Appendix B1

Construction Traffic, Transport and Access Management Sub-Plan

Western Harbour Tunnel and Warringah Freeway Upgrade

Stage 1A Early and enabling works - Critical utility installation, relocation and protection works

July 2021

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Glossary / Abbreviations

Abbreviation	Expanded text
CCS	Community Communication Strategy
CEMP	Construction Environmental Management Plan
CGC	Cammeray Golf Course
CoA	Condition of Approval
DPIE	Department of Planning, Industry and Environment
EIS	Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement (January 2020)
EP&A Act	*Environmental Planning and Assessment Act 1979*
FAS	Flashing Arrow Signs
NSC	North Sydney Council
Project, the	Western Harbour Tunnel and Warringah Freeway Upgrade
REMM	Revised Environmental Management Measures
ROL	Road Occupancy Licence
RtS	Western Harbour Tunnel and Warringah Freeway Upgrade Response to Submissions (September 2020)
SCO	Sydney Coordination Office
SSI	State Significant Infrastructure
SZA	Speed Zone Authorisation
TCP	Traffic Control Plan
TfNSW	Transport for New South Wales
TTLG	Traffic and Transport Liaison Group
TMC	Transport Management Centre
TMP	Traffic Management Plan
TTAMP	Traffic, Transport and Access Management Sub-Plan (this document)
VMP	Vehicle Movement Plan
VMS	Variable Message Sign

1 Introduction

1.1 Context and Scope

This Traffic, Transport and Access Sub-plan (NVMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Stage 1A Early and Enabling Works – critical utility installation, relocation and protection works (refer to herein as “the critical utility works’ or ‘CUT’) which will support the delivery program of the Main Works of the Western Harbour Tunnel and Warringah Freeway Upgrade (the Project). Sydney Program Alliance (SPA) has been appointed by Transport for New South Wales (TfNSW) to deliver the CUT works.

This TTAMP has been prepared to address the requirements of the Minister’s Conditions of Approval (CoA), Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement (EIS), the revised environmental management measures (REMMs) listed in the Western Harbour Tunnel and Warringah Freeway Upgrade Response to Submissions Report (RtS) and all applicable legislation. It describes how SPA proposes to manage potential traffic impacts during the Stage 1A Early and enabling works - critical utility works stage of the Project. Other construction stages of the Project, including operational traffic and transport impacts and operation measures do not fall within the scope of this TTAMP and therefore are not included within the processes contained within this TTAMP.

1.2 Background and project description

The Western Harbour Tunnel and Warringah Freeway Upgrade EIS (January 2020) assessed potential traffic impacts from construction of the Western Harbour Tunnel and Warringah Freeway Upgrade.

As part of the EIS development, a detailed construction traffic and transport assessment was prepared based on the Concept Design to address the Secretary’s Environmental Assessment Requirements issued by the Department of Planning, Industry and Environment (DPIE). The traffic and transport assessment was included in the EIS, within Chapter 8 and the Traffic and Transport Technical Paper (Appendix F of the EIS).

The project description is outlined in Section 1.2 of the CEMP.

1.3 Environmental management systems overview

The environmental management system overview is described in Section 1.6 of the CEMP. This sub-plan forms part of a suite of sub-plans and procedures which sit under the CEMP, as summarised in Figure 1-1.

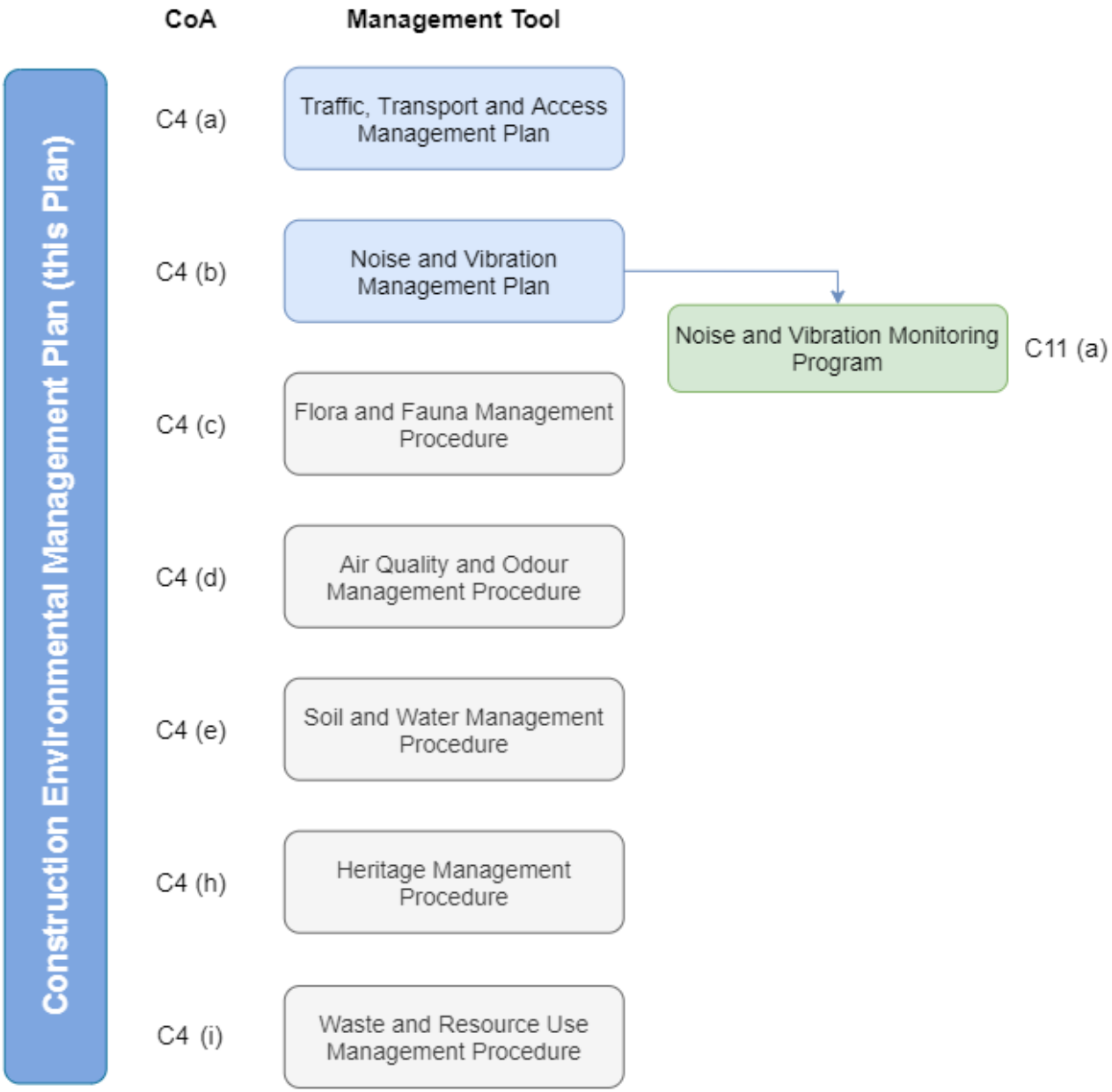


Figure 1-1 Structure of Construction Environmental Management Plan, sub-plans and procedures

2 Purpose and objectives

2.1 Purpose

The purpose of this Plan is to describe how SPA proposes to manage traffic during the critical utility works stage of the Project.

2.2 Objectives

The key objective of the TTAMP is to ensure that traffic impacts during critical utility works are minimised and are within the scope permitted by the planning approval by minimising delays, ensuring consideration is given to the needs of all road users, pedestrians and cyclists and ensuring the safety for both workers and the general public.

To achieve this objective SPA will implement appropriate:

- Controls and procedures during construction activities to address potential traffic impacts along the Project corridor
- Measures to address the relevant CoA outlined in Appendix B, and the safeguards detailed in the EIS
- Measures to comply with all relevant legislation and other requirements as described in section 3.1 of this Plan.

Furthermore, SPA will meet the performance outcomes from the EIS as required by CoA C2(d)(i), as identified in Appendix A.

3 Environmental requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation and regulatory requirements

Legislation relevant to traffic management for the Project includes:

- *Roads Act 1993*
- *Road Transport Act 2013*
- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- Australian Road Rules.

All legislation relevant for the Project is included in Appendix A3 of the CEMP.

3.1.2 Licences / Permits

Licences and permits relevant to traffic management for the Project include:

- Road Occupancy Licences (ROL)
- Speed Zone Authorisations (SZA).

3.1.3 Guidelines

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

- AS1742.3: Manual of Uniform Traffic Control Devices – Part 3: Traffic Control for Works on Roads
- AS1743:2018 - Road Sign and Traffic Signals
- TfNSW Supplement to Australian Standard AS 1742.9:2018, Manual of Uniform Traffic Control Devices
- TfNSW QA Specification G10 – Traffic Management
- TfNSW QA Specification R141 – Pavement Markings
- TfNSW QA Specification R142 – Raised Reflective Pavement Markers
- TfNSW QA Specification R143 – Sign Posting
- TfNSW Traffic Control at Worksites Manual (Version 5, 2018)
- TfNSW – Safety Barrier Acceptance
- TfNSW – Variable Message Signs (VMS) Guidelines
- TfNSW – Delineation Manual
- TfNSW – Traffic Modelling Guidelines
- TfNSW – Technical Direction (TDT 2009/07) Speed Enforcement on Worksites
- AUSTROADS Guide to Traffic Management 2009 – Parts 1-13
- AUSTROADS Guide to Road Design 2009 – Parts 1-7
- AUSTROADS Guide to Road Safety 2009 – Parts 1-9
- Transport Management Centre – Road Occupancy Manual.

3.2 Minister's Conditions of Approval

The CoA relevant to this Plan are listed in Appendix B. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

This TTAMP has been prepared to meet the requirements of CoA C4(a) and CoA C5. In accordance with CoA C9 the TTAMP will be submitted to DPIE for approval no later than one month prior to the commencement of construction. Construction will not commence until this TTAMP, the CEMP and relevant CEMP Sub-plans have been approved by DPIE in accordance with CoA C10.

3.3 Revised Environmental Management Measures

Relevant REMMs are listed in Appendix B. This includes reference to required outcomes, the timing of when the commitment applies, relevant documents or sections of the environmental assessment influencing the outcome and implementation.

4 Consultation

This Plan will be provided to North Sydney Council in accordance with CoA C4(a). The outcomes of the agency consultation are outlined in the Critical Utilities CEMP Consultation Report.

Ongoing consultation with Transport Coordination (a division within Transport for NSW), North Sydney Council, emergency services, bus operators and other stakeholders will be undertaken regarding impacts associated with construction traffic and parking management. Regular updates will be provided through a range of tools outlined within the Community Communication Strategy (CCS), including monthly meetings (or at a frequency agreed with key stakeholders), community updates and notifications and emails, to ensure all upcoming changes and impacts are communicated in a timely fashion.

Should they be required, partial or full closures of Warringah Freeway will be carried out in consultation with the Sydney Coordination Office in accordance with REMM CTT13. However, it is not anticipated that any partial or full closures of Warringah Freeway will be required while carrying out the CUT works.

Additional consultation with the above stakeholders will be triggered as a result of incident emergency response or special event planning. Refer to Table 4-1 for all proposed consultation associated with the management of traffic, transport and access impacts associated with the CUT works.

Table 4-1 Consultation requirements

Source	Consultation for	Consultation with
CoA C4(a)	Traffic, Transport and Access Management Sub-plan	North Sydney Council
CoA E140	Construction Parking and Access Strategy	Affected users on-street parking. N/A – however consultation held with North Sydney Council
CoA E132	Local roads approval	N/A – however consultation held with Anzac Park Public School and residents of Merlin Street.
TfNSW QA Specification G10	Traffic Management Plan	Customer Journey Planning (TfNSW) Planning and Programs (TfNSW)
TfNSW QA Specification G10	Road Occupancy Licence	Customer Journey Planning (TfNSW) Transport Management Centre (TMC)
CCS (CoA B2(e)	Upcoming works that will result in traffic impacts such as lane closures, parking removal.	Notification of affected community in the form of Community Updates, Community Notifications, Individual Work Notices.
Project specific scope inclusions	Upcoming road closures and detours.	SPA have established a Traffic and Transport Liaison Group (TTLG) to consult on traffic and transport impacts.

5 Construction traffic impacts

Construction of the critical utility works will require the use of both light and heavy vehicles which have the potential to impact upon road users, pedestrians, cyclists and sensitive receivers located near the construction site. This section outlines the potential impacts of critical utility works traffic upon these receivers.

5.1 Key construction sites and ancillary facilities

The critical utility works will require access to the work sites identified in Table 5-1. Refer to Figure 5-1 for an illustration of these ancillary facilities and work sites.

These sites will be used to support the utility relocation, installation and protection works. The majority of the worksites are within the existing road reserve and will be accessed using the adjacent roadway. During site establishment activities at each site, existing access points will be prioritised for access and egress. Access points to works sites and ancillary facilities requiring construction are also detailed in Table 5-1. More detailed information on the establishment and management of ancillary facilities is contained in Section 1.3 and Section 4 of the CEMP.

Table 5-1 Primary access for ancillary facilities and key worksites

Work sites	Access/Egress	Access requiring construction?
Ridge Street ancillary facility	Access: Ridge Street Egress: Ridge Street	Yes
Arthur Street ancillary facility	Access: Arthur Street Egress: Arthur Street	Yes
Rosalind Street ancillary facility	Access: Eastbound along Rosalind Street Egress: Westbound along Rosalind Street	Yes
Cammeray Golf Course ancillary facility	Access: Eastbound along Ernest Street Egress: Westbound along Ernest Street	Yes
Blue Street ancillary facility	Access: Blue Street Egress: Blue Street	No
Arthur Street	Access and Egress: Pacific Highway onto Arthur Street, right into the work area to the right of Arthur Street	Yes
Arthur Street (tidal arrangement)	Access and Egress: Mount Street off-ramp onto Arthur Street, left into the work area to the right of Arthur Street	Yes
Cammeray Avenue	Access: Ernest Street onto Cammeray Avenue Egress: Cammeray Avenue onto Anzac Avenue	No

Work sites	Access/Egress	Access requiring construction?
Cammeray Avenue (during Cammeray Avenue closure)	Access and Egress: Anzac Avenue onto Cammeray Avenue	No
Alfred Street North	Access and Egress: Alfred Street North in the south	No
Bells Avenue	Access: Eastbound along Amherst Street onto Bells Avenue Egress: Bells Avenue onto Amherst Street Westbound	No
Warringa Road	Access: Eastbound along Amherst Street onto Warringa Road Egress: Warringa Road onto Amherst Street Westbound	No
Amherst Street	Access: Northbound along Miller Street onto Amherst Street Egress: Amherst Street onto Miller Street southbound	No
High Street	Access: High Street Egress: High Street	No
Ernest St Eastbound	Access: Ernest Street Egress: Ernest Street	Yes
Ernest St Westbound	Access: Ernest Street Egress: Ernest Street	No
Pacific Highway Northbound	Access: Pacific Highway Egress: Pacific Highway	No

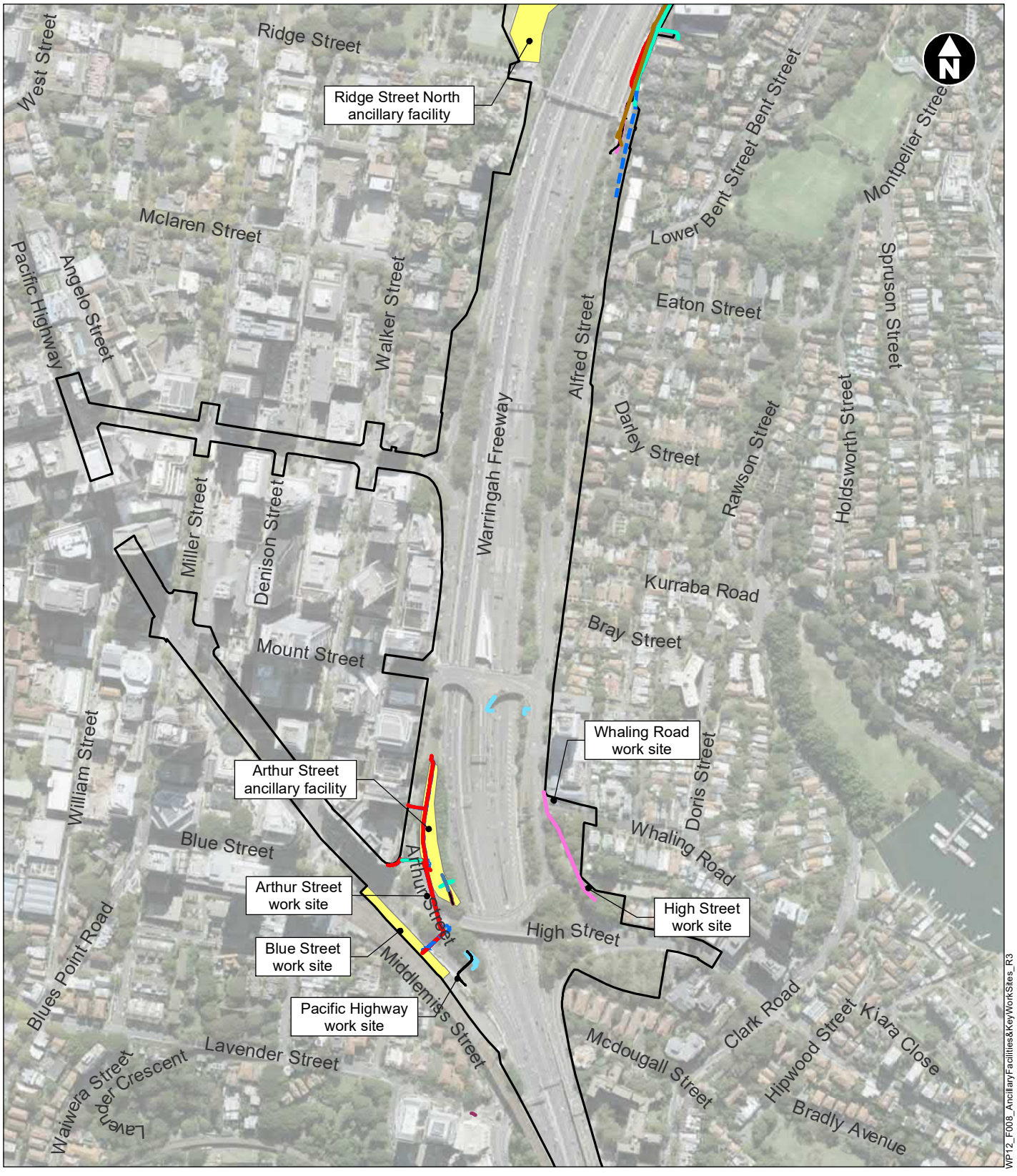


Figure 5-1 Ancillary facilities and key work sites (Sheet 1)

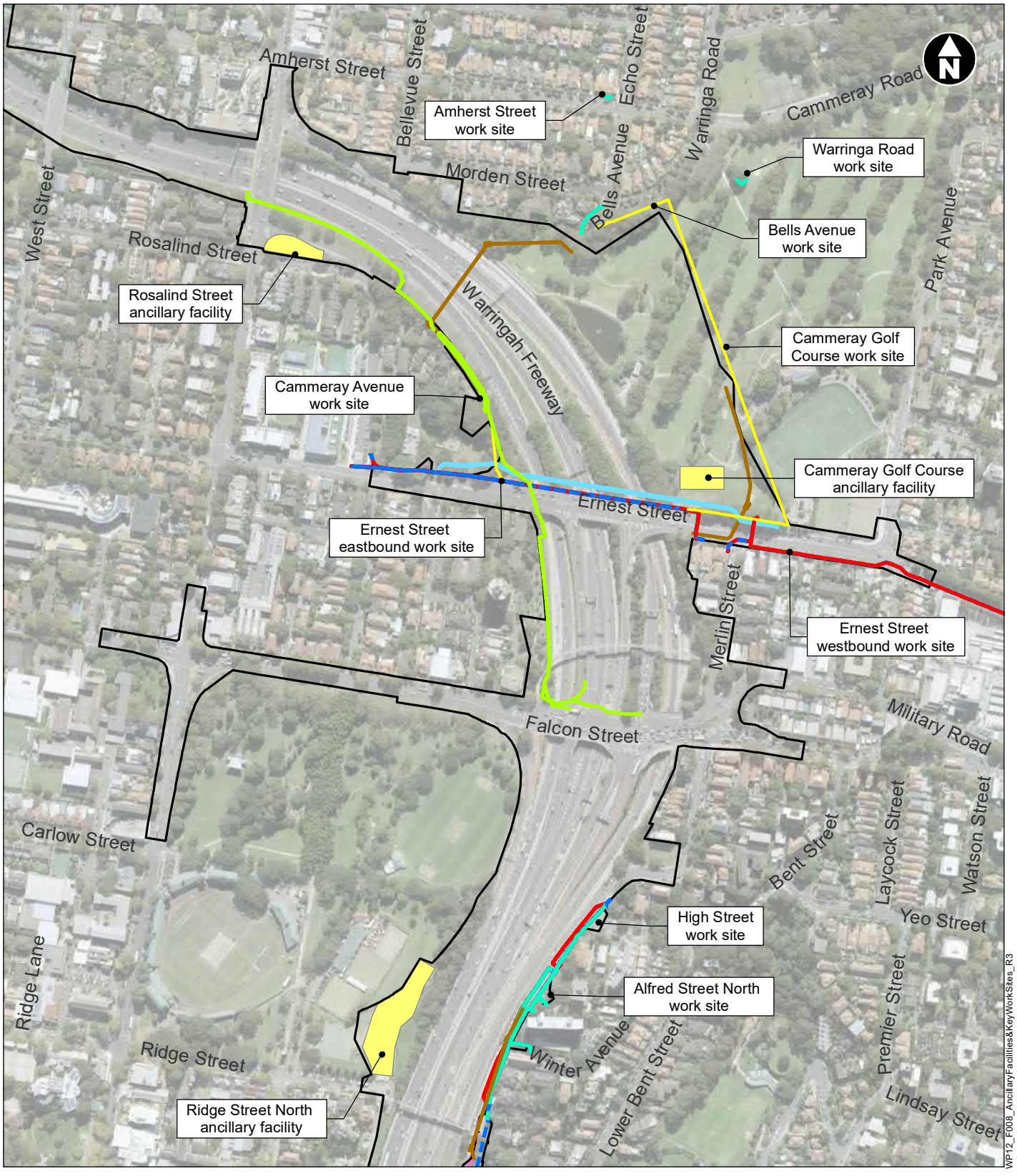


Figure 5-1 Ancillary facilities and key work sites (Sheet 2)

5.1.1 Access routes for works

SPA will access and depart ancillary facilities to each associated worksite using the primary access identified in Table 5-1 and the roads described in Table 5-2.

Routes were chosen based on roads nominated in the EIS, where possible, to minimise potential impacts on traffic and sensitive receivers along the route and generally use major arterial roads or motorways as the routes.

