CoA E132 – Local Roads Plan

Warringah Freeway Upgrade
McDougall St – Upgrade of High St On Ramp Noise Wall

Project Number:	N1098
Revision date:	5/11/2024
Revision:	Rev E
Document Number:	WHTBLWFU-CPBDTI-NWW-TA-PLN-000075

Document Approval

Rev.	Date	Prepared by	Reviewed by	Approved by	Remarks
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Distribution and Authorisation

Document Control

The CPB Downer JV Project Director is responsible for ensuring that this plan is reviewed and approved. The Design Manager is responsible for updating this plan to reflect changes to the project, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the CPB Downer JV Project Director before being distributed/implemented.

Revision Details

Revision	Details
A	For TfNSW review
B	For TfNSW review
C	For DPHI review
D	For DPHI review
E	For DPHI review

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Compliance with CoA Requirements

This Local Roads Plan sets out the minimum client requirements as defined in Table 1, and shows where each requirement has been addressed within this Plan or the wider CPB Contractors Management System (CMS).

Table 1: Compliance with Conditions of Approval E132, E133, E135, E136

Requirement			Reference
E132	Construction Traffic Management	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 4.1, Figure 2, and Table 3
E133	Construction Traffic Management	All requests to the Planning Secretary under **Condition E132** must include the following:	
		(a) a swept path analysis;	Section 5.1
		(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 5.2, 5.3
		(c) provide details as to the date of completion of the road dilapidation surveys for the subject local roads;	Section 6.0
		(d) measures that will be implemented to avoid where practicable the use of roads past schools, aged care facilities and childcare facilities during their peak operation times; and	Section 4.4, 5.5
		(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.	Appendix A1
E135	Construction Traffic Management	The locations of all heavy vehicles used for spoil haulage must be monitored in real-time and the records of monitoring are made available electronically to the Planning Secretary and the EPA upon request for a period of no less than one year following the completion of construction. **Note:** *Refer to **Condition A47** in relation to vehicle identification.*	Section 7.0
E136	Road Dilapidation	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 6.0 and Section 3.0

Abbreviations and definitions

Below is a list of abbreviations and definitions used in this document in addition to the Scope of Works Technical Criteria Glossary of Terms, Warringah Freeway Upgrade, Schedule C1.

Table 2: Abbreviations and definitions

Key Term / Abbreviation	Definition
CPBDTI	CPB Contractors Downer EDI Works Joint Venture
CCTV:	Closed Circuit Television system
Contract:	The Deed, Scope of Works & Technical Criteria, and other contractual requirements form the agreement between Leighton Dragados Samsung Joint Venture (CPB DOWNER JV) to design and construct the Tunnel and Civil Works of the WFU Main Works (the Project).
CCS	Community Communication Strategy
CEMP	Construction Environmental Management Plan
CGC	Cammeray Golf Course
CoA	Condition of Approval
CSS	Construction Support Site
DPHI	Department of Planning, Housing and Infrastructure
Document:	Including Manuals, Standards, Plans, Procedures, Inspection & Test Plans, Forms, Instructions and other related management system documents and data in the form of any type of media (hard copy or electronic).
EIS	Western Harbour Tunnel and Warringah Freeway Upgrade Environmental Impact Statement (January 2020)
EP&A Act	*Environmental Planning and Assessment Act 1979*
EB	Eastbound
ESO	Emergency Service Organisation
FAS	Flashing Arrow Signs
FDD	Final Detail Design
GRN	Government Radio Network
Health, Safety & Environment (HSE) Representative:	Nominated site management representative, responsible for establishing, implementing, and maintaining the site HSE systems and reporting on the performance of these systems to site management for review and improvement. Referred to as Environmental Management Representative and Site Safety Representative (SSR) within the Contract.
Incident	A localised event, either accidental or deliberate, may result in injury or damage to property that requires a normal response from a support agency.
IoA	Instrument of Approval
IRC	Incident Response Crew
IRP	Incident Response Procedure
ITS	Intelligent Transport Systems
IV	Independent Verifier
LRP	Local Roads Plan
METS	Motorist Emergency Telephone System
NSC	North Sydney Council
NB	Northbound
NSWFB	New South Wales Fire Brigade

OHS	Occupational Health and Safety.
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)
RASS	Radar Activated Speed Sign
SCO	Sydney Coordination Office
SEARS	Secretary's Environmental Assessment Requirements
SSI	State Significant Infrastructure
SZA	Speed Zone Authorisation
SB	Southbound
SCATS	Sydney's Coordinated and Adaptive Traffic System
SPA	Sydney Project Alliance (early works contractor)
SOP	Standard Operating Procedure
TCP	Traffic Control Plan
TfNSW	Transport for New South Wales
TTLG	Traffic and Transport Liaison Group
TMC	Transport Management Centre
TMP	Traffic Management Plan
TGS	Traffic Guidance Scheme (formerly Traffic Control Plan)
TTAMP	Traffic, Transport and Access Management Sub-Plan (this document)
TIMP	Traffic Incident Management Plan
TMO	Traffic Control Room
VMS	Variable Message Sign
VMP	Vehicle Movement Plan
VMS	Variable Message Sign
WB	Westbound
WFU	Warringah Freeway Upgrade
WHTBL	Western Harbour Tunnel and Beaches Link

Part A

1. Structure of this Plan

This Construction Traffic Management - Local Roads Plan forms part of the Project Management System (PMS). It is part of a suite of plans that together outline how the Warringah Freeway Upgrade will be managed to ensure an integrated approach to meeting contract requirements.

In addition to the Construction Traffic Management - Local Roads Plan, other Project Plans that interface with this Construction Traffic Management - Local Roads Plan include:

- Noise Wall design FDD4 drawings -WHTBLWFU-CPBDTI-WFY-MS-DRG006011,051,701,702,704,705,706 &707 and permanent construction work.
- Incident Management Plan for Traffic
- Construction Parking and Access Strategy
- Traffic Management and Safety Plan

This plan has the following structure:

Part A: Introduction (Section 1-3)	This section clearly defines: ▪ Introduction ▪ Purpose, locations and scope of works ▪ Project requirements and obligations
Part B: Local Roads	This section outlines proposed local roads for approval: • Egress route • Justification • Volumes • Swept path analysis • Pedestrian, cyclist and traffic flow safety • Dilapidation surveys • Heavy vehicles haulage monitoring and recording
Part C: Appendices	A list of appendices providing additional detail that supports this plan including: ▪ Consultation ▪ Heavy Vehicle Egress Route ▪ Local Roads Swept Path Diagrams ▪ Hazard & Risk Assessment ▪ Driver's Code of Conduct

1.1 Project Overview

Warringah Freeway Upgrade is a critical component to the Western Harbour Tunnel and Beaches Link (WHTBL) Program. It will enable the connection of the new WHTBL motorways into the existing motorway network, ensuring the WHTBL Program delivers its connectivity and safety benefits for public transport, freight, and private vehicle customers, while improving the journey experience for existing Warringah Freeway users.

The program of works is designed to boost transport capacity around the Harbour CBD and improve connectivity to and from the Northern Beaches – two areas of importance to Greater Sydney's future as a liveable, productive and sustainable global city. Once complete, the upgraded corridor will optimise demand across Sydney Harbour Tunnel, Sydney Harbour Bridge and Western Harbour Tunnel, enabling each to perform its intended function.

The Warringah Freeway Upgrade consists of surface road upgrades, structural works and ancillary works of an approximate four-kilometer section of the freeway corridor. The upgrade is focused on the simplification of traffic flows and wayfinding, as well as enabling works for the new WHTBL.

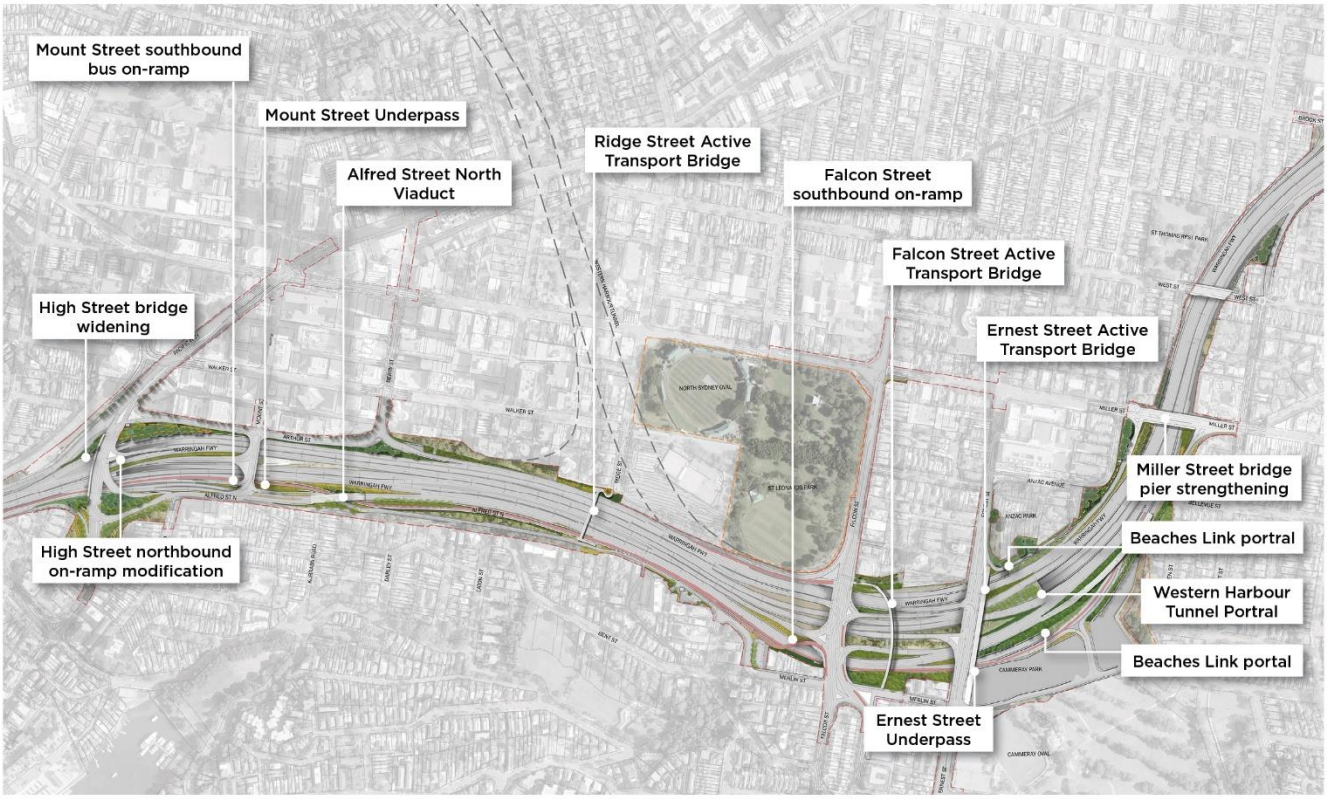


Figure 1: Warringah Freeway Upgrade Project Scope

1.2 Context and scope

This Local Roads Plan (LRP) will support the delivery program for the upgrade of the High St On-ramp Noise Wall adjacent Ennis Lane between High St and McDougall St that includes the use of the local roads:

- Clark Rd between High St and McDougall St, and
- McDougall St.

This Local Roads Plan has been prepared to address the Minister's Conditions of Approval (CoA) as shown in Table 1 with regards to construction worksite heavy and light vehicle local road access and egress on Clark Rd and McDougall St.

This Local Roads Plan (LRP) describes the workability of using the proposed local roads and how CPB Downer JV (CPBDTI) proposes to manage potential traffic impacts on Clark Rd and McDougall St during the upgrade of the High St On-ramp Noise Wall.

Later construction stages of the Project, including operational traffic and transport impacts and operation mitigation measures, may need to be revised within the scope of this LRP, and consequently are not included within the processes contained within this LRP.

1.3 Background

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

As part of the EIS development, a detailed construction traffic and transport assessment were prepared to address the Secretary's Environmental Assessment Requirements (SEARS) issued by the Department of Planning, Housing and Infrastructure (DPHI). The traffic and transport assessment were included in Chapter 8 Construction Traffic and Transport and Appendix F Traffic and Transport Technical Paper of the EIS. Access and egress to most construction work sites would be via state and regional roads with some exceptions that are unavoidable.

1.4 Project description

CPDB has started preparation work for the upgrade of the High St On-ramp Noise Wall. The construction work, subject to this Local Roads Plan is scheduled to commence in October 2024 and continue until late February 2025.

1.4.1 High St On-ramp Noise Wall construction work

The High St On-ramp noise wall construction work includes:

- Site establishment and implementation of the McDougall St work site on the cul-de-sac turning area that consist of compound perimeter security fencing, gawk screen and gate access and egress;
- Preparation work including the locating of existing insitu-wall reinforcement, fixing of multiple noise wall anchor brackets;
- Installing posts and fasteners on the existing High St On-ramp supporting concrete retaining wall;
- Installation of new acrylic transparent noise panels; and
- Handover and demobilisation.

1.4.2 Access and egress to the McDougall St work site

Access and egress to the McDougall St work site will be by means of the Pacific Hwy/High St a State Road, High St a Regional Road, Clark Rd a Local Road and McDougall St a Local Road. Figure 2 shows the road classifications.

