

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Sydney Metro West – Western Tunnelling Package

Clyde/ Rosehill Site Operations Stage 1

February 2025 to December 2026

Document Reference #: **SMWSTWTP-GLO-CLJ-TF-PLN-000004**

Current Revision: **H**

Issue Date: **29 January 2025**

Document Details

Document Title	Clyde/ Rosehill Site Operations Stage 1
Project Name	Sydney Metro West – Western Tunnelling Package
Client	Sydney Metro
Document Reference No.	SMWSTWTP-GLO-CLJ-TF-PLN-000004
Revision Date	29 January 2025

Revision History

Rev	Date	Comments
A	20 June 2022	Initial submission
B	7 July 2022	Revised based on comments received
C	12 October 2022	Updated to include changes on the road system
D	31 October 2022	Updated Appendix B & H Updated Figure 3-15
E	6 March 2023	Added 3.2.3 – Tunnel Boring Machine Transportation and associated works Updated Section 4 - To include Grand Ave as part of the Haulage route due to height restrictions on Wentworth St. Updated section 7.4 – Onsite contacts
F	15 April 2024	Updated Figure 2-1 Updated Table 3-1 Added 3.2.3.1.1.1 Added 3.2.9 Updated Figures 3-30 – 3-32 Updated 3.5 & 3.5.1 Updated 4.3.1 Updated 4.4 Updated 7.3

		Added Appendix J – Approved Work Zones
G	13 May 2024	Temporary Parking removal (3.2.11)
H	29 January 2025	For Unwin St overbridge completion and opening Updated Figure 2.1 Updated figures Chapter 3 Updated table 3-1 TBM delivery section removed New desktop RSA conducted

Document Authorisation

Action Type	Position	Name	Signature	Date Signed
Prepared by	Traffic Manager			29.01.2025
Reviewed by	Logistics Manager			29.01.2025
<p>I hereby confirm this activity and all associated work, have been appropriately planned and the relevant resources are available to conduct the work in accordance with the agreed method.</p> <p>I hereby approve this activity to commence, as the stated controls applications are the most appropriate and are in accordance with the Risk Matrix.</p>				
Approved by	Senior Project Manager			29.01.2025

NOTES: Once all signatures have been obtained, the Document Author is responsible for ensuring the signed and approved hard and soft copies are uploaded on to the project share drive or passed to the Responsible Person for filing.

Table of Contents	
Document Details.....	2
Revision History	2
Document Authorisation.....	3
1 INTRODUCTION	8
1.1 Project Description	8
1.2 Purpose	9
1.3 Objectives	9
2 LOCALITY AND EXISTING CONDITIONS.....	10
2.1 Wentworth Street	14
2.2 Kay Street	16
2.3 Unwin Street	16
2.4 Shirley Street	17
2.5 Martha Street	18
2.6 Deniehy Street	18
2.7 Tennyson Street.....	19
2.8 Colquhoun Street	19
2.9 Grand Avenue.....	20
3 SITE OPERATIONS	21
3.1 Working hours.....	21
3.2 Operating Conditions	22
3.2.1 Road Design	30
3.2.2 Haul Road.....	31
3.2.3 Gate Changes.....	31
3.2.4 Impact on Traffic Flow	32
3.2.5 Impact on public transport.....	34
3.2.6 Impact on active transport.....	34
3.2.7 Impact on properties and utilities.....	36
3.2.8 Impact on parking.....	37
3.2.9 Work Zones and Heavy Vehicle Marshalling	37
3.2.10 Cumulative impacts.....	37
3.2.11 Staged temporary removal of parking for Over Size & Over Mass Deliveries	37
3.3 Special events.....	39
3.4 Staff transport and parking.....	41
3.5 Traffic Guidance Schemes (TGS) identified works	44
3.5.1 Road occupation and restoration.....	44
4 FLEET MANAGEMENT.....	45
4.1 Management strategy	45
4.2 Drivers and operators.....	45
4.3 Heavy vehicle routes and compliance	46
4.3.1 Approved heavy vehicle routes	47
4.4 Permits / Over dimensional vehicles	49

5 MINISTERIAL CONDITIONS OF APPROVAL	50
5.1 Heavy Vehicle Local Road (HVLRL) report	50
5.2 Construction Parking and Access Strategy (CPAS).....	50
5.3 Road dilapidation report	51
6 COMMUNITY AND CONSULTATION	52
6.1 Communications and the community	52
6.2 Speed awareness signs	52
6.3 Stakeholders	52
6.3.1 Traffic and Transport Liaison Group (TTLG).....	52
6.3.2 Traffic Control Group (TCG).....	53
6.3.3 Emergency Services	53
7 OTHER CONSIDERATIONS	54
7.1 Road safety audits	54
7.2 Inspections and monitoring	54
7.3 Emergency and incident management	55
7.4 On site contacts	55

List of Tables

Table 3-1: Proposed site operations gates	22
Table 3-2: Comparison of EIS and GLC Site Operations vehicle movements (numbers)	33
Table 3-3: 2019 traffic volumes (source: EIS Chapter 10 Table 10-16 page 10-13)	34
Table 3-4 Combined Nighttime Survey of Parking Usage on Grande Ave & Colquhoun St.	38
Table 4-1: Roads to be used not included in the EIS.....	47
Table 6-1:Proposed community notifications.....	52
Table 6-2: Stakeholder consultation details.....	52
Table 7-1: inspections and frequency.....	54
Table 7-2: Site contacts	55
Table 7-3: Relevant Ministerial Conditions of Approval	56
Table 7-4: Relevant Revised Environmental Management Measures	61
Table 7-5: Traffic Guidance Schemes	66
Table 7-6: Road design drawings.....	71

List of Figures

Figure 2-1: Site locality.....	10
Figure 2-2: Existing land use zoning	11
Figure 2-3: Existing sensitive receivers	12
Figure 2-4: TfNSW Road Network Classification	13
Figure 2-5: TfNSW recognised PBS routes	14

Figure 2-6: TfNSW Cycleway Finder	15
Figure 2-7: Speed management device on Unwin Street	17
Figure 2-8: Parking on Shirley Street	18
Figure 2-9: Speed management device on Colquhoun Street	19
Figure 3-1: Gate locations for site operations works - north	23
Figure 3-2 – Site Access Gate RH 1	24
Figure 3-3 – Site Access Gate RH 2	24
Figure 3-4: Light vehicle access egress via Gate RH 3	25
Figure 3-5 Vehicle entry via Gate RH 4 (Shirley St)	25
Figure 3-6 Vehicle egress via Gate RH 4 (Shirley St).....	26
Figure 3-7: James Ruse Drive vehicle entry into site and exit from site	27
Figure 3-8: Gate CD02 Unwin Street heavy vehicle egress from the Rosehill site	28
Figure 3-9 Site parking and MSF01 access from Wentworth St	29
Figure 3-10: Deniehy Street area to be subsumed into site and gate MSF02	29
Figure 3-11 - Unwin St diversion and overbridge design	30
Figure 3-12 - Wentworth St area	30
Figure 3-13 - New Fleet St Gate	31
Figure 3-14: EIS light vehicle movements	32
Figure 3-15: EIS hourly heavy vehicle movements (source: EIS Chapter 10 page 10-13).....	33
Figure 3-16: TfNSW Road Safety Centre for NSW – Crash statistics	35
Figure 3-17: Proposed Truck Aware decal locations	36
Figure 3-18 Grande Avenue parking removal.....	38
Figure 3-19 Colquhoun Street parking removal.....	38
Figure 3-20: Rosehill Gardens Racecourse gate overview	39
Figure 3-21: Rosehill site light vehicle onsite parking	41
Figure 3-22: Clyde Dive Light Vehicle onsite parking	41
Figure 3-23 - P4 parking spaces (under agreement with ATC).....	42
Figure 3-24: MSF East Light Vehicle onsite parking	42
Figure 3-25: MSF GATE 9 Entry to site and LV Parking gate	43
Figure 4-1: EIS nominated heavy vehicle routes	46
Figure 4-2: Local roads within the Clyde/ Rosehill area.....	48
Figure 4-3: M4 Overpass on Wentworth Street	49

Appendices

A Compliance Tables.....	56
B Traffic Guidance Schemes.....	66

C Heavy Vehicle Local Road Report.....	67
D Construction Parking and Access Strategy.....	68
E Road Safety Audit Report.....	69
F Stakeholder Consultation.....	70
G Road Design Drawings.....	71
H Portable Variable Message Signs	72

1 INTRODUCTION

1.1 Project Description

Sydney Metro is Australia's biggest public transport project, with the vision "to transform Sydney with a world-class metro." In 2024, Sydney will have 31 metro stations and more than 66 kilometres of new metro rail, revolutionising the way Australia's biggest city travels. By the end of the decade, the network will be expanded to include 46 stations and more than 113 kilometres of world-class metro for Sydney.

Sydney Metro West is a new 24-kilometre metro line with stations confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD.

On completion in 2030, the Sydney Metro West project will support a growing city and deliver world-class metro services to more communities. This new underground railway will connect Greater Parramatta and the Sydney CBD.

This once-in-a-century infrastructure investment will transform Sydney for generations to come, doubling rail capacity between the two CBDs, linking new communities to rail services, and supporting employment growth and housing supply. The Sydney Metro West project is expected to create about 10,000 direct and 70,000 indirect jobs during construction.

The new 24-kilometre Sydney Metro West tunnel and excavation works for nine new stations will be delivered in three contracts—the Western Tunnelling Package (WTP), the Central Tunnelling Package (CTP) and the Eastern Tunnelling Package (ETP).

The Gamuda Australia and Laing O'Rourke Consortium (GLC) will deliver the Sydney Metro West (SMW) Western Tunnelling Package (WTP), which includes:

- Westmead Station box excavation, including temporary support, stub tunnels, partially mined station cavern and crossover cavern including permanent lining and support
- Parramatta Station, including excavation of station box and associated support
- Clyde Maintenance and Stabling Facility (MSF), including permanent dive structure, portal, spur running tunnels, spur tunnel junction cavern, bulk earthworks, civil structures, utilities corridor, road crossing and creek diversion
- Rosehill Services Facility, including shaft excavation, permanent lining and lateral support
- A precast segment manufacturing facility at Eastern Creek
- Demolition and site clearance works
- Tunnelling between Sydney Olympic Park (SOP) and Westmead. Tunnelling will be undertaken by placing the tunnel boring machines (TBMs) at the Rosehill Services Facility box and retrieved out at the SOP Station Box and then placed back at the Rosehill Services Facility and retrieved at the Westmead Station Box. No surface works are proposed at SOP except for the retrieval of the TBM.

1.2 Purpose

This Clyde/ Rosehill site specific Construction Traffic Management Plan (CTMP or this Plan) has been developed by Gamuda Laing O'Rourke (GLC) to identify the traffic management measures at the Clyde/ Rosehill worksite for site operations Stage 1 associated with the Sydney Metro West Western Tunnelling Package (WTP Works). Further Plans will be developed for the various phase of works as noted below:

- Clyde/ Rosehill Site Establishment – Approved
- Clyde/ Rosehill Utility Works - depending on the outcomes of the investigation works detailed in this CTMP
- Clyde/ Rosehill Site Operations – change to parking and speed reduction
- Site Operations, TBM transportation and associated works
- **Site Operations – OSOM transportation and associated works and Unwin Street overbridge completion and opening – THIS PLAN**

This plan sets out the traffic management initiatives that will be deployed to minimise disruption and ensure the safety of the wide range of stakeholders potentially affected by the WTP works including but not limited to motorists, pedestrians, cyclists, public transport users, local residents, property owners, business owners and workers/ staff.

This plan has been prepared in accordance with SSI 10038 Planning Approval Condition D85 and will be submitted to the Planning Secretary of the NSW Department of Planning and Environment for information prior to the commencement of any construction in the area identified and managed within this CTMP

1.3 Objectives

GLC are committed to striving to achieve the objectives as outlined in the CTMF and the environmental performance outcomes, namely:

- a) Minimising disruption and maintaining safety for all road users including pedestrian, cyclists, motorists and public transport users and providers
- b) Ensuring construction traffic access the arterial network as soon as practicable on route to and immediately after leaving the construction site
- c) Minimising change to traffic operations and kerbside access
- d) Minimising construction traffic generation during network peak periods, as outlined in the EIS
- e) Maintaining access to properties, businesses, and utility providers/ maintainers
- f) Remain incident and injury free to workers and members of the public
- g) Working collaboratively with other stakeholders and other major projects to mitigate traffic and transport impacts

2 LOCALITY AND EXISTING CONDITIONS

The site is located in an industrial area of western Sydney and is bounded by Duck Creek to the south, Unwin Street to the north, the Carlingford corridor to the west and Shirley Street/ Tennyson Street to the east as shown below on Figure 2-1 which indicates Unwin St diversion and overbridge.



Figure 2-1: Site locality

The Clyde/ Rosehill site is located within the nominated construction zone, highlighted below and is situated in a highly industrialised area which is predominantly zoned for industrial uses, refer to Figure 2-2.

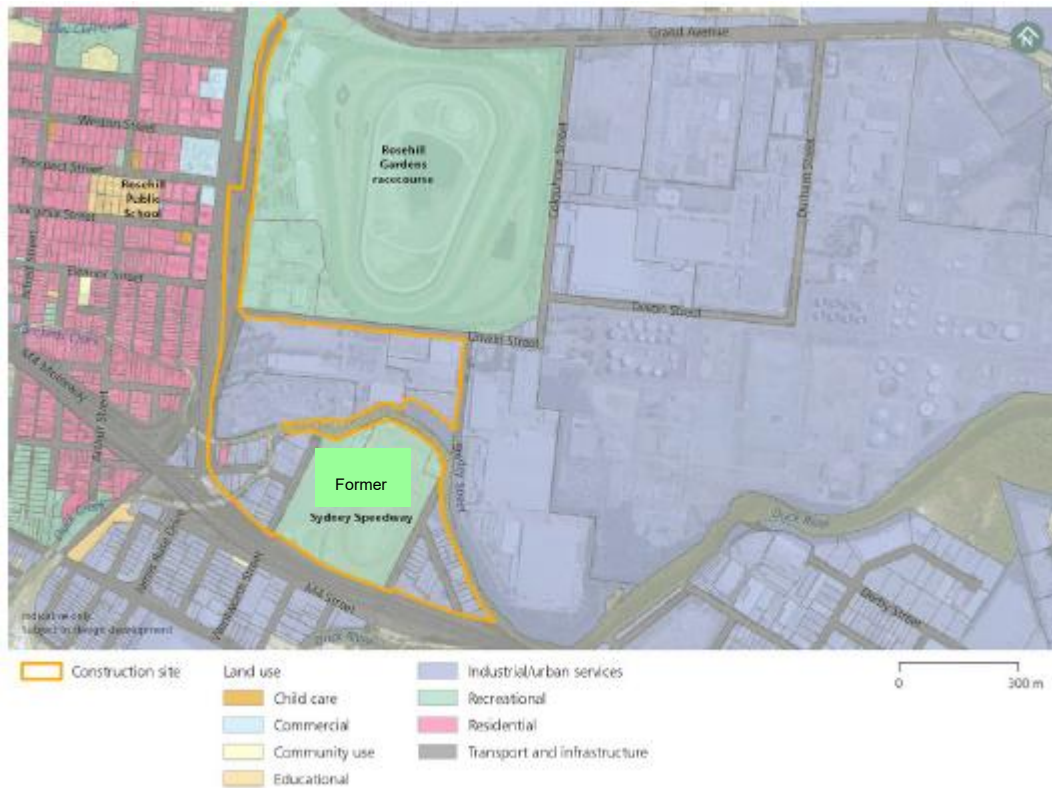


Figure 2-2: Existing land use zoning

A review of the existing sensitive receivers and their locations was undertaken by Sydney Metro West during the EIS development phase. The result of this review is shown below on Figure 2-3. A land use survey is included as part of the detailed Noise and Vibration Impact Statement (SMWSTWTP-GLO-1NL-NL000-NV-PLN-000002). This is currently in draft and is being informed by construction from the EPA and other stakeholders. Throughout the construction period this detailed Noise and Vibration Impact Statement will be an evolving document.

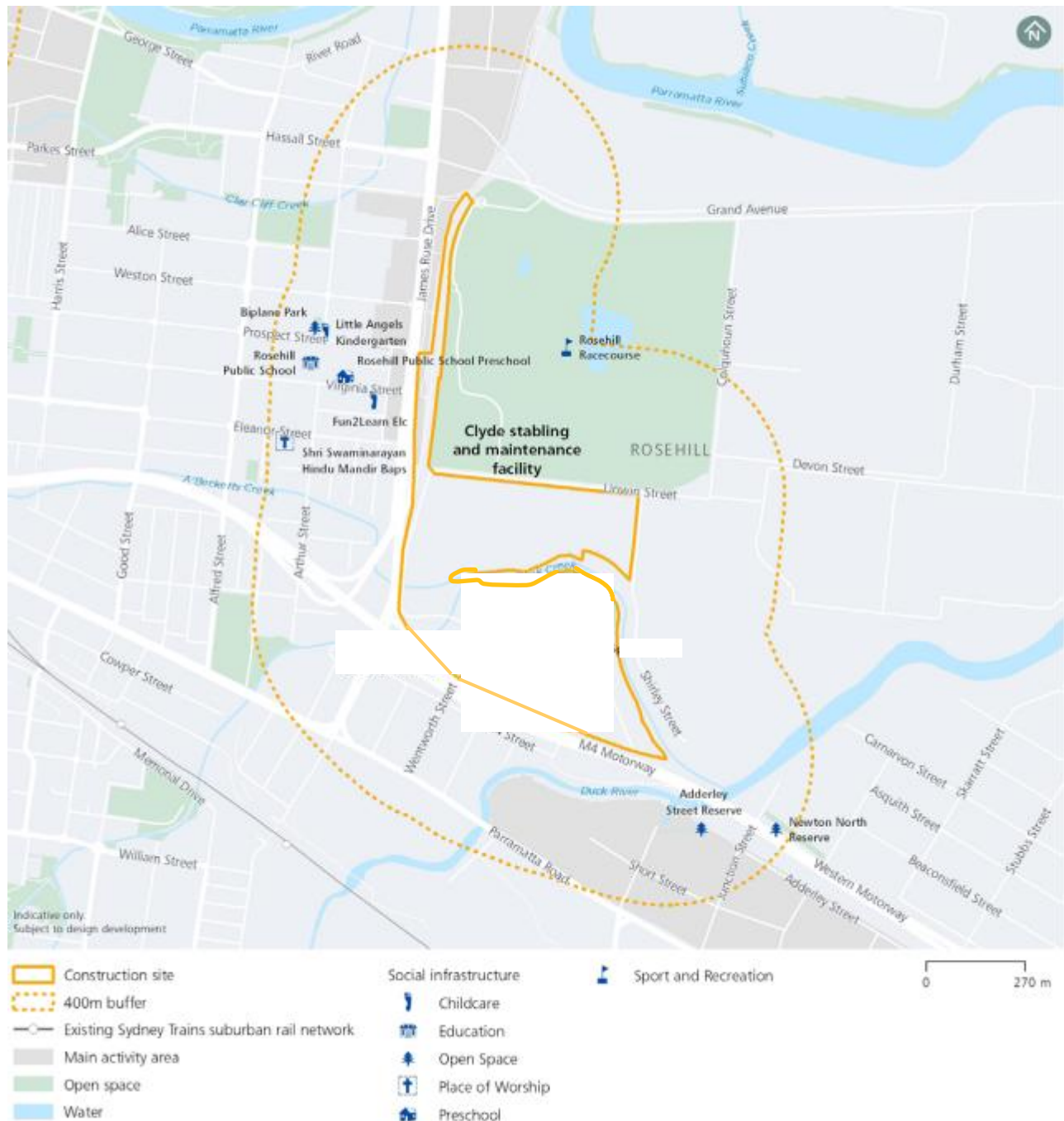


Figure 2-3: Existing sensitive receivers

Surrounding the site, the road network is typically local roads, with Parramatta Road, James Ruse Drive and Church Street being state arterial roads. The M4 Motorway is south of the site, refer to Figure 2-4. Refer to figure 2-2 for actual site boundaries.



Figure 2-4: TfNSW [Road Network Classification](#)

Surrounding the site, the road network is typically recognised as Performance Based Standard routes allowing the use of greater mass vehicles, refer to Figure 2-5. The use of PBS vehicles will reduce the number of vehicles required for the spoil haulage task in particular. This will be notable post the TBM launch.

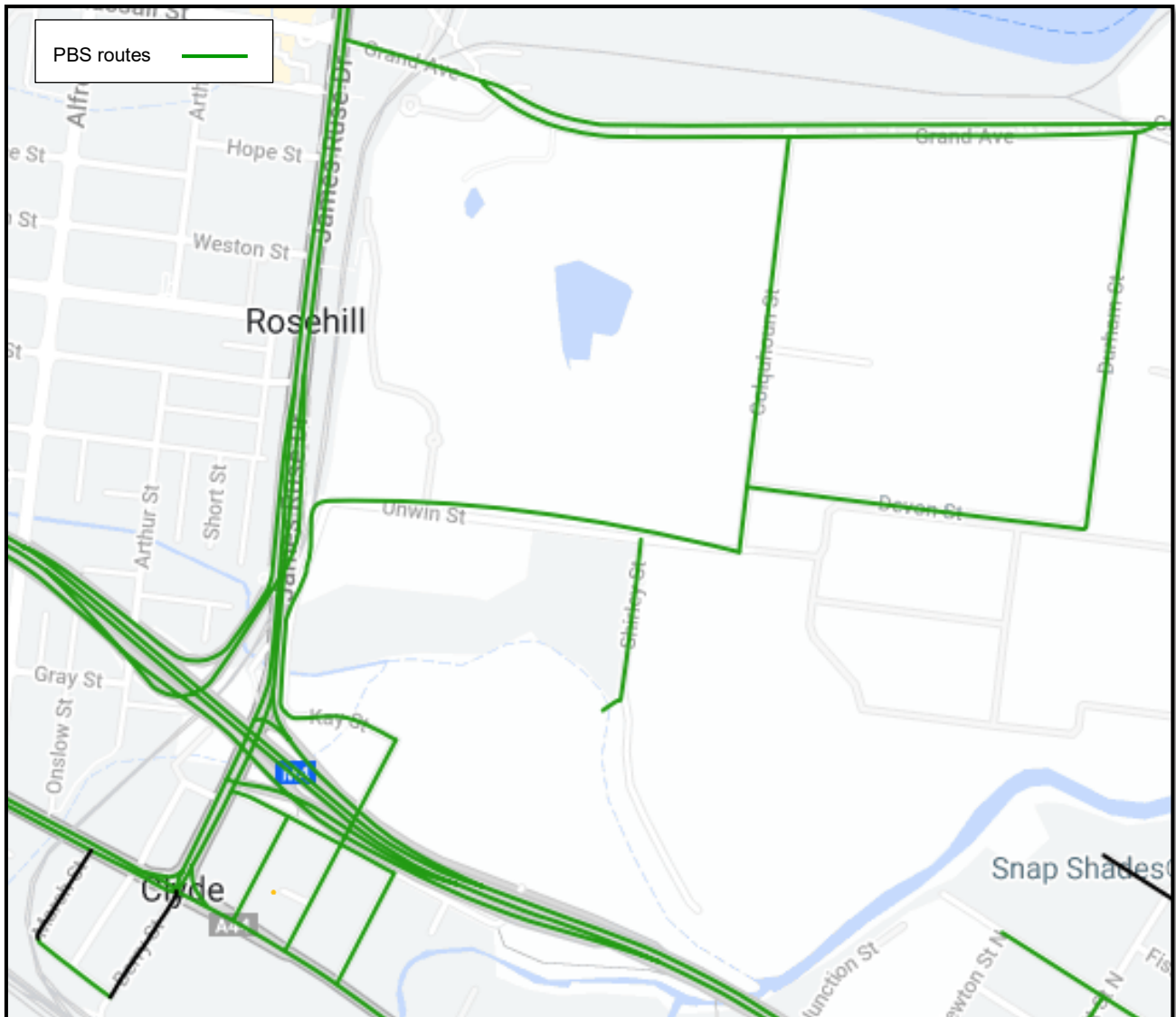


Figure 2-5: TfNSW recognised PBS routes

2.1 Wentworth Street

Wentworth Street is a local road under the care and control of the City of Parramatta Council. It starts at Parramatta Road and ceases at Kay Street Clyde. Wentworth Street runs in a north south direction. The speed limit is 40km/hr. No public transport operates along Wentworth Street.

North of the M4 Motorway overpass, the street previously contained industrial uses on the western side, however, with the demolition works by Sydney Metro West, the western side of the street contains no premises. On the eastern side of the street, Sydney Speedway was previously located. The speedway site also forms part of the Sydney Metro west Clyde site. South of the M4 Motorway overpass, the street has industrial complexes on both sides of the street. North of Kay Street,

Wentworth Street has been acquired by Sydney Metro from the City of Parramatta Council and was closed to the public on 14th June 2022 and Sydney Metro West has an interface agreement with Parramatta City Council for the area of Wentworth Street from north of the M4 overpass. All other land required for the construction and operation of the Sydney Metro West Stage 1 has been acquired by Sydney Metro.

Traffic signals are located at the intersection of Wentworth Street and Parramatta Road. These signals allow for all movements. Signalised pedestrian crossings are provided across Wentworth Street and on the northern approach on Parramatta Road. A left turn arrow hold is provided for east to north movements providing protection for the Wentworth Street signalised crossing.

Parking is typically unrestricted along Wentworth Street with a small section of No Parking provided on the eastern side of Wentworth Street leading towards the signals on Parramatta Road.

Footpaths are provided on both sides of the street between the M4 Motorway overpass and Parramatta Road. North of the overpass, a footpath is only provided on the western side.

A shared cycle path crosses Wentworth Street at the intersection with Martha Street. No dedicated crossing facilities are provided across Wentworth Street. This shared path is known as the M4 Motorway shared path, connecting South Wentworthville to Sydney Olympic Park, refer to Figure 2-6.

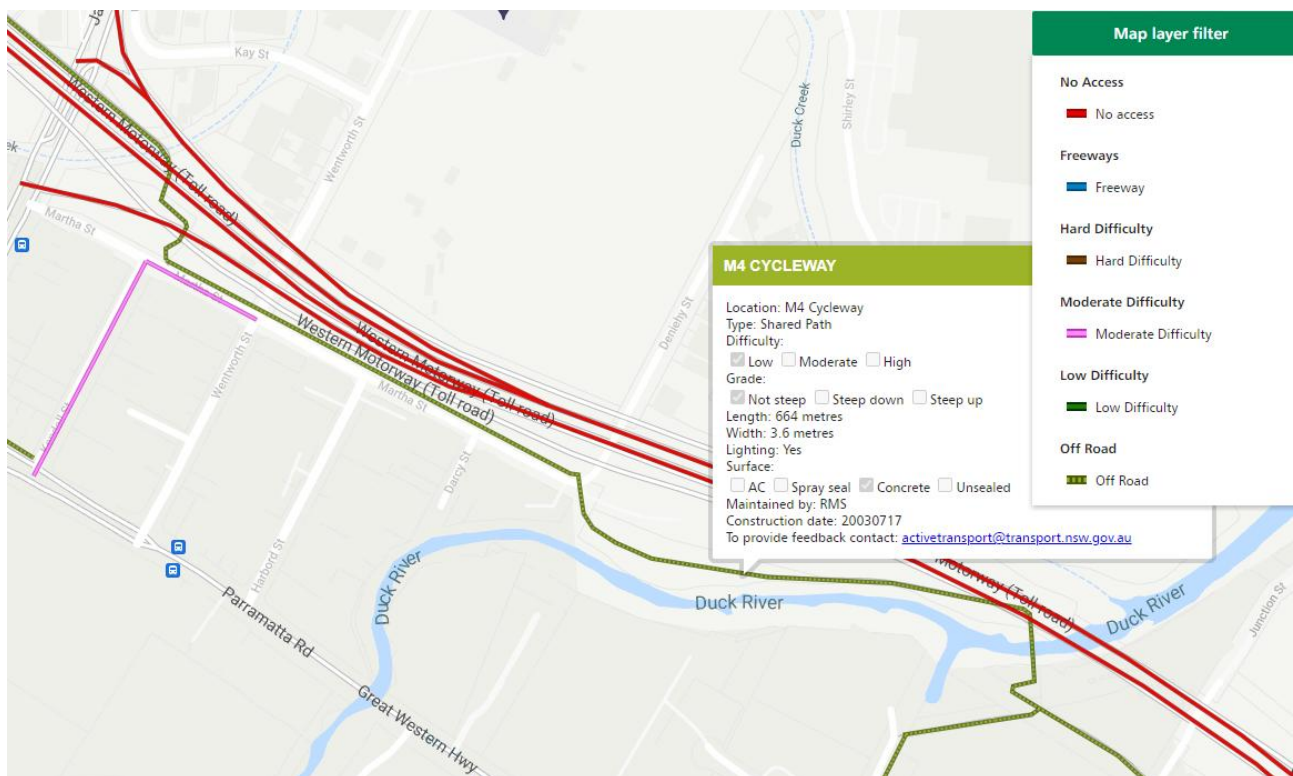


Figure 2-6: [TfNSW Cycleway Finder](#)

2.2 Kay Street

Kay Street was previously a local road under the care and control of the City of Parramatta Council. It starts at Wentworth Street and ceases at Unwin Street. Kay Street runs in an east west direction. The speed limit is 40km/hr. The street previously contained industrial premises which have been demolished as part of the Sydney Metro Enabling Works. There is no public transport operating along Kay Street. Parking is typically unrestricted. Footpaths are provided on both sides of the street. A bridge over Duck Creek is located on Kay Street. It is noted that Sydney Metro West has an interface agreement with Parramatta City Council for the area of Kay Street for the Western Tunnelling Package of works.

2.3 Unwin Street

Unwin Street, in sections, is a local road under the care and control of the City of Parramatta council. It starts at Kay Street and ceases at Colquhoun Street. Unwin Street runs in a north south direction between Kay Street and Unwin Street and east west direction between Unwin Street and Colquhoun Street. The existing speed limit is 40km/hr. No public transport operates along Unwin Street. Parking is restricted on the western side of Unwin Street between Kay Street and Unwin Street between the hours of 630AM-430PM Monday to Friday. There is a small section of 30 minute parking on the southern side of Unwin Street opposite the Rosehill Gardens entry to the stables. Outside of these two locations, parking is generally unrestricted.

Unwin Street between Kay Street and Unwin Street on the eastern side of the street, previously contained industrial premises which have been demolished by the Sydney Metro Enabling Works contractor. On the western side of this section of Unwin Street, the former Carlingford corridor. This rail line was closed in January 2020.

Fleet Street is located off Unwin Street. Fleet Street contains a TfNSW depot and provides a footpath connection to James Ruse Drive.

Unwin Street between Unwin Street and Shirley Street on the southern side of the street, also previously contained industrial premises which have largely been demolished other than the RTA heritage wall. The northern boundary of Unwin Street is bordered by Rosehill Gardens Racecourse.

Unwin Street has footpaths on the eastern side between Kay Street and Unwin Street and a small section of footpath exists on the southern side for approximately 160m east of Unwin Street. No other footpaths are provided, until east of Shirley Street.

A bridge over A'Becketts Creek is located on Unwin Street. It is noted that Sydney Metro West has an interface agreement with Parramatta City Council for the area of Unwin Street from Gate 1 (refer to figure 3.1) to Kay St in both directions.

Speed management devices are located along the east-west section of Unwin Street, as noted on Figure 2-7.



Figure 2-7: Speed management device on Unwin Street

2.4 Shirley Street

Shirley Street is a local road under the care and control of the City of Parramatta Council. It starts at Unwin Street and ceases at Duck River. Shirley Street generally runs in a north south direction. The speed limit is 40km/hr. the street previously contained industrial uses on the west side of the street north of Duck River, however, these were demolished as part of the Sydney Metro Enabling Works. Bulky good premises are located on the eastern side of the street. No public transport operates along Shirley Street. Parking is generally unrestricted; however, No Stopping is installed south of the Hytec gate, approximately 65m south of the Unwin Street kerb on the western side.

It is noted, however, that parking between the power poles occurs, refer to Figure 2-8.



Figure 2-8: Parking on Shirley Street

2.5 Martha Street

Martha Street is a local road under the care and control of the City of Parramatta Council. It starts at James Ruse Drive and ends at Deniehy Street. Martha Street runs east to west and has a speed limit of 50km/hr. the street has industrial uses on the southern side and the M4 Motorway on the northern side. Parking is unrestricted along both sides of Martha Street. The M4 Motorway shared path is located on the northern side of Martha Street and a footpath is located on the southern side. At the eastern most end the shared path crosses across Martha Street to continue towards the east. There is no public transport along Martha Street.

2.6 Deniehy Street

Deniehy Street is a local road previously under the care and control of the City of Parramatta Council but this road is now under the Sydney Metro West ownership and was closed to the public on 14th June 2022. Footpaths typically exist only under the M4 Motorway overpass. No public transport operates along Deniehy Street. The buildings in this area will be demolished and the street will be incorporated into the construction site. However, at present the street is open to the public. Parking is unrestricted.

2.7 Tennyson Street

Tennyson Street is a local road previously under the care and control of the City of Parramatta Council but this road is now under the Sydney Metro West ownership and was closed to the public on 14th June 2022. Footpaths do not exist. No public transport operates along Deniehy Street. The buildings in this area will be demolished and the street will be incorporated into the construction site. However, at present the street is open to the public. Parking is unrestricted.

2.8 Colquhoun Street

Colquhoun Street is a local road under the care and control of the City of Parramatta Council. It starts at Grand Ave and ends at Unwin St. Colquhoun Street runs north to south and has a speed limit of 50km/hr. the street has industrial uses on the eastern side, including the Parramatta Light Rail stabling yard and the Rosehill racecourse on the western side. Parking is unrestricted along both sides of Colquhoun Street. There is no paved footpath although the grass verge on either side can be used by pedestrians. There is no public transport along Colquhoun Street.

Speed management devices are located along Colquhoun Street, as noted on Figure 2-9



Figure 2-9: Speed management device on Colquhoun Street

2.9 Grand Avenue

Grand Avenue is a local road under the care and control of the City of Parramatta Council. It starts at James Ruse Drive and ceases at the Parramatta River, Clyde. A small section of Grand Ave, east of Colquhoun St is under the control of the Parramatta Light Rail for access and egress to their stabling yard. Grand Ave runs in an east/west direction. The current speed limit is 50km/hr. The avenue contains a number of industrial uses on the northern side, the southern side includes Rosehill racecourse, Parramatta Light Rail stabling yard (under construction) and a number of industrial buildings.

Grand Avenue provides one of two main access/egress points into the Clyde area – the other being Wentworth Avenue. No public transport operates within the area or along Grand Avenue.

Traffic signals are located at the intersection of the James Ruse Drive, allowing all turn movements by providing a dedicated right turn bay on James Ruse Drive for northbound traffic. A shared straight and left turn lane for vehicles egressing from Grand Ave.

Signalised pedestrian crossings are provided across Grand Ave and James Ruse Drive. The Grand Ave crossing includes a red arrow hold, so that vehicles on James Ruse Drive waiting to turn left onto Grand Ave are held during the pedestrian phase of the traffic signals.

Parking is typically unrestricted along Grand Ave; however, parking is restricted over the Grand Ave Sydney Trains bridge, at the Parramatta Light Railroad crossing and approaching intersections.

Grand Ave has a paved footpath on the northern side from James Ruse Drive to the Parramatta Light Rail crossing. The remainder of the road has wide grassed verges that could be used by pedestrians. There is no pedestrian access over the Grand Ave bridge at James Ruse Drive on the southern side of the road, the northern side of the bridge has a pedestrian path.

3 SITE OPERATIONS

Indicative time: February 2025 through to December 2026

Indicative duration: 1 years & 11 months

The site operations works will consist of the following:

- Dive excavation
- D-wall construction
- General earthworks
- FRP works on the permanent structure at Rosehill
- Delivery and installation of precast struts
- Shaft piling
- Shaft excavation
- Acoustic shed installation
- Ancillary facilities construction such as:
 - Workshop
 - Water treatment plant
 - Compressors
 - Substation
- Utility works previously identified in the Site Establishment Construction Traffic Management Plan previously approved.
- Maintenance facility works
- Unwin St overbridge operation

3.1 Working hours

The standard construction hours for the project are as noted in the Ministerial Conditions of Approval (MCoA D35) are:

- a) 7AM to 6PM Monday to Friday
- b) 8AM to 6PM Saturdays and
- c) at no time on Sundays or public holidays

Ministerial Conditions if Approval D37 also allows for works to be 24hours per day, seven days per week for tunnelling, delivery of materials to directly support tunnelling activities, haulage of spoil and works within the acoustic shed, under Low Impact circumstances.

3.2 Operating Conditions

Vehicle access to and from the construction site will be managed to maintain pedestrian, cyclists and motorist safety. General traffic and higher mass vehicles access in the precinct will be maintained throughout the works. At the Clyde site, pedestrian management will be in place to facilitate heavy vehicle movements, where footpath exists.

Site access/ egress is proposed as per Table 3-1 and the locations are shown on Figure 3-1.

Table 3-1: Proposed site operations gates

Gate	Location	Vehicle type	Access	Egress	Permitted movements
Rosehill Site					
RH 1	Unwin Street	Heavy	√	√	All
RH 2	Unwin Street	Heavy	√	√	All
RH 3	Unwin Street	Light	√	√	All
RH 4	Shirley St	Heavy	√	√	Right in & left out
Clyde Dive Site					
CD01	James Ruse Drive – Prospect St extension	Heavy	√	√	Right in Left out
		Light	√	√	Left/Right in Left out
CD02	Unwin Street	Light / Heavy	√	√	All Now within site
MSF Site					
MSF01	Unwin Street – LV Gate	Heavy	√	√	All
		Light	√	√	All
MSF02	Deniehy Street	Light / Heavy	√	√	Left in & right out
MSF09	Wentworth Street (east)	Heavy	√	√	All Now within site
Fleet St	Old Unwin St (south)	Light	√	√	From Unwin St All
		Heavy	√	√	From Unwin St Left in Right out
MSF10	Old Unwin St (north)	Max bogey size 12.5m	√	√	Left in Straight out

NOTE: All gates can operate as access and egress if under traffic control



Figure 3-1: Gate locations for site operations works - north

The site will be accessed via existing driveways. The two primary site access gates along Unwin Street. Gate RH 1 is shown in Figure 3-2 and is located 300m to the west of Shirley Street. Gate RH 2 is shown in Figure 3-3 and is located 150m to the west of Shirley Street.

Access to the proposed site carpark is via an existing driveway to be nominated Gate RH 3 and located approximately 60m west of Shirley Street intersection. Gate RH 3 is shown in Figure 3-4.



Figure 3-2 – Site Access Gate RH 1



Figure 3-3 – Site Access Gate RH 2



Figure 3-4: Light vehicle access egress via Gate RH 3

The site will be accessed via existing driveways for Rosehill (RH) gates 1-4. New driveways were installed for gate CD02 on Unwin Street.



Figure 3-5 Vehicle entry via Gate RH 4 (Shirley St)



Figure 3-6 Vehicle egress via Gate RH 4 (Shirley St)

Light and heavy vehicle access into the Clyde dive site is proposed via the existing signalised intersection of Prospect Street/ James Ruse Drive, #4, refer to Figure 3-7. The light vehicle access will be limited to right in and left in/ left out only whilst the heavy vehicle access will be via the right turn bay. Egress will be via a left turn onto James Ruse Drive or via the existing driveways on Unwin Street.