While the critical utility works will utilise roads nominated in the EIS where possible, multiple critical utility works will be undertaken on local roads and will require alternate access. Site access and egress routes will utilise roads which avoid sensitive areas including schools, aged care facilities, hospitals and shopping precincts wherever possible. These routes were selected to minimise impacts on residents and return construction vehicles to major arterial roads as quickly as possible. All requests for local road usage not identified in the EIS and RtS will require DPIE approval in accordance with CoA E132. Refer to Appendix C for a figure detailing local roads already approved under CoA E132 and local roads requiring DPIE approval under CoA E132. Refer to Section 5.1.2 for further detail on access to local roads.

The construction vehicle routes will be provided to contractors for dissemination to their workers and drivers and will be readily available at each ancillary facility for review by drivers. Drivers will minimise idling and queueing on local, state and regional roads, and marshalling of construction vehicles will not occur near sensitive receivers, in accordance with CoA E139.

Mitigation measures which will be implemented at construction site access and egress points to manage interactions between construction vehicles and public vehicles, pedestrians and cyclists are outlined in Section 6.1.

Table 5-2 Roads required to access ancillary facilities and associated worksites

Vehicle Type	State Roads/Regional Roads	Approved Local Roads under CoA E132	Local Roads requiring approval under CoA E132
Light vehicle Heavy vehicle	Warringah Freeway Cahill Expressway Pacific Highway Military Roads Falcon Street Ernest Street Miller Street Berry Street Arthur Street Mount Street ramps High Street	Ridge Street Alfred Street Alfred Street North Rosalind Street Blue Street Cammeray Avenue Whaling Road Merlin Street Park Avenue Cammeray Road Cammeray Avenue (outside of construction boundary) Bells Avenue Amherst Street Anzac Avenue Warringa Road	N/A

5.1.2 Access to local roads

Construction vehicle routes to and from ancillary facilities and worksites have been developed to avoid local roads outside the construction footprint and within 1km of the construction works, where possible, while maximising the use of state and regional roads. However some ancillary facilities and work areas are located on local roads and/or can only be accessed from local roads.

The anticipated local roads to be used by heavy vehicles for direct access to the construction boundary and ancillary facilities are shown in Figure 5-7 to 5-22 inclusive of Appendix F of the EIS and have been approved under CoA E132. Table 5-3 below details the local roads that have been approved under CoA E132 and will be used by light and heavy vehicles while carrying out CUT works

Table 5-3 Local roads assessed in the EIS and already approved under CoA E132

Local road	Description of use during construction	Description of potential impacts
Cammeray Avenue (within construction footprint)	Utility relocations	Short and long term traffic control setups. Road closures. Period of use: 12 months

Local road	Description of use during construction	Description of potential impacts
Rosalind Street	Access to ancillary facility Access to worksite	Changes to parking arrangements Use by construction traffic accessing ancillary facility and utilities worksite Period of use: 12 months
Alfred Street North	Access to ancillary facility Access to worksite	Changes to parking arrangements Light vehicle access to ancillary facility Use by construction traffic accessing utilities worksite Period of use: 12 months
Arthur Street	Access to ancillary facility Access to worksite	Light vehicle access to ancillary facility Use by construction traffic accessing utilities worksite Period of use: 12 months
Blue Street	Access to ancillary facility Access to worksite	Use by construction traffic accessing ancillary facility Period of use: 12 months
Ridge Street	Access to ancillary facility	Changes to parking arrangements Use by construction traffic accessing ancillary facility Period of use: 12 months
Whaling Road	Access to worksite	Use by construction traffic accessing utilities worksite Period of use: 12 months
High Street	Access to worksite	Use by construction traffic accessing utilities worksite Period of use: 12 months

Local roads proposed to be used by heavy vehicles to directly access the construction boundary and ancillary facilities that are not shown in the EIS, must be approved by the Planning Secretary, in accordance with CoA E132. Requests to use local roads will include the information identified in CoA E133, as discussed further in Section 6.6. The request for DPIE approval of local roads listed in Table 5-4 was lodged with DPIE on 3 March 2021. Approval for the use of Merlin Street was given by DPIE on 25 March 2021. The remaining local roads requiring approval was given by DPIE on 12 April 2021 with the exception of Warringa Road, Cammeray.

Current local roads proposed to be used that have not been assessed in the EIS and require DPIE approval are listed in Table 5-4 below. The relevant routes are described and shown in Table 5-2. Refer to Appendix C for EIS assessed local roads and local roads requiring DPIE approval under

CoA E132. In accordance with CoA E136 before any local road is used by a heavy vehicle for the CUT works, 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.

Table 5-4 Local roads requiring DPIE approval under CoA E132

Local road	Description of use during construction	Description of potential impacts
Cammeray Avenue	Utility relocations	Short and long term traffic control setups. Road closures. Period of use: 12 months Note: Approved by DPIE on 12/4/21
Anzac Avenue	Access to work site	Construction vehicle route Period of use: 12 months Note: Approved by DPIE on 12/4/21
Bells Avenue	Access to Cammeray Golf Course	Construction vehicle route Period of use: 12 months Note: Approved by DPIE on 12/4/21
Warringa Road	Access to work site	Construction vehicle route Period of use: 12 months Note: Approved by DPIE on 8/7/21
Amherst Street	Access to work site	Construction vehicle route Period of use: 12 months Note: Approved by DPIE on 12/4/21
Cammeray Road (between Park Avenue and Amherst Street)	Access to work site	Use by construction traffic Period of use: 12 months Note: Approved by DPIE on 12/4/21
Park Avenue	Access to work site	Use by construction traffic Period of use: 12 months Note: Approved by DPIE on 12/4/21
Merlin Street	Access to worksite	Use by construction traffic accessing utilities worksite Period of use: 12 months Note: Approved by DPIE on 25/3/21

The DPIE approval for the use of Merlin Street included the following conditions:

- Merlin Street northbound and southbound between Falcon Street and McIntosh Lane
- 12.5m rigid heavy vehicles
- Maximum daily two-way HV movements: 40
- Maximum two-way morning and afternoon peak HV movements: 20
- Approval duration: 12 months from the date of approval – up to 25 March 2022.

The DPIE approval for the use of Anzac Avenue included the following conditions:

- Anzac Avenue northbound and southbound between Rosalind Street and Ernest Street
- 12.5m rigid heavy vehicles
- No heavy vehicle movements will be allowed from the Cammeray Avenue worksite via Anzac Avenue during school zone times on school days:
  - 8am to 9:30am
  - 2:30pm to 4:00pm
- Maximum one-way daily HV movements: 50
- Maximum one-way morning and afternoon peak HV movements: 20
- Approval duration: 12 months from the date of the approval – up to 12 April 2022.

The DPIE approval for the use of Cammeray Avenue included the following conditions:

- Cammeray Avenue eastbound and westbound between Ernest Street and Rosalind Street
- 12.5m rigid heavy vehicles
- Maximum one-way daily HV movements: 50
- Maximum one-way morning and afternoon peak HV movements: 20
- Approval duration: 12 months from the date of the approval – up to 12 April 2022.

The DPIE approval for the use of Amherst Street included the following conditions:

- Amherst Street eastbound and westbound between Miller Street and Cammeray Road
- 12.5m rigid heavy vehicles
- Maximum two-way daily HV movements: 35
- Maximum two-way morning and afternoon peak HV movements: 13
- Approval duration: 12 months from the date of the approval – up to 12 April 2022.

The DPIE approval for the use of Cammeray Road included the following conditions:

- Cammeray Road westbound between Park Avenue and Ernest Street
- 12.5m rigid heavy vehicles
- Maximum one-way daily HV movements: 70
- Maximum one-way morning and afternoon peak HV movements: 25
- Approval duration: 12 months from the date of the approval – up to 12 April 2022.

The DPIE approval for the use of Park Avenue included the following conditions:

- Park Avenue northbound between Cammeray Road and Ernest Street
- 12.5m rigid heavy vehicles

- Maximum one-way daily HV movements: 70
- Maximum one-way morning and afternoon peak HV movements: 25
- Approval duration: 12 months from the date of the approval – up to 12 April 2022.

The DPIE approval for the use of Bells Avenue included the following conditions:

- Bells Avenue northbound and southbound between Amherst Street and Warringa Road
- 12.5m rigid heavy vehicles
- Maximum one-way daily HV movements: 70
- Maximum one-way morning and afternoon peak HV movements: 25
- Approval duration: 12 months from the date of the approval – up to 12 April 2022.

The DPIE approval for the use of Warringa Road included the following conditions:

- Warringa Road westbound between Cammeray Road and Bells Avenue
- 12.5m rigid heavy vehicles
- Maximum one-way daily HV movements: 25
- Maximum one way morning and afternoon peak HV movements: 8
- Approval duration: 12 month from the date of the original approval – up to 12 April 2022.

In addition to the above conditions, SPA will implement the following management measures with regards to local road impacts in the vicinity of Anzac Park Public School:

- The main access route to the Rosalind Street ancillary facility will be via Miller Street
- Heavy vehicles will not be scheduled to access the Rosalind Street east temporary site compound during school zone times on school days (8:00am to 9.30am and 2.30pm to 4:00pm), noting occasional and infrequent deliveries during these times may be unavoidable
- Two traffic controllers will be stationed at the Rosalind Street ancillary facility when heavy vehicles are operating during site establishment. One controller will be stationed at the compound gate and the other will be available for pedestrian management
- Heavy vehicles will be restricted from using Anzac Avenue during school zone times on school days (8 am to 9.30 am and 2.30 pm to 4 pm)
- An additional traffic controller will be provided outside of the hours of the existing Anzac Park Public School Crossing Supervisor, to cover out of school care hours
- Traffic controllers will be on site when work is taking place on Cammeray Avenue (the number of controllers will vary depending on the work being carried out on the day).

5.2 Construction traffic volumes and patterns

Table 5-5 below details the traffic volumes anticipated to access ancillary facilities for the critical utility works, based on those presented in the EIS. Table 5-6 below details the traffic volumes anticipated to access key worksite for the critical utility works. Where construction traffic volumes are anticipated to contribute to further congestion of the local road network, construction traffic movements would be minimised during peak periods in accordance with REMM CTT6. Where reasonable and feasible, SPA will not schedule deliveries to site during peak traffic times. Vehicle Movement Plans (VMPs) will be prepared for all ancillary facilities and will detail a restriction on heavy vehicle movements during school zone times where applicable.

Daily vehicle volumes consider waste removal, material deliveries and arrival and departure of construction personnel. The proposed vehicle movements are the peak movements and would not

be expected for the duration of the works. Typical light vehicles to be used during construction will be worker's 4WD utes and small trucks under 4.5t Gross Vehicle Mass (GVM). Typical heavy vehicles expected to be used during construction would include, but not limited to, rigid bogey tippers, concrete agitators, vacuum trucks, articulated floats and flatbed trucks.

Where possible, deliveries will be scheduled outside of peak traffic times. Worker shift patterns will regularly be influenced by road occupancy licences and therefore will minimise shift start times during peak traffic times.

Table 5-5 Construction vehicle numbers required to access ancillary facilities

Location	Peak vehicle movements per day		Morning peak vehicle movements (6am to 10am)		Evening peak vehicle movements (3pm to 7pm)	
	Light	Heavy	Light	Heavy	Light	Heavy
Ridge Street North (WHT9)	75	38	38	13	38	13
Cammeray Golf Course (WHT10)	63	35	25	13	25	13
Rosalind Street (WFU9)	35	15	13	5	13	5
Arthur Street (WFU4)	80	10	30	4	30	2
Blue Street (WFU1)	70	10	25	4	25	2

Note: Vehicle movements are each way.

Table 5-6 Construction vehicle numbers required to access key worksites

Location	Peak vehicle movements per day		Morning peak vehicle movements (6am to 10am)		Evening peak vehicle movements (3pm to 7pm)	
	Light	Heavy	Light	Heavy	Light	Heavy
Arthur Street	80	40	30	15	30	15
Cammeray Golf Course	125	70	50	25	50	25
Cammeray Avenue	100	50	40	20	40	20
Alfred Street North	80	40	30	15	30	15
High Street	50	30	15	10	15	10

Note: Vehicle movements are each way.

5.2.1 Traffic generation from other major infrastructure projects

Critical utility works will run concurrently with other major infrastructure projects in the region, including the subsequent Warringah Freeway Upgrade early works and the Warringah Freeway Upgrade main works stages of the project. This may raise the potential for cumulative traffic impacts on the road network to and through the critical utility works area. These potential impacts are summarised in Table 5-7.

Table 5-7 Potential cumulative traffic impacts

Project	Time Frame	Potential Impact
Approved major infrastructure projects		
M4-M5 Link Rozelle Interchange	The construction of the M4-M5 Link Rozelle Interchange Project commenced 2019 including tunnelling and surface works, with project completion in 2023.	Heavy and light vehicle movements departing the project are anticipated to predominantly be concentrated around the Rozelle Rail Yards and Iron Cove Link sites, using City West Link and Victoria Road to access the project.
Warringah Freeway Upgrade Project (Stage 2A and 2B of the WHTWFU Project)	The Warringah Freeway Upgrade early works and Warringah Freeway Upgrade Project main works will commence in 2021 and 2022 respectively, with project completion in 2025.	Vehicles involved in the construction of the project are anticipated to predominantly be concentrated at and adjacent to the Freeway, within Milsons Point, North Sydney, Neutral Bay, Cammeray, Crows Nest and Naremburn.
City and Southwest Metro	The construction of the Chatswood to Sydenham line commenced in 2018 with project completion in 2024.	Whilst the majority of tunnelling works have been completed for this project within the area with potential for cumulative impacts, specifically the area between North Sydney and St Leonards, there is fitout and subsequent works being undertaken from now until commissioning in 2024. Such works is likely to require light and heavy vehicle access onto major arterial roads north of the harbour.
Western Harbour Tunnel	Tunnel driven component of the WHT were assessed in the EIS to commence at the end of 2021 with project completion at the beginning of 2026.	WHT tunnel associated aspects at the Cammeray Golf Course cannot commence until the CUT works in the Cammeray Golf Course have been completed. The WHT tunnel components associated with the Ridge Street North construction support site cannot commence until SPA has completed the CUT works and demobilised from this ancillary facility. All WHT construction traffic will directly access and egress compounds via the Warringah Freeway.

Project	Time Frame	Potential Impact
Beaches Link and Gore Hill Freeway Connection	Early works to commence in 2023 with project completion in 2028.	Works associated with the CUT works will be completed before this Beaches Link and Gore Hill Freeway Connection commence.
Other major projects yet to be approved but with potential for cumulative impacts		
Sydney Metro West (the Bays Station)	The project EIS was exhibited in Q2 2020 and pending project approval, the indicative program for commencement of construction of the Bays Station (White Bay) is Q3 2021 with expected completion in Q2 2024.	The Bays Station site is the project's launch site for the tunnel boring machine and subsequent spoil haulage. Heavy and light vehicle movements are anticipated to access the Bays Station site, using both the City West Link and Victoria Road to access the project.

Opportunities and measures to work with other projects to minimise the effects of impacts and enhance the benefits of multiple projects occurring concurrently or consecutively will be addressed by complying with relevant CoA and REMMs, particularly REMM CTT4.

Potential cumulative impacts would be captured through the preparation of Traffic Management Plans as described in Section 6.13.

6 Traffic Management

Construction of the critical utility works will result in temporary changes to traffic arrangements which have the potential to impact upon road users, pedestrians, cyclists and sensitive receivers located near on adjacent to the changes. This section outlines the traffic management measures that will be implemented to minimise impacts to these receivers.

6.1 Traffic management during construction

To safely manage interactions between construction vehicles and workers, and public vehicles, pedestrians and cyclists at access and egress points and construction works, SPA will implement management measures including:

- Install turning truck signs to warn motorists, pedestrians and cyclists of trucks turning into and out of site accesses
- Ensure access and egress driveways are visible to approaching traffic and signposted accordingly
- Where practicable, manage pedestrians at site access and egress driveways with suitable measures such as traffic controller supervision
- Vehicle parking will not block or disrupt access across pedestrian or shared user paths at any time (CoA E139(d))
- Install security fences and gates at locations which maintain clear sight lines and enable vehicles to park clear of adjacent travel lanes
- Traffic Control Plans (TCPs) will be prepared, where required, for any temporary changes to the traffic environment associated with ancillary facility establishment and use
- VMPs will be prepared, where required, for any access associated with establishment and use of construction ancillary facilities and access routes
- Access for emergency vehicles and to firefighting equipment will be maintained
- Where feasible and reasonable, 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 in accordance with REMM CTT12
- In accordance with CoA E146 direct vehicular access must be provided from Mount Street, North Sydney to Alfred Street North, Neutral Bay. Access will be provided in both directions.
- Heavy vehicles will not be permitted to travel to or from the Cammeray Avenue worksite via ANZAC Avenue during school zone times on school days (8 am to 9.30 am and 2.30 pm to 4 pm)
- Works along Ernest Street will be undertaken in consultation with NSC
- Community notification in advance of proposed traffic changes through appropriate media and other appropriate forms of community liaison. Community notification will be undertaken in accordance with the Community Communication Strategy.

The Austroads Guide to Traffic Engineering and the TfNSW Road Design Guide provides guidance on the design of intersections and access points. Temporary traffic controls may be required from time to time to facilitate the movement of over-dimension vehicles.

6.2 Road maintenance

6.2.1 Road Dilapidation Report

SPA will undertake road dilapidation surveys on public local roads before they are used by heavy vehicles for works associated with the critical utility works and following completion of the works. Surveys would include pavement condition surveys, pavement condition assessments and roadside asset condition assessments.

The condition reports will include a written survey, photos and/or video of each road. A copy of the report, including mechanisms to repair damage to the road network caused by heavy vehicle movements associated with the project, shall be provided to the relevant roads' authority (the relevant council or TfNSW) within three weeks of completing the surveys and no later than one month prior to the commencement of roads being used by heavy vehicles associated with the critical utility works.

In accordance with CoA E136 before any local road is used by a heavy vehicle for the CUT works, 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.

6.2.2 Repair and restore

In accordance with CoA E137, if damage to roads occurs as a result of the critical utility works, SPA will either (at the relevant road authority's discretion):

- Compensate the relevant road authority for the damage so caused; or
- Rectify the damage to restore the road to at least the condition it was in pre-works as identified in the road dilapidation reports.

SPA will monitor and maintain temporary alignments installed by SPA through the relevant Traffic Management Plan (TMP, refer to section 6.13).

6.3 Road occupancy

SPA will obtain the necessary approvals and concurrence of the relevant road authority, prior to conducting any works on the road or the road reserve.

The three specific areas of approval will include:

- All development works within the road reserve and/or any changes to existing infrastructure
- The installation and/or changes of any regulatory traffic control device
- Occupation of the road to conduct works, and the associated installation of temporary traffic control devices.

A Road Occupancy Licence (ROL) will be obtained for work which:

- Slows, stops or otherwise delays or affects the normal flow of 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 vehicular, pedestrian or bicycle movement.

The ROL will be obtained prior to the commencement of any works on or near a State road except in the case of an emergency, or when directed by Police or Emergency services. ROL applications will be submitted in accordance with Road Occupancy Licensing Guidelines to the Traffic Management Centre (TMC).

6.4 Speed management

Temporary roadwork speed limits are one of many traffic controls that SPA will implement to manage the speed of traffic approaching and passing through the work site. SPA will be conscious of the potential for speed reductions over long distances, to have negative impacts on road user travel times.

SPA will implement Roadwork Speed Zones logically, credibly and capable of being enforced by the NSW Police Force, in accordance with approved Speed Zone Authorisations and as detailed in the ROL.

When considering the use of a roadwork speed zones, SPA will:

- Ensure they are clearly delineated and capable of being enforced
- Position speed signs away from other traffic control signs and devices
- Ensure they are used only while road works are in progress or the lower speed road conditions exist.

As per the TfNSW Traffic Control at Worksites Manual (Version 5, 2018), in order to maintain the current speed limits through some of the work zones, safety barriers will be provided to protect work and workers.

When night works are required, special consideration will be taken to determine changes in the speed limit depending on the location and type of works.

6.5 Signposting and delineation

During the critical utility works, there will be impacts on the existing road network information and distance information signage.

Signage associated with property access, local community access and businesses will be considered during the detailed design and implementation of temporary traffic management schemes and any impacts addressed to ensure the appropriate information for road users is effectively communicated at all times.

Information signage and advance warning signage will be designed for all changes to the road network and traffic conditions in accordance with relevant TfNSW Supplement Manual of Uniform Control Devices (AS 1742.3) and Road Sign Specifications (AS 1743).

6.5.1 Directional, information and regulatory signposting

The installation of directional, information and regulatory signposting will accompany any changes to the existing road networks.

SPA will design, supply, install and maintain direction, information and regulatory signs and structure required for the critical utility works, including any modification that are required to existing signs and sign structures. The design, manufacture and installation of the signs and sign structure will be in accordance with the TfNSW standards, Australian Standards AS1742 Manual for Traffic Control Devices. All signposting changes will be detailed in the Traffic Management Plan(s) (TMP) and Traffic Control Plan(s) (TCP).

6.5.2 Delineation

Delineation of any intersection layout changes will comply with the requirements of TfNSW Traffic Control at Worksites and other standards and will be detailed in the individual TMP and TCP.

Line marking will be undertaken in accordance with the relevant Codes and Standards, including TfNSW QA Specification, R145 (Pavement Marking) and R142 (Retroreflective Raised Pavement Markers), TfNSW Guide to “Delineation Manual” 2014 and AS 1742 Manual of uniform control devices. Temporary works designs are issued to TfNSW and the independent certifier for approval.

Mitigation measures for pavement deterioration will be considered through a Road Safety Audit, which could include sprayed seal surface over affected areas of line removal.

6.5.3 Variable Message Signs

During critical utility works, SPA will utilise portable and permanent VMS to provide advanced warning and changed traffic condition information to road users where required. The use of VMS and the appropriate message/s will be incorporated within a TMP and/or site-specific TCPs.

The Traffic Team will co-ordinate and deploy portable trailer mounted VMS to allow as much advance warning as possible, as well as set TMC agreed and approved messages in accordance with the TMC's VMS Policy.

6.5.4 Flashing Arrow Signs

Flashing Arrow Signs (FAS) are mainly used when closing traffic lanes and conducting mobile traffic control operations.

When stipulated by the TCP, SPA will implement FAS in accordance with section 3.12 of the AS 1742.3 and Annexure D of the TfNSW Traffic Control at Worksites Manual.

6.6 Local roads

SPA has developed standard mitigation strategies and approaches have been identified that will be implemented prior to and during the use of local roads (refer to Table 5-4 for local roads not previously identified in the EIS). SPA will also consult with occupiers of adjacent properties to identify potential impacts from the use of local roads and to develop site specific mitigation measures where required. Refer to Section 5.1.2 for a comprehensive list of local roads already approved for use to access the construction boundary and those requiring DPIE approval, in accordance with CoA E132.

