

# Appendix B1

Traffic, Transport and Access Management  
Sub-plan

*Western Harbour Tunnel and Warringah  
Freeway Upgrade SSI-8863  
Stage 2 – Warringah Freeway Upgrade*

**Transport for NSW**

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**Document control**

**Approval and authorisation**

<b>Title</b>	Warringah Freeway Upgrade Traffic, Transport and Access Management Sub-plan
<b>Endorsed by Environment Representative</b>	
<b>Signed</b>	
<b>Dated</b>	
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<b>Dated</b>	

## Document status

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6	25/08/2023	Update to include consultation comments	

## Distribution of controlled copies

This sub-plan is available to all personnel and sub-contractors via the Project document control management system. An electronic copy can be found on the Project website.

The document is uncontrolled when printed. One controlled hard copy of the CEMP and supporting documentation will be maintained by the Quality Manager at the Project office and on the project website.

Copy number	Issued to	Version
1	TfNSW	Revision 3
2	DPE	Revision 3

## Glossary / Abbreviations

Abbreviation	Expanded text
CEMP	Construction Environmental Management Plan
CMCS	Central Management Computer System
CMS	CPB Contractors' Management System
CoR	Chain of Responsibility
CPB Downer JV	CPB Contractors and Downer Joint Venture
CSSI	Critical State Significant Infrastructure
CTTMP	Construction Traffic and Transport Management Plans
CCTV	Closed-circuit television
CJM	Customer Journey Management
CJP	Customer Journey Planning
DDA	<i>Disability Discrimination Act 1992</i>
DPE (formerly DPIE)	NSW Department of Planning and Environment
EB	East-bound
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
IRP	Incident Response Procedures
LoS	Level of Service
LTC-TMP	Local Traffic Committee Traffic Management Plan
MCoA	Minister's Condition of Approval
OSOM	Over Size and Over Mass
NB	North-bound
RASS	Radar Activated Speed Signs
REMM	Revised Environmental Management Measures
Roads and Maritime	Roads and Maritime Services (now TfNSW)

Abbreviation	Expanded text
ROL	Road Occupancy Licence
RtS	Response to Submissions Report
SB	South-bound
SEARs	Secretary's Environmental Assessment Requirements
SPECTS	Safety, Productivity, Environment Construction Transport Scheme
SZA	Speed Zone Authorisation
TCP	Traffic Control Plan (superseded by TGS)
TGS	Traffic Guidance Scheme(s)
TfNSW	Transport for New South Wales
The Project	Warringah Freeway Upgrade
TIMP	Traffic Incident Management Plan
TMO	Traffic Monitoring Office
TTAMP	Traffic, Transport and Access Management Sub-Plan
TTLG	Traffic and Transport Liaison Group
VMP	Vehicle Movement Plan
VMS	Variable Message Sign
VSLs	Variable Speed Limit Signs
WB	West-bound
WFU	Warringah Freeway Upgrade
WHT	Western Harbour Tunnel

# 1 Introduction

## 1.1 Context

This Traffic, Transport and Access Management Sub-plan (TTAMP) forms part of the Construction Environmental Management Plan (CEMP) for the upgrade of the Warringah Freeway Upgrade (the Project), a component of Western Harbour Tunnel and Warringah Freeway Upgrade project.

This TTAMP has been prepared to address the requirements of the Minister's Conditions of Approval (MCoA) for the Western Harbour Tunnel and Warringah Freeway Upgrade project, the Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement dated January 2020 (the EIS), the Western Harbour Tunnel and Warringah Freeway Upgrade Response to Submissions report dated September 2020 (the RtS), the Western Harbour Tunnel and Warringah Freeway Upgrade Modification Report dated September 2022 (Modification 1), the Western Harbour Tunnel and Warringah Freeway Upgrade Modification – Wicks Road Construction Support Site Submissions Report dated May 2023 and applicable guidance and legislation.

In accordance with the Staging Report, Western Harbour Tunnel and Warringah Freeway Upgrade (SSI 8863) (October 2021, Revision 1), this Sub-plan is applicable to Stage 2 works.

## 1.2 Background and project description

The Western Harbour Tunnel and Warringah Freeway Upgrade project comprises a new motorway tunnel connection across Sydney Harbour, and an upgrade of the Warringah Freeway to integrate the new motorway infrastructure with the existing road network and to enable the future connection of the Beaches Link and Gore Hill Freeway Connection project.

The upgrade of Warringah Freeway extends from the northern end of the Sydney Harbour Bridge to Willoughby Road, and will optimise traffic flow, reducing the number of merge points along with introducing a southbound bus lane. The upgrade will also improve Ridge Street and Ernest Street bridges. A detailed description of the Project is provided in Section 1.3 of the CEMP.

The EIS for the Western Harbour Tunnel and Warringah Freeway Upgrade project was prepared and finalised in January 2020 to assess the construction and operational impacts. As part of the EIS development, a detailed traffic and transport assessment was prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued by the then Department of Planning and Environment. The traffic and transport assessment is included in the EIS as *Western Harbour Tunnel and Warringah Freeway Upgrade Technical working paper: Traffic and Transport*, dated January 2020.

The EIS concluded that moderate traffic impacts will occur during construction with temporary closure of Warringah Freeway likely to be required, leading to an increase in traffic on alternative routes and some parking to be permanently removed. Temporary short-term adjustment to bus stops and bus priority infrastructure will be required as well as detour routes for pedestrians and cyclists with some adjustments to the shared user paths. These impacts will be managed through the implementation of mitigation and management measures described in this TTAMP.

The Western Harbour Tunnel and Warringah Freeway Upgrade Project was approved by the Minister for Planning and Public Spaces on 21 January 2021. Modification 1 (Transport for NSW, 2022) was approved by the Minister for Planning and Public Spaces on 8 August 2023.

The proponent, Transport for NSW (TfNSW), has contracted the CPB Contractors and Downer Joint Venture (CPB Downer JV) for the design and construction of the Project.

### 1.3 Scope of the Sub-Plan

The scope of this TTAMP is to describe how the CPB Downer JV proposes to manage potential traffic, transport and access impacts during construction of the Project. Operational impacts and operational measures do not fall within the scope of this TTAMP and are therefore not included within the processes contained within this TTAMP.

This Sub-plan is applicable to all Project activities under the control of the CPB Downer JV, including all areas where physical works will occur or areas that may otherwise be impacted by the construction works. All CPB Downer JV staff and sub-contractors are required to operate fully under the requirements of this Sub-plan and related environmental management plans, for the duration of the construction program.

In accordance with the Staging Report, Western Harbour Tunnel and Warringah Freeway Upgrade (SSI 8863) (October 2021, Revision 1), this Sub-plan is applicable to Stage 2 works.

### 1.4 Environmental management system overview

This Sub-plan forms part of the CEMP which provides a structured and systematic approach to environmental management. The CEMP is based on the requirements of the CPB Contractors' Management System (CMS) and the requirements of the CSSI approval.

The CMS is certified to *AS/NZS ISO 14001:2015 Environmental Management Systems – requirements with guidance for use*. Additional details on the CEMP and Project environmental management system documents are provided in Section 1.5 of the CEMP.

Key interactions for this Sub-plan with other elements of the CEMP include:

- **Noise and Vibration Management Sub-plan** – details controls for the management of traffic-related noise and vibration impacts.

# 2 Purpose and objectives

## 2.1 Purpose

The purpose of the TTAMP is to describe how the CPB Downer JV proposes to safely manage vehicular, cyclist and pedestrian traffic and minimise any disruption during construction of the Project.

## 2.2 Objectives

The key objective of the TTAMP is to ensure that traffic impacts during construction are minimised and are within the scope permitted by the Infrastructure Approval. This includes minimising delays, ensuring consideration is given to the needs of all road users and maintaining safety for both workers and the general public.

To achieve these objectives, CPB Downer JV will undertake the following:

- Ensure appropriate controls and procedures are implemented during construction activities to address potential traffic impacts along the Project corridor
- Ensure appropriate measures are implemented to address the relevant MCoA outlined in Table 3.1 and the safeguards detailed in the EIS and RtS, and the Mod 1 Report and Submissions Report as outlined in Table 3.2.
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this Sub-plan
- Ensure the activities to be undertaken during construction will be carried out to manage the risks identified in the risk assessment undertaken before commencement of construction of the CSSI (i.e. Condition C2 (d)(i) and (ii))
- Ensure compliance with RMS specification and contract requirements.

Furthermore, the CPB Downer JV will aim to meet the performance outcomes from the EIS (Chapter 28, Table 28-4) as required by MCoA C2(d)(i). Relevant performance outcomes are detailed in **Table 2-1** including a cross reference to indicate how the matter is addressed in this Sub-plan.

**Table 2-1 Performance Outcomes Identified in the EIS Relevant to this Sub-plan**

Performance Outcome	How Addressed	Records
Network connectivity, safety and efficiency of the transport system in the vicinity of the project are managed to minimise impacts	To effectively manage the road network and provide real time traffic and road user delay management, a dedicated Traffic Monitoring Office (TMO) will operate 24 hours per day, 7 days per week.	Communication records Incident reports
The safety of transport system customers is maintained	Independent road safety audits will be undertaken to assess the safety performance of new or modified local road, parking, pedestrian and cycle infrastructure provided as part of the Project (including ancillary facilities).	Road Safety Audit Reports

Performance Outcome	How Addressed	Records
Impacts on network capacity and the level of service are effectively managed	Site specific Construction Traffic and Transport Management Plans (CTTMPs) will be developed for work sites, ancillary facilities, intersection works and/or where long-term changes occur to the road network. The CTTMPs will include an impact assessment and modelling to identify and mitigate impacts on network capacity and level of service.	CTTMPs
Works are compatible with existing infrastructure and future transport corridors.	The upgrade of the Warringah Freeway will be designed to integrate the new motorway infrastructure with the existing road network and to enable the future connection of the Beaches Link and Gore Hill Freeway Connection project.	Detailed design documentation



## 3 Environmental requirements

### 3.1 Relevant legislation and guidelines

#### 3.1.1 Legislation and regulatory requirements

Legislation and regulatory requirements relevant to traffic, transport and access for this Project include:

- Australian Road Rules form the basis for state and territory road rules
- *Roads Act 1993 (NSW)* sets out rights along a public road, establishes procedures for a public road and provides the classification of roads
- *Road Transport Act 2013*, specifically as it relates to Chapter 5: Safety and Traffic Management, Chapter 6: Road Transportation and Chapter 7: Compliance
- Road Occupancy Licence (ROL) is required for the occupation of the road space at approved times, provided certain conditions are met
- Speed Zone Authorisation (SZA) is needed to restrict speed at certain locations for a duration of time
- *Environmental Planning and Assessment Act 1979 (EP&A Act)*.

All legislation relevant to this TTAMP is included in Appendix A1 of the CEMP.

#### 3.1.2 Guidelines

The main guidelines, specifications and policy documents relevant to this Sub-plan include:

- AS 1742.3:2019 Manual of uniform traffic control devices, Part 3: Traffic control for works on roads
- AUSTRROADS Cycling Aspects of Austroads Guides, 2017
- AUSTRROADS Guide to Traffic Management, 2020 – Parts 1-13
- AUSTRROADS Guide to Road Design, 2009-2020 – Parts 1-8
- AUSTRROADS Guide to Road Safety, 2006-2019 – Parts 1-9
- AUSTRROADS Road Safety Audit Second Edition, 2019: Checklist 4. Pre-opening scheme audit
- AUSTRROADS Road Safety Audit Second Edition, 2019: Checklist 5: Roadwork traffic scheme audit
- AUSTRROADS Road Safety Audit Second Edition, 2019: Checklist 6: Existing roads: road safety audit
- Department of Infrastructure, Planning and Natural Resources Planning Guidelines for Walking and Cycling (2004)
- Roads & Traffic Authority NSW Guide to Traffic Generating Developments, 2002
- Roads & Traffic Authority NSW Bicycle Guidelines Version 1.2, 2005
- Roads and Maritime QA Specification G10 – Traffic Management, 2020
- Roads and Maritime NSW Speed Zoning Guidelines, 2011
- Roads and Maritime Traffic Control at Worksites Manual, 2020
- Transport for NSW, NSW Sustainable Design Guidelines Version 4.0, 2017

- Transport for NSW Truck and Plant Requirements, May 2020
- Spec R141 Pavement Markings
- Spec R142 Raised Reflective Pavement Markers
- Spec R143 Sign Posting
- TfNSW Safety barrier acceptance
- TfNSW Variable Message Signs (VMS) guideline
- TfNSW Delineation Manual
- TfNSW Traffic Modelling Guidelines
- TfNSW Technical Direction (TDT 2009/07) Speed Enforcement on Worksites
- Transport Management Centre Road Occupancy Manual.

### 3.2 Ministers Conditions of Approval

The MCoA relevant to this Sub-plan are listed in **Table 3-1**. A cross reference is also included to indicate where the condition is addressed in this Sub-plan or other Project management documents.

**Table 3-1 : Minister’s Conditions of Approval relevant to the TTAMP**

MCoA #	Condition Requirements	Reference	How Addressed
<b>General</b>			
A5	<p>Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Planning Secretary with the document. The evidence must include:</p> <p>(a) documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;</p> <p>(b) a log of the dates of engagement or attempted engagement with the identified party;</p> <p>(c) documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations;</p> <p>(d) outline of the issues raised by the identified party and how they have been addressed; and</p> <p>(e) a description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.</p>	Section 4 <b>Appendix A</b>	As detailed in Section 4, this TTAMP has been prepared in consultation with the relevant agencies identified in MCoA C4(a). The Consultation Report is provided in <b>Appendix A</b> .

MCoA #	Condition Requirements	Reference	How Addressed
A15	<p>With the approval of the Planning Secretary, the Proponent may submit any strategies, plans or programs required by this approval on a progressive basis.</p> <p>Notes:  <i>1. While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times; and</i>  <i>2. If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.</i></p>	<p>Section 1.1 Section 1.3</p>	<p>In accordance with the Staging Report, Western Harbour Tunnel and Warringah Freeway Upgrade (SSI 8863) (October 2021, Revision 1), this Sub-plan is applicable to Stage 2 works.</p>
A27(d)	<p>For the duration of the work until the commencement of operation, or as agreed with the Planning Secretary, the approved ER must review documents identified in Conditions A10, A17, C1, C4 and C11 and any other documents that are identified by the Planning Secretary, to ensure they are consistent with requirements in or under this approval and if so:</p> <p>(i) make a written statement to this effect before submission of such documents to the Planning Secretary (if those documents are required to be approved by the Planning Secretary); or  (ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Planning Secretary / Department for information or are not required to be submitted to the Planning Secretary/Department).</p>	<p>Section 3.13.1 of the CEMP Section 8.2</p>	<p>The role of the ER in the CEMP review process (including this Sub-plan) is detailed in Section 3.13.1 of the CEMP and cross-referenced in Section 8.2 of this Sub-plan.</p>

MCoA #	Condition Requirements	Reference	How Addressed						
A47	All heavy vehicles used for spoil haulage must be clearly marked on the sides and rear with the project name and CSSI application number to enable immediate identification by a person viewing the heavy vehicle. Details of the project identification markings must be submitted to the Planning Secretary for approval prior to the heavy vehicles used for spoil haulage being utilised for the CSSI.	Section 6.1.4	The requirements of this condition are reflected in Section 6.1.4. Details of the project identification markings will be submitted to the Planning Secretary for approval prior to the heavy vehicles used for spoil haulage being utilised for the CSSI.						
C4	<p>CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant CEMP Sub-plan, including copies of all correspondence from those agencies as required by Condition A5.</p> <table border="1" data-bbox="348 711 1186 867"> <thead> <tr> <th data-bbox="348 711 422 824"></th> <th data-bbox="422 711 831 824">Required CEMP Sub-plan</th> <th data-bbox="831 711 1186 824">Relevant government agencies to be consulted for each CEMP Sub-plan</th> </tr> </thead> <tbody> <tr> <td data-bbox="348 824 422 867">(a)</td> <td data-bbox="422 824 831 867">Traffic, transport and access</td> <td data-bbox="831 824 1186 867">Relevant council(s)</td> </tr> </tbody> </table>		Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan	(a)	Traffic, transport and access	Relevant council(s)	Section 4 <b>Appendix A</b>	As detailed in Section 4, this TTAMP has been prepared in consultation with the relevant agencies identified in MCoA C4(a). The Consultation Report is provided in <b>Appendix A</b> .
	Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan							
(a)	Traffic, transport and access	Relevant council(s)							
C5	The CEMP Sub-plans must state how: (a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;	<b>Table 2-1</b>	The environmental performance outcomes identified in the EIS and RtS are detailed in <b>Table 2-1</b> together with how each outcome is addressed by this Sub-plan.						
	(b) the mitigation measures identified in the documents listed in Condition A1 will be implemented;	Section 3.3 Section 6	Section 3.3 and Section 6 details how the mitigation measures identified in the EIS and RtS relating to traffic, transport and access will be implemented by CPB Downer JV.						

MCoA #	Condition Requirements	Reference	How Addressed
	© the relevant terms of this approval will be complied with; and	<b>Table 3-2</b>	Details of how CPB Downer JV will comply with the relevant terms of approval are listed in this Table, including references to the relevant sections of this Sub-plan.
	(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Section 5 Section 5.1 Section 5.2 Section 5.9	Traffic, transport and access issues requiring management during construction have been identified in the Environmental Risk Assessment Workshop (Section 3.2.1 of the CEMP) and Section 5 of this Sub-plan. The process for ongoing risk analysis is detailed in Section 5.2 of this Sub-plan  Cumulative impacts are detailed in Section 5.1 and Section 5.9.
C9	The CEMP Sub-plans must be submitted to the Planning Secretary for approval along with, or subsequent to, the submission of the CEMP but in any event, no later than one month before construction.	Section 8.2	This Sub-plan will be submitted to the Planning Secretary for approval along with, or subsequent to, the submission of the CEMP but in any event, no later than one month before construction.
C10	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved, unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary, including any minor amendments approved by the ER must be implemented for the duration of construction. Where construction of the CSSI is staged, construction of a stage must not commence until the CEMP and sub-plans for that stage have been endorsed by the ER and approved by the Planning Secretary.	Section 8.2	Construction of the Project will not commence until the CEMP and all relevant CEMP Sub-plans (including the TTAMP) have been approved, unless otherwise agreed by the Planning Secretary.
<b>Construction Traffic Management</b>			

MCoA #	Condition Requirements	Reference	How Addressed
E128	Access to all utilities and properties must be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.	Section 6.9	<p>All reasonably practicable measures will be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of businesses and affected properties. Where this is not possible, we will minimise our impact and provide alternative access and parking arrangements as close as practicable to the existing entry points and parking areas, in consultation with those directly affected.</p> <p>CPB Downer JV will maintain access to all utilities during our works, where practicable, unless we have agreement from the relevant utility owner/ maintenance provider.</p>
E129	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier.	Section 6.9	Any access affected by Project works will be reinstated to the previous standard as a minimum, unless agreed otherwise by the owner or occupier.
E132	Local roads proposed to be used by heavy vehicles to directly access the construction boundary and ancillary facilities that are not shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS, and Figure 7-1 of the Modification 1 Report, as described in Condition A1 must be approved by the Planning Secretary and included in the Traffic, Transport and Access Management CEMP Sub-plan.	Section 6.1.5 <b>Appendix C</b>	Local roads proposed to be used by heavy vehicles to access the construction boundary and ancillary facilities are detailed in <b>Appendix C</b> and sourced from Figures 5-19 and 5-20 of Appendix F of the EIS.
E133	<p>All requests to the Planning Secretary under Condition E132 must include the following:</p> <ul style="list-style-type: none"> <li>a) a swept path analysis;</li> <li>b) demonstration that the use of local roads by heavy vehicles for the CSSI will not compromise the safety of pedestrians</li> </ul>	Section 6.1.5	In the event that local roads are proposed to be used by heavy vehicles to directly access the construction boundary and ancillary facilities that are not shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS, a request for approval will be submitted to the

MCoA #	Condition Requirements	Reference	How Addressed
	<p>and cyclists or the safety of two-way traffic flow on two-way roadways;</p> <p>c) provide details as to the date of completion of the road dilapidation surveys for the subject local roads;</p> <p>d) measures that will be implemented to avoid where practicable the use of roads past schools, aged care facilities and child care facilities during their peak operation times; and</p> <p>e) written advice from an appropriately qualified professional on the suitability of the proposed heavy vehicle route which takes into consideration items (a), (b), (c), and (d) of this condition.</p>		<p>Planning Secretary. This process is detailed in Section 6.1.5 of this Sub-plan.</p>
E135	<p>The locations of all heavy vehicles used for spoil haulage must be monitored in real time and the records of monitoring be made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one year following the completion of construction.</p> <p>Note: Refer to Condition A47 in relation to vehicle identification.</p>	Section 6.1.4	<p>Heavy haulage trucks will be equipped with telematics (customised GPS tracking system) so that their movements are captured in real time. This enables monitoring of driver behaviour, vehicle speed and fleet arrivals. The records from this system will be made available electronically to the Planning Secretary and the EPA, upon request. The records will be available for one year following the completion of the Project.</p>
<b>Road Dilapidation</b>			



MCoA #	Condition Requirements	Reference	How Addressed
E136	<p>Before any local road is used by a heavy vehicle for the purposes of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the relevant council within three weeks of completion of the survey and no later than one month prior to the road being used by heavy vehicles associated with the CSSI.</p>	Section 6.1.4	<p>Road dilapidation surveys will be prepared for local roads before they are used for haulage operations. These surveys will include:</p> <ul style="list-style-type: none"> <li>• Pavement strength testing</li> <li>• Determination of pavement life</li> <li>• Cracking and rutting surveys</li> <li>• Road inventory.</li> </ul> <p>The surveys will be prepared in consultation with relevant council(s) and road owners. The final surveys will be submitted to the relevant council(s) and road owners within three weeks of completing the surveys and no later than one month before the use of local roads by heavy vehicles.</p>
E137	<p>If damage to roads occurs as a result of the CSSI, the Proponent must either (at the relevant road authority's discretion):</p> <ol style="list-style-type: none"> <li>a) compensate the relevant road authority for the damage so caused; or</li> <li>b) rectify the damage to restore the road to at least the condition it was in pre-works as identified in the Road Dilapidation Report(s).</li> </ol>	Section 6.1.5	<p>If damage to roads occurs as a result of construction of the works, CPB Downer JV will rectify the damage. The road will be restored to at least the condition it was before construction commenced as identified in the survey, and as agreed with the relevant road authority or we will compensate the relevant road authority for the damage caused. The requirement for rectification of compensation will be determined by the relevant road authority.</p>
<b>Pedestrian and Cyclist Access</b>			

MCoA #	Condition Requirements	Reference	How Addressed
E138	Safe pedestrian and cyclist access must be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternative route which complies with relevant standards, unless otherwise endorsed by an independent, appropriately qualified and experienced person, must be provided (including signposting) prior to the restriction or removal of the impacted access.	Section 6.7	Safe pedestrian and cyclist access will be maintained around work sites during construction. The existing footpath widths will be retained where possible; any change to the width will be approved by the relevant authorities through the CTTMP review and approval process. Where an intermittent closure of a path is required, we will provide an alternative path which will be of the same condition of the path to be diverted and comply with relevant standards unless otherwise endorsed by an independent, appropriately qualified and experienced person.
<b>Construction Parking Management</b>			

E139	<p>Vehicles (including light and heavy vehicles) associated with the CSSI must be managed to:</p> <ul style="list-style-type: none"> <li>(a) minimise parking on public roads;</li> <li>(b) minimise idling and queueing on state and regional roads;</li> <li>(c) not carry out marshalling of construction vehicles near sensitive land user(s);</li> <li>(d) not block or disrupt access across pedestrian or shared user paths at any time; and</li> <li>(e) ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the Traffic, Transport and Access Management CEMP Sub-plan.</li> </ul>	<p>Section 6.1.3 Section 6.1.4 Section 6.7</p>	<ul style="list-style-type: none"> <li>(a) CPB Downer JV will minimise our impact on the public roads by providing parking facilities where ancillary facilities cannot accommodate the proposed workforce. In addition, a shuttle bus service will be provided from the identified parking areas and nearby public transport hubs including St Leonards and North Sydney train stations (Section 6.1.3).</li> <li>(b) Heavy haulage trucks will be equipped with telematics (customised GPS tracking system) so that their movements are captured in real time. This enables monitoring of driver behaviour such as speeding, idling, queueing or not using correct routes (Section 6.1.4)</li> <li>(c) A customised GPS tracking system will allow us to monitor trucks entering and exiting an area. Trucks will be directed to specific layover areas (marshalling yard) until they are able to continue their journey. Marshalling facilities are located away from sensitive receivers (Section 6.1.4).</li> <li>(d) We will minimise our impacts to existing pedestrian and shared user paths, where practicable and feasible, and ensure that access is not blocked or disrupted. Where an intermittent closure of a path is required, we will provide an alternative path which will be of the same condition of the path to be diverted and comply with relevant standards unless otherwise endorsed by an</li> </ul>
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MCoA #	Condition Requirements	Reference	How Addressed
			<p>independent, appropriately qualified and experienced person (Section 6.7).</p> <p>(e) Local roads proposed to be used by heavy vehicles to access the construction boundary and ancillary facilities are detailed in Appendix C and sourced from Figures 5-19 and 5-20 of Appendix F of the EIS (Section 6.1.5).</p>
E140	<p>A Construction Parking and Access Strategy must be prepared to identify and mitigate impacts resulting from on- and off-street parking changes during construction of the CSSI. The Strategy must include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> <li>a) achieving the requirements of Condition E139;</li> <li>b) confirmation and timing of the removal of on- and off-street parking associated with construction of the CSSI;</li> <li>c) parking surveys of all parking spaces to be removed or occupied by the CSSI workforce to determine current demand during peak, off-peak, school drop off and pickup, weekend periods and during special events;</li> <li>d) consultation with affected stakeholders utilising existing on- and off-street parking stock which will be impacted as a result of construction;</li> <li>e) assessment of the impacts to on- and off-street parking stock taking into consideration, occupation by the CSSI workforce, outcomes of consultation with affected stakeholders and considering the impacts of special events;</li> <li>f) identification of mitigation measures to manage impacts to stakeholders as a result of on and off-street parking changes</li> </ul>	Section 6.1.6	<p>A Construction Parking and Access Strategy will be prepared in accordance with the requirements of this condition.</p> <p>The Strategy will be submitted to the Planning Secretary for approval at least one month before the commencement of any construction that reduces the availability of existing parking. The approved Strategy will be implemented before impacting on on-street parking and incorporated into this Sub-plan.</p>

MCoA #	Condition Requirements	Reference	How Addressed
	<p>including, but not necessarily limited to, staged removal and replacement of parking, provision of alternative parking arrangements, managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds or appropriate residential parking schemes;</p> <p>g) where residential parking schemes already exist, off-road parking facilities must be provided for the CSSI workforce;</p> <p>h) mechanisms for monitoring, over appropriate intervals, to determine the effectiveness of implemented mitigation measures;</p> <p>i) details of shuttle bus service(s) to transport the CSSI workforce to construction sites from public transport hubs and off-site car parking facilities (where these are provided) and between construction sites;</p> <p>j) provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective; and</p> <p>k) provision of reporting of monitoring results to the Planning Secretary and relevant council(s) at three monthly intervals.</p> <p>The Construction Parking and Access Strategy must be submitted to the Planning Secretary for approval at least one month before the commencement of any construction that reduces the availability of existing parking. The approved Strategy must be implemented before impacting on on-street parking and incorporated into the Traffic, Transport and Access Management CEMP Sub-plan.</p>		

MCoA #	Condition Requirements	Reference	How Addressed
E141	<p>During construction, all reasonably practicable measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be minimised, alternative pedestrian and vehicular access, and parking arrangements must be developed in consultation with affected businesses and implemented prior to the disruption. Adequate signage and directions to businesses must be provided prior to, and for the duration of, any disruption.</p>	Section 6.7	<p>Safe pedestrian and cyclist access will be maintained around work sites during construction and all reasonably practicable measures will be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. The existing footpath widths will be retained where possible, any change to the width will be approved by the relevant authorities through the CTTMP review and approval process. Where an intermittent closure of a path is required, we will provide an alternative path which will be of the same condition of the path to be diverted and comply with relevant standards unless otherwise endorsed by an independent, appropriately qualified and experienced person.</p>
<b>Car Parking on Alfred Street North</b>			
E142	<p>The Proponent must mitigate the loss of on-street parking in Alfred Street North (specifically between Wyagdon Street and Whaling Road), Neutral Bay during construction and operation of the CSSI, with the objective of having no impact to resident parking during operation, by:</p> <ul style="list-style-type: none"> <li>i. confirming existing capacity and the parking requirements of the residents by survey;</li> <li>ii. investigating options to mitigate the loss of on-street parking that meet the parking needs of the residents of Alfred Street North and adjacent streets;</li> </ul>	Section 6.2	<p>CPB Downer JV will work with our designers to mitigate the loss of permanent parking, particularly but not limited to Alfred Street North, Neutral Bay. As detailed in Section 6.2 and in accordance with the requirements of this condition, options to mitigate the loss of parking will be investigated in consultation with affected residents.</p> <p>A report on the outcomes of this condition will be submitted to the Planning Secretary within six months of the start of construction.</p>

MCoA #	Condition Requirements	Reference	How Addressed
	<ul style="list-style-type: none"> <li>iii. consulting with the residents at locations where on-street parking would be lost to confirm the preferred parking options; and</li> <li>iv. identifying the parking measures to be implemented.</li> </ul> <p>A report on the outcomes of this condition must be documented and submitted to the Planning Secretary for approval within six months of construction commencing.</p>		
E143	<p>The parking measures identified by Condition E142, must be delivered prior to impact, unless otherwise agreed by the Planning Secretary.</p> <p>Note: Identified mitigation measures may need to be further assessed under the Environmental Planning and Assessment Act, 1979.</p>	Section 6.2	As required by this condition, identified measures to mitigate the loss of on-street parking in Alfred Street North (specifically between Wyagdon Street and Whaling Road), Neutral Bay will be implemented prior to impacting the parking, unless agreed otherwise by the Planning Secretary.
<b>Road Safety</b>			
E144	The CSSI must be designed to meet relevant design, engineering and safety guidelines, including the Austroads Guide to Traffic Management for new or modified local roads, parking, pedestrian and cycle infrastructure.	Section 6.2	The Project will be designed in accordance with the relevant standards/guidelines and be certified by an appropriately qualified person acknowledging that the design meets the requirements of this condition.
E145	An independent Road Safety Audit must be undertaken to assess the safety performance of new or modified local road, parking, pedestrian and cycle infrastructure provided as part of the CSSI (including ancillary facilities) to ensure that they meet the requirements of relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Management.	Section 6.3	Independent road safety audits will be undertaken in accordance with the requirements of this condition to assess the safety performance of new or modified local road, parking, pedestrian and cycle infrastructure provided as part of the Project (including ancillary facilities).

MCoA #	Condition Requirements	Reference	How Addressed
	<p>The audit must be undertaken by an appropriately qualified and experienced person during detailed design development (audit of plans) and prior to opening (pre-opening audit).</p> <p>The audit findings and recommendations of the detailed design plans (audit of the plans) must be actioned prior to construction of the relevant infrastructure. The pre-opening audit findings and recommendations must be actioned prior to the relevant infrastructure being made available for use.</p>		
<b>Access from Mount Street Interchange to Alfred Street North</b>			
E146	Direct vehicular access must be provided from Mount Street, North Sydney to Alfred Street North, Neutral Bay. Access must be provided in both directions.	Section 6.9	CPB Downer JV will ensure that direct bidirectional vehicular access is provided from Mount Street, North Sydney to Alfred Street North, Neutral Bay.
<b>Road Network Performance</b>			
E147	<p>The Proponent must prepare a Road Network Performance Plan in consultation with the relevant council(s). The Plan must incorporate operational traffic modelling results from the operation of major motorways including but not limited to WestConnex M4-M5 Link (SSI 7485) and WestConnex M8 (SSI 6788) projects (including any Road Network Performance Plan or Operational Road Network Performance Review prepared) and include:</p> <ul style="list-style-type: none"> <li>consideration of movement and place analysis and local initiatives, such as local area improvement strategies, potential land use changes, and any traffic changes as a result of other major projects in the vicinity of the project area;</li> </ul>	N/A	The Road Network Performance Plan is to be prepared by TfNSW.



MCoA #	Condition Requirements	Reference	How Addressed
	<ul style="list-style-type: none"> <li>• an updated analysis, including modelling of traffic impacts to the adjoining road network (including impacts on local roads from rat-running), as a consequence of the CSSI;</li> <li>• an assessment of the performance of the road network, including:               <ol style="list-style-type: none"> <li>i. potential “pinch-points” where the merging of tunnel exit traffic and surface traffic would occur at Rozelle or along the Warringah Freeway;</li> <li>ii. traffic movements and congestion at various intersections in North Sydney, Cammeray and Rozelle/Annandale;</li> <li>iii. results of the Public Transport Review as required by Condition E153; and</li> </ol> </li> <li>• mitigation measures to manage predicted traffic performance impacts including local area traffic management and bus priority measures as relevant.</li> </ul> <p>The Road Network Performance Plan must be submitted to the Planning Secretary and relevant council(s) for information six months prior to the operation of the CSSI. The mitigation measures in the Plan must be implemented by the Proponent before the operation of the CSSI. The Proponent is responsible for the implementation of identified measures under (c) above.</p> <p>Note: Identified mitigation measures may need to be further assessed under the Environmental Planning and Assessment Act, 1979. Work will need to meet relevant design standards and be subject to independent road safety audits.</p>		
E148	The Proponent must prepare an Operational Road Network Performance Review, within 12 months and again within five years after the commencement of operation of the CSSI. The Review must	N/A	The Operational Road Network Performance Review is to be prepared by TfNSW.

MCoA #	Condition Requirements	Reference	How Addressed
	<p>address road network performance and review the effects of the CSSI on the adjoining road network. The Review must confirm whether the mitigation measures identified in the Road Network Performance Plan required under Condition E147 are adequate.</p> <p>The Review must be undertaken in consultation with relevant council(s) and be completed within six months of the review timeframes. The Review must be provided to the Planning Secretary within 60 days of its completion.</p> <p>The identification of further mitigation measures, if required, must be included in the Review. The Proponent is responsible for the implementation of the identified measures.</p> <p>Note: Identified mitigation measures may need to be further assessed under the Environmental Planning and Assessment Act, 1979. Work will need to meet relevant design standards and subject to independent road safety audits.</p>		
<b>Public Transport - Construction</b>			
E149	<p>Where bus stops are required to be temporarily closed, such closure must not occur until relocated bus stops that comply with relevant standards, are functioning, have similar capacity and amenity and are relocated within a 400 metre walking distance of the existing bus stop. Closures and relocation of bus stops during construction must be undertaken in consultation with relevant council(s). Wayfinding signage must be provided directing commuters to adjacent or relocated bus stops. Footpaths and (where required) road crossing facilities must be provided to any relocated bus stops such that accessibility and safety standards are met.</p>	Section 6.8.1	<p>The relocation of bus stops will be required at a number of work sites to ensure safe separation of the worksite and bus operations. As detailed in Section 6.8.1, temporary closure of bus stops will be undertaken in accordance with the requirements of this condition.</p>

MCoA #	Condition Requirements	Reference	How Addressed
E150	Prior to the commencement of operation, all bus stops temporarily closed must be reinstated in a manner that complies with	Section 6.8.1	The reinstatement of bus stops will occur in accordance with relevant standards and in consultation with relevant council(s). The reinstated stops will provide equal or improved capacity, amenity and accessibility (including footpaths and road crossings).
<b>Active transport network</b>			
E197	An active transport link through Cammeray Golf Course between Ernest Street and Warringa Road / Bells Avenue, Cammeray must be provided prior to the removal of the existing path.	Section 5.6.1	The shared user path along Warringah Freeway near Cammeray Golf Course will be realigned through the golf course between Ernest Street and Warringa Road/ Bells Avenue prior to the removal of the existing shared path.

### 3.3 Environmental Management Measures

Relevant REMMs are listed in **Table 3-2**, including a cross reference to indicate where the commitment is addressed in this Sub-plan or other project management documents.