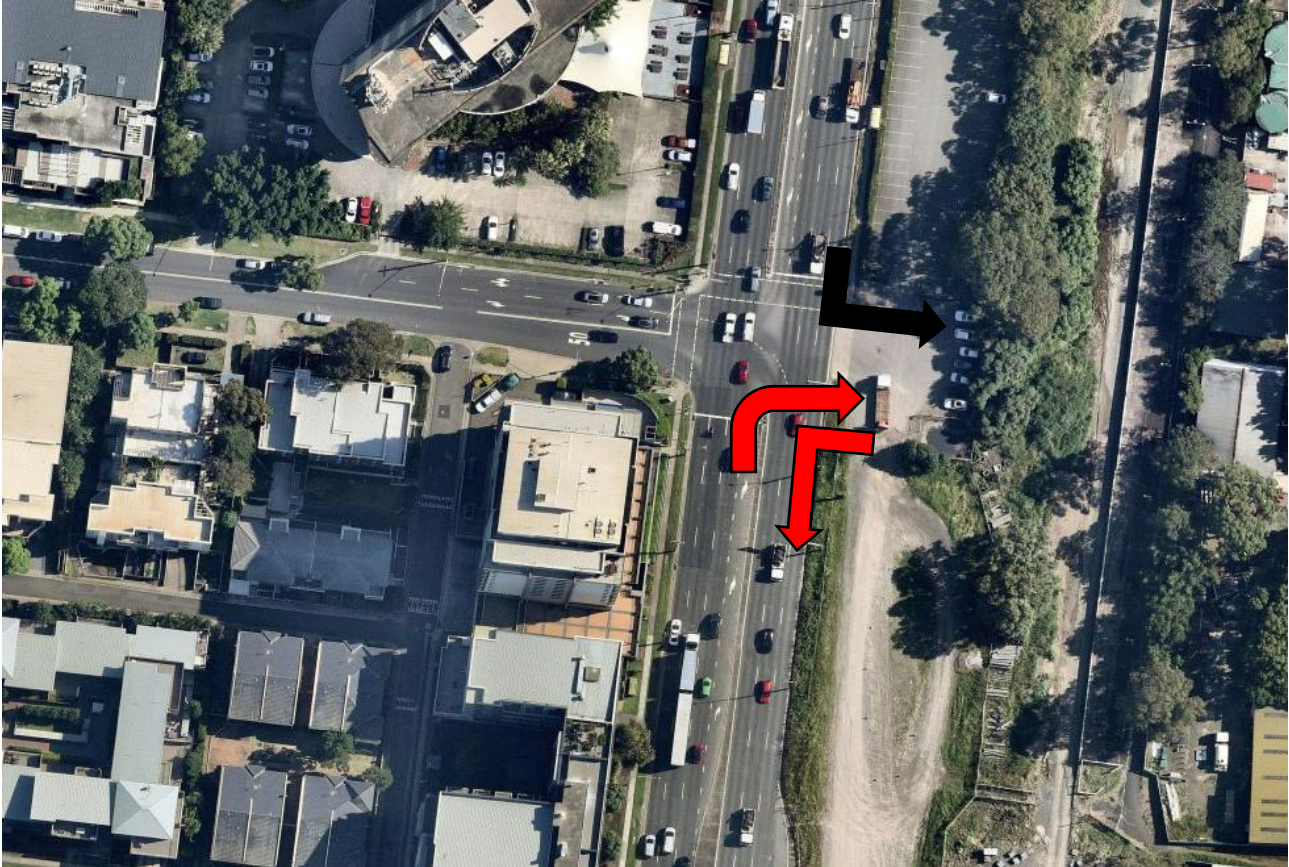


Figure 3-7: James Ruse Drive vehicle entry into site and exit from site

Heavy vehicle access into the Clyde dive site is via the P5 entry off James Ruse Drive (CD01) and egress is proposed via the existing egress point, CD02, on Unwin Street, refer to Figure 3-8. Light vehicle egress is left out of P5. A new driveway was installed to provide a more suitable egress point. Vehicles will turn left out only and exit the area via Grand Ave.



Figure 3-8: Gate CD02 Unwin Street heavy vehicle egress from the Rosehill site

Similarly, gates are required on Wentworth Street, as noted on . The gate for Wentworth Street north of old Kay Street will use the current roadway, which has been subsumed into the site, refer to figure 3-10



Figure 3-9 Site parking and MSF01 access from Wentworth St

The gate for Deniehy Street north of Martha Street will use the current roadway, which has been subsumed into the site, refer to Figure 3-10.



Figure 3-10: Deniehy Street area to be subsumed into site and gate MSF02

3.2.1 Road Design

With Unwin St diversion and overbridge open to all traffic the old section of Unwin St becomes authorised access only for TfNSW and Sydney Metro vehicles. A majority of the old Unwin St will be subsumed into site with access at the southern ends by newly created intersection. These will only be able to access internal site roads and TFNSW Fleet St depot from the southern side.

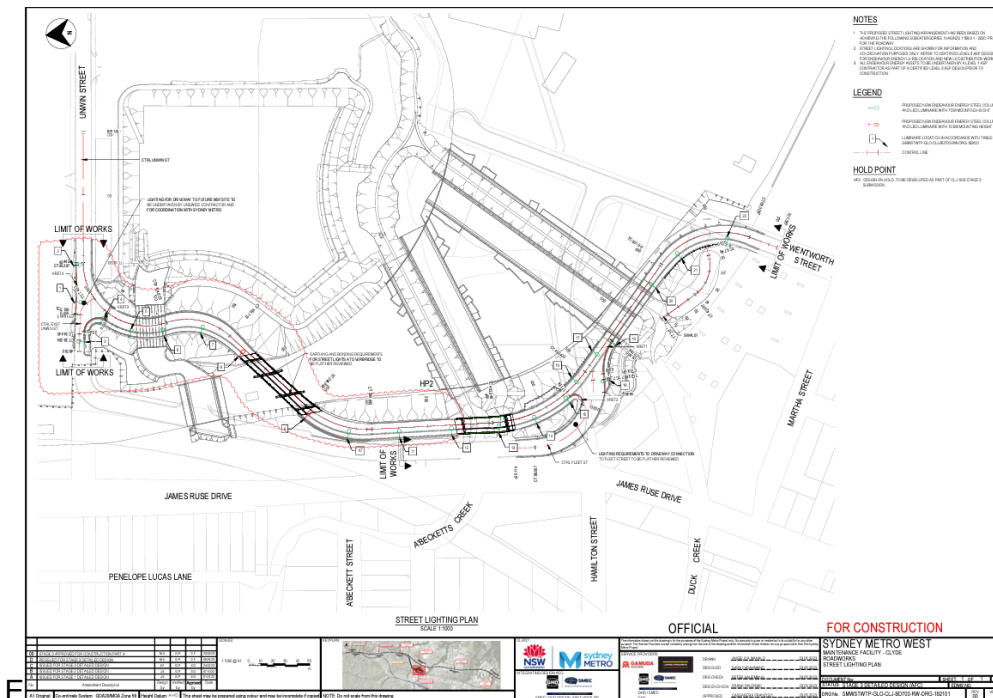


Figure 3-11 - Unwin St diversion and overbridge design

Wentworth St will have a dedicated right turn lane remain northbound into the Maintenance Facility Site (MSF01) main gate allowing for a dedicated straight through lane to prevent any queuing of traffic. This set-up will remain in place to separate work vehicles entering site shown as Gate MSF01 in figure 3-1 and 3-12 below.



Figure 3-12 - Wentworth St area

3.2.2 Haul Road

The spoil removed from the Clyde dive site will be hauled to the main Clyde site via an internal haul road that crosses the old Unwin Street section that has been subsumed into the site via the construction of the overbridge. These vehicles will be managed internally as required under traffic control.

3.2.3 Gate Changes

With the change of Unwin St one (1) new gates will be created to accommodate revised site entry points due to the realignment. Gate MSF09 and CD02 will remain as internal gates for reference. Access to these gates will be via newly created Gate – Fleet St. This side will only be accessible via the southern side of from M4 Western Motorway end of the site.

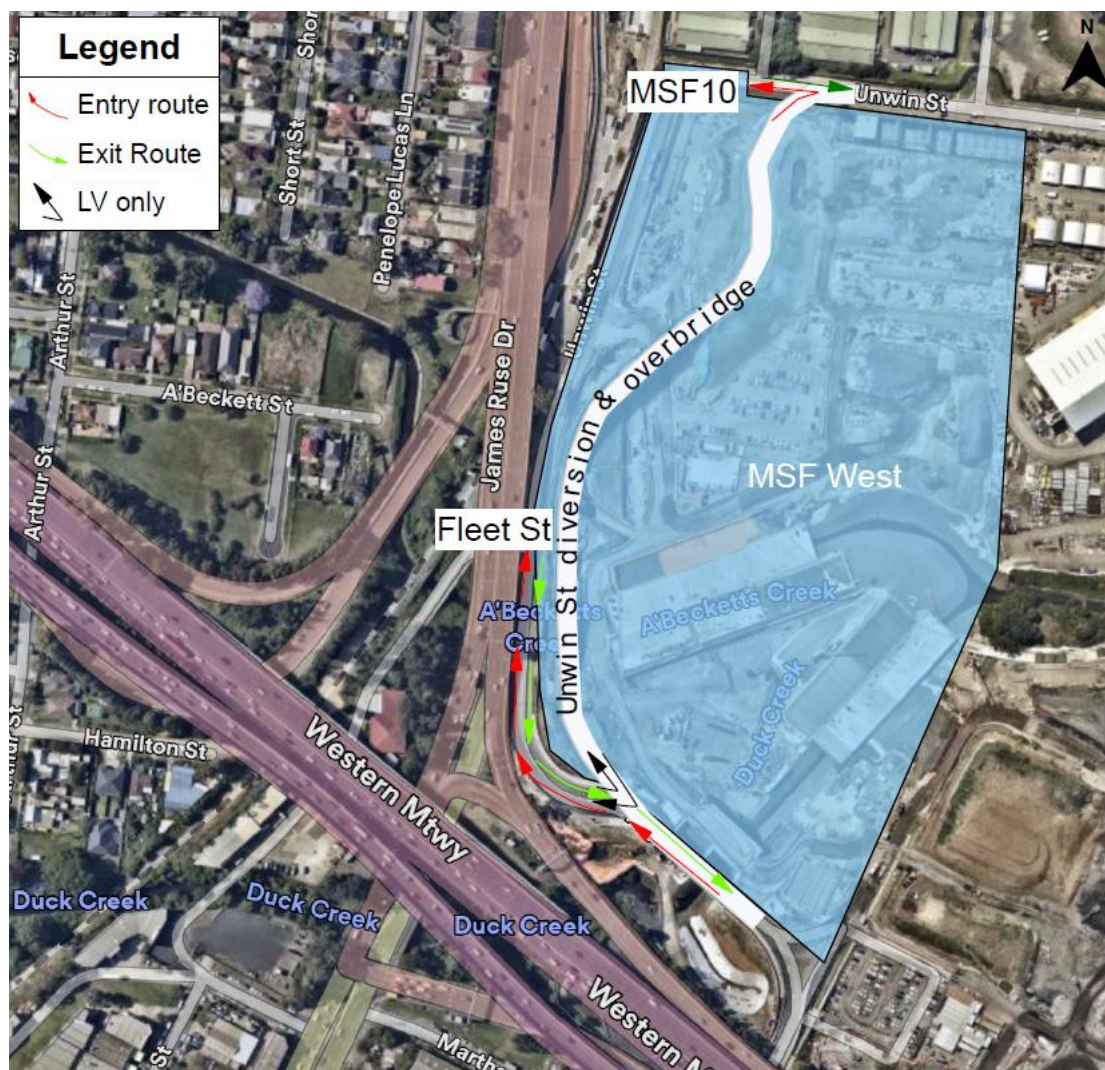


Figure 3-13 - New Fleet St Gate

3.2.4 Impact on Traffic Flow

The EIS for the Sydney Metro West Stage 1 project, noted for light vehicles that the site operations phase of the works would have a more peak hour focus than the site establishment phase of works. and that light vehicle numbers would be fairly constant over the work day, refer to Figure 3-14.

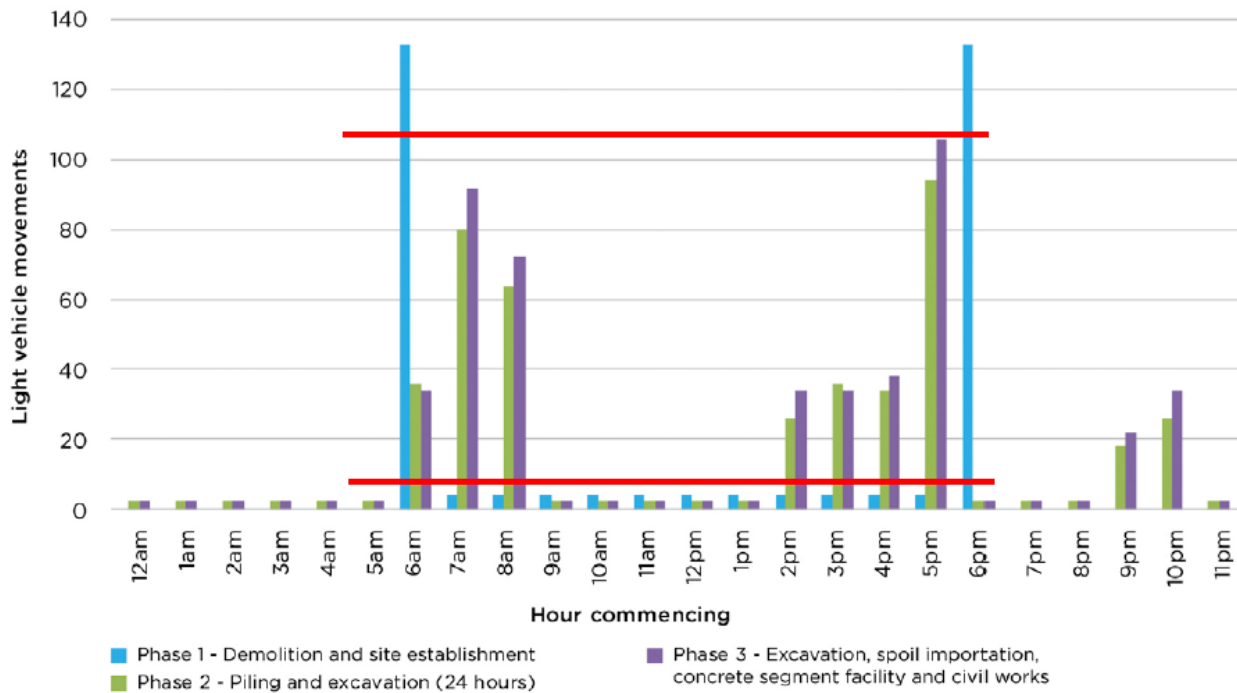


Figure 10-13: Hourly light vehicle movements at the Clyde stabling and maintenance facility construction site

Note: Movement means a one way movement. A truck entering and then leaving a work site represents 2 movements.

Figure 3-14: EIS light vehicle movements

For heavy vehicle movements, the EIS predicted movements were evenly spread over the course of the work day, refer to Figure 3-15. During the piling and excavation phase of the works, heavy vehicle movements would be in the order of 18 per hour (equating to 9 vehicles) whilst during the excavation and spoil importation and civil works the heavy vehicle movements would be 44 per hour (equating to 22 vehicles).

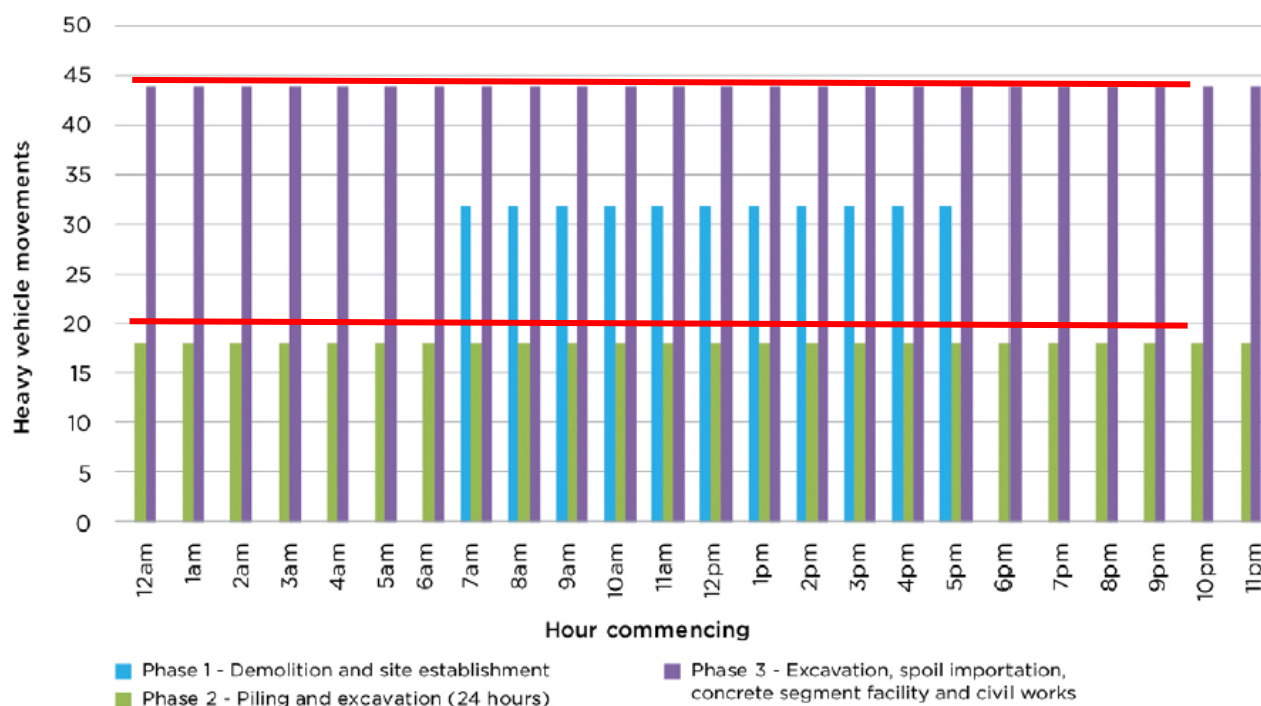


Figure 10-14: Hourly heavy vehicle movements at the Clyde stabling and maintenance facility construction site

Note: Movement means a one way movement. A truck entering and then leaving a work site represents 2 movements.

Figure 3-15: EIS hourly heavy vehicle movements (source: EIS Chapter 10 page 10-13)

A comparison of traffic volumes during the site operations stage 1 is provided in Table 3-2.

Table 3-2: Comparison of EIS and GLC Site Operations vehicle movements (numbers)

Time	EIS Light	GLC Light	EIS Heavy	GLC Heavy
0600-0800	170 (85) – 180 (90)	170 (85)	18 (9) – 44 (22)	16 (8) – 44 (22)
1400-1600	76 (38) – 80 (40)	76 (38)	18 (9) – 44 (22)	16 (8) – 44 (22)
1600-1700	96 (48)- 104 (52)	132 (66)	18 (9) – 44 (22)	16 (8) – 44 (22)
1700-1800	98 (49) -104 (52)	104 (52)	18 (9) – 44 (22)	16 (8) – 44 (22)
1800-0600	60 (30) – 66 (33)	36 (18)	18 (9) – 44 (22)	16 (8) – 44 (22)
Total	500 (250) – 534 (267)	518 (259)	90 (45) – 220 (110)	80 (40) – 220 (110)

Traffic volumes were provided in the EIS, refer to Table 3-3.

Table 3-3: 2019 traffic volumes (source: EIS Chapter 10 Table 10-16 page 10-13)

Road	Direction	Morning peak hour vehicles per hour	Evening peak hour vehicles per hour
Unwin Street, west of Colquhoun Street	Eastbound	220	190
	Westbound	280	130
Kay Street west of Wentworth Street	Eastbound	150	170
	Westbound	270	90
Wentworth Street, north of Parramatta Road	Northbound	260	120
	Southbound	150	180

The data shows that the vehicle numbers predicted in the EIS and GLC vehicle numbers are substantially under the volumes provided for previously in this area when all businesses were operational. It is further noted that a number of businesses that previously operated in the area are no longer present, as the demolition works for the Sydney Metro site has been completed.

3.2.5 Impact on public transport

No public transport operates in the Clyde area.

3.2.6 Impact on active transport

As noted in the EIS, “the pedestrian network around the Clyde stabling and maintenance facility construction site is limited given the industrial land uses to the east of Rosehill Gardens racecourse and north of Duck River”.

As noted in section 2 of this CTMP, footpaths are limited, with no pedestrian facilities provided on the east west section of Unwin Street, adjacent to the site, and footpaths provided on Shirley Street, for a short length and on the eastern side of Unwin Street north south section. However, as noted in sections 2.1 and 2.5, the M4 shared path crosses Wentworth Street at Martha Street. It is noted that this path was constructed in 2003 when the Clyde area was a heavily used industrial area.

Where footpaths cross existing driveways that are to be used for the works, appropriate traffic control will be put in place, with pedestrian management, as per TGS-PED-ALL-1101 (included in Appendix B with intermittent stops of pedestrians).

A review of crash statistics was undertaken which showed that between the years of 2019 and 2023, there were eight (8) reported crashes. Four (4) at the intersection of Martha Street and Wentworth Street where the shared path crosses across Wentworth Street with all crashes being vehicle crashes only. Two (2) at the now subsumed gate access for the Parramatta Speedway, Two (2) on Unwin St with one near A'Beckett Bridge and other just west of Rosehill Gardens gate 2. refer to Figure 3-16.

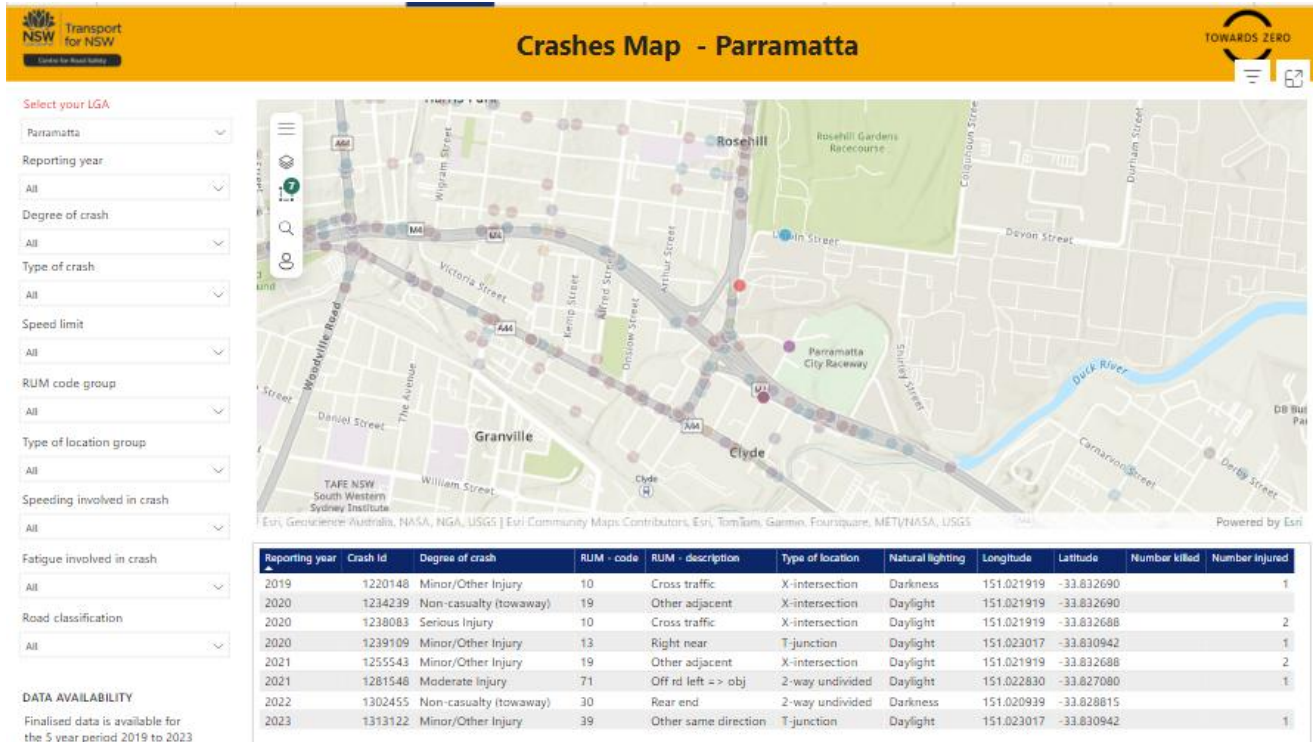


Figure 3-16: TfNSW Road Safety Centre for NSW – Crash statistics

TfNSW have also implemented a [Be truck aware](#) campaign which aims to show road users, the challenges that truck drivers face every day. Where an existing driveway crosses a footpath truck awareness decals have been installed either side of the driveway, as noted on Figure 3-17.



Figure 3-17: Proposed Truck Aware decal locations

GLC will not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided which complies with the applicable standard.

3.2.7 Impact on properties and utilities

During construction, all reasonably practicable measures will be implemented to maintain pedestrian, cyclists and vehicular access to, and parking in the vicinity of businesses and affected properties. Disruptions will be planned to be avoided, however, where it is unavoidable, the disruption will be minimised. In the event that it is not possible to minimise the impact, alternate access for all forms of traffic and/ or parking arrangements, will be provided in consultation with the affected businesses and these alternate access arrangements will be implemented before the disruption. Adequate signage and directions to businesses will be provided before, and for the duration of any disruption

GLC will ensure that access to all utilities and properties will be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier. Where access is affected, GLC will reinstate the access to an equivalent standard within one month of the completion of works, or as agreed by the landowner or occupier.

3.2.8 Impact on parking

All parking will be removed on:

- Wentworth Street between the M4 Motorway overpass and Kay Street
- Kay Street – entire length
- Unwin Street between Kay Street and Shirley Street

Parking will remain as per existing at all other locations. A revised Construction Parking and Access Strategy will be provided separately.

3.2.9 Work Zones and Heavy Vehicle Marshalling

During some stages of the works, there may be a requirement for using kerb space on adjacent streets for short-term parking, including idling, for example for the unloading of deliveries to the site. Applications for a Works Zone will be undertaken by GLC to the relevant authority where this necessity arises.

In accordance with the CEMF and MCoA, the use of a Works Zone permits would ideally be limited to local roads, with idling and queuing on state or regional roads being avoided or minimised as much as practicable. Approved Work Zones would be located in places that are away from sensitive land users and would not block or disrupt access for pedestrian or shared user paths unless alternative access is provided. Works Zones will also not be permitted within existing bus zones and their operating times, unless arrangements have been approved for the relocation of the bus zone.

Where approved, Works Zone locations relevant to the Clyde Rosehill Site would be included within this CTMP. Please refer to Appendix J which depicts/lists the approved Work Zones.

3.2.10 Cumulative impacts

There are no cumulative impacts. Parramatta Light Rail is operating at the northern end of Clyde near Grand Avenue, with most vehicles accessing and egressing the site via the Grand Avenue bridge onto James Ruse Drive. Regular contact will be maintained throughout the life of the project, through attendance at the Traffic Control Group (TCG) and Traffic and Transport Liaison Group (TTLG).

3.2.11 Staged temporary removal of parking for Over Size & Over Mass Deliveries

During the life of the project, there might be some additional need for temporary parking removal to facilitate deliveries with Oversize and Overmass vehicles (OSOM). The potential impact and mitigation approach will be reviewed on a case-by-case basis including consideration of duration of works and impact on relevant stakeholders. Where disruption cannot be avoided, alternative parking arrangements will be investigated and implemented where feasible and practical to ensure impact is minimised. The appropriate approvals and permits will be sought from Transport for NSW and Parramatta Council as described in the relevant CTMPs.

During required operations, temporary parking removal (from 5pm through to 5am) will be required on the south side of Grande Ave between Rosehill Racecourse Gate 1 & Colquhoun St (See Figure 3-18). Additionally, temporary parking removal along the eastern side of Colquhoun St from 5pm through to 5am. Additionally, western side of Colquhoun St will need to be removed for the widest loads (See Figure 3-19). Parking will be reinstated once the loads have reached

site.

A nighttime parking survey carried out in April shows current parking nighttime usage (See Table 3-4). A communication strategy including VMS Boards and mail drops to all relevant stakeholders will take place in the weeks leading up to TBM delivery.

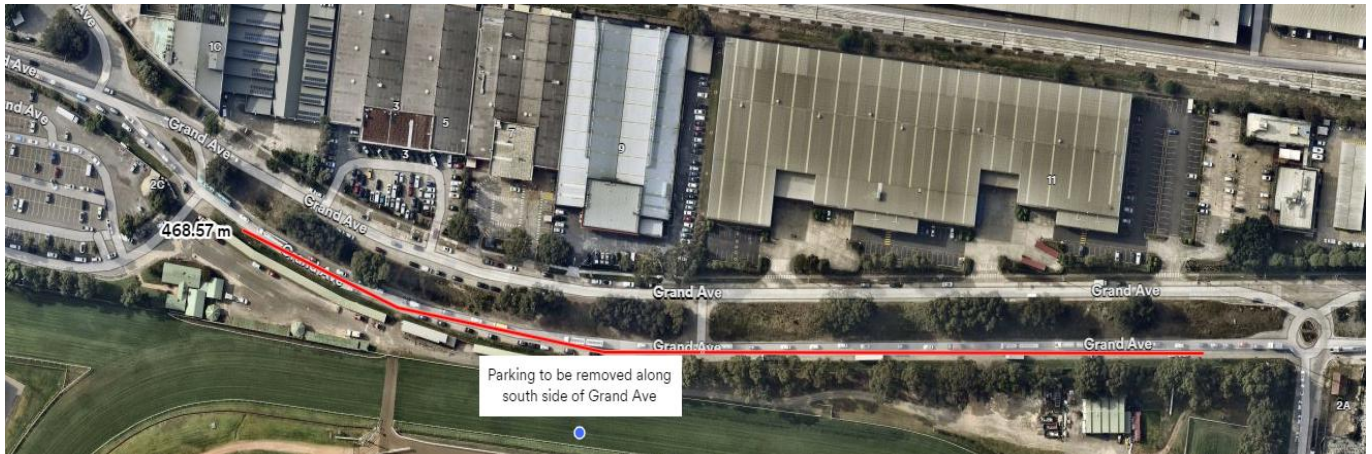


Figure 3-18 Grande Avenue parking removal



Figure 3-19 Colquhoun Street parking removal

Table 3-4 Combined Nighttime Survey of Parking Usage on Grande Ave & Colquhoun St.

Date	Time	Vehicles
19/04/2024	8pm	48
19/04/2024	12am	76
22/04/2204	8pm	93
25/04/2024	12am	75

3.3 Special events

Rosehill Gardens Racecourse is located on the northern side of Unwin Street, opposite the Clyde Maintenance and Stabling Facility. Gate 2, refer to, Figure 3-20, to the racecourse is located on Unwin Street servicing the in-field car park, the float parking area, exhibition and event parking area and exhibition loading dock and general deliveries.



Figure 3-20: Rosehill Gardens Racecourse gate overview

A [calendar of racing events](#) at the racecourse is available is updated regularly.

A number of other non-race day events are also held at the racecourse including:

- The Caravan and Camping show with over 80,000 visitors
- Sydney Santa Spectacular with 35,000 visitors
- The Pool and Spa Outdoor living expo with 7,000 visitors
- Other events ranging from between 1,000 to 10,000 attendees.

All of these non-race day events visitors/ attendees, access/ egress via either Grand Parade or James Ruse Drive.

During major special events, defined in *Guide to Traffic and Transport Management for Special Events*, published by NSW Government (version 3.5 July 1, 2018) as a Class One event that has major impacts on the transport and traffic network, GLC will review options to limit our impact by:

- Minimising the level of construction activity and, if necessary, ceasing all construction activity
- Maintaining appropriate access to all areas within the event precinct
- Erection of hoardings, site fencing and gates at key locations with the construction site boundary, to permit pedestrian movements adjacent to the construction site and separate pedestrians from construction vehicles
- Scheduling deliveries to the construction site outside of special event periods, especially during peak bump in and bump out times. The hours of opening of the infield car park is as noted below.

11:00 am	Member Gates Open
11:15 am	Public Gates Open
12:25 pm	First Race
6:00 pm	Last Race

3.4 Staff transport and parking

All staff parking during the site operations phase of the works will be catered for within the site. 72 light vehicle car spaces will be available for the workforce off Unwin Street, refer to Figure 3-21.

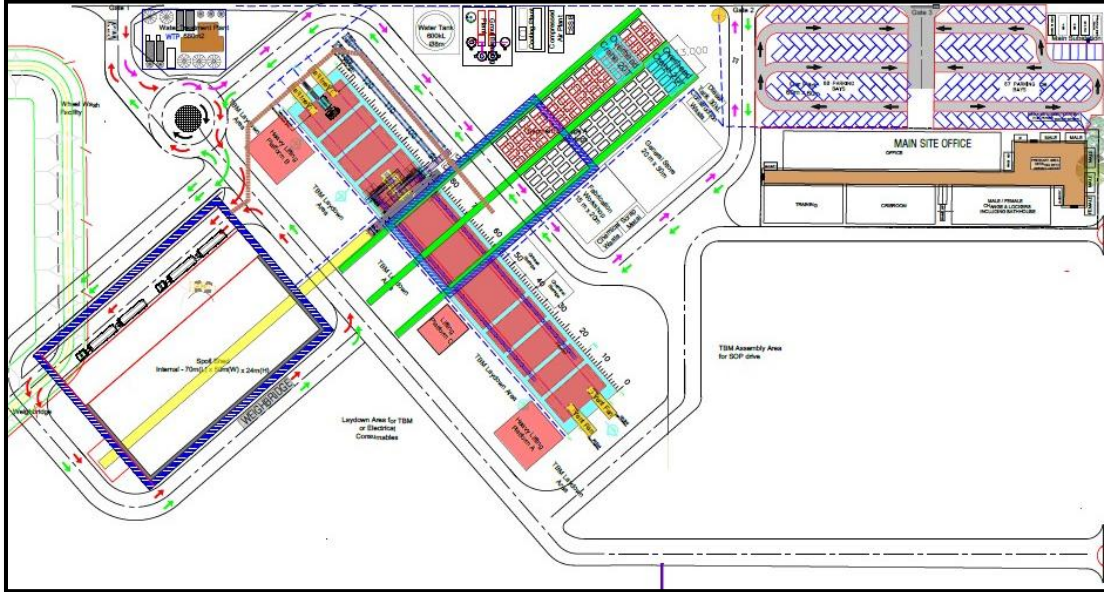


Figure 3-21: Rosehill site light vehicle onsite parking

For the Clyde Dive site, workforce parking is available. Access is via Unwin St opposite MSF West gate 9 with a direct access to walk into the Clyde Dive Site. See figure 3-22 below for the details of the location.



Figure 3-22: Clyde Dive Light Vehicle onsite parking

Private parking arrangements have been entered into with Rosehill Gardens following an agreement with ATC where staff will be permitted to occupy approximately seventy (70) spaces at the southern end of P4 as shown below in figure 3-23. This agreement has been submitted via updated CPAS for Clyde Revision J which was approved 25 November 2024.

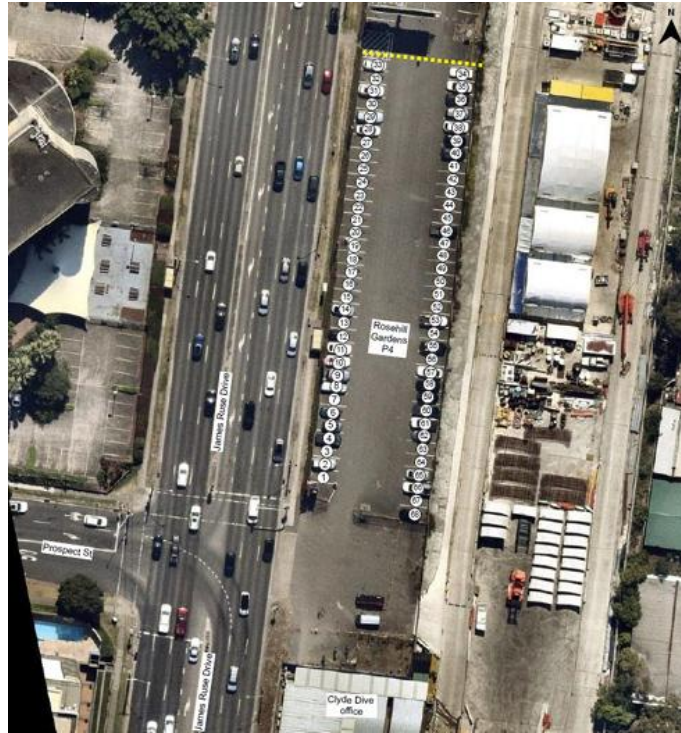


Figure 3-23 - P4 parking spaces (under agreement with ATC)

For the Clyde MSF East site, workforce parking is available with over 80 Light Vehicle parking spaces. Access is via Wentworth St eastern side, through the old speedway gate. See figure 3-24 for details on the location.

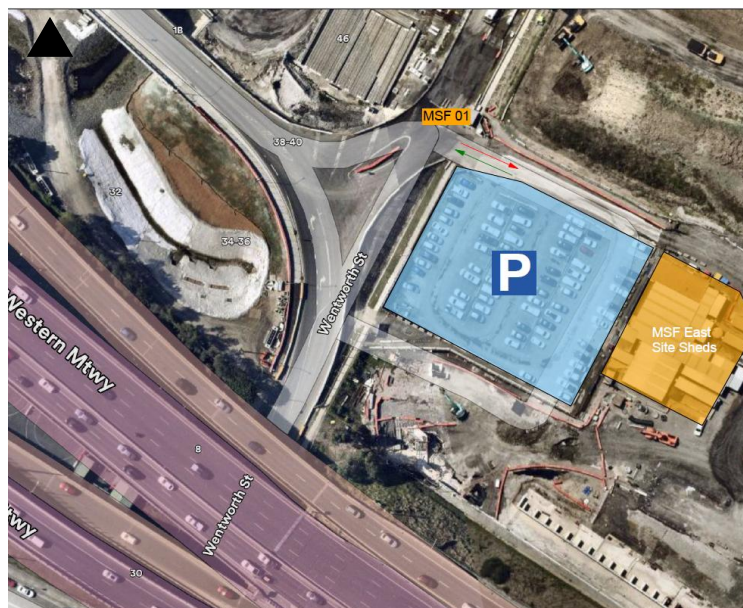


Figure 3-24: MSF East Light Vehicle onsite parking

For the MSF West site, ample onsite parking is available with over 65 Light Vehicle parking spaces. Access is via Unwin St gate 9. See figure 3-25 for details on the location.



Figure 3-25: MSF GATE 9 Entry to site and LV Parking gate

3.5 Traffic Guidance Schemes (TGS) identified works

Gate management may be required where heavy vehicle access/ egress points interact with footpaths/ shared paths. The TGS for gate management is provided in Appendix B. Multiple TGS for the Unwin St, Kay St and Wentworth St TGS have been developed to assist with the traffic requirements for various works across the site.

3.5.1 Road occupation and restoration

Works will be completed on Unwin St, Kay St and Wentworth St that will impact the road and footpaths.

For any works that involve an occupation of the road/ footpath, a Road Occupancy License (ROL) will be sought from the Transport Management Centre (TMC). If it impacts a Parramatta City Council Road, a Council permit will also be sought.

Any TfNSW ROLs through the TMC will be applied for a minimum of 10 business days from the proposed start date. Electronic lodgement of the ROL will be undertaken using TfNSW's OpLinc system. Council permits will be lodged electronically in accordance with the City of Parramatta Council requirements. For any works where parking is temporary impact, GLC will ensure that the parking removal is staged to minimise the time of parking space occupation.

For any road opening required on a Parramatta Council Road, the relevant Road Opening Permit (ROP) will be applied for through the existing City of Parramatta Council website. The ROP will also be accompanied by a ROL. Details on the permits required are found at [City of Parramatta Council road permits](#).

A register of permits/ licenses will be maintained through the works period and can be tabled at the TCG, if requested.

4 FLEET MANAGEMENT

Trucks to be used on the project will be compliant with NSW legislation, Sydney Metro's Principal Contractor Health and Safety Standard, relevant Australian Design Rules and vehicle standards and the Heavy Vehicle National Legislation. All heavy vehicle operations will be conducted in accordance with GLC's Chain of Responsibility (CoR) Management Plan, including monitoring of compliance with nominated haulage routes.

A combination of truck types will be used during the site operations works, with trucks being truck and dog, semi-trailers, 12.5m Single Unit trucks and low loaders. All trucks will enter and exit the site in a forward direction, where reasonable and feasible. Where there is a requirement to undertake reversing movements on the public road system, appropriate traffic control will be implemented.

4.1 Management strategy

Construction site traffic will be managed to minimise movements during peak periods. This will be achieved through scheduling of vehicles and staggered start and finish times. GLC will provide sufficient onsite parking for heavy vehicles. This will ensure that vehicles are not idling or queuing on public roads. Given the amount of space available on site, there is no requirement for further marshalling facilities.

4.2 Drivers and operators

Operator selection will be based on safety performance criteria. Operators and drivers will be required to have general construction industry induction cards and will be required to attend ongoing general project and site-specific inductions.

All operators will be comprehensively trained with regard to community expectations and impacts from heavy vehicle movements through site inductions and attendance at the Sydney Metro Industry Curriculum (SMIT) – Safe Heavy Vehicle Introduction Skills which provides drivers with the knowledge, skills, motivation and confidence to drive heavy vehicles safely and professionally in an urban built up road environments, whilst undertaking a transport task required on the project. The training course focuses on low-risk driver behaviours, shared the road safely with vulnerable road users and reinforces heavy vehicle driver knowledge and skill. The project and site inductions will have a particular focus on operator behaviour. The driver induction process will include safety awareness in relation to all road users, particularly pedestrians and cyclists where the M4 shared path along Martha Street crosses the heavy vehicle routes.

4.3 Heavy vehicle routes and compliance

Generally, the heavy vehicle routes will be via arterial roads/ freeways/ tollways. Where possible the routes have considered the requirements of the Environmental Impact Statement (EIS). It is noted that the EIS for this site shows access via Wentworth Street, however, the EIS does not identify heavy vehicle routes north of the M4 Motorway overpass, refer to Figure 4-1. However, the roads within the Clyde area are recognised as heavy vehicle routes, refer to Figure 2-5.