- Access will be via High St eastbound, right-turn into Clark Rd southbound, travel southbound along Clark Rd, right-turn into McDougall St and travel westbound along McDougall St until the cul-de-sac; and
- Egress will be via McDougall St travelling east; left-turn onto Clark Rd; then travel northbound along Clark Rd, and veer - left via the left-turn slip-lane onto High St westbound.

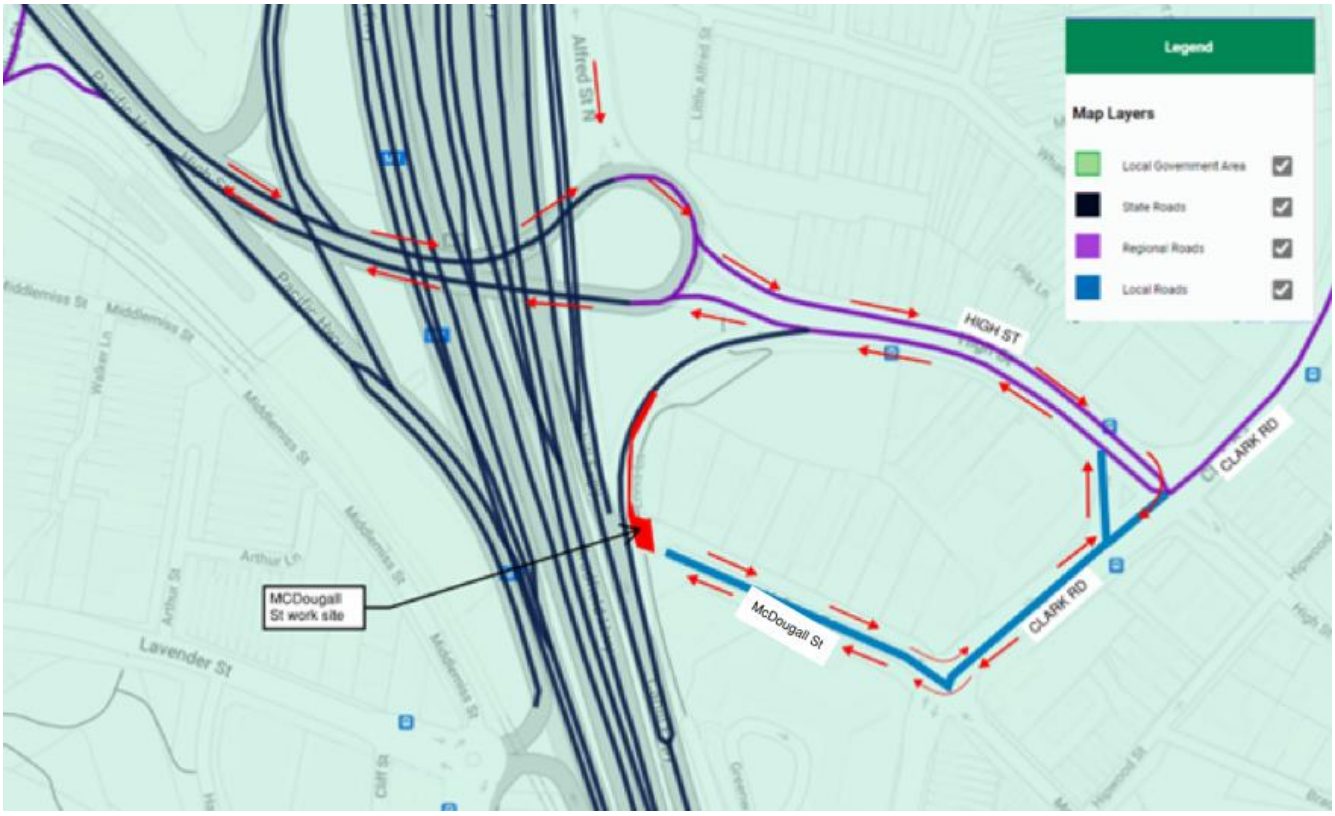


Figure 2 Road Classifications

Approval is sought to use the local roads for up to 6 months by heavy vehicles as detailed below in this Plan.

1.5 Purpose of this local roads approval

This document has been prepared to describe the workability of using the proposed local roads and how CPBDTI will comply with the requirements of CoA E132 and E133. This Document will be lodged to DPHI for approval prior to heavy vehicle (HV) use of the local roads that are the subject of this Plan.

In accordance with CoA E133, this Document will:

- Include swept path analyses for local roads that require DPHI approval;

- Demonstrate that DPHI approval of local roads nominated in this Document will not compromise the safety of pedestrians and cyclists or the safety of two-way traffic flow on two-way roadways;
- Provide details related to the date of the road dilapidation survey that has been conducted for local roads that require DPHI approval;
- Detail measures that will be implemented to avoid the use of nominated local roads past schools, aged care facilities and childcare facilities during peak operation times;
- Include advice from an appropriately qualified traffic engineer regarding the suitability of nominated local roads that require DPHI approval;

In this document, references to CoA A47 and E135 have been excluded as the roads nominated in this document will not be utilised for the purpose of spoiling materials that are generated by the Project.

1.6 Objectives

The key objective of this Local Roads Plan is to describe the approach to managing traffic impacts of construction heavy and light vehicle usage on the local roads. The key objectives of this Local Roads Plan are to describe and consider the needs of all road users, pedestrians and cyclists and to ensure the safety of both workers and the general public.

To achieve these objectives, CPBDTI will implement appropriate:

- Controls and procedures during construction activities to address potential traffic impacts along the Project corridor; and
- Measures to address the relevant CoA are outlined in Table 1, and the safeguards as detailed in the EIS.

2. Environmental requirements

2.1 Minister's Conditions of Approval

This Local Roads Plan has been prepared to meet the requirements of CoA E132 and E133, and where they are addressed in this Document are shown in Table 1 - Compliance with SWTC Requirements and cross-referenced against where the CoA is addressed in this Local Roads Plan.

In accordance with CoA E132 and E133, this Local Roads Plan (LRP) will be submitted to the Planning Secretary for approval before traveling on the subject local roads. Heavy vehicle use of these roads will not commence until this LRP has been approved by the Planning Secretary.

3. Co-ordination

CPBDTI will notify North Sydney Council (NSC) by e-mail and through the NSC / CPBDTI Construction 90 Day Lookahead Interface co-ordination meetings to provide an overview of the proposed use of the local roads and to provide a forum for discussion. A copy of the WFU McDougall St and High St On-Ramp Noise Wall Traffic Management Plan was sent to NSC on 30 July 2024. The Noise Wall works were identified in the NSC / CPBDTI Construction 90 Day Lookahead Interface co-ordination August 2024 meeting. CPBDTI have received no objection from NSC regarding the use of the local roads.

The existing McDougall St Noise Wall work site will impact on pedestrian routes, including:

- The existing Ennis Lane pedestrian pathway linking High St, McDougall St and the northern end of Ennis Rd; and

- The western and northern segments of the footway/pathway adjacent the McDougall St cul-de-sac.

As these pathway segments are well used pedestrian routes a detour will be implemented around the work site and heavy vehicle movements.

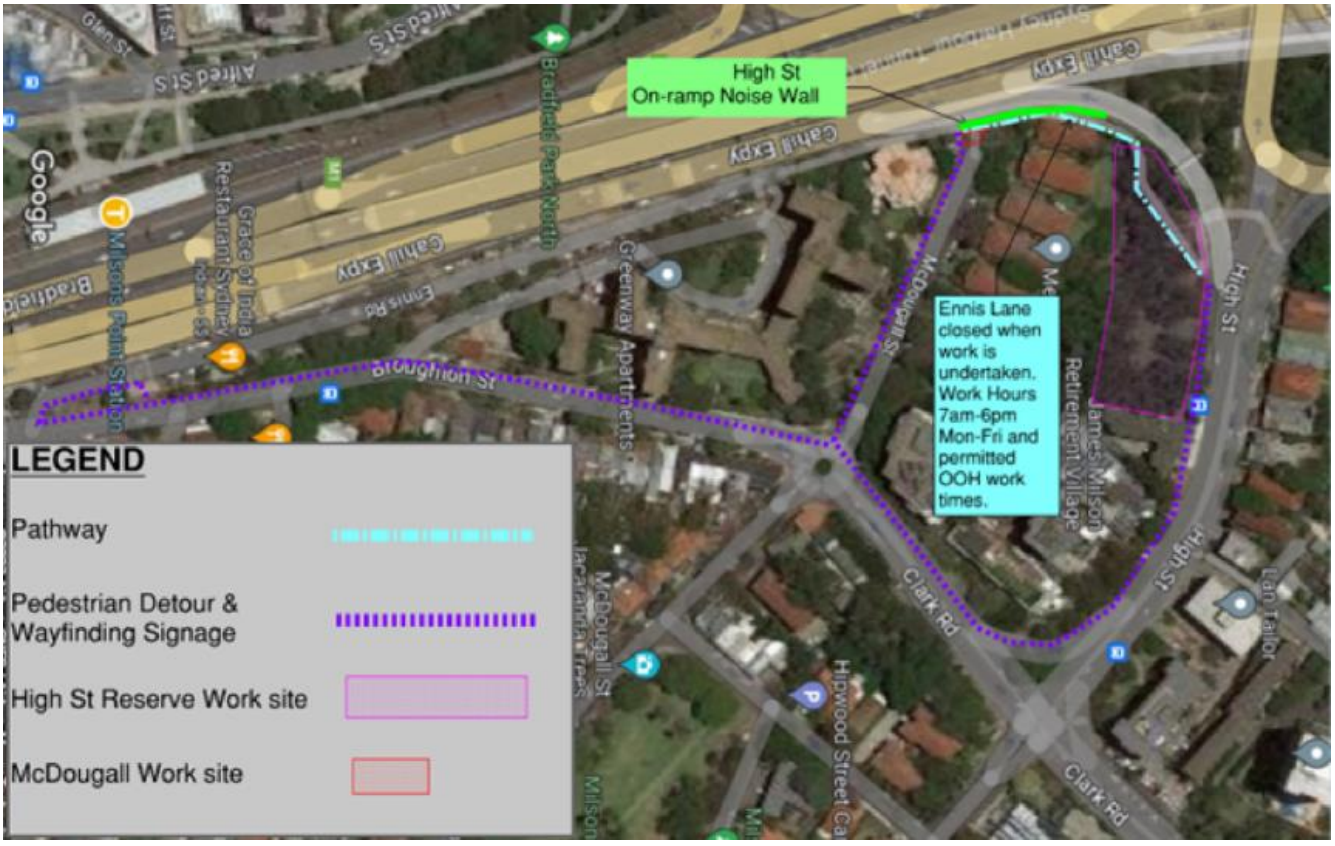


Figure 3 Pedestrian detour routes via Broughton St and McDougall St

While construction work is being carried during the day and night, Ennis Lane pedestrian pathway would be closed as shown in Figure 3. Pedestrians will be detoured along the south side of McDougall St, western side of Clark Rd and on the southern side of High St. This maintains connectivity with the Bradfield Bus stop and the southern side of the High St overbridge.

CPBDTI has notified North Sydney Council regarding the pedestrian detour.

Cyclists can use Ennis Lane pathway, if they dismount. CPBDTI will notify Bike North and Bicycle NSW about the proposed detour and the small increase in heavy vehicles movements on McDougall St and Clark Rd.

As required, stakeholder updates (including emergency service, bus operators, local schools and the James Milton Aged Facility) will be provided in line with the Community Communication Strategy (CCS) and through a range of tools outlined within the TTAMP Section 6 and Appendix A, including meetings, community updates, notifications and emails, to ensure all upcoming changes and impacts are communicated in a timely fashion.

Part B

4. Local roads proposed for approval.

4.1 Identification of local roads for approval

Local roads that require DPHI approval under CoA E132 are detailed in Table 3 and identified in Figure 4 as the green route shown.