Table 6-1 Standard mitigation strategies/approaches for local road usage to address requirements in CoA E133

Requirements	Mitigation strategies / approach
All requests to the Planning Secretary for approval under E133 must include the following: a. include a swept path analysis	A swept path analysis will be submitted with local road usage requests. Access to local road(s) will be restricted on site plans until the relevant local road usage request with supporting information has been provided and approved by the Secretary.
b. demonstration that the use of local roads by heavy vehicles for the CSSI will not compromise the safety of pedestrians and cyclists or the safety of two-way traffic flow on two-way roadways	• Traffic Management Plan(s) will be approved by TfNSW and Transport Management Centre (TMC) prior to the use of site access points • Signage advising of construction traffic conditions will be implemented in accordance with a Traffic Control Plan • Signage advising of altered traffic conditions will be implemented in accordance with a Traffic Control Plan • Heavy vehicles will be subject to the existing speed limits and road rules • Maintain safe and suitable two-way access for vehicles and pedestrians to adjoining properties and side roads affected by the critical utility works. Where is it

Requirements	Mitigation strategies / approach
	unavoidable and access to a property is impacted, the works will not commence until adequate alternative access is provided or agreement is reached with the affected property. Affected stakeholders will be notified of the changes. • Implement additional fencing (where appropriate), signposting (including VMS where appropriate) for alternative access arrangements. • Where required, authorised traffic controllers will be placed at the site access points. Authorised traffic controllers are not to stop traffic on the road to allow trucks to enter and leave the site. They must wait until a suitable gap in traffic allows them to assist trucks to exit the site. Motorists already on the road have right-of-way.
c. provide details as to the date of completion of the road dilapidation surveys for the subject local roads	Road dilapidation surveys will be undertaken prior to commencement of use of the road by heavy vehicles for the critical utility works, in accordance with CoA E136.
d. measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during peak times for operation; and	Heavy vehicle routes have been selected which avoid passing schools, aged care facilities and child care facilities where possible. Where a route passes by a school, aged care facility or child care facility the project will consult with the sensitive receiver to confirm peak times of operation and periods when they are more sensitive to heavy vehicle traffic, e.g. during school drop off and pick up times, during peak visiting hours at aged care facilities. SPA will avoid using heavy vehicle routes past receivers during these periods where practicable.
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.	The suitability of the proposed heavy vehicle route, which considers CoA E133(a) – (d), will be reviewed by an appropriately qualified traffic engineer.

6.7 Pedestrians and cyclists

Impacts to shared user paths will be dependent on the detailed design of the critical utility works. Where reasonable and feasible, these impacts will be minimised through the design process.

In accordance with CoA E138, safe pedestrian and cyclist access will be maintained around work sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to critical utility works, an alternate route which complies with the relevant standards will be provided and signposted prior to the restriction or removal of the relevant pedestrian and cyclist access. Prior to any alteration to pedestrian and cyclist access arrangements effected stakeholders will be notified in accordance with the CCS.

6.7.1 Pedestrians

SPA will maintain pedestrian connectivity around each of the critical utility works sites, however some detours may be required to improve safety or amenity of pedestrians, or accessibility of trucks entering and exiting ancillary facilities. Any changes to pedestrian connectivity will be communicated to the relevant council, TfNSW and community stakeholders at least two weeks prior to implementation in line with the CCS. Where alternate routes are implemented, they will be appropriately signed and marked. In accordance with CoA E138 an alternate route which complies with relevant standards will be provided and signposted prior to the restriction or removal of the relevant pedestrian and cyclist access.

SPA will manage pedestrian desire lines with temporary footpaths that comply with the requirements of Austroads Guide to Road Design Part 6A: Pedestrians and Cycle Paths and AS1742.3: Manual of Uniform Traffic Control Devices – Part 3: Traffic Control for Works on Roads. Prior to work commencing on State and local roads, where the pedestrian access may be affected, SPA will provide alternate pedestrian access routes that are clearly signed and delineated in accordance with all safety requirements. Alternative routes would be tied-in to existing infrastructure including provision of kerb ramps where required, and directional signage to inform pedestrians and cyclists where required.

Alternate routes will aim to minimise inconvenience to pedestrians with the primary goal of maintaining clear space between pedestrians, active work areas and live traffic. This will be addressed in TMPs prior to the commencement of critical utility works. As identified in section 6.13, TMPs are provided to the TMC and Sydney Coordination Office (SCO) for consideration and approval. Where the work impacts on council areas, the relevant council will be consulted prior to implementation.

If a TMP is not required due to the nature of works, any alternate pedestrian routes will be captured in a TCP, which is approved by TfNSW through the hold point process described in TfNSW Specification G10 and referenced in section 6.13 of this TTAMP.

As part of this TTAMP, SPA will implement the following measures when providing alternate pedestrian routes to minimise impacts on mobility impaired pedestrians:

- Clearly define temporary footpath arrangements by using appropriate signage
- Maintain sufficient space for wheelchair access
- Maintain a smooth, even surface on all temporary footpaths and crossings
- Conduct regular inspections to maintain footpaths free of trip hazards
- When changing footpath access, minimise grades for wheelchair use.

Pedestrian diversions have been identified to be required at the following sites, for the associated critical utility works listed in Table 6-2. Pedestrian detour routes are presented in Appendix E.

Table 6-2 Identified pedestrian impacts

Footpath location	Duration	Reason for change	Impact	Alternate route	Additional mitigation measures
Alfred St North, between pedestrian bridge and Wyagdon St	Short term closures during works, reinstated at end of each shift, undertaken over 12 months	Utility relocations	Closure of existing footpath.	Adjacent to works zone, under control of traffic controllers	Traffic controllers
Alfred St North access stairs to pedestrian bridge	12 months	Utility relocations	Closure of existing stairs.	Existing pedestrian ramp	Nil
Stairs to unnamed access road adjacent to Alfred St North below the Ridge Street pedestrian footbridge	2 periods of 3 months	Utility relocations	Closure of existing stairs.	Very similar alignment, in same area	Nil
North-western corner of Ernest Street and Anzac Avenue intersection	Multiple short term impacts (footpath closed during shift	Installation of new conduits through footpath	Closure of existing footpath	Adjacent to works zone	Managed with traffic controllers to ensure separation between pedestrians, traffic and the works zone.
Cammeray Avenue	Multiple short term impacts (footpath closed during shift)	Installation of new conduits through road and footpath	Closure of existing footpath (local access only)	Cammeray Avenue	Traffic controllers to guide pedestrians through site as required, or provide a safe footpath to residences

Footpath location	Duration	Reason for change	Impact	Alternate route	Additional mitigation measures
Northern side of Ernest Street (between ANZAC Avenue and Cammeray Avenue)	Multiple short term impacts (footpath closed during shift)	Installation of new conduits through footpath	Closure of existing footpath	Temporary footpath to the north of the existing footpath	Nil
Northern side of Ernest Street (between Warringah Freeway & Park Avenue)	Multiple short term impacts (footpath closed during shift)	Installation of electrical, comms, water conduits through footpath	Closure of existing footpath	Temporary footpath to the north of the existing footpath	Nil
Intersection of Ernest Street & Park Avenue (NW corner)	Multiple short term impacts (footpath closed during shift)	Installation of electrical, comms, water conduits through footpath	Closure of existing footpath	Existing footpath to be used as shared path	Traffic controllers to guide pedestrians
Intersection of Ernest Street & Ben Boyd Road (NW corner)	Multiple short term impacts (footpath closed during shift)	Installation of electrical conduits through footpath	Closure of existing footpath	Footpath on southern side of Ernest Street	Traffic controllers to guide pedestrians
Northern side of Ernest Street (between Cammeray Ave and Warringah Freeway)	Multiple short term impacts (footpath closed during shift)	Installation of new conduits through footpath	Closure of existing footpath	Falcon Street pedestrian bridge (via Merlin Street and Jefferson Jackson Reserve)	Traffic controllers to guide pedestrians. Where possible, diversion adjacent to works zone (in place of detour) when traffic is on the opposite carriageway during contraflow operation

Footpath location	Duration	Reason for change	Impact	Alternate route	Additional mitigation measures
Northern side of Ernest Street (between Warringah Freeway and Merlin Street)	Multiple short term impacts (footpath closed during shift)	Installation of new conduits through footpath	Closure of existing footpath	Temporary footpath to the north of the existing footpath	Nil
Southern side of Ernest St, between Merlin Street and Warringah Freeway	2-3 months. Short term impact during shifts	Installation of new Ausgrid and Sydney Water works	Closure of existing footpath	Footpath on northern side of Ernest St	Traffic controllers to guide pedestrians
Southern side of Ernest Street, between Warringah Freeway and ANZAC Avenue	Multiple short term impacts (footpath closed during shift)	Installation of new conduits through footpath	Closure of existing footpath	Adjacent to works zone, under control of traffic controllers	Managed with traffic controllers to ensure separation between pedestrians, traffic and the works zone. Temporary kerb ramps where required Traffic controllers
Northern side of Rosalind Street	9 months	Establishment and use of ancillary facility	Closure of existing footpath	Footpath on southern side of Rosalind Street	Nil
Northern side of Bells Avenue, west of Warringa Road	Multiple short term impacts (footpath closed during shift)	Installation of new conduits through footpath	Closure of existing footpath	Footpath on southern side of Bells Avenue	Nil
Northern side of Amherst Street, west	Multiple short term impacts	Installation of new conduits	Closure of existing footpath	Footpath on southern	Nil

Footpath location	Duration	Reason for change	Impact	Alternate route	Additional mitigation measures
of Bells Avenue	(footpath closed during shift)	through footpath		side of Amherst Street	
Cammeray Golf Course (paths between Bells Ave and Ernest St)	2-3 months during utility relocations, on multiple occasions.	Utility adjustments	Closure of existing paths.	Other existing paths located within Cammeray Golf Course	Nil

6.7.2 Cyclists

SPA will endeavour to maintain cyclist connectivity and functionality provided within and directly adjacent to the critical utility works area, by preserving existing facilities or providing alternative facilities as part of a detour. SPA will manage the cyclist desire lines with temporary routes that comply with the requirements of Austroads Guide to Road Design Part 6A: Pedestrians and Cycle Paths and AS1742 Part 9: Bicycle Facilities, AustRoads Guide to Road Design Part 10 and AS1743: Road Signs Specification. Alternative routes would be tied-in to existing infrastructure including provision of kerb ramps where required, and directional signage to inform pedestrians and cyclists where required.

Where alternate routes are implemented, they will be appropriately signed and marked. In accordance with CoA E138 an alternate route which complies with relevant standards will be provided and signposted prior to the restriction or removal of the relevant pedestrian and cyclist access. Alternate routes will be addressed in a TMP and/or TCP (refer section 6.13). Any changes will be communicated to North Sydney Council, TfNSW and community stakeholder at least two weeks prior to implementation in line with the CCS.

Cyclists on local/urban roads will typically utilise shoulders or dedicated paths where they exist. Cyclist movements at site access points will be managed to maximise cyclist safety.

Cyclist route diversions have been identified to be required at the following sites, for the associated critical utility works listed in Table 6-3. Cyclist detour routes are presented in Appendix E.

Table 6-3 Identified cyclist route impacts

Cyclist routes	Duration	Reason for change	Impact	Alternate route	Additional mitigation measures
Northern side of Ernest Street, between Park Avenue and Merlin Street	2-3 months during utility relocations	Installation of new conduits through cycleway	Closure of existing cycleway	Existing footpath to be used as shared path	Nil

Cyclist routes	Duration	Reason for change	Impact	Alternate route	Additional mitigation measures
Northern side of Ernest Street, between Warringah Freeway and Merlin Street	Multiple short term impacts (shared path closed during shift)	Installation of new conduits through cycleway. Install construction access into Cammeray Golf Course.	Closure of existing cycleway	Temporary footpath to the north of the existing footpath	Traffic controllers to guide cyclists. Cyclists may be asked to dismount from bike
Merlin Street bike path (N/S) at Ernest Street & Merlin Street intersection.	During short term closures at night	Installation of electrical conduits through cycleway	Closure of existing cycleway	Existing crossing on western side of intersection to be used as shared path	Traffic controllers to guide cyclists
Cammeray Golf Course (cycleway from Miller Street / Warringah Freeway to Ernest St)	6 months	Utility adjustment works on Ernest St	Closure of existing dedicated cycle path.	On road on Ernest Street	Traffic control guidance for cyclists passing works site while work is occurring
Winter Avenue	During short term closures of Alfred Street North	Utility adjustments on Alfred Street North	Closure of existing dedicated cycle path.	Winter Avenue	Traffic control guidance for cyclists passing works site while work is occurring

6.8 Public transport

SPA will seek to minimise disruption to the current level of service of public transport services. Where impacts to bus lanes or bus stops are identified the project will consult with the bus operators and other divisions of Transport for NSW to identify appropriate mitigation.

If short-term closures of bus lanes are required, buses will use the adjacent general traffic lanes. Where possible, temporary closure of the bus lanes will be undertaken during the short periods that these bus lanes would not be in operation.

In accordance with CoA E149, if bus stops are required to be temporarily closed or relocated, such closure will not occur until relocated bus stops 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 the critical utility works will be undertaken in consultation with relevant council(s). Wayfinding signage will be provided directing commuters to adjacent or

relocated bus stops. Footpaths and (where required) road crossing facilities will be provided to any relocated bus stops such that accessibility and safety standards are met. In some instances, bus stop relocation will require some existing parking spaces to be removed.

Required changes to bus stops will be documented and approved through the appropriate Traffic Management Plan and/or Traffic Control Plan (refer to section 6.13). Advance notification will be provided to affected bus customers of the changes to stopping sequences and location of bus stops.

The community will be notified in advance of proposed transport network changes, in accordance with the Community Communication Strategy.

No bus stops have been identified as requiring relocation as part of the CUT works. However, should any bus stops be identified as requiring location SPA will first consult with TfNSW and relevant bus operators prior to bus stop relocation to ensure that any proposed alternative bus stop locations are suitable.

6.9 Property access

There are no known impacts on existing commercial or residential properties as access will be retained throughout the works. In accordance with CoA E141, all reasonably practicable measures will 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 will be developed in consultation with affected businesses and implemented prior to the disruption. In accordance with CoA E129, any property access physically affected by the CUT works will be reinstated to at least an equivalent standard, unless otherwise agreed by the landowner or occupier.

Where practicable, access to all utilities and properties will be maintained during critical utility works, unless otherwise agreed with the relevant utility owner, landowner or occupier (CoA E128).

In the event property access is affected by the critical utility works, these impacts will be identified on the TCPs and communicated to the relevant stakeholders. All such communication will occur in accordance with the CCS. Adequate signage and directions to businesses must be provided prior to, and for the duration of, any disruption.

Affected accesses will be reinstated to a pre-construction condition, unless otherwise agreed by the landowner or occupier.

6.10 Parking management

SPA will provide car parking facilities to support its work areas and ancillary facilities to minimise worker parking on local roads and streets, and state and regional roads. The bulk of this car parking storage will be within the Ridge Street and Cammeray Golf Course ancillary facilities. Limited worker parking will also be provided at the individual work sites. The workforce will be encouraged to use public transport where available, with key bus corridors including Pacific Highway, Warringah Freeway, Miller Street, Falcon Street and Military Road. In addition, the T1 North Shore and T9 Northern Lines are accessible from Milsons Point, North Sydney, Wollstonecraft and Waverton railway stations.

Some on street parking will be temporarily removed adjacent to construction ancillary facilities during critical utility works where the utility is installed within the parking lane, to create a safe working environment where construction activities to support the utility works are within the parking lane, and provision of turning paths for construction trucks. Any NSC parking sensors to be removed will be done following approval from NSC. At least 7 business days' notice will be given to NSC prior to the removal of any NSC parking sensors.

SPA's Traffic Manager will ensure that the parking management requirements are monitored and reported through inspections as outlined in section 7.1.

In accordance with CoA E140, a Construction Parking and Access Strategy (CPAS) has been prepared to identify and mitigate impacts resulting from on- and off-street parking changes during the critical utility works. The strategy was submitted to DPIE for approval at least one month prior to the commencement of any construction activities that will impact on parking availability identified in the CPAS. The approved CPAS will be implemented throughout construction (refer to Appendix F). Version 2 of the CPAS was approved by DPIE on 23 July 2021.

REMM CTT9 requires the consideration of a shuttle bus service between ancillary facilities and worksites, where provision of construction workforce parking cannot be accommodated within ancillary facilities. Ancillary facilities associated with the CUT works will provide adequate off-street parking spaces for the construction workforce. In addition to this, shuttle bus services would not be practical given:

- The scope of the CUT works is tool and equipment intensive, therefore construction vehicles are required to travel from ancillary facilities to worksites. Such equipment can't be accommodated on shuttle buses
- The scope of the CUT works is not labour intensive, therefore shuttle buses would unlikely be filled
- The nature of the CUT works means that the workforce numbers are highly variable
- The distance between some ancillary facilities and their associated worksites are short in distance and where possible, the construction workforce could walk to the worksite. For instance:
    - Ridge Street North ancillary facility to Alfred Street North: about 125 metres distance
    - Rosalind Street ancillary facility to Cammeray Avenue: about 200 metres distance
    - Cammeray Golf Course ancillary facility to Cammeray Gold Course worksites: about 50m distance
    - Arthur Street ancillary facility to Pacific Highway worksite: about 50 metres distance
    - Blue Street ancillary facility to Pacific Highway worksite: about 150 metres distance.

6.11 Special events

Consideration for work sites will be undertaken during scheduled special events. Special events that occur in the vicinity of the worksite will be identified and incorporated into the construction program, with detailed responses and contingencies, as required.

Consultation will be undertaken with TfNSW, North Sydney Council, public transport providers and event organisers to devise and implement appropriate traffic measures.

6.12 Incident management and response

Emergencies or unplanned incidents may occur during the works which impact upon traffic including motor vehicle crashes, environmental spills, terrorist attacks, bomb threats, construction type incidents, structural catastrophic failures, inclement weather conditions, flooding and anti-social behaviour.

The Project team will immediately notify the TfNSW Representative of the occurrence of the incident and record the knowledge of the facts. The Traffic Manager, or delegate, is then required to forward a report with the information to TfNSW Representative within two days of the occurrence of the incident.

Furthermore, in case of unplanned incidents such as power failure and public road traffic incidents that occur within the work site, internal construction trucks would be re-routed over a short period of time. The cause of disruption can then be resolved, and the intersection can be returned to normal operation conditions. SPA will communicate the instructions to truck drivers through traffic marshals.

6.13 Traffic management documents

Traffic Management Plans (TMP) conforming to AS 1742.3 and the TfNSW Traffic Control at Worksites manual will be developed for the works, containing details of the nature of the works. The TMP will be provided to the TMC and SCO for consideration and approval, and where the work impacts on council areas, the relevant council will be consulted prior to implementation.

A Traffic Control Plan (TCP) 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. All TCPs will be developed in accordance with Australian Standard 1742.3 and the TfNSW' "Guide to Traffic Control at Worksites" by a suitably qualified person. In accordance with TfNSW Specification G10, all TCPs will be approved by TfNSW through a hold point process.

6.14 Driver's Code of Conduct

SPA has developed a Driver's Code of Conduct for the CUT works (refer to Appendix D). This Code of Conduct will be included in the Project Induction (refer to Section 3.5.1 of the CEMP) and will also be provided to all sub-contractors and delivery drivers.

7 Compliance management

7.1 Inspections

Requirements and responsibilities in relation to inspections are documented in Section 3.9 of the CEMP.

SPA will undertake regular inspections to ensure the safety of all traffic movements, as well as the wellbeing of pedestrians, cyclists, drivers and property through and surrounding all worksites. These inspections will also monitor the traffic movements and frequencies detailed in Table 5-5 and *Table 5-6*. The responsibility and frequency of inspections is stipulated in section 6.1 of the TfNSW Traffic Control at Worksites Manual.

These regular inspections will also verify the on-street parking commitments established by the 'Driver Code of Conduct'.

Three main types of inspections and records will occur:

- Inspections of short-term (single shift) traffic controls during the shift
- Regular daytime inspections of long-term traffic controls after implementation
- Regular night time inspections of long-term traffic controls after implementation.

Pre-opening inspections will be carried out by the Traffic Manager before the start of each new temporary roadwork site or major modification.

Any signage or devices identified during the checks or audits requiring attention will either be rectified at the time or advised to the Traffic Manager during that shift for follow-up action.

7.2 Auditing

In accordance with CoA E145, Independent Road Safety Audits will be undertaken by an appropriately qualified and experienced person during detailed design (audit of the plans) and prior to opening (pre-opening audit) to assess the safety performance of new or modified roads including traffic staging during CUT works (road safety audit), parking, pedestrian and cycle infrastructure to ensure that they meet the requirements of relevant design, engineering and safety guidelines, including AustRoads Guide to Traffic Management. These audits will also cover temporary traffic control measures and temporary alternative pedestrian and cyclist diversions.

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 must be actioned prior to the relevant infrastructure being made available for use.

Other audit requirements are detailed in Section 3.9.3 of the CEMP.

7.3 Continual improvement

Traffic, transport and access performance will be inspected and monitored for the CUT works throughout construction. The purpose of this will be to ensure that the mitigation measures identified during the environmental risk assessment (refer to Section 3.2.1 of the CEMP) are being effective and being appropriately implemented.

Should mitigation measures be found to be ineffective during regular inspections detailed in Section 7.1, SPA will review the activity and, where possible, modify the activity or mitigation measures to prevent reoccurrence. Lessons learnt will be communicated to relevant personnel in toolbox talks.

This will form part of the continual improvement processes detailed in Section 3.11 and Section 3.12 of the CEMP and will ensure ongoing achievement of the Project's performance outcomes (refer to Appendix A).

Appendix A Performance Outcomes

Performance outcomes identified in Table 28-4 of the EIS that are relevant to the management of traffic, transport and access during the critical utility works are identified in the table below.

Performance outcome	How performance outcome will be addressed	Records	Source
Minimise impacts to local streets from loss of parking, road closures and heavy vehicle movements during construction	Utilise the heavy vehicle routes outlined in section 5.1.1. Implement measures to minimise impacts resulting from loss of parking, road closures and heavy vehicles movements outlined in sections 5 and 6. Undertake training, inspections, auditing and recording in accordance with section 7.	Heavy vehicle routes Complaints register Weekly inspection record	EIS – Chapter 28
Minimise impacts to road network efficiency during construction	Implement the processes and mitigation measures identified in section 6. Undertake training, inspections, auditing and recording in accordance with section 7.	Traffic Management Plans Complaints register	EIS – Chapter 28
Enable access to properties to be maintained during construction	Property access will be maintained through the implementation of the processes and mitigation measures identified in section 6.9. Undertake training, inspections, auditing and recording in accordance with section 7.	Traffic Management Plans Complaints register	EIS – Chapter 28
Maintain pedestrian and cyclist safety along surface roads near the project	Section 6.7 outlines processes and mitigation measures which will be implemented. Undertake training, inspections, auditing and recording in accordance with section 7.	Traffic Management Plans Complaints register	EIS – Chapter 28

Appendix B Condition of Approval and REMM Compliance Tracking

The Conditions of Approval and Revised Environmental Management Measures detailed below are those that are related specifically to the preparation of this Traffic, Transport and Access Management Sub-plan.