**Table 3-2: Revised Environmental Management Measures relevant to this TTAMP**

Ref #	Commitment	Reference	How Addressed
CTT1	A road dilapidation report will be prepared, in consultation with relevant councils and road owners, identifying existing conditions of local roads and mechanisms to repair damage to the road network caused by heavy vehicle movements associated with the project.	Section 6.1.4	<p>Road dilapidation surveys will be prepared for local roads before they are used for haulage operations. These surveys will include:</p> <ul style="list-style-type: none"> <li>• Pavement strength testing</li> <li>• Determination of pavement life</li> <li>• Cracking and rutting surveys</li> <li>• Road inventory.</li> </ul> <p>The surveys will be prepared in consultation with relevant council(s) and road owners. The final surveys will be submitted to the relevant council(s) and road owners within three weeks of completing the surveys and no later than one month before the use of local roads by heavy vehicles.</p>

Ref #	Commitment	Reference	How Addressed
CTT4	Ongoing consultation will be carried out with (as relevant to the location) Transport Coordination within Transport for NSW, the Port Authority of NSW, local councils, emergency services and bus operators to minimise traffic and transport impacts during construction.	Section 4 <b>Appendix A</b> Section 7.2.1	As detailed in Section 4, this TTAMP has been prepared in consultation with the relevant agencies identified in MCoA C4(a). The Consultation Report is provided in <b>Appendix A</b> .  During construction, the Traffic and Transport Liaison Group (TTLG) will facilitate consultation with agencies and organisation that are impacted or have a direct influence on traffic and transport matters. Members include personnel from TfNSW, Emergency Services, public transport operators, motoring, bicycle and pedestrian organisations and government departments who may be impacted by the works. The TTLG will meet monthly.
CTT5	The community will be notified in advance of proposed transport network changes, and maritime restrictions through appropriate media and other appropriate forms of community liaison.	Section 7.2.4 <b>Table 7-10</b>	The community will be notified in advance of proposed transport network changes through appropriate media and other appropriate forms of community liaison as detailed in Section 7.2.4 and <b>Table 7-10</b> .
CTT6	Construction road traffic will be managed to minimise movements during peak periods.	Section 6.1.4	Heavy haulage trucks will be equipped with telematics (customised GPS tracking system) so that their movements are captured in real time. This enables monitoring of driver behaviour, vehicle speed and fleet arrivals to minimise movements during peak periods.
CTT7	Vehicle movements to and from construction sites will be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and	Section 6.1.2	Site specific CTTMPs will be developed for work sites, construction support sites, intersection works and/ or where long-term changes occur to the road network. The CTTMPs will specify the road safety and traffic management measures to be applied

Ref #	Commitment	Reference	How Addressed
	modifications to existing signals or, on occasion, police presence		while undertaking construction works to ensure pedestrian, cyclist and motorist safety.
CTT8	Directional signage, barriers and/or line marking will be used as required to direct and guide drivers, cyclists and pedestrians past construction sites and on the surrounding network. This will be supplemented by Variable Message Signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternative routes.	Sections 6.1.2	Site specific CTTMPs will be developed for work sites, construction support sites, intersection works and/ or where long-term changes occur to the road network. The CTTMPs will specify the road safety and traffic management measures to be applied while undertaking construction works to ensure pedestrian, cyclist and motorist safety. Design drawings within each CTTMP will specify signage, barriers and/or line marking as required.
CTT9	Where provision of construction on-site parking cannot accommodate the full construction workforce, feasible and reasonable management measures that minimise impacts on parking on local roads will be identified and implemented. Depending on the location, management measures may include workforce shuttle buses and the use of public transport.	Section 6.1.3	CPB Downer JV will minimise our impact on the public roads by providing parking facilities where ancillary facilities cannot accommodate the proposed workforce. In addition, a shuttle bus service will be provided from the identified parking areas and nearby public transport hubs including St Leonards and North Sydney train stations.
CTT10	Any adjustments to existing bus stops will be determined in consultation with relevant stakeholders including other divisions of Transport for NSW and advanced notification will be provided to affected bus customers. Relocations will be as close as feasible and reasonable to their existing position.	Section 6.8.1	The relocation of bus stops will be required at a number of work sites to ensure safe separation of the worksite and bus operations. As detailed in Section 6.8.1, temporary closure of bus stops will be undertaken in accordance with the requirements of this REMM.

Ref #	Commitment	Reference	How Addressed
CTT11	Truck marshalling areas will be identified and used where feasible and reasonable, to minimise potential queueing and traffic and access disruptions in the vicinity of construction support sites.	Section 6.1.4	Heavy haulage trucks will be equipped with telematics (customised GPS tracking system) so that their movements are captured in real time. This enables geofencing to be undertaken which will allow monitoring of the number of trucks entering and exiting an area. Trucks will be directed to specific layover areas (marshalling yard) until they are able to continue their journey. The use of the marshalling areas will minimise the need for on road queueing and idling of trucks in local streets. The selection of appropriate marshalling facilities locations has been undertaken to ensure that they are located away from sensitive receivers.
CTT12	Activities requiring partial and full road closures will occur outside of peak periods and/or during night-time to minimise the impact of these activities on the road network where feasible and reasonable.	Section 6	CPB Downer JV will work with Customer Journey Management (CJM) and other road authorities to minimise our impact on the local community by scheduling works, where feasible, during daytime hours. Where this is not possible due to negative impacts on the road and transport network, we will schedule our works outside of peak periods and/ or during night-time to minimise the impact of these activities on the road network.

Ref #	Commitment	Reference	How Addressed
CTT13	Partial or full closures of Warringah Freeway will be carried out in consultation with Transport Coordination within Transport for NSW.	Section 7.2.1 Section 7.2.2	<p>Partial or full closures of Warringah Freeway will be carried out in consultation with Transport Coordination within Transport for NSW. The primary consultation forums are the TTLG and the Traffic Control Group (TCG).</p> <p>The TTLG will facilitate consultation with agencies and organisation that are impacted or have a direct influence on traffic and transport matters. Members include personnel from TfNSW, Emergency Services, public transport operators, motoring, bicycle and pedestrian organisations and government departments who may be impacted by the works. Matters for discussion will include construction staging, partial or full closures of Warringah Freeway, community concerns associated with traffic changes, impacts on road, path and public transport users and operators.</p> <p>The TCG is a technical forum to discuss the proposed traffic management measures during the various stages of the construction works, including full and partial closures of Warringah Freeway and the potential impacts on the road, path and transport networks.</p>



Ref #	Commitment	Reference	How Addressed
CTT19	Direct impacts to existing shared user paths will be minimised where reasonable and feasible. Any detours and adjustments will be designed with consideration of user safety and convenience.	Section 6.7	<p>Safe pedestrian and cyclist access will be maintained around work sites during construction and all reasonably practicable measures will be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. The existing footpath widths will be retained where possible, any change to the width will be approved by the relevant authorities through the CTTMP review and approval process.</p> <p>Where an intermittent closure of a path is required, we will provide an alternative path which will be of the same condition of the path to be diverted and comply with relevant standards unless otherwise endorsed by an independent, appropriately qualified and experienced person.</p>
OT3	Opportunities to reduce or offset the permanent loss of long stay parking spaces along Alfred Street North due to the project will be investigated during further design development.	Section 6.2	In accordance with MCoA E143, identified measures to mitigate the loss of on-street parking in Alfred Street North (specifically between Wyagdon Street and Whaling Road), Neutral Bay will be implemented prior to impacting the parking, unless agreed otherwise by the Planning Secretary.
OT4	During further design development, the project will investigate opportunities for additional pedestrian connections across Ernest Street that would improve connectivity between active transport paths and public open space in the area.	Section 5.6.1	The shared user path along Warringah Freeway near Cammeray Golf Course will be realigned through the golf course between Ernest Street and Warringa Road/ Bells Avenue prior to the removal of the existing shared path.

## 4 Consultation

This TTAMP will be developed and finalised in consultation with nominated agencies in accordance with MCoA C4(a). Consultation with each agency, including responses received and how any issues raised were addressed in the development of this TTAMP are included in the Consultation Report (**Appendix A**).

Community feedback and complaints relating to traffic and access will be managed in accordance with the Community Communication Strategy and Complaints Management System.

# 5 Construction traffic, transport and access impacts

Potential traffic, transport and access impacts resulting from the construction of the Project were assessed in the EIS, Section 5 of Appendix F (Technical working paper: Traffic and transport) and Modification 1 and are summarised in this Section. The EIS and Modification 1 identified that the construction of the Project is anticipated to have some impacts on the surrounding road network, public transport and active transport routes surrounding the construction sites.

## 5.1 Traffic Modelling

To understand the likely traffic conditions during the construction of the WFU Project, TfNSW provided Do Minimum (2027) – AM and PM peak models have been modified to reflect the existing road geometry and operations such as:

- Merlin Street/ Ernest Street Signalised operation and right turn provision from Merlin to Ernest Street
- Four lanes (three general traffic and one bus lane) on Falcon Street Bridge eastbound
- Military Road and Warringah Freeway bus lane and bus only lanes re-coded
- The removal of the westbound weave at High Street/Pacific Highway immediately east of Walker Street.

These assessments are considered to be conservative as 2027 traffic volumes have been used rather than 2023 volumes.

The need to assess potential cumulative impacts of the key construction activities has resulted in three temporary works model scenarios being assessed for the weekday AM and PM peak periods. The three temporary works models developed are:

- Temporary Works 1 - Cumulative impacts of construction activities:
  - #1 - Ernest St tidal flow ramp
  - #4 - Miller Street at Falcon Street
  - #8 - Falcon Street dedicated on-ramp bus lane
  - #29 - Mount Street (Bridge Lanes)
  - #43 - Warringah Freeway Falcon Street (west) off-ramp closure
  - #45 - Mount Street tidal flow ramp
- Temporary Works 2 - # 32: Alfred Street North NB Closure
- Temporary Works 3 - # 44: Alfred Street North off-ramp (SB) left turn into Alfred Street North (NB).

When considering the Wicks Road (WFU 10) haulage route, current 2022 and future 2023 traffic volumes (when peak traffic generation would be expected to occur) were utilised to assess the performance implications of WFU 10 on the surrounding network. SCATS data and traffic survey data were used to model current, future 'do nothing' and future 'development' scenarios at AM and PM peak periods at three key intersections:

- Wicks Road / Waterloo Road / Halifax Road
- Epping Road / Wicks Road
- Epping Road / Delhi Road.

The traffic generation assumptions associated with these key construction activities is considered to be minimal with the largest traffic generation occurring due to the Western Harbour Tunnel enabling works due for completion by June 2022.

### **5.1.1 Temporary Works Model #1**

#### **Travel times**

During the AM peak, increases in travel times are anticipated with the majority of these just marginally over 10% (which is typically considered as being the daily variation that can occur on relatively uncongested roadways). The exception to this is the Bradfield Highway to Falcon Street (West) route that almost doubles in travel time length due to added congestion northbound on Bradfield Highway and the diversion routes used (via Pacific Highway and Miller Street).

#### **Intersection performance**

Intersection delay and level of service are not anticipated to change significantly, with the same or similar Level of Service (LoS) across all intersections. An exception is during the AM peak at Miller Street/McLaren Street intersection with an increase during the AM peak period and specifically 8am-9am. During the PM peak, the High Street intersections with Alfred and Clark are anticipated to experience an increase in delays along with Pacific Highway intersections with High Street/Arthur Street, Walker Street/Blue Street and Miller Street/Mount Street during period 5-6pm only.

#### **Network performance**

Average vehicle speeds are anticipated to drop by 4-5% to 44.59 km/hr in AM peak and 38.24 km/hr in PM peak with a corresponding increase in Vehicle Travel Time through the network by 4%-5%.

The Temporary Works Model #1 indicates that network wide performance impacts will be minor and while some reductions in average speeds will occur, these will not be significant. Further, there is generally enough network capacity to accommodate the cumulative works without demand management interventions.

### **5.1.2 Temporary Works Model #2**

The network changes required includes the long-term closure of the Alfred Street North (northbound) including a redistribution of modelled trips to re-route traffic via Clark Road.

#### **Travel times**

During the AM peak travel times are consistent with the Do minimum model with some increases in travel time anticipated from Ernest Street (W) to Military Road.

#### **Intersection performance**

Intersection delay and LoS are not anticipated to change significantly, with the same or similar LoS across all intersections. An exception is during the period 5-6pm when the Berry Street intersections with Miller Street and Pacific Highway see some increase in delays as well as the Pacific Highway/Miller Street/Mount Street intersection.

#### **Network performance**

Average vehicle speeds are anticipated to drop by very little (between 0.1-0.2 km/hr) with Vehicle Travel Time essentially the same as the Do minimum model.

### **5.1.3 Temporary Works Model #3**

In addition to the full closure of the Alfred Street North northbound there is also a requirement to assess the key construction activity of the removal of the left turn from North Sydney off-ramp (southbound) left turn into Alfred Street North (northbound). This forms the base of the Temporary Works Model #3 and consists of rerouting this left turn traffic around Alfred Street North-High Street- Arthur Street- Mount Street- Alfred Street North northbound.

## Travel times

During the AM peak there are no significant differences in travel time on any routes as a consequence of the proposed construction works, with all travel times within 10% of the Do Minimum model. The PM peak shows some more significant travel time increases between Ernest Street (E) to Falcon Street (W) due to signal retiming at the Falcon Street ramps. Traffic travelling southbound from the Pacific Highway to Bradfield Highway is also impacted with a 26% increase in travel time due to the re-routing of traffic on High Street and Mount Street.

## Intersection performance

It is apparent that intersection delay and LoS are not anticipated to change significantly, with the same or similar LoS across all intersections. Some exceptions are evident during the period 5-6pm only, when the Berry Street intersections with Miller Street and Pacific Highway see some increase in delays as well as the Pacific Highway/Bay Road intersection during same period.

## Network performance

Average vehicle speeds are anticipated to be similar to the Do Minimum model with AM peak increase of 0.11 km/hr and PM reduction of 0.4 km/hr. Vehicle Travel Time through the network will be essentially the same as the Do minimum model.

### 5.1.4 Wicks Road (WFU 10) haulage route

To travel from the construction site to WFU 10, heavy vehicles and worker shuttle buses would travel north-west via M1 and M2 Motorways before exiting onto Epping Road and turning right at Wicks Road.

During the AM peak, the network delays at the three identified intersections are negligible, with between minor improvements and up to 3.5 second delays during the AM peak and up to 5.8 second delays during the PM peak at intersections.

The existing intersection performance at Wicks Road / Waterloo Road / Halifax Road during both AM and PM peak and Epping Road / Delhi Road during AM peak currently experience acceptable LoS (B or C). Intersection performance at Epping Road / Wicks Road during both AM and PM peak, and Epping Road / Delhi Road during PM peak, already experience poor LoS (E or F) without WFU construction traffic. Intersection LoS is not anticipated to change significantly, with the same or similar LoS across all intersections at all peak periods.

## 5.2 Risk Assessment

CPB Downer JV will manage the risks associated with traffic management by ensuring no on-site activity that affects traffic commences without an approved construction area risk assessment.

The preliminary risk assessment (**Appendix B**) has identified the following three hazard events as most likely to have a major impact to the traffic road network:

- Abnormal traffic congestion
- Impacts to emergency service response
- Special on-road events.

Other hazard events associated with utilisation of the local road network to access and undertake the works, and primarily impacting residents and local business community are:

- Temporary full and partial road closures
- Temporary reduction in parking capacity
- Utilisation of non-arterial roads for haulage, including the use of local streets to access the work support sites.

The preliminary risk assessment will be supplemented with a series of formal risk management workshops prior to works commencing in any construction area and for each traffic staging arrangement associated with that area. These workshops will require input from stakeholders including the Construction Team, TfNSW, the CJM, emergency services and councils to identify risks relating to each specific site (if applicable). The risk workshops will be formally documented with the outcomes used to identify mitigation strategies. Risk workshops will be held during the life of the works, and specifically when site operations change.

CPB Downer JV will identify the risks and develop strategies, where required, for traffic safety and management to address these hazards and other traffic-related issues by using some or all of the following measures:

- Undertake road safety audits
- Surveillance and monitoring
- Training and evaluation of personnel competencies
- Assessment and inspections of equipment or controls
- Use of hold or witness points
- Auditing of systems/ processes
- Extensive community relations exercises.

## **5.3 Construction Traffic**

### **5.3.1 Temporary Road Closures and Worksite Access**

To facilitate the construction works, road closures will be required. Further to the baseline ROL schedule provided by TfNSW, additional proposed road closures are listed in **Table 5-1**. In cases where full closures are proposed, alternate access arrangements will be in place. The specifics of the road closures will be detailed in the site-specific CTTMPs as detailed in Section 6.1.2 of this Sub-plan and communication of the road closures will be as per Section 7.2.1. In cases where full closures are proposed, alternate access arrangements will be in place.

**Table 5-1: Temporary full and partial road closures**

Location	Direction	Between	And	Duration	Works required
Warringah Freeway – Willoughby Road off-ramp	North-bound (NB)	Donnelly Road	Merrenburn Avenue	12 months	Reduction in ramp capacity by moving diverge 80m north to extend work area for retaining wall construction
Miller Street	NB and south-bound (SB)	Falcon Street	Falcon Lane	9 months	Reduction from 4 to 3 lanes and manual implementation of tidal flow to cater for AM/PM peaks – to construct new left turn lane, including utility relocations within footpath
Cammeray Avenue	NB	Ernest Street	Anzac Avenue	Daytime closure under ROL, managed under stop/go conditions	Noise wall construction and replacement of existing road pavement
Warringah Freeway – Ernest Street on-ramp	SB	Ernest Street	Ramp merge on inner SB carriageway	42 months	Long term closure of 1 of 2 south-bound lanes to provide temporary long term bus layover for 9 buses
Warringah Freeway – Ernest Street tidal flow ramp	Tidal	Ramp diverge on reversible carriageway	Ernest Street	6 weeks over extended holiday period	Substantial vertical grade realignment and connection to north-bound inner carriageway
Warringah Freeway – Miller Street on-ramp	SB	Miller Street	Ramp merge on outer SB carriageway	56-hour weekend shutdown	Tie-in of existing and new pavements
Warringah Freeway – Falcon Street EB off-ramp	NB	Wyagdon Street	Falcon Street	6 weeks	Temporary loss of 3 'storage' spaces on ramp

Location	Direction	Between	And	Duration	Works required
Warringah Freeway – outer carriageway	NB	Falcon Street	Ernest Street	Night-time ROL – multiple occasions	Remove deck section at Ernest Street; erection of new pedestrian bridge; removal of existing bridge
Warringah Freeway – outer carriageway	SB	Ernest Street	Falcon Street	Night-time ROL – multiple occasions	Full closure to remove and replace deck sections at Falcon Street; erection of new pedestrian bridge; removal of existing bridge
Warringah Freeway – Ernest Street tidal flow ramp	Tidal	Falcon Street	Ernest Street	56-hour weekend shutdown	Piling for new pedestrian bridge
Warringah Freeway – Ernest Street tidal flow ramp	Tidal	Falcon Street	Ernest Street	Night-time ROL – multiple occasions	Erection of formwork for pier and headstock for new pedestrian bridge
Warringah Freeway – Ernest Street tidal flow ramp	Tidal	Falcon Street	Ernest Street	Night-time ROL – multiple occasions	Full closure for erection of new pedestrian bridge; removal of existing bridge
Warringah Freeway – Falcon Street tolled on-ramp	NB	Falcon Street	Ernest Street	56-hour weekend shutdown	Closure of 1 of 2 lanes for piling for new pedestrian bridge
Warringah Freeway – Falcon Street tolled on-ramp	NB	Falcon Street	Ernest Street	Night-time ROL – multiple occasions	Closure of 1 of 2 lanes for erection of formwork for pier and headstock for new pedestrian bridge
Warringah Freeway – Falcon Street tolled on-ramp	NB	Falcon Street	Ernest Street	Night-time ROL – multiple occasions	Full closure for erection of new pedestrian bridge; removal of existing bridge



Location	Direction	Between	And	Duration	Works required
Warringah Freeway – reversible carriageway	NB	Falcon Street	Ernest Street	Night-time ROL – multiple occasions	Full closure for erection of new pedestrian bridge; removal of existing bridge
Warringah Freeway – Ernest Street on-ramp	SB	Ernest Street	Falcon Street	56-hour weekend shutdown	Full closure for erection of new pedestrian bridge; removal of existing bridge
Warringah Freeway – inner carriageway	SB	Ernest Street	Falcon Street	56-hour weekend shutdown	Closure of 1 of 3 lanes for piling for new pedestrian bridge
Warringah Freeway – inner carriageway	SB	Ernest Street	Falcon Street	Night-time ROL – multiple occasions	Full closure for erection of new pedestrian bridge; removal of existing bridge
Warringah Freeway – Ernest Street on-ramp	SB	Ernest Street	Falcon Street	56-hour weekend shutdown	Closure of 1 of 2 lanes for piling for new pedestrian bridge
Warringah Freeway – Ernest Street on-ramp	SB	Ernest Street	Falcon Street	Night-time ROL – multiple occasions	Full closure for erection of new pedestrian bridge; removal of existing bridge
Warringah Freeway – Falcon Street tolled off-ramp	SB	Ernest Street	Falcon Street	Night-time ROL – multiple occasions	Full closure for erection of new pedestrian bridge; removal of existing bridge
Warringah Freeway – outer carriageway	NB	Ernest Street	Miller Street	Night-time ROL	Full closure to erect new Ernest Street ATL bridge
Warringah Freeway – Falcon Street tolled on-ramp	NB	Ernest Street	Miller Street	Night-time ROL	Full closure to erect new Ernest Street ATL bridge

Location	Direction	Between	And	Duration	Works required
Warringah Freeway – reversible carriageway	NB	Ernest Street	Miller Street	Night-time ROL	Full closure to erect new Ernest Street ATL bridge
Warringah Freeway – inner carriageway	SB	Miller Street	Ernest Street	Night-time ROL	Full closure to erect new Ernest Street ATL bridge
Warringah Freeway – Falcon Street tolled off-ramp	SB	Miller Street	Ernest Street	Night-time ROL	Full closure to erect new Ernest Street ATL bridge
Warringah Freeway – outer carriageway	SB	Miller Street	Ernest Street	Night-time ROL	Full closure to erect new Ernest Street ATL bridge
Falcon Street	West-bound (WB)	Lytton Street	Warringah Freeway SB on-ramp	24-hour weekend closure of 2 of 3 lanes, then followed by 12-hour shutdown of 1 of 3 lanes	Construction and curing of concrete bridge deck stitch pours
Warringah Freeway – Falcon Street on-ramp	SB	Falcon Street	Merlin Street (south)	36-hour shutdown of 1 of 2 lanes	Construction and curing of concrete bridge deck stitch pours
Warringah Freeway – Falcon Street WB general traffic (only) off-ramp	NB	Ridge Street	Falcon Street	Permanent closure	Left turn into Falcon Street is no longer available in final arrangement
Alfred Street North	NB	Rose Avenue	Wyagdon Street	24 months	Closure of SB lane (detour via Winter Avenue) for retaining wall and pavement reconstruction

Location	Direction	Between	And	Duration	Works required
Alfred Street North	NB	Kurraba Road	Rose Avenue	Daytime closure under ROL, managed under stop/go conditions	Creation of site access; Ridge Street pedestrian bridge – erection and demolition; replacement of existing road pavement
Mount Street	East-bound (EB)	Arthur Street	Alfred Street North	24 months	Closure of 1 of 2 lanes at the signalised intersection with Alfred Street North for construction of Mount Street SB bus on-ramp and Mount Street underpass
Mount Street	EB	Arthur Street	Alfred Street North	24-hour weekend closure of 2 of 3 lanes, then followed by 12-hour shutdown of 1 of 3 lanes	Construction and curing of concrete bridge deck stitch pours
Alfred Street North	SB	Kurraba Road	Mount Street	18 months	Closure of 1 of 3 lanes, merging 1 x Alfred Street North lane with 2 x Warringah Freeway SB off-ramp lanes, prior to signalised intersection for reconstruction of Alfred Street North NB, viaduct and Mount Street underpass
Alfred Street North	SB	Kurraba Road	Mount Street	4 months	Closure of Alfred Street North SB to traffic from Bent Street, (which will be required to detour via Kurraba and Clark Roads) to construct the southern approach slab to the viaduct
Alfred Street North	SB	Darley Street	Whaling Road	24 months	Occupation of parking lane for construction of Mount Street underpass and Warringah Freeway Mount Street SB on-ramps

Location	Direction	Between	And	Duration	Works required
Alfred Street North	NB	Mount Street	Kurraba Road	4 weeks	Full closure to construct Mount Street underpass approach slab
Alfred Street North	NB	High Street	Whaling Road	18 months	Full closure to construct Alfred Street North SB and Warringah Freeway Mount Street general traffic on-ramp
Warringah Freeway Alfred Street off-ramp – left turn into Alfred Street North NB	SB to NB	At Kurraba Road	-	Permanent closure	Left turn facility is no longer available in final arrangement
Warringah Freeway – outer/inner/reversible carriageways	NB	Mount Street	Falcon Street	Night-time ROL – multiple occasions	Full closure to erect Ridge Street pedestrian bridge; removal of existing bridge
Warringah Freeway –inner/outer carriageways and Alfred Street North B off-ramp	SB	Mount Street	Falcon Street	Night-time ROL – multiple occasions	Full closure to erect Ridge Street pedestrian bridge; removal of existing bridge
High Street	EB	Arthur Street	High Street overpass	56-hour weekend shutdown	Full closure to reconstruct existing pavement
High Street	WB	Arthur Street	High Street overpass	56-hour weekend shutdown	Closure of 1 of 2 lanes to reconstruct existing pavement
High Street	WB	Alfred Street North	Clark Road	56-hour weekend shutdown	Closure of 1 of 2 lanes to reconstruct existing pavement

Location	Direction	Between	And	Duration	Works required
High Street	EB	Alfred Street North	Clark Road	56-hour weekend shutdown	Closure of 1 of 2 lanes to reconstruct existing pavement
Warringah Freeway – High Street on-ramp	SB	High Street	Cahill Expressway	56-hour weekend shutdown – multiple over 3 months	Full closure to construct noise wall structure and pavement reconstruct existing pavement
Arthur Street off-ramp	NB	Pacific Highway	High Street	56-hour weekend shutdown	Full closure to reconstruct existing pavement
Arthur Street	SB	Mount Street	High Street	56-hour weekend shutdown	Full closure to reconstruct existing pavement
Berry Street and Warringah Freeway – Berry Street on-ramp	EB then NB	Walker Street	Hampden Street	56-hour weekend shutdown; open to local traffic only	Full closure to reconstruct existing pavement
Berry Street and Arthur Street	EB then SB	Walker Street	Mount Street	56-hour weekend shutdown; open to local traffic only	Full closure to reconstruct existing pavement
Warringah Freeway – Mount Street tidal flow ramp	Tidal	Warringah Freeway – reversible NB diverge	Mount Street	Permanent closure	Ramp facility is not available in final arrangement
Warringah Freeway – SHT exit	NB	Tunnel portal	Mount Street	Aligned with scheduled SHT NB shutdowns	Drainage, lane channelization works, and signage on Mount Street overpass

Location	Direction	Between	And	Duration	Works required
Warringah Freeway – SHT entrance	SB	Ridge Street	Tunnel portal	Aligned with scheduled SHT SB shutdowns	Drainage, lane channelisation works, toll gantry erection and removal, and signage on Mount Street overpass
Warringah Freeway	NB	Lavender Street	High Street	Night-time ROL – multiple occasions	Full closure of carriageway for tolling and signage gantry erection
Warringah Freeway	SB	High Street	Lavender Street	Night-time ROL – multiple occasions	Full closure of carriageway for tolling and signage gantry erection
Warringah Freeway – Mount Street on ramp	SB	Mount Street	Warringah Freeway – SB carriageway merge	Night-time ROL – multiple occasions	Full closure to remove existing tolling gantry
Warringah Freeway – outer/ reversible carriageways	NB	High Street	Mount Street	Night-time ROL – multiple occasions	Full closure of each carriageway for signage on Mount Street overpass
Warringah Freeway – outer carriageway	SB	Ridge Street	Mount Street	Night-time ROL – multiple occasions	Full closure of carriageway for signage on Mount Street overpass, and tolling gantry removal
Warringah Freeway – outer/inner/ reversible carriageways	NB	Ridge Street	Falcon Street	Night-time ROL – multiple occasions	Full closure of each carriageway for signage gantry erection and removal
Warringah Freeway – inner and outer carriageways	NB	Ernest Street	Miller Street	Night-time ROL – multiple occasions	Full closure of both carriageways for signage gantry erection

Location	Direction	Between	And	Duration	Works required
Warringah Freeway – inner and outer carriageways	SB	Miller Street	Ernest Street	Night-time ROL – multiple occasions	Full closure of both carriageways for signage gantry erection and removal
Warringah Freeway	SB	Ernest Street	Miller Street	Night-time ROL – multiple occasions	Full closure of each carriageway for signage gantry erection and removal
Warringah Freeway	SB	West Street	Miller Street	Night-time ROL – multiple occasions	Full closure of carriageway for signage gantry erection and removal
Warringah Freeway	SB	Merrenburn Avenue	Brook Street	Night-time ROL – multiple occasions	Full closure of carriageway for signage gantry erection and removal
Warringah Freeway	NB	West Street	Brook Street	Night-time ROL – multiple occasions	Full closure of carriageway for signage gantry removal

Work site access is as noted in **Appendix C** (Indicative Construction Vehicle Routes) and **Appendix D** (Ancillary Facility Indicative Site Layouts) and **Table 6-1** for the ancillary facilities. For access into work areas that are remote from the ancillary facilities the following principles will apply:

- Provide for safe movements within and around the site
- Minimise delays to road and path users by ensuring that access to the construction site does not impede traffic flow
- Provide consistent signs and lines so that the road/path user is aware of the work sites
- Ensure that temporary signs and line marking is clear and easily understood and that we remove or cover signs that are not relevant
- Only reduce speed limits where required for the safety of workers and/or road users
- Design access points using the same principles as a permanent treatment
- Provide barriers and appropriate end treatments for long term work sites.

The following hierarchy of access will be applied:

- Freeways/ motorways
- State roads
- Regional roads
- Local roads.

### 5.3.2 Haulage Routes

All routes will use the most direct connection from local roads to the closest arterial and motorway networks to minimise the impacts on local roads, including stakeholders who live and work near the sites. The haul routes have been divided into three categories as follows:

- Haul routes on the motorway network and closest arterial network, such as the Warringah and Gore Hill Freeways, Bradfield and Pacific Highways and Military Road.
- Heavy haulage routes additional to those detailed above, that are either within or outside the project boundary and connect the site, with the closest arterial road or motorway network (as shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS).
- Access routes for minor plant and equipment that connect ancillary facilities on the local road network with the nearest arterial road (as shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS).

Local roads proposed to be used by heavy vehicles to directly access the construction boundary and ancillary facilities that are not shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS or Figure 7-1 of Modification 1 must be approved by the Planning Secretary. Additional details on the approval process and documentation requirements are provided in Section 6.1.4 of this Sub-plan.

The haul routes and access routes connecting the ancillary facilities on the local road network with the nearest arterial road are provided in **Appendix C** of this Sub-plan.

The impact of heavy haulage on the local community has been mitigated by:

- Adopting and restricting trucks to the shortest possible route from the ancillary facilities and project work areas to the arterial network
- Providing a marshalling facility for trucks outside of the local community area in order to create a 'just-in-time' scenario, thus ensuring truck parking and idling is minimised on local streets



- Creating a temporary signalised intersection at the corner of Ernest Street and Merlin Street until such time as the permanent installation is complete, thus ensuring a controlled environment for all traffic turning movements for the full duration of the Project
- Ensuring heavy vehicles comply with existing local road weight limits. In certain specific isolated cases, where there is a requirement for a 'one-off' delivery of major plant, equipment or material, Council permission will be sought to exceed the local road weight limit
- Communicating the routes and durations of concentrated trucking activity with the community.

## 5.4 Ancillary Facilities

Potential impacts at each of the ancillary facilities, including temporary road closures, access and parking removal are outlined below and summarised in **Table 6-1**.

Access to the ancillary facilities would be provided from state and regional roads such as Pacific Highway, Ernest Street, Miller Street, Berry Street, Falcon Street, Arthur Street and High Street. One site (WFU10) would be accessed by local road Wicks Road. Access routes to each of the ancillary facilities are included in **Appendix D** of this Sub-plan.

### WFU 2 – High Street south

- Temporary road closures: none
- Traffic impact: This site would generate about 50 light vehicle and 10 heavy vehicle movements per day so this would not substantially impact the traffic performance of High Street due to the anticipated low construction volumes
- Parking removal: none.

### WFU 3 – High Street north

- Temporary road closures: none
- Traffic impact: This site would generate about 50 light vehicle and 10 heavy vehicle movements per day so this would not substantially impact the traffic performance of High Street due to the anticipated low construction volumes
- Parking removal: none.

### WFU 4 – Arthur Street east

- Temporary road closures: none
- Traffic impact: This site would generate about 50 light vehicle and 10 heavy vehicle movements per day so this would not substantially impact the traffic performance of Arthur Street due to the anticipated low construction volumes
- Parking removal: none.

### WFU 5 – Berry Street east

- Temporary road closures: none
- Traffic impact: This site would generate about 50 light vehicle and 10 heavy vehicle movements per day so this would not substantially impact the traffic performance of Berry Street due to the anticipated low construction volumes
- Parking removal: none.

### WFU 6 – Ridge Street east

- Temporary road closures: none

- Traffic impact: This site would generate about 50 light vehicle and 10 heavy vehicle movements per day so this would not substantially impact the traffic performance of Ridge Street due to the anticipated low construction volumes
- Parking removal: Use of this site will result in a temporary loss of four (4) metered spaces (resident permit holders excepted). No provision of offset parking spaces for this temporary loss is proposed.

#### WFU 7 – Merlin Street

- Temporary road closures: none
- Parking removal: Refer to Section 5.7.1 for further details of temporary and permanent parking arrangements on Merlin Street and Alfred Street North during operation of WFU 7.

#### WFU 8 Cammeray Golf Course

- Temporary road closures: None
- Traffic impact: The primary traffic impacts of the Cammeray Gold Course construction support site on Merlin Street would be an upgrade of the Ernest Street/ Merlin Street intersection to include a north approach. The additional north approach and construction vehicles at the Ernest Street/ Merlin Street intersection would minimally increase the average vehicle delay experienced at the intersection. Primary access for heavy vehicles into this site would be via the Warringah Freeway therefore the Ernest Street access point would serve as a secondary access only and therefore the impact would be negligible.
- Parking removal: None.

#### WFU 9 – Rosalind Street

- Temporary road closures: none
- Traffic impact: This site would generate about 50 light vehicle and 10 heavy vehicle movements per day so this would not substantially impact the traffic performance of Berry Street due to the anticipated low construction volumes
- Parking removal: Operation of this site will result in a temporary loss of four unrestricted spaces. No provision of offset parking spaces for this temporary loss is proposed.

#### WFU 10 – Wicks Road

- Temporary road closures: none
- Traffic impact: This site would generate about 580 light vehicle and 176 heavy vehicle movements per day. Traffic modelling has shown this would not substantially impact the traffic performance of key intersections surrounding the site
- Parking removal: none. This site would provide up to 250 parking spaces for construction personnel, who would be transport to site via shuttle bus.

#### NH1 – Northern Hub

- The NH1-Northern Hub site was not included in the EIS and is proposed for use in the Ancillary Site Establishment Management Plan.
- Temporary road closures: none
- Traffic impact: This site would generate about 50 light vehicle and 10 heavy vehicle movements per day so this would not substantially impact the traffic performance of Warringah Freeway due to the anticipated low construction volumes
- Parking removal: None.

## 5.5 Public Transport

Minor modifications to some existing bus lanes will be required for short periods during construction of the Warringah Freeway Upgrade and include:

- Temporary closure of the Mount Street on ramp bus lane
- Temporary closure of the Falcon Street on ramp bus lane
- Temporary closure of the Falcon Street off ramp bus lane.

The work generally to be performed at these locations include erection of structural bridge elements, pavement tie-ins of new to existing works, street lighting, resurfacing and pavement marking works. During these short term ROL closures, buses would be required to use the adjacent general traffic lanes.

Increased travel times are likely along key public transport corridors. The EIS assessment of these increased travel times is minor.