Table 3 Local roads requiring DPHI approval under CoA132

Local Road	Direction of movement	Description of use during construction	Description of potential impacts
McDougall St via Clark Rd	Eastbound and Westbound	Worksite Access & Egress	Construction vehicle route: ➢ 6m to 8.8m SRV/MRV[#] Period of use: from the local roads approval date to 28/2/2025
Clark Rd between McDougall St/Broughton St and High St	Southbound and Northbound	Worksite Access & Egress	Construction vehicle route: ➢ 6m to 8.8m SRV/MRV Period of use: from the local roads approval date to 28/2/2025

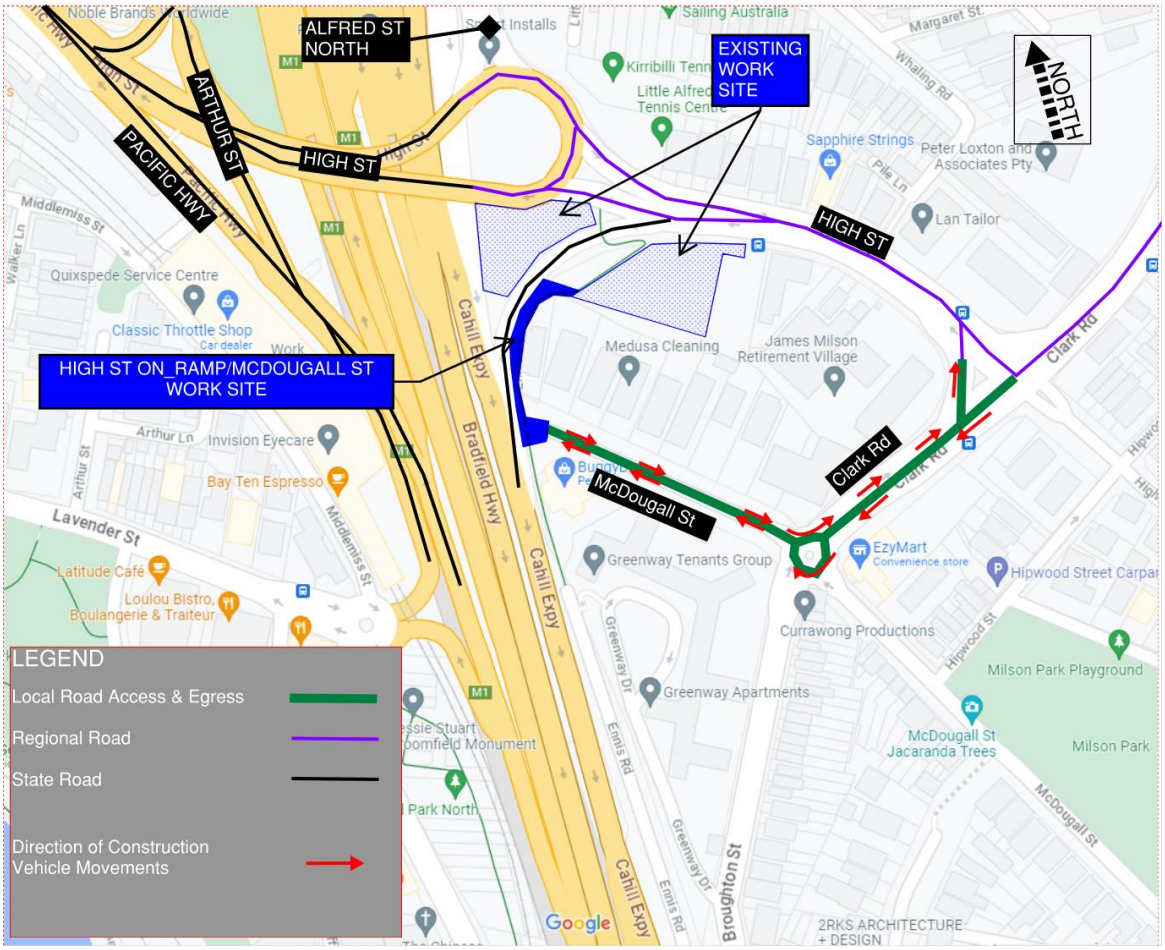


Figure 4 Local Roads Clark Rd and McDougall St requiring approval

4.2 Other Roads

Referring to Figure 4; High St is classified as a State Road west of Alfred St North, and High St is a Regional Road east of Alfred St North. There are no signs posted to restrict road and bridge use and, as such general access vehicles have unrestricted access on these roads.

The proposed construction heavy vehicles would include the 6m to 8.8m SRV/MRV categorized as general access heavy vehicles. Refer to **Appendix A5**.

Provided these vehicles have current registration appropriate to the vehicle configuration, no specific access restrictions apply, and no additional permits are required to access High St.

4.3 Justification for the use of local roads

Justification for the selection of the local roads shown in Figure 4 includes:

- Inability to construct the noise wall from the Warringah Freeway due to the road closures that would be required of the Southbound High St/Cahill Expressway On-ramp road carriageway and impacts on the High St On-ramp traffic flow to City
- There is a significant height difference of up to 5m on the wall face between the High St On-ramp road level and Ennis Lane /McDougall St pathway, posing physical restrictions on use of

construction equipment and heavy vehicles whilst works occur. The use of McDougall St for heavy vehicles will allow for a construction compound to be set up that allows for vehicle access and egress, material deliveries and the critical safety risks; working at heights, temporary works e.g., significant scaffolding, working near live traffic and lifting operational hazards to be simplified and effectively managedMcDougall St and Clark Rd form the shortest and viable accessible route between the High/McDougall worksite and the nearest arterial roads (High St/ Pacific Hwy) for arterial road network access and egress. The only feasible alternative access and egress route via Alfred St South and Broughton St passes through Milsons Point and Kirribilli high pedestrian activity areas and residential areas, thereby resulting in a more circuitous route and impact on a greater number of residential properties and sensitive receivers

- If local road access is restricted the construction methodology will require temporary scaffolding to be installed which will block pedestrian access along Ennis lane for the duration of the construction work. Access via the local roads minimises the need to close the Ennis Lane pedestrian pathway for the duration of the works as mobile elevated platforms will be used during work shifts and then removed when work is not being carried out. Ennis Lane can re-open when work is not being carried out.

The local roads required for the Planning Secretary's approval will be included in the TTAMP following approval of this E132.

4.4 Proposed volumes of heavy vehicles on local roads

Proposed volumes of heavy vehicles on local roads that are assessed in this Document (shown in Figure 2) are detailed in Table 4. Movements are provided as two-way for Clark Rd and McDougall St as the inbound and outbound movements are on the same route. For clarity, a two-way movement for one vehicle accessing and egressing the site will be presented as 2. For example, one mobile crane accessing the site in the AM peak and egressing the site in the PM peak will be shown as 2 in the first column and 1 in the second and third columns in Table 4.

Table 4 Proposed total volumes of heavy vehicles on local roads

Local road	Peak vehicle movements per day (two-way movements)			Morning peak vehicle movements (6 am to 10 am two-way movements)			Evening peak vehicle movements (3 pm to 7 pm two-way movements)		
	Heavy			Heavy			Heavy		
	No.	TYPE	Size	No.	TYPE	Size	No.	TYPE	Size
McDougall St inbound & outbound	8	SRV/MRV	6m to 8.8m	4	SRV/MRV	6m to 8.8m	4	SRV/MRV	6m to 8.8m
	2	Franna	12t	1	Franna	12t	1	Franna	12t
	2	Mobile crane	25t	1	Mobile crane	25t	1	Mobile crane	25t
	12			6			6		
	All two way@@			All two way@@			All two way@@		

Clark Rd between High St and McDougall St	8 2 2 12	SRV/MRV Franna Mobile crane	6m to 8.8m 12t 25t	4 1 1 6	SRV/MRV Franna Mobile crane	6m to 8.8m 12t 25t	4 1 1 6	SRV/MRV Franna Mobile crane	6m to 8.8m 12t 25t
	All two- way@			All two- way@			All two- way@		

@@TWO-WAY means a return trip (the same vehicle does two movements) between High St and the eastern end of McDougall St. (i.e., 8 vehicle movements per day or 4 return trips by a vehicle)

Daily vehicle volumes consider waste removal and material deliveries, The proposed vehicle movements are peak movements and would not be expected to occur continuously over the duration of the works.

Typical light vehicles to be used during construction will be workers' 4WD utes and small trucks less than 4.5t Gross Vehicle Mass-GVM.

Typical heavy vehicles expected to be used during construction would include 6-8.8m (SRV & MRV) truck. Occasionally other types and size of heavy vehicles for example a 12 tonne Franna crane and 25 tonne mobile crane will be required to access and egress the McDougall work site. Their anticipated usage is outlined in Table 4.

As required the access and egress of these vehicles will be managed under TGS/ROL for the purpose of minimising local road impacts.

Where possible, deliveries will be scheduled outside of peak traffic times. Worker shift patterns will coincide with WFU project work weekday work hours.

4.5 Heavy vehicle volume cumulative impacts

There are two WFU Project work sites in the vicinity of the McDougall St Work Site that have been identified as operational between October 2024 and February 2025 and include:

- High St East.
- Alfred St North and Mount St.

Access and egress of light and heavy construction vehicle movements to and from the McDougall St worksite may potentially overlap with the construction vehicle movements to and from these existing work sites.

The McDougall St light and heavy vehicle movements that may overlap include:

- with the High St East construction traffic eastbound between Arthur St and Clark Rd.
- with the High St East construction traffic westbound between Clark Rd and ASN.
- with both the High St East construction traffic, and the Alfred St North and Mount St construction traffic westbound between ASN and Arthur St.

These work sites are functioning independently and are at different stages of their construction schedules so the potential for peak light and heavy vehicle volumes to coincide on the access and

egress roads would be a rare occurrence.

High St, Clark Rd and McDougall St form part of the urban road network that is inter-connected by Arthur /High St signalised intersection, ASN/High St roundabout, Clark Rd /High St signalised intersection and Clark Rd/McDougall St roundabout.

These intersections manage the road network traffic flow conditions, enabling the mix of the general vehicle traffic and construction vehicle traffic volumes on High St, Clark Rd and McDougal St. Observation indicates that the traffic flow conditions at these intersections are satisfactory i.e., operating below capacity with tolerable delays and some queuing. The McDougall St, High St East and Alfred St North and Mount St construction traffic volumes using the road network will be light and intermittent and, are therefore not be expected to adversely impact on the connecting intersections traffic flow conditions.

Where reasonable and feasible construction traffic movements would be minimised during peak periods and CPBDTI will not schedule deliveries to site during peak traffic times. A Vehicle Movement Plan has been prepared for the TMP.

Trucks will be marshalled at Arthur St and Alfred St North compounds to minimise potential traffic flow, queueing and access disruptions in the vicinity of High St, North Sydney, and Clark Rd and McDougall St, Kirribilli.

5. Local roads assessment

5.1 Swept path analysis

As required by CoA E133(a), swept paths have been prepared for all local roads requiring DPHI approval. The swept path analysis has been carried out for the largest vehicles accessing the local road under this approval. Swept path diagrams are provided in Appendix A2 for the following:

- A 6-8.8m single unit truck (SRV/MRV); and
- A 12.5m HRV.

The swept paths are provided in Appendix A2 and detailed comments are provided in Table 5.

Table 5 Summary of swept path analysis

Local Road	Drawing number in Appendix A2	Can 6.4m,8.8 m or 12.5m SUT, manoeuvre **without** encroaching on existing kerbs, traffic management/traffic control devices, or on-street parking spaces?	Additional comments
Clark Rd/High St signalised intersection (Right-turn SB and Left-turn slip-lane WB)	Drawing #4000083, Drawing #4000086	6-8.8m SU Truck (includes Franna or Hiab and mobile Crane) – Yes	N/A
	Drawing #4000089	12.5m SU Truck– Yes	N/A
Clark Rd – High St to McDougall St (Through SB and NB)	Drawing #4000083, 84, 86,87	6-8.8m SU Truck (includes Franna or Hiab and mobile Crane)– Yes	N/A
	Drawing #4000089, 90	12.5m SU Truck – Yes	N/A

Local Road	Drawing number in Appendix A2	Can 6.4m,8.8 m or 12.5m SUT, manoeuvre **without** encroaching on existing kerbs, traffic management/traffic control devices, or on-street parking spaces?	Additional comments
Clark Rd/McDougall St roundabout (Right-turn WB and Left-turn NB)	Drawing #4000084,87	6-8.8m S U Truck includes Franna or Hiab and mobile Crane) – Yes	N/A
	Drawing #4000090	12.5m SU Truck – RT No and LT No	Mounts SW kerb return and conflicts with light pole. Left-turn NB encroachment on Clark Rd mountable median and pedestrian refuge area.
McDougall St Clark Rd to cul-de-sac (Through EB and WB)	Drawing #4000084, 87	6-8.8 m S U Truck (includes Franna or Hiab and mobile Crane) – Yes	Conflict between oncoming vehicles
	Drawing #4000090	12.5m SU Truck – Yes	Conflict between oncoming vehicles
McDougall St work site entry and exit	Drawing #4000084,87	6-8.8 m S U Truck (includes Franna or Hiab and mobile Crane) – Yes	N/A
	Drawing #4000090	12.5m SU Truck – No	Multiple manoeuvres and tree encroachment to turn around and exit in a forward direction

Note: SRV - 6.4m SU Truck, MRV – 8.8m SU Truck and HRV -12.5m SU Truck

5.2 Encroachment & parking removal for access and egress

Construction Vehicle Access & Egress

The swept path analysis has identified some manoeuvre restrictions and vehicle encroachments by the proposed use of a 12.5m SU truck at the Clark Rd and McDougall St roundabout, midblock on McDougall St and on the McDougall St cul-de-sac turning area, including impacts on on-street parking. Refer to Drawing #4000090 in Appendix A1. The use of a 12.5m SU Truck at the Clark Rd and McDougall St roundabout and within the cul-de-sac turning area is not considered feasible or practical. The 12.5m will not be used on Clark Rd or McDougall St.

On Clark Rd there is no identified manoeuvre restriction and traffic management encroachments by the proposed use of a 6-8.8mm SU Truck including Franna or Hiab and mobile Crane.

There is a through manoeuvre restriction on McDougall St as there is an identified midblock conflict between oncoming vehicles which can be managed under TGS/ROL that is detailed in the Construction Traffic Management Plan. Refer to Drawing #4000084 and 87 in **Appendix A2**. During work hours, traffic controllers stationed at opposite ends of McDougall St will manage potential vehicle conflicts using radio communication devices. A boom gate will be installed on McDougal St, adjacent to the first eastbound parking space. The boom gate will regulate two-way vehicle movements on the shared traffic lane.