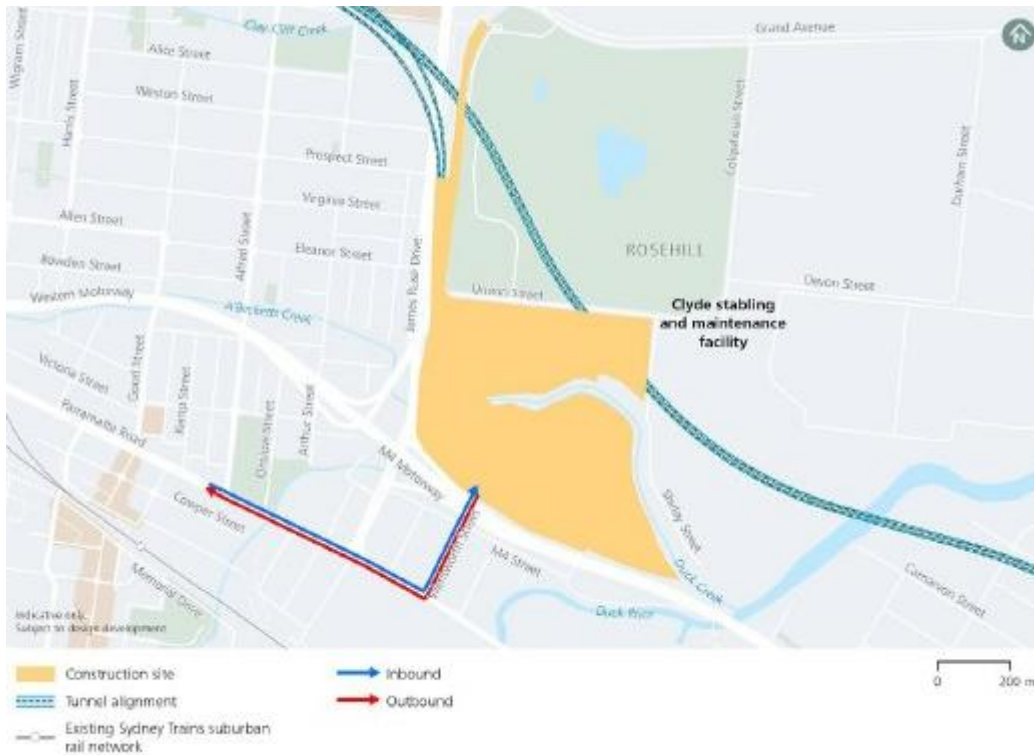


Figure 4-1: EIS nominated heavy vehicle routes

4.3.1 Approved heavy vehicle routes

There are a number of local roads within the Clyde/ Rosehill area that are required to access/ egress the construction site. The EIS nominates Wentworth St off Parramatta Rd to access and egress the site which restricts the site to only one entry and exit point. GLC have been approved to use James Ruse Drive, Grand Ave, Colquhoun St and Unwin St as an entry and exit point into the area. This route is also an OSOM route into site due to the restrictions on Wentworth St. The roads to be used for heavy vehicle movements that are not captured within the EIS are as per Table 4-1 and Figure 4-2

Table 4-1: Roads to be used not included in the EIS

Road name	Between	Between	Classification	Two way traffic flow	Parking	Speed limit
Wentworth Street	M4 Motorway Overpass	Kay Street	Local	Yes	Yes	50km/hr
Kay Street	Wentworth Street	Unwin Street	Local	Yes	Yes	50km/hr
Unwin Street	Kay Street	Colquhoun Street	Local	Yes	Yes	50km/hr
Shirley Street	Unwin Street	Duck Creek	Local	Yes	Yes	50km/hr
Martha Street	Wentworth Street	Deniehy Street	Local	Yes	Yes	50km/hr
Colquhoun St	Unwin St	Grand Ave	Local	Yes	Yes	50km/h
Grand Ave	James Ruse Dr	Colquhoun St	Local	Yes	Yes	50km/h

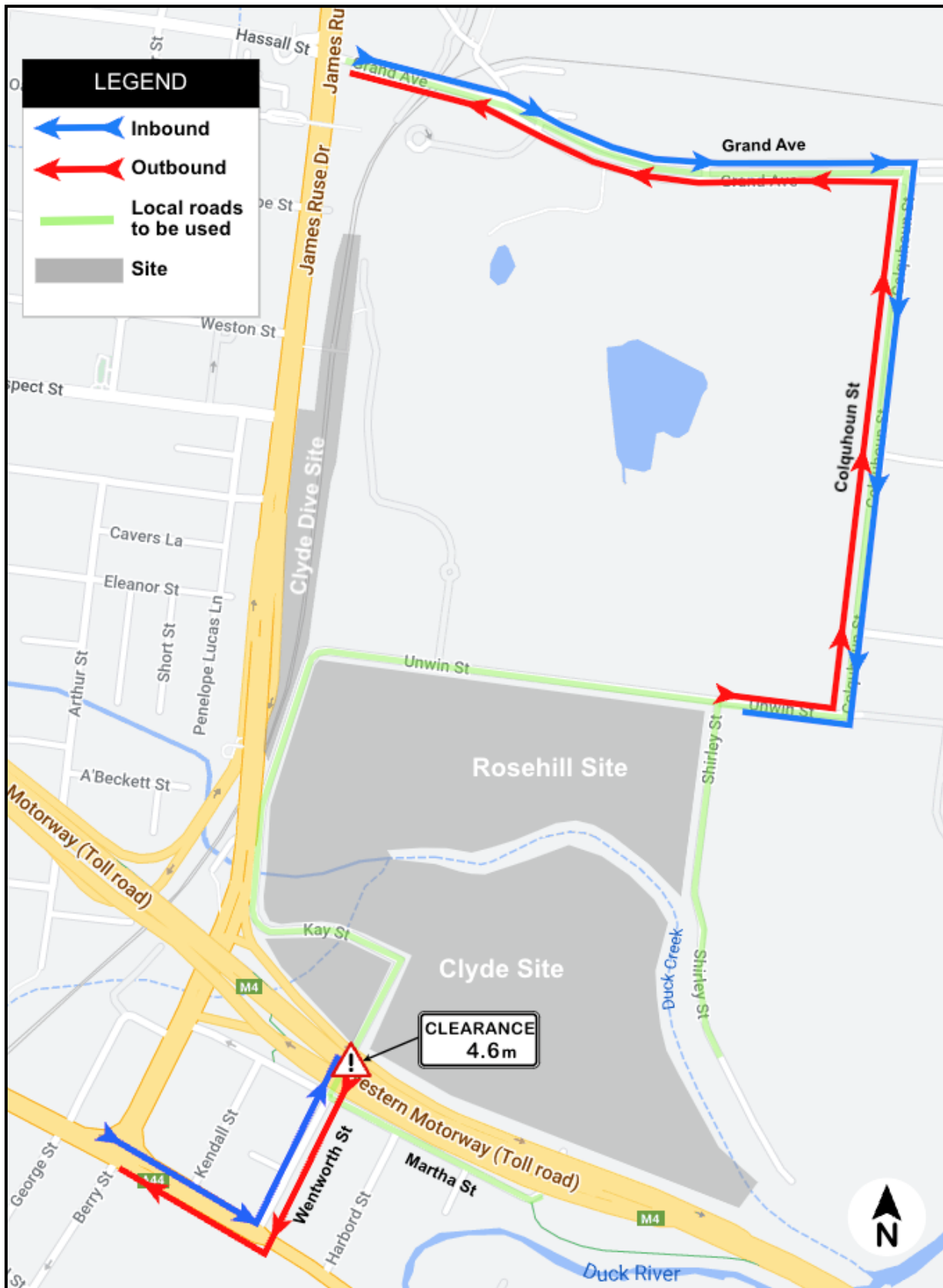


Figure 4-2: Local roads within the Clyde/ Rosehill area

The Heavy Vehicle Local Road report has been provided as a separate document and once approved will be included within this CTMP. Materials will be delivered/ removed from site using a combination of vehicles and taken to authorised disposal sites around Sydney, refer to Appendix C for the proposed routes to the closest motorway.

4.4 Permits / Over dimensional vehicles

Permit issue for vehicles greater than 4.5 tonnes is through the National Heavy Vehicle Regulator (NHVR). This applies to special purpose vehicles (SPV) such as mobile cranes and other oversize/ over mass (OSOM) vehicles.

For over dimensional vehicles, generally vehicles that are greater than 25m in length or 3,5m width require a pilot(s). Extremely long or wide vehicles will require an escort (fee payable). Permits will be applied for by the transport operator.

As part of the permit process over dimensional vehicles to be notified of WCX details so that in the event of a strike event at the M4 Motorway overpass on Wentworth St WCX is to be immediately contacted by driver and Sydney Metro. *M4 WestConnex Motorway Control Centre: (02) 9595 9600*

Oversize vehicles will be required at this site for the delivery of large plant and piling rigs. These deliveries will occur outside of peak hours. Contractors will manage their own permits.

The existing M4 Motorway overpass on Wentworth St is currently height limited (4.6m) as noted on Figure 4-3.



Figure 4-3: M4 Overpass on Wentworth Street

Where vehicles are unable to be accommodated, an alternative route would be detailed within the accompanying permit application for oversize vehicles with the use of Grand Avenue or James Ruse Drive into the Clyde Dive site being the only other routes available.

5 MINISTERIAL CONDITIONS OF APPROVAL

There are a number of plans/ reports that are required under the Ministerial Conditions of Approval (MCoA) as noted in Appendix A and included in subsequent appendices of this CTMP.

5.1 Heavy Vehicle Local Road (HVLR) report

A Heavy Vehicle Local Road is to be provided to the Planning Secretary for approval, for use of local roads not identified in the EIS or other planning documents. The report includes the following:

- a) A swept path analysis
- b) Demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two way traffic flow on two way roadways
- c) Details as to the date of completion of the road dilapidation surveys for the subject local roads and
- 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 their peak operation times and
- e) Written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items a) to d).

A copy of the HVLR is provided in Appendix C.

5.2 Construction Parking and Access Strategy (CPAS)

A Construction Parking and Access Strategy is to be provided to the Planning Secretary for approval at least one (1) month before the commencement of construction that reduces the availability of existing parking. The approved strategy will be implemented before impacting on street parking. The CPAS identifies and provides mitigation measures to alleviate the impacts from on and off street parking changes during construction. The CPAS includes the following:

- a) Achieving the requirements of MCoA D90 which includes:
 - a) Minimise parking on public roads
 - b) Minimise idling and queuing 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 unless alternate access is provided and
 - e) Ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMPs
- b) Confirmation and timing of the removal of on and off street parking associated with construction of stage 1 of the CSSI
- c) Parking surveys of all parking spaces to be removed or occupied by the project workforce to determine current demand during peak, off peak, school drop off and pickup, weekend periods and during special events
- d) Consultation with affected stakeholders utilising existing on and off street parking stock which will be impacted as a result of construction
- e) Assessment of the impacts to on and off street parking stock taking into consideration occupation by the project workforce, outcomes of consultation with affected stakeholders and considering the impacts of special events

- f) Identification of reasonable and practicable mitigation measures to manage impacts to stakeholders as a result of on and off street parking changes including but not necessarily limited to, staged removal and replacement of parking, provision of alternative parking arrangements, managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds or appropriate residential parking schemes.
- g) Where resident parking schemes already exist, off road parking facilities must be provided for the project workforce
- h) Mechanisms for monitoring, over appropriate intervals (not less than six (6) months), to determine the effectiveness of implemented mitigation measures
- i) Details of shuttle bus service(s) to transport the project workforce to construction sites from public transport hubs and off site car parking facilities, where these are provided, and between construction sites
- j) Provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective and
- k) Provision of reporting of monitoring results to the Planning Secretary and relevant Council(s) at six (6) monthly intervals

A copy of the CPAS is provided in Appendix D.

5.3 Road dilapidation report

Road dilapidation reports were previously provided for the local roads used by construction vehicles. These reports were undertaken prior to the use of these roads. A copy of the report(s) were provided to the relevant road authority within three (3) weeks of completion of the survey and no later than one (1) month before the road is used.

If damage to roads occurs as a result of heavy vehicle use associated with the construction works, GLC, will, 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-work as identified in the road dilapidation report

A copy of the Road Dilapidation Report transmittal to the City of Parramatta Council is provided in Appendix D of the HVLR.

6 COMMUNITY AND CONSULTATION

6.1 Communications and the community

Table 6-1 notes the notifications to be provided to the local community and travelling public for the site operations stage 1 works, associated with this CTMP.

Any enquiries, compliments or complaints will be directed to GLC's communications team via

- Information line 1800 612 173
- Email metrotunnels@transport.nsw.gov.au
- Mailing address Sydney Metro West, PO BOX K659, Haymarket, NSW 1240

Table 6-1: Proposed community notifications

Notification	Applicable?
Newsletters	Yes
Construction email updates	Yes
Fact sheets	Yes
Site signage	Yes
GLC website	Pending
Sydney Metro website	Pending
Variable Message signs	Where required

6.2 Speed awareness signs

Radar detected speed awareness signs will be deployed for the first week of site operations works. These signs will be installed on Unwin Street, Wentworth Street and Martha Street.

6.3 Stakeholders

Various stakeholders will be consulted for further development of this CTMP. Stakeholder details consultation will occur via TCG, TTLG meeting and emails as required.

Table 6-2: Stakeholder consultation details

6.3.1 Traffic and Transport Liaison Group (TTLG)

The TTLG has been established by Sydney Metro for the project, as required under MCoA D94. The TTLG consists of members from Sydney Metro, City of Parramatta Council and representatives from the Emergency Services. The development of this CTMP will occur in consultation with this group. The TTLG meets monthly.

Supplementary analysis and modelling as required by Sydney Metro and/ or the Traffic and Transport Liaison Group(s) will be undertaken to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations including changes to and the management of pedestrians, bicycle and public transport networks, public transport

services, and pedestrian and cyclist movements. Any revised traffic management measures identified through the supplementary analysis and modelling will be incorporated into the CTMP.

6.3.2 Traffic Control Group (TCG)

A TCG has been established for the project by Sydney Metro. The TCG meets fortnightly and is comprised of Sydney Metro representatives, Council representatives and other project contractors.

6.3.3 Emergency Services

Relevant Emergency Services will be informed, in a timely manner of relevant activities proposed within this CTMP. The initial communication to these stakeholders will be via the TTLG. Regular updates will be provided to Emergency Services representatives noting changes to the road network, changes to road conditions and worksite access locations. This communication will be via emails and face to face discussions. Access to properties for emergency vehicles will be provided at all times.

7 OTHER CONSIDERATIONS

7.1 Road safety audits

Road safety audits will be undertaken during the development of the CTMP and upon implementation of the long-term work site, refer to Appendix E.

7.2 Inspections and monitoring

Typical inspections and monitoring is as per Table 7-1 (source: Traffic Control at Worksites Manual Table 8-1)

Table 7-1: inspections and frequency

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

7.3 Emergency and incident management

In the event of an incident that has the potential to impact traffic or public transport, at sites managed by GLC, GLC will ensure that traffic control resources are provided. These resources include:

- Traffic control personnel
- Traffic control vehicle containing:
 - Barrier boards
 - Cones/ bollards
 - Flashing arrow
 - Signs
 - Spill kit

GLC will report all traffic incidents to Sydney Metro, the Transport Management Centre (13 17 00), M4 West Connex Motorway Control Centre (02) 9595 9600, and Customer Journey Planning.

7.4 On site contacts

Site contacts are provided in Table 7-2.

Table 7-2: Site contacts

Name	Position	Organisation	Contact #	Email
	Logistic Manager	GLC		
	Traffic Manager	GLC		
	Project Manager	GLC		
	Senior Project Manager	GLC		
	Place Manager	GLC		

A COMPLIANCE TABLES

Table 7-3: Relevant Ministerial Conditions of Approval

Requirement	Details	Where addressed
MCoA D80	Access to all utilities and properties must be maintained during works, unless otherwise agreed with the relevant utility owner, landowner or occupier	Section 3.2.7
MCoA D81	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. Property access must be reinstated within one (1) month of the work that physically affected the access is completed or in any other time frame agreed with the landowner or occupier	Section 3.2.7
MCoA D85	Construction Traffic Management Plans (CTMPs) must be prepared in accordance with the Construction Traffic Management Framework. A copy of the CTMPs must be submitted to the Planning Secretary for information before the commencement of any construction in the area identified and managed within the relevant CTMP	This plan
MCoA D86	Local roads proposed to be used by Heavy Vehicles to directly access construction sites that are not identified in the documents listed in Condition A1 of this schedule must be approved by the Planning Secretary and be included in the CTMP	Appendix C
MCoA D87	All requests to the Planning Secretary for approval to use local roads under Condition D86 must include the following: <ul style="list-style-type: none"> a) A swept path analysis 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 c) Details as to the date of completion of the road dilapidation surveys for the subject local roads and d) Measure that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times and 	Appendix C

Requirement	Details	Where addressed
	e) Written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items a) to d) of this condition	
MCoA D88	Before any local road is used by a Heavy Vehicle for the purposes of construction of Stage 1 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 Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of Stage 1 of the CSSI	Section 5.3 and Appendix C
MCoA D89	If damage to roads occurs as a result of the construction of Stage 1 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-work as identified in the Road Dilapidation Report	Section 5.3
MCoA D90	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to: a) Minimise parking on public roads	Section 3.2.8
	b) Minimise idling and queuing on state and regional roads	Section 4
	c) Not carry out marshalling of construction vehicles near sensitive land user(s)	Section 4
	d) Not block or disrupt access across pedestrian or shared user paths at any time unless alternate access is provided and	Section 3.2.6
	e) Ensure spoil haulage vehicles adhere to the nominated haulage routes identified in the CTMP	Section 4.3
MCoA D91	A Construction Parking and Access Strategy must be prepared to identify and mitigate impacts resulting from on and off street parking changes during construction. The Construction Parking and Access Strategy must include, but not necessarily limited to:	Appendix D

Requirement	Details	Where addressed
	<ul style="list-style-type: none"> a) Achieving the requirement of Condition D90 above b) Confirmation and timing of the removal of on and off street parking associated with construction of Stage 1 of the CSSI c) Parking surveys of all parking spaces to be removed or occupied by the project workforce to determine current demand during peak, off peak, school drop off and pick up, weekend periods and during special events d) Consultation with affected stakeholder utilising existing on and off street parking stock which will be impacted as a result of construction e) Assessment of the impacts to on and off street parking stock taking into consideration, occupation by the project workforce, outcomes of consultation with affected stakeholders and considering the impacts of special events. f) Identification of reasonable and practicable mitigation measures to manage the impacts to stakeholders as a result of on and off street parking changes including but not necessarily limited to, staged removal and replacement of parking, provision of alternative parking arrangements, managed staff parking arrangements and working with relevant council(s) to introduce parking restrictions adjacent to work sites and compounds or appropriate residential parking schemes g) Where residential parking schemes already exist, off road parking facilities must be provided for the project workforce h) Mechanisms for monitoring, over appropriate interval (not less than 6 months) to determine the effectiveness of implemented mitigation measures i) Details of shuttle bus service(s) to transport the project workforce to construction sites from public transport bubs and off site car parking facilities (where these are provided) and between construction sites j) Provision of contingency measures should the results of mitigation or monitoring indicate implemented measures are ineffective and k) Provision of reporting or monitoring results to the Planning Secretary and Relevant Council(s) at six (6) monthly intervals 	

Requirement	Details	Where addressed
MCoA D92	The Construction Parking and Access Strategy must be submitted to the Planning Secretary for approval at least one (1) month before the commencement of any construction that reduces the availability of existing parking. The approved Construction Parking and Access Strategy must be implemented before impacting on on-street parking and incorporated into the CTMPs	Section 5.2 and Appendix D
MCoA D93	During construction, all reasonably practicable measures must be implemented to maintain pedestrian, cyclists 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, alternate pedestrian, cyclists and vehicular access, and parking arrangements must be developed in consultation with affected businesses and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of any disruption	Section 3.2.7
MCoA D94	A Traffic and Transport Liaison Group(s) must be established in accordance with the Construction Traffic Management Framework to inform the development of CTMPs	Section 6.3.1
MCoA D95	Supplementary analysis and modelling as required by Sydney Metro and/ or the Traffic and Transport Liaison Group(s) must be undertaken to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations including changes to and the management of pedestrians, bicycle and public transport networks, public transport services, and pedestrian and cyclist movements. Revised traffic management measures must be incorporated into the CTMPs	Section 6.3.1
MCoA D96	The permanent road works at Clyde/ Rosehill must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and accessibility of the networks and avoid deterioration in peak period levels of service in relation to permanent and operational changes. Design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken in:	Not relevant to the CTMP – Refer to Design process

Requirement	Details	Where addressed
	<ul style="list-style-type: none"> a) In consultation with, and to the reasonable requirements of the relevant Traffic and Transport Liaison Group b) In consideration of existing and future demand, connectivity (in relation to permanent changes) and performance and safety requirements c) To minimise and manage local area traffic impacts d) To ensure access is maintained to property and infrastructure and e) To meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards and TfNSW requirements <p>Copies of civil, structure and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation during design development and before completion of construction of Stage 1 of the CSSI</p>	
MCoA D97	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclist and public transport users must be subject to safety audits, demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the relevant Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Planning Secretary upon request	Not relevant to the CTMP – Refer to Design process
MCoA D98	Safe pedestrian and cyclist access must be maintained around construction sites during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternate route which complies with the relevant standards must be provided and signposted before the restriction or removal of the impacted access	Section 3.2.6
MCoA D99	Opportunities to maximise spoil material removal by non-road methods must be investigated and implemented where reasonably practicable to minimise movements by road	Not practical for Clyde/ Rosehill site

Table 7-4: Relevant Revised Environmental Management Measures

Requirement	Impact/ issue	Details	Where addressed
TT1	Changes to the network	The community would be notified in advance of proposed road and pedestrian network changes through appropriate forms of community liaison	Section 6
TT2	Traffic incidents	In the event of a traffic related incident coordination would be carried out with Transport for NSW including Transport Coordination and/ or Traffic Management Centre's Operations Manager	Section 7.3
TT3	Emergency vehicle access	Access to properties for emergency vehicles would be provided for at all times	Section 3.2.7
TT4	Road safety	Vehicle access to and from construction sites would be managed to maintain pedestrian, cyclists and motorist safety. Depending on the location this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or on occasions police presence	Section 3.2.6
TT5	Road safety	Additional enhancements for pedestrian, cyclist and motorist safety near the construction sites would be implemented during construction. This would include measures such as: <ul style="list-style-type: none"> Assessing the suitability of construction haulage routes through sensitive land use areas with respect to road safety 	Appendix C
		<ul style="list-style-type: none"> Deployment of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers 	Section 6.2
		<ul style="list-style-type: none"> Providing community education and awareness about sharing the road safely with heavy vehicles 	Appendix C
		<ul style="list-style-type: none"> Specific construction driver training to understand the route constraints, safety and environmental 	Appendix C

Requirement	Impact/ issue	Details	Where addressed
		considerations such as sharing the road safety with other road users and limiting the use of compression braking	
		<ul style="list-style-type: none"> Requiring technology and equipment to improve vehicle safety, eliminate heavy vehicle blind spots and motor vehicle location and driver behaviour 	Appendix C
TT6	Road safety	<ul style="list-style-type: none"> All trucks would enter and exit construction sites in a forward direction, where reasonable and feasible 	Section 4
TT7	Congestion	Construction site traffic would be managed to minimise movements during peak periods	Section 4
TT8	Congestion	Construction site traffic immediately around construction sites (WMS, PMS, BNS and FDS) would be managed to minimise vehicle movements through school zones during pick up and drop off times	Applicable to Westmead (WMS), Parramatta (PMS), Burwood North (BNS) and Five Dock (FDS) only as noted in the REMM
TT9	Congestion	Opportunities to minimise impacts at the Alexandra Avenue/ Bridge Road intersection would be determined in consultation with Transport for NSW	Applicable to Westmead site as noted in the REMM
TT10	Loss of parking	Where existing parking is removed to facilitate construction activities, consultation would occur with the relevant local council to investigate opportunities to provide alternative parking facilities	Section 6
TT11	Loss of parking	<p>Construction sites would be managed to minimise the number of construction workers parking on surrounding streets by:</p> <ul style="list-style-type: none"> Encouraging workers to use public or active transport Encouraging ride sharing Provision of alternative parking locations and shuttle bus transfers where feasible and reasonable 	Appendix D
TT12	Change of bus stop locations	Any temporary closure or relocation of bus stops and kiss and ride facilities would be carried out in consultation with	Applicable to Westmead (WMS), North Strathfield (NSMS), Burwood

Requirement	Impact/ issue	Details	Where addressed
		Transport for NSW including Transport Coordination (for relevant locations), the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops	North (BNS) and The Bays (TBS) only as noted in the REMM
TT13	Bus priority	Opportunities to improve bus priority along the temporary detour at Westmead metro station construction site would be investigated during detailed design	Applicable to Westmead site as noted in the REMM
TT14	Active transport	Pedestrian and cyclist access would be maintained during the temporary closure of Alexandra Avenue at Westmead. Wayfinding and customer information would be provided to guide pedestrians and cyclists to alternative routes	Applicable to Westmead site as noted in the REMM
TT15	Impacts on active transport	Where existing cyclists facilities, (eg: bicycle parking) would be temporary unavailable to facilitate construction activities, suitable replacements facilities would be provided for this duration	Section 3.2.6
TT17	Impacts on special events	<p>During major special events, impacts to the transport and traffic network would be reduced by, (as necessary)</p> <ul style="list-style-type: none"> • Minimising the level of construction activity and, if necessary, ceasing all construction activity • Maintaining appropriate access to all areas within the event precinct • Erection of hoardings, site fencing and gates at key locations with the construction site boundary, to permit pedestrian movements adjacent to the construction site and separate pedestrians from construction vehicles • Scheduling deliveries to the construction site outside of special event periods 	Section 3.3
TT18	Property access	Access to existing properties and buildings would be maintained in consultation with property owners	Section 3.2.7

Requirement	Impact/ issue	Details	Where addressed
TT19	Construction vehicle impacts	Traffic control measures required at the Parramatta metro station construction site access on Gorge Street would be determined in consultation with Transport for NSW	Applicable to Parramatta site as noted in the REMM
C11	Occurrence of cumulative impacts	<p>Coordination and consultation with the following stakeholders would occur, where required, to manage the interface of projects under construction at the same time:</p> <ul style="list-style-type: none"> • Transport for NSW including Transport Coordination • Department of Planning, Industry and Environment • Sydney Trains • NSW Trains • Sydney Buses • Sydney Water • Port Authority of NSW • Sydney Motorways Corporation • Emergency Services providers • Utility providers • Construction contractors <p>Coordination and consultation with these stakeholders would include:</p> <ul style="list-style-type: none"> • Provision of regular updates to the detailed construction program, construction sites and haul routes • Identification of key potential conflict points with other construction projects • Developing mitigation strategies in order to manage conflicts. Depending on the nature of the conflict this could include: <ul style="list-style-type: none"> – Adjustments to the Sydney Metro construction program work activities or haul routes or 	Section 6

Requirement	Impact/ issue	Details	Where addressed
		<p>adjustments to the program activities or haul routes of other construction projects</p> <ul style="list-style-type: none">– Coordination of traffic management arrangements between projects	

B TRAFFIC GUIDANCE SCHEMES

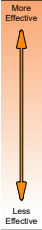
Table 7-5: Traffic Guidance Schemes

TGS#	Location	Between		Time of Day	Traffic control	Works	Impacts
LGP-147586 -1	Unwin St	Shirley St	Martha St	Day/night	Stop slow	Various	Intermittent stopping of traffic (shuttle flow)
LGP-147586-2	Unwin St	Shirley St	Martha St	Day/night	Stop slow	Various	Intermittent stopping of traffic (shuttle flow)
LGP-63822-GLC151-RC Rev 5	Unwin St	Martha St	Devon St	Night	Road Closure	Various	Road closure and traffic detour
PED-ALL-1101	Various	Various		Day/ night	Pedestrian management	Various	Intermittent stoppage of pedestrians
GLC-003	Various	Various		Day/ night	Dynamic work area	Line marking removal and installation	Intermittent stopping of traffic for line marking works
GLC-004	Various	Various		Day/ night	Stop slow	Line marking removal and installation	Intermittent stopping of traffic for line marking
1915872	All	All	All	All	Speed reduction	All	NA
GLC 059	Unwin St	Shirley St	Rosehill site gate 2	8pm to 5am	Stop slow	Traffic island maintenance	Intermittent stopping of traffic
2023-0220	Unwin St	Shirley St	Rosehill site gate 2	8pm to 5am	Stop slow	Traffic island maintenance	Intermittent stopping of traffic
GLC 060	Colquhoun St	Grand Ave	Unwin St	8pm to 5am	Stop slow	Traffic island maintenance	Intermittent stopping of traffic
2023-0217	Colquhoun St	Grand Ave	Unwin St	8pm to 5am	Stop slow	Traffic island maintenance	Intermittent stopping of traffic

TGS Risk Assessment

Hierarchy of Controls


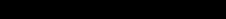
1. Eliminate the hazard altogether.
eg. Road closures.
2. Substitute the hazard with a safer alternative.
eg. Using PTCs instead of stop bats.
3. Isolate the hazard from anyone who could be harmed.
eg. Drop zones for clients works in elevated work zones.
4. Use engineering controls to reduce the risk.
eg. The use of traffic control devices to protect work area.
5. Use administrative controls to reduce the risk.
eg. Ensure personnel are trained in their field.
6. Use PPE.
eg. Wearing gloves while manual handling.



Step 2 - Probability	Almost Certain (5)	The threat can be expected to occur 75% - 99%	Common / Frequent Occurrence	More than 1 event per month	Moderate (8)	High (16)	High (18)	High (21)	Extreme (25)
	Likely (4)	The threat will quite commonly occur 50% - 75%	Is known to occur or "it has happened regularly"	More than 1 event per year	Moderate (7)	Moderate (10)	High (17)	High (20)	High (24)
	Possible (3)	The threat may occur occasionally 25% - 50%	Could occur or "I've heard of it happening"	1 event per 1 to 10 years	Low (3)	Moderate (9)	Moderate (12)	High (19)	High (23)
	Unlikely (2)	The threat could infrequently occur 10% - 25%	Not likely to occur very often	1 event per 10 to 100 years	Low (2)	Low (5)	Moderate (11)	Moderate (14)	High (22)
	Rare (1)	The threat may occur in exceptional circumstances. The threat may occur infrequently 0% - 10%	Conceivable but only in exceptional circumstances	Less than 1 event per 100 years	Low (1)	Low (4)	Low (6)	Moderate (13)	Moderate (15)
	Step 3 - The risk rating is where the consequence and the probability intersect								

Item #	Worksite Component	Potential Hazard	Initial Risk			Present	Control Measures	Residual Risk		
			C	P	R			C	P	R
Acceptance										
1.0	TGS Drawn / implemented by unqualified person or organization	TGS Drawn / implemented by unqualified person or organization	5	3	23	N	- Design and implement TGS in accordance with TCAWS, AS1742.3 and AGTTM - Ensure all relevant traffic management personnel involved in the design and implementation of the TGS are certified as competent persons to perform the traffic management tasks they are required to undertake.	4	1	13
Departures										
2.0	Stop bat used instead of PTC	Traffic controller hit by vehicle	5	4	24	N	- Consider use of shadow vehicles if practical, or other type of static hard cover available (i.e. safety barrier) - Ensure best possible escape route considered when allocating control point on TGS - to be reassessed onsite continuously - Ensure best line of sight where practical. Should the best line of sight not be possible, repeater signs in advance warning to be used. - Traffic controller to always remain clear from travelled path. - Ensure appropriate speed signage has been installed and meets minimum and maximum length requirements.	4	2	14
Advanced Warning										
3.0	VMS	Motorist collides with VMS, motorist confused by VMS	4	4	20	N	- Always place VMS behind an approved safety barrier or as far away from the edge of traffic lane as is practical in a position determined suitable based on a documented risk assessment. - The location is to be confirmed by Risk Assessment	3	2	11
3.1	Long Term Works	Confused motorist collides with worker	4	4	20	Y	- Always install RWA (T1-1) on long-term road work sites - Consider using VMS's	3	3	12
3.2	Delays or Queue extends beyond advanced warning signs	Motorist collides with end of queue	4	4	20	Y	Always: - Work in accordance with the approved and appropriate ROL - Use two-way communication with trucks and give them priority whenever possible - Monitor queue lengths - Install additional signs or use additional traffic controllers or stop work and clear traffic if end of queue extends beyond the advance warning signs - Give emergency vehicles & wide loads priority (i.e. stop work & traffic) Consider: - Working outside peak periods - Liaising with TMC for assistance with traffic signal phasing - Using VMS's - Notifying emergency services - Use of flashing beacon to be added to advance warning signage - Use of queue monitors - Ensure TGS has been designed to cater for the predicted queue lengths where required.	4	2	14
3.3	Changed traffic conditions (eg Slippery surface, no lines, changed line marking, banned turning movements, detours)	Motorist loses control, is confused, or attempts a banned manoeuvre causing MVA	4	4	20	Y	Always: - Install RWA (T1-1) if diverting traffic along a sidetrack, detour, or unexpected conditions such as loose stones or the absence of line marking - Erect Condition signs in accordance with TCAWS Manual - Provide delineation or temporary line marking and ensure this is clearly shown on the TGS - Use Traffic Control to manage changed traffic conditions where required. - Check setup before commencing work - Ensure appropriate permission for any detours - Speed reduction installed to suit road conditions - Consider using VMS's	3	2	11

Item #	Worksite Component	Potential Hazard	Initial Risk			Present	Control Measures	Residual Risk		
			C	P	R			C	P	R
3.4	After care	Inadequate signage resulting in motorist losing control and crashing or motorist becomes frustrated due to inappropriate signage	4	4	20	N	Always: - Install RWA (T1-1) if diverting traffic along a sidetrack, detour, or unexpected conditions, such as loose stones or the absence of line marking - Cover any signs that are not applicable - Erect Condition signs in accordance with TCWS Manual - Provide delineation or temporary line marking - Aftercare speed limit to suit road conditions	3	3	12
3.5	Poor sight distance or speed compliance or Approach speed > 85km/h, or multi lane roads with traffic volume > 10,000vpd	Speeding vehicle doesn't have time to react and fails to negotiate merge taper	5	4	24	Y	Always: - Install RW 1km Ahead if approach speed is > 85km/h or sight distance is less than 150m - Use 700mm cones where traffic speed is greater than 75km/h - Use 900mm cones on high speed to high volume roads (e.g., expressway) or on any work site where increased visibility is required - Duplicate Lane status sign. Consider: - Installing RWA (T1-1) - Increasing taper lengths - Increasing the number of advance warning signage installed - Increasing the size of signage installed - Need for duplication of signs.	4	2	14
3.6	Side Roads	Vehicles enters work site from a side road and collides with workers	3	4	17	Y	- Always install advance warning signage for vehicles entering from side road in advance of the work site.	3	2	11
3.7	Temporary Speed Zone	Motorist travelling too fast for the conditions causing MVA	5	4	24	Y	- Ensure speed zones are designed in accordance with TCAWS, AS1742.3 and AGTTM. - Ensure speed zoning is consistent with the work activity and road environment. - Consider the use of speed radar VMS to monitor traffic speeds and advise motorists. - Review the TGS and adjust where possible to enhance traffic calming through the work site.	4	2	14
Transition										
4.0	Lane closure	Motorist fails to negotiate taper and collides with worker, vehicle or plant	5	4	24	Y	Always: - Install taper lengths and cones in accordance with TCAWS Manual - Install & duplicate/repeat Lane Status Sign (T2-6-1 or 2) on multi lane roads - Use a minimum of 2 temporary hazard markers (T5-4 or 5) on tapers - Install a 30m minimum buffer zone at the end of tapers - Check setup before commencing work - Consider using a shadow vehicle (or vehicles) with flashing lights to protect workers - Ensure appropriate site distance to start of taper	4	2	14
Work Area										
5.0	Traffic Control	Motorist not concentrating or speeding collides with end of queue or traffic controller	5	4	24	Y	- Design and implement TGS in accordance with TCAWS, AS1742.3 and AGTTM. - Ensure all relevant traffic management personnel involved in the design and implementation of the TGS are certified as competent persons to perform the traffic management tasks they are required to undertake. - Conduct regular inspections in accordance with TCAWS, AS1742.3 and AGTTM. - Rectify any deficiencies as a matter of urgency. - Review traffic controls to suit changes in site conditions.	4	2	14
5.1	Working adjacent to travel lane	Motorist collides with worker, vehicle or plant	4	4	20	Y	Always: - Install workman T1-5 sign if workers on road - Space cones in accordance with TCAWS Manual - Check setup before commencing work - Reduce speed based on lateral clearance between the work area and travel lane Consider: - Using a shadow vehicle(s) with flashing lights to protect workers - Using spotters with workers - Using safety barriers	4	2	14
General										
6.0	Night work	Due to poor visibility motorist collides with end of queue, worker, vehicle or plant	5	4	20	Y	- Consider providing portable lighting to ensure traffic controllers are visible and ensure the positions of any temporary lighting are clearly shown on the TGS & always use applicable night PPE.	4	2	14
6.1	Wind / Rain / Fog / Obstructions	Rain/fog reduces visibility and causes road to be slippery increasing risk of a collision with workers, plant or other traffic Wind blows over signs Vehicle parks in front of sign	5	4	20	Y	- Always monitor weather and traffic - Always regularly check setup to ensure signs are visible. If visibility has been obstructed, consider shifting signs, duplication, or repetition. - Consider additional advance warning signage - Liaise with client to reconsider setup or continuation of works	3	3	12
6.2	Vehicle Movements	Plant collides with motorist, workers, or other plant	4	3	19	Y	Always: - Ensure positive communications Consider: - Using Traffic Control and/or Spotters to manage work vehicles - Installation of exclusion Zones - Preparing a VMP where required.	3	3	12
6.3	Pedestrians and Cyclists	Pedestrian and/or cyclist enters the work zone or travel lane and is hit by vehicle or plant	4	5	21	Y	- Ensure TGS design caters for all road users including pedestrians and cyclists. - Always clearly delineate the work area. - Do not obstruct pedestrian and cyclists travel paths with traffic control signs and devices. - Consider the use of additional warning and guidance signage for pedestrians, cyclists and motorists. - Comply with shoulder and lane width criteria in the design of the TGS. - Consider the use of traffic control at crossing points especially where contra-flow arrangements are in place. - Consider the use of additional traffic controllers to monitor and assist pedestrian and cyclist movements where required. - Ensure the use of existing or temporary ramps for crossing points. - Undertake consultation to determine existing travel paths, desire lines, volumes, and types of users.	4	2	14

Issue	Desg	Appd	Date & Time	Amendment Description		TGS Name & Number:	TGS Designed	Date of Approval:		Page 2 / 4
01	KD	RP	9.01.2025	Original Issue		LGP - TGS - 147586-2 - Unwin St, Rosehill	TGS Approved	09/01/2025		<div></div>
02						Works Location:	Client Company			
03						Unwin St, Rosehill NSW 2142, Australia	Client Contact:			
04						Project Name:	Project Description:			
05						Unwin St diversion				
Scale: 1 : 750				Original Size A3		Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.				