Table App B-1 Minister's Conditions of Approval

<table>
<tr><th>CoA No.</th><th>Condition Requirements</th><th>Document reference</th><th>How addressed</th></tr>
<tr><td>C4</td><td>a.<table>
<tr><th>The following 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 included in the relevant CEMP Sub-plan, including copies of all correspondence from those agencies as required by Condition A5.</th><th>Required CEMP Sub-plan</th><th>Relevant government agencies to be consulted for each CEMP Sub-plan</th></tr>
<tr><td>(a)</td><td>Traffic, transport and access</td><td>Relevant council(s)</td></tr>
</table></td><td>This Plan
Section 4</td><td>This TTAMP has been prepared in accordance with this condition and describes how SPA proposes to manage traffic during construction of the Project.
Consultation of this Plan will be in accordance with this condition. Section 4 outlines the consultation undertaken with the relevant government agencies.</td></tr>
<tr><td>C5</td><td>The CEMP Sub-plans must state how:</td><td></td><td></td></tr>
<tr><td>(a)</td><td>The environmental performance outcomes identified in the documents listed in Condition A1 will be achieved</td><td>Section 2.2
Section 5
Section 6</td><td>This TTAMP has been prepared in accordance with the environmental performance outcomes identified in the EIS as evidenced in section 2.2 and Appendix A of this Plan, as applicable to the CUT work.</td></tr>
</table>

CoA No.	Condition Requirements	Document reference	How addressed
			Measures to achieve these outcomes are detailed in sections 5 and 6 of this Plan.
(b)	the mitigation measures identified in the documents listed in Condition A1 will be implemented	Section 5 Section 6 Appendix B	The implementation of traffic management and mitigation measures identified in the EIS and RtS is addressed in sections 5 and 6 of this Plan. Section 6 of this Plan addresses the traffic management measures SPA proposes to implement during critical utility works of the Project. Section 7 of this Plan details compliance management measures SPA proposes to implement during critical utility works of the Project. Refer to Appendix B for a complete list of relevant REMMs and where in the document they are addressed.
(c)	the relevant terms of this approval will be complied with; and	Section 3.2 Appendix B Section 5 Section 6	Details regarding how SPA proposes to comply with the relevant terms of approval are listed in section 3.2, this Table and sections 5 and 6 of this 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 6 Section 3.2.1 and Appendix A4 of the CEMP	Traffic issues requiring management during critical utility works of the Project have been identified through the EIS and RtS and Environmental Risk Assessment Workshop (refer section 3.1.2 and Appendix A4 of the CEMP). These issues will be managed through the implementation of this Sub-plan and the measures in Sections 5 and 6.

CoA No.	Condition Requirements	Document reference	How addressed
		Section 3.8 to 3.12 of the CEMP	Mitigation measures have been developed with SMART principles in mind. Environmental risk analysis will be ongoing, with regular review in accordance with Section 3.8 to 3.12 of the CEMP to ensure effective management of traffic impacts.
C9	Any of the CEMP Sub-plans must be submitted to the Planning Secretary along with, or subsequent to, the submission of the CEMP but in any event, no later than one month before construction.	Section 1.4 of the CEMP Section 2 of the CEMP Section 3.2	The CEMP Sub-plans will be submitted for approval to DPIE with, or subsequent to, the final submission of the CEMP for DPIE approval.
C10	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved 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 1.4 of the CEMP Section 2 of the CEMP Section 3.2	Construction will not commence until the CEMP and all Sub-plans have been endorsed by the ER and approved by DPIE. The CEMP and all Sub-plans will be implemented for the duration of construction for the critical utility works.
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	Where practicable, access to all utilities and properties will be maintained during critical utility works, unless otherwise agreed with the relevant utility owner, landowner or occupier.

CoA No.	Condition Requirements	Document reference	How addressed
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	Affected accesses will be reinstated to a pre-construction condition, unless otherwise agreed by the landowner 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 must be approved by the Planning Secretary and included in the Traffic, Transport and Access Management CEMP Sub-plan	Section 5.1.2	Local road usage, in addition to that identified in the EIS, is addressed in section 5.1.2, particularly Table 5-4. All requests for approval for local road usage will include the information identified in CoA E133.
E133	All requests to the Planning Secretary under Condition E132 must include the following:		
(a)	include a swept path analysis;	Section 6.6	Swept path analysis will be provided to the Planning Secretary for all requests for local road usage.
(b)	demonstration that the use of local roads by heavy vehicles for the CSSI will not compromise the safety of pedestrians and cyclists or the safety of two-way traffic flow on two-way roadways;	Section 6.6	Mitigation strategies and approaches that will be implemented prior to and during the use of local roads are provided in section 6.6. These measures will ensure the safety of the public is not compromised, with no more than minimal amenity impacts.
(c)	provide details as to the date of completion of the road dilapidation surveys for the subject local roads;	Section 6.2.1 Section 6.6	Road dilapidation surveys will be undertaken prior to commencement of use of the road by heavy vehicles for the critical utility works. Details regarding the road dilapidation surveys are outlined in section 6.2.1.

CoA No.	Condition Requirements	Document reference	How addressed
(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	Section 6.6	Mitigation strategies and approaches that will be implemented prior to and during the use of local roads are provided in section 6.6.
(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.	Section 6.6	The suitability of the proposed heavy vehicle route, which considers CoA E133(a) – (d), will be reviewed by an appropriately qualified traffic engineer, as identified in Table 6-1.
E136	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.	Section 5.1.2 Section 6.2.1	Road dilapidation surveys will be undertaken prior to commencement of use of the local road by heavy vehicles for the critical utility works. Local roads required for access to/from the work areas are identified in Table 5-2. Details regarding the road dilapidation surveys for state and local roads are outlined in Section 6.2.1.
E137	If damage to roads occurs as a result of the CSSI, the Proponent must either (at the relevant road authority's discretion): a. Compensate the relevant road authority for the damage so caused; or 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).	Section 6.2.2	As detailed in section 6.2.2, SPA will either compensate the landowner for the damage caused or rectify the damage to restore the road to at least the condition it was pre-construction.

CoA No.	Condition Requirements	Document 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 6.7.1 Section 6.7.2	Safe pedestrian and cyclist access will be maintained around work sites during critical utility works, as detailed in Section 6.7.1 and Section 6.7.2. These sections detail known required pedestrian and cyclist detours.
E139	Vehicles (including light and heavy vehicles) associated with the CSSI must be managed to: a. minimise parking on public roads; b. minimise idling and queueing on state and regional roads; c. not carry out marshalling of construction vehicles near sensitive land user(s); d. not block or disrupt access across pedestrian or shared user paths at any time; e. ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the Traffic, Transport and Access Management CEMP Sub-plan.	Section 5.1.1 Section 6.1 Section 6.10 Construction Parking and Access Strategy	Parking arrangements are primarily discussed in Section 6.10 and in the Construction Parking and Access Strategy. Construction vehicle routes and idling, queueing and marshalling are addressed in Section 5.1.1. Management measures to safely manage the interactions between construction vehicles and public vehicles, pedestrians and cyclists at access and egress points and construction works are identified in Section 6.1. Access and egress routes have been provided in Section 5.1.1 and Appendix C.
E140	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:	Section 6.10 Construction Parking and	Construction Parking and Access Strategy will be prepared for the critical utility works and will be submitted to DPIE separately.

CoA No.	Condition Requirements	Document reference	How addressed
	[…] 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.	Access Strategy	The CPAS will be appended to this TTAMP following DPIE approval.
E141	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.	Section 6.9	Access will be maintained throughout critical utility works. Where access is impacted, alternative access will be provided unless otherwise agreed with the affected property.
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 7.2	Independent Road Safety Audits will be completed where required as outlined in Section 7.2.

CoA No.	Condition Requirements	Document reference	How addressed
	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). 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.		
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 6.1	The CUT scope of works will have no impacts on this intersection and therefore will not impact on this required movement. Notwithstanding, this has been included as a management measure in Section 6.1.
E149	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.	Section 6.8	No bus stop relocations have been identified as being required to carry out the CUT works. Where bus stops are relocated the project will ensure alternative access is available as outlined in Section 6.8

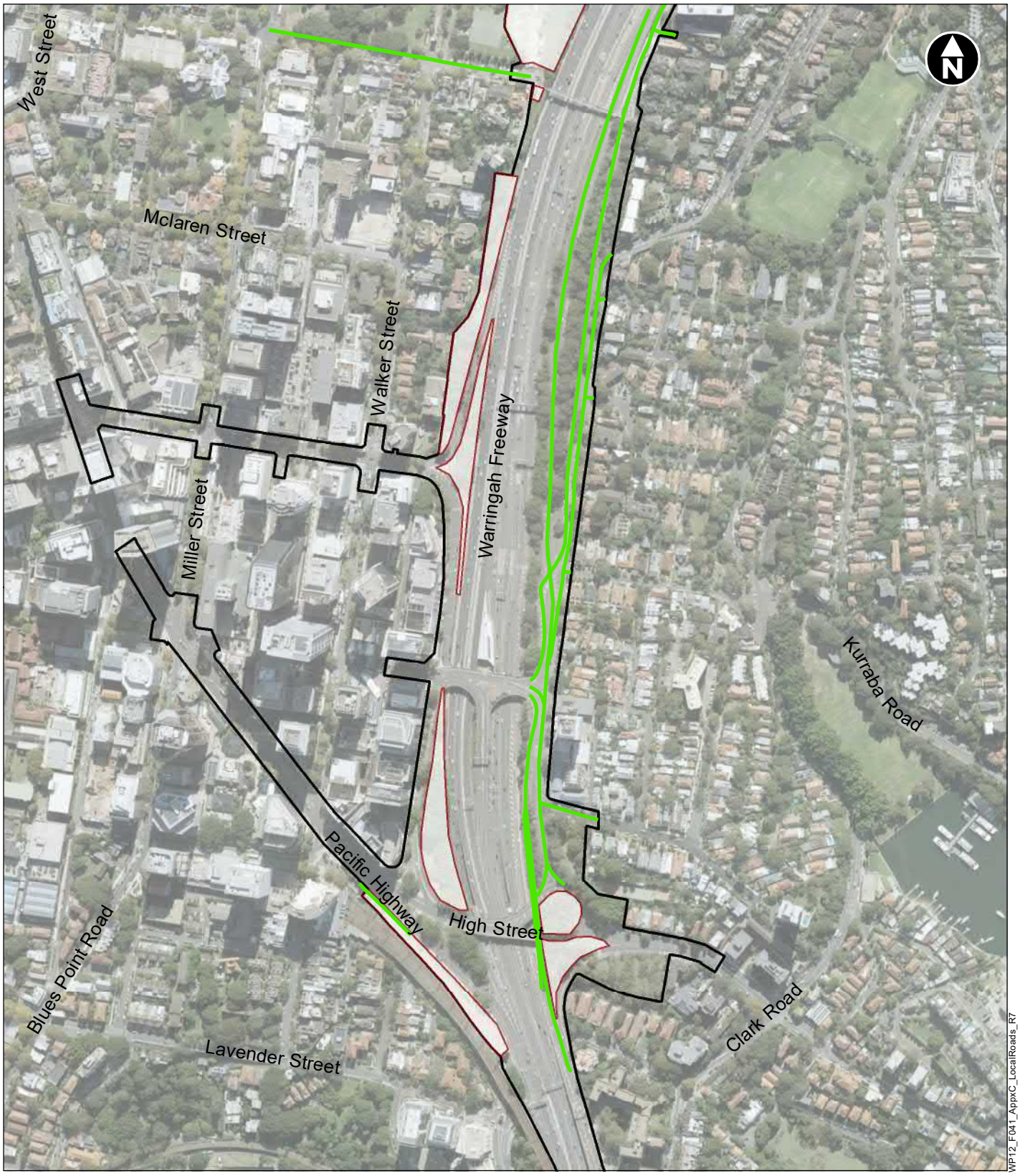
Table App B-2 Revised environmental management measures relevant to this TTAMP

Impact	Ref #	Commitment	Timing	TTAMP reference
Construction traffic	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.	Pre-construction	Section 6.2
Construction traffic	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.	Pre-construction Construction	Section 4
Construction traffic	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.	Construction	Section 6.1 Community Communication Strategy
Construction traffic	CTT6	Construction road traffic will be managed to minimise movements during peak periods.	Construction	Section 5.2
Construction traffic	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 modifications to existing signals or, on occasion, police presence.	Construction	Section 5.1 Section 6.7
Construction	CTT8	Directional signage, barriers and/or linemarking will as required be used 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	Construction	Section 6.5

Impact	Ref #	Commitment	Timing	TTAMP reference
		potential delays, traffic diversions, speed restrictions, or alternative routes.		
Construction traffic	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.	Construction	Section 6.10 Construction Parking and Access Strategy
Construction traffic	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.	Construction	Section 6.8
Construction traffic	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.	Construction	Section 6.1
Construction traffic	CTT13	Partial or full closures of Warringah Freeway will be carried out in consultation with Transport Coordination within Transport for NSW.	Construction	Section 4
Pedestrian access	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.	Construction	Section 6.7

Appendix C Local roads for DPIE approval under CoA E132

Appendix C Local Roads



Appendix C Local Roads

Appendix D Driver's Code of Conduct

Driver Code of Conduct

This Driver Code of Conduct applies to all Sydney Program Alliance personnel and any other person undertaking work for the Sydney Program Alliance, whether they are a direct employee of Sydney Program Alliance or employed by another organisation providing a service or product to Sydney Program Alliance.

All drivers must:

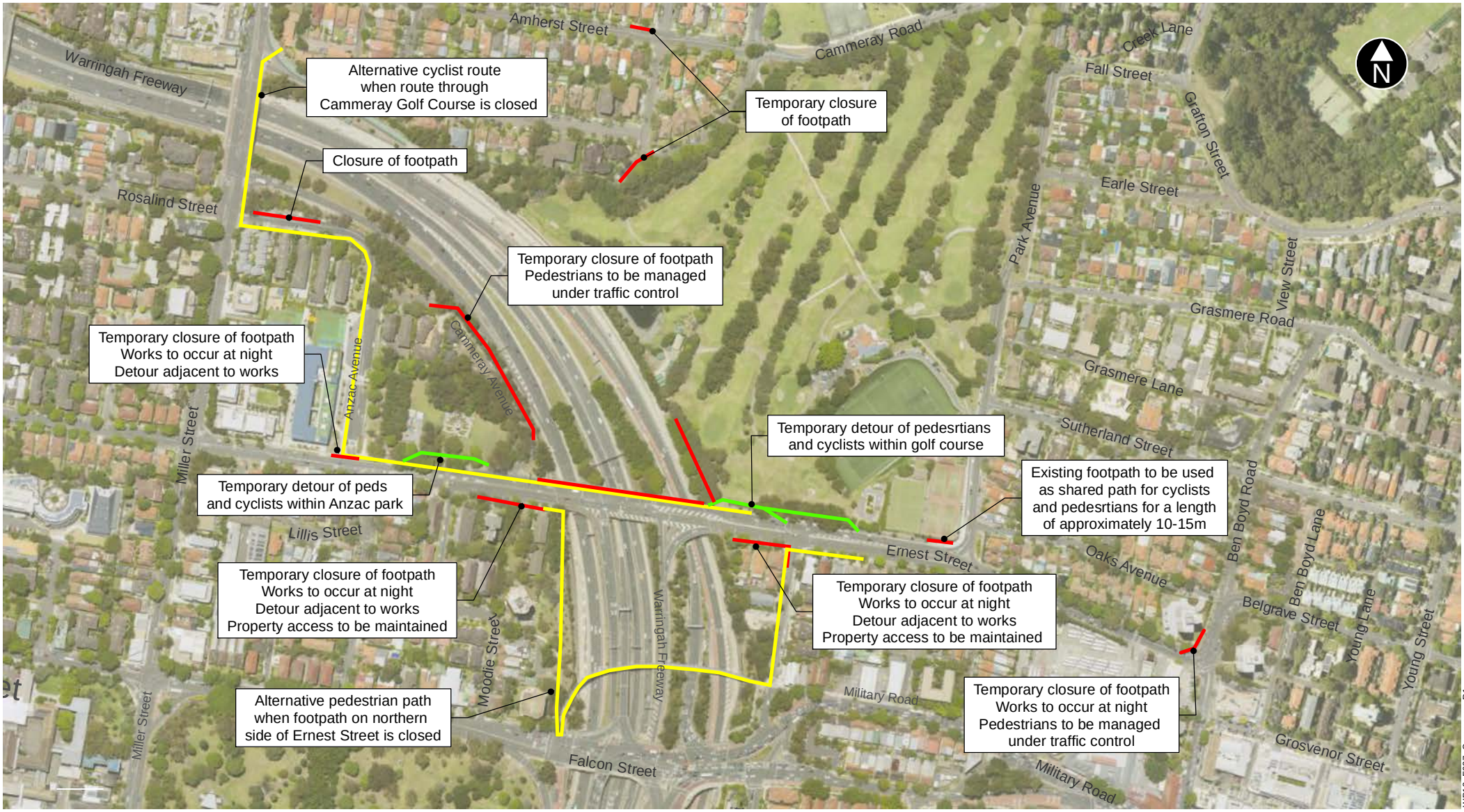
- Drive courteously.
- Obey all road rules, including posted speed limits and other traffic signage within work sites and site compounds.
- Take extreme care when driving past other vehicles travelling in the opposite direction on local roads including ANZAC Avenue, Bells Avenue, Warringa Road, Amherst Street, Cammeray Road, Park Avenue and Merlin Street.
- Report any incidents or near misses to your supervisor immediately.
- Hold a current and valid driving licence for the class of vehicle that you operate. Additionally, you must always carry your current driver licence with you while you are on duty. If your licence is cancelled or suspended, you must let your supervisor know immediately.
- Maintain and operate your vehicle in accordance with the vehicle manufacturer's recommended standards (refer to the vehicle manufacturer's handbook and service schedule).
- Not use engine brakes in residential areas.
- Try to avoid reversing whenever possible. If you cannot avoid it, use extreme caution.
- Ensure your vehicle is fitted with audible reversing alarms.
- Always follow posted signs as they provide vital clues to road conditions and characteristics.
- Always be aware of the following:
    - Reduce your speed in wet conditions
    - Drive cautiously in fog or heavy rain
    - Descend hills at signposted heavy vehicle speeds, or in the lowest gear to suit the conditions
    - Observe road work speed limits
    - Do not exceed the posted speed limit
    - Do not drive at speed past schools, school buses, playgrounds, shopping areas etc.
- Follow Vehicle Movement Plans that specify approved routes to and from work sites and site compounds. Only roads that are shown on the Vehicle Movement Plans may be used. The use of roads that are not shown on the Vehicle Movement Plans is strictly prohibited.
- Follow directions provided by a Sydney Program Alliance employee.
- Park within work sites and site compounds where possible. Parking on public roads is to be avoided. Where this is not possible, contact your Sydney Program Alliance contact to seek alternative arrangements.

SYDNEY PROGRAM ALLIANCE

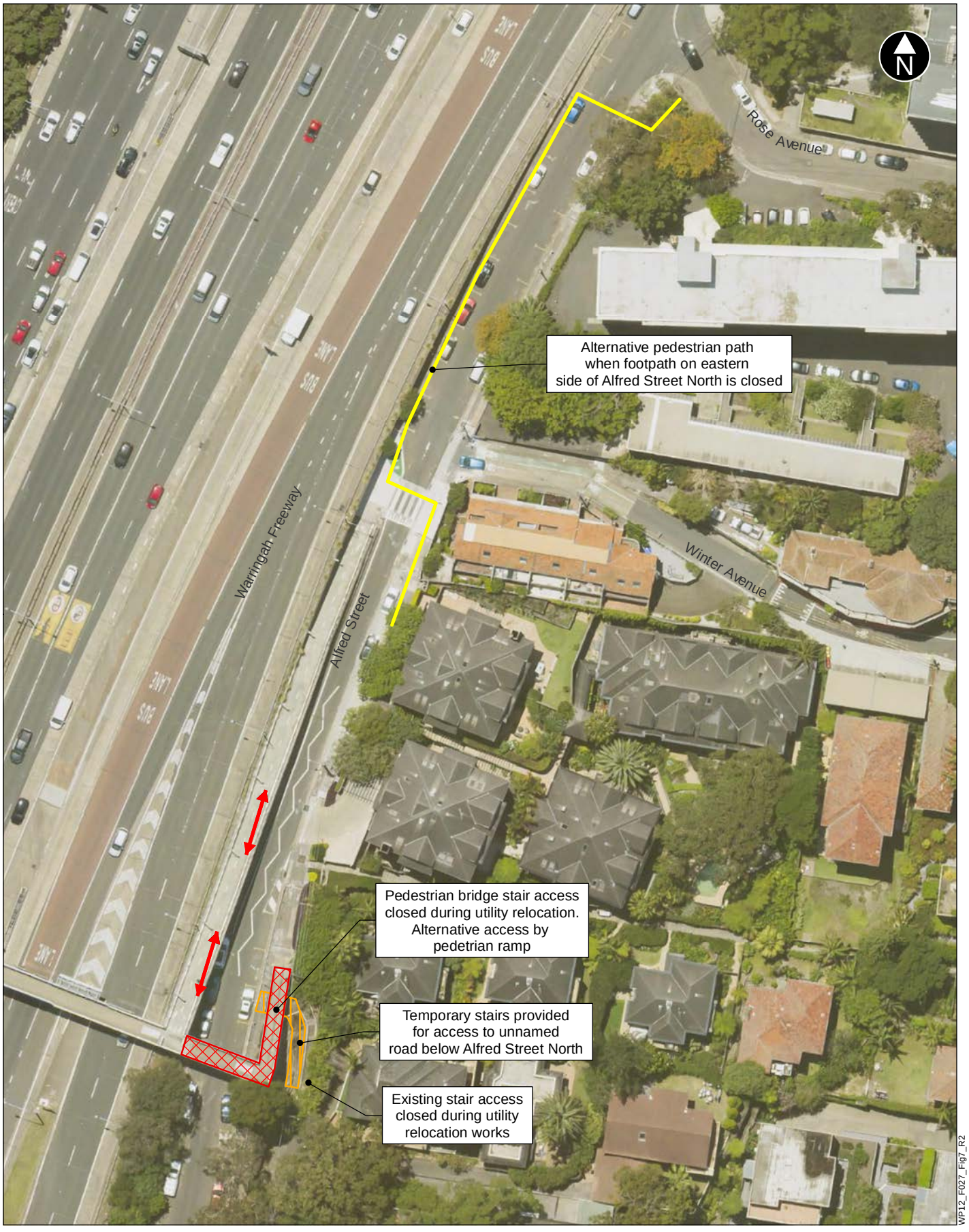
DRIVER CODE OF CONDUCT

This Driver Code of Conduct is applicable 24 hours per day, seven days per week. Failure to comply with this Driver Code of Conduct will lead to either the issue of a non-conformance notice or disciplinary action if the offender is an employee of Sydney Program Alliance. If the offending person is employed by another organisation providing a service or product to Sydney Program Alliance, then a suspension or cancellation of a service contract or arrangement with that organisation may be considered.