Turning path analysis indicates that the 6-8.8m MRV vehicle would encroach within the on-street parking spaces at the western end of McDougall St. A total of nine (9) car parking spaces will be removed within the cul-de-sac and sign posted No Parking areas will reserve the space for the MRV to carry out a three-point turn when the work site gate is open. Refer to DRG- 4000084 and 4000087 in Appendix A2.

Parking

Parking removal will be required for the purpose of carrying out construction work and to facilitate construction heavy vehicle turning manoeuvres and truck marshalling. Any parking removal will be carried out as per the approved Construction Parking and Access Strategy (CPAS) in accordance with CoA E140.

The number of on-street parking spaces and duration of removal are shown in Table 6.
A total of 9 car on-street parking spaces would be temporarily removed as shown in Figure 5, and approved in the CPAS.

Table 6 Parking removal and removal time frame for access and egress

Location	Size /Type	Removal Frequency	Number of Parking Spaces
Within McDougall St cul-de-sac turning head (outside No1 and No 2 McDougall St)	6 - 8.8m SRV/MRV and Franna/ Hiab and mobile Crane	Duration of works Q4 October 2024 to Q1 February 2025	9 - car spaces Monday - Sunday)

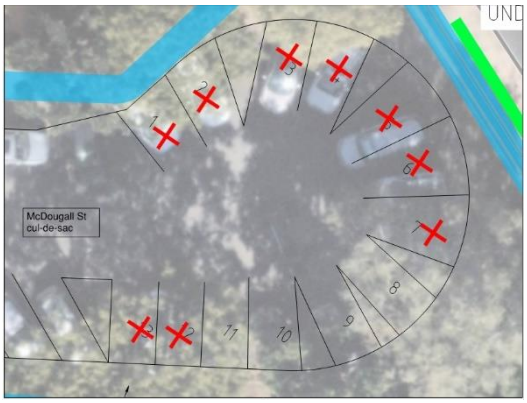


Figure 5 McDougall St parking spaces to be temporarily removed

Parking spaces to be removed are shown in Figure 5 and temporary parking arrangement is shown in **Appendix A2.**

The 6-8.8m MRV and occasionally a Franna or Hiab and mobile Crane would access and egress McDougall St and Clark Rd for the purpose of site mobilisation/implementation, during construction and de-mobilisation. Therefore, temporary removal of parking 24hrs per day, 7 days per week for access and egress over the duration of the construction work is unavoidable.

5.3 Key Hazards and Risks Assessment

As required by CoA E133(b), a pedestrian, cyclist and two-way traffic flow safety risk assessment has been undertaken to demonstrate that the use of local roads by heavy vehicles will not compromise pedestrian, cyclist and two-way traffic flow safety.

Existing potential hazards to pedestrians, cyclists and two-way traffic were identified during site inspections. These were assessed against a risk matrix. The risks of these potential hazards were then reassessed, taking into consideration the use of local roads by heavy vehicles.

The methodology of identifying hazards and assessing their level of risk is similar to that undertaken for road safety audits. The risk assessment system is the easiest means of identifying the level of risk associated with any given hazard. The risk assessment system is outlined in **Appendix A3**.

The pedestrian, cyclist and two-way traffic flow safety risk assessment is detailed in Table 8 below. Potential hazards to pedestrians, cyclists and vehicles were identified with respect to traveling on, crossing, and manoeuvring on the Clark Rd and McDougall St access and egress route. There is no existing formalised cycle route on McDougall St. There is a recognised on-road high use cycle route on Clark Rd that links North Sydney, Kirribilli and Neutral Bay to the Milsons Point and the Sydney Harbour Bridge separated bicycle path (Bike only).

The results of the safety risk assessment demonstrate that the use of local roads by heavy vehicles will not have an impact on pedestrians, cyclists and two-way traffic flow safety as indicated by the revised level of risk being the same as the existing level of risk for all identified potential hazards.

Table 7 Pedestrian, cyclist and two-way traffic flow safety risk assessment

Location	Description of existing hazard	Existing conditions			Use of local roads by heavy vehicles			
		Crash frequency	Crash severity	Level of risk	Mitigating factors	Revised crash frequency	Revised crash severity	Revised level of risk
Clark Rd/High St signalised intersection (right-turn SB into Clark Rd)	There is the potential for conflict between *pedestrians on* High St or Clark Rd and *vehicles* doing the right-turn SB – (cross and adjacent directions)	Improbable	Serious	Medium	• Existing signalized pedestrian crossing priorities movements, reduces the number of potential conflicts and separates pedestrians from vehicles doing the right-turn. • Pedestrians are able use the signalised crossing facilities to cross the roadway. • Conventional footway area for pedestrians to stand while waiting to cross the roadway. • The existing 50 km/h posted speed limit. • Inter-visibility between road users. • Driver induction process to include safety awareness in relation to all road users	Improbable	Serious	Medium
Clark Rd/High St signalised intersection	Cyclists share on road conditions.	Improbable	Serious	Medium	• Existing signalisation prioritizes approach movements and	Improbable	Serious	Medium

Location	Description of existing hazard	Existing conditions			Use of local roads by heavy vehicles			
		Crash frequency	Crash severity	Level of risk	Mitigating factors	Revised crash frequency	Revised crash severity	Revised level of risk
(right-turn SB into Clark Rd)	There is the potential for conflict between cyclists and vehicles(through and opposing direction adjacent direction, and same direction)				separates vehicle right-turn from cyclist's through and opposing movements. • The existing 50 km/h posted speed limit. • Inter-visibility between road users. • Driver induction process to include safety awareness in relation to all road users			
Clark Rd (Through SB and Through NB)	There is the potential for conflict between: • *through vehicles and, cyclist travelling along Clark Rd (same direction)* • *through vehicles and cyclists parking, unparking, drivers entering & exiting their vehicle, vehicle exiting/entering*	Improbable	Limited	Medium	• Existing 40- 50 km/h posted speed limit. • Mutual-visibility for the low-speed environment and sight distance between road users. • 3.5-4.0m wide traffic lane southbound with a dedicated 2.2-3m wide parking lane providing clearance between vehicle-vehicle, cyclist - vehicles and vehicle-driver & cyclist-driver • 1.2-1.5m median provides refuge and allows pedestrians to cross in stages and	Improbable	Limited	Medium

Location	Description of existing hazard	Existing conditions			Use of local roads by heavy vehicles			
		Crash frequency	Crash severity	Level of risk	Mitigating factors	Revised crash frequency	Revised crash severity	Revised level of risk
	access lane or driveway (on path, manoeuvring, same direction, adjacent direction) • *through vehicles and pedestrians randomly crossing on Clark Rd. (far side , emerging and near side)*				negotiate a suitable gap to cross safely. • 1-lane 3.5m wide to 2-lanes (3.5m & 3.3m wide) northbound with No Stopping restriction and no parking removes parking obstructions NB and improves mutual visibility along road carriageway • Roadway delineation SB edge lines, central median & NB lane separation and kerb define traffic lanes providing a clear path of travel. • Formalised pedestrian crossing facilities are accessible at High St and McDougall St • Driver induction process to include safety awareness in relation to all road users			

Location	Description of existing hazard	Existing conditions			Use of local roads by heavy vehicles			
		Crash frequency	Crash severity	Level of risk	Mitigating factors	Revised crash frequency	Revised crash severity	Revised level of risk
Clark Rd/High St left turn slip lane	There is potential for conflict between a vehicle and cyclist or pedestrian on the slip lane marked pedestrian crossing	Improbable	Limited	Medium	• Formalised pedestrian crossing facility with conventional footway area for pedestrians to stand while selecting a safe gap in the traffic flow to cross the slip lane mark pedestrian crossing. • Raised platform pedestrian crossing means vehicles must reduce speed to travel through the crossing. ARR rules requires drivers to give way to pedestrians on the pedestrian crossing. • Mutual visibility between a near and far side pedestrian waiting to cross and approaching driver. • Visible approach 25km/hr speed advisory signs • On approach zig-zag pavement marking to warn drivers of the pedestrian crossing facility	Improbable	Limited	Medium

Location	Description of existing hazard	Existing conditions			Use of local roads by heavy vehicles			
		Crash frequency	Crash severity	Level of risk	Mitigating factors	Revised crash frequency	Revised crash severity	Revised level of risk
Clark Rd/McDougall St roundabout (right-turn WB into McDougall St and left-turn NB into Clark Rd)	There is potential for conflict between a vehicle making a right-turn across through and turning vehicles/cyclists from Broughton St and McDougall St (adjacent directions, same directions) There is potential for conflict between a vehicle making a left turn across through and turning vehicles/cyclists from Clark Rd, Broughton St and McDougall St (adjacent directions , same directions) There is potential for conflict on all approaches between a vehicle and pedestrian crossing at the roundabout *(far side , emerging*	Improbable	Serious	Medium	• Low 15 km/h - 25km/hr speed due to roundabout geometrical roadway conditions. • Roundabout intersection control priorities movements and allows drivers to choose a safe gap before entering & reducing the number of potential conflicts. • Traffic management (signage and delineation) in place to direct and guide drivers. • Pedestrian crossing facilities provided on desire lines. • Refuge medians separate approach/ departure movements. Provides refuge and allows pedestrians to cross in stages over a shorter distance and select a safe gap in the traffic flow to cross safely.	Improbable	Serious	Medium

Location	Description of existing hazard	Existing conditions			Use of local roads by heavy vehicles			
		Crash frequency	Crash severity	Level of risk	Mitigating factors	Revised crash frequency	Revised crash severity	Revised level of risk
	and near side)				• Raised marked pedestrian crossing on the northern leg gives pedestrian priority to cross. ARR rules requires drivers to give way to pedestrians on the pedestrian crossing. • Mutual-visibility for the low-speed environment and sight distance between road users. • Driver induction process to include safety awareness in relation to all road users.			
McDougall St (Through WB and EB)	There is the potential for conflict between: • through vehicles and, cyclist travelling along McDougall St (same direction and opposing direction) • through vehicles parking & unparking, drivers entering & exiting their vehicle,	Improbable	Limited	Medium	• Low speed (25 km/h - 40km/hr) due to short road segment and narrowed traffic lane due to parking on both sides of the roadway. • Low volume of vehicles and cyclists • Low volume of pedestrians • Mutual-visibility for the	Improbable	Limited	Medium

Location	Description of existing hazard	Existing conditions			Use of local roads by heavy vehicles			
		Crash frequency	Crash severity	Level of risk	Mitigating factors	Revised crash frequency	Revised crash severity	Revised level of risk
	vehicle exiting/entering a driveway (on path, manoeuvring, same direction, adjacent direction) • through vehicles and pedestrians randomly crossing on McDougall St (far side, emerging and near side)				low-speed environment and sight distance between road users. • Driver induction process to include safety awareness in relation to all road users. • Formalised longitudinal pedestrian pathways • Access and egress construction vehicle movements on McDougall St will be managed under TGS/ROL.			
McDougall St work site **entry** and **exit**	There is a potential conflict between vehicles entering and exiting the worksite and vehicles/pedestrians/ cyclists traveling on McDougall St.	Improbable	Limited	Medium	• 40 km/h ROAD WORK zone signposted and advance advisory and warning signs to be installed. • Existing parking to be temporarily removed. • Mutual-visibility for the low-speed environment between drivers exiting/entering and drivers/cyclist/pedestrians traveling on McDougall St	Improbable	Limited	Medium

Location	Description of existing hazard	Existing conditions			Use of local roads by heavy vehicles			
		Crash frequency	Crash severity	Level of risk	Mitigating factors	Revised crash frequency	Revised crash severity	Revised level of risk
					• Access and egress construction vehicle movements on McDougall St will be managed under TGS/ROL. • Pedestrians and cyclists to be detoured around work site using existing pathway			

5.4 Explanation of Key Hazards and Risk Areas Assessment

Table 7 evaluates the hazards and risks along Clark Rd and McDougall St. The evaluation carries out a crash risk assessment comparison for pedestrians, cyclists and vehicles potential conflicts **without** the 6-8.8m SRV/MRV vehicles and **with** 6-8.8m SRV/MRV vehicles.

Due to the nature of the urban road environment pedestrians, cyclists and vehicles without or with 6-8.8m SRV/MRV would use, occupy and travel on Clark Rd and McDougall St in the same way and in accordance with the road regulations. The swept path analysis confirms that the 6-8.8m SRV/MRV vehicles at key locations can travel on Clark Rd and McDougall St with the removal of some parking spaces within the McDougall St cul-de-sac turning area.

It is proposed to make minor changes to the McDougall St cul-de-sac turning area road traffic management, temporarily remove 9 on-street car parking spaces, implement traffic management and signage controls and pedestrian/cyclist detour around the McDougall St work site (refer to Appendix A1) under TMP - TGS/ROL arrangements.

It is not feasible or practical to use 12.5m HRV on McDougall St. For the 'with' SRV/MRV scenario, the assessment identifies that on McDougall St temporary TGS measures are required to ensure that the prevailing traffic conditions with the introduction of heavy vehicles is workable, and the likely level of risk is the same for 'without' SRV/MRV and 'with' SRV/MRV use of the local roads.