Adjustments to bus stops within the construction zone on High Street and Miller Street will be required. The process for bus stop changes is outlined in Section 6.8.1 and communication of changes is provided in Section 7.2. Details of the bus stop impacts are provided in **Table 3-2**.

**Table 3-2: Bus stop impacts**

Bus stop ID	Location	Impact
206213	Miller Street opposite Abbott Street, Cammeray	Temporary relocation of bus stop 50m further north for a period of 2 months
206059	High Street after Clark Road	Temporary relocation of bus stop 30m further east during one 56-hour weekend shutdown

Details of the bus route changes required are provided in **Table 5-3**.

**Table 5-3: Bus route impacts**

Bus ID	Route change	Impact
263	For city bound buses, Cahill Expressway on-ramp from High Street closed on weekend (six separate occasions over a 3-month period)	Buses will be required to continue along High Street, turn right into Arthur Street, right again into Mount Street and right again to access Cahill Expressway from Mount Street on-ramp. Trip duration anticipated to extend by approximately 5 minutes.

Bus priority infrastructure and the capacity of layover facilities on the Warringah Freeway would be maintained throughout all stages of the works. Strategies to be implemented include:

- The use of one lane of the Ernest Street on-ramp to store nine (9) buses. Access to the on-ramp from the north is available by using the Falcon Street off-ramp (tolled), Falcon Street, Merlin Street and Ernest Street to the on-ramp. The on-ramp facility will be provided during the site start-up phase of the project. Temporary ancillary facilities for drivers will be provided within the confines of the on-ramp verge
- The use of two (2) parking spaces on Ernest Street westbound, between Park Avenue and Ernest Street. Access to the on-ramp from the north is available by taking the Falcon Street off-ramp (tolled), Falcon Street, Military Road and Ben Boyd Road to Ernest Street. The facility will only be available from 9:30am to 7:00pm. The kerb-side lane is a Clearway

between the hours of 6:00am and 9:30am. Drivers will need to walk 100m to use the ancillary facilities provided at the Ernest Street on-ramp

- The use of the newly constructed bus layover at the former Sydney Harbour Bridge northern toll plaza, where seven (7) spaces are available. Drivers can use the permanent ancillary facilities constructed as part of the bus layover
- A staged approach for the remaining twelve spaces (12) located at Cammeray. During the early stages of construction, 12 spaces will be provided for within the existing Cammeray facility. Drivers will be able to use the existing ancillary facilities. As construction progresses, 12 spaces will be provided within the Cammeray Golf Course, along with ancillary facilities for the drivers. Access to and egress from the Golf Course facility will be from and to the existing outer southbound carriageway.
- Relocation, in the later stages of the project, of the temporary Golf Course facility to the permanent facility of twelve (12) spaces located within the freeway confines at Cammeray, including the closure of the temporary facilities at Cammeray Golf Course and Ernest Street and the Ernest Street on-ramp.

A bus marshal will be provided during the weekday PM peak periods to advise bus operators of the availability and location of bus layover spaces.

## **5.6 Active Transport**

### **5.6.1 Pedestrian and cyclist detours**

The following pedestrian footpaths and cycleways are likely to require restriction or removal during construction of the Project:

#### **Cammeray Golf Course**

A shared use path currently exists on the northern side of Ernest Street. With the introduction of the new intersection, a new signalised pedestrian crossing will be incorporated to provide a safe crossing facility and minimise the impacts on pedestrians/ cyclists at this location. In addition, the shared user path along Warringah Freeway near Cammeray Golf Course would be realigned through the golf course between Ernest Street and Warringah Road/ Bells Avenue prior to the removal of the existing shared path.

#### **Ridge Street east**

Pedestrians and cyclists would continue to access the western end of the existing shared user bridge from the footpath on the southern side of Ridge Street, near the Ridge Street north ancillary facility access. Construction volumes generated by the Project at this site are low with approximately 20 light vehicles and 10 heavy vehicle movements per day, which would be locally managed under stop/go conditions.

Pedestrian and cyclists would continue to access the eastern end of the existing shared user bridge from Alfred Street North via the existing ramp at Winter Avenue, or the existing stair tower on Alfred Street North, until such time as a temporary lift is provided at the eastern abutment. Once the lift has been installed and commissioned, the existing ramp and stair tower will be demolished to make way for new construction. Once the new shared user bridge is completed, including stairs and a permanent lift, pedestrians and cyclists will be guided over the new structure and the existing bridge demolished.

Continuity between Alfred Street North and Ridge Street for cyclists and pedestrians will be maintained throughout the Project.

#### **Ernest Street bridge**

A new shared user bridge would be constructed across Warringah Freeway at the location of the existing Ernest Street bridge. The new bridge would be constructed with minor impact to pedestrians using the footpath on the existing bridge. The minor works are generally short-term

structure erection, other lifting activities and tie-ins to existing, which will generally occur at night. Pedestrians would be locally managed under stop/go conditions under these circumstances. The new shared user bridge is not opened to pedestrians and cyclists until completion of Stage 2 works.

Should the footpath be required to be closed over a weekend or during school holidays, pedestrians would be detoured via the Falcon Street shared user bridge, located about 140m south of Ernest Street, involving an extra 400m of walking.

### **Falcon Street bridge**

A new shared user bridge would be constructed across Warringah Freeway adjacent to the existing Falcon Street bridge. The new bridge would be constructed prior to the demolition of the existing bridge and would not result in any interruption to pedestrians or cyclists that currently use the existing bridge. Temporary short-term adjustments would be required on the shared user path in Jeaffreson Jackson Reserve to accommodate the new shared use bridge.

Pedestrians and cyclists would be detoured via the footpath on the existing Falcon Street road bridge 25m to the south, with a further option for pedestrians to detour via Ernest Street bridge, located about 140m north of Falcon Street, involving an extra 400m of walking.

The cycleway underpass below the eastern side of the Falcon Street bridge will be permanently removed during the works. Closure of the underpass requires pedestrians and cyclists to travel up to an additional 450m via existing pedestrian crossing facilities on Falcon Street and Military Road.

### **Mount Street bridge**

The existing pedestrian and cyclist arrangements on Mount Street bridge will not be impacted by the works.

### **High Street bridge**

The existing High Street bridge will be widened on the southern side, including the widening of the existing footpath to form a new shared user path. The bridge widening will be constructed with minor impact to the pedestrians and cyclists using the footpath on the existing bridge. The tie-in of new to existing work will have a minor impact, requiring pedestrians and cyclists to be relocated on both new and existing works as the work progresses. Signage and pedestrian fencing will be provided to guide users throughout works. Pedestrians and cyclists would be locally managed under stop/go conditions when alignment changes are being implemented.

### **High Street/ High Street Off Ramp/ Arthur Street intersection**

The existing intersection will be realigned and reconstructed approximately 20m north of the existing intersection. Existing pedestrian movements through the intersection will be maintained. When areas of the intersections are being realigned, pedestrians will be locally managed under stop/go conditions.

### **Alfred Street North/ High Street east realignment**

Alfred Street North will be realigned between Whaling Road and High Street and the existing roundabout at the intersection of Alfred Street North and High Street will be converted into a signalised intersection on a revised alignment. Existing pedestrian movements throughout the realignment works will be maintained and will include the provision of a side track through the existing park. When new footpaths are in the process of being tied into existing paths, pedestrians will be locally managed under stop/go conditions.

### **Miller Street/ Falcon Street intersection**

The existing footpath on the north-east corner of the intersection, extending 25m to the north will be realigned to accommodate a new left turn lane. Existing pedestrian movements adjacent to the widening works will be maintained. When sections of the footpath are being realigned during tie-in's, pedestrians will be locally managed under stop/go conditions.

## 5.7 Parking Removal

### 5.7.1 Permanent Arrangements

#### Alfred Street North

The proposed alignment of the Warringah Freeway will impact the existing footprint of Alfred Street North. Alfred Street North is proposed to be realigned to maintain the existing functionality, however a significant number of car parking spaces (approximately 98 places) are impacted by the works. The car park losses as a result of the Project works are situated in the following areas:

- Between McIntosh Lane and Winter Avenue (43 spaces)
- Adjacent to the existing and proposed Ridge Street pedestrian bridges (19 spaces)
- North of Kurraba Road (8 spaces)
- Between Kurraba Road and Mount Street (16 spaces)
- On Alfred Street North in front of the commercial building between Mount Street and Whaling Road (5 spaces)
- On Alfred Street North adjacent to the park on the corner of Whaling Road (7 spaces).

The following off-street and on-street car parks are proposed along Alfred Street North, aiming to offset the impacted car parking spaces, providing no-nett loss:

- Adjacent to McIntosh Lane and Merlin Street
- On the corner of Rose Avenue and Alfred Street North
- Under the Alfred Street North exit ramp from the Warringah Freeway to the Mount Street intersection
- Adjacent to the park on Alfred Street North between Whaling Road and High Street. This includes one space that is lost due to the Alfred Street North and Whaling Road intersection realignment.

#### Cammeray Avenue

Cammeray Avenue is located on the western side of the main carriageways and connects Ernest Street to Anzac Avenue. The existing Cammeray Avenue arrangement is a one-way local road with a width of approximately 5.4m. There is on-street parallel parking adjacent to Anzac Park.

The alignment of the Warringah Freeway and future Beaches Link impacts the existing alignment of Cammeray Avenue. The design includes widening Cammeray Avenue to the west by approximately the same amount it is impacted on the east, and therefore retaining the existing road width. This approach has been implemented from Ernest Street through to the start of the existing properties. In front of these properties, the road is to be narrowed to retain the western kerb line and avoid property impacts.

This means the existing parking 13 spaces on Cammeray Avenue in front of ANZAC Park are retained and the 10 car parking spaces are to be removed in front of the existing properties.

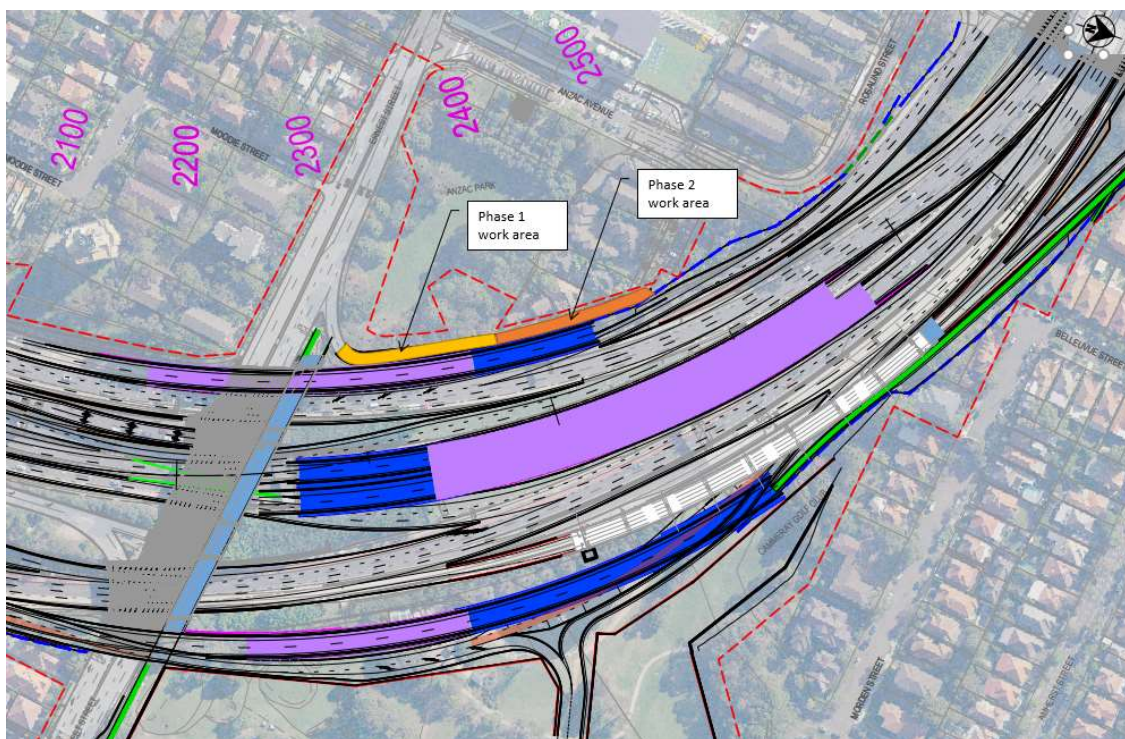
The parking in front of ANZAC Park is currently unregulated, while the parking in front of the properties is regulated as 2P parking, resident permit holders excepted. It is proposed to consult with North Sydney Council with the aim of re-signposting the unregulated area as 2P parking, resident permit holders excepted, to mitigate the impact on the Cammeray Avenue residents.

### 5.7.2 Temporary Arrangements

#### Cammeray Avenue, Cammeray

Cammeray Avenue will be reconstructed in two phases as follows and as detailed in **Figure 5-1**:

- Phase 1: Widen the existing road, including utility and drainage works, in front of ANZAC park. This will cause the loss of all the unregulated 13 parking spaces. The 2P parking in front of the Cammeray Avenue properties will be retained. There will be an intermittent day-time requirement to fully close the section of the road in front of ANZAC park. During these times, resident traffic will be detoured via Anzac Avenue (i.e. Cammeray Avenue direction reversed) under traffic control stop/go conditions.
- Phase 2: Upon completion of Phase 1, the regulated 2P parking spaces in front of the properties will be permanently (subject to North Sydney Council agreement) relocated to in front of ANZAC park. Subsequently noise wall and roadworks will be undertaken in front of the properties. During construction work, resident traffic will be managed under stop/go traffic control conditions.



**Figure 5-1: Construction phases on Cammeray Avenue**

### **Ernest Street, Cammeray**

It is proposed to provide two bus layover spaces on Ernest Street westbound between Park Avenue and Merlin Street. This will cause the temporary loss of eight parking spaces.

Currently, Ernest Street in this location has clearway restrictions between 6:00am to 9:30am and 2P parking, resident permit holders excepted.

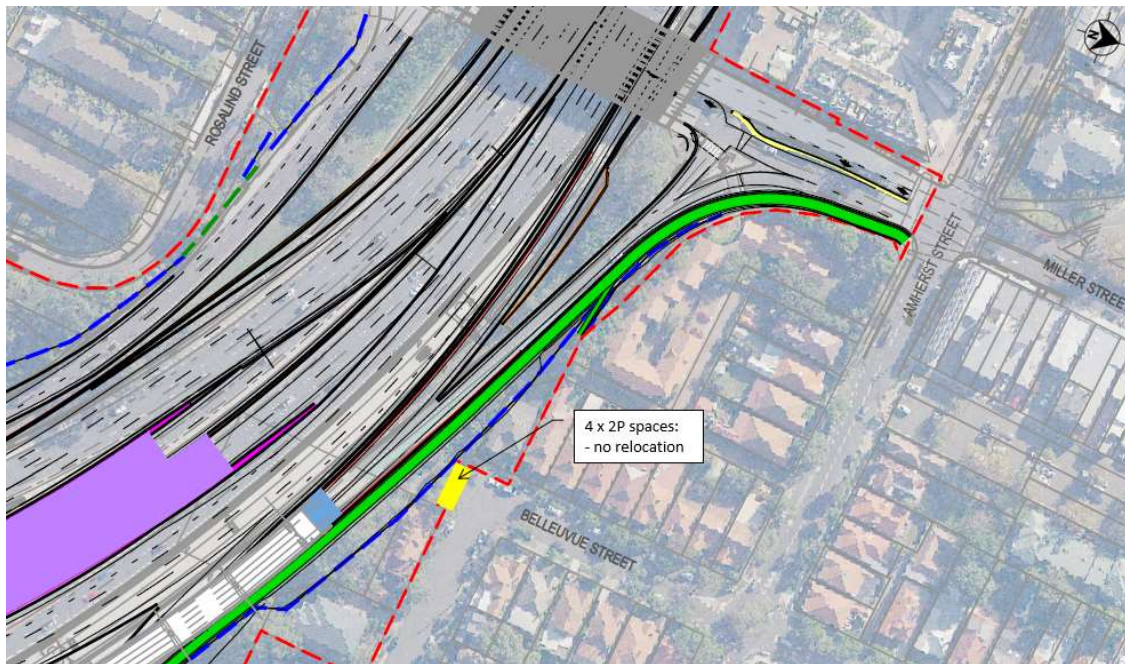
Subject to agreement with North Sydney Council it is proposed to install bus zone signage (for parking) from 9:30am to 7:00pm Monday to Friday for the area covered by eight spaces and permit the 2P parking regime at all other times (excepting Clearway conditions). It is not proposed to provide any offset temporary parking for the lost eight spaces when the bus parking zone is in operation.

### **Bellevue Street, Cammeray**

Dwellings at 1-3 Morden Road, 53 Bellevue Street and 36 Bellevue Street are required to be demolished as part of the works. There are four spaces signposted as 2P 8:30am to 6:00pm, Monday to Friday, permit holder excepted as shown in Figure 5-2 that are located between 53 and 36 Bellevue Streets that would be temporarily impacted by demolition works. The duration of the



demolition works is expected to take three months. No offset parking is proposed for the four spaces as it is assumed the spaces primarily serve the dwellings being demolished and there are no retail, day-care facilities or schools in the immediate vicinity.



**Figure 5-2: Parking spaces in Bellevue Street**

#### **Miller Street, North Sydney/Crows Nest**

The existing traffic arrangement on Miller Street, immediately north of the Falcon Street, is two lanes in each direction. It is proposed to occupy the southbound kerbside lane of Miller Street, approaching the intersection with Falcon Street, to construct a dedicated left turn lane from Miller Street into Falcon Street. The southbound kerbside lane is sign posted as No Stopping.

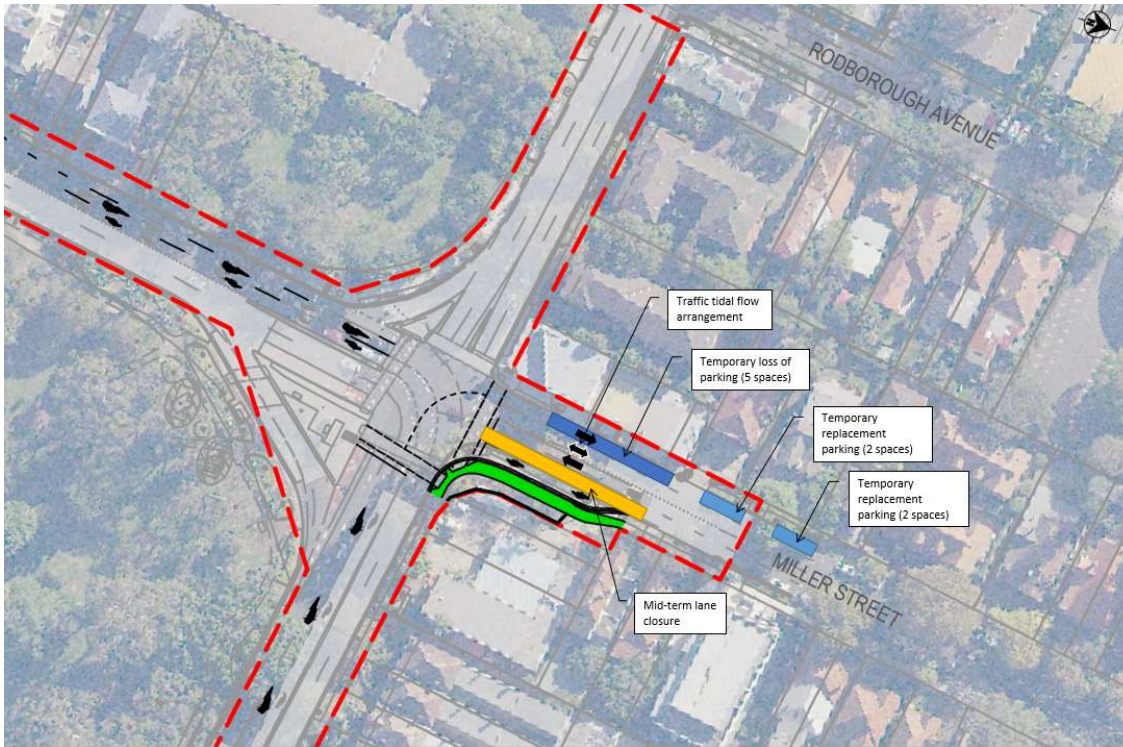
The northbound kerbside lane is a PM Clearway between 3:00pm and 7:00pm Monday to Friday and 1P regulated parking between 8:30AM and 3:00PM Monday to Friday (4 spaces) and 4P regulated parking between 8:30AM and 3:00PM and 7:00pm to 10:00pm Monday to Sunday, permit holders excepted (1 space).

Under the proposal to close the southbound kerbside lane, a tidal flow traffic arrangement will be implemented across the three open lanes of traffic. During the PM Clearway period, two lanes will operate in the northerly direction, and one lane in the southerly direction. At all other times two lanes will operate in the southerly direction and one lane in the northerly direction.

Under these arrangements, the 5 parking spaces immediately north of the intersection on the western side of Miller Street will be lost. Mindful of the retail facilities that exist at this location, it is proposed to temporarily amend the existing parking signage that exists north of the tidal flow area to provide 4 spaces of 1P regulated parking between 8:30AM and 3:00PM Monday to Friday, subject to the approval of North Sydney Council. This is shown in **Figure 5-3**.

The duration of the southbound lane closure and associated tidal flow arrangement is six months, whereupon the parking arrangements will revert to the existing condition.

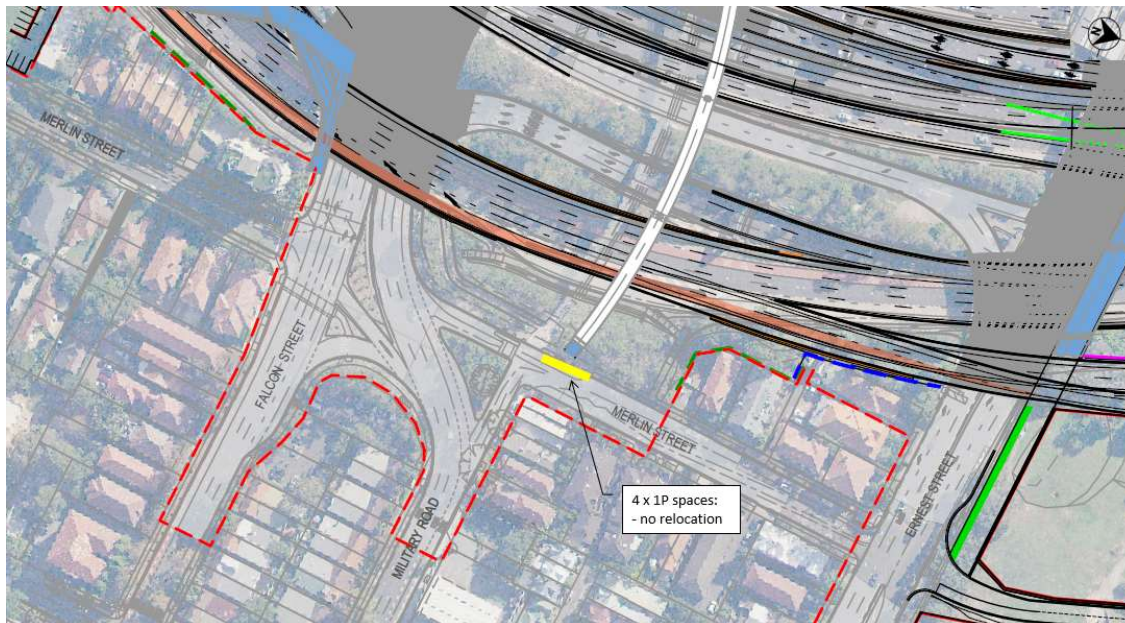




**Figure 5-3: Temporary parking arrangements at Miller and Falcon streets intersection  
Merlin Street, Neutral Bay**

The existing shared use bridge at Falcon Street will be replaced by a new bridge 10m north of the existing bridge. The existing bridge will not be removed until the new bridge is commissioned. Construction access is required to construct the eastern abutment of the bridge at Merlin Street and will require pedestrians to be detoured off the existing footpath into the roadway, protected from passing traffic by concrete barriers. Four spaces signposted 1P 8:30 to 6:00pm Monday to Thursday, 8:30am to 11pm Friday, permit holders excepted will be impacted for approximately nine months.

It is proposed not to provide any off-set parking for these four spaces. It is assumed the primary daytime use is by customers attending the retail facilities further east on Military Road. They will be required to find alternate locations within the neighbourhood. The location of the spaces is shown in **Figure 5-4**.



**Figure 5-4: Temporary loss of parking spaces in Merlin Street**

### **Alfred Street North, Neutral Bay - Area 1**

The scope of works on Alfred Street North between Bent Street and Merlin Street includes the construction of new retaining walls, noise walls, reconstruction of the Ridge Street pedestrian bridge and roadway reconstruction. Due to the course of the works, parking spaces on Alfred Street North will be impacted as follows:

- Between Winter Avenue and Wyagdon Street Phase 1 – 40 spaces signposted as 9P 9:00am to 6:00pm Monday to Friday (metered), permit holders excepted. Duration: 12 months
- Between Winter Avenue and Wyagdon Street Phase 2 – an additional 48 spaces signposted as 9P 9:00am to 6:00pm Monday to Friday (metered), permit holders excepted (29 of 48 spaces) and 2P 8:30am to 6:00pm Monday to Friday (metered), permit holders excepted (19 of 48 spaces): Duration: 12 months.

The impacted spaces will be managed in accordance with Condition E142 (Reinstatement of Car Parking on Alfred Street North).

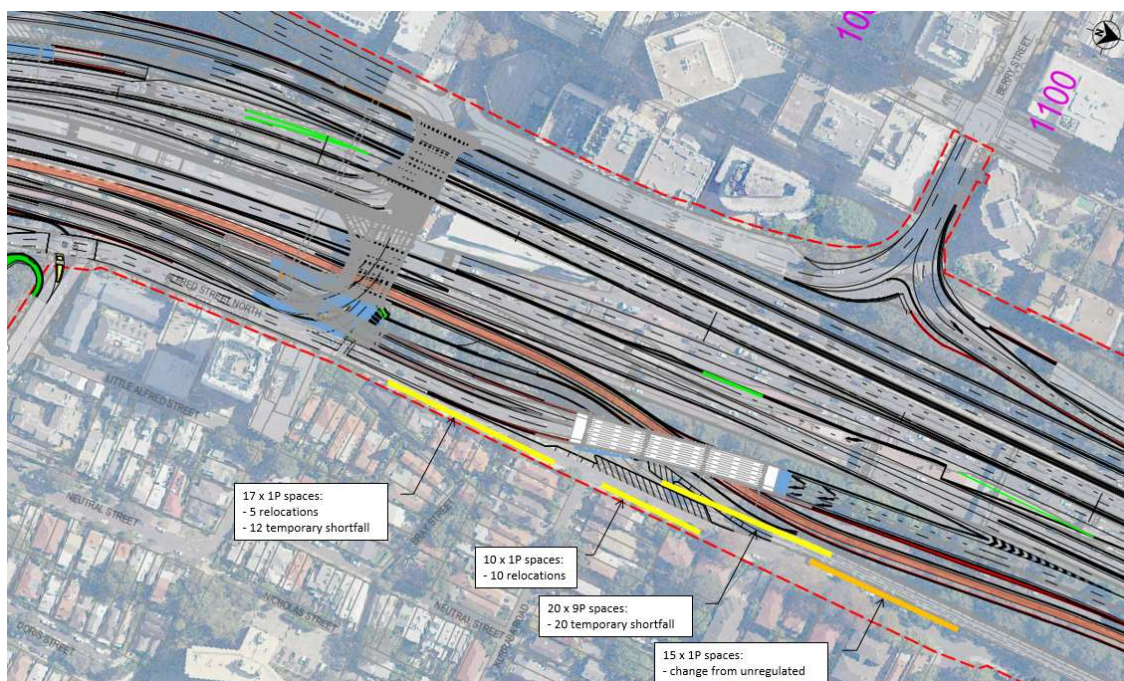
### **Alfred Street North, Neutral Bay – Area 2**

The scope of works on Alfred Street North between Bent Street and Mount Street includes the construction of new retaining walls, noise walls, viaduct construction, underpass construction and roadway reconstruction. Due to the works, parking spaces on Alfred Street North will be impacted as follows:

- Between Darley Street and Mount Street – 47 spaces signposted as 1P 8:30am to 6:00pm (metered), permit holders excepted (27 of 47 spaces) and 9P 9:00am to 6:00pm Monday to Friday (metered), permit holders excepted (20 of 47 spaces): Duration: 24 months.



Figure 5-5 shows the areas of parking areas impacted and temporary provisions.



**Figure 5-5: Alfred Street North impacted parking and provisions**

The impacted spaces will be managed as follows:

- Provision for the temporary loss of 10 1P spaces on the eastern side of Alfred Street North, immediately north of Kurraba Road will be made on the east side of Alfred Street North south of Darley Street where there are 15 unregulated parking spaces. Signage that reflects the existing 1P spaces will be installed in the unregulated area, all subject to agreement with North Sydney Council
- Provision for the temporary loss of five of the 17 x 1P spaces on the eastern side of Alfred Street North, between Kurraba Road and Mount Street will be made again on the east side of Alfred Street North south of Darley Street where there are 15 unregulated parking spaces. Signage that reflects the existing 1P spaces will be installed in the unregulated area, again subject to agreement with North Sydney Council
- There will be a temporary nett offset shortfall of 12 x 1P spaces from the Kurraba Road to Mount Street section of Alfred Street North. The customers who utilise these spaces during the day are short-term visitors to the area and will be required to look at other parking options within the municipality.
- There will be a temporary nett offset shortfall of 20 x 9P spaces on the western side of Alfred Street North, immediately north of the Alfred Street North off-ramp/Kurraba Road intersection. The customers who utilise these spaces during the day are commuters from outside the municipality and will be required to identify other parking options within the area.

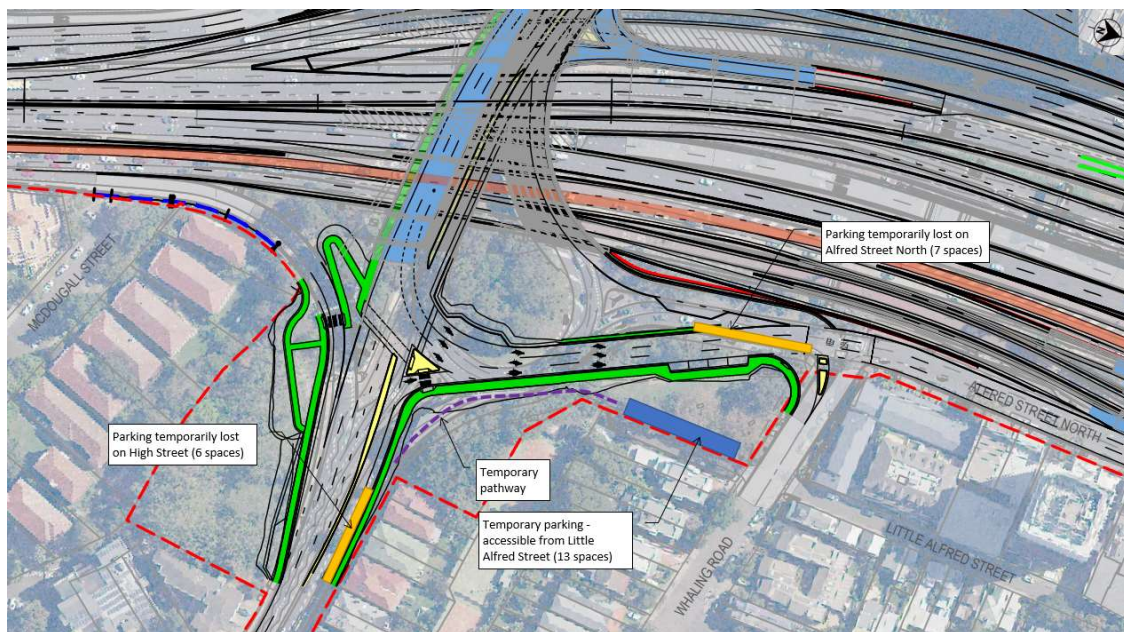
### **Alfred Street North / High Street, North Sydney**

The realignment of Alfred Street North and the reconstruction of High Street, respectively north and east of the existing roundabout will impact the existing street parking.

On Alfred Street North, between the roundabout and Whaling Road, seven spaces with signage 2P 8:30am to 6:00pm Monday to Friday (metered) will be temporarily lost, noting the permanent design provides only four spaces in the same vicinity.

On High Street, east of the roundabout, six spaces with signage 2P 8:30am to 6:00pm Monday to Friday will be temporarily lost.

It is proposed to provide 13 temporary spaces, with the same regulated signage and metering within the Project site. The spaces will be located adjacent to Little Alfred Street, accessible from Whaling Road, as shown in **Figure 5-6**. A temporary all-weather pathway will be constructed to connect the parking area with the High Street northern footpath. The duration of the temporary parking arrangements is six months.



**Figure 5-6 Temporary parking arrangements at Little Alfred Street**

### 5.7.3 Temporary Addition

The Wicks Road construction support site (WFU 10) will provide up to 250 parking spaces for construction personnel. This increase in the off-street parking capacity available for the project construction workforce will reduce the impacts on the surrounding road network and nearby community during construction.

## 5.8 Property Access Impacts

**Table 5-4** identifies the location of the properties impacted and the type and duration of that impact. Prior to and during any implementation of access restrictions, the impacted residents, landowners and occupiers will be consulted.

**Table 5-4: Property access impacts from roadworks**

Property address	Impact	Duration
76-180 Falcon Street, North Sydney	Property adjustments and road widening in front of property – access to property will be through the works area	Intermittent over six-month period; managed under stop/go conditions by traffic control team



Property address	Impact	Duration
1 Cammeray Avenue, Cammeray 3-5 Cammeray Avenue, Cammeray 7 Cammeray Avenue, Cammeray 9 Cammeray Avenue, Cammeray 13 Cammeray Avenue, Cammeray	Property access for vehicles entering from Ernest Street will be reversed to entering from and exiting to Anzac Avenue; access maintained for local traffic only	Intermittent over nine-month period; managed under stop/go conditions by traffic control team
165 Walker Street, North Sydney 161 Walker Street, North Sydney 157 Walker Street, North Sydney 153 Walker Street, North Sydney 141 Walker Street, North Sydney 146 Arthur Street, North Sydney 140 Arthur Street, North Sydney 132 Arthur Street, North Sydney 123 Walker Street, North Sydney 121 Walker Street, North Sydney 122 Arthur Street, North Sydney 140 Arthur Street, North Sydney 132 Arthur Street, North Sydney 169 Walker Street, North Sydney 88 Berry Street, North Sydney	Property access for vehicles from Berry Street west of Walker Street, and from Little Walker Street will be maintained but restricted to local traffic only	One 56-hour weekend shutdown; access will be managed under stop/go conditions by traffic control team.
26 High Street, North Sydney 28 High street, North Sydney 38 High street, North Sydney 40 High street, North Sydney	Property access for vehicles will be unavailable. Pedestrian access will be maintained	One 56-hour weekend shutdown; alternate reserved parking for impacted properties will be provided in the immediate vicinity. Spaces will be managed by the traffic team
433 Alfred street North, Neutral Bay	Property access for vehicles will be restricted	Intermittent over 2-month period; managed under stop/go conditions by traffic control team.

**Table 5-5** addresses property access impacts arising from utility relocations performed in the road reserve and other public spaces. These are by nature minor and brief impacts.

**Table 5-5: Property access impacts from utilities**

Property address	Impact	Duration
311 Ernest Street, Cammeray	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
313 Ernest Street, Cammeray	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
72 Merlin Street, Neutral Bay	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
74 Merlin Street, Neutral Bay	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
76 Merlin Street, Neutral Bay	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
76A Merlin Street, Neutral Bay	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
78 Merlin Street, Neutral Bay	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
425 Miller Street, Cammeray	Driveway cross-over, managed under stop/go conditions by traffic control team	Three days
423 Miller Street, Cammeray	Driveway cross-over, managed under stop/go conditions by traffic control team	Three days
8 Brook Street, Crows Nest	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
10 Brook Street, Crows Nest	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
20 Brook Street, Crows Nest	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
169 -171 Berry Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
169 -171 Berry Street, North Sydney (driveway from Arthur Street)	Driveway cross-over, managed under stop/go conditions by traffic control team	One day
165 Walker Street, North Sydney	Restricted pedestrian access to foyer	Two days
76 Berry Street, North Sydney	Restricted pedestrian access to foyer	One day
51 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days

Property address	Impact	Duration
53 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
55 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
65 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
26B High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
28 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
20High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
32 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
34 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
36 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
38 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days
40 High Street, North Sydney	Driveway cross-over, managed under stop/go conditions by traffic control team	Two days

## 5.9 Cumulative Impacts with other major projects

The following two projects have been identified as having the potential to create cumulative construction traffic impacts should they proceed concurrent with the Warringah Freeway Upgrade project:

- Western Harbour Tunnel
- Beaches Link and Gore Hill Freeway Connection.