Appendix E Pedestrian and cyclist detour locations



Cammeray pedestrians and cyclist detours



Neutral Bay cyclist and pedestrian detours

North Sydney precinct cyclist and pedestrian detours

Appendix F Construction Parking and Access Strategy

Construction Parking and Access Strategy

Western Harbour Tunnel and Warringah Freeway Upgrade

Stage 1A Early and Enabling Works - Critical utility installation, relocation and protection works

Transport for NSW

NSW GOVERNMENT

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Construction Parking and Access Strategy

Western Harbour Tunnel and Warringah Freeway Upgrade

Stage 1A Early and Enabling Works - Critical utility installation, relocation and protection works

June 2021

List of emergency and key contacts

Position	Name	Phone
North Sydney Council		(02) 9936 8100
24-hour community information line		1800 931 189
SPA Environmental Manager	[redacted]	
SPA Community Manager		
SPA Project Manager		
SPA Superintendent		
SPA Traffic Manager		
Environmental Representative		
Transport for NSW Representative		
Transport for NSW Environmental Representative		

Contents

Tables

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Document control

Approval

Title	Critical utility installation, relocation and protection works Construction Parking and Access Strategy
Approved by SPA Environment Manager	[redacted]
Signed	
Dated	
Approved by SPA Project Manager	
Signed	
Dated	

Version control

The below document status table is for tracking the revisions of the CPAS, while the project is in construction. The version control table is to be used to track CPAS revisions, including those incorporating changes following agency comments.

It may be modified where necessary to fit with requirements of the individual project.

Revision	Date	Description	Approval
A	7/12/20	For internal review	PT
B	28/01/21	For internal review	PT
C	19/02/21	For NSC and community consultation	PT
0	05/05/21	For lodgement to DPIE	DL
1	10/06/21	Updated following additional TfNSW comments	DL
2	25/06/21	Updated following DPIE comments	DL

Glossary / abbreviations

Abbreviation	Expanded text
CCS	Community Communication Strategy
CEMP	Construction Environmental Management Plan
CGC	Cammeray Golf Course
CoA	Condition of Approval
CPAS	Construction Parking and Access Strategy
CUT	Critical utilities installation, relocation and protection
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
ITS	Intelligent Transport System
Project, the	Western Harbour Tunnel Warringah Freeway Upgrade
REMM	Revised Environmental Management Measures
ROL	Road Occupancy Licence
TfNSW	Transport for NSW
TTAMP	Traffic, Transport and Access Management Sub-plan
WFU	Warringah Freeway Upgrade
WFUEW	Warringah Freeway Upgrade Early Works
WFUMW	Warringah Freeway Upgrade Main Works
WHT	Western Harbour Tunnel
WHTWFU	Western Harbour Tunnel Warringah Freeway Upgrade

1 Introduction

1.1 Background

The Western Harbour Tunnel and Warringah Freeway Upgrade (WHTWFU) is shown in Figure 1-1. The project comprises two main components:

- A new crossing of Sydney Harbour involving twin tolled motorway tunnels connecting the M4-M5 Link at Rozelle and the Warringah Freeway at North Sydney (the Western Harbour Tunnel)
- Upgrade and integration work along the existing Warringah Freeway, including infrastructure required for connections to the Beaches Link and Gore Hill Freeway Connection project. Reconfiguration works as part of the Warringah Freeway Upgrade would optimise the road corridor and improve the performance of the Sydney Harbour Tunnel, the Sydney Harbour Bridge and the Western Harbour Tunnel.

Due to its importance, the WHTWFU project was declared to be Critical State Significant Infrastructure (CSSI) by the Minister for Planning and Public Space on 9 November 2020.

On 21 January 2021, the Department of Planning, Industry and Environment (DPIE) approved the construction and operation of the WHTWFU project (SSI 8863).

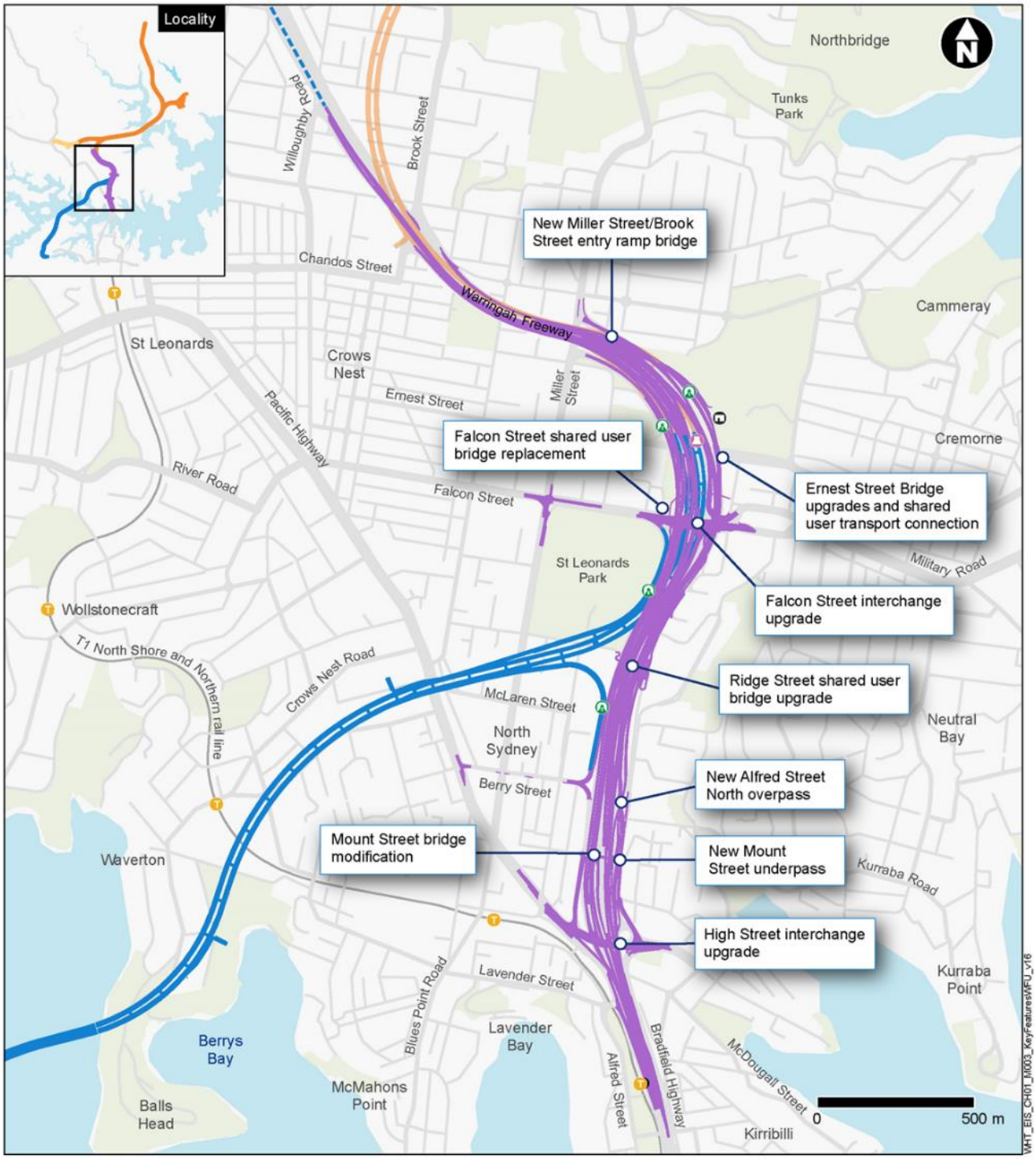
A detailed description of the project is provided in Chapter 5 of the Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement (EIS).

The WHTWFU project will be delivered in numerous stages:

- Stage 1 - Early and enabling works:
  - Stage 1A - Critical utility installation, relocation and protection (CUT) (the subject of this CPAS)
  - Stage 1B - Cammeray Golf Course adjustment works (CGC)
- Stage 2 - Warringah Freeway Upgrade project:
  - Stage 2A - Warringah Freeway Upgrade early works (WFUEW)
  - Stage 2B - Warringah Freeway Upgrade main works (WFUMW)
- Stage 3 - Western Harbour Tunnel project (WHT).

Further detail on each stage is provided in the WHTWFU project Staging Report.

This Construction Parking and Access Strategy (CPAS) applies only to Stage 1A Early and Enabling Works - Critical utility installation, relocation and protection stage of the project (referred to herein as “the critical utility works’ or ‘CUT’. The critical utility works will support the delivery of the wider WHTWFU program of works by undertaking these works prior to the commencement of the Stage 2 and Stage 3.



(Reference: Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement, Figure 1-3)

Figure 1-1 Key features of the Warringah Freeway Upgrade component of the project

1.2 Project description

The early and enabling works will support the delivery program of the Main Works of the project by undertaking these works prior to the commencement of the Main Works.

This CPAS applies only to the critical utility installation, relocation and protection early works package of the project (Stage 1A). These critical utilities work is critical to an earlier start on site and will be undertaken as part of early and enabling works of the project as outlined in Table 1-1 and Figure 1-2.

Table 1-2 provides a summary of the activities which will be completed as part of the critical utility works scope outlined in Table 1-1.

The critical utility works will commence in early 2021 and be completed by early 2022. The program for the remaining stages of the WHTWFU project is included in the WHTWFU Project Staging Report.

Table 1-1 Critical utilities works

Areas	Key activities
Alfred Street North, Neutral Bay	Deviation of existing Sydney Water sewer mains Relocation of existing Ausgrid assets Relocation of various communication provider assets
Arthur Street / High Street, North Sydney	Relocation of existing Ausgrid assets Relocation of various communication provider assets Relocation of two (2) existing Sydney Harbour Tunnel fire hydrant booster stations Relocation of existing 415V feed to Sydney Harbour Tunnel control room
Cammeray Avenue / Ernest Street / Cammeray Golf Course, Cammeray	Relocation of existing in-ground Ausgrid assets Removal of existing disused in-ground Ausgrid assets Relocation of existing in-ground Sydney Water assets Relocation of existing in-ground communication provider assets Installation of new permanent Intelligent Transport System (ITS) node and temporary connections Installation of temporary construction power supply along Ernest Street from Ben Boyd Road to the Cammeray Golf Course site (WHT10).

Table 1-2 Description of activities for the critical utility works scope

Activity	Description
Establishment of major ancillary facilities	
Site preparation works	Provision of site security such as temporary fencing and perimeter fencing Clearing and trimming of vegetation within the construction footprint Site levelling, grading and compaction (including fill importation), including temporary stockpiling of materials for site levelling Provision of foundations and buildings for toilet facilities, offices, lunchrooms, signage and pedestrian diversions, and installation of traffic barriers
Site survey and site investigation works	Ground penetrating radar or electromagnetic ground investigation Utility investigation by potholing with a vacuum truck
Initial environmental controls	Erosion and sediment controls, including: Installation of rip rap Drainage sump Diversion of offsite flows Erosion, sediment and water flow controls Delineation of sensitive areas and temporary fencing/hoardings
Fit out, commissioning and install of remaining site infrastructure including	Chemical and hazardous material storage Designated stockpile/laydown areas Office furniture fit out Formalisation of on-site car parking (line marking etc.) Site lighting installed which will involve the use of power saws for cutting steel work
Critical utilities work	
Installation of services to the site e.g., water, sewer, power, communications	Establish temporary work area including installation of temporary fencing, storage, laydown and stockpiling areas Installing pre-construction environmental management controls, e.g., sandbags at stormwater drainage outlets Clearing and trimming of vegetation Concrete wet saw cutting to remove concrete or asphalt pavement Trench excavations Stockpiling excavated materials within the work area for reuse or removal for off- site disposal Preparing sub-grade surface (e.g., stabilised sand) to accommodate utility services Laying utility services either as pipes, cables or conduits Constructing joint bays and pits (where required) Pulling feeders and cables through conduits

Activity	Description
	Connecting utility services to existing networks Testing and commissioning of utility services Backfilling trenches and re-instating ground surface to an appropriate condition Rehabilitate areas disturbed by works Site clean-up and decommissioning of temporary work areas and environmental management controls
Installation of relocated utilities e.g., water, sewer, power, communications	Establish temporary work area including installation of temporary fencing, storage, laydown and stockpiling areas Installing pre-construction environmental management controls, e.g., sandbags at stormwater drainage outlets Clearing and trimming of vegetation Concrete wet saw cutting to remove concrete or asphalt pavement Trench excavations Installation of directional drilling launch/receiving sites Stockpiling excavated materials within the work area for reuse or removal for off- site disposal Preparing sub-grade surface (e.g., stabilised sand) to accommodate utility services Laying utility services either as pipes, cables or conduits Constructing joint bays and pits (where required) Pulling feeders and cables through conduits Connecting utility services to existing networks Testing and commissioning of utility services Backfilling trenches and re-instating ground surface to an appropriate condition Removal of redundant utilities Rehabilitate areas disturbed by works Site clean-up and decommissioning of temporary work areas and environmental management controls

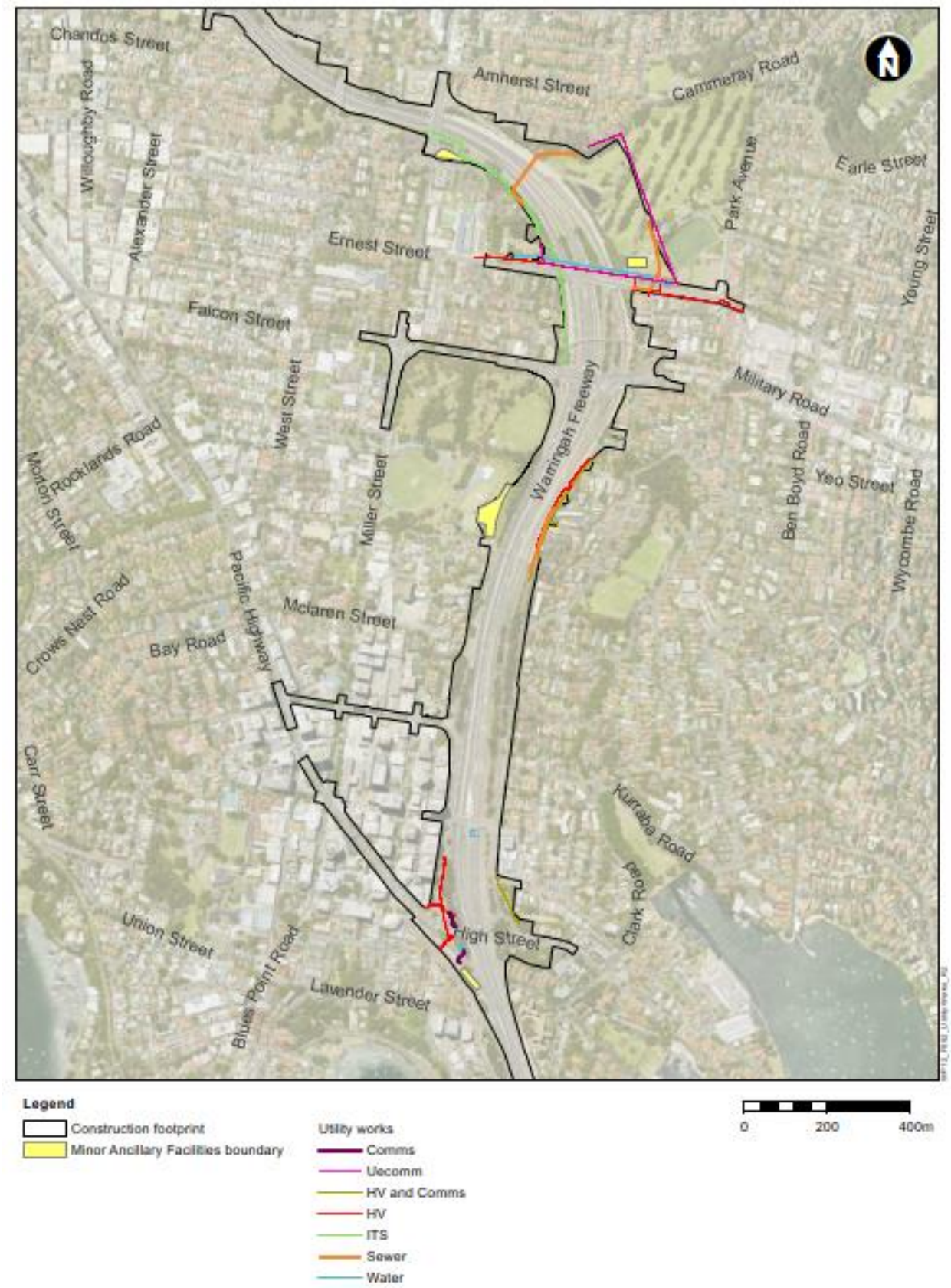


Figure 1-2 Location of critical utility works scope

1.3 Purpose and scope of this CPAS

This CPAS has been prepared to describe how the Contractor, during the critical utilities work, will comply with the requirements of the NSW Minister for Planning and Public Space's Conditions of Approval (CoA) E139 and E140. The scope of the CPAS includes on- and off-street parking changes during the critical utilities work that are located outside the approved CSSI footprint. Car parking requiring removal inside the approved CSSI footprint has been considered in the EIS and has already been approved under the Infrastructure Approval (SSI-8863). Notwithstanding, car parking spaces that will be removed during the critical utilities work that are located within the approved CSSI footprint have been assessed and identified.

The CPAS will be lodged to DPIE at least one month prior to the commencement of any work that will impact on parking. These works will not commence until the CPAS has been approved by DPIE.

The requirements of CoA E139 and E140 and where they are met in this CPAS are shown in Table 1-3. Additional CoA and Revised Environmental Management Measures (REMM) are presented in Appendix A3.

Table 1-3 CoA E139 and E140 compliance

CoA No.	Condition requirements	Where addressed in CPAS
E139	Vehicles (including light and heavy vehicles) associated with the CSSI must be managed to:	
	a. minimise parking on local roads	Section 5.2 Also refer to Traffic, Transport and Access Management Sub-Plan (TTAMP)
	b. minimise idling and queuing on state and regional roads	Section 5.2 Also refer to the TTAMP
	c. not carry out marshalling of construction vehicles near sensitive land user(s)	Section 5.2 Also refer to the TTAMP
	d. not block or disrupt access across pedestrian or shared user paths at any time	Section 5.2 Also refer to the TTAMP
	e. ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the Traffic, Transport and Access Management CEMP Sub-plan	N/A – no spoil haulage will be required during the CUT works.
E140	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:	

CoA No.	Condition requirements	Where addressed in CPAS
	a. achieving the requirements of Condition E139	Table 1-3
	b. confirmation and timing of the removal of on- and off-street parking associated with construction of the CSSI	Section 4
	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 pick up, weekend periods and during special events	Section 3.1
	d. consultation with affected stakeholders utilising existing on- and off-street parking stock which will be impacted as a result of construction	Section 2
	e. assessment of the impacts of changes 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	Section 4
	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	Section 5
	g. where residential parking schemes already exist, off-road parking facilities must be provided for the CSSI workforce	Section 4.1
	h. mechanisms for monitoring, over appropriate intervals, to determine the effectiveness of implemented mitigation measures	Section 6.1
	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	Section 5
	j. provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective	Section 6.4

CoA No.	Condition requirements	Where addressed in CPAS
	k. provision of reporting of monitoring results to the Planning Secretary and relevant council(s) at three monthly intervals	Section 6.3
	The **Construction Parking and Access Strategy** must be submitted to the Planning Secretary for approval at least one month before the commencement of any works that impact existing parking. The approved Strategy must be implemented before impacting on on-street parking.	Section 1.3

A rapid assessment of parking spaces that will be removed during the critical utilities work is shown in Table 1-4.

Table 1-4 Rapid assessment of parking spaces to be removed

Assessment criteria	Alfred Street North	Cammeray Avenue (south of ANZAC Avenue Reserve)	Ridge Street	Rosalind Street	Bells Avenue / Warringa Road	Cammeray Avenue (adjacent to ANZAC Avenue Reserve)
Has the Roads Act 1993 been enacted or does TfNSW already own / control the land?	Yes	Yes	Yes	Yes	Yes	Yes
Is the parking located within the approved CSSI footprint?	Yes	Yes	Yes	Yes	No	No
Has sufficient off-streetcar parking been provided for the construction workforce?	Yes	Yes	Yes	Yes	Yes	Yes
How many parking spaces are proposed to be removed?	73 spaces	26 spaces	6 spaces	3 spaces	3 spaces	8 spaces
Are there sufficient remaining car parking spaces to meet parking	Yes	No	Yes	Yes	Yes	No

Assessment criteria	Alfred Street North	Cammeray Avenue (south of ANZAC Avenue Reserve)	Ridge Street	Rosalind Street	Bells Avenue / Warringa Road	Cammeray Avenue (adjacent to ANZAC Avenue Reserve)
demand post-removal?						
Where addressed in CPAS	Sections 3.4 and 4.3.1	Sections 3.5 and 4.3.2	Sections 3.6 and 4.3.3	Sections 3.7 and 4.3.4	Sections 3.2, 4.2.1 and 5.3	Sections 3.3, 4.2.2 and 5.4

2 Consultation, endorsement and approval

This CPAS will be accepted by the Contractor Project Manager, Contractor Environmental Manager and Transport for NSW (TfNSW) prior to lodgement to DPIE for approval. The CPAS will be prepared with consideration of consultation undertaken with North Sydney Council and stakeholders who will be affected by impacts to on and off-street parking.

Consultation was undertaken with affected stakeholders associated with on-street car parking removal proposed on Bells Avenue and Cammeray Avenue, in accordance with CoA E140(d),(e) and (f). The intent of this consultation was to inform affected stakeholders, to assess impacts to affected stakeholders and to develop specific mitigation measures to manage the impacts to affected stakeholder. This consultation included the following:

- Letter box drops
- Door knocks
- Emails
- Phone calls
- Online Survey.

No specific mitigation measures were identified following the outcomes of stakeholder consultation associated with the removal of on-street car parking along Bells Avenue and Cammeray Avenue. Therefore, no additional mitigation measures were developed beyond those presented in Section 5.3 of this CPAS.

In accordance with CoA A5 a Consultation Summary report has been prepared to document the consultation undertaken in the development as required by CoA E140(d),(e) and (f). This Consultation Summary will be lodged to DPIE along with this CPAS.

Ongoing consultation with stakeholders, including the surrounding community, will be conducted throughout works in accordance with the Community Communication Strategy (CCS).

3 Existing conditions

3.1 Parking surveys

3.1.1 Parking survey times and locations

In accordance with CoA E140(c), parking surveys have been undertaken at all locations where on-street parking spaces are proposed to be removed to determine existing parking demand during peak, off-peak, school drop-off and pick up, weekend periods and during special events.

The parking surveys were undertaken on the following days and times:

- Weekdays[1]
  - 8.30 am (weekday morning peak / school drop-off)
  - 3 pm (school pick up)
  - 5 pm (weekday evening peak)
  - 10 pm (weekday evening off-peak)
- Weekends[2]
  - 12 pm (weekend day)
  - 11 pm (weekend evening)

These days do not coincide with public holidays or school holidays. The parking survey results can therefore be considered an accurate representation of a typical weekday and weekend.

The parking surveys were undertaken at the locations listed in Table 3-1.