A summary of the risk assessment and mitigation strategies/approach to ensure the proposal will not compromise the safety of pedestrians and cyclists or the safety of two-way traffic flow on two-way roadways (CoA E133(b)) is as follows:

- There are no changes to the Clark Rd roadway traffic lanes or traffic management. There are existing road traffic management arrangements (e.g., width of road, centre of road median intersection controls) that facilitate the two-way traffic flow on the two-way local road. Road users retain, and heavy vehicle drivers can use the road environment features and the visual cues to safely travel inbound and outbound on Clark Rd.
- There are no changes to the McDougall St roadway shared traffic lane, however the existing traffic management will be supplemented with a traffic guidance scheme (TGS) managed by traffic controllers to control and maintain the usual daily two-way traffic flow on the two-way local road.
- The pedestrian footways and pedestrian crossing arrangement allocate right of way and provide controls to achieve an acceptable level of risk for pedestrians.
- On Clark Rd the roadway signage such as the 40km/hr High Pedestrian Activity zone, Age Pedestrian activity warning signs, the on-road bicycle symbols make drivers aware of the usual road user daily activity.
- The roadway formation, on-road control devices and road rules support the safety of pedestrians and cyclists in the two-way road, two-way traffic flow by limiting existing speed limit of 25-40km/hr
- As required, traffic controllers will be on duty and TGS/ROL will be implemented to manage construction vehicle movements to and from the McDougall St work site and along McDougall St to ensure that pedestrian, cyclist and local resident vehicle movements remain workable.

- CPBDTI has developed a Driver's Code of Conduct for the Early Establishment works (refer to Appendix A4) that define driver speed behaviour.
- The pavement condition assessment indicated no serious pavement degradation and that the pavement was in a functional state. With the addition of heavy vehicles, there will be a small incremental increase in the heavy vehicle traffic volumes on Clark Rd and McDougall St that may adversely influence the pavement life. Clark Rd and McDougall St are not subject to any load limit restrictions. The additional traffic loading may contribute to some minor localised pavement damage that CPBDTI will rectify in a timely manner.
- As Clark Rd and McDougall St are both over 500m away from St Aloysius College and Loreto Kirribilli College , with neither road containing school zones in operation, it is expected that the use of these local roads will have a minor impact on this sensitive land use. However, construction vehicles will travel on High St (Regional Road) , Clark Rd and McDougall St (Local Roads) past the James Milson Retirement Village to access and egress the McDougall St work site which is unavoidable.

5.5 CoA E133(b) Demonstrated Safety on Local Roads

A closer examination of the road user's use of the road environment with SRV/ MRV shows that the 'with construction vehicles" will not compromise the safety of pedestrians, cyclists or the safety of two-way traffic flow on two-way roads.

5.5.1 Pedestrians

Given the closure of Ennis Lane when noise wall works are occurring, there will be higher volumes of pedestrians using McDougall St , Clark Rd and High St footways. From pedestrian surveys it is estimated that on the McDougall St, Clark Rd and High St route the average number of movements would increase from 11 peds/hr to 36 peds/ hr, and that the maximum number of movements in the peak hour would increase from 58 peds/hr to 182ped/hr. With this small increase there is no need to make change the existing pedestrian road management arrangements on Clark Rd and McDougall St. Pedestrians will continue to use the existing footways, verge and designated crossing points

The vulnerability of pedestrians in the road space near the workspace and allocated right of way is managed by detouring pedestrian around the work sites on the parallel formalised footways and controlled crossing locations. During construction traffic controllers will be on duty to manage vehicle and pedestrian movements on McDougall St.

The roadway horizontal and vertical alignments afford inter-visibility between pedestrians and drivers which allow pedestrians to find suitable gaps in the traffic flow. The road pedestrian facilities on Clark Rd and High St provide the means to negotiate and cross the roadway safely with security and minimal delay.

With the addition of heavy vehicles, traffic flows remain light. Pedestrians will continue to use the existing footways and designated crossing locations without noticeable change to their exposure to the two-way traffic flow.

5.5.2 Cyclists

In accordance with the Australian Roads Rules Division 2, Rule 15 a bicycle is classified as a vehicle, and cyclists and vehicles have an equal right-of-way on the road and share the road space.

On-road cyclists would continue to share the Clark Rd and McDougall St two-way roadway with the general traffic and construction vehicles, and on approach and departure at the intersecting roads with High St and Broughton St/McDougall St.

At the western end of McDougall St during work shifts traffic controllers will be on duty to manage construction vehicle movements and maintain the roadway serviceability for all road users.

Cyclists will continue to use the roadway in the same way that they have in the past.

The Clark Rd and McDougall St roadway traffic management conditions supports the safety of cyclists in the managed two-way road traffic flow.

5.5.3 Safety of two-way traffic flow on two-way roadways

5.5.3.1 Roadway Traffic Management

There are no changes to the Clark Rd and McDougall St roadway traffic lanes or traffic management. However, there will be changes to parking arrangements in the McDougall St cul-de-sac turning area to accommodate the McDougall St work site and heavy vehicle turning movements so they can enter and exit in a forward direction.

Clark Rd is a divided local road with regulatory traffic management signs to provide for through two-way traffic flow and kerb side parking on the eastern side of the road carriageway. Southbound there is 1-through nominal 3.8m wide traffic lane and a full-time 2-3m wide parking lane. Northbound there is 1-through nominal 3.5m wide traffic lane that transitions to 2- (3.1m & 3.0m wide) traffic lanes and a left-turn slip lane 5m wide with full time No Stopping restrictions.

McDougall St is an undivided 12m wide carriageway that permits two-way traffic flow on a shared traffic lane and there are parking lanes on both sides of the road carriageway.

A comparison between Austroads standard lane widths and Clark Road and McDougall St road user lane widths shown in Table 8 indicates that the road user lane widths are consistent with the Austroads standards.

Table 8 Widths of two-way roadway elements

Road User Lane	Austroads Standard Width Range	Clark Rd High St to McDougall St	McDougall St Clark Rd to cul-de-sac
Traffic Lane	2.8- 3.7m	Variable 3.0m to 5.0m	2.6m
Parking Lane			
✓ **Parallel**	2.0 - 2.3m	2.0 -2.3m	2.0m
✓ **45 degrees**	2.3 - 2.6	NA	2.5-2.6m

The traffic lane widths and divided road carriageway on Clark Road permit oncoming heavy vehicle to pass oncoming other vehicles, therefore, maintaining two-way traffic flow. On McDougall St the traffic lane width of 2.6m is below the Austroads standard for trucks to pass each other and there is limited opportunity for heavy vehicles to pull-in at driveways. Consequently, two-way traffic control will be managed under TGS/ROL arrangements during approved work hours.

The combination of existing and proposed traffic management maintains two-way traffic flow.

5.5.3.2 Safe Urban Two-way Road Environment.

A site inspection and review of the Clark Rd and McDougall St road environment (i.e., road carriageway, vertical and horizontal road geometry, traffic volumes, parking and shared lane widths, medians, inter-visibility, intersection controls, formed footways, pedestrian crossing locations, local area traffic management, road delineation, road and wayfinding signage and street lighting) indicate that the road environment features are consistent with a functionally safe urban road environment. This functionality on Clark Rd and McDougall St enables road users and the heavy vehicle drivers to manoeuvre and use the visual cues to safely travel along and negotiate the two-way road environment.

5.5.3.3 Travel Speed

The speed at which a vehicle may be driven on roads is restricted to improve the safety of motorists, cyclists and pedestrians. Clark Rd is sign posted 40km/hr (High Pedestrian Activity) and the existing speed control platforms on Clark Rd regulates the travel speed to between 25-40km/hr as defined by posted regulatory and warnings signs, pavement markings, and/or by the road regulations.

Heavy vehicles will be subject to the existing speed management conditions. The heavy vehicles due to their variable load, speed and acceleration characteristics on downhill or uphill two-way local road segments will travel at or below the speed environment of 25-50km/hr during. CPBDTIhas developed a Driver's Code of Conduct for the Early Establishment works (refer to Appendix A4) that define driver speed behaviour. This Code of Conduct will be included in the site mobilisation induction, reiterated at shift toolbox sessions, and will also be provided to all sub-contractors and delivery drivers.

5.5.3.4 Road Pavement

Clark Rd and McDougall St are North Sydney Council roads and CPBDTI haveformally notified TfNSW to undertake the required road dilapidation survey and report for Clark Rd and McDougall St. The road dilapidation survey and report has been undertaken and provided to NSC. A site inspection and visual assessment of the pavement's condition state (e.g., surface distress like rutting and cracking) as outlined in Austroads was undertaken. The site inspection indicated no serious pavement degradation and that the pavement was in a functional state. Clark Rd and McDougall St are not subject to any sign-posted load limit restrictions. With the addition of repetitive heavy vehicle movements, the additional traffic loading may contribute to some minor localised pavement damage that CPBDTI will repair and restore in a timely manner.

Repair and restore

In accordance with CoA E137, if damage to roads occurs as a result of the construction site works, CPBDTI 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.

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

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

- Slows, stop, 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).

5.6 CoA E133(d) Use of Roads Past Sensitive Land uses

Figure 6 shows the local roads providing access and egress and the location of sensitive land uses nearby the McDougall St work site.

There are no childcare facilities located on Clark Rd and McDougall St.

There are no Schools adjacent to Clark Rd and McDougall St. The nearest schools; St Aloysius College and Loreto Kirribilli College are at least 500 metres away.

As Clark Rd and McDougall St are somewhat remote from the neighbourhood schools and heavy vehicle movements are relatively low it is expected that the use of these local roads will have a negligible impact on these sensitive land users.

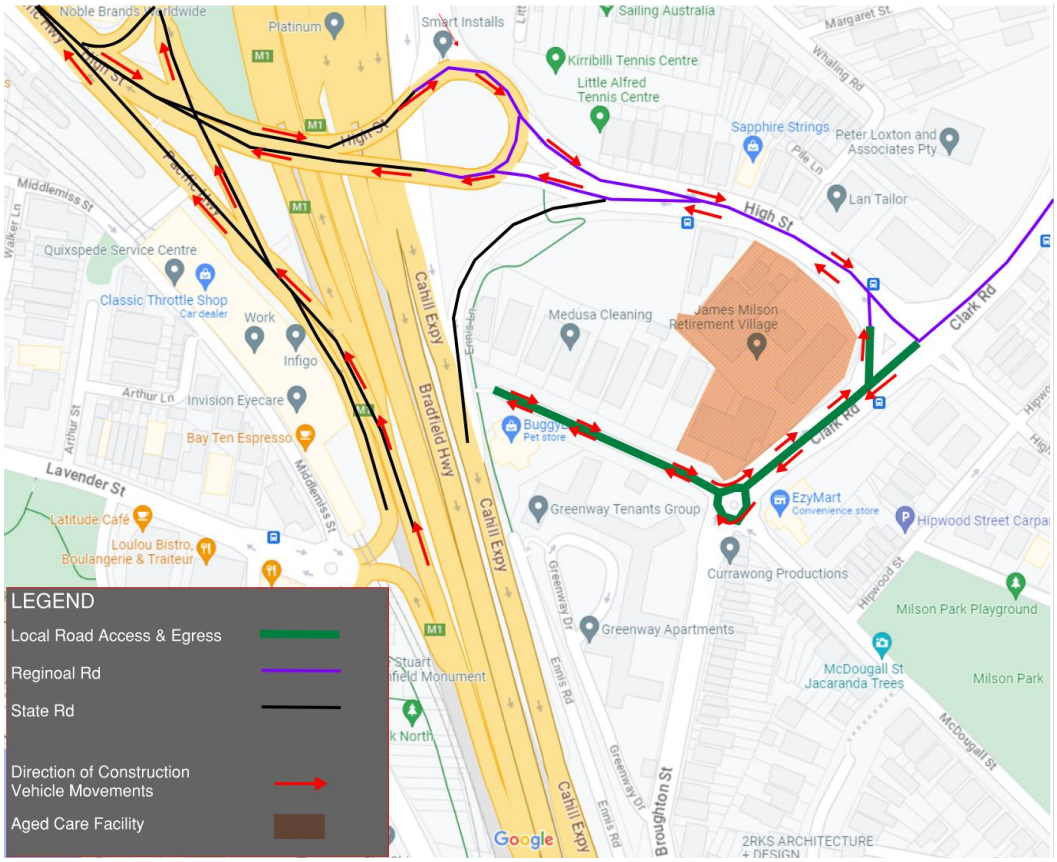


Figure 6 Local Roads & sensitive land uses nearby McDougall St and Clark Rd

Peak operation times and sensitive periods for heavy vehicle traffic, for both St Aloysius College and Loreto Kirribilli College, have been identified to be during school zone times (8:00am – 9:30am and 2:30pm – 4:00pm). There are no school zones operating on McDougall St or Clark Rd where heavy vehicles would travel.