Item #	Worksite Component	Potential Hazard	Initial Risk			Present	Control Measures	Residual Risk		
			C	P	R			C	P	R
6.4	Bus stops	Bus unable to pull up safely causing MVA	3	3	12	Y	<ul style="list-style-type: none"> - Consider notifying bus companies that operate in the area - Always provide adequate provision for buses or carry out work at night when buses aren't operating - Where temporary bus stops are created, ensure buses are able to meet the curb - Ensure TGS clearly shows affected stops - Traffic controllers to manage and assist where safe and possible 	2	2	5
6.5	Property accesses - commercial or private	Collisions due to propertie acess restrictions	3	4	17	Y	<ul style="list-style-type: none"> - Consider staging work outside of business hours - Create physical barrier to prevent traffic entering site & driveways 	2	2	5
6.6	Excavations within work area	Errant vehicle drives into excavation	5	4	25	Y	<ul style="list-style-type: none"> - For excavations shallower than 0.5m and within 3m of the edge of traffic lane, delineate the excavation with plastic mesh fencing, barrier boards placed perpendicular to the traffic flow or cones/bollards. - For excavations deeper than 0.5m and within 3m of the edge of traffic lane, a temporary safety barrier must be installed. When traffic is greater than 3m from the excavation, the requirement for a temporary safety barrier should be considered based on a documented risk assessment. - Where the excavation is deeper than 200mm, is open for more than 2 weeks and the distance from the edge of traffic lane is less than 3m for 60km/h, 6m for 80km/h and 9m for 100km/h, a temporary safety barrier must be installed. 	4	2	14
6.7	Parking	Parked vehicle or worker exiting vehicle hit by passing vehicle	4	4	20	Y	<ul style="list-style-type: none"> - Always check adequate parking is available for workers and visitors - Consider providing safe parking within the work area 	4	2	14
6.8	Concurrent Works	Motorist confused by conflicting signs causing MVA	3	4	17	Y	<ul style="list-style-type: none"> - Always establish communication with other site if possible - Always cover any conflicting signs and adjust TGS as necessary - Complete conflict checks where required 	3	3	12
6.9	Heavy Vehicles and OSOM Vehicles	HV cannot travel past work site without knocking over delineation	4	4	20	Y	<ul style="list-style-type: none"> - Comply with shoulder and lane width criteria in the design of the TGS. - During the design of the TGS, check vehicle swept path where necessary to ensure the largest known vehicle travelling through the work site can negotiate the changed traffic conditions. - Traffic controllers to communicate with heavy vehicle and OSOM drivers to warn and guide them through the work site as required. - Traffic control to monitor heavy vehicle movements and if required, make adjustments to the signs and devices within approved tolerances. If more significant changes are required, liaise with Client/Supervisor and arrange for TGS to be reviewed and modified by the designer. 	4	2	14
Dynamic Works										
7.0	General Traffic	Motorists speeding / not concentrating / tired / distracted. Not having enough time to merge causing MVA	5	5	25	Y	<ul style="list-style-type: none"> - Always use a minimum 1 AWW and consider the use of a 2nd AWW. - Consider use of TMA on higher speed roads >85km - Use speed reduction best suited to work activity and road environment - Use applicable AW signage displayed on AWW - Ensure sight distances between AWW, shadow vehicles are clearly labelled on TGS - Ensure 20-40m buffer zone between shadow vehicle and work vehicle. No less than 40m when using a TMA as a shadow vehicle - Positive communications to be held at all times - Workers to remain shadowed at all times - Monitor traffic queues on all road configurations, convoy to clear roadway if required until traffic has cleared 	4	2	14

Item

Additional Control Measures

8.0

9.0

10.0

11.0

Item

Departures: State the departure and reason for departure

12.0

13.0

14.0

Departures Sign Off (CLIENT):

Client Name:

Client Signature:

Date:

NOTES:
GENERAL NOTES
1. This Traffic Guidance Scheme (TGS) is to be used in conjunction with the Traffic Management Plan (TMP) and associated road authority permits and management plans, including Road Occupancy Licence (ROL), vehicle movement plan (VMP) and pedestrian movement plan (PMP) where applicable.
2. This TGS has been produced by a Prepare Work Zone Traffic Management Plan (PWZTMP) qualified person in accordance with the requirements of the TINSW Traffic Control at Work Sites manual, Issue 6.1 dated 28 February 2022 (TCAWS 6.1) and with reference to AS1742.3 and AUSTRROADS Guide to Temporary Traffic Management Parts 1 – 10, version 1.1 dated September 2021 (AGTTM).
3. This TGS is suitable for ~~short term~~ / long term works.
4. Lack Group does not accept responsibility for this TGS if it is implemented or modified by external parties.

APPROVALS
5. The TGS must be approved for use before implementation.
6. Ensure all road authority approvals and associated conditions of approval are met prior to implementing the TGS.

TGS VERIFICATION
7. Prior to use on site, the selected or designed TGS must be verified to ensure it is suitable for the works and location by undertaking an inspection of the work site where the TGS will be implemented. The TGS verification must be completed in accordance with TCAWS 6.1, Section 8.1.2 by an Implement Traffic Control Plan (ITCP) or PWZTMP qualified person. Refer Page 1 of this TGS for Site Verification sign-off.

RISK ASSESSMENT
8. A desktop risk assessment has been undertaken in developing this TGS. However, when implementing this TGS on site, the site supervisor should undertake a site specific risk assessment to ensure that the TGS has considered and mitigated all identified hazards and risks.

INSTALLATION AND REMOVAL OF SIGNS AND DEVICES
9. All traffic management signs and devices prescribed for use in this TGS are in accordance with TCAWS 6.1 with reference to AS1742.3 and AGTTM.
10. The TGS must be installed, maintained and removed in a planned and safe manner. The implementation must only be undertaken by an ITCP qualified person.
11. All signage shown on this TGS is not to conflict with any long-term existing signage arrangements in the area. If this occurs, cover all conflicting road signage where required.

PLACEMENT OF SIGNS AND DEVICES
12. Signs must be properly displayed and securely mounted at all times and within the line of sight of the intended road user. Regulatory and detour signs must be located nearest to the travel edge of the lane. Signs must not: Be obscured from view, such as by vegetation or parked cars; Obscure other devices from the line of sight of the intended road users; Create a hazard to road workers and road users, including pedestrians and cyclists; Be a hazard that deflects traffic into an undesirable path; Restrict sight distance for drivers entering from side roads or streets, or private driveways; and Be installed using supports that could be a hazard if struck by a vehicle.
13. Signs mounted on frames for short-term works should be mounted a minimum 200mm from the ground to the lower edge of the sign.
14. Signs mounted on posts for long-term works in open road situations, the underside of the sign must be at least 1.5m above the level of the nearest edge of the travelled path. When installed on a kerb or footpath, the underside of the sign must be at least 2.2m above the level of the nearest edge of the travelled path.

ORIENTATION OF SIGNS
15. On the outside of a curve, the sign face must be at 0 degrees, or 'normal to traffic'. On a straight, the sign face must be angled at approximately 5 degrees normal to oncoming traffic and on the inside of a curve, the sign face must be angled at approximately 5 degrees normal to oncoming traffic at 200m preceding the sign.

TOLERANCES
16. Local constraints may not allow signage and devices to be placed in accordance with this TGS. Unless stated otherwise on the TGS, the tolerances on the positioning of signs, length of tapers or pavement markings detailed in the TGS is a minimum 10% less and a maximum 25% more than the distances or lengths stated and for the spacing of delineation devices a maximum 10% more than the spacing detailed in the TGS.
17. Any variation to the positioning of signs and devices within the approved tolerances must be marked and intalled on the TGS held on site, with the name of the person making the changes shown on the TGS.

MODIFYING TGS
18. Modifications to a Site Specific or Site Suitable TGS must be approved by a person holding the PWZTMP qualification and must be supported by a TMP or risk assessment to ensure that the TGS has considered and mitigated all identified site specific conditions and risks.
19. If it is identified that by implementing the TGS with modifications outside of the approved tolerances it will generate risks, then the works must be stopped (including the implementation of the TGS), the site must be made safe and an updated TGS must be provided by a PWZTMP qualified person prior to works recommencing. Any concerns regarding the suitability of the TGS must be raised with the Site Manager and your immediate Supervisor.

TRAFFIC CONTROLLERS
20. The implementation of traffic control must be conducted in line with the hierarchy of controls with the elimination of harm to workers and the travelling public considered in the first instance.
21. Where traffic control is required, a portable traffic control device (PTCD) must be used rather than using a manual traffic controller when the existing permanent speed limit is greater than 45 km/h.
22. TCAWS 6.1, Section 5.4 provides the conditions under which a manual traffic controller may be used.
23. Where PTCDs or traffic controllers are used, approach speeds of traffic must be reduced to less than 65 km/h.
24. All persons operating a portable traffic control device or performing manual traffic control must be qualified with 'Traffic Control' training; and authorised by the relevant road authority.

ROAD USER MANAGEMENT
25. The needs of specific road users, including travel paths and desire lines, must be considered and managed for the extent of the works to ensure safety and access is maintained. Specific road user groups to be considered include: Pedestrians including high-risk pedestrians such as persons with a disability, children, the elderly or persons using mobility aid devices; Cyclists; Motorcyclists; Heavy Vehicles, including oversize overmass vehicles; Public transport; and Emergency services. The needs of these specific road users have been considered in the design of this TGS, however the needs of all road users should be considered in the site specific risk assessment before implementing the TGS to ensure the TGS is appropriate.
26. Road users are to be monitored for the duration of the works. If additional signage and/or devices are required to manage the needs of specific road users, such as pedestrians and cyclists, this would be subject to following the procedure for modifying a TGS.


ACCESS MANAGEMENT
27. Access to properties located within the extent of works must be maintained at all times.
28. Property access impacted by the works should be identified and addressed in the TGS. Consultation with the property owner/resident must be undertaken prior to implementing the TGS if required.

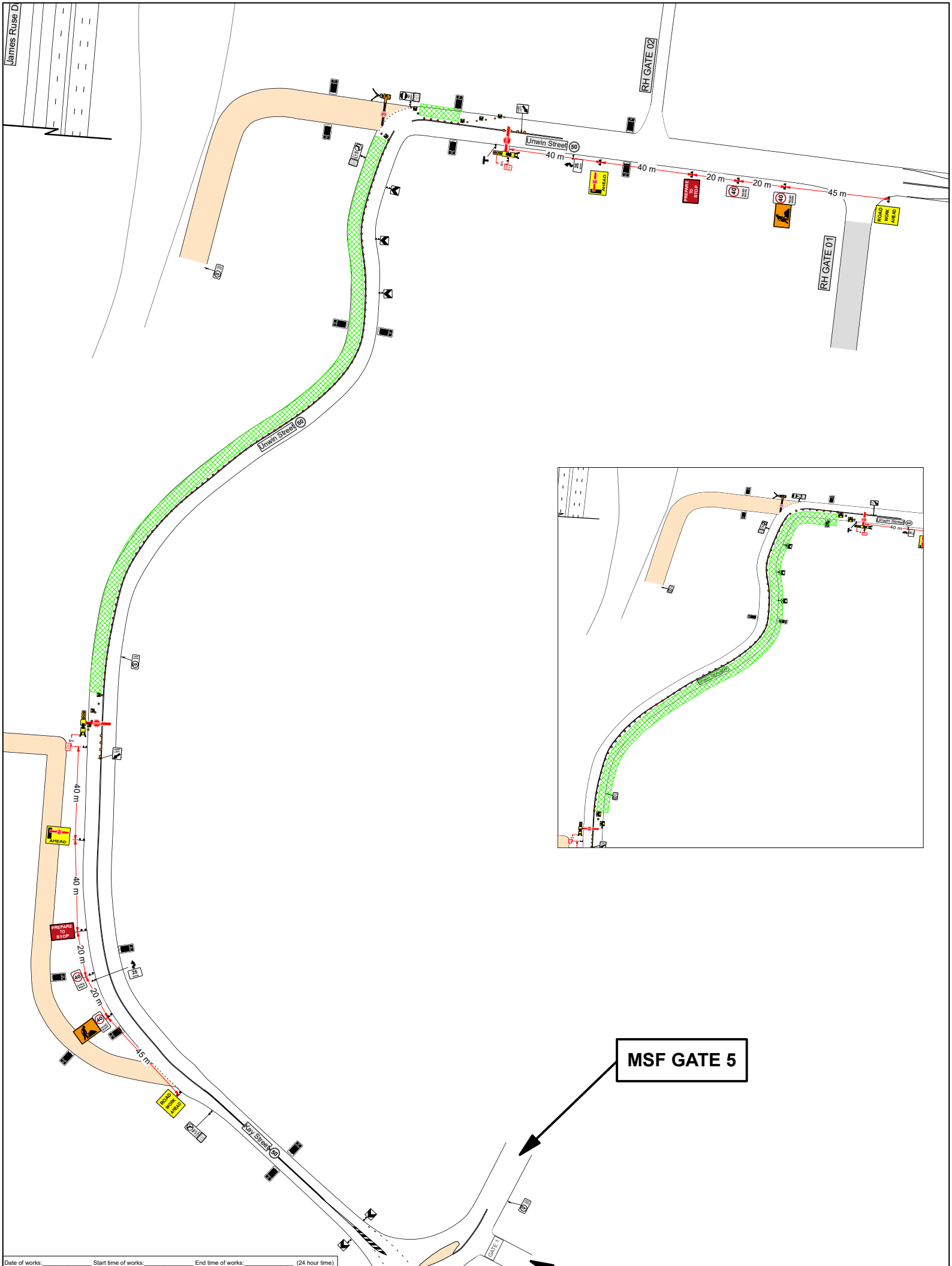
INCIDENT MANAGEMENT
29. The site contractor is to determine the appropriate procedure for incident management where appropriate.
30. If an incident occurs within the extent of the traffic control arrangement: Call for assistance if incident requires (emergency services 000 or 112); Notify the work site supervisor or Team Leader immediately of any incident; Maintain effective traffic control, if necessary, relocate the traffic control station to a suitable location clear of any further danger; and Record sufficient notes of the incident, including observations, to complete an incident report.

INSPECTIONS
31. Temporary traffic management monitoring activities must be undertaken in all instances where work is being performed or aftercare is in place. This includes day and night times as required. The type of inspections and frequency are to be in accordance with TCAWS 6.1, Section 8.1.1.



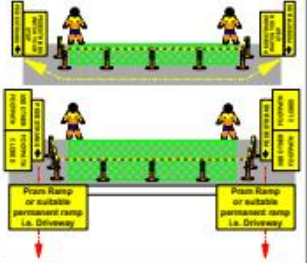
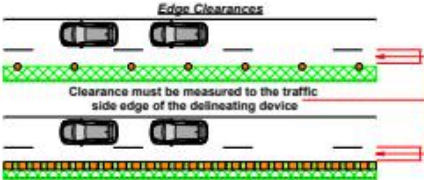
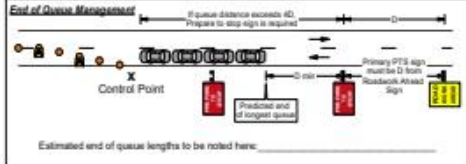


REVIEW OF TGS
32. Generic TGSs must be reviewed by a PWZTMP qualified person every 12 months so that they remain appropriate. Once reviewed the date and details of the PWZTMP person must be updated on the TGS to ensure persons selecting can confirm currency.
33. All active site specific and site suitable TGS are designed for the nominated work activity and are only valid for the time period of works specified on the TGS. They must be reviewed as part of the weekly inspections as detailed in TCAWS 6.1, Section 8.1. If the work activity is intended to be longer than 12 months, then the TGS musty be formally reviewed by a PWZTMP qualified person at least every 12 months and issued with the review date and the details of the person undertaking the review.


RECORD KEEPING
34. Supervisory personnel are to keep daily records of the TGS implementation including: Site specific risk assessments; Approved TGS used, including versions where modifications or updates have been made; Completed inspection checklists that have been undertaken; Records of traffic related incidents that occurred during the works; and Any other relevant document generated by the process of completing the temporary traffic management works.

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed	TGS Approved	Client Company	Client Contact:	Date of Approval:	Page 3 / 4
01	KD	RP	9.01.2025	Original Issue	LGP - TGS - 147586-2 - Unwin St, Rosehill					09/01/2025	
02					Works Location:						
03					Unwin St, Rosehill NSW 2142, Australia						
04					Project Name:						
05					Project Description:						
					Unwin St diversion						
Scale: 1 : 750				Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.						



MSF GATE 5

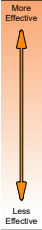
Locality Map		Personnel Requirements		Actual Requirements		Legend		Traffic Management Options Analysis				Dimension "D" (Main Roads)		Dimension "D" (Minor Roads)																																			
		Traffic Controllers	5								<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>OPTION</th> <th>DESCRIPTION</th> <th>METHOD TYPE</th> <th>TGS SELECTED</th> </tr> </thead> <tbody> <tr> <td>AROUND</td> <td>Vehicles detoured via existing road network or sidetrack</td> <td>Full road closure / One-way road closure / Detour</td> <td></td> </tr> <tr> <td rowspan="4">PAST</td> <td rowspan="4">Vehicles past delineated work zones</td> <td>Lateral Shift</td> <td></td> </tr> <tr> <td>Shoulder closure</td> <td>Selected</td> </tr> <tr> <td>Contrailow (2 way traffic maintained)</td> <td></td> </tr> <tr> <td>Single or Multi Lane Closure</td> <td>Selected</td> </tr> <tr> <td rowspan="2">THROUGH</td> <td rowspan="2">Vehicles through work zone</td> <td>Single Lane Shuttle Flow</td> <td>Selected</td> </tr> <tr> <td>Temporary Road Closure / Hold & Release / Local Traffic Access / Pilot Vehicle</td> <td></td> </tr> </tbody> </table>		OPTION	DESCRIPTION	METHOD TYPE	TGS SELECTED	AROUND	Vehicles detoured via existing road network or sidetrack	Full road closure / One-way road closure / Detour		PAST	Vehicles past delineated work zones	Lateral Shift		Shoulder closure	Selected	Contrailow (2 way traffic maintained)		Single or Multi Lane Closure	Selected	THROUGH	Vehicles through work zone	Single Lane Shuttle Flow	Selected	Temporary Road Closure / Hold & Release / Local Traffic Access / Pilot Vehicle		40 metres		40 metres										
		OPTION	DESCRIPTION	METHOD TYPE	TGS SELECTED																																												
		AROUND	Vehicles detoured via existing road network or sidetrack	Full road closure / One-way road closure / Detour																																													
		PAST	Vehicles past delineated work zones	Lateral Shift																																													
				Shoulder closure	Selected																																												
				Contrailow (2 way traffic maintained)																																													
Single or Multi Lane Closure	Selected																																																
THROUGH	Vehicles through work zone	Single Lane Shuttle Flow	Selected																																														
		Temporary Road Closure / Hold & Release / Local Traffic Access / Pilot Vehicle																																															
TGS Verification Checklist: Verified By: _____ Position: _____ Signature: _____ Qualification: _____ Expiry / Issue Date: _____ Date of Verification: _____		TGS Verification Checklist: Verified By: _____ Position: _____ Signature: _____ Qualification: _____ Expiry / Issue Date: _____ Date of Verification: _____		Pedestrian Management Options Analysis				Cyclist Management Options Analysis				Speed (km/h) Distance between tapers (m)																																					
				<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Options Available</th> <th>THROUGH</th> <th>PAST</th> <th>AROUND</th> </tr> </thead> <tbody> <tr> <td>Options Selected</td> <td></td> <td>Selected</td> <td></td> </tr> </tbody> </table>				Options Available	THROUGH	PAST	AROUND	Options Selected		Selected		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Options Available</th> <th>THROUGH</th> <th>PAST</th> <th>AROUND</th> </tr> </thead> <tbody> <tr> <td>Options Selected</td> <td></td> <td>Selected</td> <td></td> </tr> </tbody> </table>				Options Available	THROUGH	PAST	AROUND	Options Selected		Selected		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Purpose & Usage</th> <th>Speed zone of device location km/h</th> <th>Maximum Spacing m</th> </tr> </thead> <tbody> <tr> <td>On approach to a traffic controller position (center line or edge line)</td> <td>All cases</td> <td>4</td> </tr> <tr> <td>Merge Tapers</td> <td>55 to 75 Greater than 76</td> <td>9 12</td> </tr> <tr> <td>Lateral shift tapers</td> <td>55 to 75 Greater than 76</td> <td>12 18</td> </tr> <tr> <td>Protecting freshly painted lines</td> <td>56 to 75 Greater than 76</td> <td>24 60</td> </tr> <tr> <td>All other purposes</td> <td>less than or equal to 55 56 to 75 Greater than 76</td> <td>4 12 18</td> </tr> </tbody> </table>				Purpose & Usage	Speed zone of device location km/h	Maximum Spacing m	On approach to a traffic controller position (center line or edge line)	All cases	4	Merge Tapers	55 to 75 Greater than 76	9 12	Lateral shift tapers	55 to 75 Greater than 76	12 18	Protecting freshly painted lines	56 to 75 Greater than 76	24 60	All other purposes	less than or equal to 55 56 to 75 Greater than 76	4 12 18
				Options Available	THROUGH	PAST	AROUND																																										
				Options Selected		Selected																																											
				Options Available	THROUGH	PAST	AROUND																																										
				Options Selected		Selected																																											
Purpose & Usage	Speed zone of device location km/h	Maximum Spacing m																																															
On approach to a traffic controller position (center line or edge line)	All cases	4																																															
Merge Tapers	55 to 75 Greater than 76	9 12																																															
Lateral shift tapers	55 to 75 Greater than 76	12 18																																															
Protecting freshly painted lines	56 to 75 Greater than 76	24 60																																															
All other purposes	less than or equal to 55 56 to 75 Greater than 76	4 12 18																																															
Edge Clearances 				Edge of traffic lane to: Edge Clearance				Sign spacing requirements																																									
End of Queue Management 				<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Line of traffic cones or bollards</th> <th>Edge Clearance</th> </tr> </thead> <tbody> <tr> <td>Barrier boards, temporary guide posts or temporary hazard markers</td> <td>0.5 m for traffic speeds less than 65 km/h 1.0 m for traffic speeds greater than 65 km/h</td> </tr> <tr> <td>Road safety barrier system</td> <td>-0.3 m for traffic speeds less than 45 km/h -0.5 m for traffic speeds 45 to 65 km/h -1.0 m for traffic speeds 65 to 85 km/h -2.0 m for traffic speeds greater than 85 km/h</td> </tr> </tbody> </table>				Line of traffic cones or bollards	Edge Clearance	Barrier boards, temporary guide posts or temporary hazard markers	0.5 m for traffic speeds less than 65 km/h 1.0 m for traffic speeds greater than 65 km/h	Road safety barrier system	-0.3 m for traffic speeds less than 45 km/h -0.5 m for traffic speeds 45 to 65 km/h -1.0 m for traffic speeds 65 to 85 km/h -2.0 m for traffic speeds greater than 85 km/h	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Number of signs</th> <th colspan="2">Approach Speed</th> </tr> <tr> <th>less than 65 km/h</th> <th>65 km/h or greater</th> </tr> </thead> <tbody> <tr> <td>One advanced sign</td> <td>D</td> <td>2D</td> </tr> <tr> <td>Multiple advanced signs</td> <td>D</td> <td>D</td> </tr> </tbody> </table>				Number of signs	Approach Speed		less than 65 km/h	65 km/h or greater	One advanced sign	D	2D	Multiple advanced signs	D	D																					
Line of traffic cones or bollards	Edge Clearance																																																
Barrier boards, temporary guide posts or temporary hazard markers	0.5 m for traffic speeds less than 65 km/h 1.0 m for traffic speeds greater than 65 km/h																																																
Road safety barrier system	-0.3 m for traffic speeds less than 45 km/h -0.5 m for traffic speeds 45 to 65 km/h -1.0 m for traffic speeds 65 to 85 km/h -2.0 m for traffic speeds greater than 85 km/h																																																
Number of signs	Approach Speed																																																
	less than 65 km/h	65 km/h or greater																																															
One advanced sign	D	2D																																															
Multiple advanced signs	D	D																																															
Traffic Guidance Scheme Modifications: Modified By: Scott McMichael Qualification Number: TCT0066322 Expiry / Issue Date: _____ Signature: _____ Date of Modification: 29/01/2025 Modification Notes:				Installation & Removal of Signs & Devices Two-lane, two-way roads: The sequence of installation should be as illustrated in the following order: 1: Install the termination signs when initially leaving work area, 'End Road Work/speed reinstatement' (affected direction). 2: Use the existing road network to turn where safe to do so. 3 to 7: Place approach signs in unaffected direction, including the PTCD (traffic controller to remain with the PTCD). 8: Install 'End Road Work/speed reinstatement' (unaffected direction). 9: Use the existing road network to turn where safe to do so. 10 to 14: Place approach signs in the affected direction, including the PTCD (traffic controller to remain with PTCD). 15 and 16: Traffic controller/s to stop traffic and taperlane closure delineation implemented. 17: T/C/P qualified person completes drive around to confirm TGS is installed as designed.				Multi-lane roads: The sequence of installation should be as illustrated in the following order: 1: Locate advance warning vehicle and TMA to shadow sign installation vehicle. 2 to 5: Install advance warning signs in unaffected lane. 6: Install 'End Roadwork/speed reinstatement'. 7: Use the existing road network to turn where safe to do so. 8: Locate advance warning vehicle and TMA to shadow sign installation vehicle. 9 to 12: Install advance warning signs in obstructed (affected) lane. 13: Install 'Flashing Arrow' and delineation devices on approach to start of taper. 14: Position TMA in travel lane to shadow installation of taper. 14 and 15: Install taper and delineation devices to form taper, safety buffer and past work area. 16: Install 'End Roadwork/speed reinstatement'. 17: Use the existing road network to turn where safe to do so. 18: TMA positioned to shadow work area. 19: T/C/P qualified person completes drive around to confirm TGS is installed as designed.				ALTERNATE SIGN SPACING Dimension "D": AGTMM: A distance expressed in metres, determined in accordance with Table 2.2 and used for positioning of advance signs. To be considered if TCAMS dimension "D" cannot be provided due to site conditions.																																					
Traffic Guidance Scheme Installation: Installed By: _____ Qualification Number: _____ Expiry / Issue Date: _____ Signature: _____ Date of Installation: _____												<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Speed of Traffic - km/h</th> <th>Dimension - m</th> </tr> </thead> <tbody> <tr> <td>55 or less</td> <td>15</td> </tr> <tr> <td>56 to 65</td> <td>45</td> </tr> <tr> <td>Greater than 65</td> <td>speed of traffic, in Km/h</td> </tr> </tbody> </table>				Speed of Traffic - km/h	Dimension - m	55 or less	15	56 to 65	45	Greater than 65	speed of traffic, in Km/h																										
Speed of Traffic - km/h	Dimension - m																																																
55 or less	15																																																
56 to 65	45																																																
Greater than 65	speed of traffic, in Km/h																																																

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number	TGS Designed	TGS Approved	Client Company	Client Contact	Date of Approval:	Page 1 / 4
01	KD	RP	9.01.2025	Original Issue	LGP - TGS - 147586-1 - Unwin St, Rosehill					09/01/2025	
02					Works Location:						
03					Unwin St, Rosehill NSW 2142, Australia						
04					Project Name:						
05					Project Description:						
Scale: 1 : 750 Original Size A3					Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.						

TGS Risk Assessment

Hierarchy of Controls

1. Eliminate the hazard altogether.
eg. Road closures.
2. Substitute the hazard with a safer alternative.
eg. Using PTCs instead of stop bats.
3. Isolate the hazard from anyone who could be harmed.
eg. Drop zones for clients works in elevated work zones.
4. Use engineering controls to reduce the risk.
eg. The use of traffic control devices to protect work area.
5. Use administrative controls to reduce the risk.
eg. Ensure personnel are trained in their field.
6. Use PPE.
eg. Wearing gloves while manual handling.





Step 1 - Consequence (impact)				
Negligible (1)	Minor (2)	Moderate (3)	Major (4)	Severe (5)
First Aid Treatment	Medical Treatment	Lost Time Injury	Permanent Impairment Injury	Fatality
Very minor injury that requires no treatment or simple first aid	Injury / illness, which requires medical treatment and may temporarily restrict a persons capacity to work	Injury / illness, which temporarily renders a person unfit to work in any capacity	Injury / illness, which permanently alters a persons future (eg. Spinal injury, amputation or death)	
Short term damage	Limited but medium term damage	Significant but recoverable ecological damage	Heavy ecological damage, costly restoration	
Brief delay / slight impact on service delivery	Local or worksite specific impact on service delivery or customer satisfaction	Temporary impact on service delivery or customer satisfaction at a local event / project level	Serious impact on service delivery or customer satisfaction at a state client or large project level	Long term or very severe impact on service delivery or customer satisfaction resulting in loss of business nationally
Moderate (8)	High (16)	High (18)	High (21)	Extreme (25)
Moderate (7)	Moderate (10)	High (17)	High (20)	High (24)
Low (3)	Moderate (9)	Moderate (12)	High (19)	High (23)
Low (2)	Low (5)	Moderate (11)	Moderate (14)	High (22)
Low (1)	Low (4)	Low (6)	Moderate (13)	Moderate (15)
Step 3 - The risk rating is where the consequence and the probability intersect				

Step 3 - The risk rating is where the consequence and the probability intersect

Step 2 - Probability	Almost Certain (5)	The threat can be expected to occur 75% - 99%	Common / Frequent Occurrence	More than 1 event per month
	Likely (4)	The threat will quite commonly occur 50% - 75%	Is known to occur or "it has happened regularly"	More than 1 event per year
	Possible (3)	The threat may occur occasionally 25% - 50%	Could occur or "I've heard of it happening"	1 event per 1 to 10 years
	Unlikely (2)	The threat could infrequently occur 10% - 25%	Not likely to occur very often	1 event per 10 to 100 years
	Rare (1)	The threat may occur in exceptional circumstances. The threat may occur infrequently 0% - 10%	Conceivable but only in exceptional circumstances	Less than 1 event per 100 years

Item #	Worksite Component	Potential Hazard	Initial Risk			Present	Control Measures	Residual Risk		
			C	P	R			C	P	R
Acceptance										
1.0	TGS Drawn / implemented by unqualified person or organization	TGS Drawn / implemented by unqualified person or organization	5	3	23	N	- Design and implement TGS in accordance with TCAWS, AS1742.3 and AGTTM - Ensure all relevant traffic management personnel involved in the design and implementation of the TGS are certified as competent persons to perform the traffic management tasks they are required to undertake.	4	1	13
Departures										
2.0	Stop bat used instead of PTC	Traffic controller hit by vehicle	5	4	24	N	- Consider use of shadow vehicles if practical, or other type of static hard cover available (i.e. safety barrier) - Ensure best possible escape route considered when allocating control point on TGS - to be reassessed onsite continuously - Ensure best line of sight where practical. Should the best line of sight not be possible, repeater signs in advance warning to be used. - Traffic controller to always remain clear from travelled path. - Ensure appropriate speed signage has been installed and meets minimum and maximum length requirements.	4	2	14
Advanced Warning										
3.0	VMS	Motorist collides with VMS, motorist confused by VMS	4	4	20	N	- Always place VMS behind an approved safety barrier or as far away from the edge of traffic lane as is practical in a position determined suitable based on a documented risk assessment. - The location is to be confirmed by Risk Assessment	3	2	11
3.1	Long Term Works	Confused motorist collides with worker	4	4	20	Y	- Always install RWA (T1-1) on long-term road work sites - Consider using VMS's	3	3	12
3.2	Delays or Queue extends beyond advanced warning signs	Motorist collides with end of queue	4	4	20	Y	Always: - Work in accordance with the approved and appropriate ROL - Use two-way communication with trucks and give them priority whenever possible - Monitor queue lengths - Install additional signs or use additional traffic controllers or stop work and clear traffic if end of queue extends beyond the advance warning signs - Give emergency vehicles & wide loads priority (i.e. stop work & traffic) Consider: - Working outside peak periods - Liaising with TMC for assistance with traffic signal phasing - Using VMS's - Notifying emergency services - Use of flashing beacon to be added to advance warning signage - Use of queue monitors - Ensure TGS has been designed to cater for the predicted queue lengths where required.	4	2	14
3.3	Changed traffic conditions (eg Slippery surface, no lines, changed line marking, banned turning movements, detours)	Motorist loses control, is confused, or attempts a banned manoeuvre causing MVA	4	4	20	Y	Always: - Install RWA (T1-1) if diverting traffic along a sidetrack, detour, or unexpected conditions such as loose stones or the absence of line marking - Erect Condition signs in accordance with TCAWS Manual - Provide delineation or temporary line marking and ensure this is clearly shown on the TGS - Use Traffic Control to manage changed traffic conditions where required. - Check setup before commencing work - Ensure appropriate permission for any detours - Speed reduction installed to suit road conditions - Consider using VMS's	3	2	11

Item #	Worksite Component	Potential Hazard	Initial Risk			Present	Control Measures	Residual Risk		
			C	P	R			C	P	R
3.4	After care	Inadequate signage resulting in motorist losing control and crashing or motorist becomes frustrated due to inappropriate signage	4	4	20	N	Always: - Install RWA (T1-1) if diverting traffic along a sidetrack, detour, or unexpected conditions, such as loose stones or the absence of line marking - Cover any signs that are not applicable - Erect Condition signs in accordance with TCAWS Manual - Provide delineation or temporary line marking - Aftercare speed limit to suit road conditions	3	3	12
3.5	Poor sight distance or speed compliance or Approach speed > 85km/h, or multi lane roads with traffic volume > 10,000vpd	Speeding vehicle doesn't have time to react and fails to negotiate merge taper	5	4	24	Y	Always: - Install RW 1km Ahead if approach speed is > 85km/h or sight distance is less than 150m - Use 700mm cones where traffic speed is greater than 75km/h - Use 900mm cones on high speed to high volume roads (e.g., expressway) or on any work site where increased visibility is required - Duplicate Lane status sign. Consider: - Installing RWA (T1-1) - Increasing taper lengths - Increasing the number of advance warning signage installed - Increasing the size of signage installed - Need for duplication of signs.	4	2	14
3.6	Side Roads	Vehicles enters work site from a side road and collides with workers	3	4	17	Y	- Always install advance warning signage for vehicles entering from side road in advance of the work site.	3	2	11
3.7	Temporary Speed Zone	Motorist travelling too fast for the conditions causing MVA	5	4	24	Y	- Ensure speed zones are designed in accordance with TCAWS, AS1742.3 and AGTTM. - Ensure speed zoning is consistent with the work activity and road environment. - Consider the use of speed radar VMS to monitor traffic speeds and advise motorists. - Review the TGS and adjust where possible to enhance traffic calming through the work site.	4	2	14
Transition										
4.0	Lane closure	Motorist fails to negotiate taper and collides with worker, vehicle or plant	5	4	24	Y	Always: - Install taper lengths and cones in accordance with TCAWS Manual - Install & duplicate/repeat Lane Status Sign (T2-6-1 or 2) on multi lane roads - Use a minimum of 2 temporary hazard markers (T5-4 or 5) on tapers - Install a 30m minimum buffer zone at the end of tapers - Check setup before commencing work - Consider using a shadow vehicle (or vehicles) with flashing lights to protect workers - Ensure appropriate site distance to start of taper	4	2	14
Work Area										
5.0	Traffic Control	Motorist not concentrating or speeding collides with end of queue or traffic controller	5	4	24	Y	- Design and implement TGS in accordance with TCAWS, AS1742.3 and AGTTM. - Ensure all relevant traffic management personnel involved in the design and implementation of the TGS are certified as competent persons to perform the traffic management tasks they are required to undertake. - Conduct regular inspections in accordance with TCAWS, AS1742.3 and AGTTM. - Rectify any deficiencies as a matter of urgency. - Review traffic controls to suit changes in site conditions.	4	2	14
5.1	Working adjacent to travel lane	Motorist collides with worker, vehicle or plant	4	4	20	Y	Always: - Install workman T1-5 sign if workers on road - Space cones in accordance with TCAWS Manual - Check setup before commencing work - Reduce speed based on lateral clearance between the work area and travel lane Consider: - Using a shadow vehicle(s) with flashing lights to protect workers - Using spotters with workers - Using safety barriers	4	2	14
General										
6.0	Night work	Due to poor visibility motorist collides with end of queue, worker, vehicle or plant	5	4	20	Y	- Consider providing portable lighting to ensure traffic controllers are visible and ensure the positions of any temporary lighting are clearly shown on the TGS & always use applicable night PPE.	4	2	14
6.1	Wind / Rain / Fog / Obstructions	Rain/fog reduces visibility and causes road to be slippery increasing risk of a collision with workers, plant or other traffic Wind blows over signs Vehicle parks in front of sign	5	4	20	Y	- Always monitor weather and traffic - Always regularly check setup to ensure signs are visible. If visibility has been obstructed, consider shifting signs, duplication, or repetition. - Consider additional advance warning signage - Liaise with client to reconsider setup or continuation of works	3	3	12
6.2	Vehicle Movements	Plant collides with motorist, workers, or other plant	4	3	19	Y	Always: - Ensure positive communications Consider: - Using Traffic Control and/or Spotters to manage work vehicles - Installation of exclusion Zones - Preparing a VMP where required.	3	3	12
6.3	Pedestrians and Cyclists	Pedestrian and/or cyclist enters the work zone or travel lane and is hit by vehicle or plant	4	5	21	Y	- Ensure TGS design caters for all road users including pedestrians and cyclists. - Always clearly delineate the work area. - Do not obstruct pedestrian and cyclists travel paths with traffic control signs and devices. - Consider the use of additional warning and guidance signage for pedestrians, cyclists and motorists. - Comply with shoulder and lane width criteria in the design of the TGS. - Consider the use of traffic control at crossing points especially where contra-flow arrangements are in place. - Consider the use of additional traffic controllers to monitor and assist pedestrian and cyclist movements where required. - Ensure the use of existing or temporary ramps for crossing points. - Undertake consultation to determine existing travel paths, desire lines, volumes, and types of users.	4	2	14

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed	TGS Approved	Client Compan	Client Contact:	Date of Approval:	Page 2 / 4
01	KD	RP	9.01.2025	Original Issue	LGP - TGS - 147586-1 - Unwin St, Rosehill					09/01/2025	<div>Scale: 1 : 750</div> <div>Original Size A3</div> <div>Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.</div> <div></div> <div></div>
02					Works Location:						
03					Unwin St, Rosehill NSW 2142, Australia						
04					Project Name:						
05					Project Description:						
					Unwin St diversion						

Item #	Worksite Component	Potential Hazard	Initial Risk			Present	Control Measures	Residual Risk		
			C	P	R			C	P	R
6.4	Bus stops	Bus unable to pull up safely causing MVA	3	3	12	Y	<ul style="list-style-type: none"> - Consider notifying bus companies that operate in the area - Always provide adequate provision for buses or carry out work at night when buses aren't operating - Where temporary bus stops are created, ensure buses are able to meet the curb - Ensure TGS clearly shows affected stops - Traffic controllers to manage and assist where safe and possible 	2	2	5
6.5	Property accesses - commercial or private	Collisions due to propertie access restrictions	3	4	17	Y	<ul style="list-style-type: none"> - Consider staging work outside of business hours - Create physical barrier to prevent traffic entering site & driveways 	2	2	5
6.6	Excavations within work area	Errant vehicle drives into excavation	5	4	25	Y	<ul style="list-style-type: none"> - For excavations shallower than 0.5m and within 3m of the edge of traffic lane, delineate the excavation with plastic mesh fencing, barrier boards placed perpendicular to the traffic flow or cones/bollards. - For excavations deeper than 0.5m and within 3m of the edge of traffic lane, a temporary safety barrier must be installed. When traffic is greater than 3m from the excavation, the requirement for a temporary safety barrier should be considered based on a documented risk assessment. - Where the excavation is deeper than 200mm, is open for more than 2 weeks and the distance from the edge of traffic lane is less than 3m for 60km/h, 6m for 80km/h and 9m for 100km/h, a temporary safety barrier must be installed. 	4	2	14
6.7	Parking	Parked vehicle or worker exiting vehicle hit by passing vehicle	4	4	20	Y	<ul style="list-style-type: none"> - Always check adequate parking is available for workers and visitors - Consider providing safe parking within the work area 	4	2	14
6.8	Concurrent Works	Motorist confused by conflicting signs causing MVA	3	4	17	Y	<ul style="list-style-type: none"> - Always establish communication with other site if possible - Always cover any conflicting signs and adjust TGS as necessary - Complete conflict checks where required 	3	3	12
6.9	Heavy Vehicles and OSOM Vehicles	HV cannot travel past work site without knocking over delineation	4	4	20	Y	<ul style="list-style-type: none"> - Comply with shoulder and lane width criteria in the design of the TGS. - During the design of the TGS, check vehicle swept path where necessary to ensure the largest known vehicle travelling through the work site can negotiate the changed traffic conditions. - Traffic controllers to communicate with heavy vehicle and OSOM drivers to warn and guide them through the work site as required. - Traffic control to monitor heavy vehicle movements and if required, make adjustments to the signs and devices within approved tolerances. If more significant changes are required, liaise with Client/Supervisor and arrange for TGS to be reviewed and modified by the designer. 	4	2	14
Dynamic Works										
7.0	General Traffic	Motorists speeding / not concentrating / tired / distracted. Not having enough time to merge causing MVA	5	5	25	Y	<ul style="list-style-type: none"> - Always use a minimum 1 AWW and consider the use of a 2nd AWW. - Consider use of TMA on higher speed roads >85km - Use speed reduction best suited to work activity and road environment - Use applicable AW signage displayed on AWW - Ensure sight distances between AWW, shadow vehicles are clearly labelled on TGS - Ensure 20-40m buffer zone between shadow vehicle and work vehicle. No less than 40m when using a TMA as a shadow vehicle - Positive communications to be held at all times - Workers to remain shadowed at all times - Monitor traffic queues on all road configurations, convoy to clear roadway if required until traffic has cleared 	4	2	14

Item

Additional Control Measures

8.0

9.0

10.0

11.0

Item

Departures: State the departure and reason for departure

12.0

13.0

14.0

Departures Sign Off (CLIENT):

Client Name:

Client Signature:

Date:

NOTES:
GENERAL NOTES

- This Traffic Guidance Scheme (TGS) is to be used in conjunction with the Traffic Management Plan (TMP) and associated road authority permits and management plans, including Road Occupancy Licence (ROL), vehicle movement plan (VMP) and pedestrian movement plan (PMP) where applicable.
- This TGS has been produced by a Prepare Work Zone Traffic Management Plan (PWZTMP) qualified person in accordance with the requirements of the TINSW Traffic Control at Work Sites manual, Issue 6.1 dated 28 February 2022 (TCAWS 6.1) and with reference to AS1742.3 and AUSTRROADS Guide to Temporary Traffic Management Parts 1 – 10, version 1.1 dated September 2021 (AGTTM).
- This TGS is suitable for ~~short term~~ / long term works.
- Lack Group does not accept responsibility for this TGS if it is implemented or modified by external parties.

APPROVALS

- The TGS must be approved for use before implementation.
- Ensure all road authority approvals and associated conditions of approval are met prior to implementing the TGS.