In addition to the above major projects, a number of construction projects are currently in progress within and adjacent to the Approved Project boundary, including the Olympic Pool Redevelopment and redevelopments in North Sydney.

Cumulative traffic impacts include the additional and prolonged reduction in level of service on local streets, including Ernest Street, Falcon Street and Miller Street at Cammeray due to construction traffic volumes. A detailed assessment of cumulative impacts will be undertaken as part of Site Specific CTTMPs (refer to Section 6.1.2 for further details).

The community consultation framework described within the SEMP and CEMP has been developed with consideration of complaint fatigue and includes procedures to proactively manage this type of issue where possible.



# 6 Traffic, Transport and Access Management

For all works on road and path networks that stops, slows or otherwise delays or affects the normal flow of traffic, we will liaise with the relevant road authorities including TfNSW and local councils as well as emergency services and bus operators to minimise our impacts on the traffic and transport networks.

We will work with CJM and other road authorities to minimise our impact on the local community by scheduling works, where feasible, during daytime hours. Where this is not possible due to negative impacts on the road and transport network, we will schedule our works outside of peak periods and/ or during night-time to minimise the impact of these activities on the road network.

## 6.1 Construction stage traffic management

### 6.1.1 Construction staging

The following traffic management methods have been used in developing the traffic staging for the works.

- Around the work site (elimination of the risk)
- Past the work site (isolation or engineering of the risk) and
- Through the work site (administration and PPE to manage the risk).

Traffic staging plans will be finalised prior to commencement of construction.

To effectively manage the road network and provide real time traffic and road user delay management we will implement the following:

- A dedicated TMO operating 24 hours per day, 7 days per week. The TMO will commence operation prior to the start of construction that impact the road and path network and continue until the completion of construction. Resources to be provided/developed include:
  - Dedicated Traffic Incident Response Crews who are TfNSW qualified and certified
  - Develop and implement Incident Response Plans. This will provide our crews with a standard response to incidents
  - Implement a communication line between the TMO and the CJM
  - Install closed-circuit television (CCTV) to enable monitoring of the road network and monitoring of the interface with the construction access/egress points and the existing tidal flow systems
  - Use the CCTV to meter construction traffic onto the road network
  - Temporary Variable Message Sign (VMS) to warn road users and path users of the works and road occupancies that may impact traffic flow. The VMS can be remotely controlled through the TMO to allow for changes to messages
- Develop and implement site-specific CTTMPs
- Develop and implement site-specific Traffic Guidance schemes
- Install speed zone signs to highlight to motorists the posted speed limit
- Install driver advisory, regulatory and information signs and lines to guide road users safely through the local area

- Ensure that any traffic monitoring loops are reinstated within the maintenance intervention times
- Undertake surveys of the existing road network to provide an understanding of the traffic task for the duration of the works
- Provide access maps to the emergency services, utility providers and other affected stakeholders on a regular basis.

### **6.1.2 Construction site traffic management**

Site specific CTTMPs will be developed for work sites, ancillary facilities, intersection works and/ or where long-term changes occur to the road network. The CTTMPs will specify the road safety and traffic management measures to be applied while undertaking construction works to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications existing signals or, on occasion, police presence.

The CTTMP will include as a minimum:

- Work location maps defining the extent of the work zone
- Description of the works including work program and expected start/ finish dates
- Existing and proposed speed limits and justification
- Existing and proposed lane widths and justification
- Design drawings including
  - Traffic staging plans
  - Design speeds and certification
  - Locations of barriers and crash cushions including identification of type to be used
  - Existing and proposed wayfinding including identification of size, installation details
  - Approved traffic control signals and drawings
- Detail the impact on traffic, pedestrians, cyclists, property access, public transport, emergency services vehicle access, parking etc. including:
  - Impact assessment and analysis during morning, afternoon, and inter peak times stipulating existing volumes, speed, queue lengths, travel times, delays and LoS and expected deterioration to these parameters due to work zones
  - Appropriate modelling as needed, including consideration of cumulative impacts from other construction projects within and adjacent to the Approved Project boundary
- Public notifications and communications strategy, including a register of stakeholder consultation
- Road safety audits
- Strategies to minimise disruptions and an hour by hour works program of the works during traffic changes or under short term ROLs
- All plans required to implement the works including Traffic Guidance Scheme(s), Vehicle Movement Plan(s), Pedestrian Management Plan(s), Parking Management Plans, detour plans, VMS plans, local access plans, incident management plans, risk management plans and bus layover management plans as required for the works.

The final site-specific CTTMP will be submitted to TfNSW Customer Journey Planning (CJP) at least 20 business days before the commencement of any activity which will affect traffic conditions on the construction site for endorsement and approval. Where requests for further clarification or information are provided, the 20 business days will start from the date of the new submission.

Where works will impact on local council assets that involve a change to regulatory signposting or delineation, a TfNSW compliant local traffic committee traffic management plan (LTC-TMP) will be lodged with the relevant council. Councils affected by the works are North Sydney Council and Willoughby City Council.

A Traffic Guidance Scheme (TGS) (previously known as Traffic Control Plans or TCPs) is a diagram showing signs and devices arranged to warn traffic and to guide it around, past or if necessary, through a work site or temporary hazard. A selection of TGS is provided in **Appendix E**. Further TGS will be developed as works progress and will be submitted where appropriate with the CTTMP or as standalone with ROL and Council permit submissions.

The TGS will be developed in accordance with:

- TfNSW G10 Specification
- TfNSW Traffic Control at Work Sites v6
- AS 1742.3
- AustRoads Guide to Temporary Traffic Management.

Other plans to be developed include the Construction Parking and Access Strategy (**Appendix H**). This plan will contain the information required as noted in the appendix.

Vehicles involved in the works will only enter, operate within and exit in a manner which does not endanger the public and under suitably designed and appropriate traffic control measures. A site-specific Vehicle Management Plan (VMP) for the worksites will be developed and included in the site specific CTTMP.

The CEMP detail site-specific measures to be implemented to minimise impacts from construction mud, dirt or other materials on public roads and footpaths. Measures may include wheel-wash facilities, rumble grids, and ensuring that all loads are covered before leaving site. We will provide appropriate resources to respond to any spills that are due to our works. CPB Downer JV will maintain roads around our sites that are impacted by our operations, including rectifying any damage to restore the roads to at least the condition they were in before we occupied the site.

To ensure that haulage vehicles are loaded appropriately, portable weighbridges will be installed within sites. Where we cannot physically install these due to space constraints, we will use calibrated load rites with trucks being picked randomly to be sent to a public weighbridge for load verification.

### **6.1.3 Construction support site traffic management**

There are a range of hazards for vehicles onsite, including rough surfaces, other larger plant and existing infrastructure. For each phase of works CPB Downer JV will ensure that:

- Regular toolbox meetings discuss on site vehicle movements and changes to work areas
- Site plant is fitted with the appropriate safety systems including flashing yellow lights, non-tonal reversing alarms, horns and two-way radios
- Access and egress points and tracks within the site are clearly defined and signposted
- Pedestrian paths and crossing points are clearly defined and signposted
- Warning signs or traffic controls are installed on the approach to hazards or conflict points and
- Consideration being given to reducing on site speed limits.

Table **6-1** provides details for each of the ancillary facilities including the expected heavy and light vehicle movements, which are based on those presented in the EIS and Modification 1 Report. It is noted that the values provided will fluctuate depending on the works being undertaken and will not be consistent throughout the Project. Increased traffic volumes will be required during peak periods

of construction activity. Increased heavy vehicle numbers will be consistent with the Approved Project.

We will minimise our impact on the public roads by providing parking facilities where ancillary facilities cannot accommodate the proposed workforce. In addition, a shuttle bus service will be provided from the identified parking areas and nearby public transport hubs including St Leonards and North Sydney train stations (**Appendix H**).

**Table 6-1: Ancillary Facilities**

Ancillary Facility	Location	Traffic Control	Access/ Egress	Parking on site	Peak Daily movements	
					Light	Heavy
WFU 2	High Street south	Yes	Left in, left out from High Street (one way westbound)	Yes	50	10
WFU 3	High Street north	No	Right in, right out from High Street (one way eastbound)	Yes	50	10
WFU 4	Arthur Street east	No	Right in, right out from Arthur Street (one way northbound)	Yes	50	10
WFU 5	Berry Street east	No	Right in, right out from Berry Street on-ramp (one way northbound)	Yes	50	10
WFU 6	Ridge Street east	Yes	Left in, left out in Ridge Street cul-de-sac	Yes	50	10
WFU 7	Merlin Street	No	Not used for support site	Yes	0	0
WFU 8	Cammeray Golf Course	New traffic signals at Ernest Street	Initial access from Ernest Street eastbound Additional later access left in, left out from Warringah Freeway	Yes	100	280
WFU 9	Rosalind Street east	No	Left in, left out from Rosalind Street	Yes	50	10
WFU10	Wicks Road	No	No access/egress restriction from Wicks Road	Yes	580	176
HS1	High Street East	Yes	Left in, left out from High Street westbound	Yes	50	10

Ancillary Facility	Location	Traffic Control	Access/ Egress	Parking on site	Peak Daily movements	
					Light	Heavy
NH1	Warringah Freeway corridor Cammeray	Yes	Left in, left out from Warringah Freeway corridor and pedestrian access via West St bridge	Yes	100	200

#### 6.1.4 Construction traffic monitoring

Indicative construction vehicle routes are detailed in **Appendix C**, and layover bays and vehicle parking locations are provided in **Appendix D**.

We will manage heavy vehicle movements to minimise impacts during peak periods, where practicable. We will also implement measures to control movements that have the potential to detrimentally impact pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.

Heavy haulage trucks will be equipped with telematics (customised GPS tracking system) so that their movements are captured in real time. This enables monitoring of:

- Driver behaviour such as speeding, idling, queueing or not using correct routes
- Vehicle movements to minimise traffic during peak periods
- Haulage work efficiency including:
  - Truck speed
  - Loading and unloading times
  - Management of fleet arrivals and departures during normal operations and unplanned events.

This system, successfully implemented on past projects, serves as an early warning system and supports a flexible management approach to any changes in traffic conditions, potential incidents and traffic-related issues. The system will also assist with the management of fleet arrivals and departures during normal and unplanned events. The records from this system will be made available electronically to the Planning Secretary and the EPA, upon request. The records will be available for one year following the completion of the Project.

Geofencing will allow us to place cordons around areas and monitor the number of trucks entering and exiting an area. Trucks will be directed to specific layover areas (marshalling yard) until they are able to continue their journey (refer to **Appendix D** for details). The use of the marshalling areas will remove the need for on road queuing and idling of trucks in local streets. Marshalling facility locations will be selected to minimise impacts to sensitive receivers.

It is acknowledged there is little to no storage for haulage vehicles to park on site, waiting to be unloaded or loaded. Accordingly, a 'just-in-time' methodology will be implemented across the site and a marshalling yard facility will play an important role in supporting this.

Deliveries to the site will be held at a marshalling yard until space becomes available and unloading equipment is in place. For material leaving the site, haulage contractors and spoil receival sites will be provided with long term and short-term histograms. On each day, spoil orders will be placed detailing:

- Spoil type and quantity
- Site Vehicle Movement Plan, detailing gate number and UHF radio channel
- Approved destination
- Start time, truck stagger
- Loading hours
- Disposal site hours.

Each contractor will accept the order and return an allocation sheet detailing the approved project vehicles and each truck start time. Only these trucks will be granted access to site. The daily allocation sheet will allow the site to stagger trucks depending on site access, loading duration and

quantity of material to be moved. A marshalling yard facility will allow the stagger between trucks to be maintained throughout the day, and the short distance of the facility will allow the efficiency of haulage trucks to be maximised.

The TMO will contain a screen showing the location of all trucks working for the project. Both delivery and removal trucks will receive a message through their GPS unit when to depart the marshalling yard, based on existing traffic conditions between the marshalling yard and the site and the availability of sufficient space to park and load/unload. This will minimise the risk of trucks queuing on approaches to site.

All heavy vehicles used for spoil haulage will be clearly marked on the sides and rear with the project name and CSSI application number to enable immediate identification. Details of the project identification markings will be submitted to the Planning Secretary for approval prior to the heavy vehicles used for spoil haulage being utilised for the CSSI.

### **6.1.5 Construction traffic routes**

All construction vehicles will use the most direct connection from local roads to the closest arterial and motorway networks to minimise the impacts on local roads and sensitive land users. Local roads proposed to be used by heavy vehicles to access the construction boundary and ancillary facilities are detailed in **Appendix C**.

In the event that local roads are proposed to be used by heavy vehicles to directly access the construction boundary and ancillary facilities that are not shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS, a request for approval will be submitted to the Planning Secretary. Reflecting the requirements of MCoA E133, the request for approval will include a report which details:

- Swept path analysis
- Demonstration that the use of local roads by heavy vehicles will not compromise the safety of pedestrians and cyclists or safety of two-way traffic flow on two-way roadways
- Details as to the date of completion of the road dilapidation surveys for the subject local roads
- Measures that will be implemented to avoid where practicable the use of roads past schools, aged care facilities and childcare facilities during their peak operation times
- Advice from an appropriately qualified traffic engineer on the suitability of the proposed heavy vehicle route which takes into consideration items (a), (b), (c) (d).

In accordance with MCoA E136 and REMM CTT1, road dilapidation surveys will be prepared for local roads before they are used for haulage operations. These surveys will include:

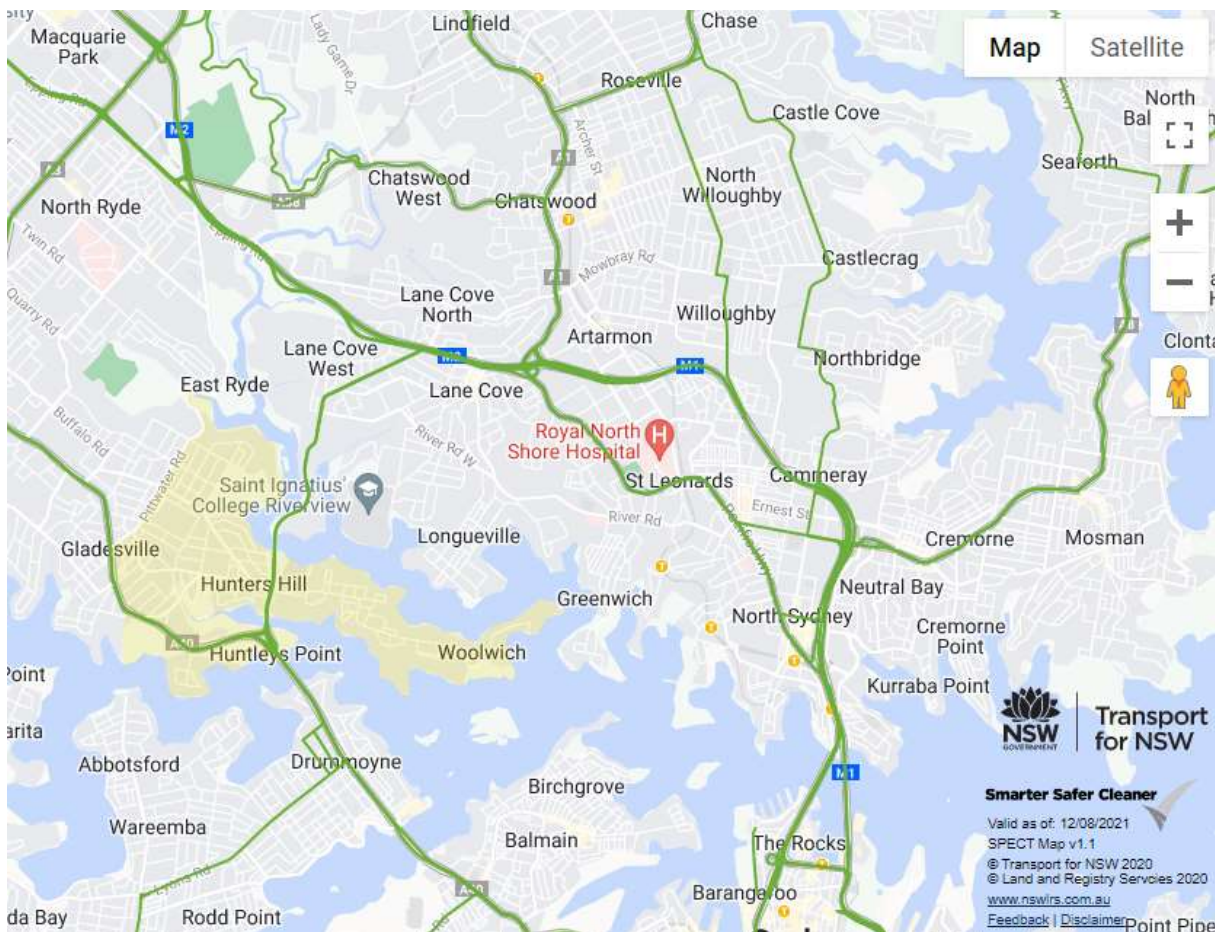
- Pavement strength testing
- Determination of pavement life
- Cracking and rutting surveys
- Road inventory.

The surveys will be prepared in consultation with relevant council(s) and road owners. The final surveys will be submitted to the relevant council(s) and road owners within three weeks of completing the surveys and no later than one month before the use of local roads by heavy vehicles.

We will work with our subcontractors to reduce our heavy vehicle numbers, where reasonable and practicable, by using vehicles enrolled in the Safety, Productivity, Environment Construction Transport Scheme (SPECTS). This scheme is a voluntary system applied to eligible heavy vehicles on specified parts of the road network. SPECTS vehicles can transport increased loads.



Roads currently mapped for SPECTS use surrounding the Warringah Freeway Upgrade sites are shown in **Figure 6-1**.



**Figure 6-1: SPECTS Map from TfNSW**

Our requirements for compliance with the Chain of Responsibility (CoR) will be detailed in the Chain of Responsibility Management Plan. This plan will be submitted at least 25 business days prior to the commencement of any of the Contractor's Activities using any Construction Plant governed by the Heavy Vehicle National Law.

If damage to roads occurs as a result of construction of the works, CPB Downer JV will rectify the damage. The road will be restored to at least the condition it was before construction commenced as identified in the survey, and as agreed with the relevant road authority or we will compensate the relevant road authority for the damage caused. The requirement for rectification of compensation will be determined by the relevant road authority.

It is acknowledged that TfNSW will coordinate haulage routes with other major transport projects. Drivers will need to meet project requirements to minimise impacts on the communities and environment near the worksites and along the approved routes. This includes the appropriate use of compression braking and minimising the need for truck idling, especially near sensitive receivers.

Drivers will receive a copy of the Code of Conduct (refer to **Appendix G**) at the project induction and will be required to sign it to show that they have understood and will comply with its requirements. Subcontractors will be responsible for ensuring all their drivers adhere to these requirements. Ongoing monitoring will be undertaken during project delivery and drivers found to be contravening the Code will be dismissed from the works and Heavy Vehicle Operators will be issued with non-compliance notices.

We will work with the relevant authorities to provide and facilitate Over Size and Over Mass (OSOM) vehicles when required. Our TGS' will be designed to accommodate the passage of over dimension vehicles through the works. Where this is not feasible, discussions will be held with TfNSW permits section to understand what OSOM movements are proposed over the targeted dates. All relevant permits will be gained prior to OSOM movements associated with the works.

Dangerous goods and hazardous substances will be transported in accordance with relevant legislation and codes, including the *Dangerous Goods (Road and Rail Transport) Act 2008*, *Road and Rail Transport (Dangerous Goods) (Road) Regulation 1998* and the Australian Code for the Transport of Dangerous Goods by Road and Rail (National Transport Commission 2008).

### **6.1.6 Construction Parking and Access Strategy**

A Construction Parking and Access Strategy will be prepared to identify and mitigate impacts resulting from on- and off-street parking changes during the Project construction. The Strategy will include, but not necessarily be limited to:

- a) achieving the requirements of MCoA E139
- b) confirmation and timing of the removal of on- and off-street parking associated with construction of the Project
- c) parking surveys of all parking spaces to be removed or occupied by the Project workforce to determine current demand during peak, off-peak, school drop off and pickup, weekend periods and during special events
- d) consultation with affected stakeholders utilising existing on- and off-street parking stock which will be impacted as a result of construction
- e) assessment of the impacts to on- and off-street parking stock taking into consideration, occupation by the Project workforce, outcomes of consultation with affected stakeholders and considering the impacts of special events
- f) identification of mitigation measures to manage impacts to stakeholders as a result of on and off-street parking changes including, but not necessarily limited to, staged removal and replacement of parking, provision of alternative parking arrangements, managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds or appropriate residential parking schemes
- g) where residential parking schemes already exist, off-road parking facilities will be provided for the Project workforce
- h) mechanisms for monitoring, over appropriate intervals, to determine the effectiveness of implemented mitigation measures
- i) details of shuttle bus service(s) to transport the Project workforce to construction sites from public transport hubs and off-site car parking facilities (where these are provided) and between construction sites
- j) provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective
- k) provision of reporting of monitoring results to the Planning Secretary and relevant council(s) at three monthly intervals.

The Construction Parking and Access Strategy will be submitted to the Planning Secretary for approval at least one month before the commencement of any construction that reduces the availability of existing parking. The approved Strategy will be implemented before impacting on on-street parking and incorporated into this Sub-plan. Reporting of monitoring results will be provided to the Planning Secretary and relevant council(s) at three monthly intervals.

Where necessary any mitigation measures relating to design (temporary or permanent) that has been identified from the project's review of parking loss and/or active transport upgrades may require further assessment under the EP&A Act.

## **6.2 Design of the works**

The project will be designed in consultation with the relevant road authorities and consider the existing and future demand, road safety and traffic network impacts. The design will be in accordance with the relevant standards/guidelines and be certified by an appropriately qualified person (as per MCoA E145) acknowledging that the design meets the requirements listed above.

Road safety audits (detailed in Section 6.3) will be undertaken of any new or modified local road, parking, pedestrian and cycle infrastructure provided as part of the CSSI. Audit recommendations will be actioned as per AustRoads Guide to Road Safety Audits (AGR AGRS06-09) and will be included within the individual design reports. The audit findings and recommendations will be actioned prior to construction of the relevant infrastructure.

We will work with our designers to minimise the loss of permanent parking, particularly but not limited to Alfred Street North, Neutral Bay. CPB Downer JV will investigate options to mitigate the loss of parking in consultation with affected residents by

- Conducting surveys to confirm the existing capacity and the parking requirements of the residents
- investigating options to mitigate the loss of on-street parking that meet the parking needs of the residents of Alfred Street North and adjacent streets
- consulting with the residents at locations where on-street parking would be lost to confirm the preferred parking options
- identifying the parking mitigation measures to be implemented

We will provide a report of the above to the Planning Secretary within 6 months of the start of construction and ensure that any measures identified are implemented prior to impacting the parking, unless agreed otherwise by the Planning Secretary. Any design options considered appropriate to minimise the loss of permanent parking on Alfred Street North, Neutral Bay, will be actioned prior to parking impacts.

We will also investigate opportunities for additional pedestrian connections across Ernest Street to improve connectivity between active transport paths and public open spaces.

Where necessary any mitigation measures relating to design (temporary or permanent) that has been identified from the project's review of parking loss and/or active transport upgrades may require further assessment under the EPA Act.

## **6.3 Road Safety Audit**

Road safety auditors will be engaged to undertake independent road safety audits:

- During detailed design development (audit of plans)
- Prior to opening (pre-opening audit)
- At regular intervals during the construction program.

The audits will be undertaken to assess the safety performance of new or modified local road, parking, pedestrian and cycle infrastructure provided as part of the CSSI (including ancillary facilities) to ensure that they meet the requirements of relevant design, engineering and safety guidelines, including Austroads Guide to Traffic Management.

The audits will be in line with the TfNSW Centre for Road Safety requirements, including their technical direction policy for road safety audits of construction and reconstruction project and AustRoads Guide to Road Safety Part 6: Road Safety Audit. The auditors will be recognised on the NSW Register of Road Safety Auditors and the audit team will comprise as a minimum, a lead auditor registered at Level 3 certification and at least one other auditor at Level 2 certification.

The road safety audit reports will be included within the CTTMP and a copy of the audit report will be provided to TfNSW and relevant authorities within five working days of the audit.

The audit findings and recommendations of the detailed design plans (audit of the plans) will be actioned prior to construction of the relevant infrastructure. The pre-opening audit findings and recommendations will be actioned prior to the relevant infrastructure being made available for use.

## **6.4 Road occupancy**

A road occupancy consists of any activity likely to impact on the operational efficiency of the road network. A ROL authorises the occupation of a portion of the road that would normally be available to traffic. Except in the case of an unplanned incident, or when directed by the Police or other emergency services, a ROL must be obtained for any works which:

- Slows, stops or otherwise delays or affects the normal flow or traffic
- Diverts traffic from its normal course along the road, including lane closures and detours
- Occupies any portion of the road related area, including the footpath that is normally available for vehicle, pedestrian or cycle movements.

CPB Downer JV will obtain the relevant ROL from the CJM. These licenses will be obtained in advance of the works. The ROL will be lodged at the same time that the final submitted CTTMP is submitted for approval.

Electronic lodgment of the ROL will be undertaken using TfNSW's OpLinc system. ROL through the CJM will be applied for a minimum of 10 business days from site requirements. Longer lead times may be applicable for works involving significant traffic impacts such as road/carriageway closures or when works require road occupation outside of the normally permitted hours.

It is acknowledged that the CJM has traffic and transport safety and efficiency targets to ensure road users do not experience excessive delays. Maintaining the capacity of the road network is critical to maintaining safety. Roadway capacity assessment will be one of the tasks that will be undertaken by CJM, prior to granting ROL.

Council permits will be lodged in accordance with the Council timelines. Council permits are typically required for occupation of a council road or pathway or changes to council assets including parking removal.

## **6.5 Speed management**

Temporary roadwork speed zones, both short and long term, will be implemented during construction to manage the speed of traffic approaching and passing through and/or past work sites. The speed zones will comply with Section 8.2 of the TfNSW Traffic Control at Work Sites (TCAWS) manual Issue 6 and the TfNSW NSW Speed Zoning Guidelines, Australian Standards 1742.3 and AustRoads Guide to Temporary Traffic Management.

CPB Downer JV acknowledges that roadwork speed zones must be logical, credible, and enforceable. When considering the use of a roadwork speed zone, we will adopt the principles outlined in TfNSW's Traffic Control at Worksites Manual (v6):

- Not be used alone but with other traffic control signs and devices as dictated by and in response to the site specific conditions
- Not be used in place of more effective traffic controls but to complement such controls
- Only be used while road work is in progress or where lower standard road conditions exist
- Meet clearance and lane width requirements.

It is proposed that the long-term speed limit on the Warringah Freeway will be 60km/hr for the duration of the works (**Table 6-2**). The requirement for a reduced speed limit is based on Table 4-8 Selection criteria of roadwork speed zones contained within the TCAWS manual.

During short term traffic control, the speed limit may be reduced to 40km/hr for each shift.

Lane widths for temporary traffic arrangements will be:

- 3.0m for general traffic lanes
- 3.2m for all lanes where buses travel.

**Table 6-2: Construction Posted speed limits**

Road	Between		Posted speed limit during the works
Warringah Freeway	Willoughby Road	Cahill Expressway	60km/hr
Miller Street	Rosalind Street	Amherst Street	50km/hr
Ernest Street	Anzac Avenue	Park Avenue	50km/hr
Falcon Street/Military Road	West Street	Watson Street	50km/hr
Mount Street	Arthur Street	Alfred Street North	40km/hr
High Street	Arthur Street	Clark Road	40km/hr
Pacific Highway	Miller Street	Arthur Street	60km/hr
Alfred Street North	Wyagdon Street	High Street	40km/hr
Arthur Street	Mount Street	High Street	40km/hr

### 6.5.1 Speed Zone Authorisation

Speed Zone Authorisation (SZA) is required to be in place and will be applied for when applying for the associated ROL. A copy of this document will be maintained with the ROL, on site and kept within the TMO.

### 6.5.2 Speed limit approvals

For work undertaken on state roads, we will seek TfNSW's authorisation to install the speed limit signs. For works undertaken on roads where councils are the delegated authority, we will seek the council's authority, as required under TCAWS. We will ensure that Emergency Services are provided with advance warning of the speed limit reductions.

### 6.5.3 Speed limit signs

Road Work Speed signs will be Type C and will be duplicated on both sides of the road for any change in the posted speeds. The signs will be supported on two posts. Where space inhibits the

duplication of signs on both sides of the road, speed signs will be installed at a maximum spacing of 300m to ensure that all motorists are aware of the change to the posted speed.

## 6.6 Signposting and delineation

Signs and lines are important to allow road users to navigate through the road and path network. They are an important part of providing for a safe and easily discernible path and are essential elements in traffic management control and road safety. All signs and lines used will conform to the AustRoads and TfNSW Guidelines and Australian Standards with sign faces to be approved by TfNSW. Signs for the construction period will be included in the site specific CTTMP.

Project identification signs, acknowledging government initiatives will be installed in accordance with TfNSW requirements.

Signs and lines are classified as shown in **Table 6-3**.

**Table 6-3: Traffic Signs and lines**

Signs and lines can be classified in the following ways	
<b>Regulatory</b>	<ul style="list-style-type: none"> <li>Regulatory signs instruct road users on what they must do or must not do in a certain situation</li> <li>They are used to indicate or reinforce traffic laws. Regulation of requirements that apply all the time or at specified times or places.</li> <li>Speed limit signs are a part of the regulatory signs and serve to limit the speed of traffic.</li> <li>Pavement markings that are regulatory in nature include Bus Lanes, Double Barrier lines and Turn Arrows at intersections</li> </ul>
<b>Warning</b>	<ul style="list-style-type: none"> <li>These alert road users to possible hazards ahead. These hazards can be either temporary or permanent</li> <li>These hazard signs are typically black on yellow (or orange on black) and include such signs as Road Work Ahead, Curve signs etc.</li> <li>Warning pavement markings are speed zone markings (other than school zones), pedestrian refuge islands and on the approach of marked foot crossings (zig zag lines)</li> </ul>
<b>Information</b>	<ul style="list-style-type: none"> <li>Information signs inform road users of relevant information for their journey, such as destinations and distances, special road conditions, property access, bus stop closures and construction sites</li> <li>This classification also includes Project identification signs that will be installed to provide project details to the public and acknowledge the government's initiative through their funding programs. The project's identification signage location and design will be as approved by TfNSW and in accordance with the SWTC</li> </ul>

### 6.6.1 Electronic Messaging

Trailer mounted portable VMS will also be used for the duration of our works. Vehicle mounted VMS will be included within our incident response vehicles. The VMS will have the capability of displaying up to four screens with three lines of eight characters. Remote communications will be possible through the TMO.

The TMO will have the ability to relocate the VMS within an hour of being notified. Damaged VMS will be replaced within four hours of notification.

At least one VMS will be installed on the approach to each road occupancy. This VMS will be in place at least one week prior to the proposed road occupancy and will display messages that are appropriate to the occupancy for the duration of the occupancy, where required by the conditions of the ROL.

Variable Speed Limit Signs (VSLS) will be installed and can be remotely changed under a pre-agreed incident response plan. To supplement speed signs, Radar Activated Speed Signs (RASS) will be installed to inform road users of the current speed limit in operation and their current speed. This is particularly useful during short term road occupancies where workers may be on the road.

## **6.7 Pedestrians and cyclists**

Recognising the specific needs and behaviours of pedestrians and cyclists will be integral to the safe delivery of the works. Safe pedestrian and cyclist access will be maintained around work sites during construction and all reasonably practicable measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties.

Signage will be installed around worksites to alert pedestrians and cyclists of vehicle movements, where documented in the site specific CTTMP. This signage will be supplemented with VMS if necessary.

We will minimise our impacts to existing pedestrian and shared user paths, where practicable and feasible, and ensure that access is not blocked or disrupted.

*Disability Discrimination Act 1992* (DDA) requirements will be adopted for kerb ramps and bus stop locations. The existing footpath widths will be retained where possible, any change to the width will be approved by the relevant authorities through the CTTMP review and approval process. Where an intermittent closure of a path is required, we will provide an alternative path which will be of the same condition of the path to be diverted and comply with relevant standards unless otherwise endorsed by an independent, appropriately qualified and experienced person. This alternate path, including all relevant infrastructure will be provided prior to the closure of the existing path. Any short-term path closures will be documented in TGS and permits/ ROL. Longer term changes will be detailed in the site specific CTTMP.

To provide a safe environment for pedestrians, the project will clearly define the boundaries of all work areas, and where required, provide defined walking paths. Physical traffic management controls will be implemented to ensure that detrimental effects to natural surveillance, natural access control and definition of space are minimised. By adhering to the principles of crime prevention through environmental design (CPTED), the traffic management will reduce opportunities for offending and improve feelings of safety.

All long-term changes to pedestrian routes will be shown on the corresponding staging plans and any short-term pedestrian detours will be shown through site specific TGS.

Nominated cycle routes around the sites have been identified in Figure 6-2.



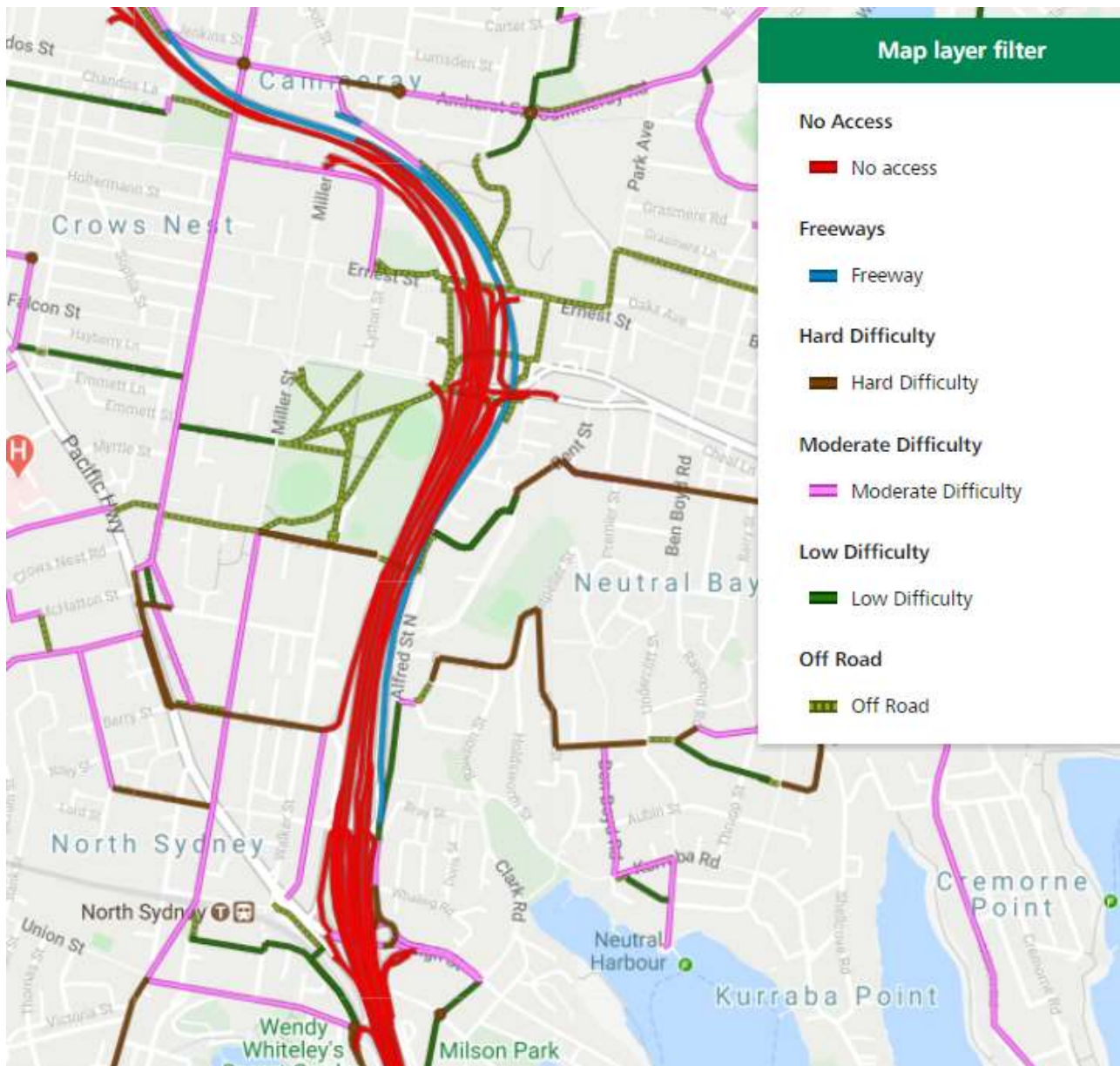


Figure 6-2: Existing cycle routes

## 6.8 Public transport

### 6.8.1 Bus customers and operators

The relocation of bus stops will be required at a number of work sites to allow for safe separation between worksite and bus operations. Temporary closure will not occur until relocated bus stops that comply with relevant standards, are functioning, have similar capacity and amenity and are relocated within a 400 metre walking distance of the existing bus stop. Footpaths and (where required) road crossing facilities will also be provided to any relocated bus stops such that accessibility and safety standards are met.