To access and egress McDougall St work site, heavy vehicles would use High St, Clark Rd and McDougall St which passes by James Milson Retirement Village (JMRV). High St, Clark Rd and McDougall St is the shortest route to and from the work site. The alternative route via Alfred St South and Broughton St passes through Milsons Point and Kirribilli high pedestrian activity areas and residential areas, therefore the route identified in this approval is deemed the most suitable for heavy vehicle use. Access and egress to the McDougall work site would be during approved work hours and permitted OOH work times. Due to the low volume of heavy vehicles accessing and egressing the McDougall work site it is expected that the use of these local roads would have a minor impact on the amenity of this sensitive land use.

CPBDTI have engaged with the JMRV about use of Clark Rd and McDougall St and potential amenity issues. Following a doorknock on 08/10/24 and phone call with the Village Operations Manager on 09/10/24, JMRV confirmed they have no issues with the planned heavy vehicle volumes. JMRV also confirmed they do not have specific peak operation times however are typically busiest during morning periods. CPBDTI will continue to engage regularly with the JMRV throughout the duration of use of the local roads, in accordance with the CCS.

6. Details of road dilapidation surveys undertaken

As required by CoA E133(c), road dilapidation surveys will be undertaken on the local roads requiring DPHI approval. A dilapidation survey and report are required for Clark Rd and McDougall St. The road dilapidation survey was undertaken in June 2022 and report provided to North Sydney Council for information in accordance with CoA E136.

7. Heavy vehicles haulage monitoring and recording

For the purposes of keeping track of the locations of all heavy vehicles used for spoil haulage, CPBDTI will employ Virtual Superintendent a cloud-based reporting software used for construction.

The Virtual Superintendent collects data from on-machine devices, a mobile app or sensors which integrate with other software applications, and tracks and gives a detailed view of heavy vehicle movements. The software functions will identify vehicles, monitor them in real-time their location and record heavy vehicle spoil haulage movements on the road network.

The geospatial database allows the information to be stored electronically and made available electronically to the Planning Secretary and the EPA upon request.

8. Mitigation measures

To mitigate any potential impacts:

- Access and egress will be during approved project work hours, 7:00am to 6:00pm Monday to Friday and 8:00am – 6:00pm Saturday, and approved OOH work times
- All heavy vehicles accessing the McDougall St work site will be required to travel south on Clark Rd and west on McDougall St to access the work site, and east on McDougall St and north on Clark Rd to egress the work site. Only the 6-8.8m including the occasional Franna or Hiab and mobile Crane heavy vehicles will access and egress McDougall St via Clark Rd including; Clark Rd/McDougall St roundabout the Clark Rd/High St signalised intersection. This arrangement has been included in the VMP for the construction worksite;
- To safely maintain two-way traffic flow on McDougall St during work shifts traffic controllers will be positioned at the McDougall St work site entry and exit gate and immediately west of the McDougall St and Clark Rd roundabout to manage truck movements. Traffic controllers will be deployed during construction hours when heavy vehicle movements are occurring.
- As a behavioural deterrent, CPBDTI will monitor truck movements in real-time by Virtual Superintendent. Truck drivers will be subject to disciplinary action as outlined in the Drivers Code of Conduct.
- The driver induction process will include safety awareness in relation to all road users (including pedestrians, aged pedestrians and cyclists) and the strict requirement to obey all road rules and to travel only on approved roads.
- Vehicle movement plans showing approved routes and vehicle sizes to and from the McDougall St work site will be issued to all subcontractors as part of contract documentation upon engagement. Signage will also be installed along approved routes to guide heavy vehicle drivers;
- A TMP has been prepared detailing changes to on-street parking including sign posting, temporary traffic management for vehicles, cyclists and pedestrians and turn around facilities for vehicles on McDougall St.
- Implementation of a Driver's Code of Conduct (refer to Appendix A4)
- The driver induction process will include safety awareness in relation to all road users (including pedestrians, school & aged pedestrians and cyclists) and the strict requirement to obey all road rules and to travel only on approved roads.
- Community notification will be undertaken via fact sheets showing the McDougall St construction worksite heavy vehicle routes, detour for pedestrians and cyclist around the McDougall St construction work site, temporary removal of on-street parking and turn around facilities on McDougall St as well as community and stakeholder updates, notifications and emails, to ensure all upcoming changes and impacts are communicated in a timely fashion to the community and stakeholders.
- Regular monitoring of mitigation measures for compliance and effectiveness will be undertaken (refer to Section 5.1.4 of the TTMP). Further detail on regular inspections is detailed in Section 8.1 below.
- CPBDTI will continue to engage regularly with the JMRV throughout the duration of use of the local roads, in accordance with the CCS.

8.1 Inspections

In accordance with Section 6.3 of the TTAMP CPBDTI 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. The responsibility and frequency of inspections are 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 and corrective action.

Part C

Appendices

Appendix A1 Advice regarding the suitability of local roads as proposed heavy vehicle routes

Memo Title	Suitability of proposed heavy vehicle routes on local roads
Recipient	CPBDTI
Prepared by	Denis Fung
Revision	A
Date	21 June 2024

I. Introduction

This memo provides advice on the suitability of proposed heavy vehicle routes for the McDougall St construction worksite that includes:

- early preparation works;
- the establishment of the McDougall St work site; and
- the planned staging of the construction work associated with the construction of the SB High St/Cahill Expressway On-ramp Noise Wall over the duration of the project.

In accordance with the NSW Minister for Planning and Public Space's Conditions of Approval (CoA) E133(e), the advice is based on Revision A of this CoA E132 – Local Roads Approval (McDougall St – Upgrade of High St/ Cahill Expressway On-ramp Noise Wall) document that describes the access and egress movements of the 6m to 8.8m MRV construction vehicles on local roads and the selected removal of on-street parking on McDougall St under the McDougall St Noise Wall Site Specific TMP including:

- Nine (9) car parking spaces in the cul-de-sac at the western end of McDougall St for the purpose of establishment of the McDougall St work site and make provision for light and heavy vehicle manoeuvring and marshalling weekdays and nights under OOHW permit during WFU project working hours for inbound and outbound public vehicle and construction vehicle movements;

II. Assessment

The following local roads were assessed for their suitability as proposed heavy vehicle routes:

- Clark Rd northbound and southbound between McDougall St/Broughton St and High St;
- McDougall St no through road west of Clark Rd; westbound and eastbound including the cul-de-sac turning head;
- The signalised intersection of High St and Clark Rd, and the roundabout at the intersection of Clark Rd/Broughton St and McDougall St

Items that were considered in the assessment include:

- CoA E133: All requests to the Planning Secretary under Condition E132 must include the following:
    - CoA E133(a): include a swept path analysis
    - CoA E133(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.

- CoA E133(c): provide details as to the date of completion of the road dilapidation surveys for the subject local roads.
- CoA E133(d): measures that will be implemented to avoid where practicable the use of roads past schools, aged care facilities and childcare facilities during their peak operation times.

Taking into account CoA E133(a), CoA E133(b), CoA E133(c) and CoA E133(d), it is considered that all local roads that were assessed are suitable as proposed heavy vehicle routes with proposed traffic controls.

III. Formal statement

This assessment has been undertaken by Denis Fung, who is an appropriately qualified professional from the Downer Group

Denis Fung is a Traffic manager and traffic and transport engineer with over 20 years of experience. He has a broad range of skills that enable him to analyse complex problems and develop innovative solutions. He has demonstrated these skills in major projects involving public transport planning, traffic engineering, traffic and transport management, traffic impact assessments, road user safety and road safety auditing. He has traffic and transport technical lead for projects including Sydney Metro, WestConnex Stage 3A, and The Northern Road 3 upgrade.

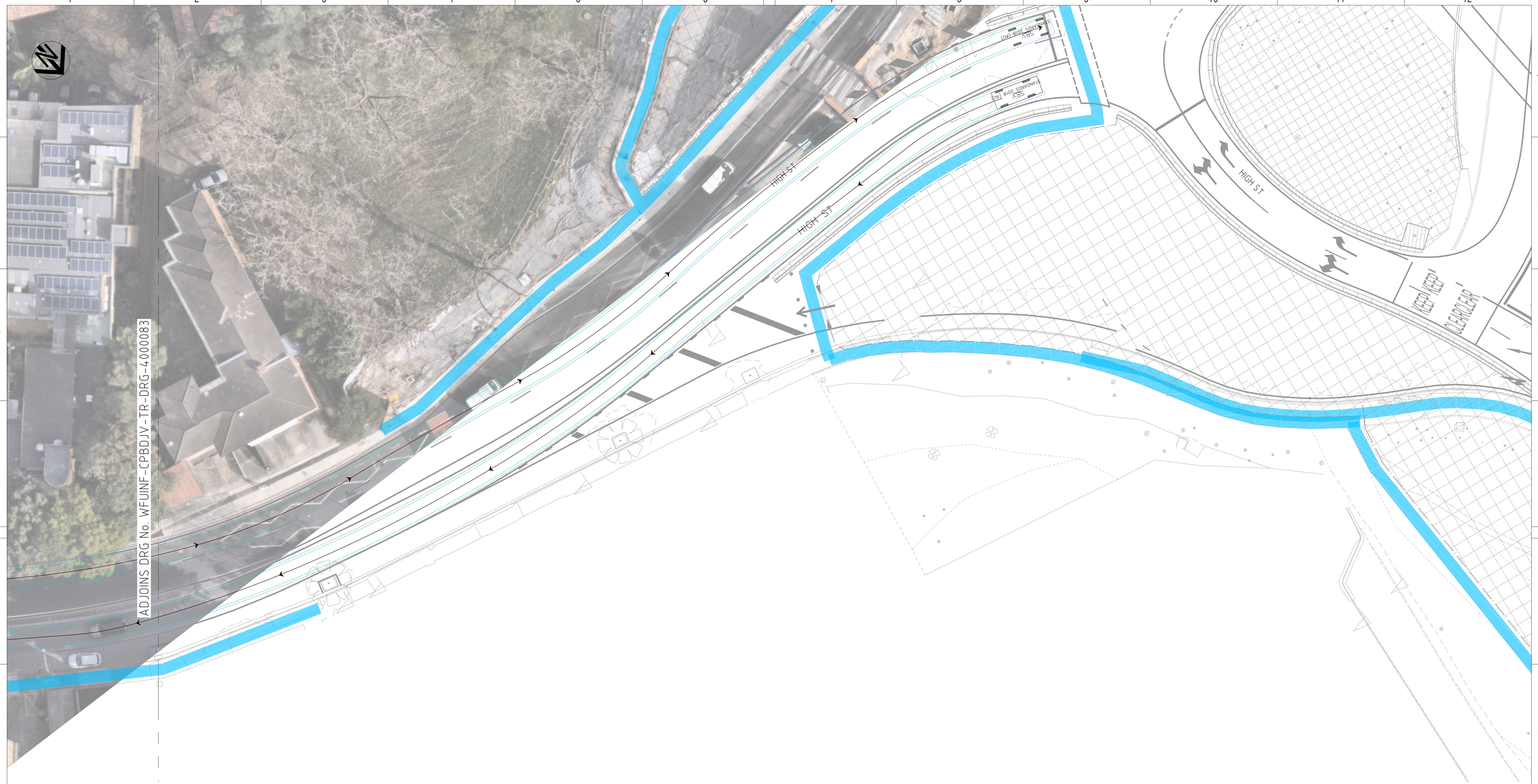
This assessment has been undertaken for the sole purpose of providing advice on the suitability of proposed heavy vehicle routes for the McDougall St construction worksite in accordance with the NSW Minister for Planning and Public Space's Conditions of Approval (CoA) E133(e), including:

- early preparation works;
- the establishment of the McDougall St work site; and
- the planned staging of the construction work associated with the construction of the SB High St On-ramp Noise Wall over the duration of the project.



Denis Fung
Traffic Manager
21. 06.2024

Appendix A2 Swept path diagrams



PLAN
SCALE 1:500

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Warringah Freeway Upgrade

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DESIGNED	PAUL DAVIDSON	11.08.2023
DRG CHECK	GRETCHEN PANIEL	11.08.2023
DESIGN CHECK	DENIS FUNG	11.08.2023
APPROVED	DENIS FUNG	11.08.2023

WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST- LOCAL ROADS E132

6.4m SRV

ROUTE ASSESSMENT

FILE No. | SHEET: 1 OF 9 | A1

STATUS: C

DRG No. WFUINF-CPBDJV-TR-DRG-4000082 | B1 | EDMS No.