TGS VERIFICATION

- Prior to use on site, the selected or designed TGS must be verified to ensure it is suitable for the works and location by undertaking an inspection of the work site where the TGS will be implemented. The TGS verification must be completed in accordance with TCAWS 6.1, Section 8.1.2 by an Implement Traffic Control Plan (ITCP) or PWZTMP qualified person. Refer Page 1 of this TGS for Site Verification sign-off.

RISK ASSESSMENT

- A desktop risk assessment has been undertaken in developing this TGS. However, when implementing this TGS on site, the site supervisor should undertake a site specific risk assessment to ensure that the TGS has considered and mitigated all identified hazards and risks.

INSTALLATION AND REMOVAL OF SIGNS AND DEVICES

- All traffic management signs and devices prescribed for use in this TGS are in accordance with TCAWS 6.1 with reference to AS1742.3 and AGTTM.
- The TGS must be installed, maintained and removed in a planned and safe manner. The implementation must only be undertaken by an ITCP qualified person.
- All signage shown on this TGS is not to conflict with any long-term existing signage arrangements in the area. If this occurs, cover all conflicting road signage where required.

PLACEMENT OF SIGNS AND DEVICES

- Signs must be properly displayed and securely mounted at all times and within the line of sight of the intended road user. Regulatory and detour signs must be located nearest to the travel edge of the lane. Signs must not: Be obscured from view, such as by vegetation or parked cars; Obscure other devices from the line of sight of the intended road users; Create a hazard to road workers and road users, including pedestrians and cyclists; Be a hazard that deflects traffic into an undesirable path; Restrict sight distance for drivers entering from side roads or streets, or private driveways; and Be installed using supports that could be a hazard if struck by a vehicle.
- Signs mounted on frames for short-term works should be mounted a minimum 200mm from the ground to the lower edge of the sign.
- Signs mounted on posts for long-term works in open road situations, the underside of the sign must be at least 1.5m above the level of the nearest edge of the travelled path. When installed on a kerb or footpath, the underside of the sign must be at least 2.2m above the level of the nearest edge of the travelled path.

ORIENTATION OF SIGNS

- On the outside of a curve, the sign face must be at 0 degrees, or 'normal to traffic'. On a straight, the sign face must be angled at approximately 5 degrees normal to oncoming traffic and on the inside of a curve, the sign face must be angled at approximately 5 degrees normal to oncoming traffic at 200m preceding the sign.

TOLERANCES

- Local constraints may not allow signage and devices to be placed in accordance with this TGS. Unless stated otherwise on the TGS, the tolerances on the positioning of signs, length of tapers or pavement markings detailed in the TGS is a minimum 10% less and a maximum 25% more than the distances or lengths stated and for the spacing of delineation devices a maximum 10% more than the spacing detailed in the TGS.
- Any variation to the positioning of signs and devices within the approved tolerances must be marked and intalled on the TGS held on site, with the name of the person making the changes shown on the TGS.

MODIFYING TGS

- Modifications to a Site Specific or Site Suitable TGS must be approved by a person holding the PWZTMP qualification and must be supported by a TMP or risk assessment to ensure that the TGS has considered and mitigated all identified site specific conditions and risks.
- If it is identified that by implementing the TGS with modifications outside of the approved tolerances it will generate risks, then the works must be stopped (including the implementation of the TGS), the site must be made safe and an updated TGS must be provided by a PWZTMP qualified person prior to works recommencing. Any concerns regarding the suitability of the TGS must be raised with the Site Manager and your immediate Supervisor.

TRAFFIC CONTROLLERS

- The implementation of traffic control must be conducted in line with the hierarchy of controls with the elimination of harm to workers and the travelling public considered in the first instance.
- Where traffic control is required, a portable traffic control device (PTCD) must be used rather than using a manual traffic controller when the existing permanent speed limit is greater than 45 km/h.
- TCAWS 6.1, Section 5.4 provides the conditions under which a manual traffic controller may be used.
- Where PTCDs or traffic controllers are used, approach speeds of traffic must be reduced to less than 65 km/h.
- All persons operating a portable traffic control device or performing manual traffic control must be qualified with 'Traffic Control' training; and authorised by the relevant road authority.

ROAD USER MANAGEMENT

- The needs of specific road users, including travel paths and desire lines, must be considered and managed for the extent of the works to ensure safety and access is maintained. Specific road user groups to be considered include: Pedestrians including high-risk pedestrians such as persons with a disability, children, the elderly or persons using mobility aid devices; Cyclists; Motorcyclists; Heavy Vehicles, including oversize overmass vehicles; Public transport; and Emergency services. The needs of these specific road users have been considered in the design of this TGS, however the needs of all road users should be considered in the site specific risk assessment before implementing the TGS to ensure the TGS is appropriate.
- Road users are to be monitored for the duration of the works. If additional signage and/or devices are required to manage the needs of specific road users, such as pedestrians and cyclists, this would be subject to following the procedure for modifying a TGS.

ACCESS MANAGEMENT

- Access to properties located within the extent of works must be maintained at all times.
- Property access impacted by the works should be identified and addressed in the TGS. Consultation with the property owner/resident must be undertaken prior to implementing the TGS if required.

INCIDENT MANAGEMENT

- The site contractor is to determine the appropriate procedure for incident management where appropriate.
- If an incident occurs within the extent of the traffic control arrangement: Call for assistance if incident requires (emergency services 000 or 112); Notify the work site supervisor or Team Leader immediately of any incident; Maintain effective traffic control, if necessary, relocate the traffic control station to a suitable location clear of any further danger; and Record sufficient notes of the incident, including observations, to complete an incident report.

INSPECTIONS


- Temporary traffic management monitoring activities must be undertaken in all instances where work is being performed or aftercare is in place. This includes day and night times as required. The type of inspections and frequency are to be in accordance with TCAWS 6.1, Section 8.1.1.

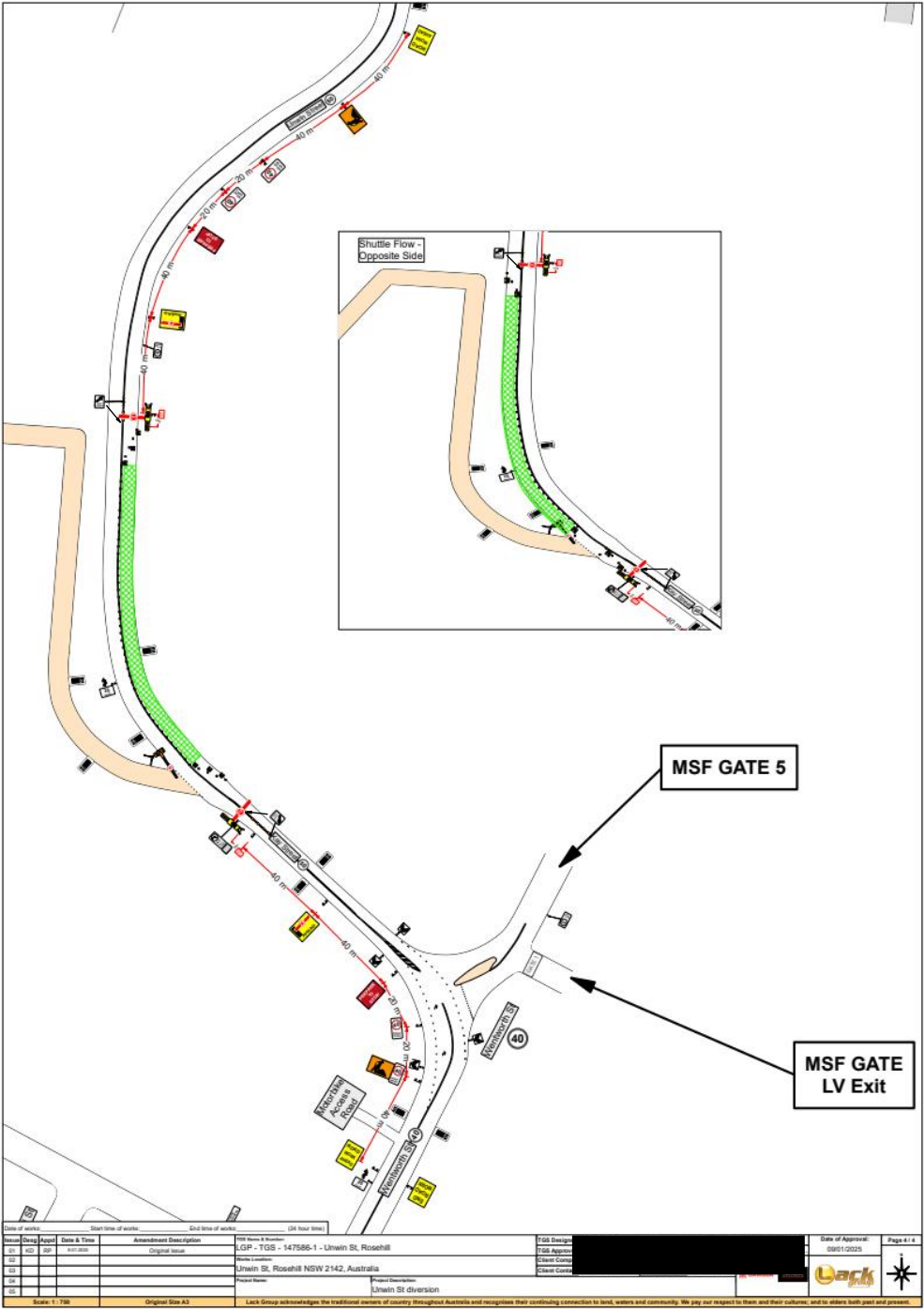
REVIEW OF TGS

- Generic TGSs must be reviewed by a PWZTMP qualified person every 12 months so that they remain appropriate. Once reviewed the date and details of the PWZTMP person must be updated on the TGS to ensure persons selecting can confirm currency.
- All active site specific and site suitable TGS are designed for the nominated work activity and are only valid for the time period of works specified on the TGS. They must be reviewed as part of the weekly inspections as detailed in TCAWS 6.1, Section 8.1. If the work activity is intended to be longer than 12 months, then the TGS musty be formally reviewed by a PWZTMP qualified person at least every 12 months and issued with the review date and the details of the person undertaking the review.

RECORD KEEPING

- Supervisory personnel are to keep daily records of the TGS implementation including: Site specific risk assessments; Approved TGS used, including versions where modifications or updates have been made; Completed inspection checklists that have been undertaken; Records of traffic related incidents that occurred during the works; and Any other relevant document generated by the process of completing the temporary traffic management works.

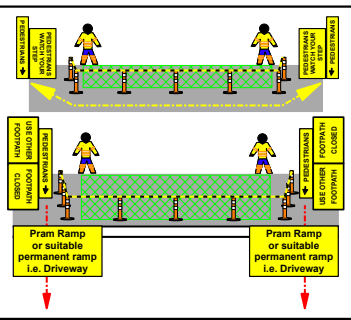
Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed	TGS Approved	Client Compan	Client Contact:	Date of Approval:	Page 3 / 4
01	KD	RP	9.01.2025	Original Issue	LGP - TGS - 147586-1 - Unwin St, Rosehill					09/01/2025	
02					Works Location:						
03					Unwin St, Rosehill NSW 2142, Australia						
04					Project Name:						
05					Project Description:						
					Unwin St diversion						
Scale: 1 : 750				Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.						





Personnel Requirements	Asset Requirements
Traffic Controllers	13
UTE	5
CONE TRUCK	1
ESAS	0
TMA	0
ESTOP	0
BOOM GATE	4
EXTRA REQUIREMENTS	0
Above requirements are for guidance only as they may change due to unforeseen circumstances	

Legend	
	Work Area
	Bollard
	Safety Barrier
	Safety Zone
	Traffic Controller
	Escape Route
	Tiger Tail
	Portable Traffic Signal
	Portaboom
	Barrier Board
	Trailer VMS
	Traffic Cone
	Temporary Bus Stop
	Open Bus stop
	Closed Bus stop
	Arrowboard
	Sign Cover
	Existing Signs
	Traffic Flow
	Pedestrian Flow
	TMA
	Cone Truck
	Work Vehicle
	Police Car
	VMS Vehicle
	Traffic Vehicle

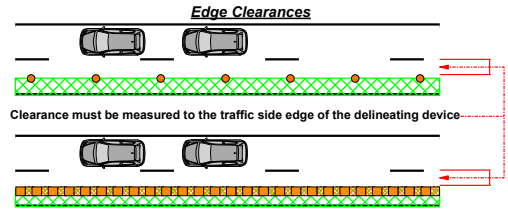


Pedestrian / Cyclist Note: Crossing location must consider site conditions including sight distance, number of lanes, traffic volumes, traffic speed, numbers of pedestrians

Pedestrian Management Options Analysis			
Options Available	THROUGH	PAST	AROUND
Options Selected		Selected	

Cyclist Management Options Analysis			
Options Available	THROUGH	PAST	AROUND
Options Selected		Selected	

Traffic Management Options Analysis			
OPTION	DESCRIPTION	METHOD TYPE	TGS SELECTED
AROUND	Vehicles detoured via existing road network or sidetrack	Full road closure / One-way road closure / Detour	Selected
PAST	Vehicles past delineated work zones	Lateral Shift	
		Shoulder closure	
		Contraflow (2 way traffic maintained)	
		Single or Multi Lane Closure	
THROUGH	Vehicles through work zone	Single Lane Shuttle Flow	
		Temporary Road Closure / Hold & Release / Local Traffic Access / Pilot Vehicle	Selected



Edge of traffic lane to:	Edge Clearance
Line of traffic cones or bollards	- 0.5 m for traffic speeds less than 65 km/h - 1.0 m for traffic speeds greater than 65 km/h
Barrier boards, temporary guide posts or temporary hazard markers	- 1.0 m
Road safety barrier system	- 0.3 m for traffic speeds less than 45 km/h - 0.5 m for traffic speeds 45 to 65 km/h - 1.0 m for traffic speeds 65 to 85 km/h - 2.0 m for traffic speeds greater than 85 km/h

Dimension "D" (Main Roads)	50	metres
Dimension "D" (Minor Roads)	50	metres

Taper Lengths			
Approximate speed of traffic	Traffic control at beginning of taper	Lateral shift taper	Merge taper
45 or less	15	15	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
> 105	N/A	110	180

Speed (km/h)	Distance between tapers (m)
45 or less	10
46 to 55	25
56 to 65	70
Greater than 65	1.5 x Speed Limit (D)

Delineation Spacing		
Purpose & Usage	Speed zone of device location km/h	Maximum Spacing m
On approach to a traffic controller position (center line or edge line)	All cases	4
Merge Tapers	55 to 75 Greater than 76	9 12
Lateral shift tapers	55 to 75 Greater than 76	12 18
Protecting freshly painted lines	56 to 75 Greater than 76	24 60
All other purposes	less than or equal to 55 26 to 75 greater than 76	4 12 18

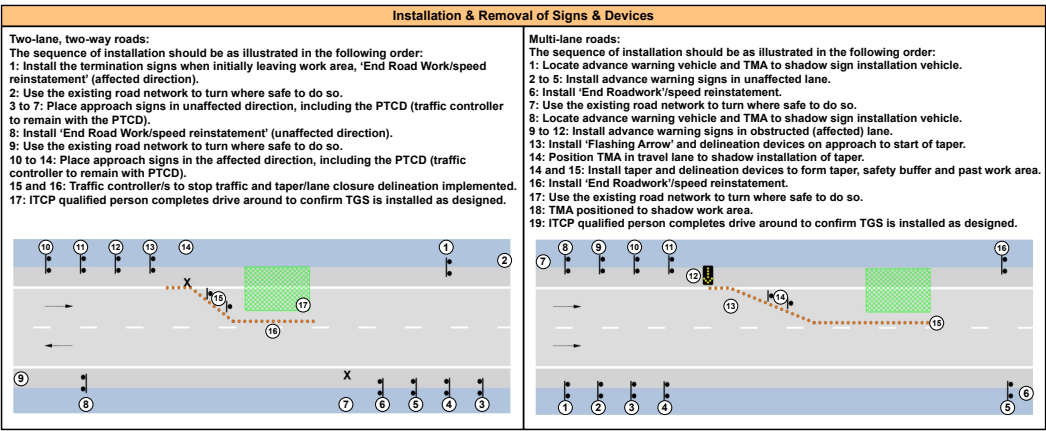
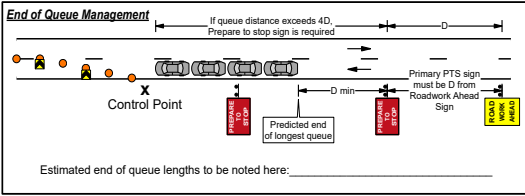
Sign spacing requirements		
Number of signs	Approach Speed	
	less than 65 km/h	65 km/h or greater
One advanced sign	D	2D
Multiple advanced signs	D	D

ALTERNATE SIGN SPACING	
Dimension 'D': AGTTM: A distance expressed in metres, determined in accordance with Table 2.2 and used for positioning of advance signs. To be considered if TCAMS dimension "D" cannot be provided due to site conditions.	
Speed of Traffic km/h	Dimension m
55 or less	15
56 to 65	45
Greater than 65	speed of traffic, in Km/h

TGS Verification Checklist:		
Verified By:	Position:	Signature:
Qualification:	Expiry / Issue Date:	Date of Verification:




Traffic Guidance Scheme Modifications:		
Modified By:	Qualification Number:	
Expiry / Issue Date:	Signature:	Date of Modification:
Modification Notes:		




Traffic Guidance Scheme Installation:		
Installed By:	Qualification Number:	
Expiry / Issue Date:	Signature:	Date of Installation:



Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed	TGS Approved	Client Company	Client Contact:	Date of Approval:	Page 1 / 10
01	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road					24/09/2024	
02	AC	PL	07/11/2023 13:15	Amended as per comments	Works Location:						
03	AC	PL	07/11/2023 16:30	Amended as per comments	Wentworth to Unwin Street - Clyde						
04	AC	PL	13/11/2023 12:06	Amended detour	Project Name:						
05	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate	Sydney Metro Werstern Tunnelling	Project Description:					
Scale: 1 : 750					Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.					

Step 1 - Consequence (impact)				
Negligible (1)	Minor (2)	Moderate (3)	Major (4)	Severe (5)
First Aid Treatment	Medical Treatment	Lost Time Injury	Permanent Impairment Injury	Fatality
Very minor injury that requires no treatment or simple first aid	Injury / illness, which requires medical treatment and may temporarily restrict a persons capacity to work	Injury / illness, which temporarily renders a person unfit to work in any capacity	Injury / illness, which permanently alters a persons future (eg. Spinal injury, amputation or death)	
Short term damage	Limited but medium term damage	Significant but recoverable ecological damage	Heavy ecological damage, costly restoration	Permanent widespread ecological damage
Brief delay / slight impact on service delivery	Local or work/site specific impact on service delivery or customer satisfaction	Temporary impact on service delivery or customer satisfaction at a local event / project level	Serious impact on service delivery or customer satisfaction at a state client or large project level	Long term or very severe impact on service delivery or customer satisfaction resulting in loss of business nationally
Moderate (8)	High (16)	High (18)	High (21)	Extreme (25)
Moderate (7)	Moderate (10)	High (17)	High (20)	High (24)
Low (3)	Moderate (9)	Moderate (12)	High (19)	High (23)
Low (2)	Low (5)	Moderate (11)	Moderate (14)	High (22)
Low (1)	Low (4)	Low (6)	Moderate (13)	Moderate (15)
Step 3 - The risk rating is where the consequence and the probability intersect				

e	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed	TGS Approved	Date of Approval:	Page 2 /
	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road			24/09/2024	
	AC	PL	07/11/2023 13:15	Amended as per comments	Works Location:	Client Company:			
	AC	PL	07/11/2023 16:30	Amended as per comments	Wentworth to Unwin Street - Clyde	Client Contact:			
	AC	PL	13/11/2023 12:06	Amended detail	Project Name:	Project Description:			
	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate	Sydney Metro Werstern Tunnelling	Construction Stage 6 - Traffic Switch 4			
			Scale: 1 : 750	Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present				

6 TS4 - Road	TGS Designed		Date of Approval: 24/09/2024	Page 2 / 3
	TGS Approved			
	Client Company			
	Client Contact:			
Traffic Switch 4				
aila and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present				

Item #	Worksite Component	Potential Hazard	Initial Risk			Present	Control Measures	Residual Risk		
			C	P	R			C	P	R
6.4	Bus stops	Bus unable to pull up safely causing MVA	3	3	12	N	- Consider notifying bus companies that operate in the area - Always provide adequate provision for buses or carry out work at night when buses aren't operating - Where temporary bus stops are created, ensure buses are able to meet the curb - Ensure TGS clearly shows affected stops - Traffic controllers to manage and assist where safe and possible	2	2	5
6.5	Property accesses - commercial or private	Collisions due to propertie acess restrictions	3	4	17	Y	- Consider staging work outside of business hours - Create physical barrier to prevent traffic entering site & driveways	2	2	5
6.6	Excavations within work area	Errant vehicle drives into excavation	5	4	25	N	- For excavations shallower than 0.5m and within 3m of the edge of traffic lane, delineate the excavation with plastic mesh fencing, barrier boards placed perpendicular to the traffic flow or cones/bollards. - For excavations deeper than 0.5m and within 3m of the edge of traffic lane, a temporary safety barrier must be installed. When traffic is greater than 3m from the excavation, the requirement for a temporary safety barrier should be considered based on a documented risk assessment. - Where the excavation is deeper than 200mm, is open for more than 2 weeks and the distance from the edge of traffic lane is less than 3m for 60km/h, 6m for 80km/h and 9m for 100km/h, a temporary safety barrier must be installed.	4	2	14
6.7	Parking	Parked vehicle or worker exiting vehicle hit by passing vehicle	4	4	20	Y	- Always check adequate parking is available for workers and visitors - Consider providing safe parking within the work area	4	2	14
6.8	Concurrent Works	Motorist confused by conflicting signs causing MVA	3	4	17	Y	- Always establish communication with other site if possible - Always cover any conflicting signs and adjust TGS as necessary - Complete conflict checks where required	3	3	12
6.9	Heavy Vehicles and OSOM Vehicles	HV cannot travel past work site without knocking over delineation	4	4	20	Y	- Comply with shoulder and lane width criteria in the design of the TGS. - During the design of the TGS, check vehicle swept path where necessary to ensure the largest known vehicle travelling through the work site can negotiate the changed traffic conditions. - Traffic controllers to communicate with heavy vehicle and OSOM drivers to warn and guide them through the work site as required. - Traffic control to monitor heavy vehicle movements and if required, make adjustments to the signs and devices within approved tolerances. If more significant changes are required, liaise with Client/Supervisor and arrange for TGS to be reviewed and modified by the designer.	4	2	14
Dynamic Works										
7.0	General Traffic	Motorists speeding / not concentrating / tired / distracted. Not having enough time to merge causing MVA	5	5	25	N	- Always use a minimum 1 AWW and consider the use of a 2nd AWW. - Consider use of TMA on higher speed roads >85km - Use speed reduction best suited to work activity and road environment - Use applicable AW signage displayed on AWW - Ensure sight distances between AWW, shadow vehicles are clearly labelled on TGS - Ensure 20-40m buffer zone between shadow vehicle and work vehicle. No less than 40m when using a TMA as a shadow vehicle - Positive communications to be held at all times - Workers to remain shadowed at all times - Monitor traffic queues on all road configurations, convoy to clear roadway if required until traffic has cleared	4	2	14

Item	Additional Control Control Measures	
8.0	SKELETON CREW TO DO ROUTINE SIGN CHECKS TO ENSURE DETOUR IS CLEARLY POSTED.	
9.0		
10.0		
11.0		
Item	Departures: State the departure and reason for departure	
12.0		
13.0		
14.0		
Departures Sign Off (CLIENT):		
Client Name:		
Client Signature:		Date:

NOTES:
GENERAL NOTES
1. This Traffic Guidance Scheme (TGS) is to be used in conjunction with the Traffic Management Plan (TMP) and associated road authority permits and management plans, including Road Occupancy Licence (ROL), vehicle movement plan (VMP) and pedestrian movement plan (PMP) where applicable.
2. This TGS has been produced by a Prepare Work Zone Traffic Management Plan (PWZTMP) qualified person in accordance with the requirements of the TINSW Traffic Control at Work Sites manual, Issue 6.1 dated 28 February 2022 (TCAWS 6.1) and with reference to AS1742.3 and AUSTRROADS Guide to Temporary Traffic Management Parts 1 – 10, version 1.1 dated September 2021 (AGTTM).
3. This TGS is suitable for short term/long term works.
4. Lack Group does not accept responsibility for this TGS if it is implemented or modified by external parties.

APPROVALS
5. The TGS must be approved for use before implementation.
6. Ensure all road authority approvals and associated conditions of approval are met prior to implementing the TGS.

TGS VERIFICATION
7. Prior to use on site, the selected or designed TGS must be verified to ensure it is suitable for the works and location by undertaking an inspection of the work site where the TGS will be implemented. The TGS verification must be completed in accordance with TCAWS 6.1, Section 8.1.2 by an Implement Traffic Control Plan (ITCP) or PWZTMP qualified person. Refer Page 1 of this TGS for Site Verification sign-off.

RISK ASSESSMENT
8. A desktop risk assessment has been undertaken in developing this TGS. However, when implementing this TGS on site, the site supervisor should undertake a site specific risk assessment to ensure that the TGS has considered and mitigated all identified hazards and risks.

INSTALLATION AND REMOVAL OF SIGNS AND DEVICES
9. All traffic management signs and devices prescribed for use in this TGS are in accordance with TCAWS 6.1 with reference to AS1742.3 and AGTTM.
10. The TGS must be installed, maintained and removed in a planned and safe manner. The implementation must only be undertaken by an ITCP qualified person.
11. All signage shown on this TGS is not to conflict with any long-term existing signage arrangements in the area. If this occurs, cover all conflicting road signage where required.

PLACEMENT OF SIGNS AND DEVICES
12. Signs must be properly displayed and securely mounted at all times and within the line of sight of the intended road user. Regulatory and detour signs must be located nearest to the travel edge of the lane. Signs must not be obscured from view, such as by vegetation or parked cars. Obscure other devices from the line of sight of the intended road users; Create a hazard to road workers and road users, including pedestrians and cyclists; Be a hazard that deflects traffic into an undesirable path; Restrict sight distance for drivers entering from side roads or streets, or private driveways; and Be installed using supports that could be a hazard if struck by a vehicle.
13. Signs mounted on frames for short-term works should be mounted a minimum 200mm from the ground to the lower edge of the sign.
14. Signs mounted on posts for long-term works in open road situations, the underside of the sign must be at least 1.5m above the level of the nearest edge of the travelled path. When installed on a kerb or footpath, the underside of the sign must be at least 2.2m above the level of the nearest edge of the travelled path.

ORIENTATION OF SIGNS
15. On the outside of a curve, the sign face must be at 0 degrees, or 'normal to traffic'. On a straight, the sign face must be angled at approximately 5 degrees normal to oncoming traffic and on the inside of a curve, the sign ace must be angled at approximately 5 degrees normal to oncoming traffic at 200m preceding the sign.

TOLERANCES
16. Local constraints may not allow signage and devices to be placed in accordance with this TGS. Unless stated otherwise on the TGS, the tolerances on the positioning of signs, length of tapers or pavement markings detailed in the TGS is a minimum 10% less and a maximum 25% more than the distances or lengths stated and for the spacing of delineation devices a maximum 10% more than the spacing detailed in the TGS.
17. Any variation to the positioning of signs and devices within the approved tolerances must be marked and initialed on the TGS held on site, with the name of the person making the changes shown on the TGS.

MODIFYING TGS
18. Modifications to a Site Specific or Site Suitable TGS must be approved by a person holding the PWZTMP qualification and must be supported by a TMP or risk assessment to ensure that the TGS has considered and mitigated all identified site specific conditions and risks.
19. If it is identified that by implementing the TGS with modifications outside of the approved tolerances it will generate risks, then the works must be stopped (including the implementation of the TGS), the site must be made safe and an updated TGS must be provided by a PWZTMP qualified person prior to works recommencing. Any concerns regarding the suitability of the TGS must be raised with the Site Manager and your immediate Supervisor.

TRAFFIC CONTROLLERS
20. The implementation of traffic control must be conducted in line with the hierarchy of controls with the elimination of harm to workers and the travelling public considered in the first instance.
21. Where traffic control is required, a portable traffic control device (PTCD) must be used rather than using a manual traffic controller when the existing permanent speed limit is greater than 45 km/h.
22. TCAWS 6.1, Section 5.4 provides the conditions under which a manual traffic controller may be used.
23. Where PTCDs or traffic controllers are used, approach speeds of traffic must be reduced to less than 65 km/h.
24. All persons operating a portable traffic control device or performing manual traffic control must be qualified with 'Traffic Control' training; and authorised by the relevant road authority.

ROAD USER MANAGEMENT
25. The needs of specific road users, including travel paths and desire lines, must be considered and managed for the extent of the works to ensure safety and access is maintained. Specific road user groups to be considered include: Pedestrians including high-risk pedestrians such as persons with a disability, children, the elderly or persons using mobility aid devices; Cyclists; Motorcyclists; Heavy Vehicles, including oversize overmass vehicles; Public transport; and Emergency services. The needs of these specific road users have been considered in the design of this TGS, however the needs of all road users should be considered in the site specific risk assessment before implementing the TGS to ensure the TGS is appropriate.
26. Road users are to be monitored for the duration of the works. If additional signage and/or devices are required to manage the needs of specific road users, such as pedestrians and cyclists, this would be subject to following the procedure for modifying a TGS.



ACCESS MANAGEMENT
27. Access to properties located within the extent of works must be maintained at all times.
28. Property access impacted by the works should be identified and addressed in the TGS. Consultation with the property owner/resident must be undertaken prior to implementing the TGS if required.

INCIDENT MANAGEMENT
29. The site contractor is to determine the appropriate procedure for incident management where appropriate.
30. If an incident occurs within the extent of the traffic control arrangement: Call for assistance if incident requires (emergency services 000 or 112); Notify the work site supervisor or Team Leader immediately of any incident; Maintain effective traffic control, if necessary, relocate the traffic control station to a suitable location clear of any further danger; and Record sufficient notes of the incident, including observations, to complete an incident report.

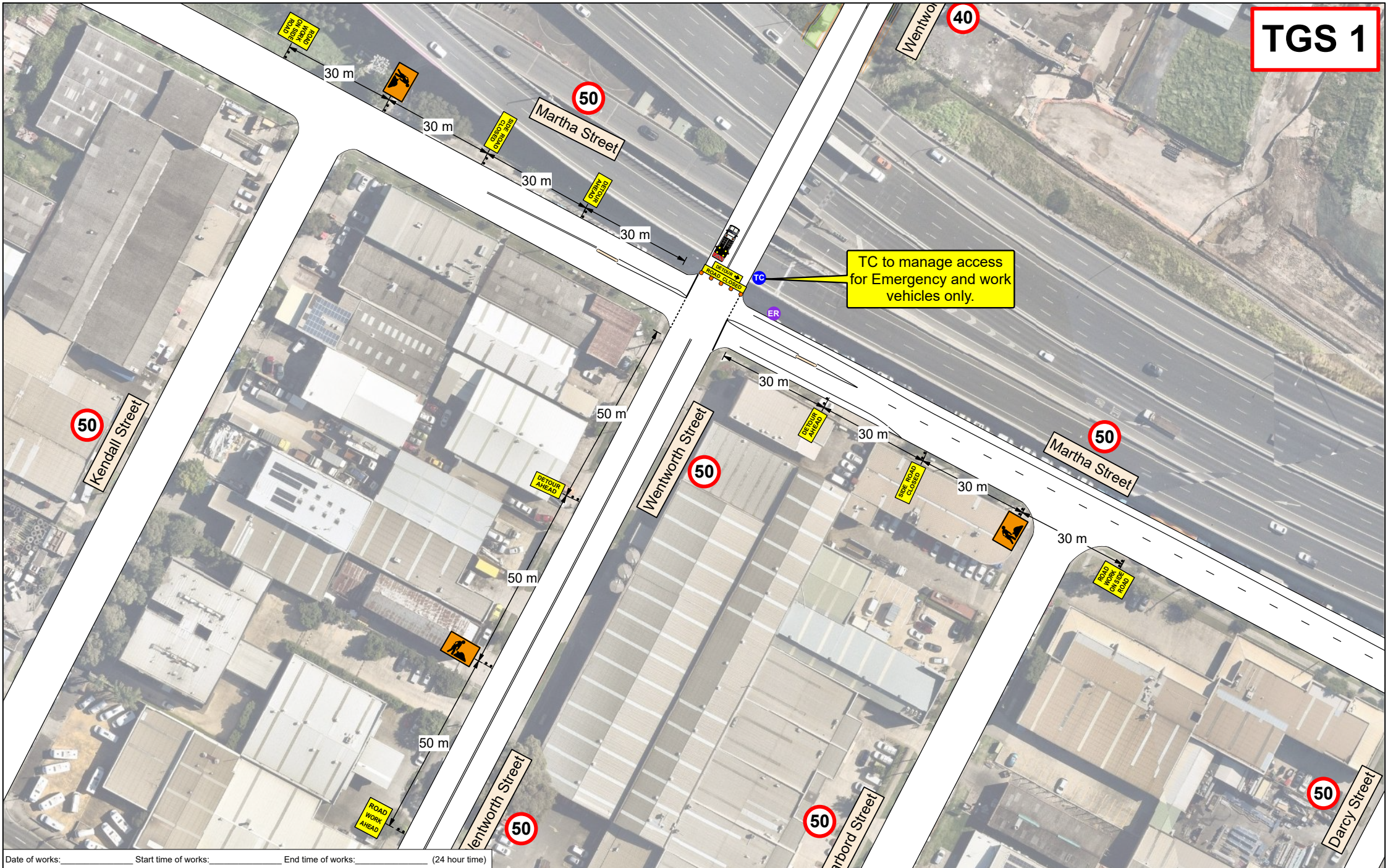
INSPECTIONS
31. Temporary traffic management monitoring activities must be undertaken in all instances where work is being performed or aftercare is in place. This includes day and night times as required. The type of inspections and frequency are to be in accordance with TCAWS 6.1, Section 8.1.1.

REVIEW OF TGS
32. Generic TGSs must be reviewed by a PWZTMP qualified person every 12 months so that they remain appropriate. Once reviewed the date and details of the PWZTMP person must be updated on the TGS to ensure persons selecting can confirm currency.
33. All active site specific and site suitable TGS are designed for the nominated work activity and are only valid for the time period of works specified on the TGS. They must be reviewed as part of the weekly inspections as detailed in TCAWS 6.1, Section 8.1. If the work activity is intended to be longer than 12 months, then the TGS must be formally reviewed by a PWZTMP qualified person at least every 12 months and issued with the review date and the details of the person undertaking the review.

RECORD KEEPING
34. Supervisory personnel are to keep daily records of the TGS implementation including: Site specific risk assessments; Approved TGS used, including versions where modifications or updates have been made; Completed inspection checklists that have been undertaken; Records of traffic related incidents that occurred during the works; and Any other relevant document generated by the process of completing the temporary traffic management works.

Issue	Desg	Appd	Date & Time	Amendment Description		TGS Name & Number:		TGS Designed	<div></div>	Date of Approval:	Page 3 / 10	
01	AC	PL	17/10/2023 22:30	Original Issue		LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road		TGS Approved		24/09/2024	<div><div>Lackgroup</div><div>THE MISSING LINK GROUP</div></div>	
02	AC	PL	07/11/2023 13:15	Amended as per comments		Works Location:		Client Company				
03	AC	PL	07/11/2023 16:30	Amended as per comments		Wentworth to Unwin Street - Clyde		Client Contact:				
04	AC	PL	13/11/2023 12:06	Amended detour		Project Name:		Project Description:				
05	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate		Sydney Metro Werstern Tunnelling		Construction Stage 6 - Traffic Switch 4	<div><div>GAMUDA</div><div>Australia</div></div>			
Scale: 1 : 750			Original Size A3		Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.							





Date of works: _____ Start time of works: _____ End time of works: _____ (24 hour time)

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number: LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	
01	AC	PL	17/10/2023 22:30	Original Issue	Works Location: Wentworth to Unwin Street - Clyde	
02	AC	PL	07/11/2023 13:15	Amended as per comments		
03	AC	PL	07/11/2023 16:30	Amended as per comments		
04	AC	PL	13/11/2023 12:06	Amended detour	Project Name: Sydney Metro Werstern Tunnelling	
05	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate		
Scale: 1 : 750				Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.	

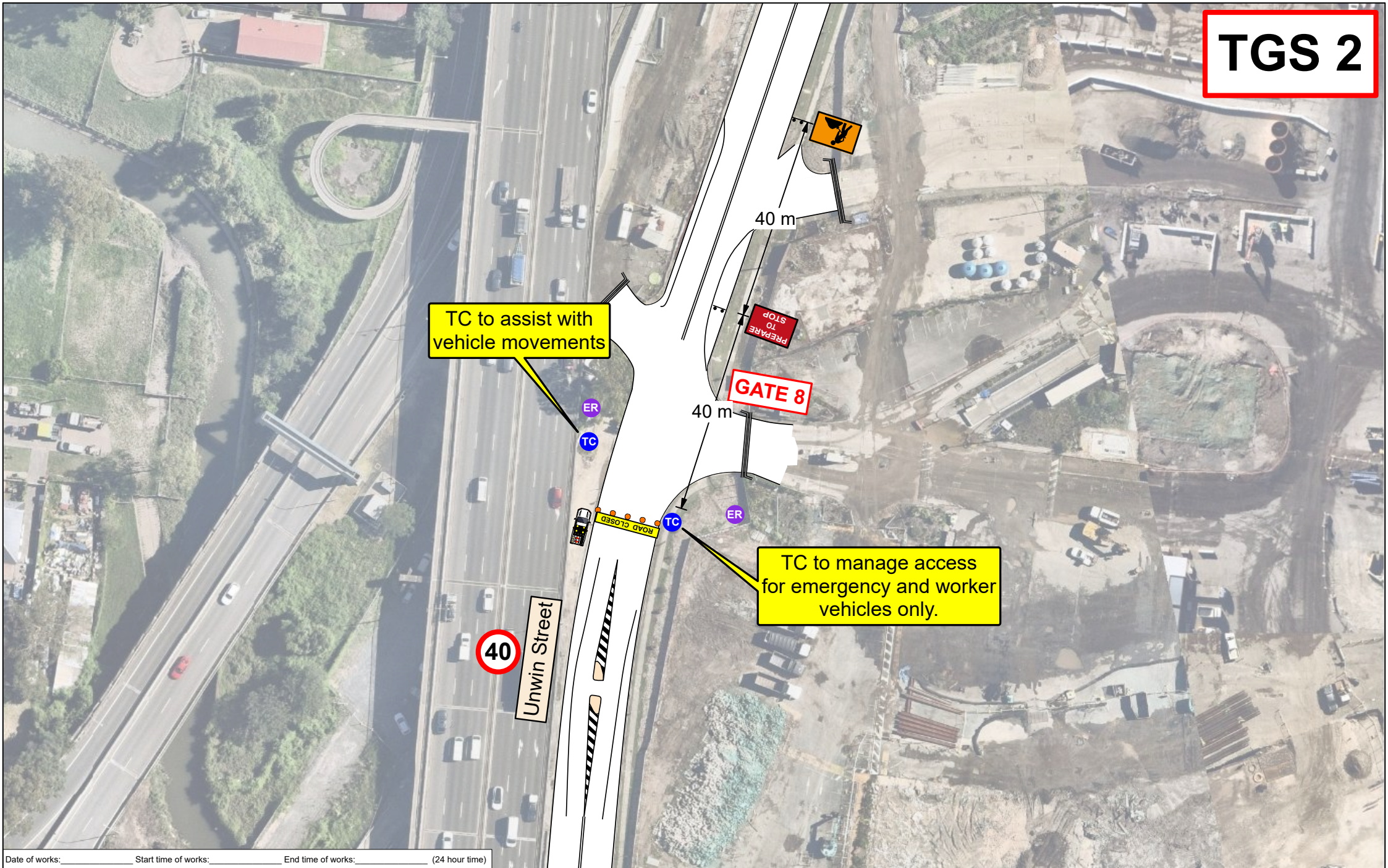
TGS Designed	
TGS Approved	
Client Company	
Client Contact:	

Date of Approval:
24/09/2024




Lack group

GAMUDA Australia

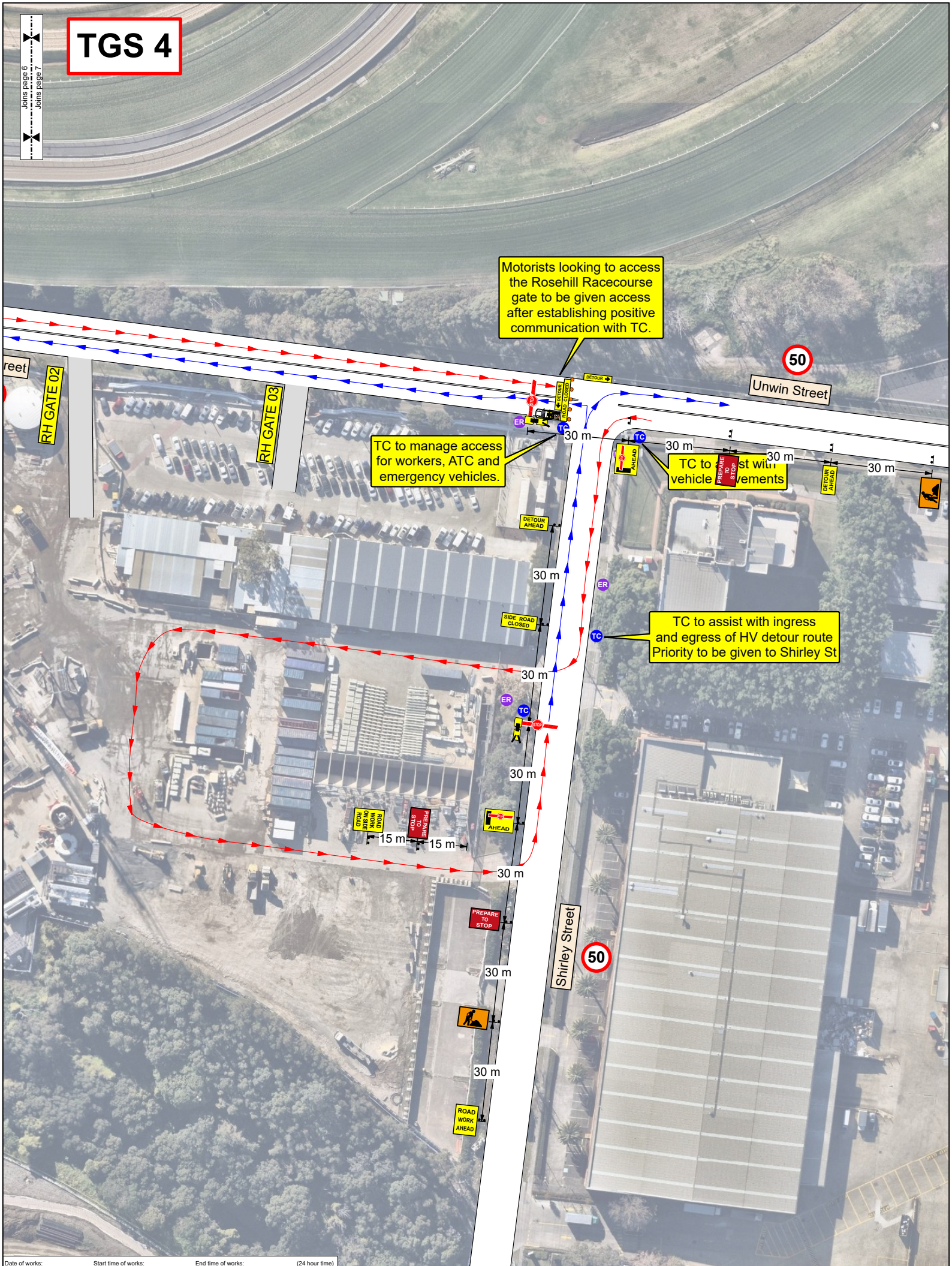
Page 4 / 10




Date of works: _____ Start time of works: _____ End time of works: _____ (24 hour time)

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:		TGS Designed	Date of Approval:	Page 5 / 10
01	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road		TGS Approved	24/09/2024	
02	AC	PL	07/11/2023 13:15	Amended as per comments	Works Location:		Client Company		
03	AC	PL	07/11/2023 16:30	Amended as per comments	Wentworth to Unwin Street - Clyde		Client Contact:		
04	AC	PL	13/11/2023 12:06	Amended detour	Project Name:		Project Description:		
05	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate	Sydney Metro Werstern Tunnelling		Construction Stage 6 - Traffic Switch 4		
Scale: 1 : 750				Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.				
									