Any changes to bus stops will be undertaken in consultation with the local council, TfNSW departments and bus operators. We will provide funding of personnel to manage changes on bus routes for a minimum of 5 days after each change to a bus route, or as otherwise agreed to by the bus operators and TfNSW.



Any bus stop relocations will be communicated to the public using the TfNSW standard template for bus notifications and we will install wayfinding to assist commuters, where required. All communication materials will be developed in line with the requirements of relevant authorities, in consultation with bus operators and be installed prior to and post the relocation works.

Where changes impact a large volume of school students who use a bus stop, additional information will be provided directly to the schools affected.

If bus services need to be rerouted during temporary road closures (partial or full) we will identify these impacts early so that liaison with relevant authorities and bus operators can begin. Consultation with bus service providers will be undertaken on all bus stop relocations or route changes.

At the conclusion of the construction period, all bus stops temporarily closed or relocated will be reinstated. These relocations will provide equal or improved capacity, amenity and accessibility (including footpaths and road crossings) as a minimum. These facilities will be designed in consultation with relevant council(s).

Bus layover facilities will be provided to ensure that the existing Cammeray bus layover capacity of 30 buses is maintained. Where the layover capacity cannot be fully accommodated, CPB Downer JV will ensure that minimum of 14 bus bays within, or in the immediate vicinity of, the existing facility is maintained, and we will provide replacement amenity block for drivers. We will endeavour to provide replacement facilities within the CBD of both North Sydney and Sydney.

Driver facilities will also be provided, and the layover areas will be in accordance with TfNSW requirements including the provision of an afternoon peak bus marshal as part of the TMO.

## **6.9 Property access**

Reflecting the requirements of MCoA E128, access to all utilities and properties will be maintained during construction, where practicable, unless otherwise agreed with the relevant utility owner, landowner or occupier.

As required by MCoA E129, any access affected by Project works will be reinstated to the previous standard as a minimum, unless agreed otherwise by the owner or occupier.

CPB Downer JV will ensure that direct bidirectional vehicular access is provided from Mount Street, North Sydney to Alfred Street North, Neutral Bay. We will maintain access to all utilities during our works, where practicable, unless we have agreement from the relevant utility owner/maintenance provider. We will provide weekly updates to utility providers.

Emergency services will be regularly consulted and informed of our works schedule and program and will be provided with weekly updates on any closures that could impact their services.

## **6.10 Special events**

The majority of construction works for the Project would have minimal impacts on special events as the proposed construction zones and construction traffic routes are not located close to venues that regularly schedule events that require traffic or public transport event plans. When planning construction works, CPB Downer JV will identify special events which directly impact our worksites and/or haulage activities. We will also identify areas of work that may impact on special events to allow us to plan activities to minimise any disruption. Special events will be included within the site specific CTTMPs. Special events will be discussed at the specific traffic meetings, refer to Section 7.2, to ensure that the special events diary can be regularly updated.

We have incorporated known Class 1 and Class 2 events into our construction program and will review these monthly for any new or changed requirements. We will also continue to interrogate event websites that provide details on upcoming events such as:

- NSW and Sydney Events – Destination NSW

- NSW Events & Festivals | Official NSW Tourism Website (visitnsw.com)
- North Sydney Council – What's On? (nsw.gov.au).

We will work closely with the relevant road authorities and explore opportunities to undertake works in low traffic times, especially over holiday periods such as:

- Easter
- School holidays
- June and October long weekends.

A listing of known special events are included in **Appendix F**.

## 6.11 Incident management and response

The management and response to unplanned incidents on the surrounding road network is the responsibility of CPB Downer JV in coordination with, or under the direction of, NSW Police Force and the CJM. It has been identified that there are three incident classifications:

- **Minor** – Requiring minimum human resources to safely clear the incident and return to normal conditions
- **Moderate** – Requiring a combination of resources and/or plant and equipment to clear the incident.
- **Major** – The incident needs to be managed by Police and/or Emergency Services and reported through 000. The initial response can be activated by CPB Downer JV until Emergency Services attend and take command of the incident site.

We will be responsible for the management of minor and moderate unplanned incidents along the defined road network. We will provide the initial response to major unplanned incidents and emergencies along the defined road network until an emergency services agency and/or the CJM patrols arrive on the scene. CPB Downer JV will provide assistance to motorists and assist in the clearance of the road to minimise impacts on the road/path networks.

It is understood that TfNSW will retain responsibility for the control and management of responses to major incidents on the road network and traffic systems. CPB Downer JV will provide an incident management and response capability to effectively manage minor incidents on the road network affected by the works.

### 6.11.1 Traffic Monitoring Office (TMO)

A TMO will be in operation prior to the commencement of construction works, which will impact the road network. This TMO will operate 24 hours per day, 7 days per week for the duration of our works. The TMO will be used to monitor the operations of the road network, ROL conditions, including compliance with the imposed conditions and truck movements.

The TMO will have:

- A minimum of four Closed Circuit Television (CCTV) colour monitors
- A plan of the construction site and the road network in sufficient detail that will identify:
  - Construction site entry and departure points
  - All roads in and surrounding the road network
  - Traffic management infrastructure, including variable message signs and CCTV locations
- Remote control of portable VMS with the ability to change messages instantaneously.

CCTV will be installed at all entry and exit points from the site that interface with the state road network and at all locations where devices (automated or static) which facilitate tidal flow operations.

The TMO will be connected to the CJM via their Central Management Computer System (CMCS) to ensure that all road side devices and CCTV are available to TfNSW operators.

Where a traffic accident occurs on the road network a report detailing the accident, including photographs of the incident site (including all devices and signs) will be provided to TfNSW.

### 6.11.2 Road Network and Incident Management

The CPB Downer JV incident management strategy is based on the following principles:

- Incident detection
- Incident verification
- Incident response
- Monitoring of the road network
- Incident recovery
- Incident review (post-recovery)
- Continual improvement
- Change in set up to avoid / minimise possible reoccurrence.

We will provide and operate the necessary infrastructure, services, resources and systems to monitor, manage and control traffic flow on the affected roads for the duration of our activities. This will also include the management of traffic incidents.

### 6.11.3 Traffic Incident Management Plan

We will develop a Traffic Incident Management Plan (TIMP) in consultation with, and to the satisfaction of TfNSW including CJM and this plan will be provided prior to the commencement of construction. This TIMP will identify the minor incidents that we are responsible for, any infrastructure that is required to effectively manage the road network and Incident Response Procedures (IRP). The TIMP will be regularly reviewed including a review of the effectiveness of the responses and recommend improvements to the IRPs.

The TIMP will detail the planning, process actions and responses to incidents and will provide the following elements:

- Written standard incident response procedures (IRP) for managing incidents and supporting each incident type
- Supplementary detail for each incident type describing additional measures to be undertaken, in the event of an incident being classified or escalated to major.

The IRPs will cover all the anticipated planned and unplanned minor incidents that could occur, with recognition given to the type and nature of the incident, the time of day and the location on the road network. The IRP will address the immediate safety issues on carriageways in the area surrounding the incident. **Table 6-4** details the initial IRP that will be developed.

**Table 6-4: Incident Response Procedures**

Plan no.	Incident description
IRP-01	Minor Motor Vehicle Accident
IRP-02	Major Motor Vehicle Accident

Plan no.	Incident description
IRP-03	Stationary or broken down vehicle in a trafficable lane
IRP 04	Construction material spillage in a trafficable lane
IRP-05	Stray animal
IRP-06	Slippery road/ pavement surface
IRP 07	Pavement failure in prescribed maintenance area
IRP 08	Significant traffic congestion as a result of project works
IRP 09	Towing a vehicle
IRP 10	Civil unrest
IRP 11	Pedestrians and cycleways

Incident response crews will be available to undertake relevant real time operational road safety and monitoring during construction. The crews, detailed in the sections that follow, will be available 24 hours a day and will be managed by the TMO.

### Incident Response Crews

The incident response crews will consist of a two person team on a 24hr, 7 day roster. They will have the appropriate SafeWork NSW certifications to undertake their duties.

Each crew is likely to carry the following in a small truck which is equipped with type B flashing arrow unit, flashing / rotating beacons, reversing alarm and camera and UHF radios. The truck will be provided with the following equipment:

- Stop / Slow bats
- 700mm Traffic Cones (30 minimum)
- A selection of signs
- Dust Proof Tool Box
- Laminated TCP's in A3
- Barrier Boards and legs
- Tools – shovels, brooms, etc.
- Small spill kit
- Digital Camera
- Fire extinguisher
- Flow chart and contacts list
- Folder for documentation.

### Tow Truck resources

In addition to the incident response crews, CPB Downer JV will execute contracts to provide towing services. Provision of this contract service will require co-ordination with the CJM and NSW Police.

# 7 Compliance management

## 7.1 Roles and responsibilities

The CPB Downer JV Project Team’s organisational structure and overall roles and responsibilities are outlined in Section 3.3 of the CEMP. Specific responsibilities for the implementation of construction traffic management are detailed in the sections that follow.

### 7.1.1 Construction personnel

The role, authority and responsibility of key personnel with respect to traffic management during the construction of the Project are shown in **Table 7-1**.

**Table 7-1: Role, authority and responsibility of key personnel with respect to traffic**

Role	Authority and responsibility
Project Director	<ul style="list-style-type: none"> <li>Managing the delivery of the works</li> <li>Authority to direct personnel and/or Subcontractors to carry out actions to avoid or minimise unintended traffic impacts. Contractor’s Representative</li> </ul>
Construction Director	<ul style="list-style-type: none"> <li>Manage construction in relation to traffic management for their work activity</li> <li>Ensure compliance with this Sub-plan, CTTMPs and procedures</li> </ul>
Construction Traffic Manager	<ul style="list-style-type: none"> <li>Managing the delivery of the works including overseeing construction traffic management</li> <li>Authority to direct personnel and/or Subcontractors to carry out actions to access, avoid or minimise unintended traffic impacts.</li> </ul>
Safety Manager	<ul style="list-style-type: none"> <li>Ensure traffic management requirements are addressed in relevant safety documents</li> <li>Collaborative incident management and reporting in the event of safety incidents with a potential to cause traffic impact</li> </ul>
Environment Manager	<ul style="list-style-type: none"> <li>Ensure traffic management requirements are addressed in relevant environmental documents</li> <li>Collaborative incident management and reporting in the event of environmental incidents with a potential to cause traffic impact</li> </ul>
Workforce Development	<ul style="list-style-type: none"> <li>Ensuring the provision of appropriate training in traffic management aspects for relevant project personnel in consultation with the Traffic and Transport Manager</li> </ul>
Stakeholder & Community Relations Manager	<ul style="list-style-type: none"> <li>Assist the Construction Traffic Manager in consulting regulatory agencies</li> <li>Notification of traffic impacts to road users</li> </ul>

Spoil Manager	<ul style="list-style-type: none"> <li>Responsible for ensuring compliance with designated haul routes and for the day-to-day operation of the spoil management task in conjunction with the Traffic Manager</li> </ul>
Project managers, project engineers, site engineers and supervisors	<ul style="list-style-type: none"> <li>Implement and monitor on-site traffic management and compliance measures across all sites including preparation and implementation of VMPs</li> <li>Regular site inspections</li> </ul>

### 7.1.2 Traffic personnel

The personnel that make up the traffic management team and a detailed description of each role is provided in **Table 7-2** through to **Table 7-9**.

**Table 7-2: Construction Traffic Manager (Traffic Representative)**

<b>Construction Traffic Manager (Traffic Representative)</b>	
<b>Authority</b>	<ul style="list-style-type: none"> <li>Appointed by the Project Director</li> <li>Authorised to produce any correspondence and documentation necessary for approvals and traffic management</li> <li>Authorised to require all reasonable steps to be taken to achieve compliance</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>Accountable for traffic approvals and performance for all Project works</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>Provide support to the construction team to ensure documentation and compliance for all matters relating to traffic and transport management and systems compliance</li> <li>Coordinate the development and maintenance of the systems underpinning contractual documentation and TfNSW approvals</li> <li>Act freely and independently to require all reasonable steps to be taken to avoid and minimise adverse traffic impacts and to stop the progress of the relevant part of the Project when any non-conformity with the traffic management requirements of the Deed is identified</li> <li>Engage with traffic and transport stakeholders and support TfNSW's outcomes for the Project</li> <li>Support site Project Managers and the Stakeholder and Community team in planning to manage access for businesses community groups and residents if potentially disrupted</li> <li>Provide ongoing support to project managers through regular communication and interface, ensuring knowledge capture</li> </ul>
<b>Lines of communication</b>	<ul style="list-style-type: none"> <li>Reports to the Project Director</li> <li>Primary traffic and transport contact for construction traffic management and approvals.</li> </ul>
<b>Minimum Skill Levels</b>	<ul style="list-style-type: none"> <li>Minimum of 10 years traffic management experience, with experience in the preparation and implementation of construction traffic management plans and traffic control plans.</li> </ul>

**Table 7-3: Traffic Manager**

<b>Traffic Manager</b>	
<b>Authority</b>	<ul style="list-style-type: none"> <li>• Appointed by the Project Manager for each area</li> <li>• Authorised to produce any correspondence and documentation necessary for approvals and traffic management</li> <li>• Authorised to require all reasonable steps to be taken to achieve compliance</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>• Accountable for traffic approvals and performance for the Project</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>• Arrange the preparation and implementation of construction traffic management plans and TGS</li> <li>• Provide support to the construction team to ensure documentation and compliance for all matters relating to traffic and transport management and systems compliance</li> <li>• Coordinate the development and maintenance of the systems underpinning contractual documentation and TfNSW approvals</li> <li>• Engage with traffic and transport stakeholders and support TfNSW's outcomes for the Works</li> <li>• Support site Project Managers and the Stakeholder and Community team in planning to manage access for businesses community groups and residents if potentially disrupted by the works</li> <li>• Provide ongoing support to project managers through regular communication and interface, ensuring knowledge capture</li> </ul>
<b>Lines of communication</b>	<ul style="list-style-type: none"> <li>• Reports to the Project Manager for each construction precinct</li> <li>• Secondary traffic and transport contact for construction traffic management and approvals.</li> </ul>
<b>Minimum Skill Levels</b>	<ul style="list-style-type: none"> <li>• A recognised, relevant qualification with recent relevant work experience in a traffic management position on large projects similar to the Project Works and Temporary Works</li> <li>• Minimum of five years traffic management experience, with experience in the preparation and implementation of construction traffic management plans and TGS</li> </ul>

**Table 7-4: Traffic Staging Engineer**

<b>Traffic Staging Engineer</b>	
<b>Authority</b>	<ul style="list-style-type: none"> <li>• Appointed by the Traffic Manager</li> <li>• Works with the Traffic Manager to produce any correspondence and documentation necessary for approvals and traffic management</li> <li>• Reports issues associated with compliance to the Traffic Manager</li> </ul>

Traffic Staging Engineer	
<b>Role</b>	<ul style="list-style-type: none"> <li>Accountable for liaison with construction teams on traffic issues</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>Arrange the preparation and implementation of construction traffic management plans and TGS</li> <li>Provide support to the Traffic Manager to ensure documentation and compliance for all matters relating to traffic and transport management and systems compliance</li> <li>Ensure maintenance of the systems underpinning approvals</li> <li>Engage with traffic and transport stakeholders and support TfNSW's outcomes for the <a href="#">Project</a></li> <li>Support site Project Managers and the Stakeholder and Community team in planning to manage access for businesses community groups and residents</li> <li>Provide ongoing support to site managers through regular communication and interface, ensuring knowledge capture</li> </ul>
<b>Lines of communication</b>	<ul style="list-style-type: none"> <li>Reports to the Traffic Manager</li> </ul>
<b>Minimum Skill Levels</b>	<ul style="list-style-type: none"> <li>A recognised, relevant qualification with recent relevant work experience in a traffic management position on large projects</li> </ul>

**Table 7-5: Traffic Superintendent**

Sub	
<b>Authority</b>	<ul style="list-style-type: none"> <li>Appointed by the Construction Traffic Manager</li> <li>Works with the Construction Traffic Manager to ensure compliance with approved traffic plans in the field</li> <li>Reports issues associated with compliance to the Traffic Manager</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>Accountable for liaison with construction teams on traffic issues in the field</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>Arrange the implementation of construction traffic and transport management plans and traffic guidance schemes.</li> <li>Provide support to the Traffic Manager to ensure documentation and compliance for all matters relating to traffic and transport management compliance.</li> <li>Support site Project Managers and the Stakeholder and Community team</li> <li>Provide ongoing support to site managers</li> </ul>
<b>Lines of communication</b>	<ul style="list-style-type: none"> <li>Reports to the Traffic Manager</li> </ul>
<b>Minimum Skill Levels</b>	<ul style="list-style-type: none"> <li>Recent relevant work experience in a traffic management position</li> </ul>



**Table 7-6: Senior Traffic Monitoring Office Operator**

Senior Traffic Monitoring Office Operator	
<b>Authority</b>	<ul style="list-style-type: none"> <li>• Appointed by the Construction Traffic Manager</li> <li>• Works with the Traffic Managers to produce any correspondence and documentation necessary for approvals and traffic management</li> <li>• Reports issues associated with compliance to the Construction Traffic Manager</li> <li>• Implement the procedures associated with the incident response plan and manage incident response resources</li> <li>• Maintain logs of all incidents and report on attendance and outcomes</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>• Accountable for operation of the TMO</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>• Have a good working knowledge of the Incident Response Plan</li> <li>• Be aware at all times of the location of the Traffic Manager, Field Crews and the activities which they are undertaking</li> <li>• Manage the notification of Transport Management Centre and the Emergency Services in the case of Incidents and maintain two way radio communications with field crews.</li> <li>• Assist the Traffic Manager in organising appropriate personnel, plant and resources to attend Incidents</li> <li>• Be available for shift work to provide the coverage requirements of the TMO and additional hours if required for specific construction events</li> <li>• Become familiar with the traffic area for which responsibility is held, including alternate routes available</li> <li>• Maintain open and effective communication with the CJM and Emergency Services</li> </ul>
<b>Lines of communication</b>	<ul style="list-style-type: none"> <li>• Reports to the Construction Traffic Manager/Traffic Superintendent</li> </ul>
<b>Minimum Skill Levels</b>	<ul style="list-style-type: none"> <li>• A recognised, relevant qualification with recent relevant work experience in a control room position.</li> </ul>

**Table 7-7: Traffic Monitoring Office Operators**

Traffic Monitoring Office Operators	
<b>Authority</b>	<ul style="list-style-type: none"> <li>• Appointed by the Senior Traffic Monitoring Office Operator</li> <li>• Works with the Senior Traffic Monitoring Office Operator to produce any correspondence and documentation necessary for approvals and traffic management</li> <li>• Reports issues associated with compliance to the Traffic Manager</li> </ul>

<b>Traffic Monitoring Office Operators</b>	
	<ul style="list-style-type: none"> <li>• Implement the procedures associated with the incident response plan and manage incident response resources</li> <li>• Maintain logs of all incidents and reports on attendance and outcomes</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>• Accountable for operation of the TMO</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>• Have a good working knowledge of the IRP</li> <li>• Responsible for the continual monitoring of CCTV during construction hours, addressing incoming communication relating to traffic management</li> <li>• Be aware at all times of the location of the Traffic Manager, Field Crews and the activities which they are undertaking</li> <li>• Manage the notification of CJM and the Emergency Services in the case of incidents and maintain two way radio communications with field crews</li> <li>• Assist the Senior Traffic Monitoring Office Operator in organising appropriate personnel, plant and resources to attend Incidents</li> <li>• Be available for shift work to provide the coverage requirements of the TMO and additional hours if required for specific construction events</li> <li>• Become familiar with the traffic area for which responsibility is held, including alternate routes available</li> <li>• Maintain open and effective communication with the CJM and Emergency Services</li> </ul>
<b>Lines of communication</b>	<ul style="list-style-type: none"> <li>• Reports to the Senior Traffic Monitoring Office Operator</li> </ul>
<b>Minimum Skill Levels</b>	<ul style="list-style-type: none"> <li>• Relevant work experience in a control room position</li> </ul>

**Table 7-8: Incident response crew member**

<b>Incident Response Crew</b>	
<b>Authority</b>	<ul style="list-style-type: none"> <li>• Appointed by the Traffic Superintendent</li> <li>• Reports issues directly to the Traffic Monitoring Office and operators</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>• Accountable for operation of the incident response and management</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>• Provide a first response as well as install relevant traffic control for minor unplanned incidents along the core and precinct road network</li> <li>• Collect road and traffic intelligence and pass on to the TMO</li> </ul>

<b>Incident Response Crew</b>	
	<ul style="list-style-type: none"> <li>• Implement traffic management arrangements either independently, or under the direction of the TMO, CJM or the Emergency Services</li> <li>• Provide immediate assistance to motorists along the core and precinct road network</li> <li>• Assist, in the safest possible manner, in clearing of the road to minimise traffic effects along the core and precinct road network</li> <li>• Work as an operational extension of the TMO</li> <li>• Be directed from the TMO, however are capable of operating semi-autonomously with independent action for minor incidents</li> <li>• Work on a 24 hour, 7 day a week, shift work roster</li> </ul>
<b>Lines of communication</b>	<ul style="list-style-type: none"> <li>• Reports to the TMO</li> </ul>
<b>Minimum Skill Levels</b>	<ul style="list-style-type: none"> <li>• Minimum of two years as a member of an incident response crew on an existing motorway, or, in a team leader role for a traffic management company</li> </ul>

**Table 7-9 Bus Marshal**

<b>Bus Marshal</b>	
<b>Authority</b>	<ul style="list-style-type: none"> <li>• Appointed by the Construction Traffic Manager</li> <li>• Works with the CJM and bus operators during the PM peak periods</li> <li>• Reports issues associated with compliance</li> </ul>
<b>Role</b>	<ul style="list-style-type: none"> <li>• Accountable for liaison with the CJM, public and private bus operators to manage the bus layover areas</li> </ul>
<b>Responsibility</b>	<ul style="list-style-type: none"> <li>• Provide support to the CTM to ensure documentation and compliance for all matters relating to bus operations.</li> <li>• Support the Stakeholder and Community team</li> <li>• Provide ongoing support to site managers</li> </ul>
<b>Lines of communication</b>	<ul style="list-style-type: none"> <li>• Reports to the Senior Traffic Monitoring Office Operator</li> </ul>
<b>Minimum Skill Levels</b>	<ul style="list-style-type: none"> <li>• Recent relevant work experience in a bus environment</li> </ul>

### 7.1.3 Specialist consultants

#### Traffic control subcontractors

We will maintain a register of traffic controllers to be used on the Project, including the names of proposed traffic controllers, their traffic controllers' certificate numbers and expiry dates. Only TfNSW pre-qualified companies will be used and the register will be provided to the Principal's Representative.

## **Road safety auditors**

Road safety auditors will be engaged to undertake independent road safety audits. Refer to Section 6.3 of this Sub-plan for additional details on road safety audits.

## **Traffic modellers**

Specialist traffic modellers are part of the team to inform construction staging. Modelling will be undertaken as required by the site specific CTTMP, the TCG and TTLG forums.

## **7.2 Communication**

For all works on road and path networks that stops, slows or otherwise delays or affects the normal flow of traffic, we will liaise with the relevant road authorities including TfNSW and local councils as well as emergency services and bus operators to minimise our impacts on the traffic and transport networks during the construction phase.

### **7.2.1 Traffic and Transport Liaison Group**

The Traffic and Transport Liaison Group (TTLG) will facilitate consultation with agencies and organisation that are impacted or have a direct influence on traffic and transport matters. Members include personnel from TfNSW, councils, Emergency Services, public transport operators, motoring, bicycle and pedestrian organisations and government departments who may be impacted by the works. The TTLG will meet monthly at the CJM facility or via Teams if COVID-19 restrictions dictate.

Matters for discussion will include construction staging, partial or full closures of Warringah Freeway, community concerns associated with traffic changes, impacts on road, path and public transport users and operators. CTTMPs and ROL applications and the cumulative impact of works being undertaken by other projects will also be the subject of discussions at this forum.

Where required, CPB Downer JV will undertake supplementary analysis and modelling to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations and the public. This includes changes and the management of any changes to pedestrian, cyclist movements and public transport services. Any revised traffic management measures will be incorporated into site-specific CTTMPs.

Up and coming special events will be included as an ongoing agenda item to ensure that any known special events and their impacts on our works are fully understood.

The Construction Traffic Manager and Traffic Managers will attend this forum. Other members of the team, including construction personnel and the Community Engagement and Stakeholder Manager, may also attend.

### **7.2.2 Traffic Control Group**

The Traffic Control Group (TCG) is a technical forum to discuss the proposed traffic management measures during the various stages of the construction works, including full and partial closures of Warringah Freeway and the potential impacts on the road, path and transport networks. At this forum we will discuss proposed mitigation measures. The TCG will meet weekly or as otherwise agreed.

Feedback received on the traffic documentation provided prior to the meeting will be incorporated into the revised plans.

The TCG members will vary depending on the location of the works.

Core members include:

- TfNSW
- Customer Journey Planning.

Other participants may include:

- CJM
- Emergency Services
- Relevant local councils
- Relevant communications team members
- Bus operators.

A six month look ahead program will be provided to ensure that any identified or potential issues are raised and addressed to ensure that works proceed in line with the agreed program.

### 7.2.3 ROL Schedule Weekly Meetings

CPB Downer JV will meet weekly with TfNSW and representatives of the CJM to review the ROL Change Register and to discuss any potential replacement road occupancies to mitigate the impact of any ROL changes.

### 7.2.4 Community Engagement

All community notifications will be undertaken in accordance with our Communications Strategy. The minimum consultation and community notifications, timelines, and approval routes are shown in **Table 7-10**.

**Table 7-10: Dissemination of information to the Community**

Minimum Requirement	Frequency
Provide full details on the impacts of our activities on the road, pedestrian and cyclist network and traffic systems on the project website	Updated on a weekly basis
Provide large temporary driver advisory, advance notice static signposting on roads approaching the construction site. The minimum size is to be 1800x1200mm with the design to satisfy AS1743 Road Signs specifications.	Provided at least three weeks prior to traffic changes
Provide large temporary direction signposting to direct motorists to residences and businesses directly affected by our activities. The minimum size is to be 1800x1200mm with the design to satisfy AS1743 Road Signs specifications.	Ad hoc basis depending on impact caused by the construction stage Where required, provided at least 10 days prior to traffic changes
Provide temporary notices and signposting at bus stops detailing any changes to bus routes, stops, timetables and service frequencies due to our works	Provided at least 10 days prior to a change to any bus service
Provide temporary notices and signposting at pedestrian and cyclist crossings of the construction site and routes around the construction site detailing any changes to these facilities due to our activities.	Provided at least 10 days prior to a change to any pedestrian or cycle route
Provide variable message signs at appropriate locations and in accordance with relevant TfNSW guidelines and policies	Provided at least 10 days prior to traffic changes
Provide radio advertising	Negotiate with each radio station and implement a protocol for

Minimum Requirement	Frequency
	publicising every traffic change through their traffic reporters including paid advertisements if necessary
Provide full details on the impacts of our activities on the road, pedestrian and cyclist network and traffic systems in the newsletters issued as part of the community involvement and consultation process	Every two months
Provide leaflets to letterboxes of local properties, residences and businesses outlining project information including the current and next construction stage and changes and impacts on traffic conditions, including on-street parking conditions, the number of traffic lanes and turn movements, changes to pedestrian and cyclist crossings and access routes and changes to bus routes, service frequencies and stops	<p>Leaflets prepared and submitted to the Principal for approval at least 5 business days prior to the distribution date and distributed at least 5 business days prior to the start of every construction activity</p> <p>Distributed to all properties, residences and businesses directly affect by, and within 500m of, the changes to the road network and traffic systems</p>
Provide full details on the impacts of our activities on the road network and traffic systems int the project display centres and social media platforms	Display at least two weeks prior to the start of every construction activity that involves a change of three or more days duration to the road network and systems
Provide email, telephone, social media and postal contacts for interaction with the community to receive comments concerning traffic issues associated with our activities	Available at all times during our activities
Maintain a register of all views, complaints and comments received from the community, including details on the date received, location, subject matter, name and address of the member of the community, actions taken, response given, and any information related to the issues. Provide a summary report to the Principal on the contents and status of the register	Maintain the register continuously and report monthly
Provide email and telephone facilities between Customer Journey Planning and CPB Downer JV	Provide the facilities 24hours per days, 7 days per week

### 7.3 Inspections

CPB Downer JV will undertake inspections of implemented long term traffic measures to ensure that they are fit for purpose and that all devices are clear and legible for all road users. These inspections will include daily checks of implemented measures with intermittent night-time inspections by a qualified person.

Every TGS/VMP implemented for works will be subject to checking as required by the TfNSW Traffic Control Work Sites Manual (**Table 7-11**). These checks are to ensure that the TGS/VMP is maintained fit for purpose and that the safety of road users is not compromised.

**Table 7-11 Monitoring activities (adapted from TCAWS Manual v6 Tables 8-1 and 8-2)**

Stage	Activity	Purpose	Frequency
Planning	TGS verification	To ensure that the TGS selected or designed is suitable for the works and location	Prior to each submission
During temporary traffic management	Weekly inspections	To ensure that the CTTMP and relevant TGS are appropriate and operating safely, effectively and efficiently	Weekly
	Shift inspections	To ensure that the TGS is implemented as designed. This includes at a minimum twice per shift and when a <ul style="list-style-type: none"> <li>▪ A TGS is installed/ changed or updated</li> <li>▪ At regular frequency after work commences (recommended every 2 hours)</li> <li>▪ Once aftercare arrangements have been installed if required</li> </ul>	Minimum twice per shift or if the TGS is amended/ updated on site.
	CTTMP review	To ensure that the CTTMP controls are achieving the required outcomes	Weekly
	Road safety audits	To identify road safety crash potential and areas of risk that could lead to traffic incidents.	1 per month
Post completion	Post completion inspection	To ensure that the site has been demobilised as planned and is safe for opening to traffic	As required at the end of each stage

Records will be maintained of all traffic guidance facilities and any adjustments or changes made to such facilities, together with dates and times the facilities were installed, varied and removed.

The TMO and incident response crews will also measure and record traffic queue lengths during the life of ROLs. An auditing program of road occupancies, including regular and frequent audits and inspections will be implemented.

Monitoring of the road network will be undertaken daily by our incident response crews.

## 7.4 Auditing

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

Audit requirements are detailed in Section 3.9 of the CEMP.

## 7.5 Reporting

Reporting requirements to be provided to the Planning Secretary include:

- Construction Parking and Access Management Strategy – required under CoA E140 – this strategy will be provided at least 1 month prior to any construction that impacts existing parking arrangements and a quarterly report will be provided. Details to be provided are included in Section 6.1.6 of this Sub-plan
- Alfred Street North parking report – required under CoA E142 – this report will be provided within the first 6 months of construction commencement. The details to be provided are listed in Section 6.2 of this Sub-plan.

Other reporting requirements include a monthly progress report which will be provided to TfNSW and the Independent Certifier. These reports will be provided within five business days after the end of each calendar month.

The traffic and transport management section of the monthly progress report will include an update on the management of traffic and transport and any traffic and transport issues including:

- Our performance
- Current and upcoming critical issues, including those identified by the TfNSW, TCG, TTLG and other relevant stakeholders, and the proposed measures to address these issues
- A summary of existing and proposed traffic documentation, including ROL, site specific CTTMP, RSA including status and identified critical impacts and concerns raised by our stakeholders including changes to the construction staging
- Recent and proposed changes to traffic management, parking and kerbside use and the impact of this on road users, the operation of the road networks and traffic systems
- Media or community information released and proposed to be released and comments and complaints in regard to traffic and transport
- Recent traffic related incidents
- Comparisons of current and base case traffic conditions including traffic volumes at intersections and travel time impacts
- A summary of daily inspections of implemented traffic control measures.

We will also provide reports to the TTLG and the TCG with any issues that are affecting the road network, traffic and bus operations due to our activities and the actions taken to mitigate the impact.



# 8 Review and improvement

## 8.1 Continuous improvement

Continuous improvement of this Sub-plan 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
- 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.

## 8.2 TTAMP update and amendment

The processes described in Section 3.9 to Section 3.13 of the CEMP may result in the need to update or revise this Sub-plan. This will occur as needed.

Only the CPB Downer JV Construction Environment Manager, or delegate, has the authority to propose amendments to any of the environmental management documentation.

The ER will review this TTAMP (as required by CoA A27(d)) prior to submission to the Planning Secretary to ensure it is consistent with the requirements of the Planning Approval.

A copy of the updated Sub-plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure (refer to Section 3.11.2 of the CEMP).