DeskSite No. 18125867 Rev 5

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PLAN
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DESIGN CHECK	DENIS FUNG	11.08.2023
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WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST- LOCAL ROAD E132

6.4m SRV

ROUTE ASSESSMENT

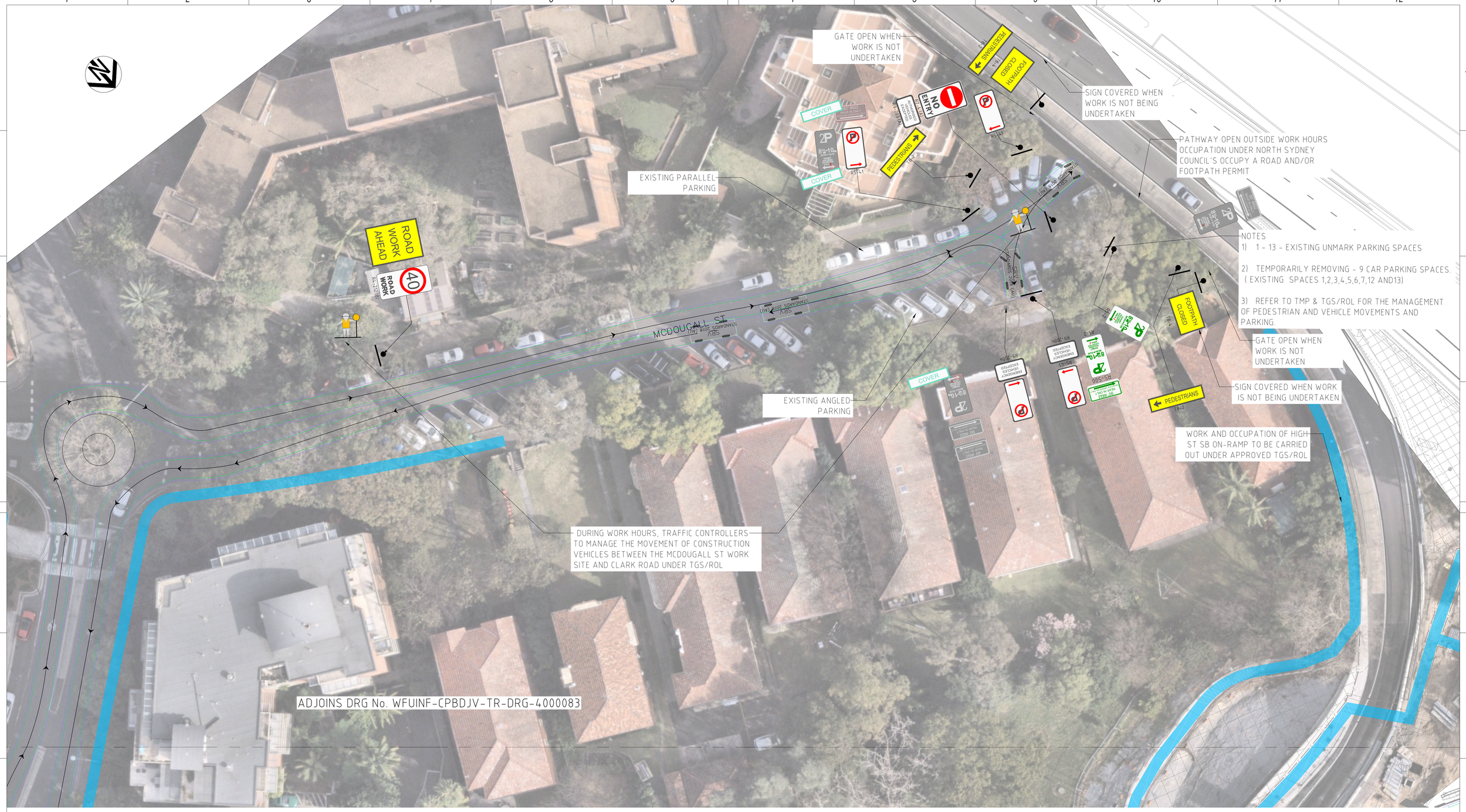
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WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST- LOCAL ROAD E132

6.4m SRV

ROUTE ASSESSMENT

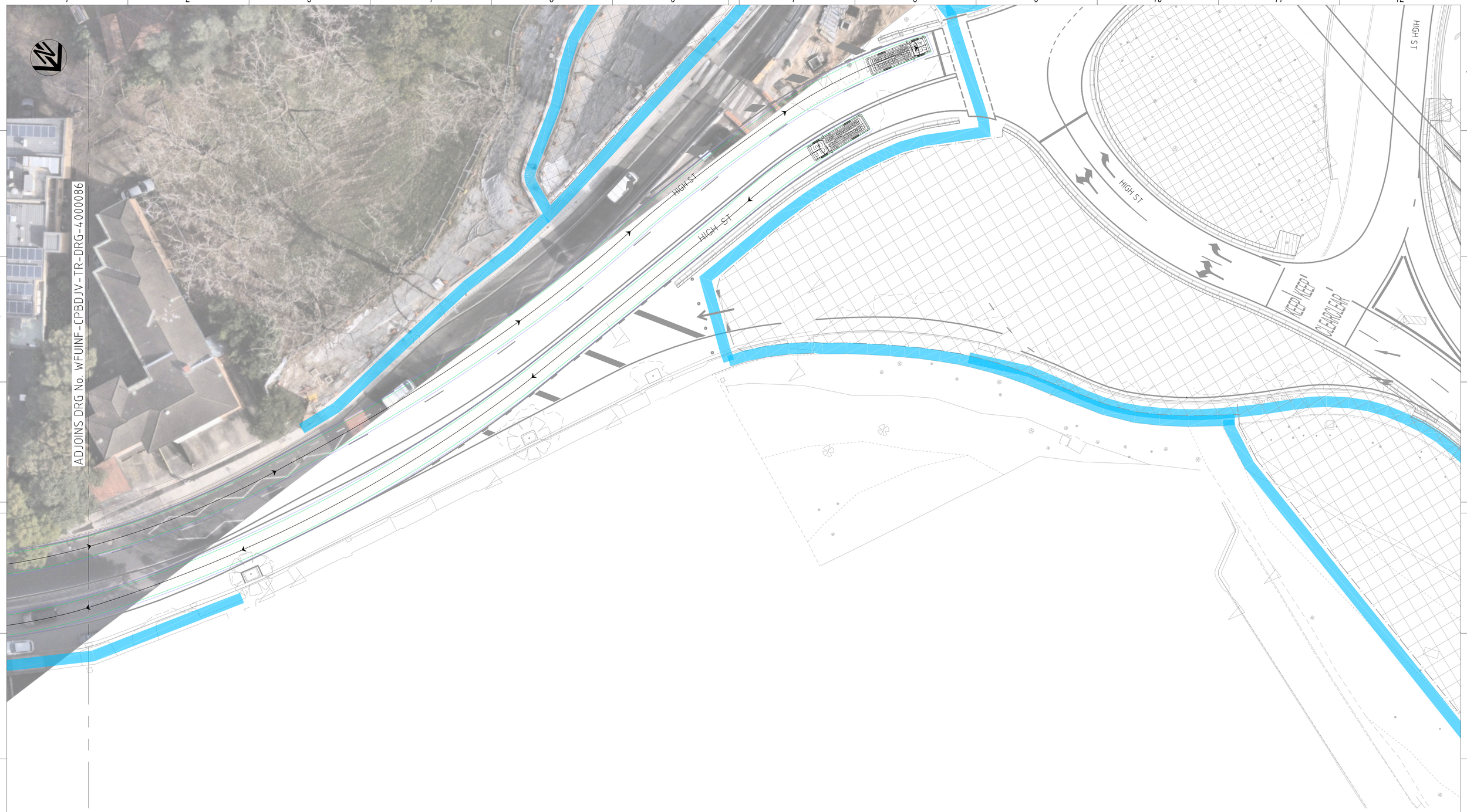
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WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST - LOCAL ROAD E132

8.8m - SERVICE VEHICLE

ROUTE ASSESSMENT

FILE No. | SHEET: 4 OF 9 | A1

STATUS: Ⓒ

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WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST - LOCAL ROAD E132

8.8m SERVICE VEHICLE

ROUTE ASSESSMENT

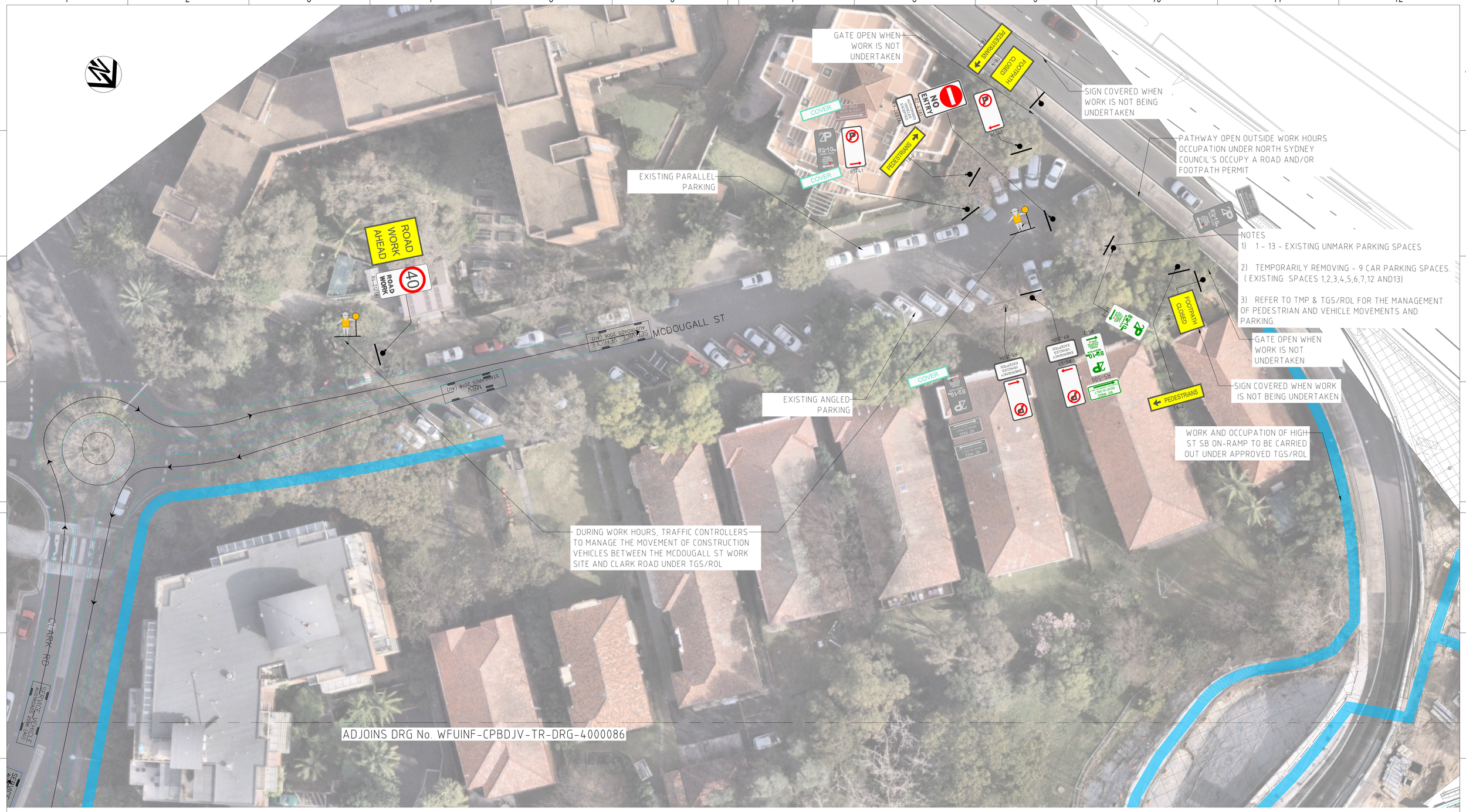
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WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST - LOCAL ROAD E132
8.8m - SERVICE VEHICLE

ROUTE ASSESSMENT

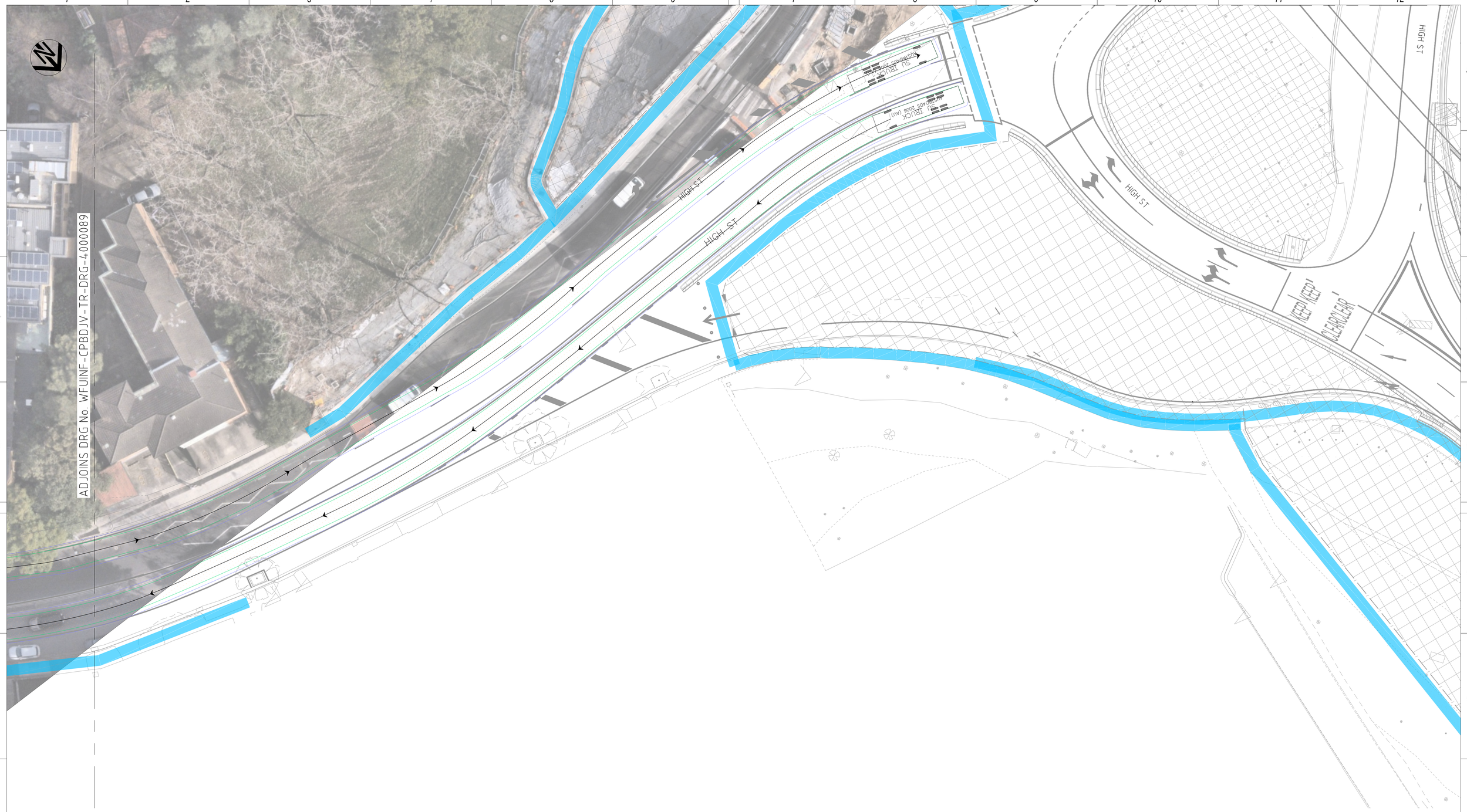
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WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST - LOCAL ROAD E132
SU TRUCK 12.5m