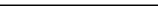




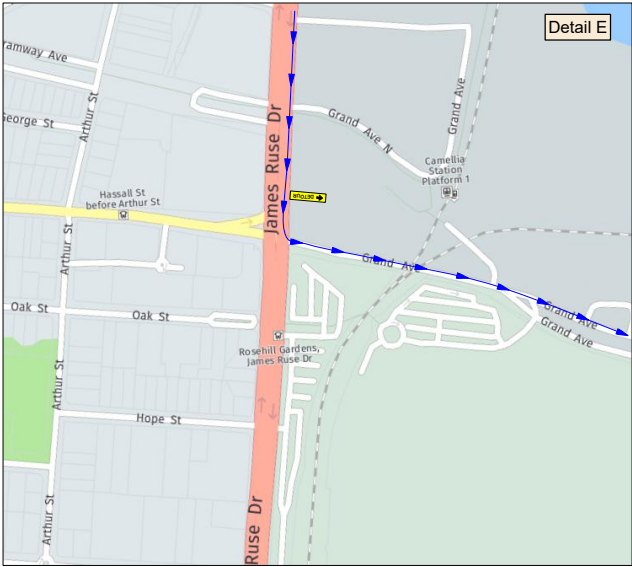
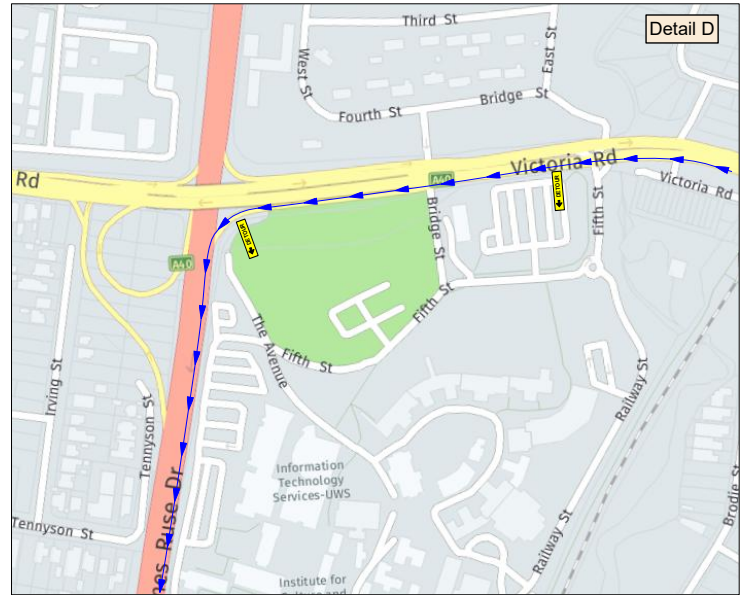
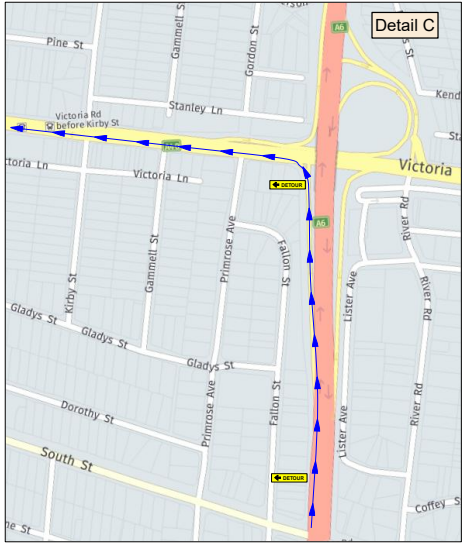
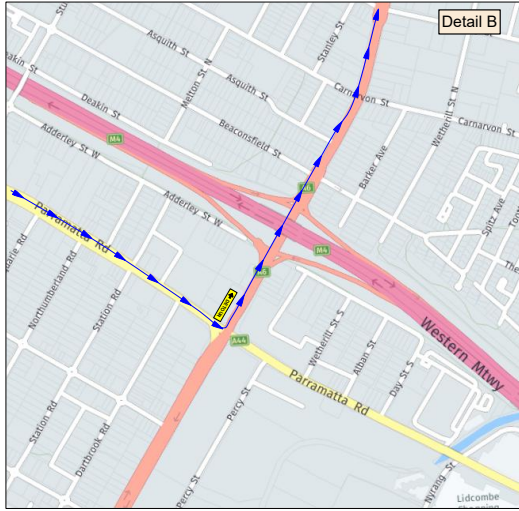
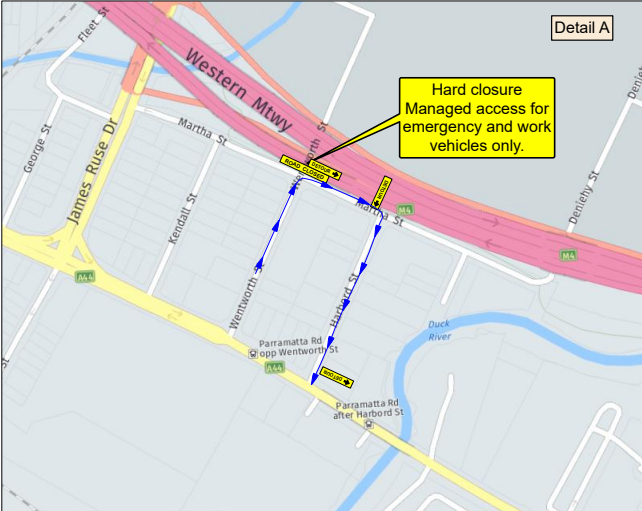
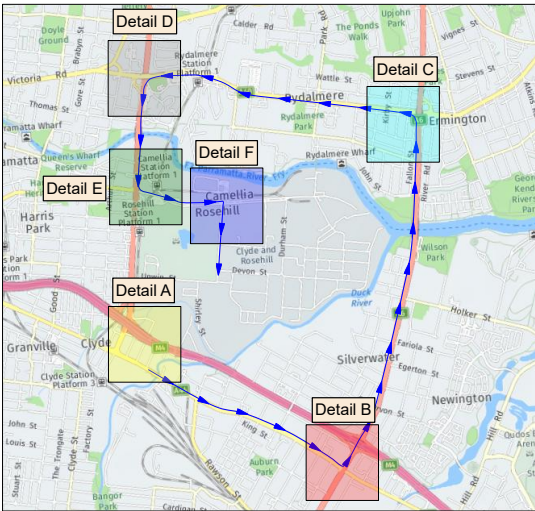
Date of works:						Start time of works:		End time of works:		(24 hour time)	
Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:		TGS Designed		Date of Approval:		Page 7 / 10
01	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road		TGS Approved		24/09/2024		 
02	AC	PL	07/11/2023 13:15	Amended as per comments	Works Location: Wentworth to Unwin Street - Clyde		Client Company				
03	AC	PL	07/11/2023 16:30	Amended as per comments	Project Name:		Client Contact:				
04	AC	PL	13/09/2023 12:06	Amended detail	Project Description:						
05	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate	Sydney Metro Western Tunnelling Construction Stage 6 - Traffic Switch 4						
Scale: 1 : 750			Original Size A3		Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.						



Date of works: _____ Start time of works: _____ End time of works: _____ (24 hour time)

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:		TGS Designed			Date of Approval:	Page 8 / 10
01	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road		TGS Approved				24/09/2024
02	AC	PL	07/11/2023 13:15	Amended as per comments	Works Location:		Client Company				
03	AC	PL	07/11/2023 16:30	Amended as per comments	Wentworth to Unwin Street - Clyde		Client Contact:				
04	AC	PL	13/11/2023 12:06	Amended detour	Project Name:	Project Description:					
05	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate	Sydney Metro Werstern Tunnelling	Construction Stage 6 - Traffic Switch 4					
Scale: 1 : 750				Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.						

Wentworth Closure detour Route (From Wentworth To Unwin)





Date of works: _____ Start time of works: _____ End time of works: _____ (24 hour time)

Issue	Desg	Appd	Date & Time	Amendment Description
01	AC	PL	17/10/2023 22:30	Original Issue
02	AC	PL	07/11/2023 13:15	Amended as per comments
03	AC	PL	07/11/2023 16:30	Amended as per comments
04	AC	PL	13/11/2023 12:06	Amended detour
05	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate

TGS Name & Number: LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	
Works Location: Wentworth to Unwin Street - Clyde	
Project Name: Sydney Metro Werstern Tunnelling	Project Description: Construction Stage 6 - Traffic Switch 4

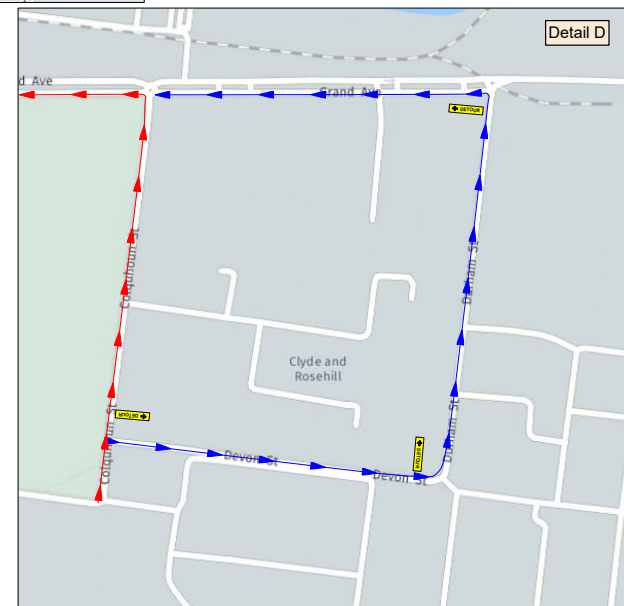
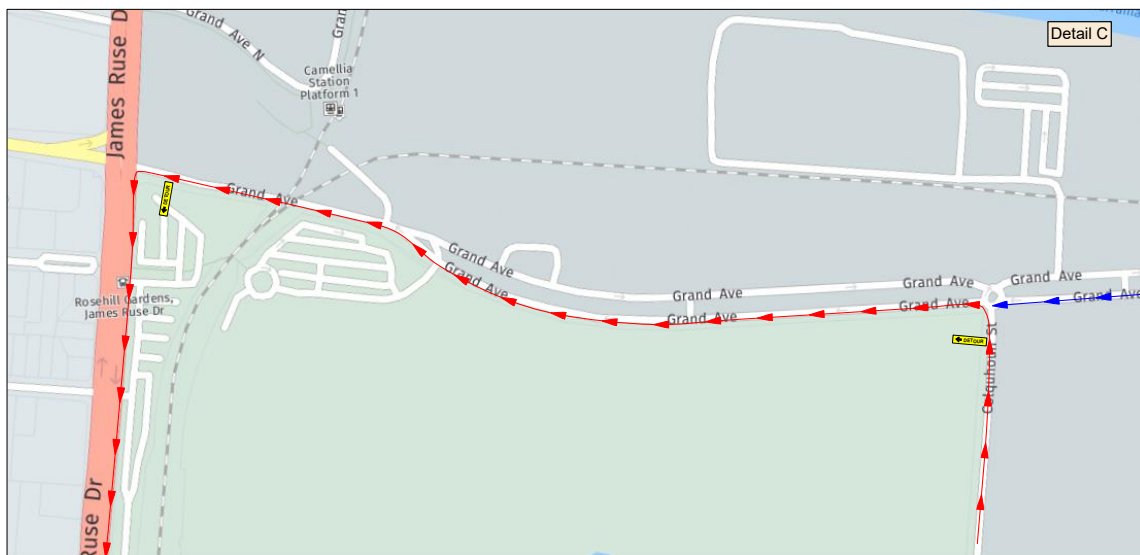
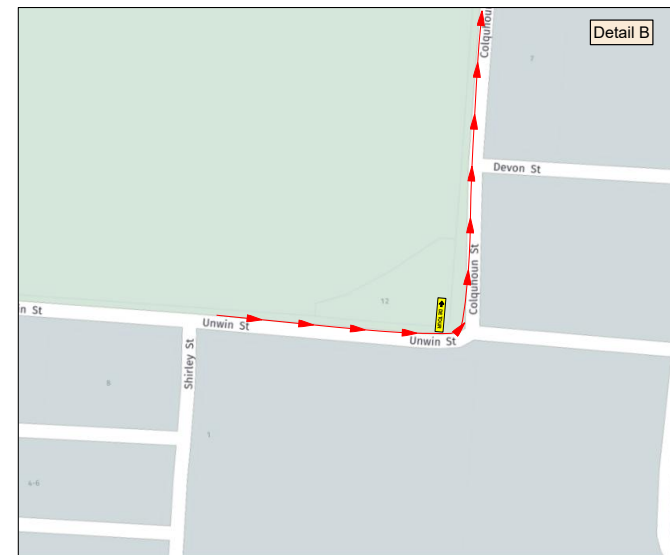
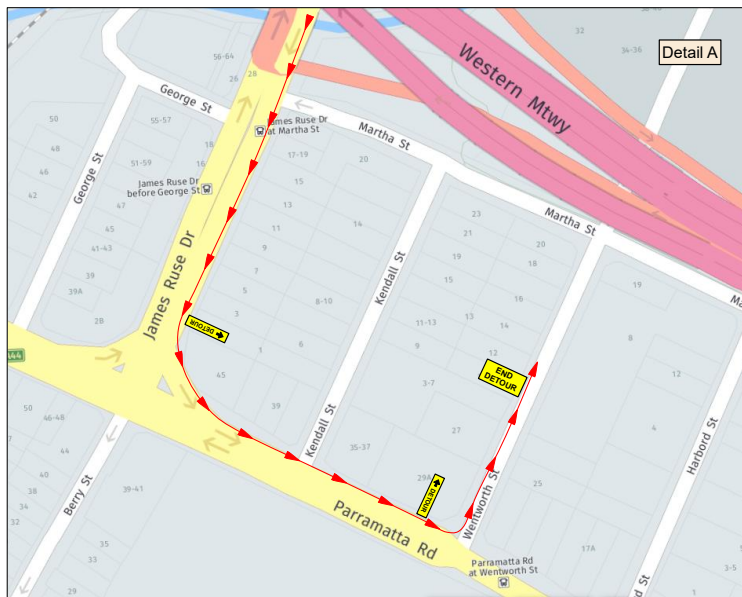
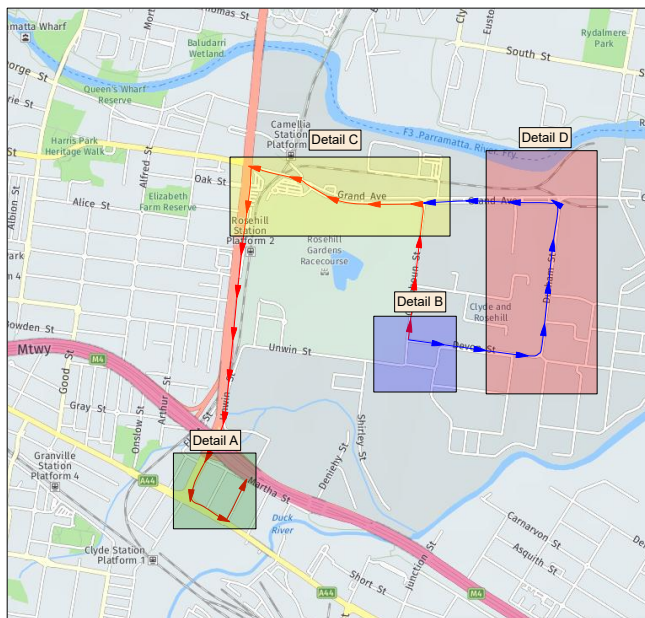
TGS Designed	[Redacted]
TGS Approved	
Client Company	
Client Contact:	

Date of Approval:
24/09/2024



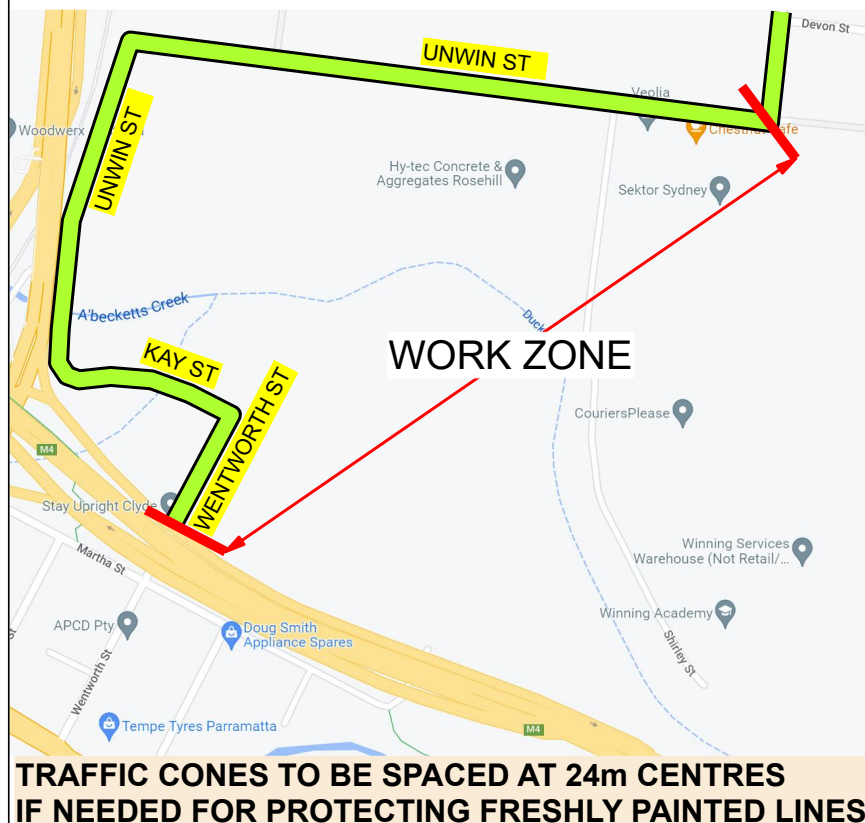
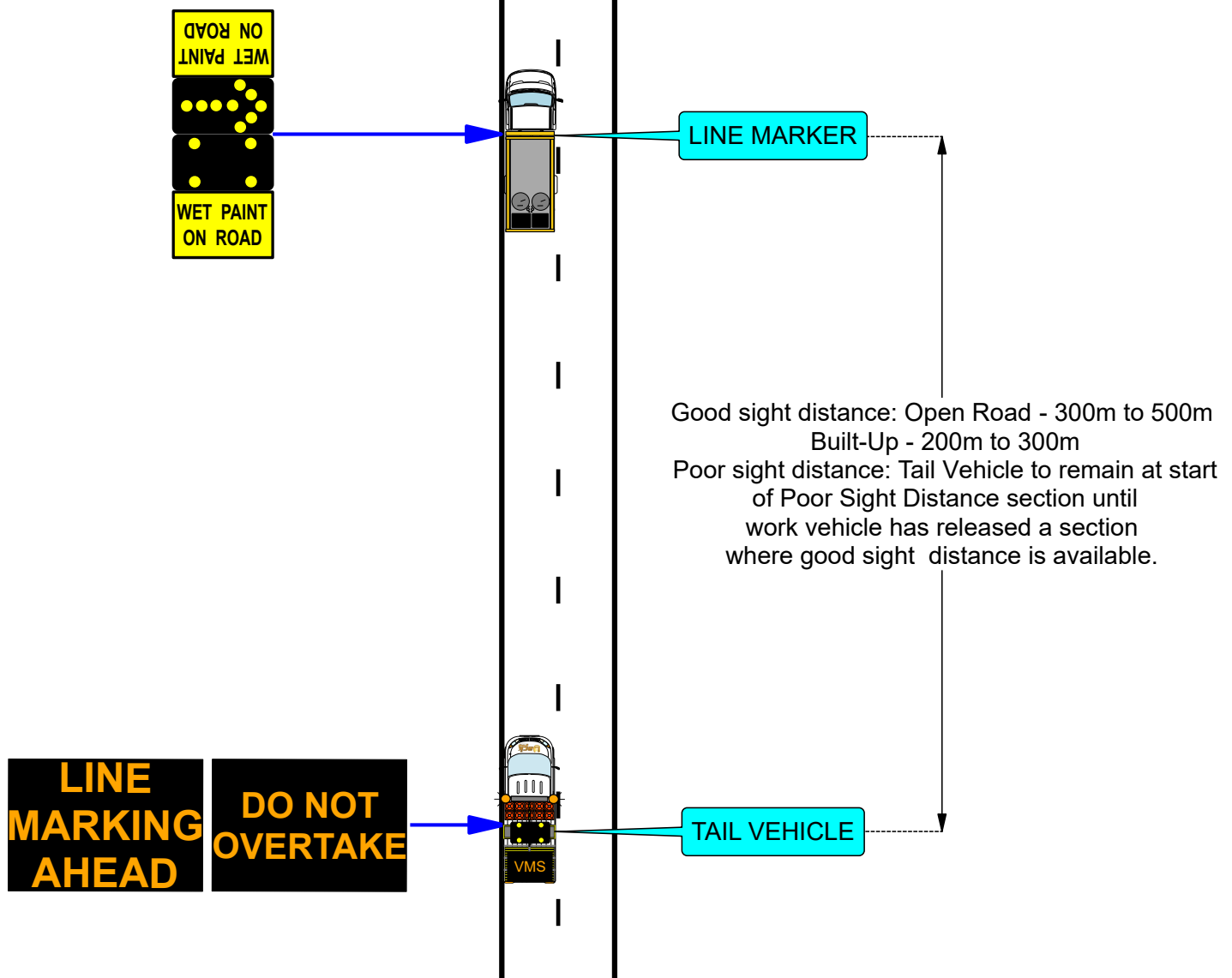
Page 9 / 10

Unwin St Closure detour Route (From Unwin To Wentworth)



Date of works: _____ Start time of works: _____ End time of works: _____ (24 hour time)

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed	TGS Approved	Client Company	Client Contact:	Date of Approval:	Page 10 / 10
01	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road					24/09/2024	
02	AC	PL	07/11/2023 13:15	Amended as per comments	Works Location:						
03	AC	PL	07/11/2023 16:30	Amended as per comments	Wentworth to Unwin Street - Clyde						
04	AC	PL	13/11/2023 12:06	Amended detour	Project Name:						
05	DK	KD	24/09/2024 15:15	Moved closure to Rosehill Race Gate	Sydney Metro Werstern Tunnelling	Project Description:					
Scale: 1 : 750					Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.					



DYNAMIC WORK 2 LANE / 2 WAY LINE MARKING

Personnel Requirements	Asset Requirements					
Traffic Controllers	VMS	CONE TRUCK	ESAS	TMA	ESTOP	BOOMGATE
①	①	①	①	①	①	①

Notes:

- Local constraints may not allow signage and devices to be placed in accordance with this TGS. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual Issue 6 2020.
- This TGS is suitable for Short & Long term works.
- Signs to be mounted 200mm from ground height for frame mounted and 2.2m for post mounted.
- This TGS is based on guidelines provided within the TCAWS Manual Issue 6 2020.
- For Night works adequate lighting is to be provided at all control points.
- Pedestrians MUST be monitored and assisted at all times and suitable controls implemented.
- If not already noted, The existing speed limits are to be noted on this plan.
- The value of speed limits displayed shall match the speed zone approval.
- Signage used in the TGS is to be B Size.
- Ensure all approval requirements are met prior to commencing set up.
- Cover all conflicting & Contradicting road signage & devices where required.
- If required cone spacing is to be no greater than 24m centres.
- TTM Inspections to be undertaken on a regular basis.
- Estimated Queue Lengths to be noted here
- The site MUST comply with the TCAWS (Traffic Control at Worksites) Manual Issue 6 2020 and AS 1742.3 (MUTCD) 2019.

Amendments:

All amendments to the TGS must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWZTMP card in consultation with the relevant project works supervisor.

Name: _____

PWZTMP Card Number: _____

Exp Date: _____

Date: _____ Sign: _____

Reason for modification: _____

No.	Date	Time	Description	Appr.	CLIENT	SCALE	PROJECT	WORK ACTIVITY	ADD NORTH MARKER
0	27/09/22	09:30am	Issued for Implementation	MC	GAMUDA - GLC	1:750	GLC - SYDNEY METRO WEST - WTP	Line Marking	
1						Original Size A3	TITLE: Unwin St, Kay St & Wentworth St Clyde	TGS NUMBER: 003	PAGE NO: 1 of 1
2							Drawn By: [REDACTED]		
3							Approved: [REDACTED]		
4							Implement: [REDACTED]		
5									
6									

Revisions

GAMUDA Australia

Lack group

Planning Division Ph: 02 8319 4888
Email: LGP@lackgroup.com.au

Personnel Requirements	Asset Requirements						
Traffic Controllers	UTE	CONE TRUCK	ESAS	TMA	ESTOP	BOOMGATE	
⑤	②	①	①	①	①	④	

Notes:

1: Local constraints may not allow signage and devices to be placed in accordance with this TGS.
Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual Issue 6 2020.

2: This TGS is suitable for Short & Long term works.

3: Signs to be mounted 200mm from ground height for frame mounted and 2.2m for post mounted.

4: This TGS is based on guidelines provided within the TCAWS Manual Issue 6 2020.

5: For Night works adequate lighting is to be provided at all control points.

6: Pedestrians MUST be monitored and assisted at all times and suitable controls implemented.

7: If not already noted, The existing speed limits are to be noted on this plan.

8: The value of speed limits displayed shall match the speed zone approval.

9: Signage used in the TGS is to be B Size.

10: Ensure all approval requirements are met prior to commencing set up.

11: Cover all conflicting & Contradicting road signage & devices where required.

12: If required cone spacing is to be no greater than 24m centres.

13: TTM Inspections to be undertaken on a regular basis.

14: Estimated Queue Lengths to be noted here

15: The site MUST comply with the TCAWS (Traffic Control at Worksites) Manual Issue 6 2020 and AS 1742.3 (MUTCD) 2019.

Amendments:
All amendments to the TGS must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWZTMP card in consultation with the relevant project works supervisor.

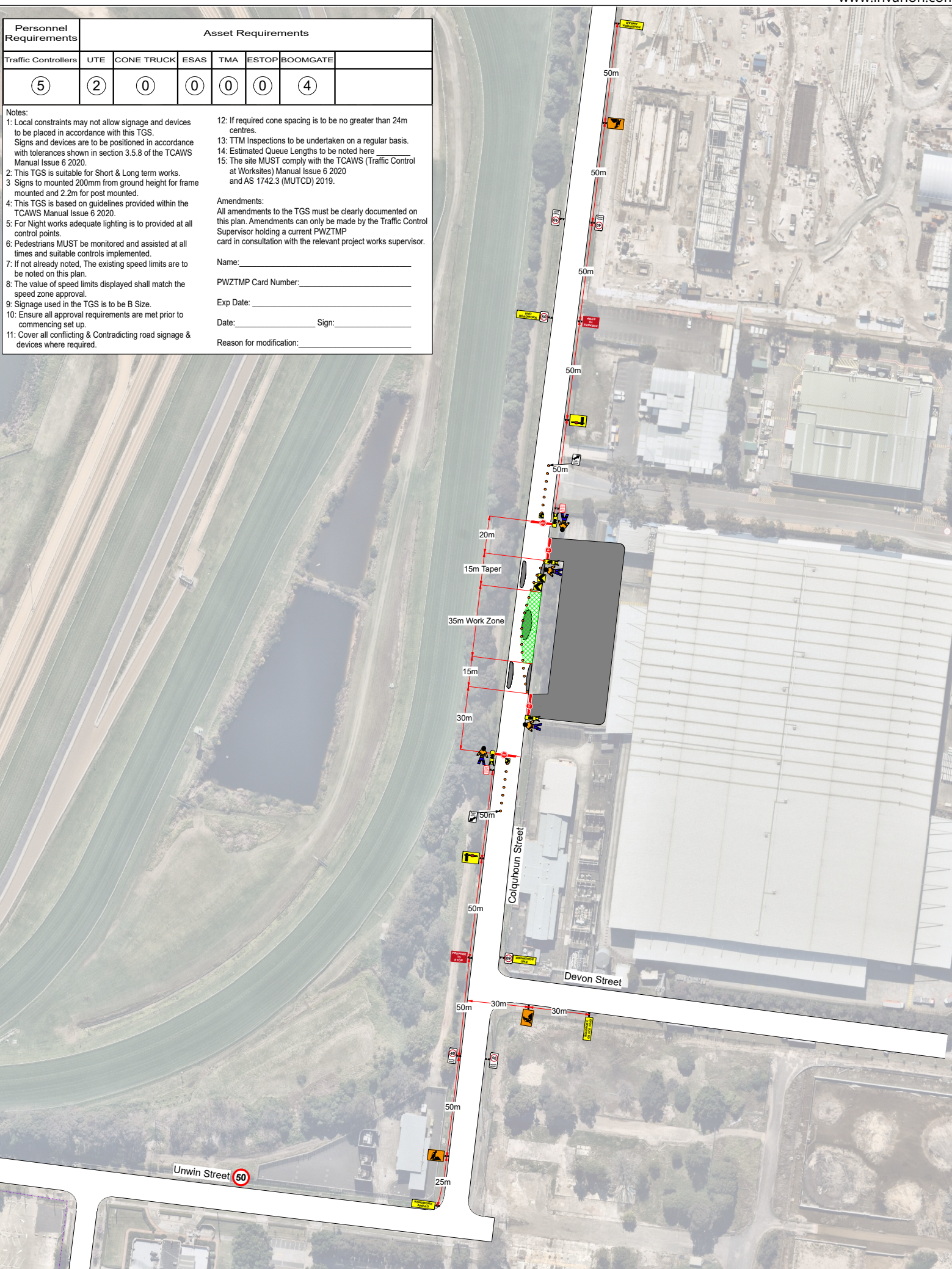
Name: _____

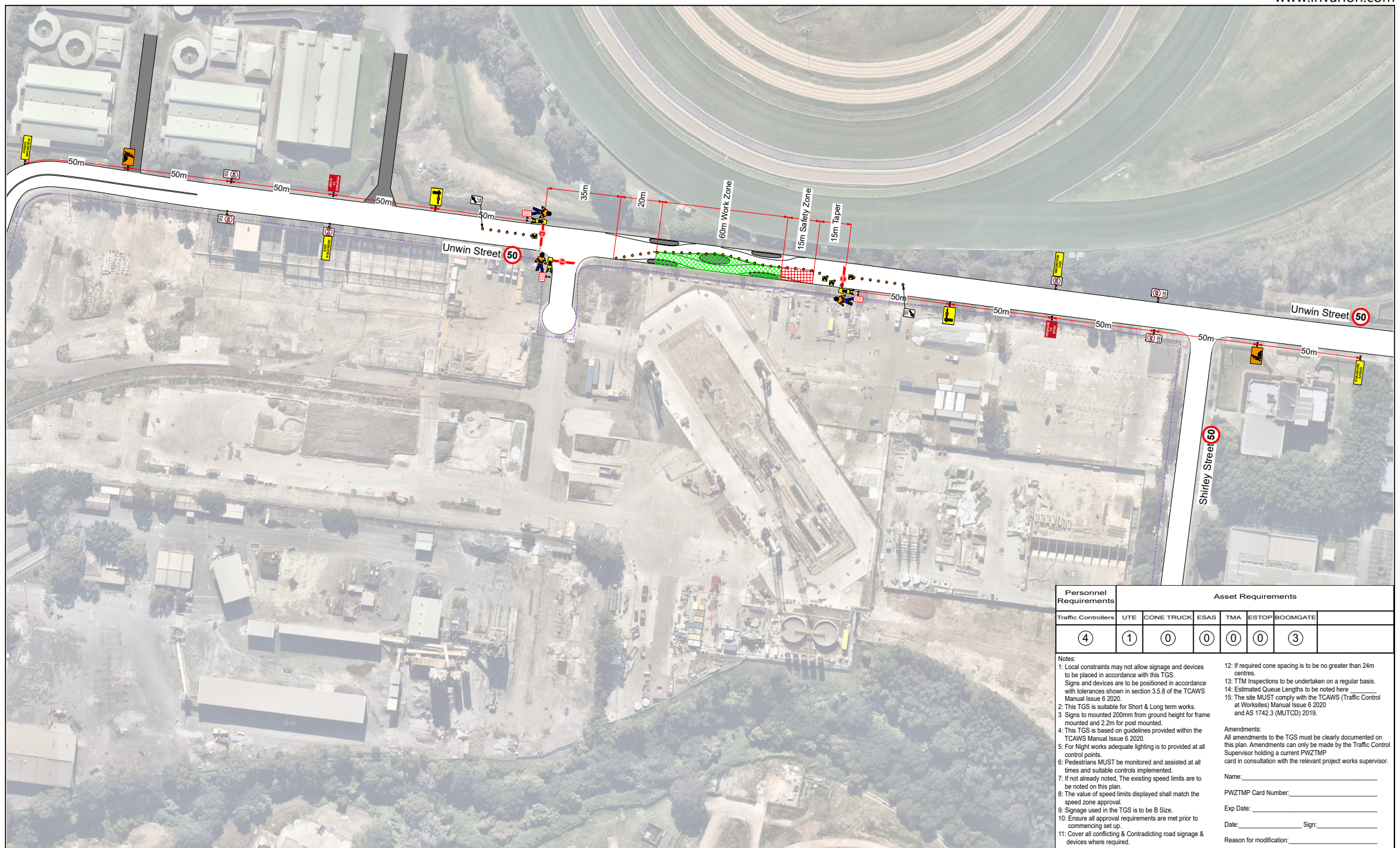
PWZTMP Card Number: _____

Exp Date: _____





Date: _____ Sign: _____

Reason for modification: _____





Personnel Requirements	Asset Requirements						
	Traffic Controllers	UTE	CONE TRUCK	ESAS	TMA	ESTOP	BOOMGATE
④	①	①	①	①	①	③	
<p>Notes:</p> <p>1: Local constraints may not allow signage and devices to be placed in accordance with this TGS. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual Issue 6 2020.</p> <p>2: This TGS is suitable for Short & Long term works.</p> <p>3: Signs to be mounted 200mm from ground height for frame mounted and 2.2m for post mounted.</p> <p>4: This TGS is based on guidelines provided within the TCAWS Manual Issue 6 2020.</p> <p>5: For Night works adequate lighting is to be provided at all control points.</p> <p>6: Pedestrians MUST be monitored and assisted at all times and suitable controls implemented.</p> <p>7: If not already noted, The existing speed limits are to be noted on this plan.</p> <p>8: The value of speed limits displayed shall match the speed zone approval.</p> <p>9: Signage used in the TGS is to be B Size.</p> <p>10: Ensure all approval requirements are met prior to commencing set up.</p> <p>11: Cover all conflicting & Contradicting road signage & devices where required.</p> <p>12: If required cone spacing is to be no greater than 24m centres.</p> <p>13: TTM Inspections to be undertaken on a regular basis.</p> <p>14: Estimated Queue Lengths to be noted here</p> <p>15: The site MUST comply with the TCAWS (Traffic Control at Worksites) Manual Issue 6 2020 and AS 1742.3 (MUTCD) 2019.</p> <p>Amendments: All amendments to the TGS must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWZTMP card in consultation with the relevant project works supervisor.</p> <p>Name: _____</p> <p>PWZTMP Card Number: _____</p> <p>Exp Date: _____</p> <p>Date: _____ Sign: _____</p> <p>Reason for modification: _____</p>							

Revisions	No:	Date:	Time:	Description:	Appr:	CLIENT:	SCALE:	PROJECT: GLC - SYDNEY METRO WEST - WTP		WORK ACTIVITY: 1 LANE ALTERNATE FLOW		
	0	12/12/22	09:15pm	Issued for Implementation	MC	GAMUDA / LAING O'ROUKE CONSORTIUM  	Original Size A3  Planning Division Ph: 02 8319 4898 Email : LGP@Lackgroup.com.au	TITLE: UNWIN ST ROSEHILL		TGS NUMBER: 060	PAGE NO: 1 of 1	
	1	05/03/23	04:00pm	add cones on approach	PI							
	2											
	3											
	4											
	5											
	6											
									Implemented by:	Certification Type :	Certification Number:	Signed:

Personnel Requirements	Asset Requirements						
Traffic Controllers	UTE	CONE TRUCK	ESAS	TMA	ESTOP	BOOMGATE	
⑤	②	①	①	①	①	④	

Notes:

1: Local constraints may not allow signage and devices to be placed in accordance with this TGS.
Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual Issue 6 2020.

2: This TGS is suitable for Short & Long term works.

3: Signs to be mounted 200mm from ground height for frame mounted and 2.2m for post mounted.

4: This TGS is based on guidelines provided within the TCAWS Manual Issue 6 2020.

5: For Night works adequate lighting is to be provided at all control points.

6: Pedestrians MUST be monitored and assisted at all times and suitable controls implemented.

7: If not already noted, The existing speed limits are to be noted on this plan.

8: The value of speed limits displayed shall match the speed zone approval.

9: Signage used in the TGS is to be B Size.

10: Ensure all approval requirements are met prior to commencing set up.

11: Cover all conflicting & Contradicting road signage & devices where required.

12: If required cone spacing is to be no greater than 24m centres.

13: TTM Inspections to be undertaken on a regular basis.

14: Estimated Queue Lengths to be noted here

15: The site MUST comply with the TCAWS (Traffic Control at Worksites) Manual Issue 6 2020 and AS 1742.3 (MUTCD) 2019.

Amendments:
All amendments to the TGS must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWZTMP card in consultation with the relevant project works supervisor.