# Appendix B – Preliminary Risk Register

**Table B1: Preliminary Risk Register**

Hazard event	Potential causes	Potential consequences	Risk controls in place (when determining the risk rating)	Consequence	Likelihood	Risk rating	Description of tasks required to achieve SFAIRP	Consequence	Likelihood	Risk rating
Abnormal traffic congestion	Congestion in the local area Increase in traffic volume Vehicle breakdowns Haulage operations Coinciding other project works	Reduced travel times Impact on public transport routes	Obtain traffic volume data and conduct analysis as required Where possible minimise lane closures and speed limit reductions Plan works during low traffic volume periods, where possible Notify road users about expected delays in advance Have alternate haulage routes Haul at night and/ or over 24hrs Regularly communicate with nearby works or projects	S4: Moderate	L3: Possible	3 Tolerable	Monitor road network for congestion, review traffic management measures as required  All construction teams coordinate and plan works to reduce need for road occupancies	S5: Minor	L3: Possible	3 Tolerable
Impacts to emergency service response within road network	Congestion in the local area created by traffic volume	Fatality	Design and implement emergency service accesses in all stages of construction  Inform and regularly update emergency services in regard to the site gates and access points	S2: Severe	L3: Possible	2 Undesirable	Consult with emergency services on access restrictions and alternate arrangements  Provide 24hr contact number to all emergency services  Use the TTLG to advise of changes	S3: Major	L4: Unlikely	3: Tolerable
Special events (on road)	Increase in traffic volume	Reduced travel times	Support TfNSW/Councils in managing the special event  Liaise with the CJM and organisers to manage traffic flow through the work area	S5: Minor	L2: Likely	3: Tolerable	Where possible, schedule road works to avoid conflict with special event traffic  Coordinate and maintain regular contact with the CJM and Councils	S6: Insignificant	L2: Likely	3: Tolerable

## Appendix C – Indicative Construction Vehicle Routes

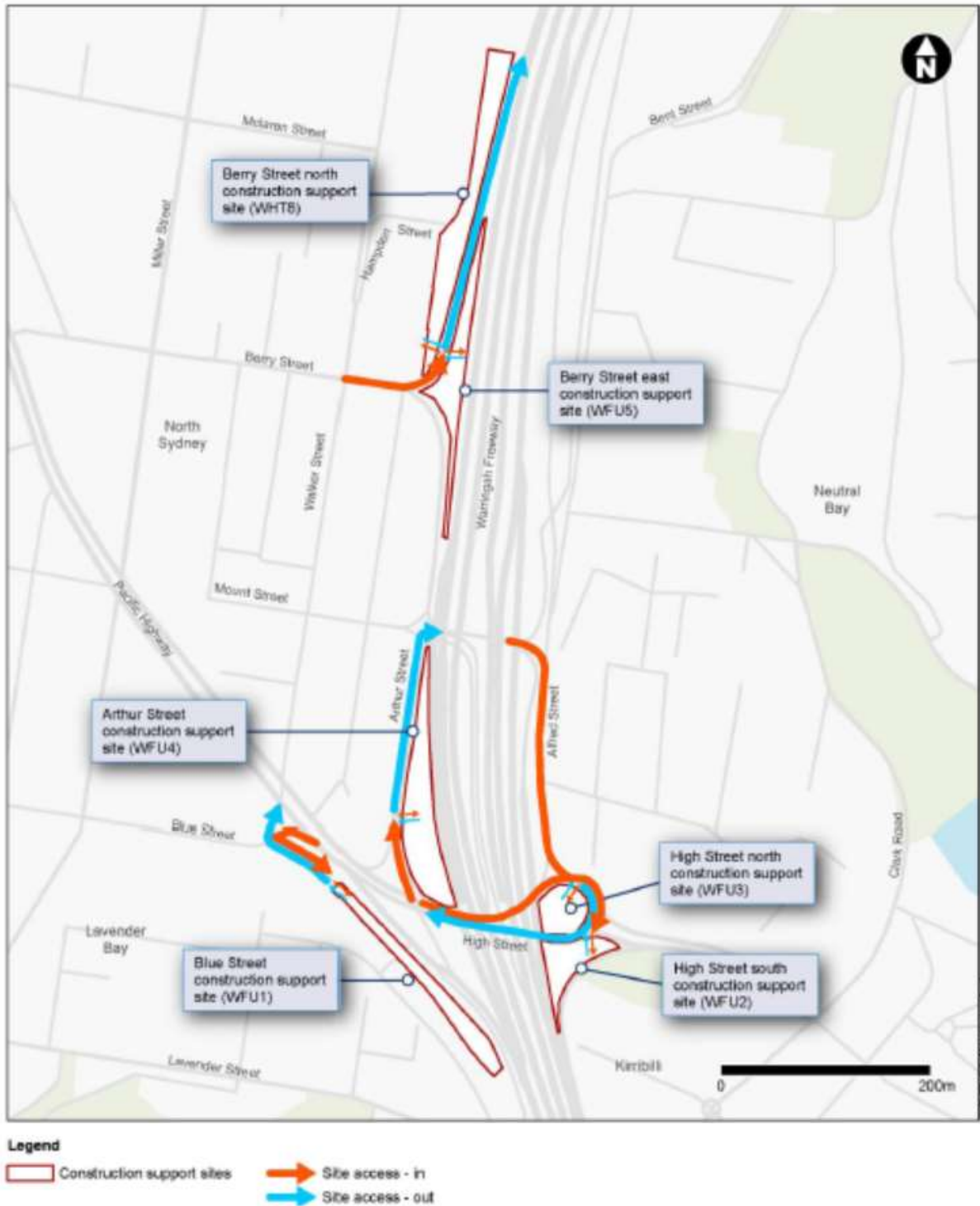


Figure C1: Indicative Construction Vehicle Routes (Source EIS, Appendix F, Figure 5-19)

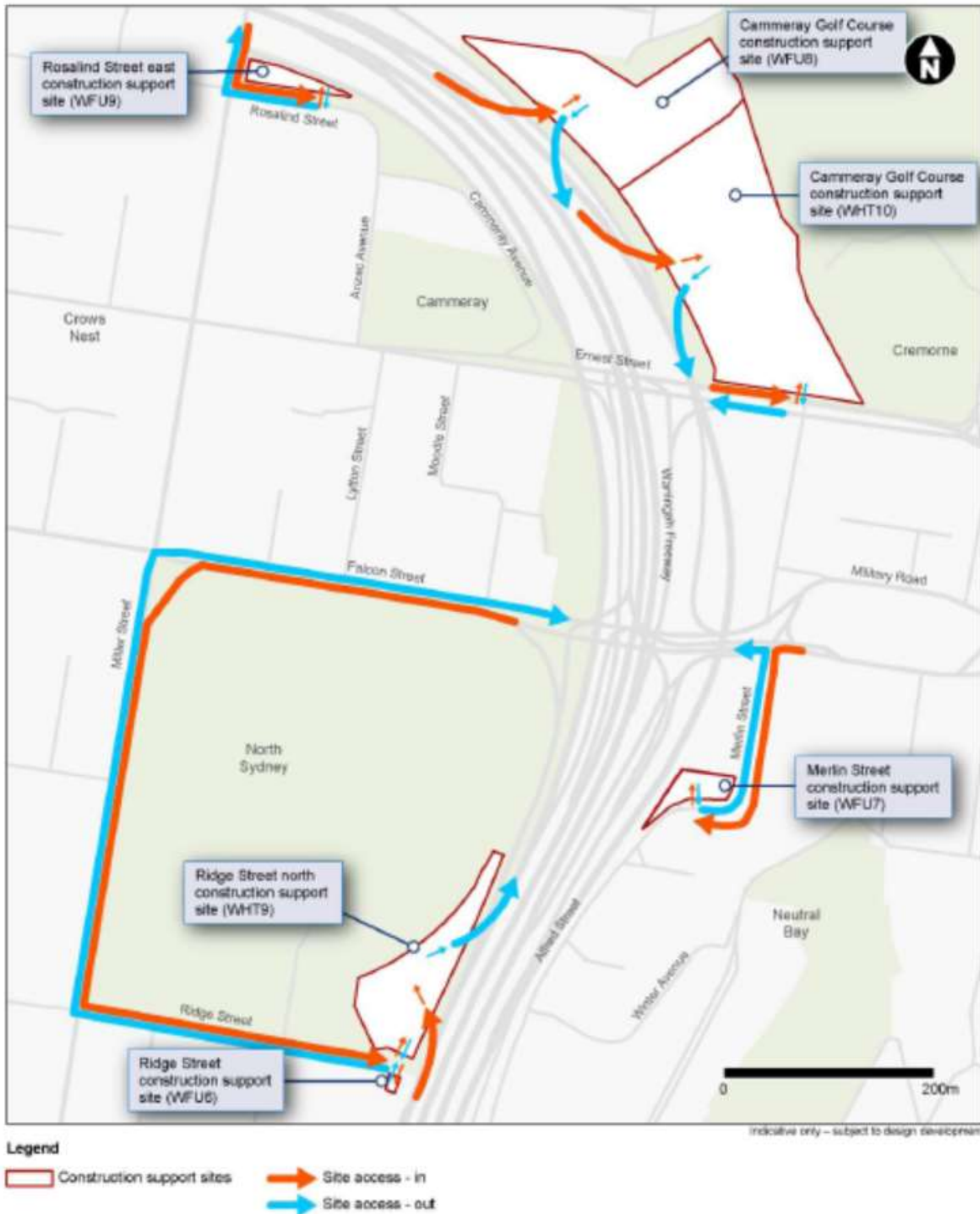
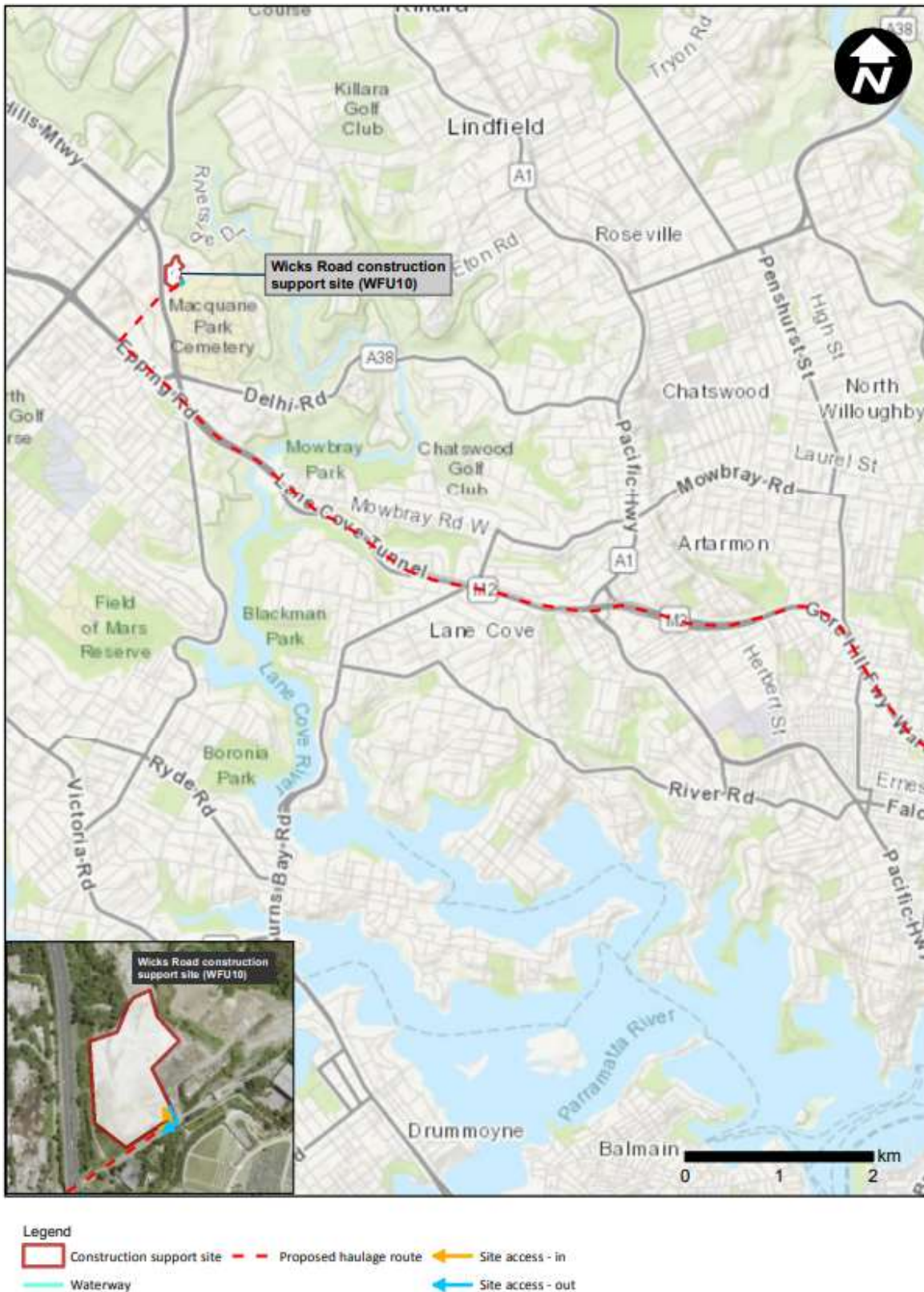


Figure C2: Indicative Construction Vehicle Routes (Source EIS, Appendix F, Figure 5-20)





**Figure C3: Indicative Construction Vehicle Routes WFU10**

The following routes were approved by DPE on 04/12/2022 with respect to Local Roads Plan – Portal Precinct Revision C:

Heavy vehicle use of

- Rosalind Street (between WFU9 access and Anzac Avenue);
- Anzac Avenue (between Rosalind Street and Ernest Street);
- Anzac Avenue (between Ernest Street and Cammeray Avenue); and
- Cammeray Avenue (between the construction boundary and Anzac Ave).

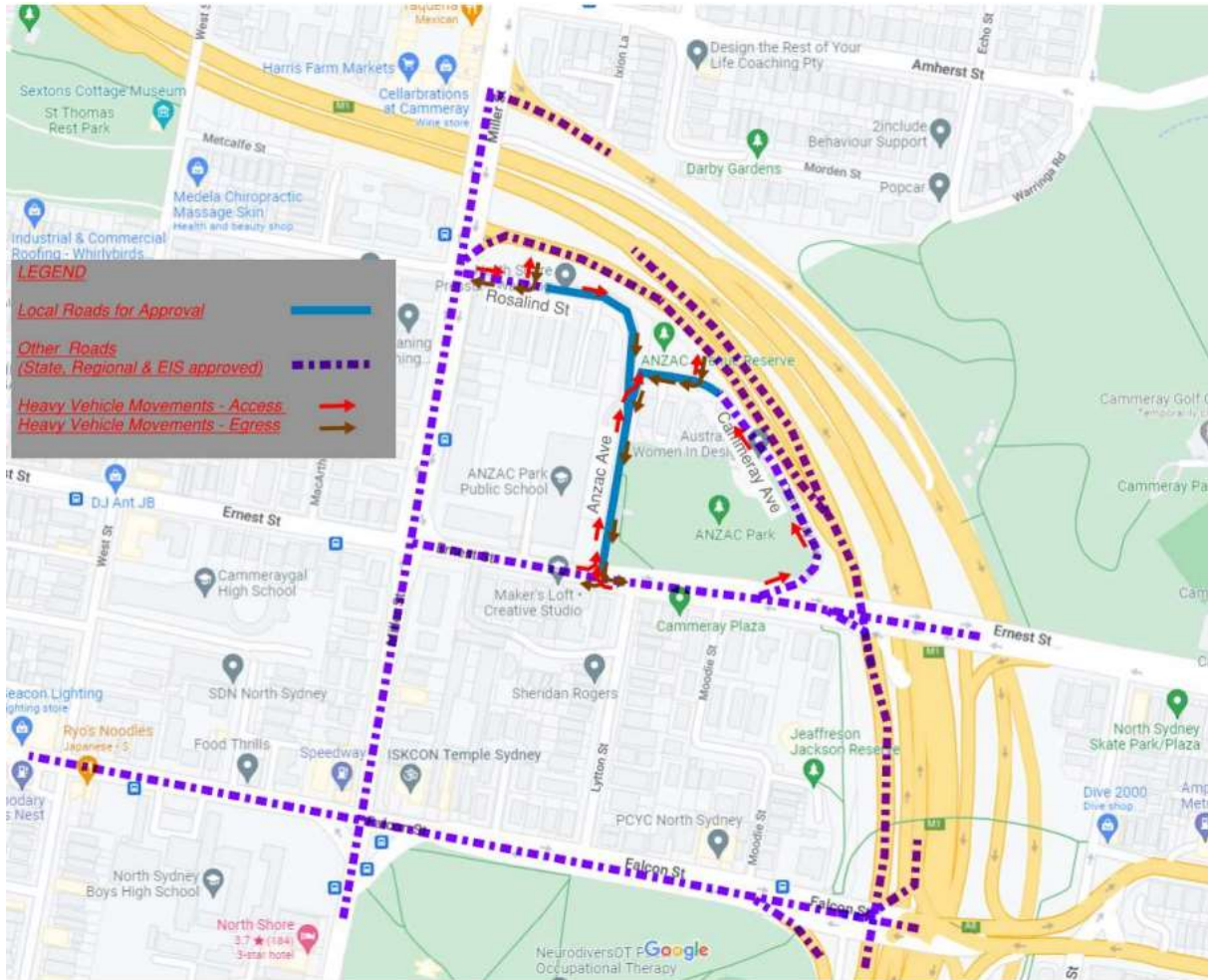


Figure C4: Additional local roads to be used as approved by DPE on 04/12/2022 with respect to local Road Plan – Portal Precinct Revision C



The following routes are proposed for use subject to DPE approval of the Local Roads Plan – Falcon Street Active Transport Bridge Replacement and Demolition Revision B, submitted 23/01/2023:

Heavy vehicle use of

- Moodie Street;
- Moodie Lane (between Moodie Street and Jeaffreson Jackson Reserve); and
- Merlin Street (between Falcon Street and Ernest Street).



**Figure C5: Additional Construction Vehicle Routes proposed for use subject to DPE approval (Moodie Street, Moodie Lane and Merlin Street)**



The following local roads are proposed for the turnaround of the Barrier Transfer Machine (BTM) as shown in Figure below:

- York Street;
- Jamieson Street; and
- Clarence Street.

This route is not subject to DPE approval under CoA E132 as it does not provide direct access to the construction boundary.

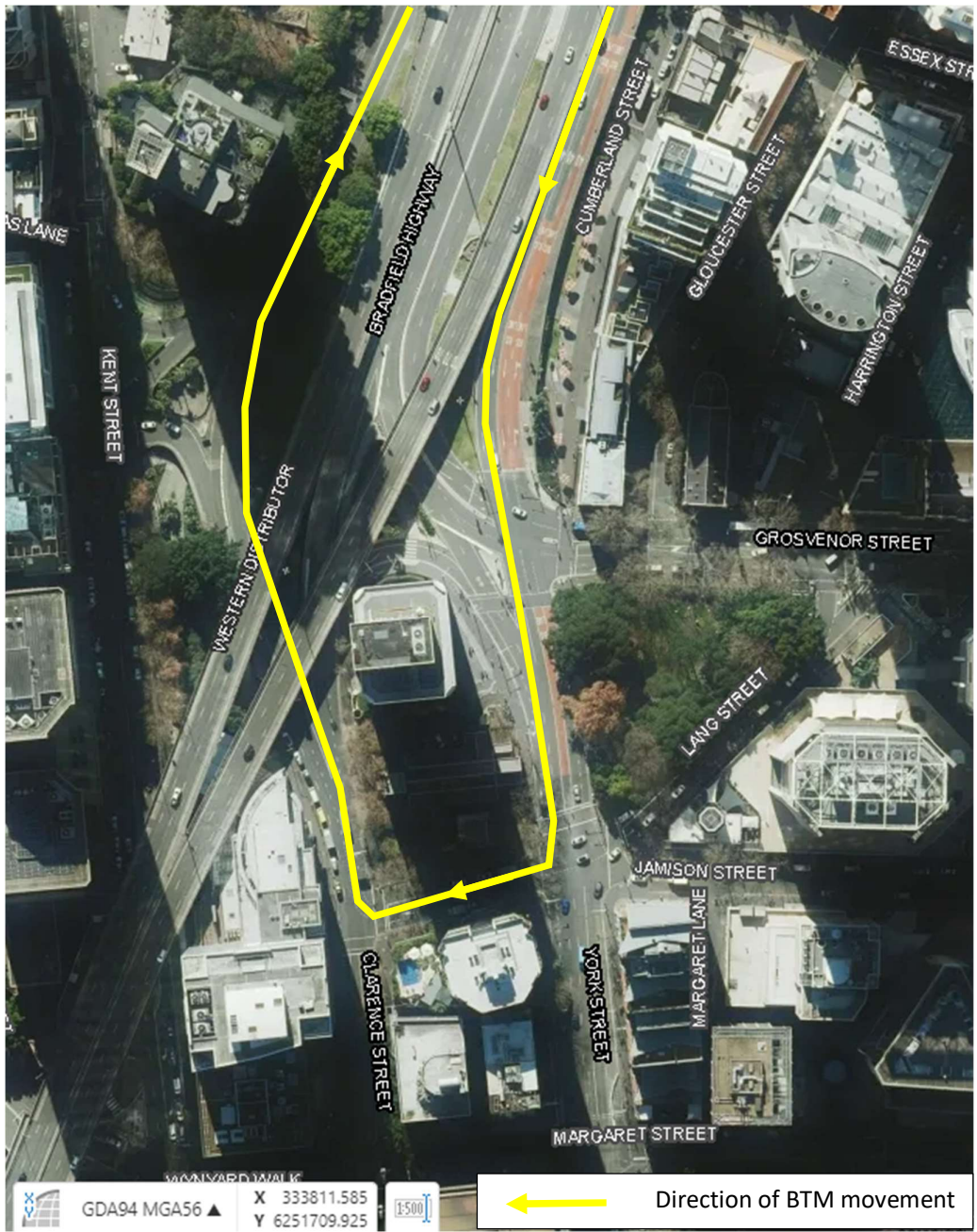
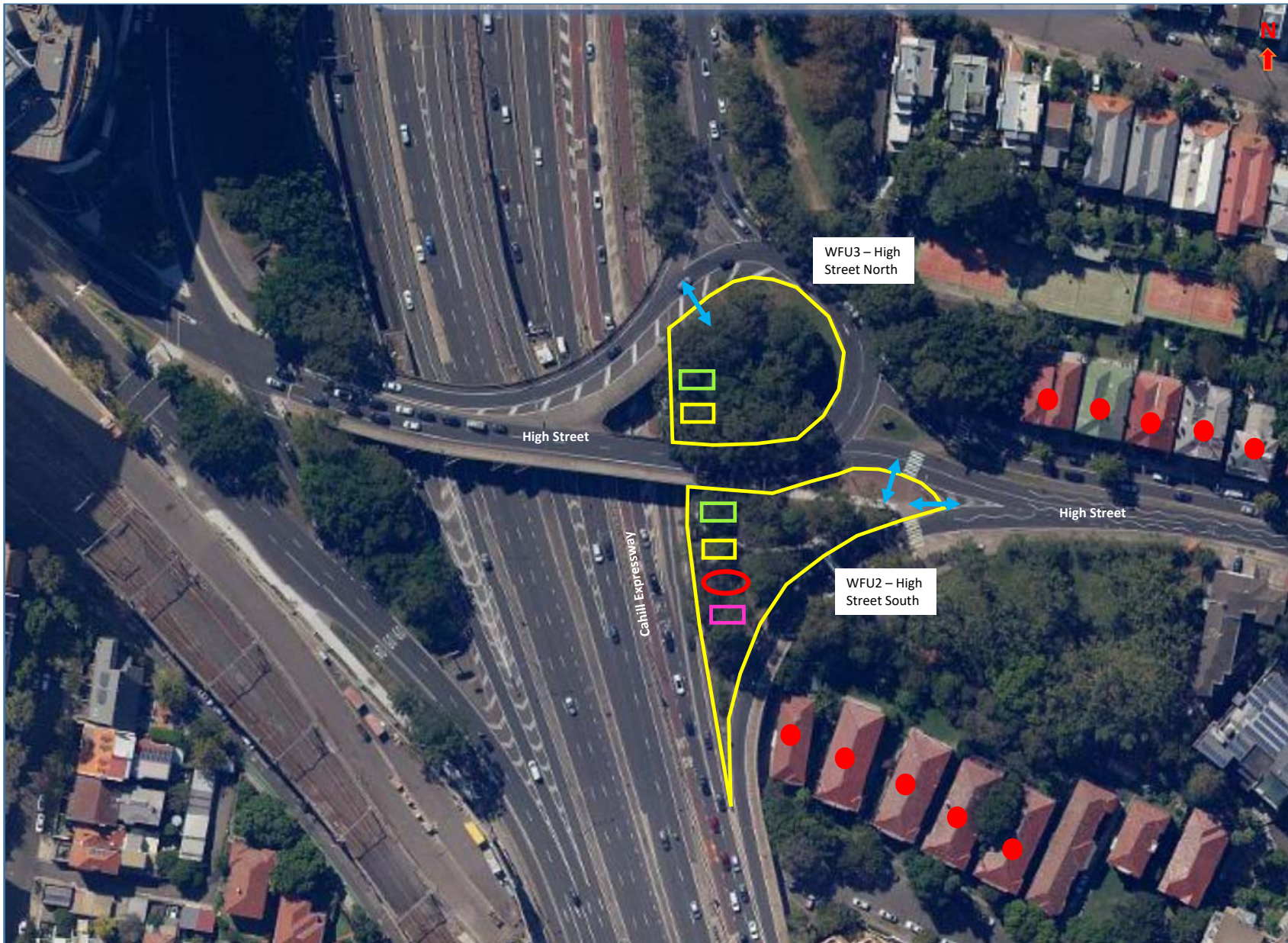


Figure C6: Additional construction vehicle route proposed for use by BTM

# Appendix D – Ancillary Facility Indicative Site Layouts





**LEGEND**

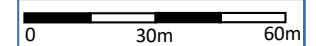
- Construction Boundary
- Crib Facilities
- Toilets
- Parking
- ↔ Entry/Exit
- Laydown
- Sensitive Land User

**Indicative Site Layout: WFU2 – High Street South and WFU3 – High Street North**

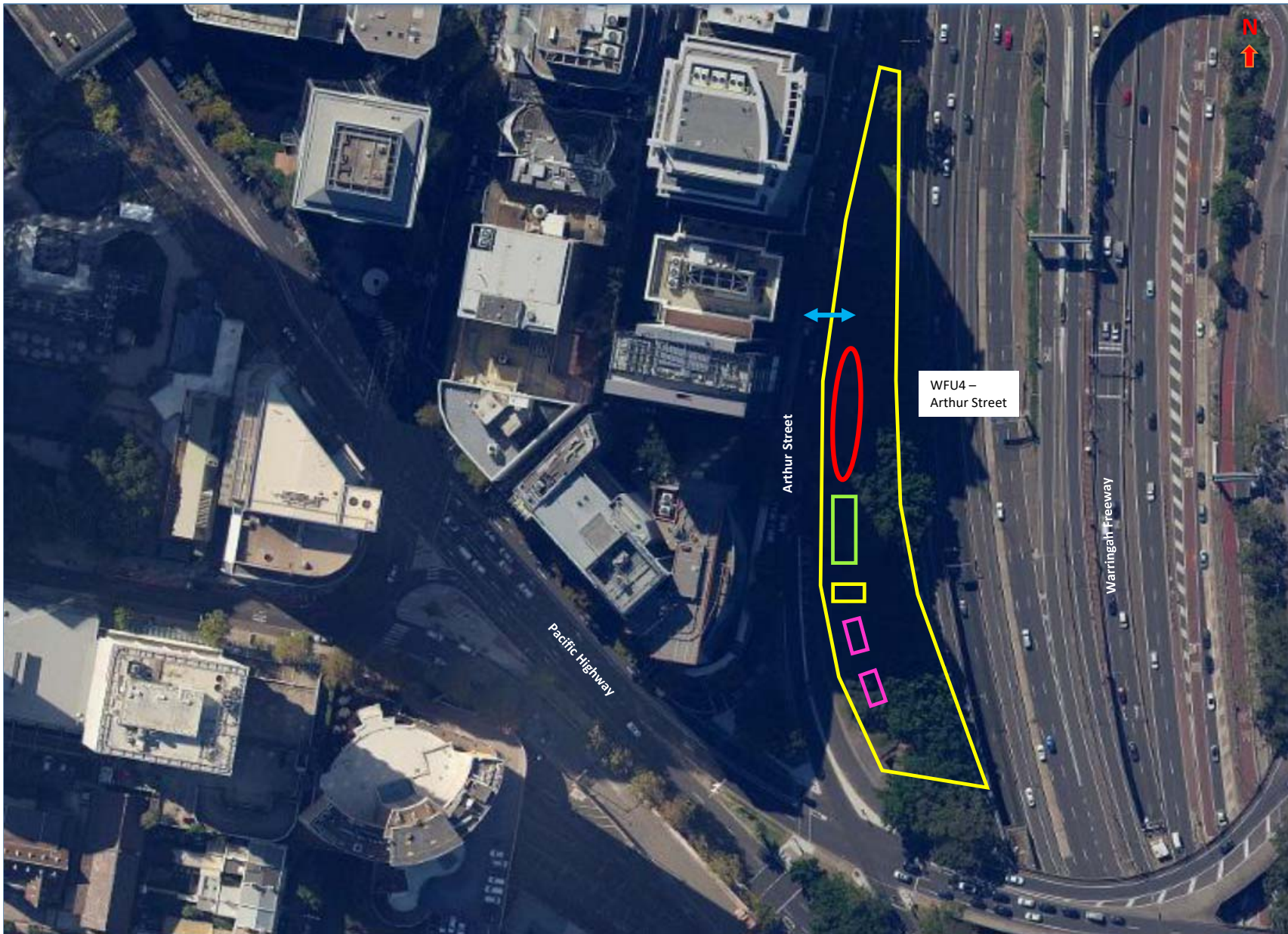
Western Harbour Tunnel and Warringah Freeway Upgrade SSI-8863  
 Stage 2 – Warringah Freeway Upgrade

11 November 2021

Revision D







**LEGEND**

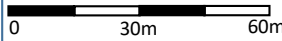
- Construction Boundary
- Crib Facilities
- Toilets
- Parking
- ↔ Entry/Exit
- Laydown
- Sensitive Land User

**Indicative Site Layout: WFU4 – Arthur Street**

Western Harbour Tunnel and Warringah Freeway Upgrade SSI-8863  
 Stage 2 – Warringah Freeway Upgrade

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**LEGEND**

- Construction Boundary
- Crib Facilities
- Toilets
- Parking
- ↔ Entry/Exit
- Laydown
- Sensitive Land User

**Indicative Site Layout: WFU5 – Berry Street East**  
 Western Harbour Tunnel and Warringah Freeway Upgrade SSI-8863  
 Stage 2 – Warringah Freeway Upgrade

11 November 2021

Revision D

0 30m 60m





**LEGEND**

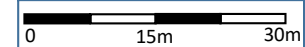
- Construction Boundary
- Crib Facilities
- Toilets
- Parking
- ↔ Entry/Exit
- Laydown
- Sensitive Land User

**Indicative Site Layout: WFU6 – Ridge Street**

Western Harbour Tunnel and Warringah Freeway Upgrade SSI-8863  
 Stage 2 – Warringah Freeway Upgrade

11 November 2021

Revision D







**LEGEND**

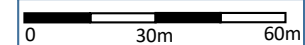
- Construction Boundary
- Crib Facilities
- Toilets
- Parking
- ↔ Entry/Exit
- Laydown
- Sensitive Land User

**Indicative Site Layout: WFU7 – Merlin Street**

Western Harbour Tunnel and Warringah Freeway Upgrade SSI-8863  
 Stage 2 – Warringah Freeway Upgrade

11 November 2021

Revision D







**LEGEND**

- Construction Boundary
- ▭ Crib Facilities
- ▭ Toilets
- ▭ Parking
- ↔ Entry/Exit
- Laydown
- Sensitive Land User
- ▭ Bus Laydown (exact location TBC)

**Indicative Site Layout: WFU8 – Cammeray Golf Course**  
 Western Harbour Tunnel and Warringah Freeway Upgrade SSI-8863  
 Stage 2 – Warringah Freeway Upgrade

11 November 2021

Revision D





**LEGEND**

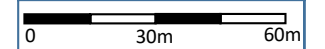
- Construction Boundary
- Crib Facilities
- Toilets
- Parking
- ↔ Entry/Exit
- Laydown
- Sensitive Land User

**Indicative Site Layout: WFU9 – Rosalind Street**

Western Harbour Tunnel and Warringah Freeway Upgrade SSI-8863  
 Stage 2 – Warringah Freeway Upgrade

11 November 2021

Revision D







**LEGEND**

- Construction Boundary
- Storage Sheds
- Toilets
- Parking
- ↔ Entry/Exit
- Laydown
- Sensitive Land User
- Noise Wall (existing)

**Indicative Site Layout: NH1 – Northern Hub**

Western Harbour Tunnel and Warringah Freeway Upgrade SSI-8863  
 Stage 2 – Warringah Freeway Upgrade

11 November 2021

Revision D







**Legend**

- Heritage item - General
- Wicks Road Premise

Rev	Description	Date	Approved
A	FOR REVIEW	2/6/2023	JM

Scale 1:2,080

**WARRINGAH FREEWAY UPGRADE**

Status			
<b>FOR RE VIEW</b>			
Original Date	A3	Drawn	GIS
Coordinate System	MGA ZONE 56	Designed	JM
Height Datum	AHD	Date Plotted	26/03/23
Filename	WFU_SEP		



**Site Environmental Plan**  
**Wicks Road (WFU10)**

Document Number <<001>>

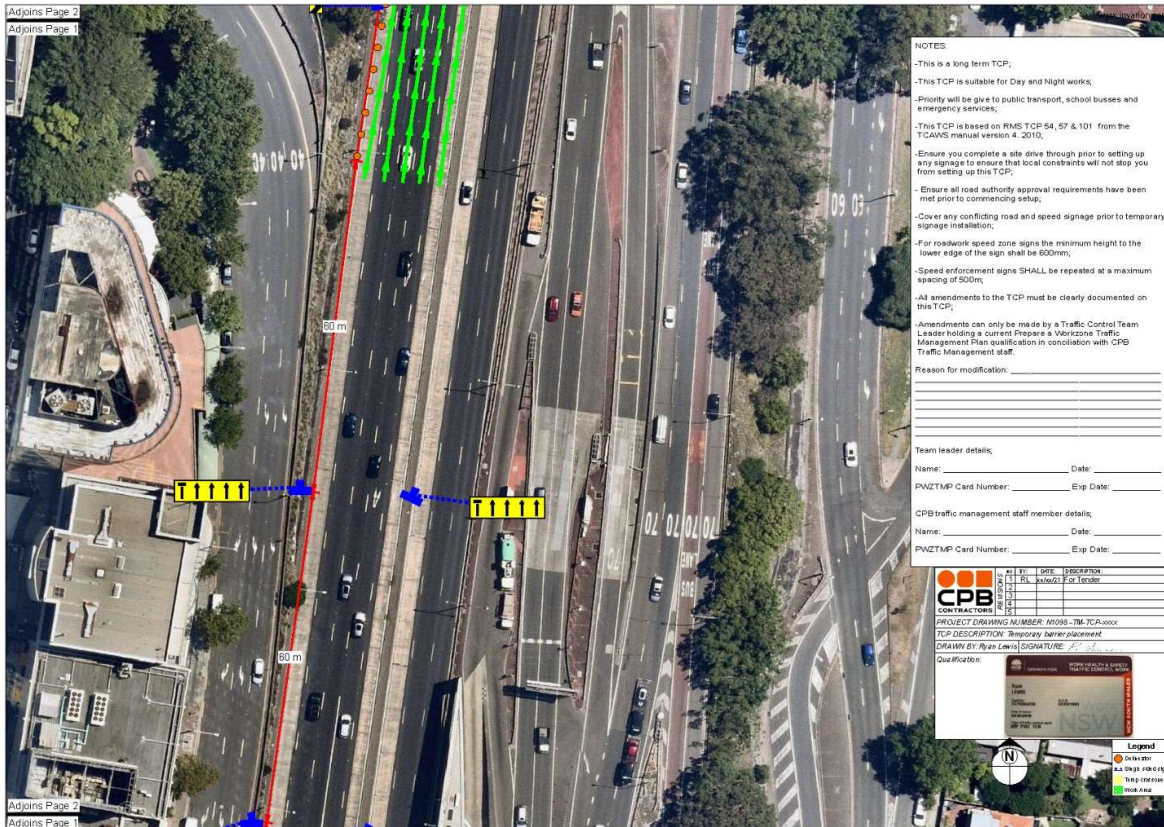
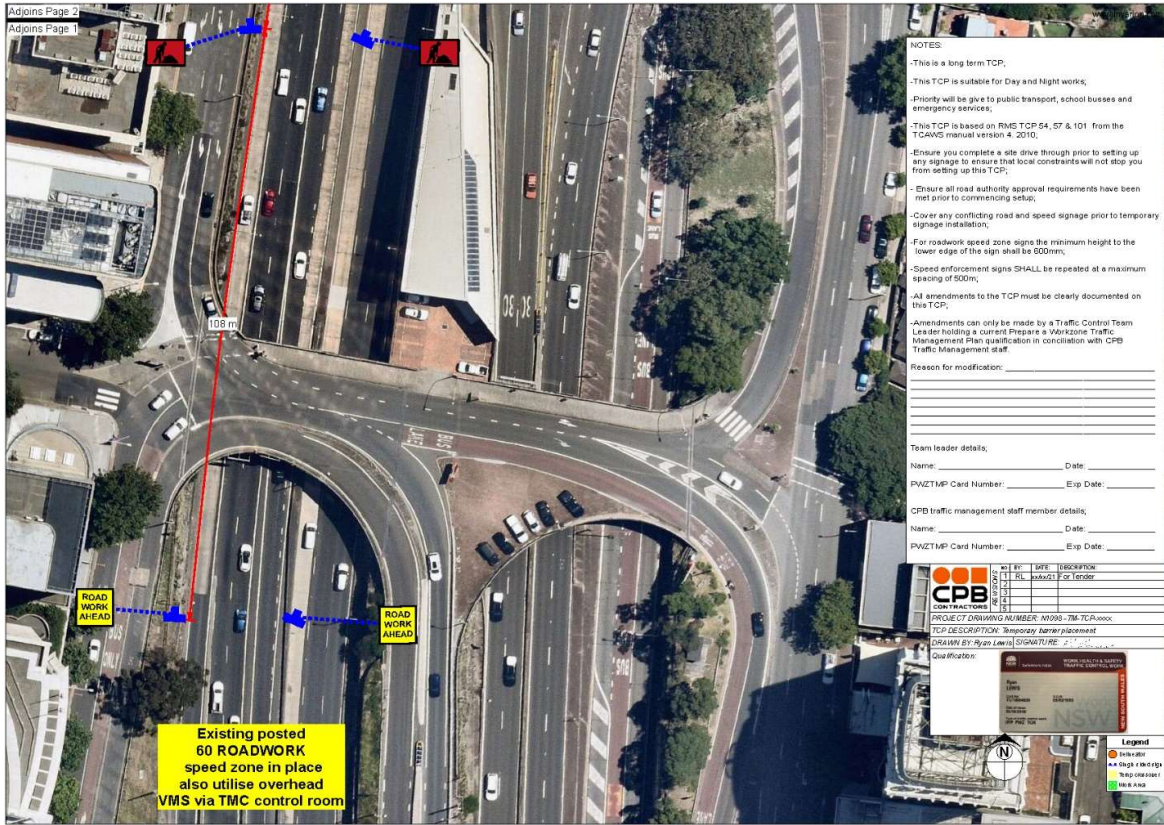
Project Number	Discipline	Document	Rev
W00127	ENV	PL	A