Table 3-1 Parking survey locations

Location	Road segment
Bells Avenue / Warringa Road, Cammeray (refer to Figure 3-1)	Northern and southern sides, south of Amherst Street / Cammeray Road
Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray (refer to Figure 3-2)	Northern and southern sides, adjacent to ANZAC Avenue Reserve
Alfred Street North, Neutral Bay (refer to Figure 3-3)	Northbound carriageway, western side, between Kurraba Road and McIntosh Lane Northbound carriageway, eastern side, between Bent Street and Rose Avenue

[1] Weekday surveys were undertaken on Thursday 26 November 2020, Monday 14 December 2020, Tuesday 15 December 2020, Wednesday 16 December 2020 and Friday 18 December 2020

[2] Weekend surveys were undertaken on Saturday 28 November 2020 and Sunday 13 December 2020

Location	Road segment
Cammeray Avenue (south of ANZAC Avenue Reserve) (refer to Figure 3-4)	Western side, south of ANZAC Avenue Reserve
Ridge Street, North Sydney (refer to Figure 3-5)	Northern and southern sides, east of Miller Street
Rosalind Street, Cammeray (refer to Figure 3-6)	Northern and southern sides, between Miller Street and ANZAC Avenue

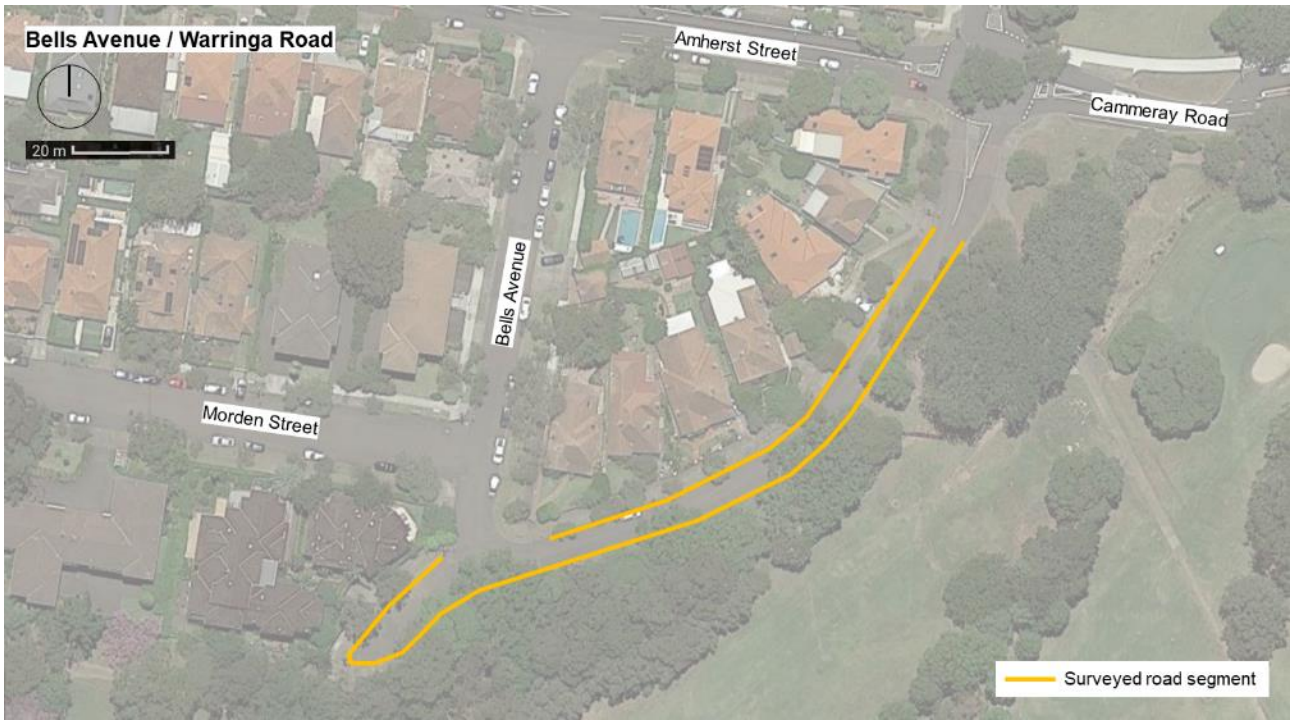


Figure 3-1 Parking survey locations – Bells Avenue / Warringa Road, Cammeray

Figure 3-2 Parking survey locations – Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray

Figure 3-3 Parking survey locations – Alfred Street North (northbound carriageway), Neutral Bay

Figure 3-4 Parking survey locations – Cammeray Avenue (south of ANZAC Avenue Reserve), Cammeray

Figure 3-5 Parking survey locations – Ridge Street, North Sydney

Figure 3-6 Parking survey locations – Rosalind Street, Cammeray

3.1.2 Parking survey methodology

All nominated locations subject to the parking survey were initially inspected to note existing capacity and existing parking restrictions (e.g., untimed, timed parking, loading zones). Where on-street parking spaces are not marked, the maximum number of parking spaces was determined in accordance with Australian Standard 2890.5-1993 Parking facilities Part 5: On-street parking.

On each day and time listed above, all nominated locations were surveyed by vehicle and the number of occupied spaces was documented.

3.1.3 Calculation of parking occupancy

Parking occupancy is defined as the ratio of the number of occupied spaces to the total number of available spaces:

$$Parking\ occupancy\ (\%) = \frac{Number\ of\ occupied\ spaces}{Total\ number\ of\ available\ spaces}$$

3.2 Bells Avenue / Warringa Road, Cammeray

3.2.1 Parking supply

There is a total of 41 parking spaces on Bells Avenue / Warringa Road. These spaces are allocated as follows:

- Northern side, south of Amherst Street / Cammeray Road – 17 spaces – 8P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)
- Southern side, south of Amherst Street / Cammeray Road – 24 spaces – 8P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)

The allocation of parking spaces is shown spatially in Figure *3-7*.

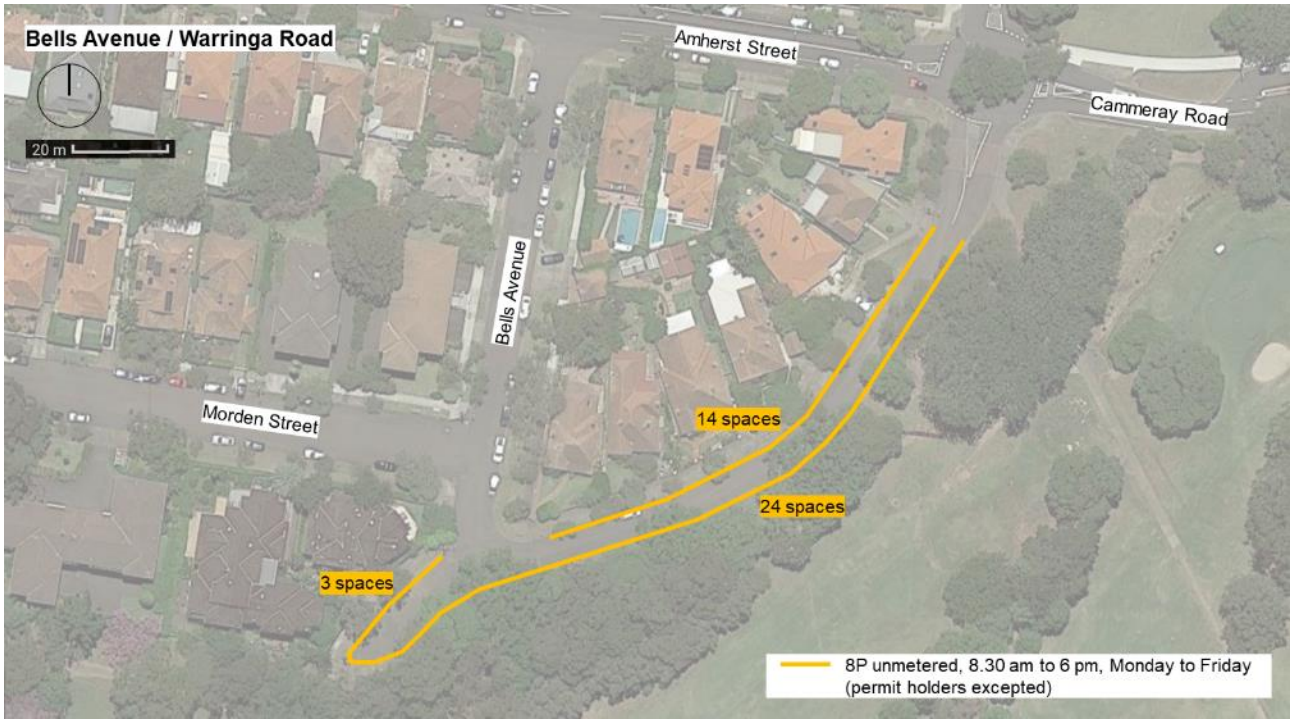


Figure 3-7 Existing parking supply – Bells Avenue / Warringa Road, Cammeray

3.2.2 Parking occupancy

Existing parking occupancies on Bells Avenue / Warringa Road during the various surveyed days and times is detailed in Table 3-2. The results show very low occupancies in all surveyed periods. Existing parking is likely associated with long-term resident / visitor parking servicing adjoining houses.

Table 3-2 Existing parking occupancy – Bells Avenue / Warringa Road, Cammeray

Day	Time period	Occupied spaces	Unoccupied spaces	Total available spaces	Parking occupancy
Average weekday	8.30 am (weekday morning peak / school drop-off)	4	37	41	10%
	3 pm (school pick up)	4	37	41	10%
	5 pm (weekday evening peak)	4	37	41	10%
	10 pm (weekday evening off-peak)	5	36	41	12%
Average weekend	12 pm (weekend day)	5	36	41	12%
	11 pm (weekend evening)	5	36	41	12%

3.3 Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray

3.3.1 Parking supply

There is a total of 22 parking spaces on Cammeray Avenue (adjacent to ANZAC Avenue Reserve). These spaces are allocated as follows:

- Northern side – 17 spaces – 2P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)
- Southern side – five spaces – 2P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)

The allocation of parking spaces is shown spatially in Figure 3-8.

Figure 3-8 Existing parking supply – Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray

3.3.2 Parking occupancy

Existing parking occupancies on Cammeray Avenue (adjacent to ANZAC Avenue Reserve) during the various surveyed days and times is detailed in Table 3-3. The results show the following:

- Overall occupancies vary throughout the surveyed periods
- The highest occupancies of 73 and 91 per cent were recorded in the weekday morning peak / school drop-off and school pick up periods. This is likely associated with parents / guardians dropping off and picking up students at ANZAC Park Public School
- ANZAC Avenue has about 50 on-street parking spaces. Spare capacity was observed in all surveyed periods with the exception of the weekday morning peak / school drop-off and school pick up periods

- The following surrounding streets were observed to have little to no spare parking capacity in all surveyed periods:
    - Lytton Street
    - Lillis Street
    - Moodie Street.

Table 3-3 Existing parking occupancy – Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray

Day	Time period	Occupied spaces	Unoccupied spaces	Total available spaces	Parking occupancy
Average weekday	8.30 am (weekday morning peak / school drop-off)	16	6	22	73%
	3 pm (school pick up)	20	2	22	91%
	5 pm (weekday evening peak)	3	19	22	14%
	10 pm (weekday evening off-peak)	4	18	22	18%
Average weekend	12 pm (weekend day)	6	16	22	27%
	11 pm (weekend evening)	7	15	22	32%

3.4 Alfred Street North, Neutral Bay

3.4.1 Parking supply

There is a total of 156 parking spaces on the northbound carriageway of Alfred Street North. These spaces are allocated as follows:

- Northbound carriageway, western side, between Kurraba Road and McIntosh Lane
    - South of Bent Street – 53 spaces – 9P metered, 9 am to 6 pm, Monday to Friday (permit holders excepted)
    - Between Bent Street and Ridge Street pedestrian bridge – 24 spaces – 9P metered, 9 am to 6 pm, Monday to Friday (permit holders excepted)
    - Between Ridge Street pedestrian bridge and McIntosh Lane – 40 spaces – 9P metered, 9 am to 6 pm, Monday to Friday (permit holders excepted)
- Northbound carriageway, eastern side, between Bent Street and Rose Avenue
    - Between Bent Street and Ridge Street pedestrian bridge
        - 16 spaces – 2P metered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)
        - 10 spaces – 9P metered, 9 am to 6 pm, Monday to Friday (permit holders excepted)
    - Adjacent to 433 Alfred Street North
        - Two spaces – loading zone at all times

- Three spaces – 1/2P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)

◦ Between Winter Avenue and Rose Avenue – eight spaces – 2P metered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted).

The allocation of parking spaces is shown spatially in Figure 3-9.

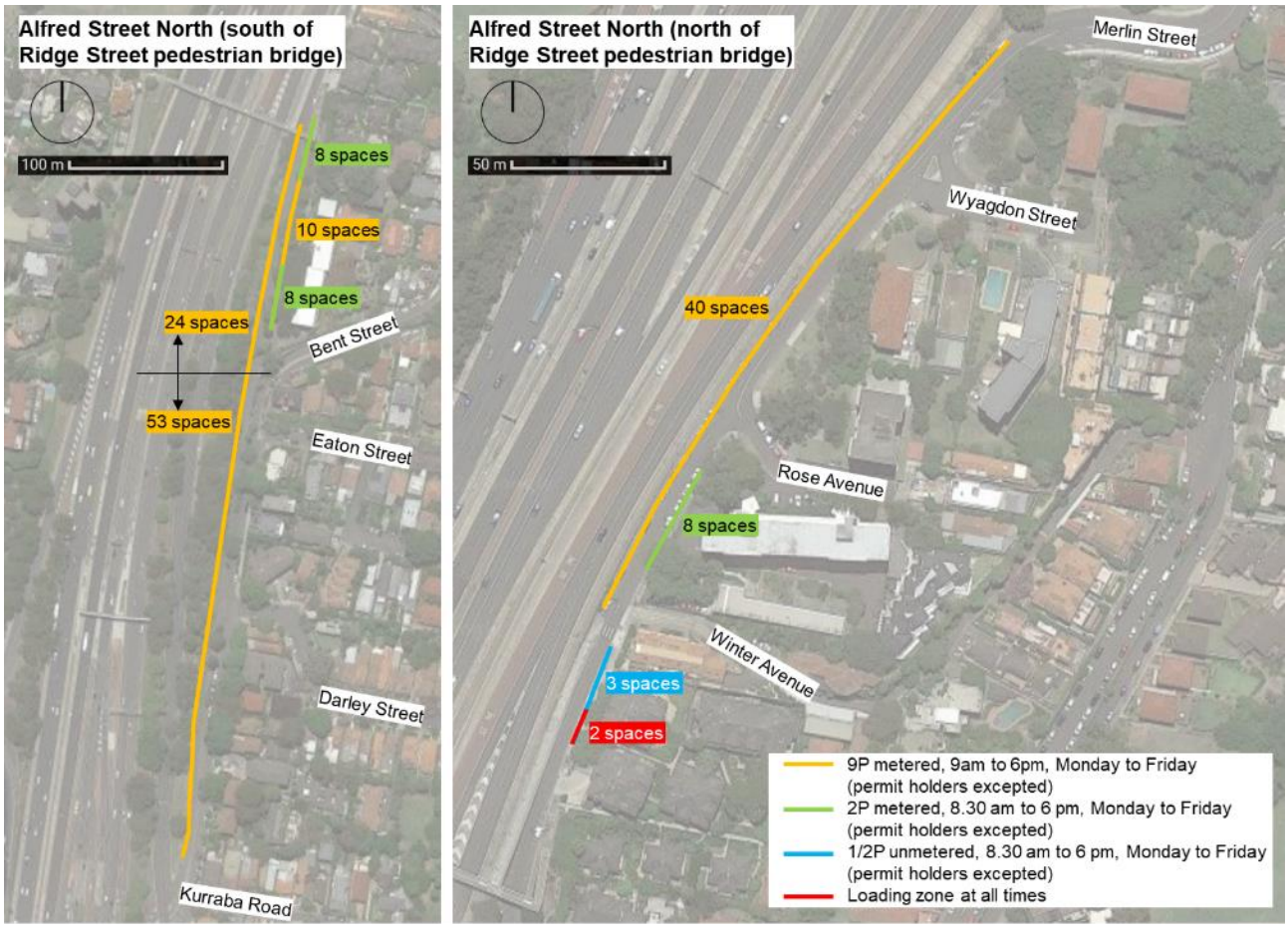


Figure 3-9 Existing parking supply – Alfred Street North (northbound carriageway), Neutral Bay

3.4.2 Parking occupancy

Existing parking occupancies on Alfred Street North (northbound carriageway) during the various surveyed days and times is detailed in Table 3-4. The results show the following:

- Overall occupancies are relatively low at below 50 per cent in all surveyed periods. However, parking was observed to be concentrated in the following locations:
  - Near Kurraba Road during weekday business hours – likely associated with long-term (i.e. greater than two hours) parking for workers in the North Sydney CBD
  - Near Bent Street and between just south of the Ridge Street pedestrian bridge and McIntosh Lane in all surveyed periods – likely associated with long-term resident / visitor parking servicing adjoining unit blocks and townhouses
- There is some spare capacity on Alfred Street North (northbound carriageway) between just south of the Ridge Street pedestrian bridge and McIntosh Lane in the weekday morning peak / school drop-off, school pick up, weekday evening peak and weekend day periods
- There is little to no spare parking capacity on Alfred Street North (northbound carriageway) between just south of the Ridge Street pedestrian bridge and McIntosh Lane in the weekday evening off-peak and weekend evening periods

- The following surrounding streets were observed to also have little to no spare parking capacity in all surveyed periods:
  - Alfred Street North (southbound carriageway)
  - Darley Street
  - Eaton Street
  - Bent Street
  - Rose Avenue
  - Wyagdon Street
  - Merlin Street.

Table 3-4 Existing parking occupancy – Alfred Street North (northbound carriageway), Neutral Bay

Day	Time period	Occupied spaces	Unoccupied spaces	Total available spaces	Parking occupancy
Average weekday	8.30 am (weekday morning peak / school drop-off)	52	104	156	33%
	3 pm (school pick up)	47	109	156	30%
	5 pm (weekday evening peak)	50	106	156	32%
	10 pm (weekday evening off-peak)	65	91	156	42%
Average weekend	12 pm (weekend day)	52	104	156	33%
	11 pm (weekend evening)	71	85	156	46%

3.5 Cammeray Avenue (south of ANZAC Avenue Reserve), Cammeray

3.5.1 Parking supply

There is a total of 26 parking spaces on Cammeray Avenue (south of ANZAC Avenue Reserve). These spaces are allocated as follows:

- Western side, adjacent to residential properties – Eight spaces – 2P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)
- Western side, south of residential properties – five spaces – 2P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)

The allocation of parking spaces is shown spatially in Figure 3-8.

Figure 3-10 Existing parking supply – Cammeray Avenue (south of ANZAC Avenue Reserve), Cammeray

3.5.2 Parking occupancy

Existing parking occupancies on Cammeray Avenue (adjacent to ANZAC Avenue Reserve) during the various surveyed days and times is detailed in Table 3-5. The results show the following:

- Overall occupancies vary throughout the surveyed periods
- The highest occupancies of 73 and 77 per cent were recorded in the weekday morning peak / school drop-off and school pick up periods. This is likely associated with parents / guardians dropping off and picking up students at ANZAC Park Public School
- ANZAC Avenue has about 50 on-street parking spaces. Spare capacity was observed in all surveyed periods with the exception of the weekday morning peak / school drop-off and school pick up periods
- The following surrounding streets were observed to have little to no spare parking capacity in all surveyed periods:
    - Lytton Street
    - Lillis Street
    - Moodie Street.

Table 3-5 Existing parking occupancy – Cammeray Avenue (south of ANZAC Avenue Reserve), Cammeray

Day	Time period	Occupied spaces	Unoccupied spaces	Total available spaces	Parking occupancy
Average weekday	8.30 am (weekday morning peak / school drop-off)	19	7	26	73%
	3 pm (school pick up)	20	6	26	77%
	5 pm (weekday evening peak)	15	11	26	58%
	10 pm (weekday evening off-peak)	17	9	26	65%
Average weekend	12 pm (weekend day)	8	18	26	31%
	11 pm (weekend evening)	13	13	26	50%

3.6 Ridge Street, North Sydney

3.6.1 Parking supply

There is a total of 90 parking spaces on Ridge Street. These spaces are allocated as follows:

- Northern side, east of Miller Street
  - Between Miller Street and Walker Street – 23 spaces – 8P metered (permit holders excepted)
    - 8.30 am to 6 pm, Monday to Thursday
    - 8.30 am to 11 pm, Friday
    - 10 am to 6 pm, Saturday and Sunday
  - East of Walker Street – 42 spaces – 8P metered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)
- Southern side, east of Miller Street
  - Between Miller Street and Walker Street
    - 11 spaces – 2P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)
    - One space – 2P unmetered, 8.30 am to 3.30 pm, Monday to Friday; no parking, 7.30 am to 8.30 am and 3.30 pm to 6 pm on school days; untimed parking at all other times
    - Two spaces – no parking, 7.30 am to 6 pm, Monday to Friday; untimed parking at all other times
  - East of Walker Street – 11 spaces – 2P metered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted).

The allocation of parking spaces is shown spatially in Figure 3-11.

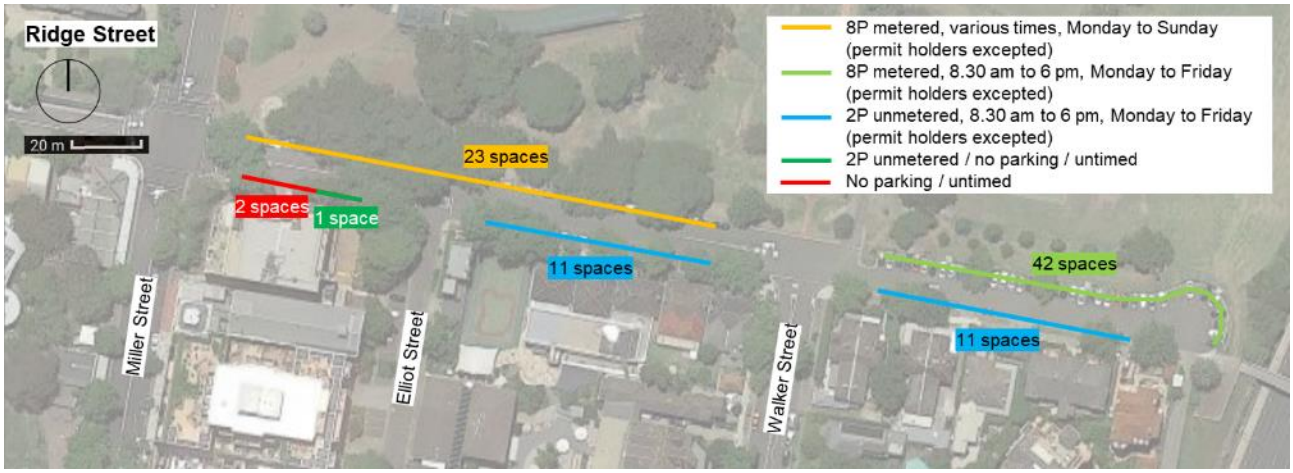


Figure 3-11 Existing parking supply – Ridge Street, North Sydney

3.6.2 Parking occupancy

Existing parking occupancies on Ridge Street during the various surveyed days and times is detailed in Table 3-6. The results show the following:

- Overall occupancies vary throughout the surveyed periods
- The highest occupancy of 90 per cent was recorded in the school pick up period
- At all times, parking was observed to be concentrated east of Walker Street. This is likely associated with long-term resident / visitor parking servicing adjoining unit blocks, townhouses and houses, and also short-term (i.e. less than two hours) parking associated with the North Sydney Bowling Club
- Some spare capacity was observed during a special event held at North Sydney Oval.