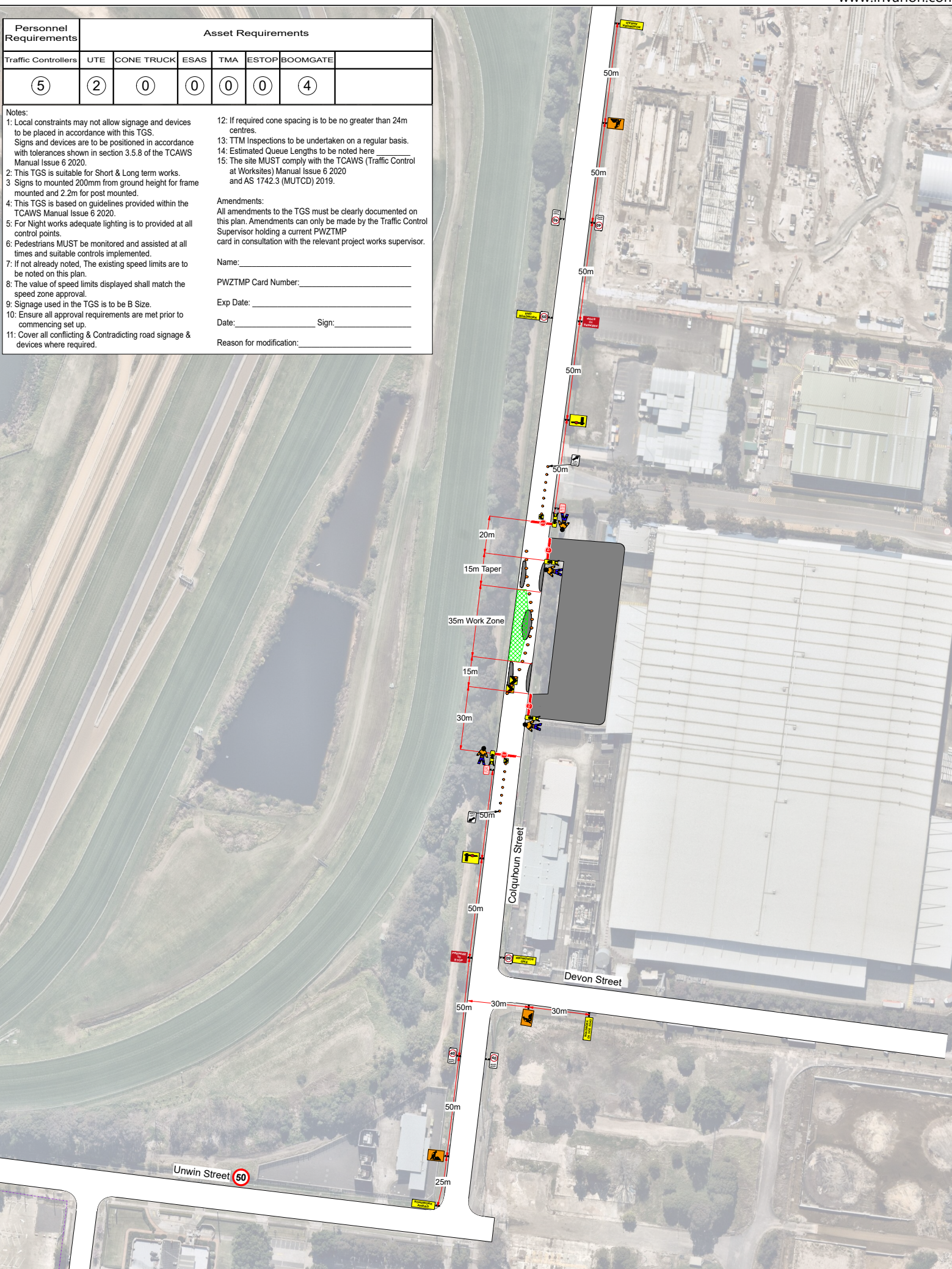
Name: _____

PWZTMP Card Number: _____

Exp Date: _____

Date: _____ Sign: _____

Reason for modification: _____



Legend

-  Safety Zone
-  Traffic Cone
-  Work Area

Notes:

- 1: Local constraints may not allow signage and devices to be placed in accordance with this TGS. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual Issue 6.1 2020.
- 2: This TGS is suitable for Short & Long term works.
- 3: Signs to be mounted 200mm from ground height for frame mounted and 2.2m for post mounted.
- 4: This TGS is based on guidelines provided within the TCAWS Manual Issue 6.1 2022.
- 5: For Night works adequate lighting is to be provided at all control points.
- 6: Pedestrians MUST be monitored and assisted at all times and suitable controls implemented.
- 7: If not already noted, The existing speed limits are to be noted on this plan.
- 8: The value of speed limits displayed shall match the speed zone approval.
- 9: Signage used in the TGS is to be B Size.
- 10: Ensure all approval requirements are met prior to commencing set up.
- 11: Cover all conflicting & Contradicting road signage & devices where required.
- 12: Frequency of shift TTM inspections to be in accordance with TCAWS, AS 1742.3 & Ausroad guide & noted on Lack Group sign diary.
- 13: If required cone spacing is to be no greater than 24m centres.
- 14: TTM Inspections to be undertaken on a regular basis.
- 15: Estimated Queue Lengths to be noted here
- 16: The site MUST comply with the TCAWS (Traffic Control at Worksites) Manual Issue 6.1 2022 and AS 1742.3 (MUTCD) 2019.
- 17: The installation and removal of signage and devices must be carried out in a forward direction in the advance warning area, starting on the approaches of the work site and progress towards the work area, unless shown otherwise on the related documents.

Amendments:

All amendments to the TGS must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWZTMP card in consultation with the relevant project works supervisor.

Name: _____

PWZTMP Card Number: _____

Exp Date: _____

Date: _____ Sign: _____

Reason for modification: _____

Revisions	No:	Date:	Time:	Description:	Appr:
1	30/01/23	03:00pm		Issued for Implementation	PI
2	05/03/23	04:00pm		add cones on approach	PI
3					
4					
5					

Original Size A3
Planning Division Ph: 02 8319 4898

Scale : **1:750**

Email : LGP@Lackgroup.com.au

CLIENT: GAMUDA
CLIENT CONTACT: RUTH VARGAS
CONTACT NUMBER: 0492 074 907

GAMUDA
Australia



Lack
group

Lack
Safe
Work Safe. Home safe. #LackSafe

PROJECT : GLC - SYDNEY METRO WEST - WTP

ADDRESS : UNWIN ST ROSEHILL

Drawn By: _____

Approved _____

Implemented by: _____

Certification Type : _____

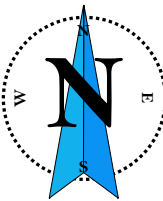
WORK ACTIVITY: 1 LANE ALTERNATE

TGS NUMBER: GLC - 2023-0220

PAGE NO: 1 of 1

Certification Number: _____

Signed: _____



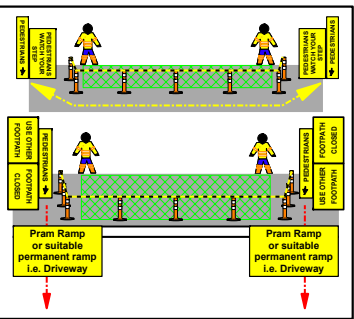
Personnel Requirements	Asset Requirements					
	Traffic Controllers	UTE	CONE TRUCK	ESAS	TMA	ESTOP
	4	1	1	0	0	0

Locality Map

See page 4 for map locality

Personnel Requirements	Asset Requirements
Traffic Controllers	5
UTE	2
CONE TRUCK	0
ESAS	0
TMA	0
ESTOP	0
BOOM GATE	4
EXTRA REQUIREMENTS	0
Above requirements are for guidance only as they may change due to unforeseen circumstances	

Legend	
	Work Area
	Bollard
	Safety Barrier
	Safety Zone
	Traffic Controller
	Escape Route
	Portable Traffic Signal
	Portaboom
	Barrier Board
	Tiger Tail
	Trailer VMS
	Traffic Cone
	Temporary Bus Stop
	Open Bus stop
	Closed Bus stop
	Arrowboard
	Sign Cover
	Existing Signs
	Traffic Flow
	Traffic Flow
	Pedestrian Flow
	TMA
	Cone Truck
	Work Vehicle
	Police Car
	VMS Vehicle
	Traffic Vehicle

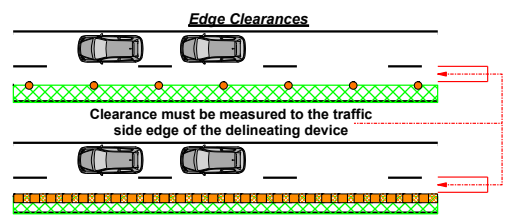


Pedestrian / Cyclist Note: Crossing location must consider site conditions including sight distance, number of lanes, traffic volumes, traffic speed, numbers of pedestrians

Pedestrian Management Options Analysis			
Options Available	THROUGH	PAST	AROUND
Options Selected		Selected	

Cyclist Management Options Analysis			
Options Available	THROUGH	PAST	AROUND
Options Selected		Selected	

Traffic Management Options Analysis			
OPTION	DESCRIPTION	METHOD TYPE	TGS SELECTED
AROUND	Vehicles detoured via existing road network or sidetrack	Full road closure / One-way road closure / Detour	
PAST	Vehicles past delineated work zones	Lateral Shift	
		Shoulder closure	
		Contraflow (2 way traffic maintained)	
		Single or Multi Lane Closure	Selected
THROUGH	Vehicles through work zone	Single Lane Shuttle Flow	Selected
		Temporary Road Closure / Hold & Release / Local Traffic Access / Pilot Vehicle	



Edge of traffic lane to:	Edge Clearance
Line of traffic cones or bollards	- 0.5 m for traffic speeds less than 65 km/h - 1.0 m for traffic speeds greater than 65 km/h
Barrier boards, temporary guide posts or temporary hazard markers	- 1.0 m
Road safety barrier system	- 0.3 m for traffic speeds less than 45 km/h - 0.5 m for traffic speeds 45 to 65 km/h - 1.0 m for traffic speeds 65 to 85 km/h - 2.0 m for traffic speeds greater than 85 km/h

Dimension "D" (Main Roads)	50,40	metres
Dimension "D" (Minor Roads)	50,40	metres

Taper Lengths			
Approximate speed of traffic	Traffic control at beginning of taper	Lateral shift taper	Merge taper
45 or less	15	15	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
> 105	N/A	110	180

Speed (km/h)	Distance between tapers (m)
45 or less	10
46 to 55	25
56 to 65	70
Greater than 65	1.5 x Speed Limit (D)

Delineation Spacing		
Purpose & Usage	Speed zone of device location km/h	Maximum Spacing m
On approach to a traffic controller position (center line or edge line)	All cases	4
Merge Tapers	55 to 75 Greater than 76	9 12
Lateral shift tapers	55 to 75 Greater than 76	12 18
Protecting freshly painted lines	56 to 75 Greater than 76	24 60
All other purposes	less than or equal to 55 26 to 75 greater than 76	4 12 18

Number of signs	Approach Speed	
	less than 65 km/h	65 km/h or greater
One advanced sign	D	2D
Multiple advanced signs	D	D

ALTERNATE SIGN SPACING	
Dimension "D": AGTTM: A distance expressed in metres, determined in accordance with Table 2.2 and used for positioning of advance signs. To be considered if TCAWS dimension "D" cannot be provided due to site conditions.	
Speed of Traffic - km/h	Dimension - m
55 or less	15
56 to 65	45
Greater than 65	speed of traffic, in Km/h

TGS Verification Checklist:

Verified By:

Position:

Signature:

Qualification:

Expiry / Issue Date:

Date of Verification:

Traffic Guidance Scheme Modifications:

Modified By:

Qualification Number:

Expiry / Issue Date:

Signature:

Date of Modification:

Modification Notes:

Traffic Guidance Scheme Installation:

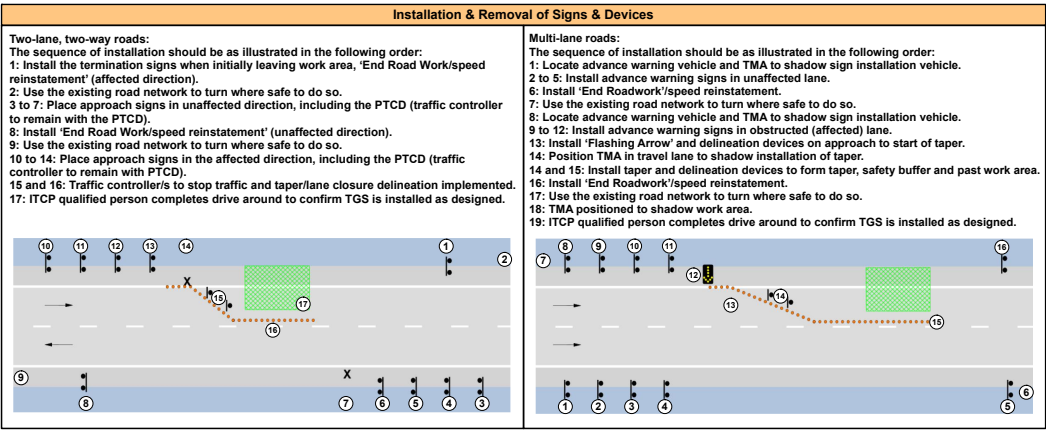
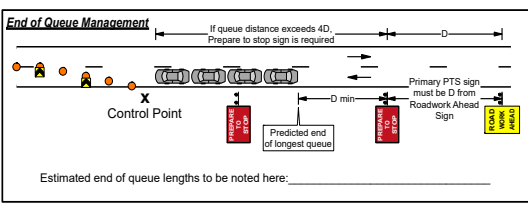
Installed By:

Qualification Number:



Expiry / Issue Date:

Signature:

Date of Installation:



Step 1 - Consequence (impact)				
Negligible (1)	Minor (2)	Moderate (3)	Major (4)	Severe (5)
First Aid Treatment	Medical Treatment	Lost Time Injury	Permanent Impairment Injury	Fatality
Very minor injury that requires no treatment or simple first aid	Injury / illness, which requires medical treatment and may temporarily restrict a persons capacity to work	Injury / illness, which temporarily renders a person unfit to work in any capacity	Injury / illness, which permanently alters a persons future (eg. Spinal injury, amputation or death)	
Short term damage	Limited but medium term damage	Significant but recoverable ecological damage	Heavy ecological damage, costly restoration	Permanent widespread ecological damage
Brief delay / slight impact on service delivery	Local or worksite specific impact on service delivery or customer satisfaction	Temporary impact on service delivery or customer satisfaction at a local event / project level	Serious impact on service delivery or customer satisfaction at a state client or large project level	Long term or very severe impact on service delivery or customer satisfaction resulting in loss of business nationally
Moderate (8)	High (16)	High (18)	High (21)	Extreme (25)
Moderate (7)	Moderate (10)	High (17)	High (20)	High (24)
Low (3)	Moderate (9)	Moderate (12)	High (19)	High (23)
Low (2)	Low (5)	Moderate (11)	Moderate (14)	High (22)
Low (1)	Low (4)	Low (6)	Moderate (13)	Moderate (15)
Step 3 - The risk rating is where the consequence and the probability intersect				

e	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed By	TGS Approved By	Date of Approval:	Page 2
	AC	GA	27/10/2023 12:15	Original Issue	LGP - 66619 - GLC 154 - Unwin to Martha - Site suitable - Line marking			30/10/2023	
	AC	GA	30/10/2023 14:00	Amended as per comments	Works Location:	Client Company:			
					Various Locations - Clyde	Client Contact:			
					Project Name:				
					Sydney Metro Werstern Tunnelling	Line marking works - Site suitable			
Scale: 1 : 750			Original Size A3		Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present				

Item #	Worksite Component	Potential Hazard	Initial Risk			Present	Control Measures	Residual Risk		
			C	P	R			C	P	R
6.4	Bus stops	Bus unable to pull up safely causing MVA	3	3	12	N	<ul style="list-style-type: none"> - Consider notifying bus companies that operate in the area - Always provide adequate provision for buses or carry out work at night when buses aren't operating - Where temporary bus stops are created, ensure buses are able to meet the curb - Ensure TGS clearly shows affected stops - Traffic controllers to manage and assist where safe and possible 	2	2	5
6.5	Property accesses - commercial or private	Collisions due to propertie aces restrictions	3	4	17	Y	<ul style="list-style-type: none"> - Consider staging work outside of business hours - Create physical barrier to prevent traffic entering site & driveways 	2	2	5
6.6	Excavations within work area	Errant vehicle drives into excavation	5	4	25	N	<ul style="list-style-type: none"> - For excavations shallower than 0.5m and within 3m of the edge of traffic lane, delineate the excavation with plastic mesh fencing, barrier boards placed perpendicular to the traffic flow or cones/bollards. - For excavations deeper than 0.5m and within 3m of the edge of traffic lane, a temporary safety barrier must be installed. When traffic is greater than 3m from the excavation, the requirement for a temporary safety barrier should be considered based on a documented risk assessment. - Where the excavation is deeper than 200mm, is open for more than 2 weeks and the distance from the edge of traffic lane is less than 3m for 60km/h, 6m for 80km/h and 9m for 100km/h, a temporary safety barrier must be installed. 	4	2	14
6.7	Parking	Parked vehicle or worker exiting vehicle hit by passing vehicle	4	4	20	Y	<ul style="list-style-type: none"> - Always check adequate parking is available for workers and visitors - Consider providing safe parking within the work area 	4	2	14
6.8	Concurrent Works	Motorist confused by conflicting signs causing MVA	3	4	17	Y	<ul style="list-style-type: none"> - Always establish communication with other site if possible - Always cover any conflicting signs and adjust TGS as necessary - Complete conflict checks where required 	3	3	12
6.9	Heavy Vehicles and OSOM Vehicles	HV cannot travel past work site without knocking over delineation	4	4	20	Y	<ul style="list-style-type: none"> - Comply with shoulder and lane width criteria in the design of the TGS. - During the design of the TGS, check vehicle swept path where necessary to ensure the largest known vehicle travelling through the work site can negotiate the changed traffic conditions. - Traffic controllers to communicate with heavy vehicle and OSOM drivers to warn and guide them through the work site as required. - Traffic control to monitor heavy vehicle movements and if required, make adjustments to the signs and devices within approved tolerances. If more significant changes are required, liaise with Client/Supervisor and arrange for TGS to be reviewed and modified by the designer. 	4	2	14
Dynamic Works										
7.0	General Traffic	Motorists speeding / not concentrating / tired / distracted. Not having enough time to merge causing MVA	5	5	25	N	<ul style="list-style-type: none"> - Always use a minimum 1 AWW and consider the use of a 2nd AWW. - Consider use of TMA on higher speed roads >85km - Use speed reduction best suited to work activity and road environment - Use applicable AW signage displayed on AWW - Ensure sight distances between AWW, shadow vehicles are clearly labelled on TGS - Ensure 20-40m buffer zone between shadow vehicle and work vehicle. No less than 40m when using a TMA as a shadow vehicle - Positive communications to be held at all times - Workers to remain shadowed at all times - Monitor traffic queues on all road configurations, convoy to clear roadway if required until traffic has cleared 	4	2	14

Item

Additional Control Measures

8.0

9.0

10.0

11.0

Item

Departures: State the departure and reason for departure

12.0

13.0

14.0

Departures Sign Off (CLIENT):

Client Name:

Client Signature:

Date:

NOTES:

GENERAL NOTES

1. This Traffic Guidance Scheme (TGS) is to be used in conjunction with the Traffic Management Plan (TMP) and associated road authority permits and management plans, including Road Occupancy Licence (ROL), vehicle movement plan (VMP) and pedestrian movement plan (PMP) where applicable.

2. This TGS has been produced by a Prepare Work Zone Traffic Management Plan (PWZTMP) qualified person in accordance with the requirements of the TfNSW Traffic Control at Work Sites manual, Issue 6.1 dated 28 February 2022 (TCAWS 6.1) and with reference to AS1742.3 and AUSTRROADS Guide to Temporary Traffic Management Parts 1 – 10, version 1.1 dated September 2021 (AGTTM).

3. This TGS is suitable for short term / long term works.

4. Lack Group does not accept responsibility for this TGS if it is implemented or modified by external parties.

APPROVALS

5. The TGS must be approved for use before implementation.

6. Ensure all road authority approvals and associated conditions of approval are met prior to implementing the TGS.

TGS VERIFICATION

7. Prior to use on site, the selected or designed TGS must be verified to ensure it is suitable for the works and location by undertaking an inspection of the work site where the TGS will be implemented. The TGS verification must be completed in accordance with TCAWS 6.1, Section 8.1.2 by an Implement Traffic Control Plan (ITCP) or PWZTMP qualified person. Refer Page 1 of this TGS for Site Verification sign-off.

RISK ASSESSMENT

8. A desktop risk assessment has been undertaken in developing this TGS. However, when implementing this TGS on site, the site supervisor should undertake a site specific risk assessment to ensure that the TGS has considered and mitigated all identified hazards and risks.

INSTALLATION AND REMOVAL OF SIGNS AND DEVICES

9. All traffic management signs and devices prescribed for use in this TGS are in accordance with TCAWS 6.1 with reference to AS1742.3 and AGTTM.

10. The TGS must be installed, maintained and removed in a planned and safe manner. The implementation must only be undertaken by an ITCP qualified person.

11. All signage shown on this TGS is not to conflict with any long-term existing signage arrangements in the area. If this occurs, cover all conflicting road signage where required.

PLACEMENT OF SIGNS AND DEVICES

12. Signs must be properly displayed and securely mounted at all times and within the line of sight of the intended road user. Regulatory and detour signs must be located nearest to the travel edge of the lane. Signs must not: Be obscured from view, such as by vegetation; or parked cars; Obscure other devices from the line of sight of the intended road users; Create a hazard to road workers and road users, including pedestrians and cyclists; Be a hazard that deflects traffic into an undesirable path; Restrict sight distance for drivers entering from side roads or streets, or private driveways; and Be installed using supports that could be a hazard if struck by a vehicle.

13. Signs mounted on frames for short-term works should be mounted a minimum 200mm from the ground to the lower edge of the sign.

14. Signs mounted on posts for long-term works in open road situations, the underside of the sign must be at least 1.5m above the level of the nearest edge of the travelled path. When installed on a kerb or footpath, the underside of the sign must be at least 2.2m above the level of the nearest edge of the travelled path.

ORIENTATION OF SIGNS

15. On the outside of a curve, the sign face must be at 0 degrees, or 'normal to traffic'. On a straight, the sign face must be angled at approximately 5 degrees normal to oncoming traffic and on the inside of a curve, the sign face must be angled at approximately 5 degrees normal to oncoming traffic at 200m preceding the sign.

TOLERANCES

16. Local constraints may not allow signage and devices to be placed in accordance with this TGS. Unless stated otherwise on the TGS, the tolerances on the positioning of signs, length of tapers or pavement markings detailed in the TGS is a minimum 10% less and a maximum 25% more than the distances or lengths stated and for the spacing of delineation devices a maximum 10% more than the spacing detailed in the TGS.

17. Any variation to the positioning of signs and devices within the approved tolerances must be marked and initialled on the TGS held on site, with the name of the person making the changes shown on the TGS.

MODIFYING TGS

18. Modifications to a Site Specific or Site Suitable TGS must be approved by a person holding the PWZTMP qualification and must be supported by a TMP or risk assessment to ensure that the TGS has considered and mitigated all identified site specific conditions and risks.

19. If it is identified that by implementing the TGS with modifications outside of the approved tolerances it will generate risks, then the works must be stopped (including the implementation of the TGS), the site must be made safe and an updated TGS must be provided by a PWZTMP qualified person prior to works recommencing. Any concerns regarding the suitability of the TGS must be raised with the Site Manager and your immediate Supervisor.

TRAFFIC CONTROLLERS

20. The implementation of traffic control must be conducted in line with the hierarchy of controls with the elimination of harm to workers and the travelling public considered in the first instance.

21. Where traffic control is required, a portable traffic control device (PTCD) must be used rather than using a manual traffic controller when the existing permanent speed limit is greater than 45 km/h.

22. TCAWS 6.1, Section 5.4 provides the conditions under which a manual traffic controller may be used.

23. Where PTCDs or traffic controllers are used, approach speeds of traffic must be reduced to less than 65 km/h.

24. All persons operating a portable traffic control device or performing manual traffic control must be qualified with 'Traffic Control' training; and authorised by the relevant road authority.

ROAD USER MANAGEMENT

25. The needs of specific road users, including travel paths and desire lines, must be considered and managed for the extent of the works to ensure safety and access is maintained. Specific road user groups to be considered include: Pedestrians including high-risk pedestrians such as persons with a disability, children, the elderly or persons using mobility aid devices; Cyclists; Motorcyclists; Heavy Vehicles, including oversize overmass vehicles; Public transport; and Emergency services. The needs of these specific road users have been considered in the design of this TGS, however the needs of all road users should be considered in the site specific risk assessment before implementing the TGS to ensure the TGS is appropriate.

26. Road users are to be monitored for the duration of the works. If additional signage and/or devices are required to manage the needs of specific road users, such as pedestrians and cyclists, this would be subject to following the procedure for modifying a TGS.

ACCESS MANAGEMENT

27. Access to properties located within the extent of works must be maintained at all times.

28. Property access impacted by the works should be identified and addressed in the TGS. Consultation with the property owner/resident must be undertaken prior to implementing the TGS if required.

INCIDENT MANAGEMENT

29. The site contractor is to determine the appropriate procedure for incident management where appropriate.

30. If an incident occurs within the extent of the traffic control arrangement: Call for assistance if incident requires (emergency services 000 or 112); Notify the work site supervisor or Team Leader immediately of any incident; Maintain effective traffic control, if necessary, relocate the traffic control station to a suitable location clear of any further danger; and Record sufficient notes of the incident, including observations, to complete an incident report.

INSPECTIONS

31. Temporary traffic management monitoring activities must be undertaken in all instances where work is being performed or aftercare is in place. This includes day and night times as required. The type of inspections and frequency are to be in accordance with TCAWS 6.1, Section 8.1.1.



REVIEW OF TGS

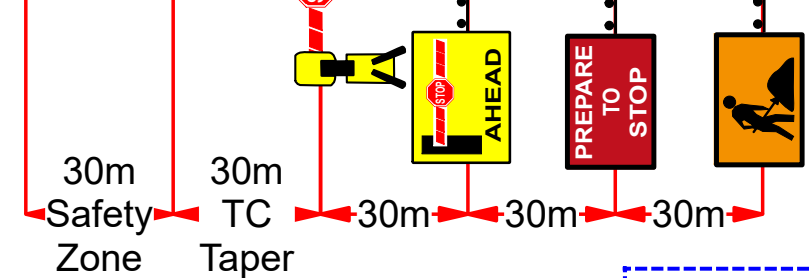
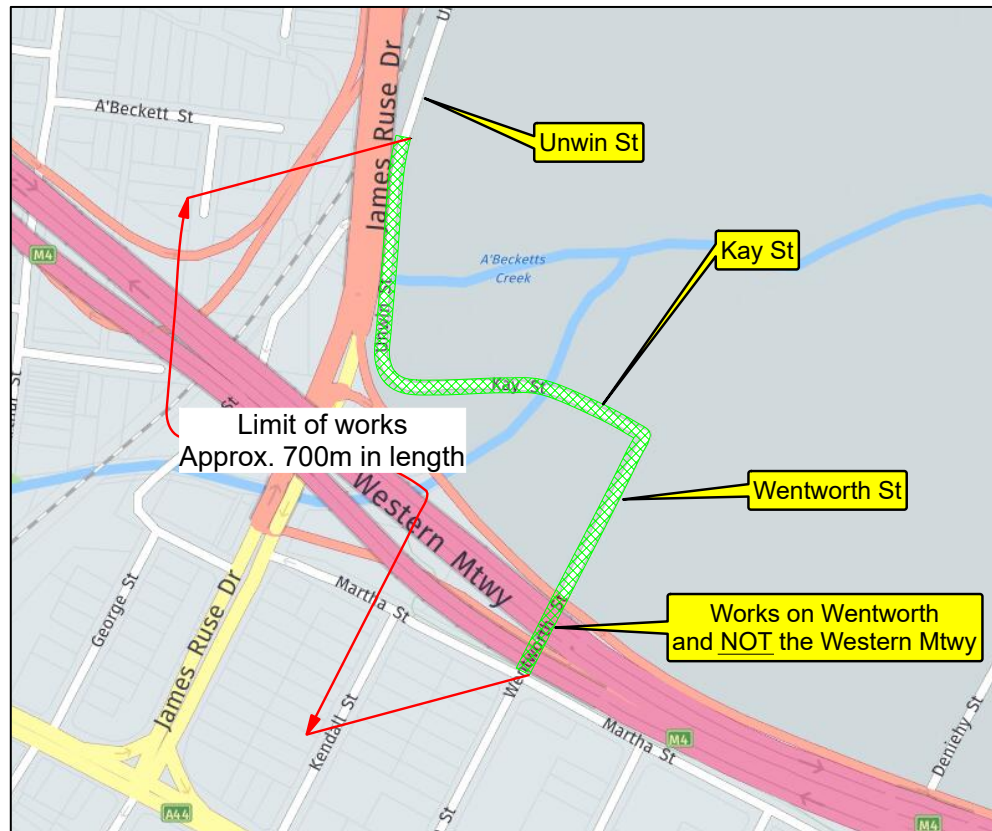
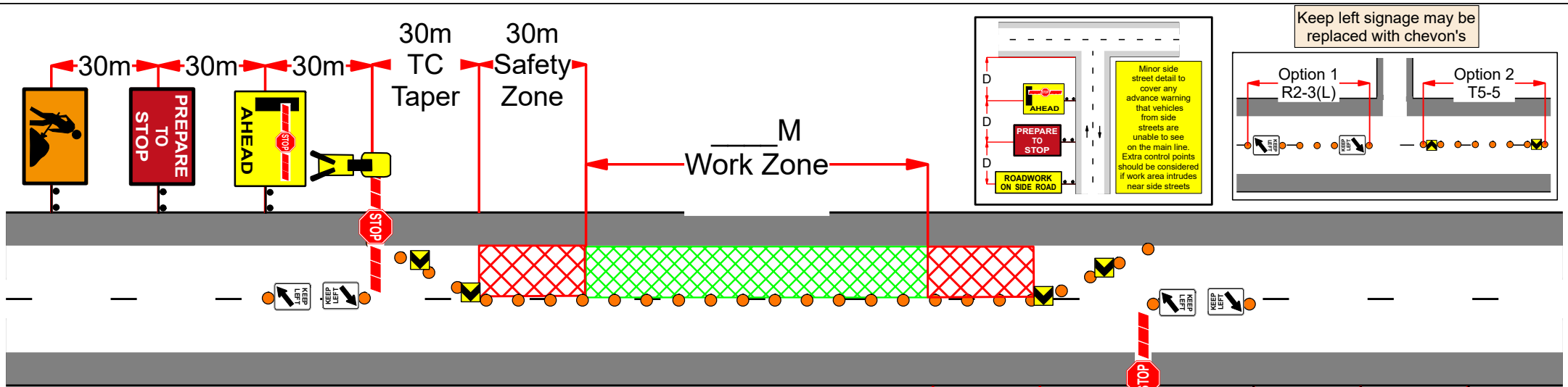
32. Generic TGSs must be reviewed by a PWZTMP qualified person every 12 months so that they remain appropriate. Once reviewed the date and details of the PWZTMP person must be updated on the TGS to ensure persons selecting can confirm currency.

33. All active site specific and site suitable TGS are designed for the nominated work activity and are only valid for the time period of works specified on the TGS. They must be reviewed as part of the weekly inspections as detailed in TCAWS 6.1, Section 8.1. If the work activity is intended to be longer than 12 months, then the TGS must be formally reviewed by a PWZTMP qualified person at least every 12 months and issued with the review date and the details of the person undertaking the review.

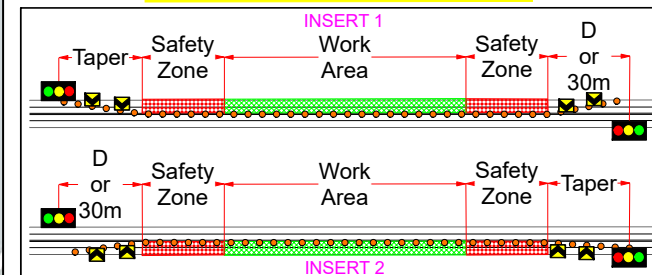
RECORD KEEPING

34. Supervisory personnel are to keep daily records of the TGS implementation including: Site specific risk assessments; Approved TGS used, including versions where modifications or updates have been made; Completed inspection checklists that have been undertaken; Records of traffic related incidents that occurred during the works; and Any other relevant document generated by the process of completing the temporary traffic management works.

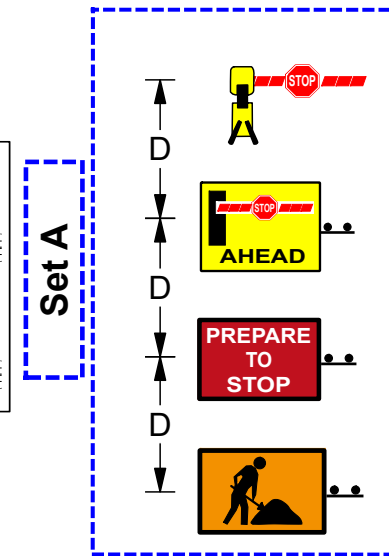
Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed	TGS Approved	Client Compan	Client Contact:	Date of Approval:	Page 3 / 4
01	AC	GA	27/10/2023 12:15	Original Issue	LGP - 66619 - GLC 154 - Unwin to Martha - Site suitable - Line marking					30/10/2023	 
02	AC	GA	30/10/2023 14:00	Amended as per comments	Works Location:						
03					Various Locations - Clyde						
04					Project Name:						
05					Sydney Metro Werstern Tunnelling	Project Description:					
Scale: 1 : 750				Original Size A3	Lack Group acknowledges the traditional owners of country throughout Australia and recognises their continuing connection to land, waters and community. We pay our respect to them and their cultures; and to elders both past and present.						



1 LANE ALTERNATE SET UP



If a control point is required, ensure the "SET A" signage is in place prior to stopping traffic



Date of works: _____ Start time of works: _____ End time of works: _____ (24 hour time)

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:
01	AC	GA	27/10/2023 12:15	Original Issue	LGP - 66619 - GLC 154 - Unwin to Martha - Site suitable - Line marking
02	AC	GA	30/10/2023 14:00	Amended as per comments	Works Location:
03					Various Locations - Clyde
04					Project Name:
05					Sydney Metro Werstern Tunnelling
					Project Description:
					Line marking works - Site suitable

TGS Designed by: _____

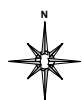
TGS Approved by: _____

Client Company: _____

Client Contact: _____

Date of Approval: 30/10/2023

Page 4 / 4





Adjusting / Modifying TGS:

ITCP Holder-

- ITCP qualified person must ensure that the TGS is implemented as approved. Minor adjustments can be completed in accordance with Section 7.10.3 Tolerances on positioning of signs and devices (Table below). Modifications will be recorded on the TGS checklist and a signed copy will be available on-site.

PWZTMP Holder-

- Modifications to a Site Specific TGS must be approved by the PWZTMP or relevant qualification holder, and must be supported by a TMP or risk assessment to ensure all TGSs considers and mitigate identified site-specific conditions and risks.

- If risk is identified during the implementation of the TGS and requires modification outside of the tolerance listed below, the works must be stopped until an updated TGS is drafted and approved by a PWZTMP qualified person prior to works recommencing. (refer to TCAWS 7.10.4)

- Any anomalies or inconsistencies found in the TGSs being used must be recorded and reported back to the TGS designer who is PWZTMP qualified.

Implementing A TGS

- A TGS must be installed, maintained and removed in a planned and safe manner. The implementation of a TGS must only be undertaken by an ITCP qualified person. (Refer To TCAWS 7.10.1)

- Signs and traffic control devices must be installed in a sequence via GPS, survey, landmarks, side streets or chainage in accordance with TCAWS V6 Section 6.4 and AGTMM Section 6.2

- An implementation TGS should be provided if the risk of implementation is deemed high. The sequence of implementation should be determined as part of the drafting process in TGS or SWMS, rather than being determined on-site. (Refer To TCAWS 7.10.2)

NOTES:

- This Traffic Guidance Scheme is developed by competent and experienced persons in accordance with the requirements outlined in the TCAWS Version 6.1, AS1742.3 and the Road Management Act 2004. Prior to implementation of the TGS, Lack Group will carry out an inspection and risk assessment. Signed copy of the SWMS will be available on-site at all times.

- This plan is developed in conjunction with vehicle and pedestrian movement plans access management and other measures. PWZTMP qualified person must ensure the TGS is implemented, maintained as per attached TGS. Otherwise, any adjustment and modification will be captured in the checklist and work pack.

- Pedestrian management is to be overseen by onsite crew and supported by a risk assessment. If additional signage (TCAWS 6.52 - Table 6.5) is required it is subject to modifying TGS criteria, see below.

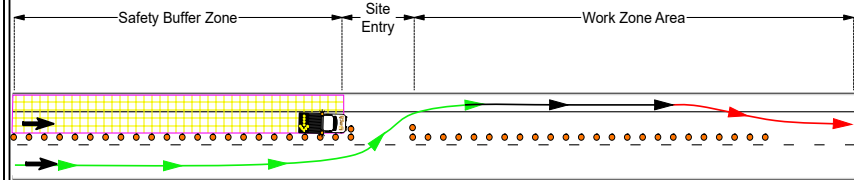
- All amendments will be outlined and recorded in a work pack and checklist.

- Signs to be installed on high legs if sight obstruction is present (for example behind guardrails/barriers .etc.)

- Site Specific TGS is drafted for nominated works that is noted on the TGS. TGS must be formally reviewed and signed off by PWZTMP qualified person (a minimum of every 6 months from the drafted date) as per TCAWS 7.11.2. Details refer to the amendment box below.

- Lack Group Traffic does not accept responsibility of this plan if it is implemented or modification by external parties.

Site Entry and Exit Process



- Highlight entry point with double cones and leaving a small break,

- Prior Entering Worksite:

- Turn on the flashing lights

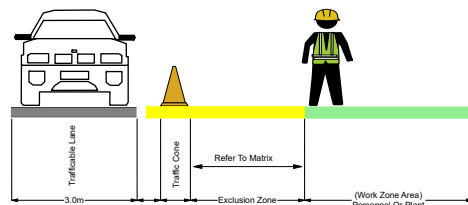
- Radio the traffic controller a minimum 100m prior

- If miss or fail above procedures, Traffic Controllers are to direct the vehicle to loop around and attempt re-entry.

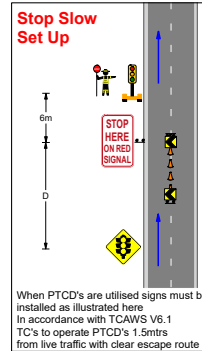
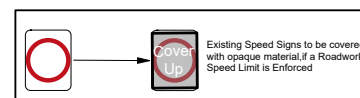
- Traffic Controllers are to ensure that no local traffic follows work vehicles in the work area

- Flip the Setup for Fast Lane Closures

CROSS SECTION DIAGRAM



40 ROADWORK TO BE USED WHEN WORKERS ARE ON FOOT
MAXIMUM LENGTH 500 METRES



Traffic Guidance Scheme installation:

Date: / / 20

Traffic Guidance Scheme Installer:

Full Name: _____

ITCP Number: _____

Expire Date: / / 20

Signature: _____

Date: / / 20

Traffic Guidance Scheme Modifications:

Full Name: Scott McMichael

PWZTMP Number: TCT0066322

Expire Date: / / 20

Signature: _____

Date: 29/01.2025

TGS Modification Notes:

TGS amended after RSA findings the cones along centre line missing at Traffic Control points and no information to traffic of return or assurance of lane of travel/path

Site Inspection Date
Prior to Implementation: / / 20

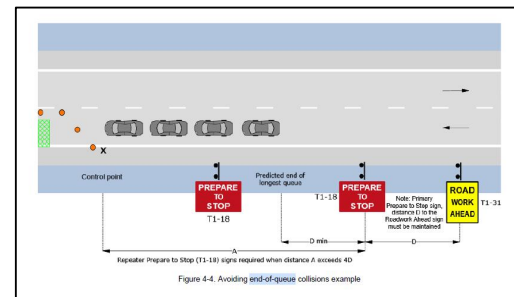
Purpose and usage	Speed zone of device location Km/h	Maximum spacing m
On approach to a traffic controller position (centerline or edge line)	All cases	4
Merge tapers	55 to 75 greater than 76	9 12
Lateral shift tapers	55 to 75 greater than 76	12 18
Protecting freshly painted lines	55 to 75 greater than 76	24 60*
All other purposes	less than or equal 55 55 to 75 greater than 76	4 12 18

Dimension 'D'
AS 1742.3: A distance expressed in metres, determined in accordance with Clause 4.1.5 and used for positioning of advance signs and related purposes.