## Appendix E – Sample Traffic Guidance Schemes

TGS #	Location	Time of implementation	Works description
TCP1	Warringah Freeway northbound carriageway	Weekend night 10:00pm to 10:00am	Full carriageway closure for crane lift
TCP2	Warringah Freeway northbound carriageway	Any night 10:00pm to 4:30am	Partial carriageway closure for temporary barrier placement
TCP3	Warringah Freeway northbound carriageway	Any night 10:00pm to 4:30am	Partial carriageway closure for investigation works
TCP4	Warringah Freeway southbound carriageway	Any night 10:00pm to 4:30am	Partial carriageway closure for temporary barrier placement
TCP5	High Street east	Any weekend 10:00pm Friday to 4:30am Monday	56-hour weekend shutdown for road reconstruction works



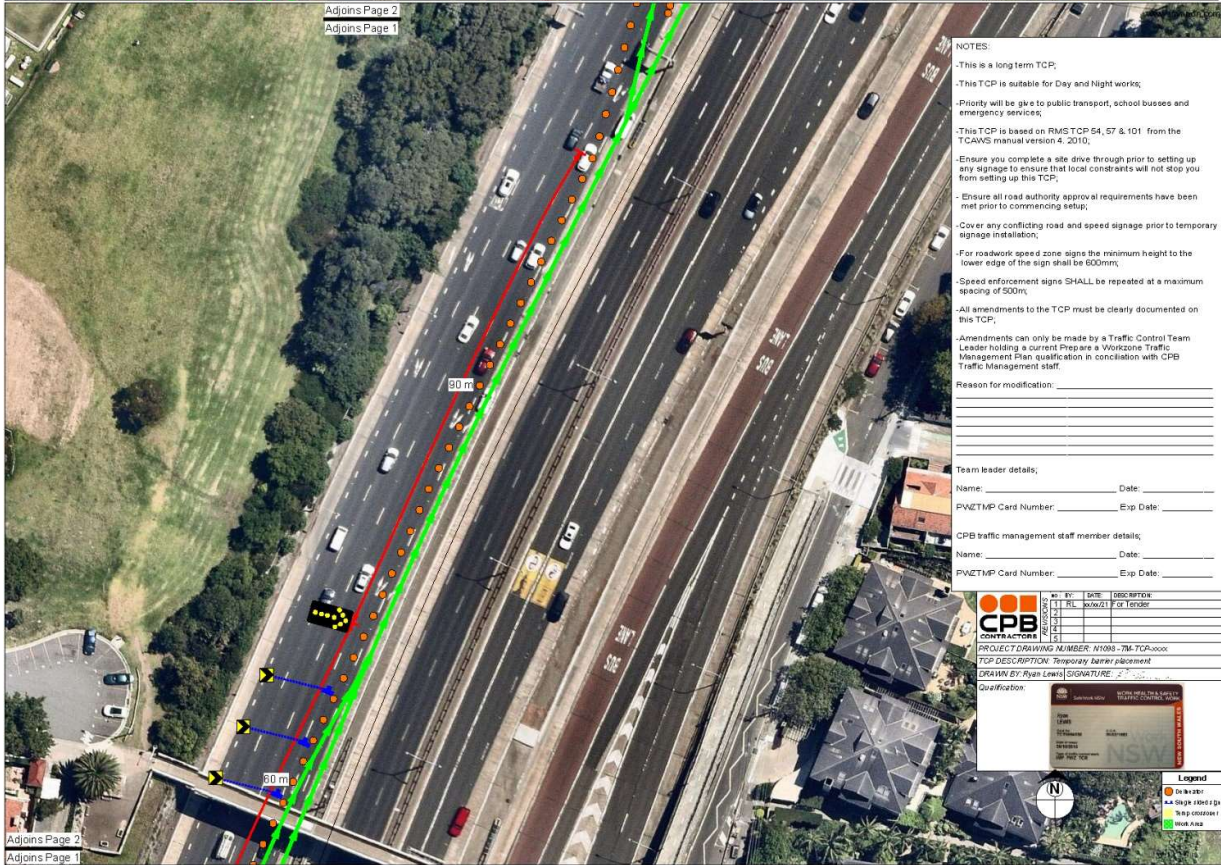
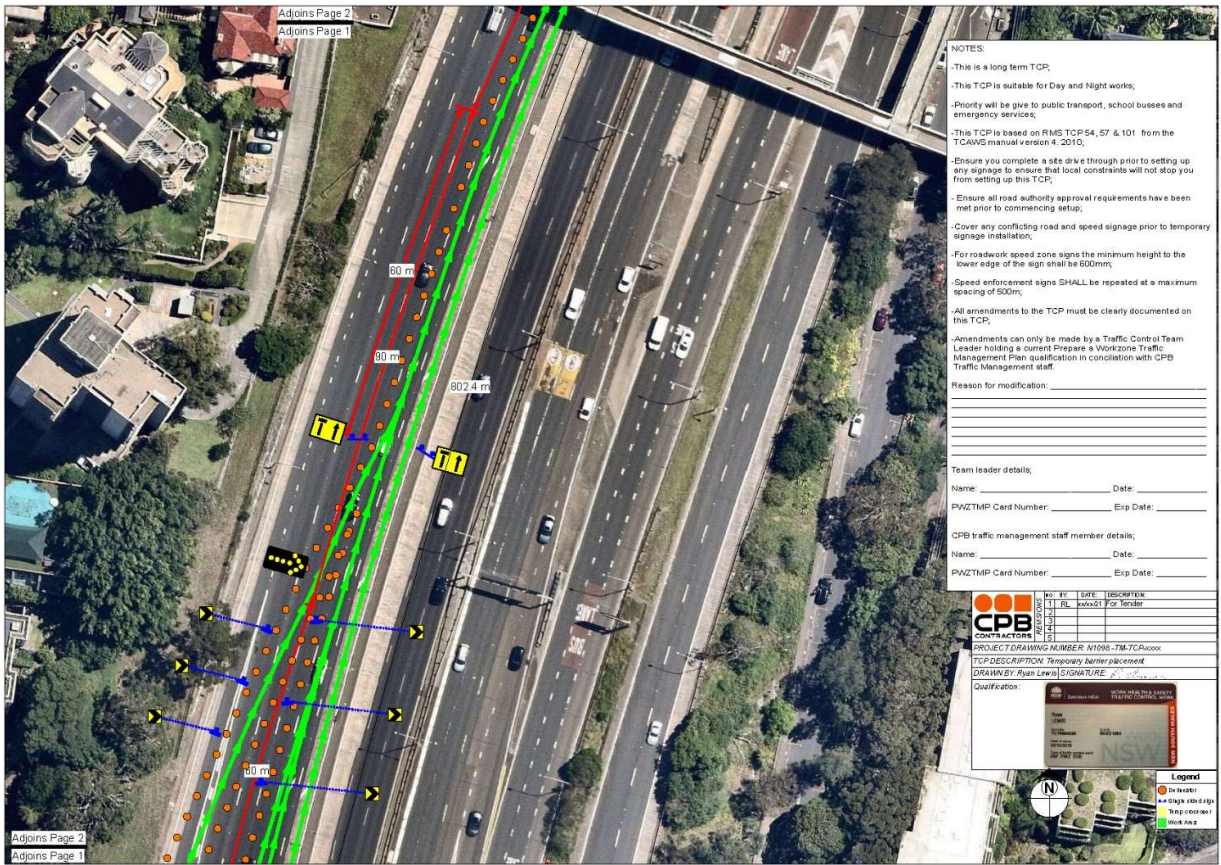
# TCP1 Warringah Freeway northbound carriageway



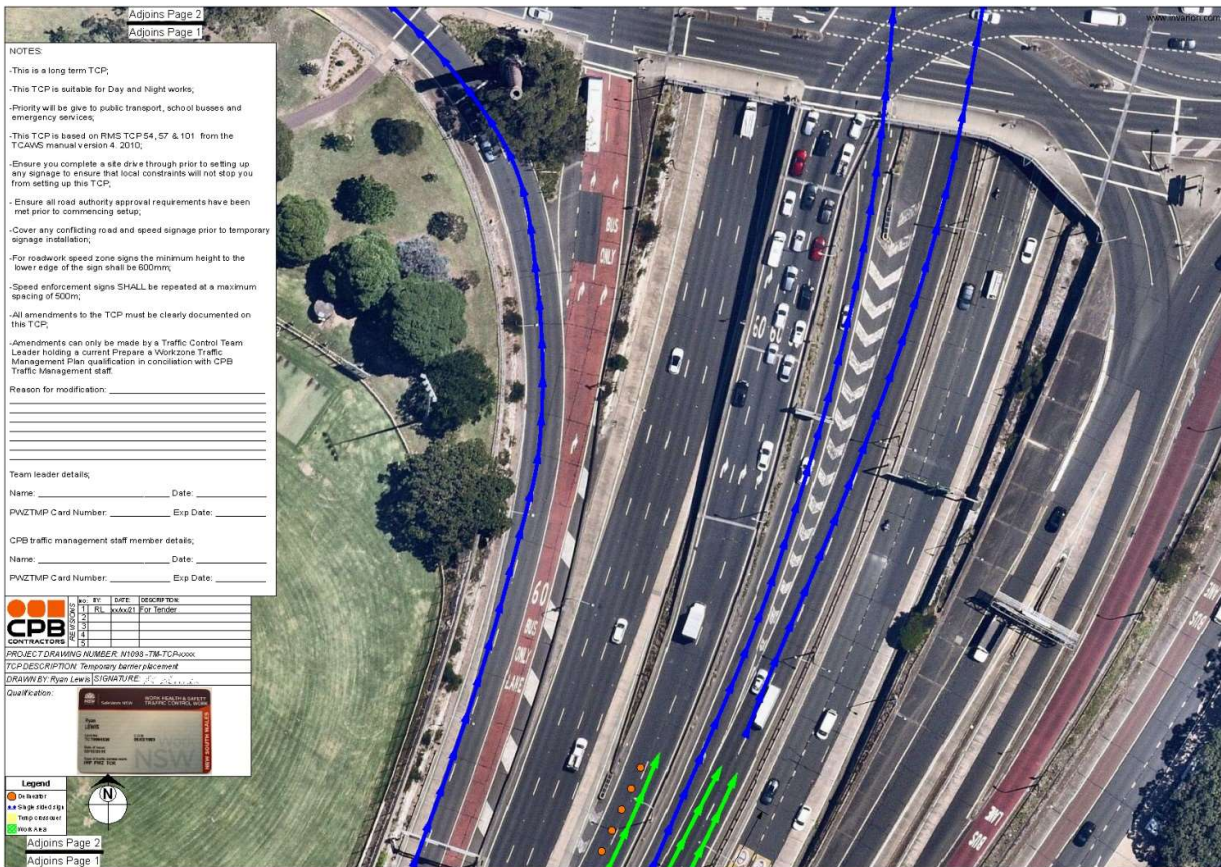
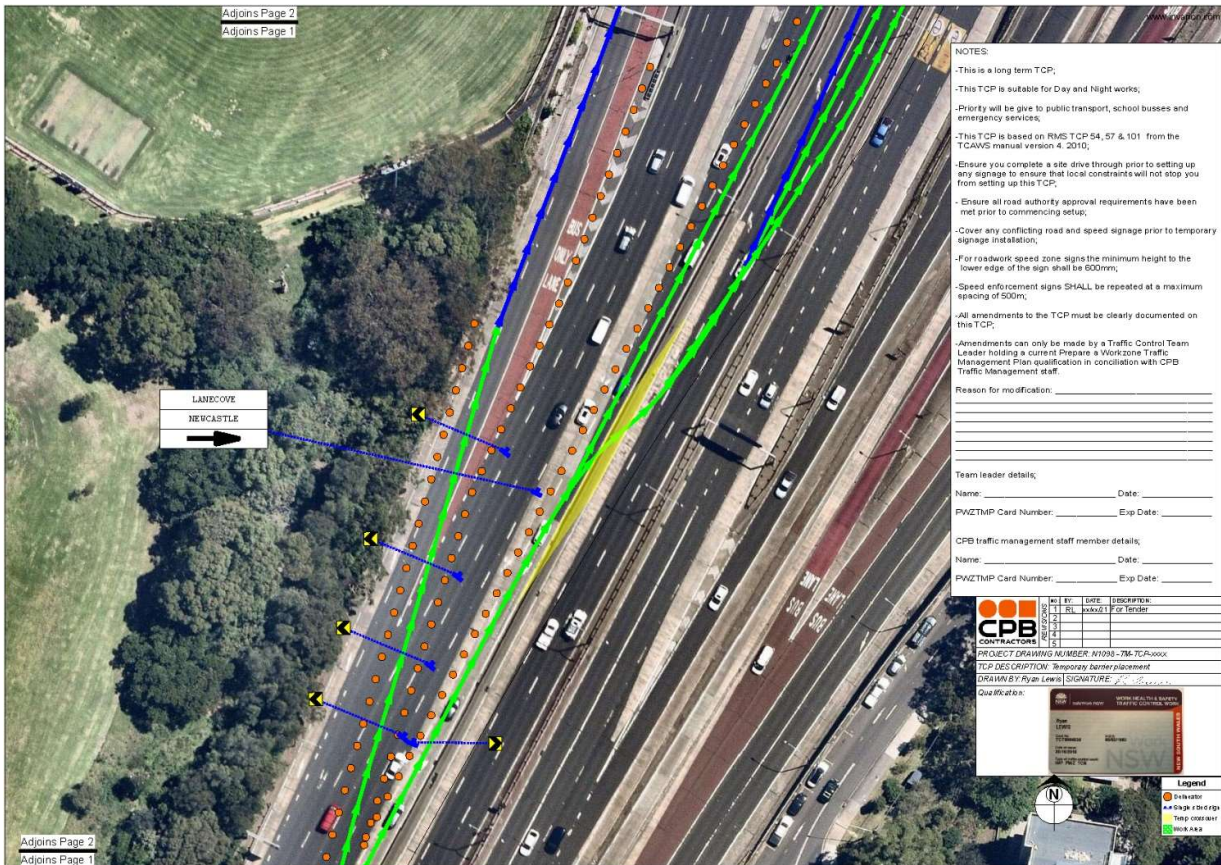




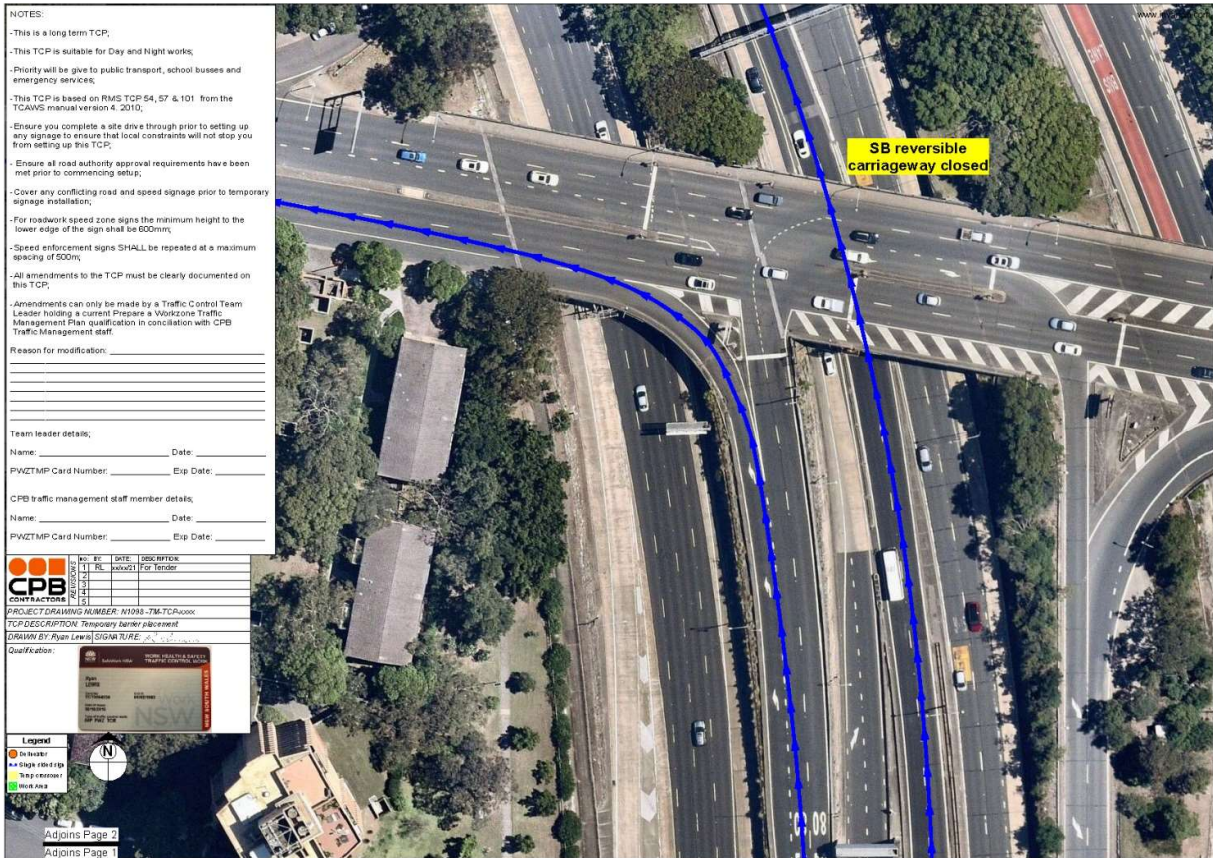
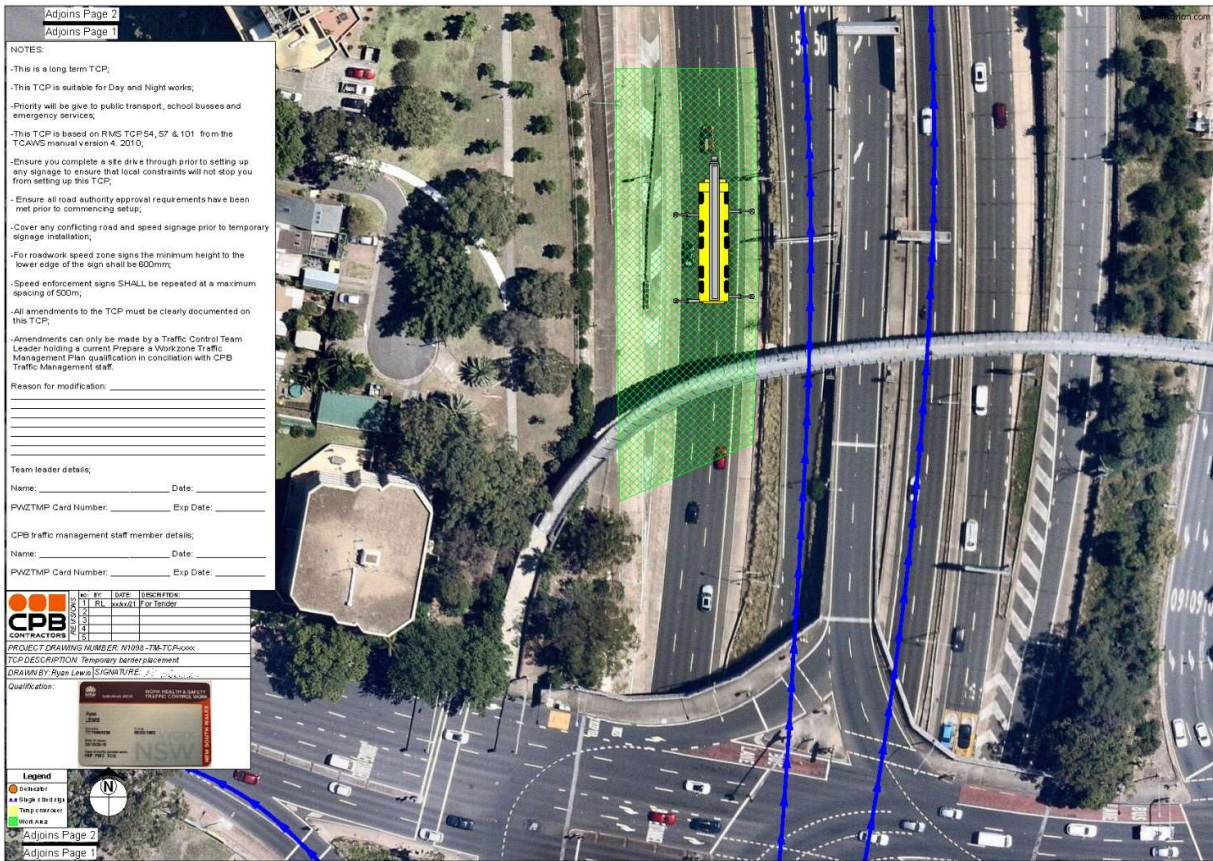




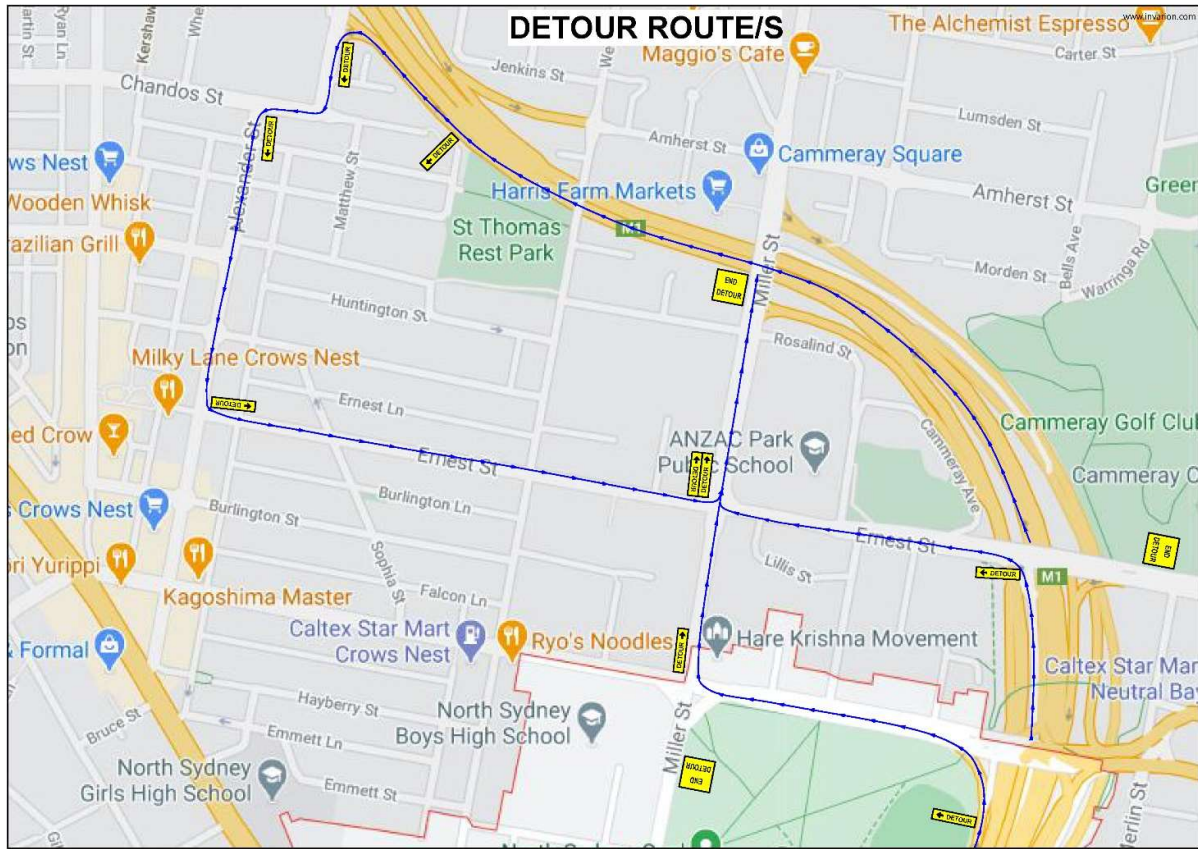














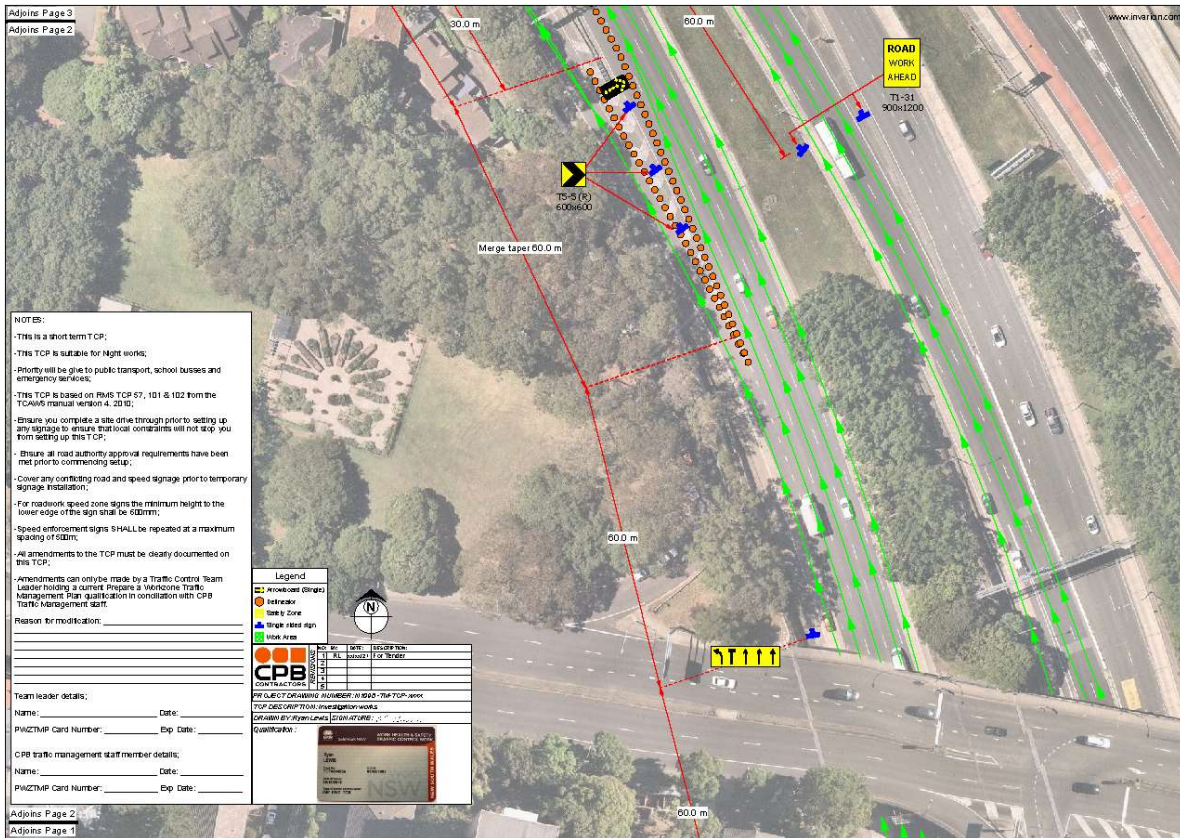
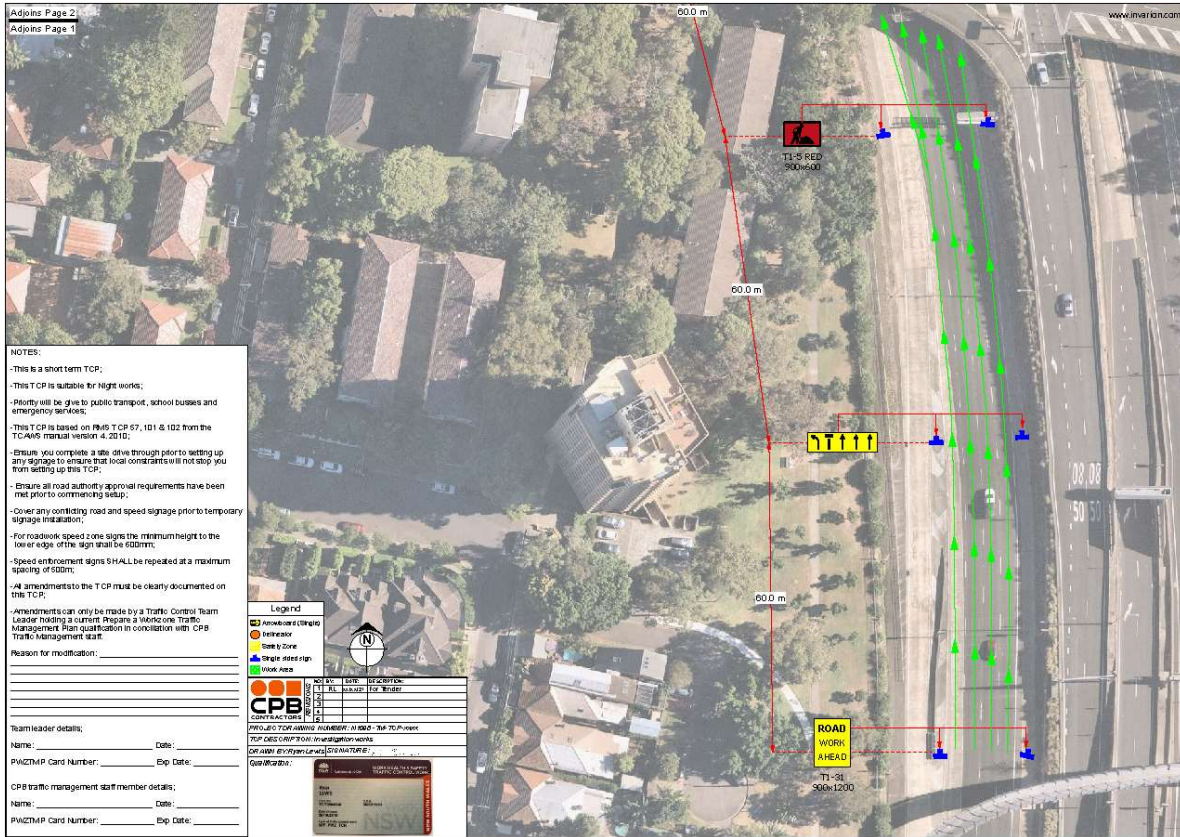








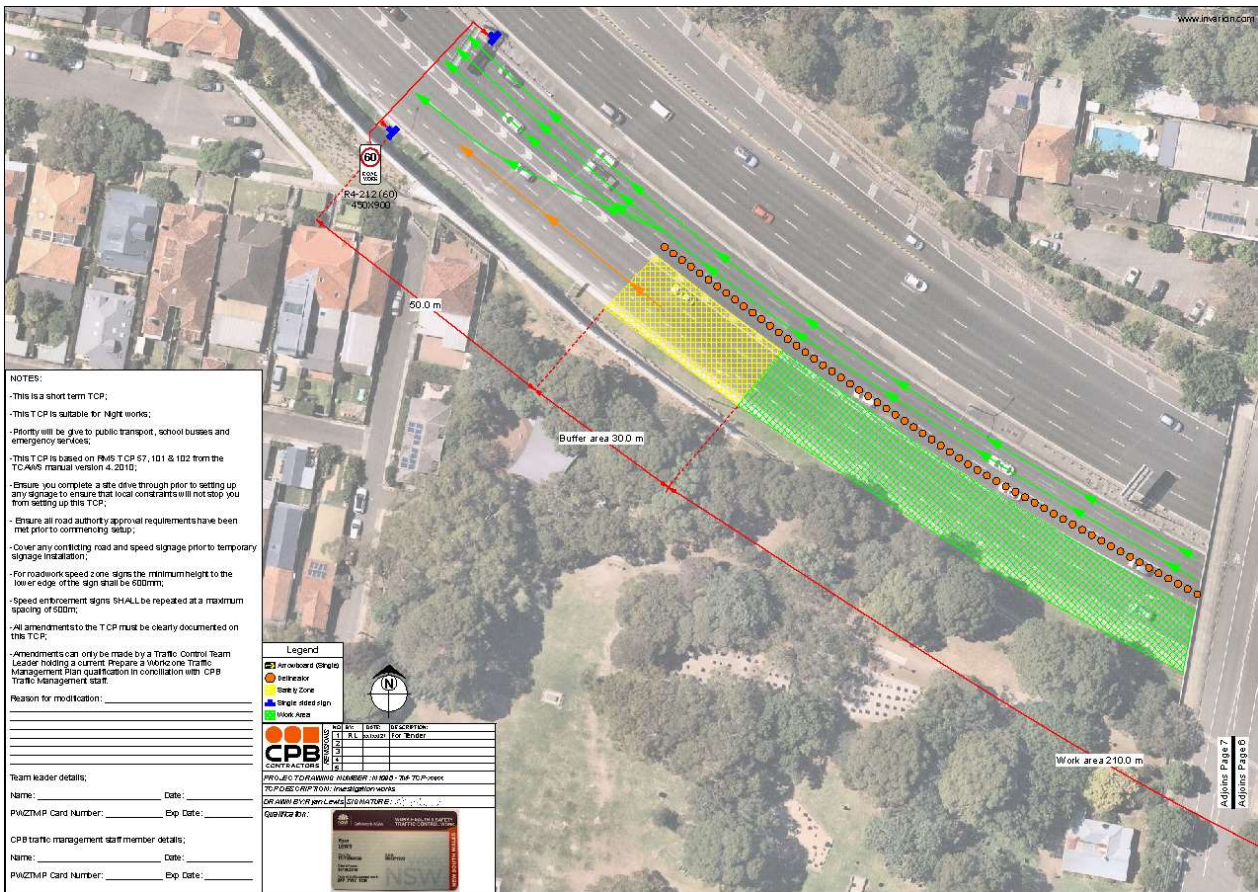
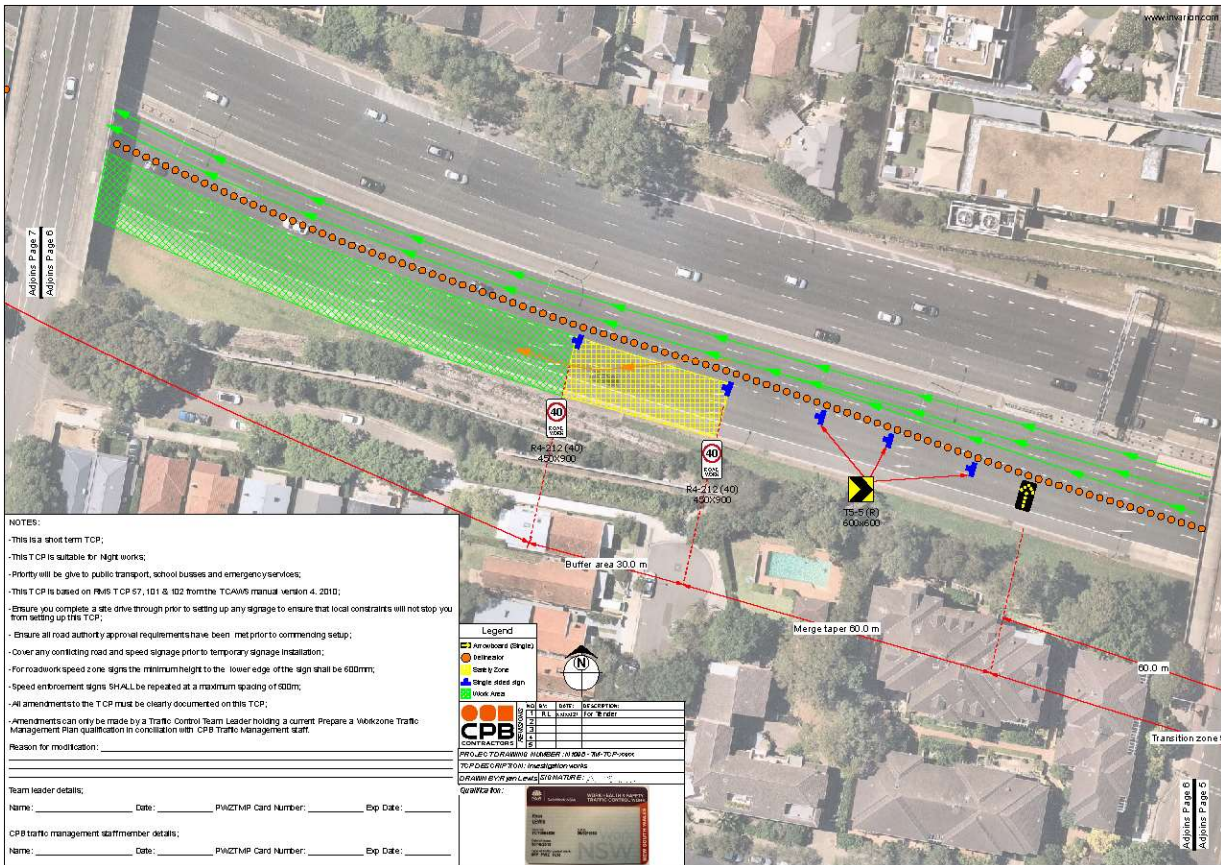
# TCP3 Warringah Freeway northbound carriageway