Table 3-6 Existing parking occupancy – Ridge Street, North Sydney

Day	Time period	Occupied spaces	Unoccupied spaces	Total available spaces	Parking occupancy
Average weekday	8.30 am (weekday morning peak / school drop-off)	49	39	88	56%
	3 pm (school pick up)	79	9	88	90%
	5 pm (weekday evening peak)	69	18	87	79%
	10 pm (weekday evening off-peak)	31	59	90	34%
Average weekend	12 pm (weekend day)	44	46	90	49%
	8 pm (special event)[3]	71	19	90	79%

[3] The parking survey on Saturday 28 November 2020 at 8 pm coincided with the Women's Big Bash League final between Sydney Thunder and Melbourne Stars that was held at North Sydney Oval.

Day	Time period	Occupied spaces	Unoccupied spaces	Total available spaces	Parking occupancy
	11 pm (weekend evening)	28	62	90	31%

3.7 Rosalind Street, Cammeray

3.7.1 Parking supply

There is a total of 22 parking spaces on Rosalind Street. These spaces are allocated as follows:

- Northern side, between Miller Street and ANZAC Avenue
  - Seven spaces – 2P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)
  - One space – untimed
- Northern side, between Miller Street and ANZAC Avenue – 14 spaces – 2P unmetered, 8.30 am to 6 pm, Monday to Friday (permit holders excepted)

The allocation of parking spaces is shown spatially in Figure 3-12.

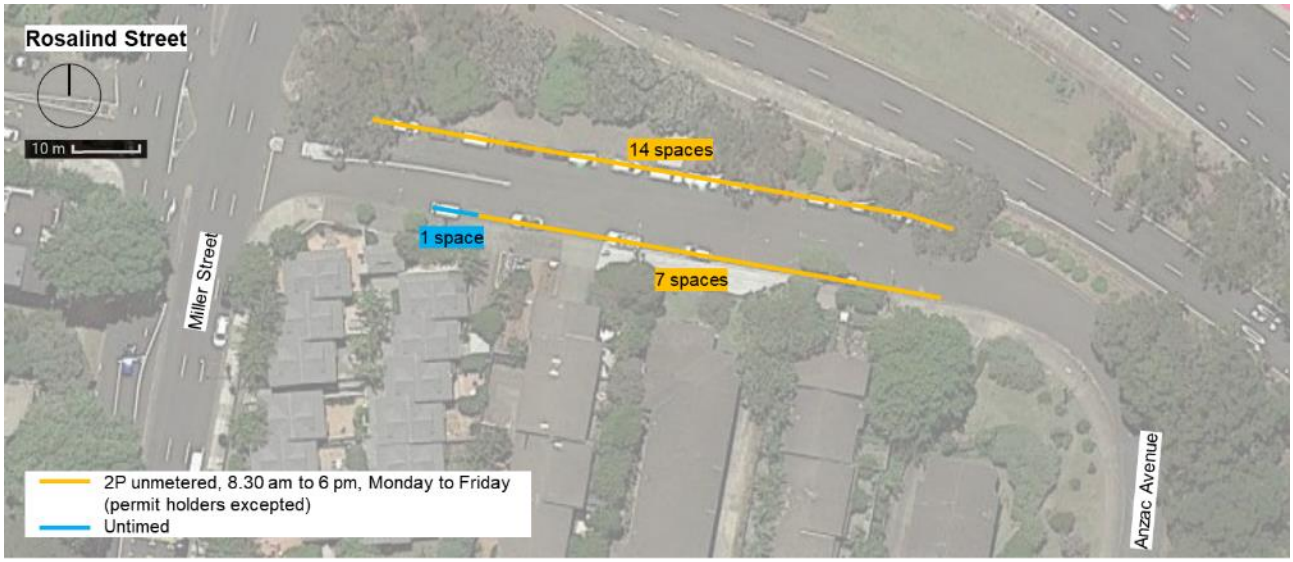


Figure 3-12 Existing parking supply – Rosalind Street, Cammeray

3.7.2 Parking occupancy

Existing parking occupancies on Rosalind Street during the various surveyed days and times is detailed in Table 3-7. The results show the following:

- Overall occupancies range between 68 per cent and 86 per cent
- The highest occupancy of 82 per cent was recorded in the school pick up, weekday evening off-peak and weekend evening periods. This is likely associated with school pick ups and long-term resident / visitor parking servicing adjoining unit blocks and townhouses.

Table 3-7 Existing parking occupancy – Rosalind Street, Cammeray

Day	Time period	Occupied spaces	Unoccupied spaces	Total available spaces	Parking occupancy
Average weekday	8.30 am (weekday morning peak / school drop-off)	15	7	22	68%
	3 pm (school pick up)	18	4	22	82%
	5 pm (weekday evening peak)	15	7	22	68%
	10 pm (weekday evening off-peak)	18	4	22	82%
Average weekend	12 pm (weekend day)	17	5	22	77%
	11 pm (weekend evening)	18	4	22	82%

3.8 Public transport accessibility

Compounds and work sites associated with the critical utility works have good public transport accessibility, with bus services located in close proximity. These are detailed in Table 3-8 and shown in Figure 3-13. These bus services provide connections to several railway stations for Sydney Trains services to destinations across Greater Sydney.

Table 3-8 Bus services at each compound and work site

Location	Nearest bus stops	Distance from compound / worksite	Bus services	Connections to Sydney Trains services
Alfred Street North work site	Stop ID 208923 – Rawson Street at Eaton Street Stop ID 208921 – Montpelier Street before Rawson Street	400 m to 500 m	Route 263 – Crow's Nest to City Bridge Street via Cremorne	North Sydney and Sydney CBD stations
	Stop ID 206048 – Miller Street at Ridge Street Stop ID 206018 – North Sydney Oval, Miller Street	400 m to 500 m	Routes 150X, 151, 154X, 168, 173, 188, 202-3, 207-9, 227-30, 245, 247 – services to Sydney CBD and various destinations across the North Shore and Northern Beaches	North Sydney, Milsons Point and Sydney CBD stations

Location	Nearest bus stops	Distance from compound / worksite	Bus services	Connections to Sydney Trains services
	Stop ID 208947 – Military Road opposite Watson Street Stop ID 208911 and 208912 – Military Road after Watson Street	400 m to 500 m	Routes 143-4, 150X, 151, 154X, 165-6X, 168-9, 169X, 170X, 173, 176-7X, 178, 178-9X, 180, 188, 227-30, 243-9, 257, 430 – services to Sydney CBD, Sydenham and various destinations across the North Shore and Northern Beaches	North Sydney, Milsons Point, Sydney CBD, St Leonards, Chatswood, Newtown, Sydenham
Ridge Street compound	Stop ID 206048 – Miller Street at Ridge Street Stop ID 206018 – North Sydney Oval, Miller Street	400 m to 500 m	Routes 150X, 151, 154X, 168, 173, 188, 202-3, 207-9, 227-30, 245, 247 – services to Sydney CBD and various destinations across the North Shore and Northern Beaches	North Sydney, Milsons Point and Sydney CBD stations
Cammeray Avenue work site	Stop ID 206216 – Miller Street before Ernest Street Stop ID 206215 – Miller Street before Ernest Street	400 m to 500 m	Routes 202-3, 207-9 – services to Sydney CBD and various destinations across the North Shore	North Sydney, Milsons Point and Sydney CBD stations
Rosalind Street compound	Stop ID 206217 – Miller Street at Rosalind Street Stop ID 206215 – Miller Street before Ernest Street	200 m	Routes 202-3, 207-9 – services to Sydney CBD and various destinations across the North Shore	North Sydney, Milsons Point and Sydney CBD stations

Location	Nearest bus stops	Distance from compound / worksite	Bus services	Connections to Sydney Trains services
Cammeray Golf Course work site	Stop ID 209024 – Earle Street opposite Grafton Street Stop ID 209025 – Grafton Street at Fall Street Stop ID 209012 – Earle Street opposite View Street Stop ID 209011 – Grafton Street opposite Fall Street	400 m	Route 201 – Cremorne to City Bridge Street Route 263 – Crow's Nest to City Bridge Street via Cremorne	North Sydney and Sydney CBD stations

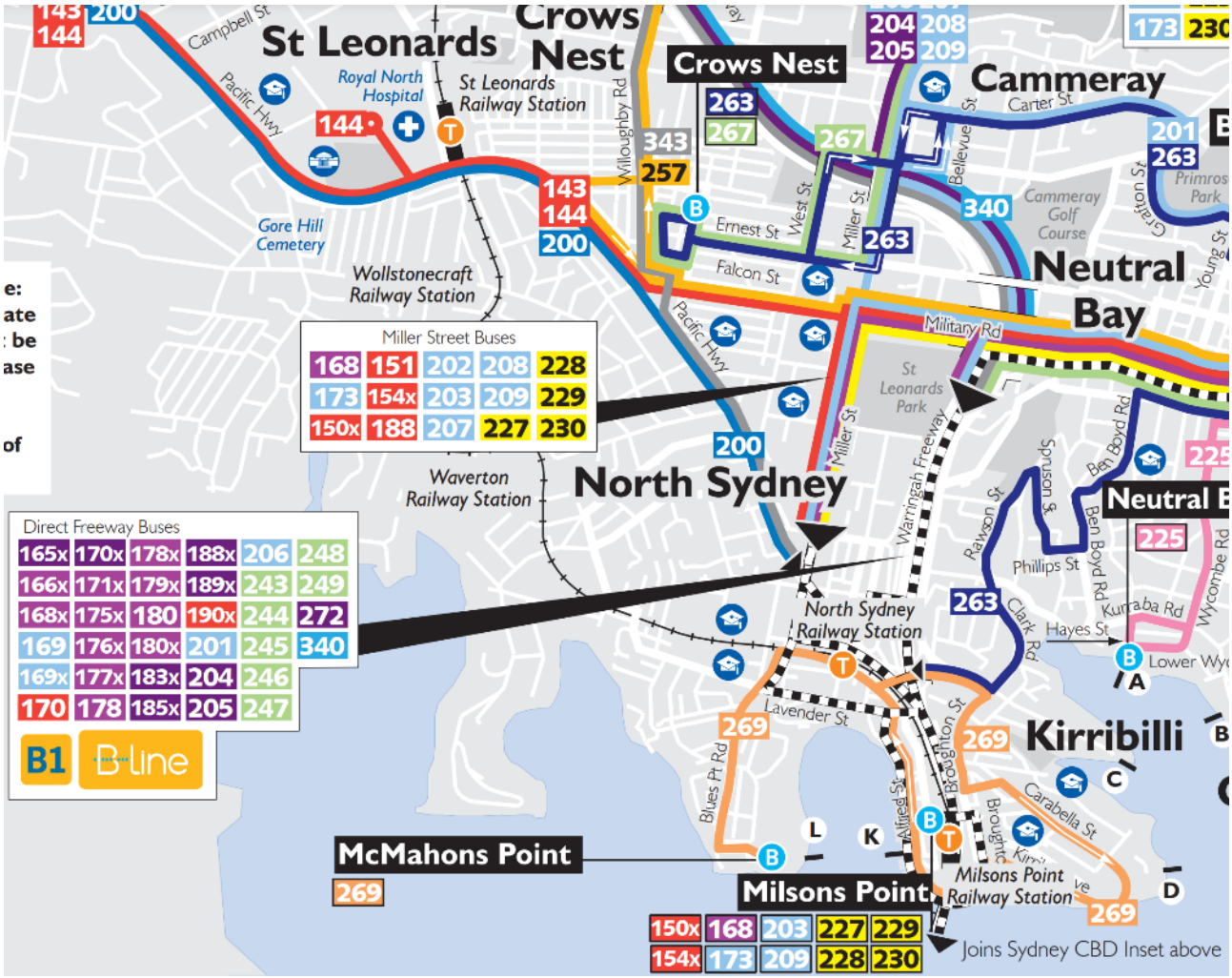


Figure 3-13 Bus network in Neutral Bay, North Sydney and Cammeray

4 Proposed parking and access changes and impacts

The temporary removal of on-street parking spaces during the critical utilities work in locations that are outside the approved CSSI footprint is addressed in Section 4.2. Car parking requiring removal inside the approved CSSI footprint has been considered in the EIS and has already been approved under the Infrastructure Approval (SSI-8863). Notwithstanding, car parking spaces that will be removed during the critical utilities work in locations that are within the approved CSSI footprint have been assessed and identified and are detailed in Section 4.3. Throughout construction there may be occasional times when short term on-street car parking removal (i.e. for the period of one shift) will be required under a Road Occupancy Licence (ROL). In these cases any short term on-street car parking removed will be reinstated at the end of each shift following expiration of the ROL. There may also be other occasional times when short term car parking removal (i.e. for the period of one shift) will be required due to progression of a utilities trench. In these cases any short term car parking removal will be reinstated at the end of each shift. Any such short term car parking removal will be managed in accordance with the TTAMP.

4.1 Construction workforce parking

The construction workforce will comprise of trades and construction personnel, and engineering, functional and administration staff. The size of the workforce will vary throughout the duration of the critical utility works program, with a reduction in personnel for evening and night shifts. The maximum size of the construction workforce is expected to be 90 people.

A total of 110 off-street parking spaces will be provided at the following locations:

- The Ridge Street compound will include about 60 off-street parking spaces. This will serve most of the construction workforce
- The Cammeray Golf Course work site will include about 50 off-street parking spaces. This will serve as construction workforce parking.

Assuming a worst-case scenario where 100 per cent of the construction workforce travels to work by car and there is no carpooling, there would be demand for 90 parking spaces. Given there will be a total of 110 off-street parking spaces, construction workforce parking is expected to have a minimal impact on on-street parking.

Where practical, essential vehicles (i.e., vehicles carrying tools, plant and other equipment to facilitate works) will be contained within the footprint of each work site with no impact on adjacent on-street parking.

4.2 Locations outside the approved CSSI footprint

4.2.1 Bells Avenue / Warringa Road, Cammeray

Impact of parking changes

The critical utility works on Bells Avenue will result in the long-term temporary removal of three on-street parking spaces at the western end of Bells Avenue between June 2021 and December 2021 (refer to Figure 4-1). The long-term temporary removal of these spaces is required to facilitate the following works:

- Sewer adjustments
- Hauling of communications cables
- Underbore installation.

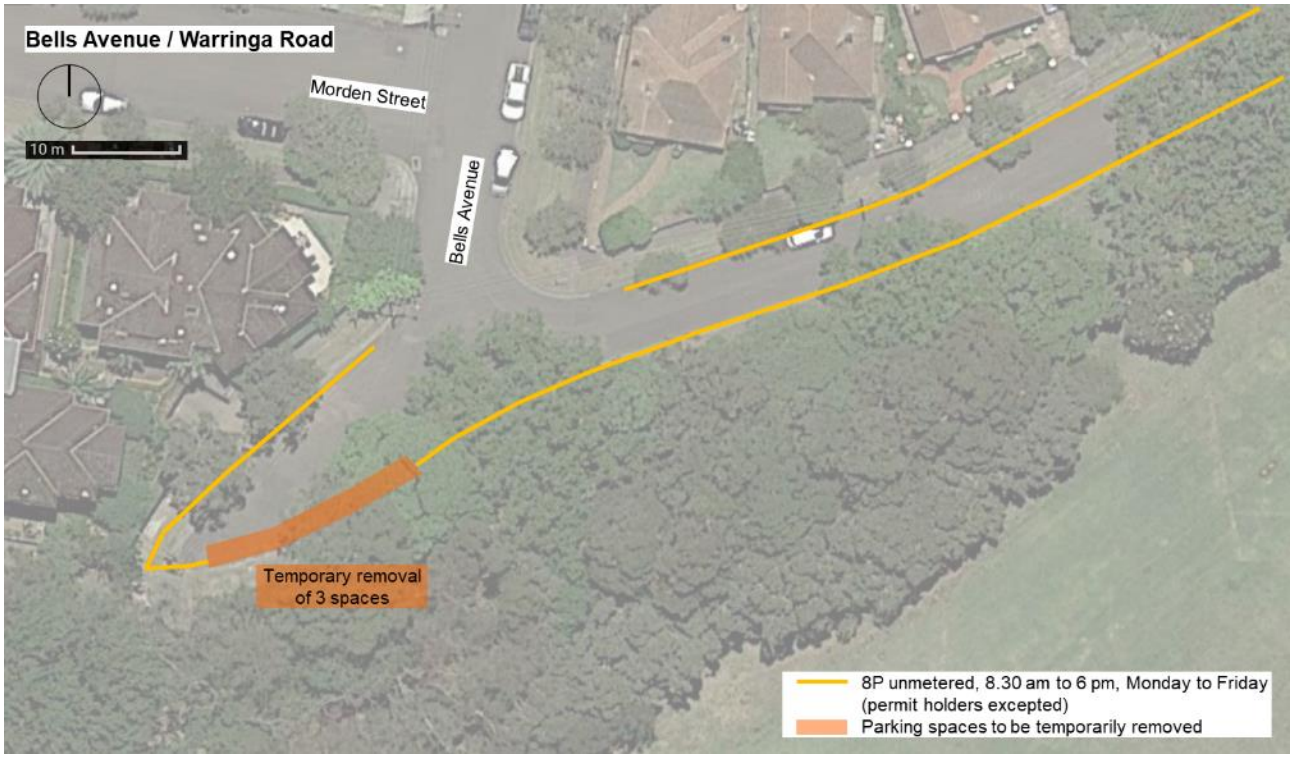


Figure 4-1 Long-term temporary removal of on-street parking – Bells Avenue / Warringa Road, Cammeray (indicative only – exact location subject to change)

The removal of these spaces will impact resident / visitor parking servicing adjoining houses. However, existing parking occupancy as detailed in Table 3-2 shows there is spare capacity to accommodate the displacement of parking with a minimum of 36 unoccupied spaces elsewhere on Bells Avenue / Warringa Road during the surveyed periods. Therefore, the impact is considered minor and mitigation measures are not required.

Comparison with impacts assessed in the EIS

The WHTWFU EIS did not assess the impact of parking changes on Bells Avenue / Warringa Road.

4.2.2 Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray

Impact of parking changes

The critical utility works on Cammeray Avenue (adjacent to ANZAC Avenue Reserve) will result in the long-term temporary removal of eight on-street parking spaces on the northern side of Cammeray Avenue between June 2021 and December 2021 (refer to Figure 4-2). The long-term temporary removal of these spaces is required to facilitate the following works:

- Relocation of existing in-ground Ausgrid assets
- Removal of existing disused in-ground Ausgrid assets
- Relocation of existing in-ground Sydney Water assets
- Relocation of existing in-ground communication provider assets
- Installation of new permanent ITS node and temporary connections.

Figure 4-2 Long-term temporary removal of on-street parking – Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray (indicative only – exact location subject to change)

The removal of these spaces will impact:

- Parents / guardians dropping off and picking up students at ANZAC Park Public School on school days
- Long-term resident / visitor parking servicing adjoining unit blocks, townhouses and houses at all times.

As described in Section 3.3.2, ANZAC Avenue was observed to have spare capacity in all surveyed periods with the exception of the weekday morning peak / school drop-off and school pick up periods. Outside of these periods, the spare parking capacity on ANZAC Avenue is likely to be able to accommodate the displacement of parking on Cammeray Avenue (adjacent to ANZAC Avenue Reserve) based on the parking occupancies detailed in Table 3-3. Therefore, the impacts are considered as follows:

- Major impact for parents / guardians dropping off and picking up students at ANZAC Park Public School during school drop-off and pick up periods – mitigation measures are required
- Minor impact for residents / visitors at all other times – mitigation measures are not required.

Comparison of impacts assessed in the EIS

The WHTWFU EIS did not assess the impact of parking changes on Cammeray Avenue (adjacent to ANZAC Avenue Reserve).

4.3 Locations within the approved CSSI footprint

4.3.1 Alfred Street North, Neutral Bay

Impact of parking changes

The critical utility works on Alfred Street North will result in the long-term temporary removal of on-street parking spaces on the northbound carriageway as follows (refer to Figure 4-3):

- South of the Ridge Street pedestrian bridge – 24 spaces
- North of the Ridge Street pedestrian bridge – 48 spaces.

The long-term temporary removal of these spaces is required to facilitate the following:

- Deviation of existing Sydney Water sewer mains
- Relocation of existing Ausgrid assets
- Relocation of various communication provider assets
- Complete closure of Alfred Street North between just south of the Ridge Street pedestrian bridge and Winter Avenue to facilitate these works.

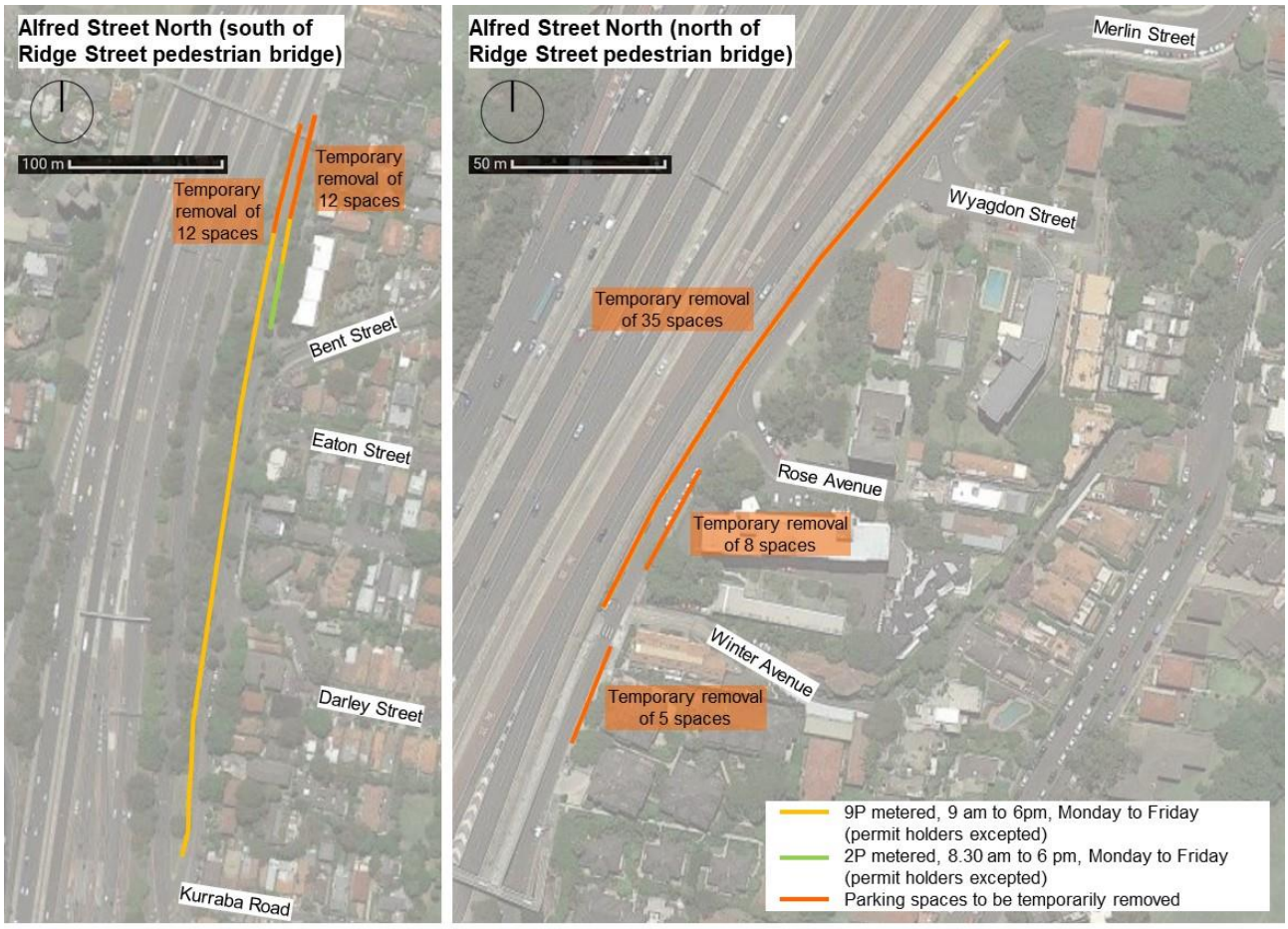


Figure 4-3 Long-term temporary removal of on-street parking – Alfred Street North, Neutral Bay (indicative only – exact location subject to change)

The removal of these spaces will impact long-term resident / visitor parking servicing adjoining unit blocks and townhouses near Bent Street and between just south of the Ridge Street pedestrian bridge and McIntosh Lane.

