projects & Design Coordinator | 20/7/2018 | Email | Comment on the CTMP |

# 3 Summary of issues raised and responses

**Table 3-1: Summary of issues raised and Roads and Maritime responses**

| Summary of agency comment | Roads and Maritime response |
|---|---|
| **Liverpool City Council** | |
| No comments provided | |
| **Penrith City Council** | |
| Construction Traffic Management Sub Plan did not recognise Grover Cr as a local road accessed by both construction and light vehicles and should be included. | Section 5.3.3 updated to include Grover Crescent as a local road that will be accessed by both construction and light vehicles. |
| Whether programmed night works are undertaken for utility installation is not noted. Our experience is some work will be required. | Section 5.3.1 updated to include utility works in the list of works which may be required to be undertaken outside of standard working hours. |
| Where bus stops are relocated for construction, safe crossing points for bus commuters will need to be provided with sufficient lighting for changed locations. | Section 5.4 updated to include the requirement for safe crossing points for bus commuters to be provided with sufficient lighting for the changed locations |

| Summary of agency comment | Roads and Maritime response |
|---|---|
| A dilapidation report will be required for the local roads to be accessed/ upgraded. | Section 6.14 updated to include a cross reference to Section 5.3.3 which identifies the local roads to be accessed and for which dilapidation reports are to be prepared and provided to LCC and PCC. |
| Section 6.11 (Emergency Services notification – minor comment should be Nepean Local Area Command (as Penrith/St Marys have amalgamated). | Section 6.11 amended to refer to Nepean Local Area Command. |
| There should be notations included that Local Roads not be included in any TMP's for State Road traffic detours. | Sections 5.3.3 and 6.3.2 updated to include a statement that Local Roads not be included in any CTMPs for State Road traffic detours. |

# 4 Outstanding issues

There are no outstanding issues to be resolved arising from the consultation on the CTMP.

# Attachment 1: Copies of Consultation Correspondence

## Alison Tourle (Sydney)

**Subject:** FW: The Northern Road Upgrade - NSW and Federal Approvals & comments on CEMP Sub Plans

---

**From:** Ari Fernando [mailto:ari.fernando@penrith.city]
**Sent:** Friday, 20 July 2018 5:21 PM
**To:** GRAHAM Suzette E
**Cc:** TNR4 Correspondence File
**Subject:** RE: The Northern Road Upgrade - NSW and Federal Approvals & comments on CEMP Sub Plans

Hi Suzette

I have now collated comments received for the sub plans attached and is noted as below.

1. **Construction Traffic Management Plan**

Section 5 - Construction Traffic Management Sub Plan did not recognise Grover's Cr as a local road accessed by both construction and light vehicles and should be included.
Whether programmed night works are undertaken for utility installation is not noted. Our experience is some work will be required.
Where bus stops are relocated for construction, safe crossing points for bus commuters will need to be provided with sufficient lighting for changed locations.

A dilapidation report will be required for the local roads to be accessed/ upgraded.

Minor comment – Section 6.11 (Emergency Services notification – should be Nepean Local Area Command (As Penrith/St Marys have amalgamated).

There should be notations included that Local Roads not be included in any TMP's for State Road traffic detours.

2. **Construction Noise & Vibration Management Plan**

Council's Environmental Health Section has noted that the Draft Noise Mgt Plan is comprehensive.

However, in Section 8 it should be noted that any variation of hours of work or Out of hours work or should have Penrith City Council agreement be noted.

A copy of the final CNVMP should be provided to Council.

3. **Construction Soil & Water Management Plan**

The draft CSWMP is considered to be comprehensive and no further comments.

4. **Water & Soil Contamination Management Plan**

The draft WSCMP is considered to be comprehensive and no further comments.

5. No further comments on Construction Contamination Land Management Plan.

6. I am awaiting some further comments from Aboriginal Liaison Officer with respect to Aboriginal Heritage component of the Construction Heritage Management Plan.

Regards

**Ari Fernando**
**Major Projects & Design Coordinator**

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**From:** GRAHAM Suzette E [mailto:Suzette.GRAHAM@rms.nsw.gov.au]
**Sent:** Thursday, 28 June 2018 5:38 PM
**To:** Ari Fernando <ari.fernando@penrith.city>
**Cc:** TNR4 Correspondence File <TNR4S@rms.nsw.gov.au>
**Subject:** The Northern Road Upgrade - NSW and Federal Approvals

Hi Ari,

Here are the NSW and Federal Approvals for The Northern Road Project to assist with the CEMP Sub-plan reviews.

Thanks,

Kind regards,

Suzette Graham
Senior Environment Officer, WSPO
Environment **|** Stakeholder and Community Engagement
**M** 0476 828 524 **PH:** (02) 8849 2618
www.rms.nsw.gov.au
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