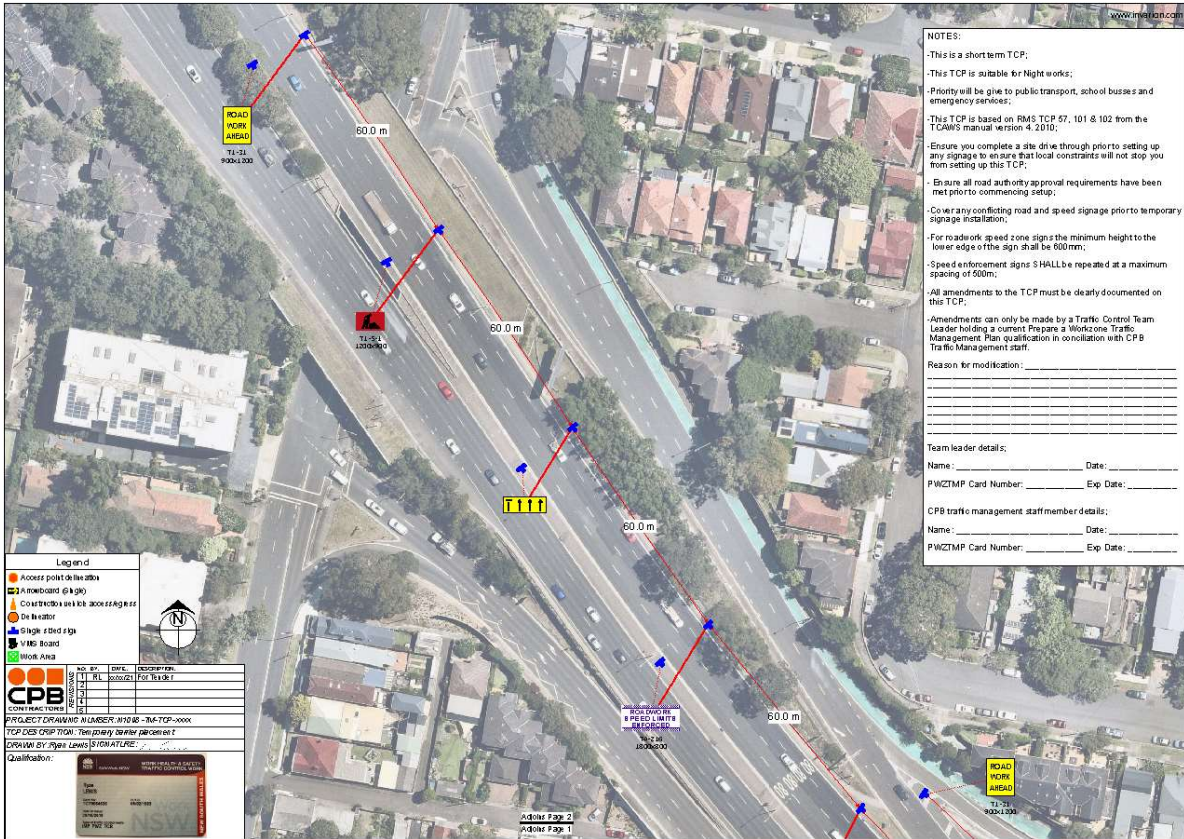








# TCP4 Warringah Freeway southbound carriageway



**NOTES:**

- This is a short term TCP;
- This TCP is suitable for Night works;
- Priority will be given to public transport, school buses and emergency services;
- This TCP is based on RMS TCP 57, 101 & 102 from the TCAMS manual version 4.2010;
- Ensure you complete a site drive through prior to setting up any signage to ensure that local constraints will not stop you from setting up this TCP;
- Ensure all road authority approval requirements have been met prior to commencing setup;
- Cover any conflicting road and speed signage prior to temporary signage installation;
- For roadwork speed zone signs the minimum height to the lower edge of the sign shall be 600mm;
- Speed enforcement signs SHALL be repeated at a maximum spacing of 500m;
- All amendments to the TCP must be clearly documented on this TCP;
- Amendments can only be made by a Traffic Control Team Leader holding a current Prepare a Workzone Traffic Management Plan qualification in consultation with CPB Traffic Management staff.

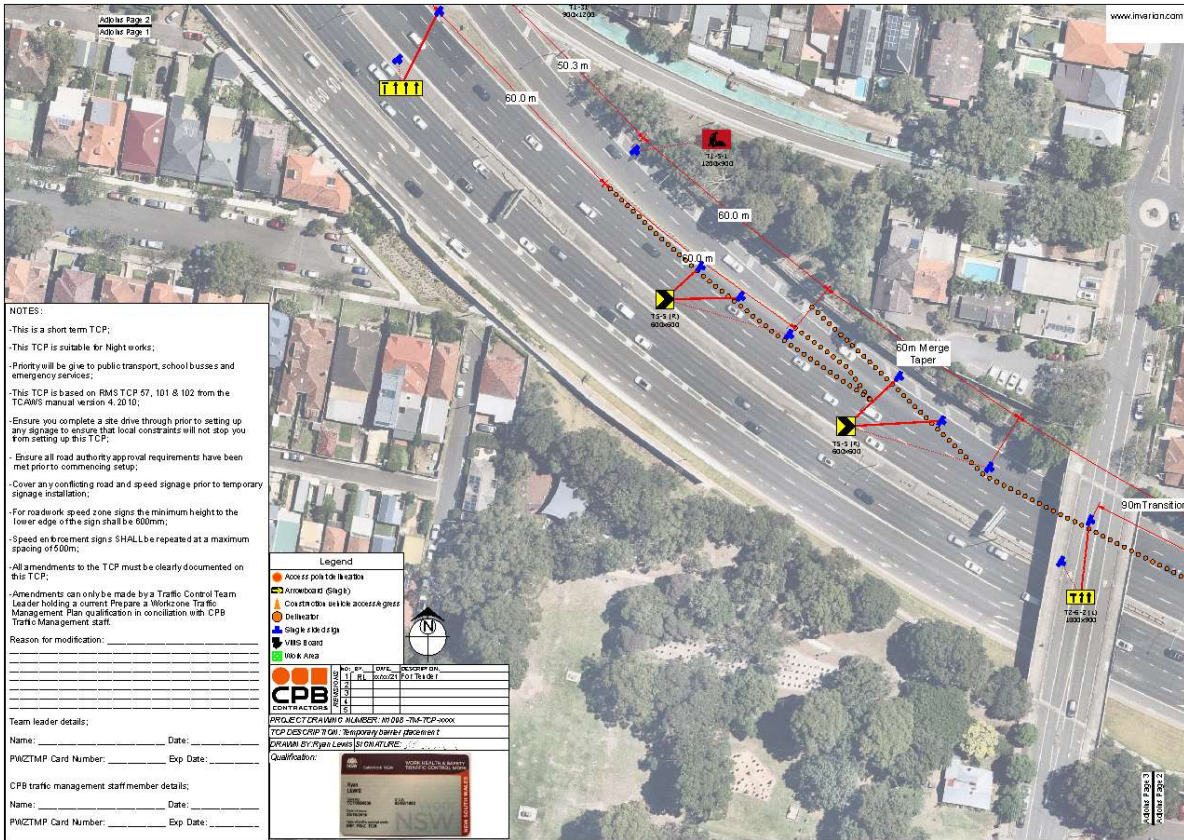
Reason for modification:

Team leader details:

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 PWZTMP Card Number: \_\_\_\_\_ Exp Date: \_\_\_\_\_

CPB traffic management staff member details:

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 PWZTMP Card Number: \_\_\_\_\_ Exp Date: \_\_\_\_\_



**NOTES:**

- This is a short term TCP;
- This TCP is suitable for Night works;
- Priority will be given to public transport, school buses and emergency services;
- This TCP is based on RMS TCP 57, 101 & 102 from the TCAMS manual version 4.2010;
- Ensure you complete a site drive through prior to setting up any signage to ensure that local constraints will not stop you from setting up this TCP;
- Ensure all road authority approval requirements have been met prior to commencing setup;
- Cover any conflicting road and speed signage prior to temporary signage installation;
- For roadwork speed zone signs the minimum height to the lower edge of the sign shall be 600mm;
- Speed enforcement signs SHALL be repeated at a maximum spacing of 500m;
- All amendments to the TCP must be clearly documented on this TCP;
- Amendments can only be made by a Traffic Control Team Leader holding a current Prepare a Workzone Traffic Management Plan qualification in consultation with CPB Traffic Management staff.

Reason for modification:

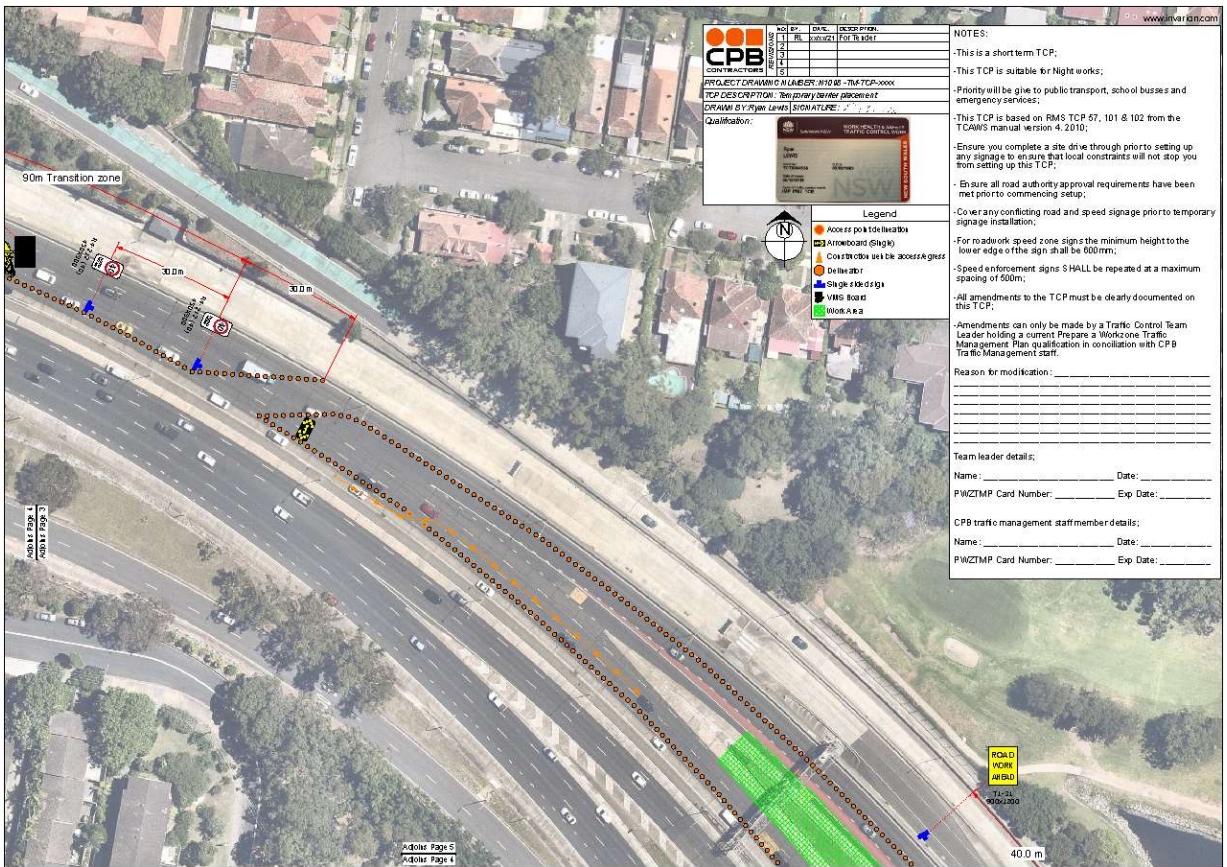
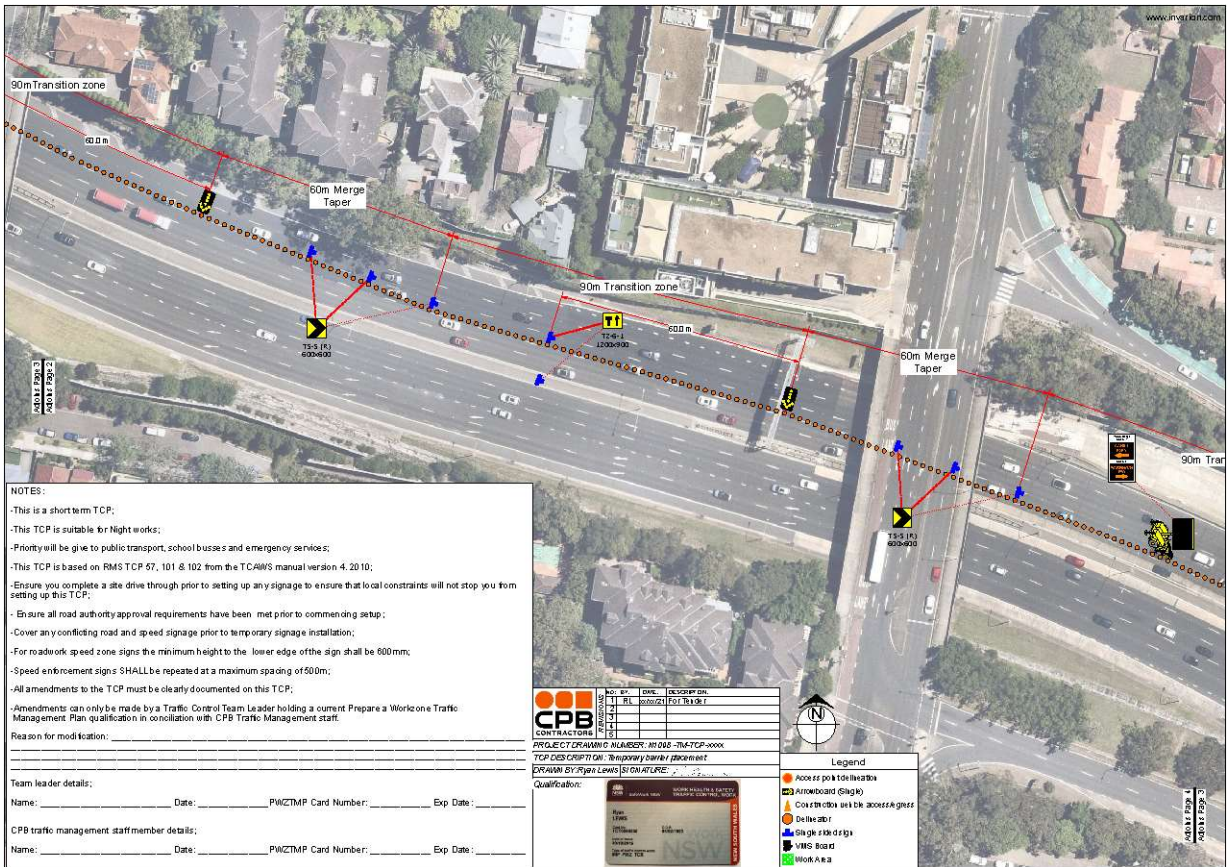
Team leader details:

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 PWZTMP Card Number: \_\_\_\_\_ Exp Date: \_\_\_\_\_

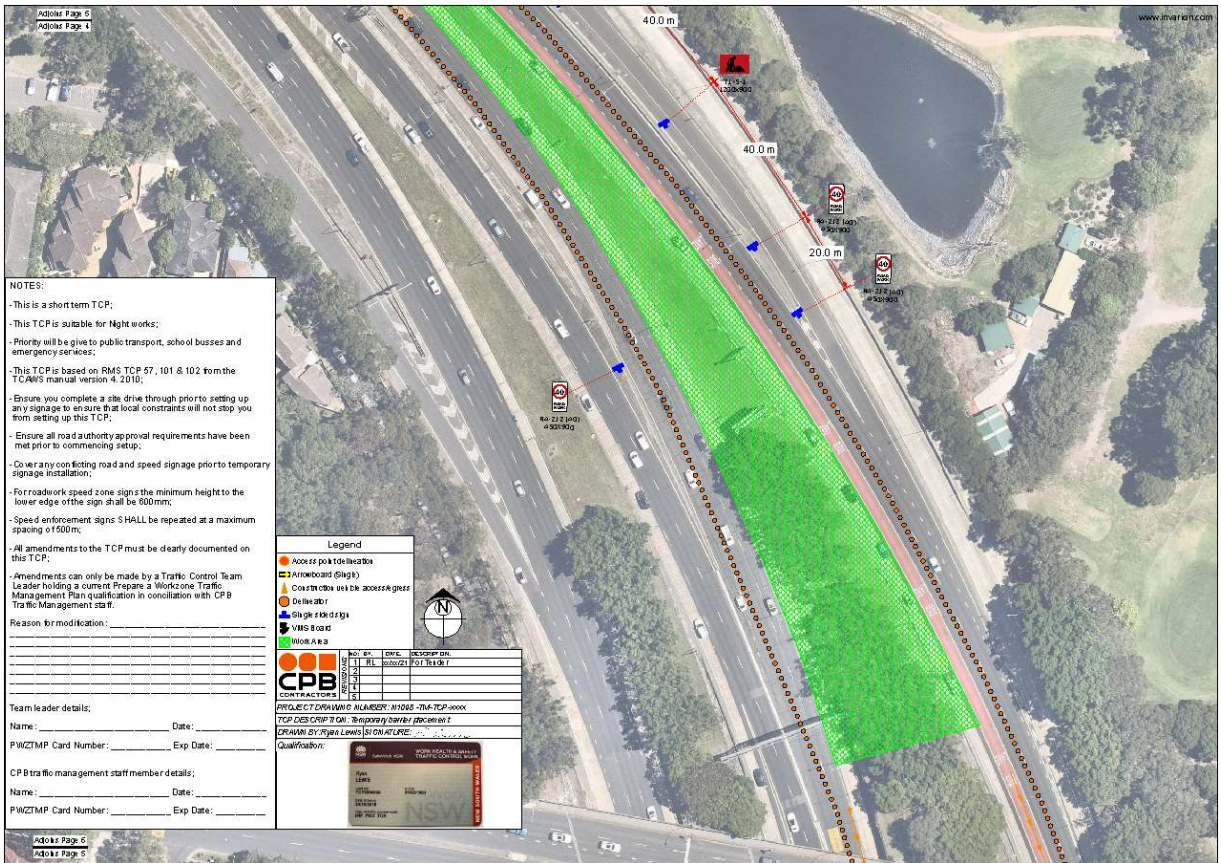
CPB traffic management staff member details:

Name: \_\_\_\_\_ Date: \_\_\_\_\_  
 PWZTMP Card Number: \_\_\_\_\_ Exp Date: \_\_\_\_\_





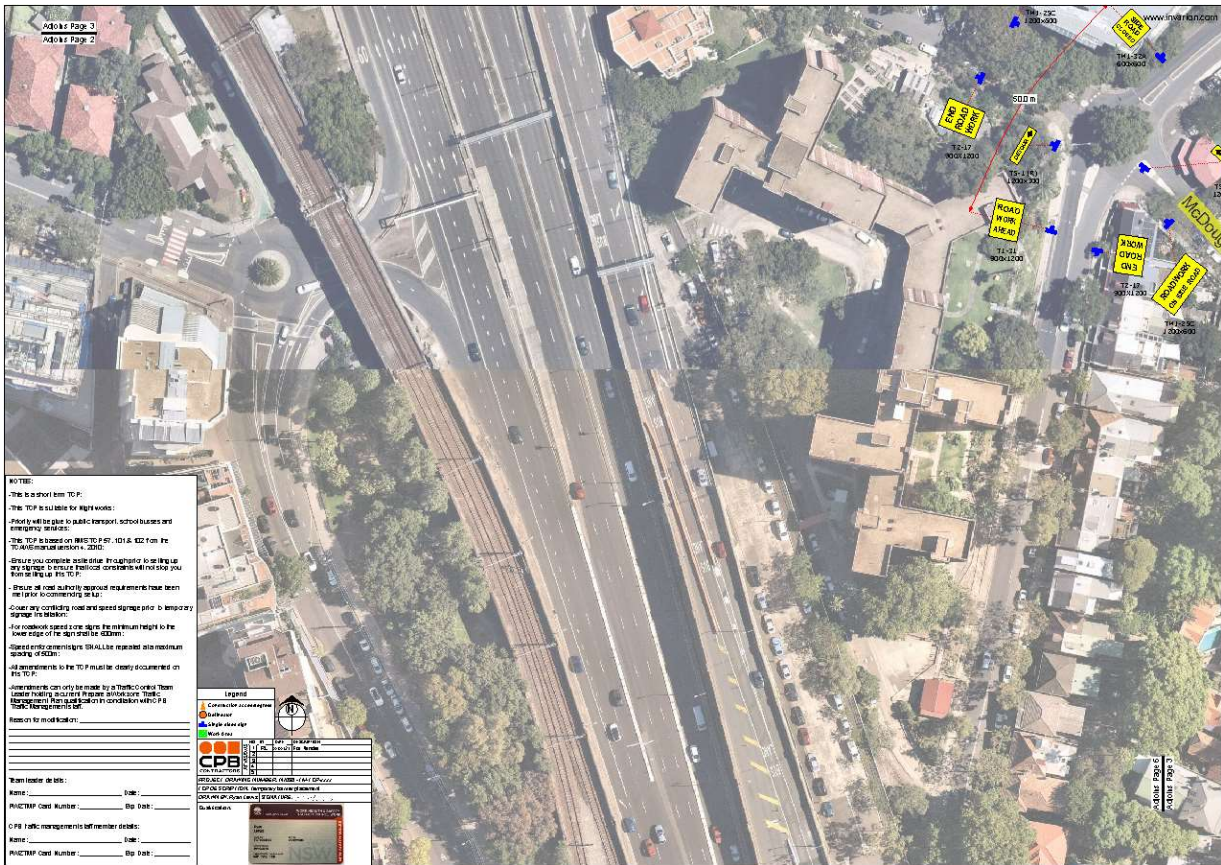


















## Appendix F – Known Special Events

Month	Date	Event
January	26 January	Australia Day
February	No known events	
March	Varies by year	Mardi Gras
April	25 April	Anzac Day
	Varies by year	Vivid
May	Varies by year	Half Marathon
	Varies by year	Mother's Day
June	Varies by year	Vivid
July	Varies for 2023 only	Women's Football World Cup
August	Varies for 2023 only	Women's Football World Cup
	Varies by year	City to Surf
September	Varies by year	Father's Day
	Varies by year	Marathon
October	Varies by year	Spring Cycle
November	Varies by year	Spring Cycle
December	31 December	New Year's Eve

# Appendix G – Drivers Code of Conduct

## Purpose and Objectives

The purpose of the Heavy Vehicle Driver Code of Conduct is to ensure that the impacts of construction traffic on transport networks and adjoining properties is minimised. This Code defines and details acceptable behaviour for all heavy vehicle drivers operating in connection with the WFU works including employees, suppliers and subcontractors.

## Responsibilities of Drivers

- Drivers must follow ALL road rules and regulations required by law.
- Drivers must:
  - Hold a current and appropriate licence for the class of vehicle they are operating
  - Comply with speed limits on all roads
  - Comply with all road works speed limits
  - Obey construction traffic signs and devices
  - Obey sign posted (road) load limits
  - Ensure the vehicle does not exceed mass or dimension limits
  - Ensure loads are distributed to remain within the capacity of the vehicle and axles
  - Restrain loads appropriately in accordance with the NTC Load Restraint Guide
  - Make sure that your vehicle is roadworthy and well maintained
  - Minimise parking on public roads
  - Minimise idling and queuing on state and regional roads
  - Ensure spoil haulage vehicles are clearly marked on the sides and rear with the Project name and CSSI number.
- Drivers must drive safely which includes, but is not limited to:
  - Making sure you are medically fit to drive, have no alcohol in your system and you are not under the influence of drugs
  - Driving in a calm, courteous manner that is appropriate with existing road, traffic and weather conditions
  - Not operating any vehicles or machinery while suffering from fatigue
  - Implementing fatigue management and rest laws and procedures
  - Responding to changes in circumstances (such as delays), reporting these to your base (if possible) to implement short-term fatigue management measures
- Making sure that your rest breaks are taken at the prescribed intervals and are effective
- If you are concerned about the placement of a load or mass of loaded materials raise the issue with the CPB Downer JV Supervisor and do not leave site
- Drivers must behave in a professional manner at all times.
- Drivers must adhere to routes nominated by CPB Downer JV for each specific worksite and they must not use any roads if their weight is over the posted load limit. Local roads must not be used unless the road is an approved haulage route.
- Routes passing schools and childcare centres are subject to school zone. During the hours of 08:00-09:30 and 14:30 – 16:00 the speed limit is 40 km/hr. These locations and times will be identified and confirmed by CPB Downer JV during planning of the work and communicated to all drivers.

- Drivers should only park or wait in approved areas as directed by CPB Downer JV. DO NOT queue at worksite gates.
- Drivers are to arrive and depart from worksites as required by CPB Downer JV. Drivers will be turned away if they arrive outside of the CPB Downer JV approved hours and the truck operating company will be notified.
- Turn vehicles off when not in use or required to idle for long periods of time
- Drivers must not leave their vehicle unless it is correctly parked, has been turned off, hand brake applied, and the keys removed
- Drivers leaving their vehicle must wear appropriate PPE (safety boots, long pants, Hi-Vis long sleeve shirt, hard hat and safety glasses)
- Vehicles must not transfer dirt or debris onto public roads. You must use rumble grids/ wheel wash units where they are installed. If any materials are deposited on public roads you must immediately contact your Supervisor and the CPB Downer JV Supervisor to arrange for the road to be cleaned.
- Before leaving any site it is mandatory to cover truck loads and tailgates and draw bars must be free of loose material
- If approached by people with enquiries about the WFU Works, drivers should remain polite and provide them with the community information line number (1800 931 189). Do not provide any other information about the project.
- Drivers must comply with the CPB Downer JV 'Non-negotiables', which have been communicated via Inductions.
- As a courtesy to people who may be impacted by driver behaviour, drivers will:
  - Use horns only in an emergency or for safety reasons
  - Not tailgate (drive too close to other vehicles)
  - Not use compression braking if possible where noise is likely to adversely impact on residents
  - Ensure that there is no littering
  - Not block pedestrian, cyclist, property or utility access unless agreed with the relevant landowner, occupier or utility owner.

## Declaration

I have read and understand the above conditions and will ensure that I abide by this Code of Conduct.

Signed:

Date:

/ /

Print Name:

Company:

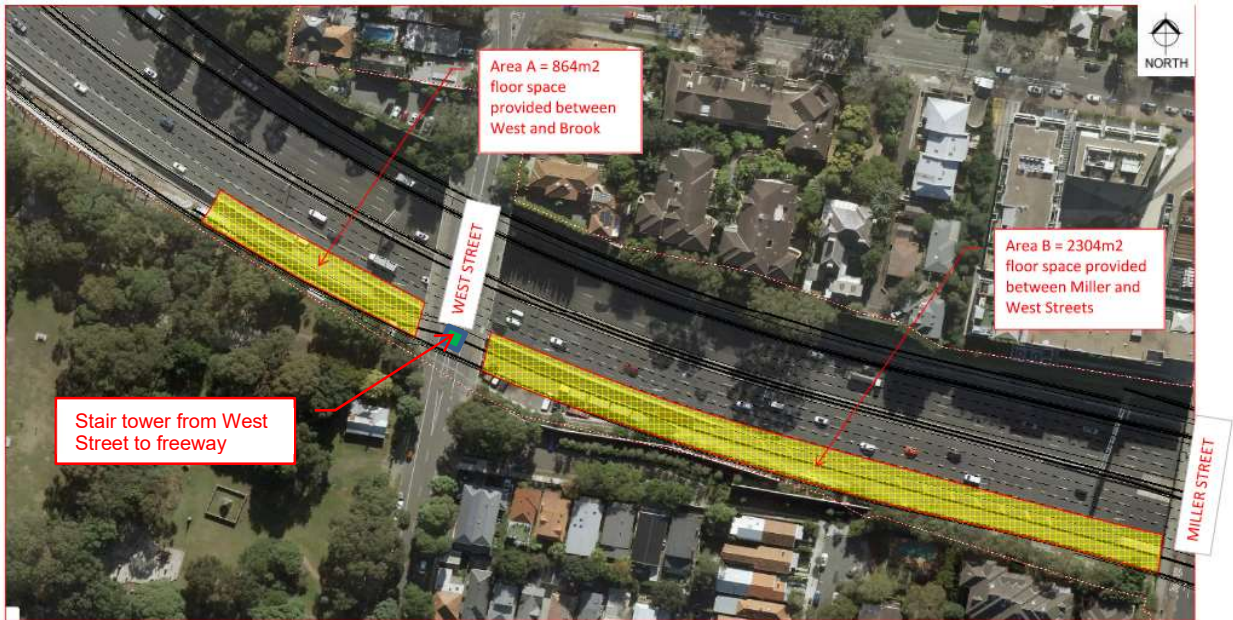


# Appendix H – Employee Parking and Bussing Strategy

## Employee Parking and Bussing Strategy

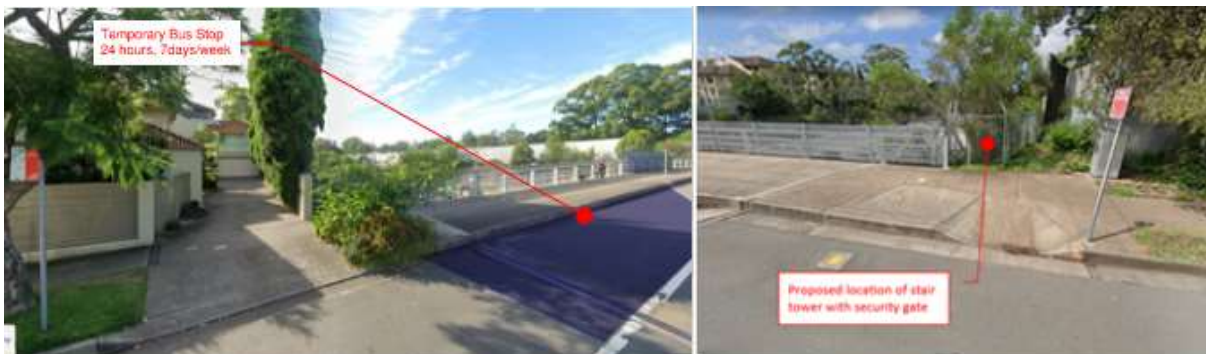
To minimise the impact of workers parking on local streets, off-street parking will be provided at nominated ancillary facilities and a shuttle bus will operate between North Sydney Station and St Leonards Station, proposed NH1 – Northern Hub ancillary facility and the Wicks Road Ancillary Facility (WFU10).

The proposed NH1 – Northern Hub is located on the verge of the northbound Warringah Freeway in Cammeray, as shown in **Figure H-1**.



**Figure H-1: Location of NH1 – Northern Hub**

The drop-off and pick-up location for passengers for the NH1 – Northern Hub is on West Street, on the eastern approach to the bridge within a segment of the No Stopping Zone converted to a No Parking Zone. A stair tower with security gate will be located adjacent to the West Street Bridge to provide access to the NH1 – Northern Hub located at the level of the Freeway below. The location of the bus stop and stair tower is shown in **Figure H-2**.

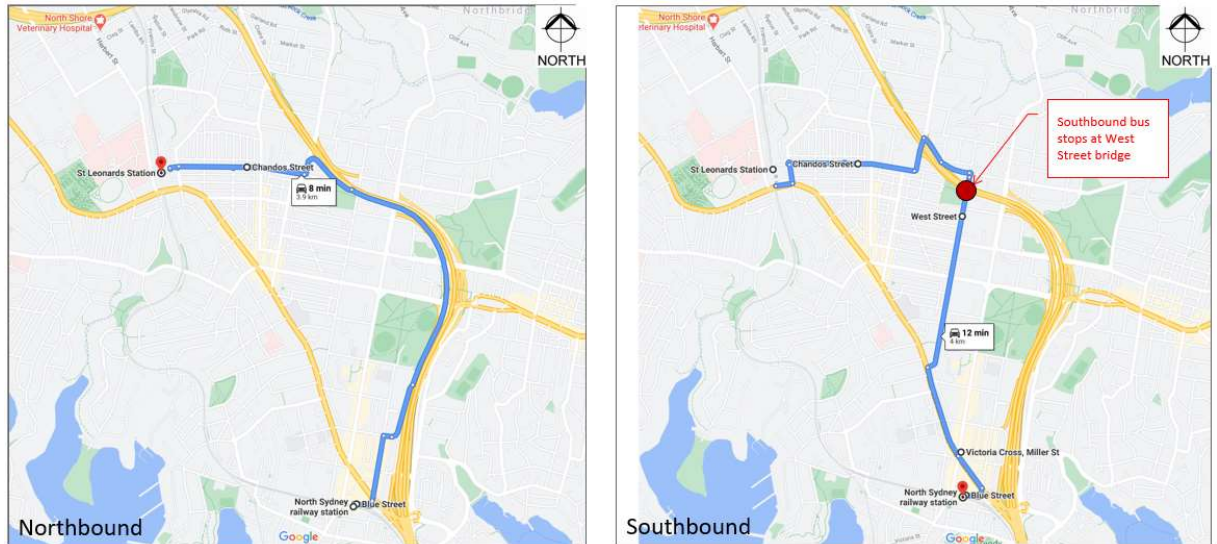


## Figure H-2: Proposed NH1 – Northern Hub temporary bus stop and proposed stair tower

The bus stop will operate 24 hours per day when construction works are in progress. The nearest residence to the bus stop is 35m away, on the south-east corner of the West Street and Metcalfe Street intersection.

A fleet of 22-seater buses will run a shuttle service between North Sydney Station and St Leonards Station via the NH1 – Northern Hub. The route for these 'commuter' buses is shown in **Figure H-3**.

For the duration of the Project, patronage, departure times, travel times and route selection will be regularly evaluated, and if required adjustments will be made to existing arrangements to optimise the journey experience.



**Figure H-3: 22-seater shuttle service between North Sydney Station and St Leonards Station**

The duration of the trip is 15 minutes in each direction, with buses departing at 10-minute intervals 60 minutes prior to and after each shift. Additionally, commuter buses will run every hour at other times when work is in progress to accommodate isolated departures and arrivals.