ROUTE ASSESSMENT

FILE No. | SHEET: 7 OF 9 | A1

STATUS: Ⓒ

DRG No. WFUINF-CPBDJV-TR-DRG-4000088 | B1 | EDMS No.

DeskSite No. 18158617 Rev 5

Plot Date: 5 November 2024 - 10:11 AM
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WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST - LOCAL ROAD E132
SU TRUCK 12.5m

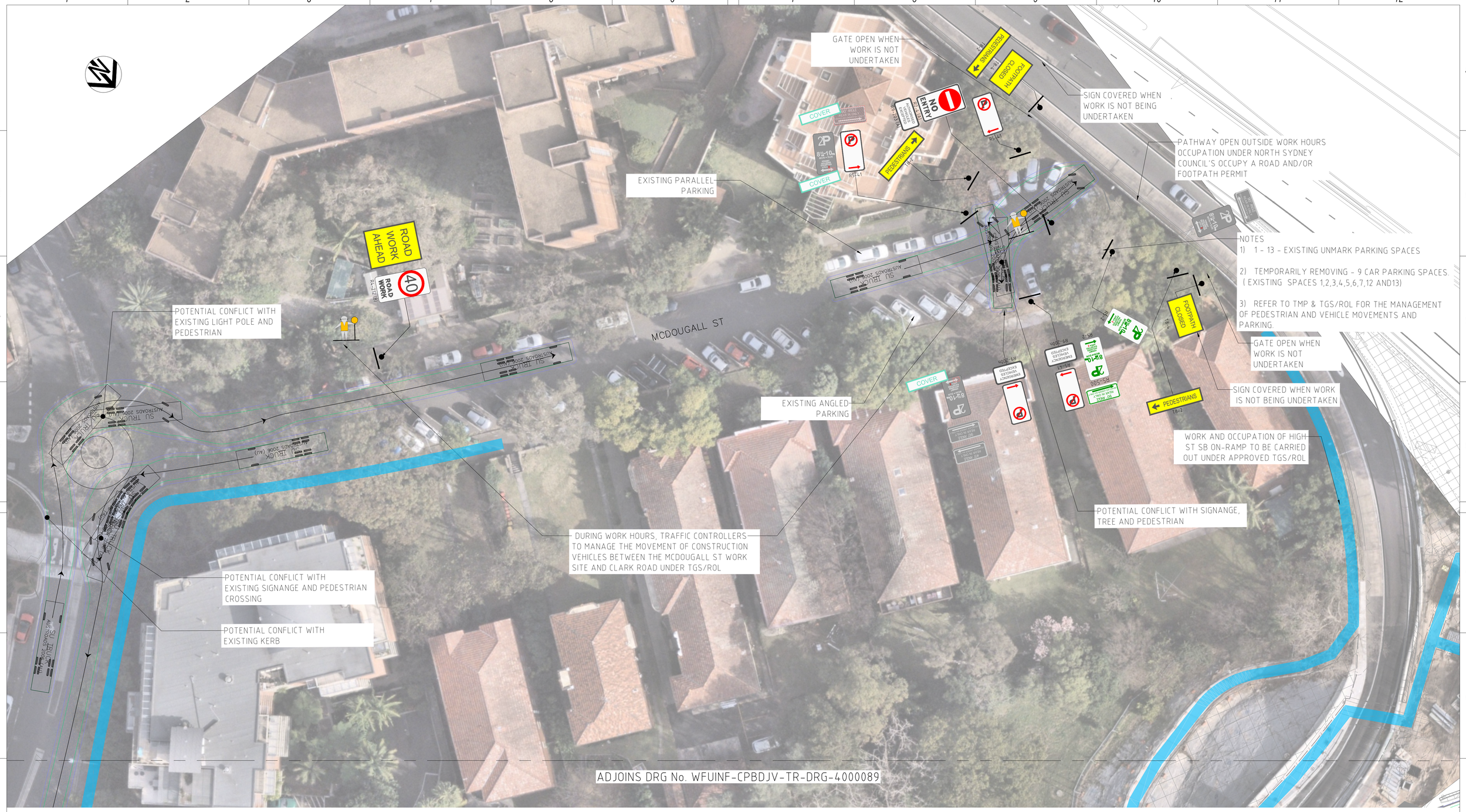
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FILE No. | SHEET: 8 OF 9 | A1

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WARRINGAH FREEWAY UPGRADE

SOUTHERN ZONE

McDOUGALL ST - LOCAL ROAD E132

SU TRUCK 12.5m

ROUTE ASSESSMENT

FILE No. | SHEET: 9 OF 9 | A1

STATUS: ©

DRG No. WFUINF-CPBDJV-TR-DRG-4000090 | B1 | EDMS No.

DeskSite No. 18135867 Rev 5

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Appendix A3 The Risk Assessment System

Each identified hazard has been recorded and assessed in accordance with the Austroads *Guide to Road Safety Part 6: Managing Road Safety Audits* (Edition 1.0), 2019. The guide recommends a risk matrix be used to determine the level of risk associated with each hazard. This risk matrix is described below.

Estimated crash frequency: the probable frequency of an incident occurring as a direct result of the hazard was determined using the scale displayed in Table 9.

Table 9 Estimated crash frequency

Frequency	Description
Frequent	Once or more per week
Probable	Once or more per year (but less than once a week)
Occasional	Once every five or ten years
Improbable	Less often than once every ten years

Estimated crash severity: the likely severity of the incident which occurred as a direct result of the hazard was determined using the scale displayed in Table 10.

Table 10 Estimated crash severity

Severity	Description	Examples
Catastrophic	Likely multiple deaths	• High-speed, multi-vehicle crash on the freeway • Car runs into a crowded bus stop • Bus and petrol tanker collide • The collapse of a bridge or tunnel
Serious	Likely death or serious injury	• High or medium-speed vehicle/vehicle collision • High or medium-speed collision with a fixed roadside object • Pedestrian or cyclist struck by a car
Minor	Likely minor injury	• Some low-speed vehicle collisions • Cyclists fall from a bicycle at low speed • Left-turn rear-end crash in a slip lane

Severity	Description	Examples
Limited	Likely trivial injury or property damage only	• Some low-speed vehicle collisions • A pedestrian walks into an object (no head injury) • Car reverses into a post

Deemed level of risk: the risk matrix displayed in Table 11 was used to assess the level of risk for each hazard. The risk matrix uses the frequency / severity determined above to determine the likely level of risk for each hazard.

Table 11 Deemed level of risk

		Frequency			
		Frequent	**Probable**	**Occasional**	**Improbable**
Severity	**Catastrophic**	Intolerable	Intolerable	Intolerable	High
	Serious	Intolerable	Intolerable	High	Medium
	Minor	Intolerable	High	Medium	Low
	Limited	High	Medium	Low	Low

Appendix A4 Driver Code of Conduct

DRIVER CODE OF CONDUCT

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

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 traveling in the opposite direction on local roads including; High St, Clark Rd, and McDougall St, at the intersections of High St and Clark Rd; and Clark Rd and McDougall St roundabout.
- Be informed of the high pedestrian, school, and aged pedestrian activity on Clark Road and at the intersection of Clark Rd and McDougall St
- 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 CPBDTI Traffic Manager.
- Park within work sites and site compounds where possible. Parking on public roads is to be avoided and where existing on-street parking spaces have been removed to facilitate the swept path of vehicles. Where this is not possible, contact your CPBDTI contact to seek alternative arrangements.
- 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 CPBDTI. If the offending person is employed by another organisation providing a service or product to CPBDTI, then a suspension or cancellation of a service contract or arrangement with that organisation may be considered.

Appendix A5 Heavy vehicle routes according to vehicle size

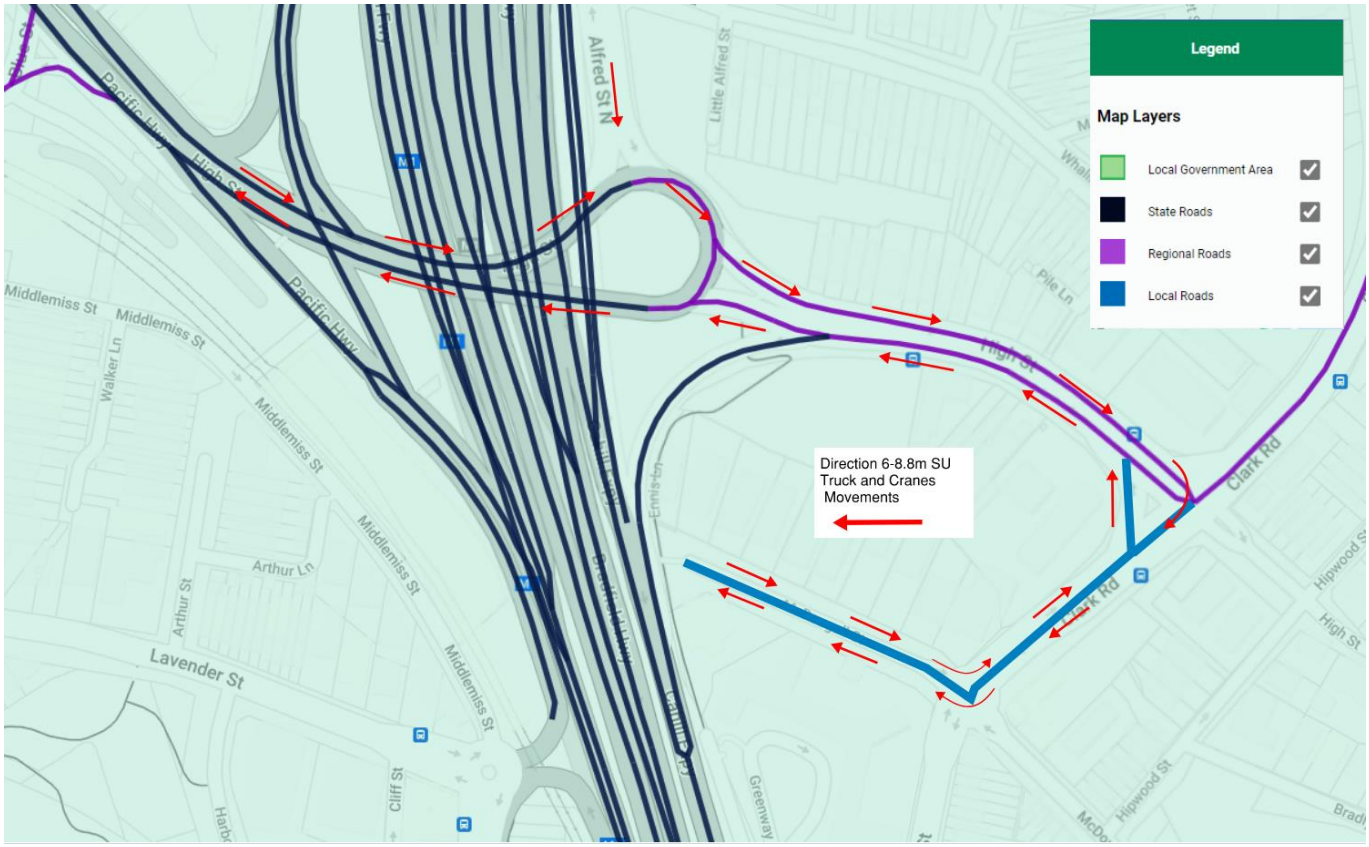


Figure 7 Heavy Vehicle routes 6m - 8.8m SU Truck and Cranes