Taking into consideration the staging and duration of works, and existing parking occupancies as detailed in Table 3-4, the impacts are considered minor given there is a minimum of 85 unoccupied

spaces elsewhere on Alfred Street North in all surveyed periods. Therefore, mitigation measures are not required.

Comparison with impacts assessed in the EIS

Section 5.3.4 of Appendix F (Traffic and Transport) of the WHTWFU EIS states that construction works on Alfred Street North would result in the permanent removal of a total of 96 on-street parking spaces, distributed as follows:

- 49 parking spaces between Whaling Road and the Ridge Street pedestrian bridge
- 47 spaces between the Ridge Street pedestrian bridge and Wyagdon Street.

This compares to the proposed temporary removal of 72 on-street parking spaces on Alfred Street North as part of the critical utility works that are the subject of this CPAS, distributed as follows:

- South of the Ridge Street pedestrian bridge – 24 spaces
- North of the Ridge Street pedestrian bridge – 48 spaces.

4.3.2 Cammeray Avenue (south of ANZAC Avenue Reserve), Cammeray

Impact of parking changes

The critical utility works on Cammeray Avenue (south of ANZAC Avenue Reserve) will result in the long-term temporary removal of 26 on-street parking spaces on the western side of Cammeray Avenue between June 2021 and December 2021 (refer to Figure 4-4). The long-term temporary removal of these spaces is required to facilitate the following works:

- Relocation of existing in-ground Ausgrid assets
- Removal of existing disused in-ground Ausgrid assets
- Relocation of existing in-ground Sydney Water assets
- Relocation of existing in-ground communication provider assets
- Installation of new permanent ITS node and temporary connections.

Figure 4-4 Long-term temporary removal of on-street parking – Cammeray Avenue (south of ANZAC Avenue Reserve), Cammeray (indicative only – exact location subject to change)

The removal of these spaces will impact:

- Parents / guardians dropping off and picking up students at ANZAC Park Public School on school days
- Long-term resident / visitor parking servicing adjoining unit blocks, townhouses and houses at all times.

As described in Section 3.5.2, ANZAC Avenue was observed to have spare capacity in all surveyed periods with the exception of the weekday morning peak / school drop-off and school pick up periods. Outside of these periods, the spare parking capacity on ANZAC Avenue is likely to be able to accommodate the displacement of parking on Cammeray Avenue (adjacent to ANZAC Avenue Reserve) based on the parking occupancies detailed in Table 3-5. Therefore, the impacts are considered as follows:

- Major impact for parents / guardians dropping off and picking up students at ANZAC Park Public School during school drop-off and pick up periods – mitigation measures are required
- Minor impact for residents / visitors at all other times – mitigation measures are not required.

Comparison of impacts assessed in the EIS

The WHTWFU EIS did not assess the impact of parking changes on Cammeray Avenue (south of ANZAC Avenue Reserve).

4.3.3 Ridge Street, North Sydney

Impact of parking changes

Establishment and operation of the Ridge Street compound will result in the long-term temporary removal of six on-street parking spaces at the eastern end of Ridge Street between February 2021 and December 2021 (refer to Figure 4-5). The long-term temporary removal of these spaces is required to facilitate access to and from the compound.

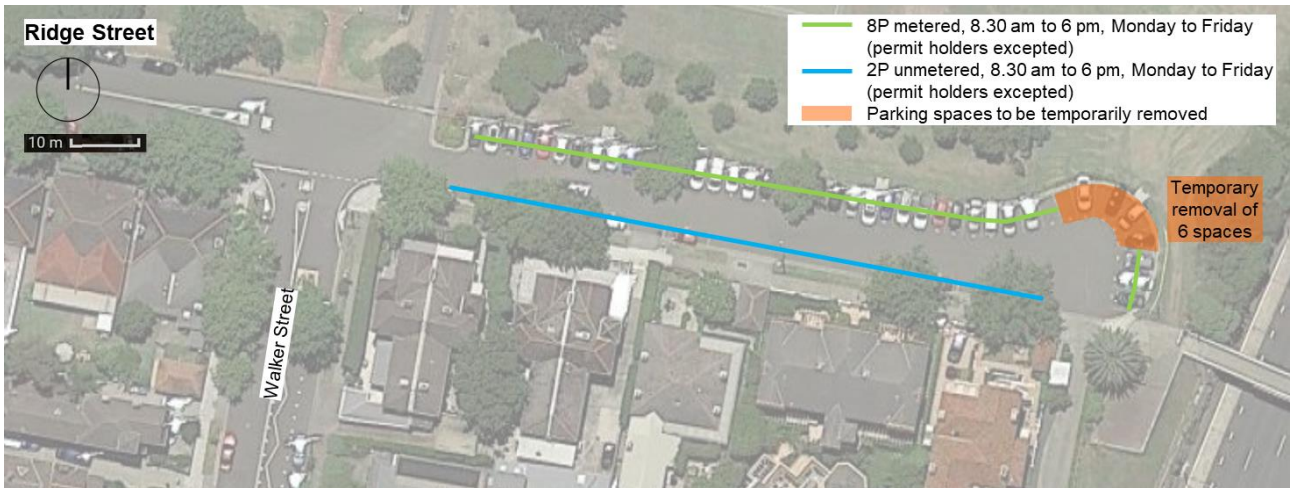


Figure 4-5 Long-term temporary removal of on-street parking – Ridge Street, North Sydney (indicative only – exact location subject to change)

The removal of these spaces will impact long-term resident / visitor parking servicing adjoining unit blocks, townhouses and houses, and also short-term parking associated with the North Sydney Bowling Club. However, existing parking occupancy as detailed in Table 3-6 shows there is spare capacity to accommodate the displacement of parking with a minimum of nine unoccupied spaces elsewhere on Ridge Street during the surveyed periods. Therefore, the impact is considered minor and mitigation measures are not required.

Comparison with impacts assessed in the EIS

Section 5.3.4 of Appendix F (Traffic and Transport) of the WHTWFU EIS states that operation of the Ridge Street compound would result in the removal 12 on-street parking spaces. This compares to the proposed temporary removal of six on-street parking spaces on Ridge Street as part of the critical utility works that are the subject of this CPAS.

4.3.4 Rosalind Street, Cammeray

Impact of parking changes

Establishment and operation of the Rosalind Street compound will result in the long-term temporary removal of three on-street parking spaces on the northern side of Rosalind Street between February 2021 and December 2021 (refer to Figure 4-6). The long-term temporary removal of these spaces is required to facilitate access to and from the compound.

Figure 4-6 Long-term temporary removal of on-street parking – Rosalind Street, Cammeray (indicative only – exact location subject to change)

The removal of these spaces will impact resident / visitor parking servicing adjoining unit blocks and townhouses. However, existing parking occupancy as detailed in Table 3-7 shows there is spare capacity to accommodate the displacement of parking with a minimum of four unoccupied spaces elsewhere on Rosalind Street during the surveyed periods. Therefore, the impact is considered minor and mitigation measures are not required.

Comparison with impacts assessed in the EIS

Section 5.3.4 of Appendix F (Traffic and Transport) of the WHTWFU EIS states that operation of the Rosalind Street compound would result in the removal 10 on-street parking spaces. This compares to the proposed temporary removal of three on-street parking spaces on Rosalind Street as part of the critical utility works that are the subject of this CPAS.

5 Mitigation measures

5.1 Potential mitigation measures

Potential measures that were considered to mitigate the identified impacts of the long-term temporary removal of on-street parking include the following:

- Consultation with affected stakeholders of parking proposed to be removed
- Staging the removal of on-street parking
- Consideration of alternative parking locations and / or arrangements
- Provision of a shuttle bus service for the construction workforce
- Introduction of parking restrictions near compounds and work sites where they currently do not exist, or alteration of existing parking restrictions
- Daily workforce parking to be contained within the footprint of individual work sites
- Provision of parking at ancillary facilities
- Ancillary facility design to considered impacts to pedestrian and shared user paths
- Encouraging use of public transport
- Encouraging carpooling
- Ongoing communication with workforce on measures to reduce impacts to parking and access
- Parking demand reduction (through the use of other transport modes).

5.2 Construction workforce parking

As described in Section 4.1, construction workforce parking is expected to have a minimal impact on on-street parking given the provision of off-street parking at the Ridge Street, Cammeray Golf Course and Rosalind Street compounds. In addition:

- Where practical, essential vehicles (i.e., vehicles carrying tools, plant and other equipment to facilitate works) will be contained within the footprint of each work site with no impact on adjacent on-street parking
- The provision of parking at ancillary facilities means there will be no requirement to idle and queue on state and regional roads
- The provision of parking at ancillary facilities, and the limited number of deliveries required at work sites, means there will be no requirement to marshal construction vehicles
- The ancillary facilities have been designed so that construction vehicles will not block access across pedestrian or shared user paths at any time.

However, the following measures will be in place for the construction workforce to reduce the potential for an unexpected impact to occur:

- Encouragement of the use of public transport – through the recruitment and onboarding process and site toolbox talks to reduce the number of private vehicles travelling to and from the compounds
- Encouragement of carpooling – site toolbox talks will be utilised to encourage the construction workforce on the same shifts to coordinate with others to carpool to / from similar locations
- Communication of parking restrictions to the construction workforce – parking restrictions around the compounds and work sites will be communicated to the construction workforce

through site inductions where they will be supplied with a Project Worker Code of Conduct, site toolbox talks, and pre-start meetings as required. Where workers are impacting the amenity of adjacent residents, are not complying with the Project Worker Code of Conduct, or are repeatedly parking inappropriately, they may be required re-attend the site inductions. Stronger sanctions, up to and including dismissal, may be implemented for repeat offenders at the discretion of the Project Manager.

5.3 Bells Avenue / Warringa Road, Cammeray

As described in Section 4.2.1, the impact of the long-term temporary removal of on-street parking on Bells Avenue / Warringa Road is considered minor. Potential measures that have been considered to mitigate the identified impacts of the long-term temporary removal of on-street parking on Bells Avenue / Warringa Road are detailed in Table 5-1. As detailed in Section 2 of this CPAS, no additional mitigation measures were identified following consultation with affected stakeholders associated with the removal of on-street car parking at this location.

Table 5-1 Consideration of potential mitigation measures – Bells Avenue / Warringa Road, Cammeray

Potential mitigation measure	Applicability to location	Justification
Consultation with affected stakeholders	Yes	Consultation has occurred with affected stakeholders prior to the removal of car parking.
Staging the removal of on-street parking	No	Staging the removal of on-street parking is not practical due to site constraints and the desire to minimise the duration of works given the broader impacts of works on residents.
Consideration of alternative parking locations and / or arrangements	No	Alternative parking locations have not been considered given there is a minimum of 36 unoccupied spaces elsewhere on Bells Avenue / Warringa Road in all surveyed periods to accommodate the displacement of parking.
Provision of a shuttle bus service for the construction workforce	No	A shuttle bus service would not be practical given: There are sufficient off-street parking spaces to cater for the expected maximum size of the construction workforce The scope of the critical utility works is tool and equipment-intensive rather than labour-intensive The varied nature of the works means construction workforce numbers are highly variable.

Potential mitigation measure	Applicability to location	Justification
Introduction of parking restrictions near compounds and work sites where they currently do not exist, or alteration of existing parking restrictions	No	Existing parking restrictions already provide priority to residents with permits.
Daily workforce parking to be contained within the footprint of individual work sites	No	The Bells Avenue work site is contained within the on-street car parking spaces.
Provision of parking at ancillary facilities	Yes	Workforce car parking has been provided at the nearby Cammeray Golf Course ancillary facility.
Ancillary facility design to considered impacts to pedestrian and shared user paths	No	Bells Avenue is a work site contained within on-street car parking spaces, not an ancillary facility.
Encouraging use of public transport	Yes	Workforce will be encouraged to use public transport throughout construction.
Encouraging carpooling	Yes	Workforce will be encouraged to carpool throughout construction. This will reduce the demand on workforce parking provided within ancillary facilities.
Ongoing communication with workforce on measures to reduce impacts to parking and access	Yes	Parking and access impacts will be communicated to the workforce throughout construction via inductions and toolbox talks.
Parking demand reduction (through the use of other transport modes)	No	Parking demand reduction measures have not been considered given there is a minimum of 36 unoccupied spaces elsewhere on Bells Avenue / Warringa Road in all surveyed periods to accommodate the displacement of parking.

5.4 Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray

As described in Section 4.2.2, the impact of the long-term temporary removal of on-street parking on Cammeray Avenue (adjacent to ANZAC Avenue Reserve) is considered as follows:

- Major impact for parents / guardians dropping off and picking up students at ANZAC Park Public School during school drop-off and pick up periods
- Minor impact for residents / visitors at all other times.

Potential measures that have been considered to mitigate the identified impacts of the long-term temporary removal of on-street parking on Cammeray Avenue (adjacent to ANZAC Avenue

Reserve) are detailed in Table 5-2. As detailed in Section 2 of this CPAS, no additional mitigation measures were identified following consultation with affected stakeholders associated with the removal of on-street car parking at this location.

Table 5-2 Consideration of potential mitigation measures – Cammeray Avenue (adjacent to ANZAC Avenue Reserve), Cammeray

Potential mitigation measure	Applicability to location	Justification
Consultation with affected stakeholders	Yes	Consultation has occurred with affected stakeholders prior to the removal of car parking.
Staging the removal of on-street parking	No	Staging the removal of on-street parking is not possible due to site constraints and the desire to minimise the duration of works given the broader impacts of works on residents.
Consideration of alternative parking locations and / or arrangements	No	Alternative parking locations have not been considered given there are no feasible locations near Cammeray Avenue.
Provision of a shuttle bus service for the construction workforce	No	The Rosalind Street compound, which has provision for off-street parking, is easily accessible by foot A shuttle bus service would not be practical given: • The scope of the critical utility works is tool and equipment-intensive rather than labour-intensive • The varied nature of the works means construction workforce numbers are highly variable.
Introduction of parking restrictions near compounds and work sites where they currently do not exist, or alteration of existing parking restrictions	No	Existing parking restrictions already provide priority to residents with permits.
Daily workforce parking to be contained within the footprint of individual work sites	No	The Cammeray Avenue work site is contained within the on-street car parking spaces.
Provision of parking at ancillary facilities	Yes	Workforce car parking has been provided at the nearby Rosalind Street ancillary facility.

Ancillary facility design to considered impacts to pedestrian and shared user paths	No	Cammeray Avenue is a work site contained within on-street car parking spaces, not an ancillary facility.
Encouraging use of public transport	Yes	Workforce will be encouraged to use public transport throughout construction.
Encouraging carpooling	Yes	Workforce will be encouraged to carpool throughout construction. This will reduce the demand on workforce parking provided within ancillary facilities.
Ongoing communication with workforce on measures to reduce impacts to parking and access	Yes	Parking and access impacts will be communicated to the workforce throughout construction via inductions and toolbox talks.
Parking demand reduction (through the use of other transport modes)	No	Parking demand reduction measures have not been considered given the disparate origins and destinations of residents and workers in the area.

6 Monitoring and reporting

6.1 Monitoring of mitigation measures

Monitoring to assess the effectiveness of this CPAS will be undertaken on roads that have been impacted by the long-term temporary removal of on-street parking, i.e., Alfred Street North, Neutral Bay; Ridge Street, North Sydney; Cammeray Avenue, Cammeray; Rosalind Street, Cammeray; and Bells Avenue / Warringa Road, Cammeray.

Inspections will be undertaken at fortnightly intervals and will involve the following:

- Confirmation that where alternative parking arrangements have been provided, these are being implemented
- Monitoring the impacts of the removal of on-street parking on surrounding roads
- Inspections for the presence of construction workforce parking on local roads.

Inspections will be undertaken by project engineers. The Project Manager will be responsible for implementing the mitigation measures contained in this CPAS with support from the Traffic Manager.

6.2 Corrective actions

Where monitoring or community complaints identify non-conformances with this CPAS, corrective actions will be undertaken through the project's non-conformance works procedure. Corrective actions will be documented as per the procedure. Where practicable, non-conformances and corresponding corrective actions will be communicated to the construction workforce and reinforced through various communications including but not limited to:

- Site toolbox talks
- Pre-start meetings
- Project alerts
- Investigation and implementation of alternative methods to reinforce this CPAS
- Investigation and implementation of other viable options for the construction workforce to use public transport
- Issue warning notices where the owner of an offending vehicle can be identified
- Documenting actions in weekly and monthly internal reports.

Refer to Section 3.8 of the Construction Environmental Management Plan (CEMP) for further detail on environmental non-conformances.

6.3 Reporting

A quarterly summary report will be provided to North Sydney Council, DPIE and TfNSW regarding the outcomes of the monitoring that has been undertaken in the preceding quarter. Details of non-conformances and corrective actions will be summarised.

6.4 Contingency measures

Contingency measures will depend on the issues / non-conformances identified during monitoring and the effectiveness of corrective actions that have been implemented as described in Sections 6.1 and 6.2, respectively.

Contingency measures will be investigated if it is determined that the corrective actions implemented are ineffective, and may include:

- Investigating the potential to provide additional off-street parking for the construction workforce
- Revising site induction and site toolbox talk content to better encourage the use of public transport and communicate designated and prohibited locations for construction workforce parking
- Amending carpooling communications to encourage an increase in participation rates
- Implementing disciplinary processes for repeated non-conformances.

6.5 Update and amendment of this CPAS

Any revisions to this CPAS will be in accordance with the process outlined in Section 3.12 of the CEMP and will be provided to TfNSW for review and comment and forwarded to the Secretary of DPIE for approval.

A copy of the updated CPAS and record of changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

Appendix A1 Parking survey data

	Monday 14 Dec				Tuesday 15 Dec				Wednesday 16 Dec				Thursday 26 Nov				Friday 18 Dec				Saturday 28 Nov			Sunday 13 Dec	
	8.30am	3pm	5pm	10pm	8.30am	3pm	5pm	10pm	8.30am	3pm	5pm	10pm	8.30am	3pm	5pm	10pm	8.30am	3pm	5pm	10pm	12pm	8pm (special event)	11pm	12pm	11pm
Alfred Street North	55	51	46	69	53	48	51	70	53	45	47	62	46	44	45	65	55	46	60	61	44	N/A	71	60	71
Ridge Street	51	80	78	21	51	80	69	29	49	81	69	37	51	77	79	35	44	78	48	31	48	71	29	39	27
Cammeray Avenue (south of ANZAC Avenue Reserve)	18	23	13	18	19	21	14	16	20	25	13	16	24	15	20	17	16	18	14	17	7		10	9	15
Cammeray Avenue (adjacent to ANZAC Avenue Reserve)	19	17	4	4	21	19	2	4	19	22	2	3	18	22	5	7	4	20	4	3	7		8	5	6
Rosalind Street	15	19	18	19	15	18	14	18	15	22	14	17	16	15	15	18	13	17	13	17	16	N/A	19	17	17
Bells Avenue / Warringa Road	3	5	3	6	4	3	6	6	5	3	3	3	5	4	5	5	5	4	5	3	3	N/A	4	6	6

	Average weekday			
	8.30am	3pm	5pm	10pm
Alfred Street North	52	47	50	65
Ridge Street	49	79	69	31
Cammeray Avenue (south of ANZAC Avenue Reserve)	19	20	15	17
Cammeray Avenue (adjacent to ANZAC Avenue Reserve)	16	20	3	4
Rosalind Street	15	18	15	18
Bells Avenue / Warringa Road	4	4	4	5

	Average weekend	
	12pm	11pm
Alfred Street North	52	71
Ridge Street	44	28
Cammeray Avenue (south of ANZAC Avenue Reserve)	8	13
Cammeray Avenue (adjacent to ANZAC Avenue Reserve)	6	7
Rosalind Street	17	18
Bells Avenue / Warringa Road	5	5

Appendix A2 Additional CoA and REMM compliance table

Additional CoA and REMM relevant to the development of the CUT CPAS are presented in Table A-6-5 below.

Table A-6-5 CoA and REMM relevant to the development of this CPAS

Source / Condition	Condition requirements	Where addressed in CPAS
CoA E141	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.	Section 5 Also refer to the TTAMP
CoA E149	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.	N/A – No bus stops will be required to be closed as part of the CUT works subject to this CPAS.
CoA E150	Prior to the commencement of operation, all bus stops temporarily closed must be reinstated in a manner that complies with relevant standards, provides equal or improved capacity, amenity and accessibility (including footpaths and road crossings) in consultation with relevant council(s).	N/A – No bus stops will be required to be closed as part of the CUT works subject to this CPAS.
REMM 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	Section 5 Also refer to the TTAMP

Source / Condition	Condition requirements	Where addressed in CPAS
	location, management measures may include workforce shuttle buses and the use of public transport.	
REMM 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.	N/A – No bus stops will be required to be closed as part of the CUT works subject to this CPAS.

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30 July 2021 Ref: 2011.4.4

Transport for NSW
Attention: Mark Russell

Dear Mark

Environmental Representative (ER) - Review amendments to Construction Traffic, Transport and Access Management Sub-Plan

SSI8863 - Western Harbour Tunnel and Warringah Freeway Upgrade (WHTWFU), Stage 1A Early and Enabling Works - Critical utility installation, relocation and protection works

I confirm that I have reviewed the amendments to the Construction Traffic, Transport and Access Management Sub-Plan, SPAWP12-JGA-PLN-MAN-A-0001, previously approved by the Planning Secretary. In my opinion the amendments to the document are necessary, minor in nature and consistent with the SSI8863 Conditions of Approval.

The amendments to the document relate to:

- Inclusion of the Construction Parking and Access Strategy (Rev 2) approved by Planning Secretary (DPIE letter to TfNSW dated 23 July 2021).

Pursuant to SSI8863 CoA A27 (i), I approve amendments to the Construction Traffic, Transport and Access Management Sub-Plan, SPAWP12-JGA-PLN-MAN-A-0001 Version 7, dated 28 July 2021 (TTAMP).

Yours sincerely,

Maurice Pignatelli
Environmental Representative – Warringah Freeway Upgrade
OptimE Pty Ltd