Speed of Traffic km/h	Dimension m
55 or less	15
56 to 65	45
Greater than 65	speed of traffic, in Km/h

Taper Lengths

Approximate speed of traffic	Traffic control at beginning of taper	Lateral shift taper	Merge taper
45 or less	15	0	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
Greater than 105	N/A	110	180



Tolerances on positioning of signs and devices

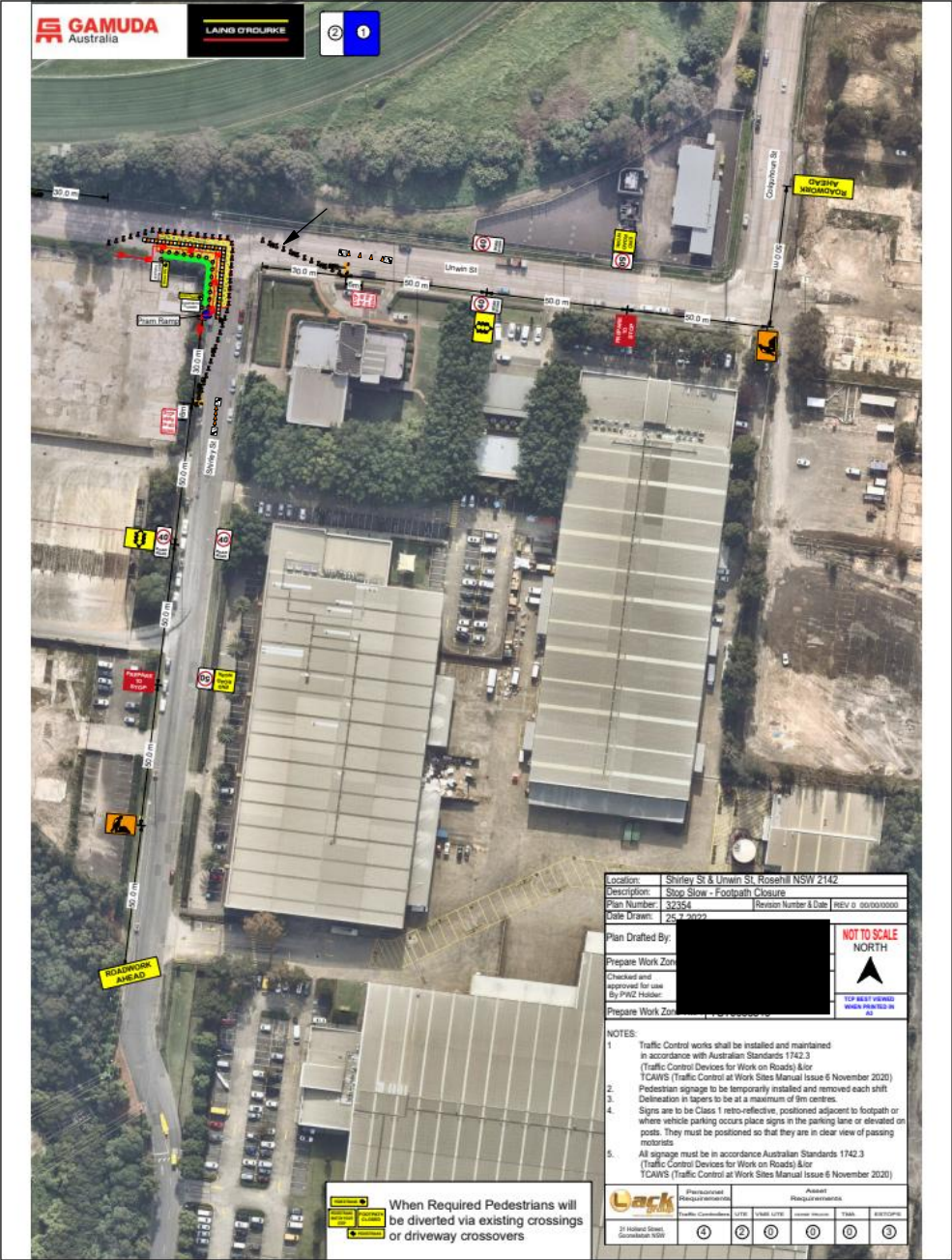
- Local constraints might not allow signs and devices to be placed exactly in accordance with the designed and approved TGS. Where a specific distance is provided for the longitudinal positioning of signs or devices with respect to other items or features, the tolerances to adjust are:

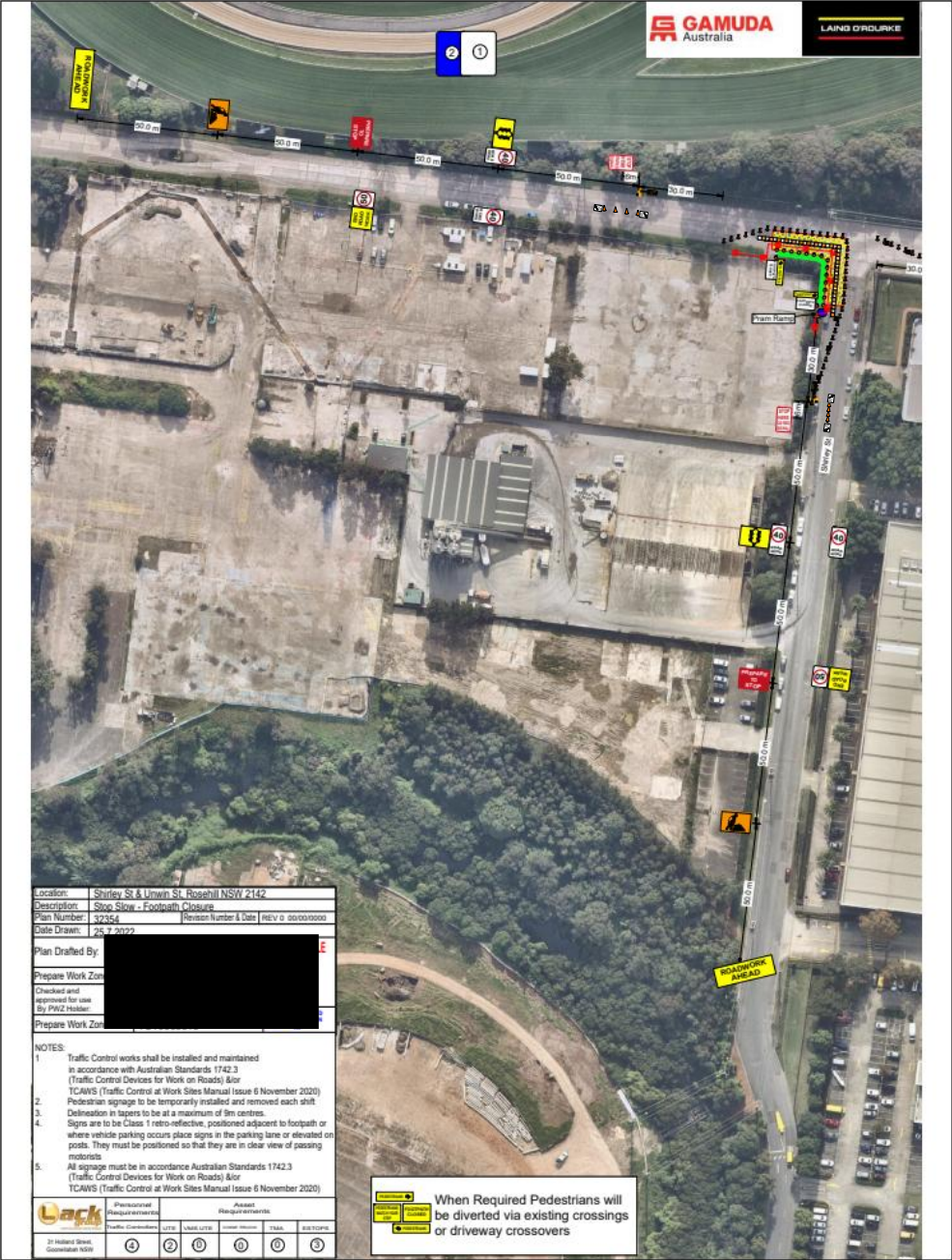
Tolerance	Positioning of signs, length of tapers or markings	Spacing of delineating devices
Minimum	10% less than the distances or lengths given	Nil
Maximum	25% more than distances or lengths given	10% more than the spacing shown

(Refer To TCAWS 7.10.3)

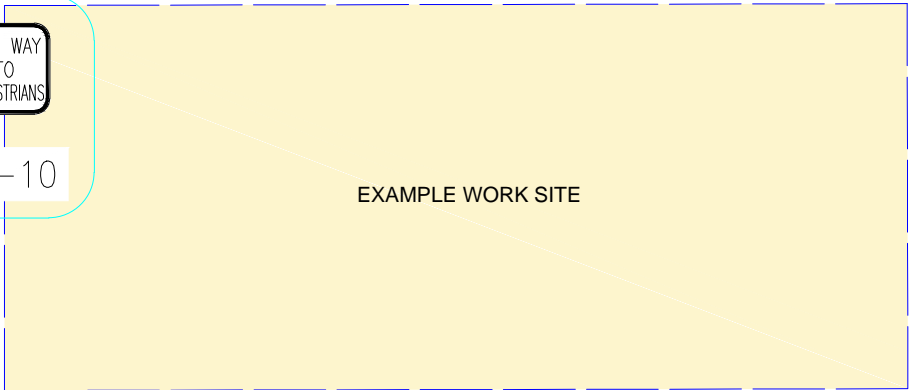
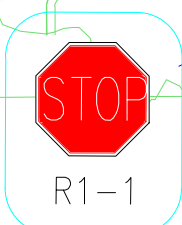
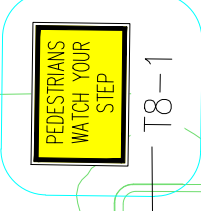
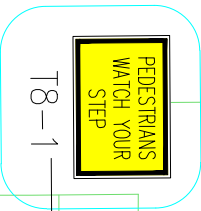
Clearances and spacing of signs and devices

- Clearances between the edge of traffic lane and delineating devices or a road safety barrier system must be in accordance with in Table 6-1. Clearances must be measured to the traffic side edge of delineating devices or barrier. This edge must also be the line from which clearances to the work area are measured for the purpose of determining treatments.





- GENERAL NOTES
- THIS TGS HAS BEEN PREPARED IN ACCORDANCE WITH THE TCAWS MANUAL 2020
 - ALL SIGNAGE MUST BE PLACED TO NOT RESTRICT PEDESTRAIN PATH IN ACCORDANCE WITH THE TCAWS MANUAL V4 2010, SECTION 3.2.8
 - THE CONTRACTOR SHALL ENSURE ALL ROL AND SZA REQUIREMENTS ARE SATISFIED DURING IMPLEMENTATION OF THIS TGS.
 - ANY EXISTING SIGNAGE THAT CONFLICTS WITH THIS TGS MUST BE COVERED AT THE START OF SHIFT AND UNCOVERED AT THE END OF SHIFT.
 - THE SITE MUST COMPLY WITH THE TRAFFIC CONTROL AT WORK SITES MANUAL V4 2010 EDITION AN A.S. 1742.3
 - PEDESTRIANS WILL ONLY BE HELD FOR SHORT PERIODS WHILST THE TRUCKS ENTER/EXIT THE SITE AND WILL NOT BE UNDULY HELD BY TRAFFIC CONTROLLERS OUTSIDE OF IMMEDIATE VEHICLE MOVEMENTS



TRAFFIC CONTROLLERS ON SITE TO EXTEND PEDESTRIAN BARRIER WHILE TRUCK ENTERS AND EXIT WORK SITE

EXTENDABLE PEDESTRIAN BARRIER SIMILAR TO BELOW IMAGE

REV	BY	DATE	DESCRIPTION	APPD.
B-00	LS	19/03/2017	AMENDED AS PER COMMENTS	SL
A-01	LS	15/03/2017	UPDATED NOTES	SL
A-00	LS	19/02/2017	INITIAL DRAFT	SL

COORDINATE SYSTEM:	HEIGHT DATUM:	SCALE:
--------------------	---------------	--------

DRAWN BY:	LS
DRW CHECK:	SS
APPROVED:	SL
IND REVIEW:	N/A



SYDNEY METRO

TYPICAL PEDESTRIAN MANAGEMENT
SHORT TERM STOP ON FOOTPATH

DRAWING No:	TGS-PED-ALL-1101		
SHEET	1	OF	1
REVISION	B-00		

C HEAVY VEHICLE LOCAL ROAD REPORT

(Provided separately)

D CONSTRUCTION PARKING AND ACCESS STRATEGY

(Provided separately)

E ROAD SAFETY AUDIT REPORT

ROADWORK ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN
2025)



Civlink Consulting Pty Ltd

ABN 64 633 194 948

Telephone +61 432 544 458

Email alex@civlink-consulting.com.au

Website www.civlink-consulting.com.au

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O’ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



CONTENTS

Executive Summary	4
1. Introduction	5
1.1 Purpose of Audit	5
1.2 Audit Objectives.....	6
1.3 Procedures and reference material	6
1.4 Audit Team.....	6
1.5 Statement of Independence	6
2. Road Safety Audit Program	6
2.1 Commencement Meeting.....	6
2.2 Completion meeting.....	7
2.3 Responding to the audit report.....	7
2.4 Corrective action response	7
2.5 Disclaimer	7
3. Risk Assessment Approach.....	8
3.1 Likelihood	8
3.2 Severity	8
3.3 Risk Rating	8
3.4 Treatment.....	8
4. Audit Findings	9
5. Conclusion	12

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O’ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



Document Control

Title:	Description
Ref No.:	GLC-WTP-RSA-0013 - 00
Description:	Pre-construction roadworks road safety audit on the changes in Rosehill Racecourse area along Unwin Street as shown in Revision H of the Construction Traffic Management Plan (CTMP) for the area.

Role	Name	Position	Date	Signed
Author:				

Document Revisions

No.	Date	Issue / Description
00	28.01.2025	ORIGINAL ISSUE

©Civlink Consulting Pty Ltd [2025].

Copyright in the drawings, information and data recorded in this document (the information) is the property of Civlink Consulting. This document and the information are solely for the use of the authorised recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that for which it was supplied by Civlink Consulting. Civlink Consulting makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the information.

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



Executive Summary

Audited Project:	Sydney Metro – Western Tunnel Package
Audit for:	Gamuda Australia and Laing O'Rourke Consortium (Western Tunnel Package)
Email Address:	[REDACTED] @gamuda.com.au
Clients Contact:	[REDACTED]
Auditors:	[REDACTED] Safety Auditor – ID:0908), Director / Senior Civil Engineer – Civlink Pty Ltd Lead Safety Auditor). Traffic Manager – Civlink Pty Ltd Safety Auditor) Traffic Engineer – Civlink Pty Ltd
Audit Type:	Roadworks - Road Safety Audit
Commencement Meeting:	Monday 15 th January 2025
Site Visit:	19 th December 2024
Completion Meeting:	To be advised
Previous Audit:	Unwin Street 19 th December 2024

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



1. Introduction

1.1 Purpose of Audit

This report presents findings of a pre-construction roadworks road safety audit. The audit involved reviewing the audit documentation provided by the project as the audit brief. The site is located adjacent Rosehill Racecourse as part of the Western Tunnel Package construction works for the Sydney Metro West projects.

The audit is conducted to verify the manifestation of the documentation and planning for works within road related areas, and within the specified area affected by the project works. The audit scrutinizes the 'safe system' approach to road design and the traffic management planning, targeting roadside hazards including (but not limited to) signage and pavement marking, pedestrian & cyclists' facilities, delineation, sight distances, intersection controls and safety barriers.

The site being audited covers the areas affected by changes, including the placement of temporary barriers along Unwin Street as well as various other temporary controls to manage traffic. The area that is the subject of this audit is the red area shown in Figure 1, below;



Figure 1: Road Safety Audit Scope [Google.com]

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



1.2 Audit Objectives

The objective of this road safety audit was to identify relevant road safety deficiencies in the site which, if addressed, would improve safety for road users.

The other objectives of this Roadworks Road Safety Audit were to:

- Check the compatibility between the traffic management's safety features and the functional classification of the roads.
- Identify any design feature's that can, either now or with time, create a traffic safety issue.
- identify additional design's features at the site that pose a safety hazard or risk to any of the road users
- Determine the extent of the deficiencies in the design, considering all road user groups.

1.3 Procedures and reference material

The procedures used are those in the Austroads Guide to Road Safety Part 6: Road Safety Audit (2022) and RTA Guidelines for Road Safety Audit Practices 2011.

Technical reference documents for Traffic Guidance Schemes is the Traffic Control at Worksites Manual (TCAWS) Version 6.1, 2021.

1.4 Audit Team

This Audit Team consisted of:

- a) [REDACTED] link Consulting Director / Traffic Manager / Senior Civil Engineer). Alex is a registered Road Safety Auditor with the Institute of Public Works Engineers Australia, NSW and Senior auditor in both VIC & QLD. Alex is a registered Level 3 Road Safety Auditor in NSW.
- b) [REDACTED] vlink Consulting / Traffic Manager.) Dustin has worked in the traffic management sector across Qld and NSW for 17 years with experience in civil design and temporary traffic management. Dustin is registered Level 2 road safety auditor in NSW
- c) [REDACTED] Civlink Consulting / Traffic Engineer). John has 5 years construction and traffic experience on Australian major construction projects including the M4-M8 Link Tunnels and Warringah Freeway Upgrade. John has completed Road Safety Auditor training is working towards level one accreditation.

1.5 Statement of Independence

The audit team are independent from the design team and have not been involved in the development of the traffic strategies selected for implementation on this project and site. The audit has been carried out independently of the design team in accordance with Austroads Guide to Road Safety; Part 6 – Road Safety Audit and NSW Centre for Road Safety: Guidelines for Road Safety Audit Practices.

2. Road Safety Audit Program

2.1 Commencement Meeting

On Wednesday 15th January 2025 an email was received from [REDACTED] requesting an audit be conducted on the Traffic Management Plan for Rosehill Racecourse (including Unwin Street) revision H. The changes to the TMP included updates relating to Unwin Street overbridge completion and opening. The works were part of the Western Tunnel Package construction works. The audit was to be conducted by Alex Gosper, Lead Road Safety Auditor (Civlink Consulting) with the assistance of Dustin Conley and John Yap.

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



2.2 Completion meeting

Project representatives are to advise of the need for a Completion meeting.

2.3 Responding to the audit report

The responsibility for the design and implementation of this project rests with the client's project management team, not with the auditors. The project manager is under no obligation to accept the audit findings. Also, it is not the role of the auditor to agree or to approve the project manager's responses to the audit. Rather, the audit provides the opportunity to highlight potential road safety problems and have them formally considered by the project manager or design manager in conjunction with all other project considerations.

2.4 Corrective action response

The road safety audit is a formal process. The road safety audit report is by no means the end of the audit process. The audit report documents the audit teams' identified concerns made to improve the safety of the roads. This report must be responded to by the client with a written response to each audit finding.

2.5 Disclaimer

The findings and opinions in the report are based on the examination of the site and might not address all concerns existing at the time of the audit. The auditors have endeavoured to identify features of the site that could be modified or removed in order to improve safety, although it must be recognised that safety cannot be guaranteed.

The problems identified have been noted in this report and should be considered for improving road safety. Where corrective actions are not taken, this should be reported in writing, providing the reason for the decision. Readers are urged to seek specific advice on matters and not to rely solely on this report. While every effort has been made to ensure the accuracy of this report, it is made available strictly on the basis that everyone relying on it does so at their own risk without any liability to the Auditors.

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



3. Risk Assessment Approach

This audit identified and rated risks per the Austroads recommendation using the assessment process below. Potential safety hazards were identified and categorised based on the frequency of occurrence and severity (consequence of crash). A preliminary risk rating for each identified issue has been assigned in Section 4 which were determined via a subjective judgement by the Auditor guided by the Austroads "Guide to Road Safety, Part 6: Road Safety Audit".

Austroads' provides an indication of the level of risk and what response may be appropriate – refer to the tables below.

3.1 Likelihood

Description	
Almost Certain	Occurrence once per quarter
Likely	Occurrence once per quarter to once per year
Possible	Occurrence once per year to once every three years
Unlikely	Occurrence once every three years to once every seven years
Rare	Occurrence less than once every seven years

3.2 Severity

Description	
Insignificant	Property damage
Minor	Minor first aid
Moderate	Major first aid and/or presents to hospital (not admitted)
Serious	Admitted to hospital
Fatal	At scene or within 30 days of the crash

3.3 Risk Rating

		Severity				
		Insignificant	Minor	Moderate	Serious	Fatal
Likelihood	Almost Certain	Medium	High	High	Extreme	Extreme
	Likely	Medium	Medium	High	Extreme	Extreme
	Possible	Low	Medium	High	High	Extreme
	Unlikely	Negligible	Low	Medium	High	Extreme
	Rare	Negligible	Negligible	Low	Medium	High

3.4 Treatment

Risk	Suggested treatment approach
Negligible	No action required
Low	Should be corrected or the risk reduced if the treatment cost is low
Medium	Should be corrected or the risk significantly reduced, if the treatment cost is moderate but not high
High	Should be corrected or the risk significantly reduced, even if the treatment cost is high
Extreme	Must be corrected regardless of cost

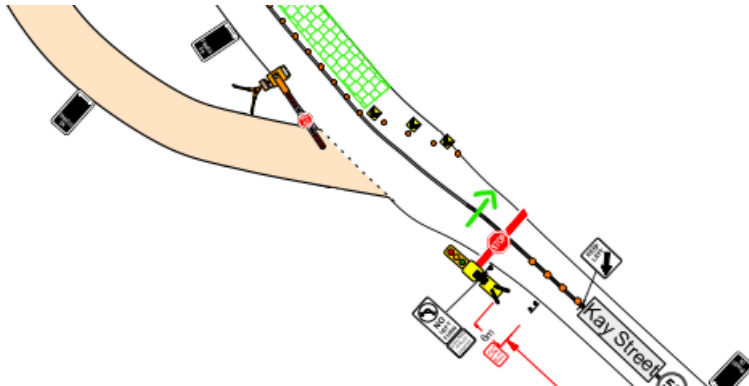
ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



4. Audit Findings

No.	Location	Description of Deficiency / Observation	Risk level
1	LGP - TGS - 147586-1 - Unwin St, Rosehill	<p>The traffic guidance schemes reflecting a stop/slow arrangement provide limited directional signage to put vehicles operating in contraflow back on the correct side of the road. This may see some confusion and it is unclear how visible the boom gates will be from behind.</p> <p>Insufficient direction may see some low speed collisions with road furniture. It is noted however that the site is operating at a very low speed, and if there was any conflict with other vehicles or road furniture the severity would be minor.</p> 	<p>Likelihood – Unlikely</p> <p>Severity – Minor</p> <p>Risk Rating – Low</p>

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O’ROURKE CONSORTIUM

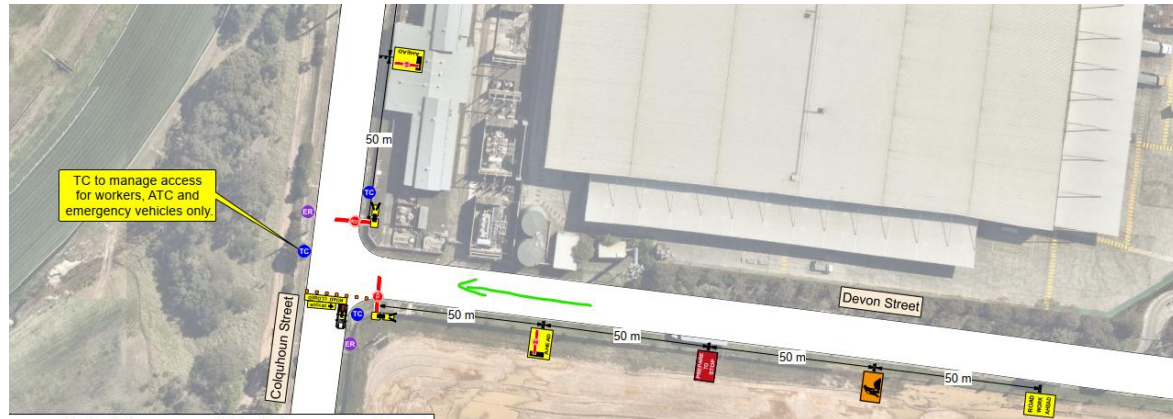
UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



- 2 LGP - 63822 - GLC 151 -
Wentworth to Unwin St -
Clyde - CS6 TS4 - Road

The TGS which details the closure of Colquhoun Street doesn't appear to provide a signed detour for traffic originating within Devon Street. It is understood that there will be traffic controllers at the intersection, but confusion, hesitation and insufficient guidance may contribute to rear-end type collisions. Detail D doesn't appear to accommodate the Devon Street traffic either.

It is noted that this area has a very low operating speed generally, and any incident is likely to have limited severity.



Likelihood – Unlikely

Severity – Minor

Risk Rating – Low

ROADWORKS – ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TMP PRE-CONSTRUCTION – REVISION H (JAN 2025)



- 3 TGS Plan Number: 32354 and 32350

The works area and stop/slow does not provide cones down the centreline or edgeline on the approach to the PTCD. Nor does the plan provide for any direction or guidance for traffic running in the contraflow movement to get back onto the correct side of the road when departing site.

This (similar to item 1) may contribute to some low speed side-swipe type collisions with either other vehicles or road furniture.



Likelihood – Unlikely

Severity – Minor

Risk Rating – Low

- 4 SMWSTWTP-GLO-CLJ-BD700-RW-DRG-193101

General note – there are no speed signs proposed on the design. It is understood the current speed limits on site are typically 30 or 40km/h. It is unclear if this is intended to be retained for the new alignment.

Note only



5. Conclusion

The report outlines where potential deficiencies have been identified for consideration by the project manager, designer and/or engineer.

The findings and opinions in the report are based on the examination of the CTMP and associated documentation for the site at Rosehill Racecourse as part of the Sydney Metro West construction project. The Auditors have endeavoured to identify features of the design that could be modified or removed to improve safety, although it must be recognised that safety cannot be guaranteed. While every effort has been made to ensure the accuracy of this report, it is made available strictly on the basis that anyone relying on it does so at their own risk without any liability to the Auditors.

Date: 29.01.2025

Date: 29.01.2025

Date: 29.01.2025

Item	Reference	Comment	Client's Response/Action for Resolution	Close out Date
1	LGP - TGS - 147586-1 - Unwin St, Rosehill	The traffic guidance schemes reflecting a stop/slow arrangement provide limited directional signage to put vehicles operating in contraflow back on the correct side of the road. This may see some confusion and it is unclear how visible the boom gates will be from behind. Insufficient direction may see some low speed collisions with road furniture. It is noted however that the site is operating at a very low speed, and if there was any conflict with other vehicles or road furniture the severity would be minor.	Noted. TGS amended. TGS set-ups are also monitored and any adjustments required will result in revised TGS.	29.01.2025
2	LGP - 63822 - GLC 151 Wentworth to Unwin St - Clyde - CS6 TS4 - Road	The TGS which details the closure of Colquhoun Street doesn't appear to provide a signed detour for traffic originating within Devon Street. It is understood that there will be traffic controllers at the intersection, but confusion, hesitation and insufficient guidance may contribute to rear-end type collisions. Detail D doesn't appear to accommodate the Devon Street traffic either. It is noted that this area has a very low operating speed generally, and any incident is likely to have limited severity.	Full detour maps are located at the end of the TGS set.	29.01.2025
3	TGS Plan Number: 32354 and 32350	The works area and stop/slow does not provide cones down the centreline or edgeline on the approach to the PTCD. Nor does the plan provide for any direction or guidance for traffic running in the contraflow movement to get back onto the correct side of the road when departing site. This (similar to item 1) may contribute to some low speed side-swipe type collisions with either other vehicles or road furniture.	Noted. TGS amended. TGS set-ups are also monitored and any adjustments required will result in revised TGS.	29.01.2025
4	SMWSTWTP-GLO-CLJ-BD700-RW-DRG-193101	General note – there are no speed signs proposed on the design. It is understood the current speed limits on site are typically 30 or 40km/h. It is unclear if this is intended to be retained for the new alignment.	Noted.	29.01.2025

F STAKEHOLDER CONSULTATION

G ROAD DESIGN DRAWINGS

Table 7-6: Road design drawings

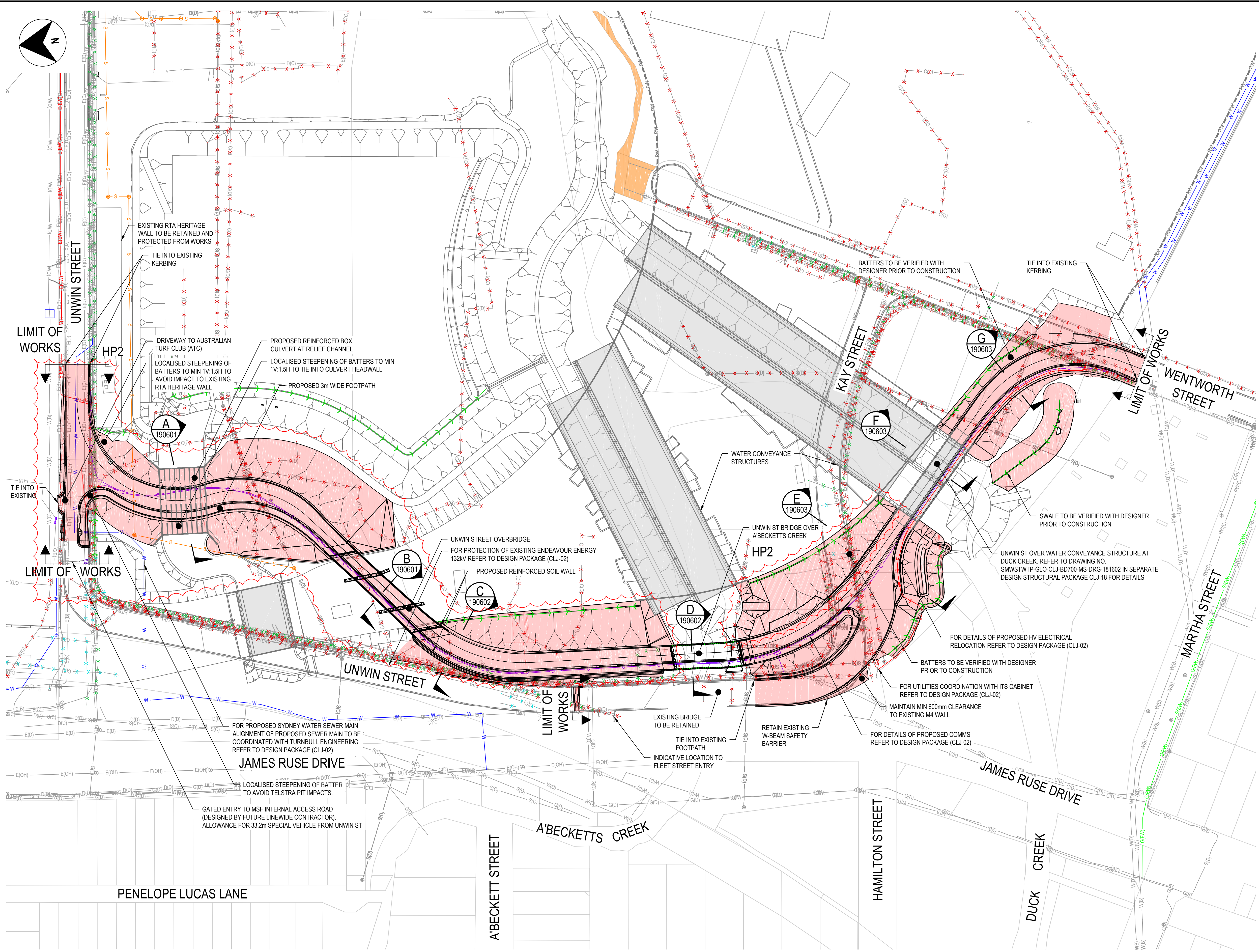
Drawing #	Description
SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190111	General arrangement plan
SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190301-302	Longitudinal sections
SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190404-407	Cross sections
SMWSTWTP-GLO-CLJ-BD700-RW-DRG-193101	Unwin Street signage and line marking plan

Cad File: C:\pwworkdrawings\msa2711\SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190111.dwg

Plot Date: 28/06/23 - 22:30

100mm AT FULL SIZE

Unwin



GENERAL ARRANGEMENT PLAN
SCALE 1:1000

NOTE

1. FOR EXISTING AND PROPOSED UTILITIES LEGEND.
REFER TO DRG SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190011.

LEGEND

- PROPOSED DESIGN
- ADJACENT PACKAGE DESIGN
- SURVEY
- PROPOSED RETAINING WALL
- CHANNEL
- ABORIGINAL LAND CLAIM
- UNWIN STREET REALIGNMENT
- WATER CONVEYANCE BRIDGE STRUCTURE

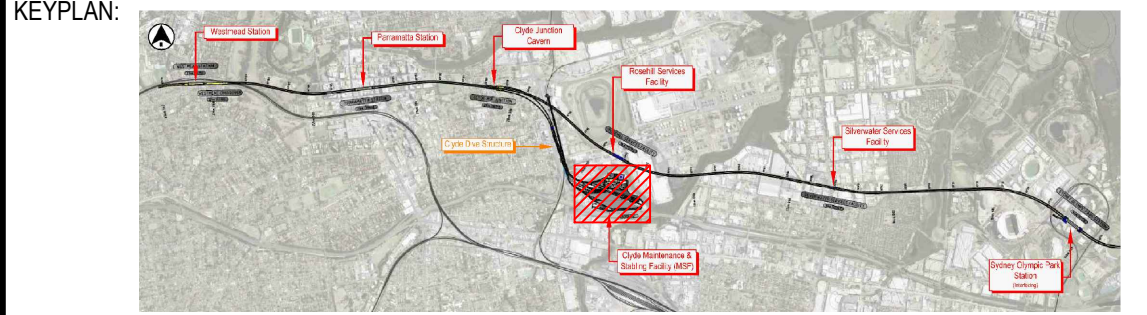
HOLD POINT

HP2 - DESIGN ON HOLD. TO BE DEVELOPED AS PART OF CLJ-19 B STAGE 3 SUBMISSION.

OFFICIAL FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
00	STAGE 3 APPROVED FOR CONSTRUCTION PART A	M.V.	G.P.	C.F.	23.06.23
D	REISSUED FOR STAGE 3 DETAILED DESIGN	M.V.	G.P.	C.F.	05.05.23
C	ISSUED FOR STAGE 3 DETAILED DESIGN	M.V.	G.P.	S.D.	24.02.23
B	ISSUED FOR STAGE 2 DETAILED DESIGN	M.V.	G.P.	S.D.	07.10.22
A	ISSUED FOR STAGE 1 DETAILED DESIGN	M.N.	G.P.	S.D.	01.07.22

SCALES:
1:1000 @ A1
0 10 20 30 40 50 m



CLIENT:

NSW GOVERNMENT | sydney METRO

INTEGRATING DESIGN AEO:

GHD | SMEC

SMEC | GHD DESIGN JOINT VENTURE

Service Providers

GAMUDA Australia | LANG GROUP

GHD | SMEC

GHD / SMEC CIVIL

Drawn: [Redacted] 23.06.2023

Designed: [Redacted] 23.06.2023

DRG Check: [Redacted] 23.06.2023

Design Check: [Redacted] 23.06.2023

Approved: [Redacted] 23.06.2023

SYDNEY METRO WEST

MAINTENANCE FACILITY - CLYDE

ROADWORKS

GENERAL ARRANGEMENT PLAN

DOCUMENT No: [Redacted] SHEET: 1 OF 1 ©

STATUS: STAGE 3 DETAILED DESIGN (AFC) EDMS NO: [Redacted]

DRG No. SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190111 REV 00 VER

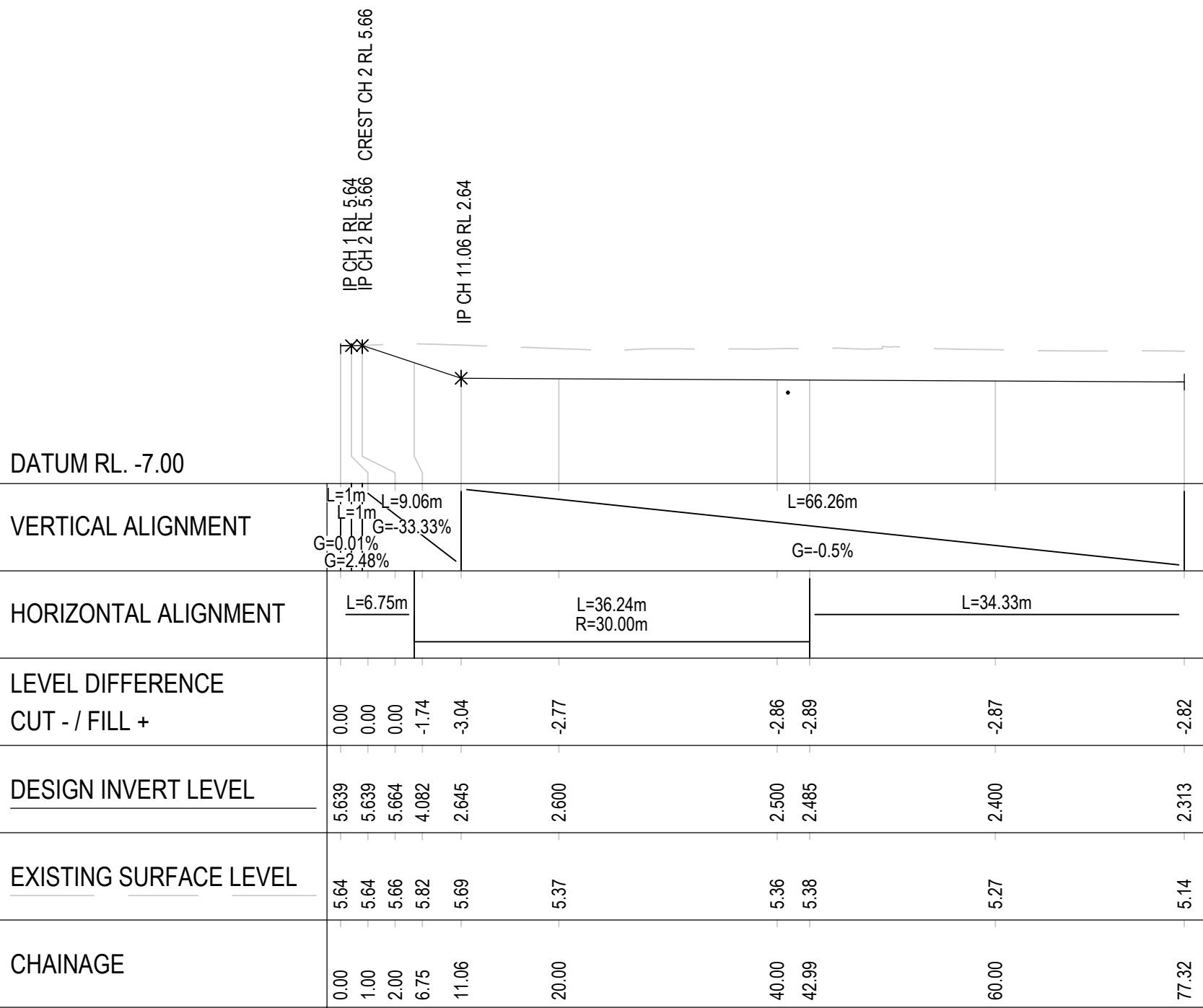
A1 Original Co-ordinate System: GDA20/MGA Zone 56 Height Datum: A.H.D. This sheet may be prepared using colour and may be incomplete if copied

NOTE: Do not scale from this drawing.

Plot Date: 30/06/23 - 09:46 Card File: C:\pwworkdir\pkins4711\SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190302.dwg

100mm AT FULL SIZE

100mm



NOTE

- UTILITIES SHOWN ARE FOR INFORMATION ONLY.

LEGEND

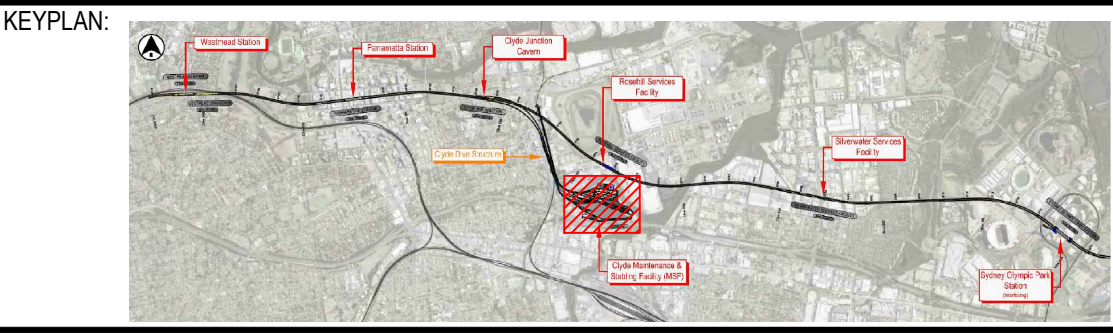
	EXISTING SURFACE LEVEL
	DESIGN SURFACE LEVEL
	EXISTING/PROPOSED UTILITIES (FOR DETAILS REFER TO SEPARATE DESIGN PACKAGE CLJ-02)

OFFICIAL

FOR CONSTRUCTION

00	STAGE 3 APPROVED FOR CONSTRUCTION PART A	M.V.	G.P.	C.F.	23.06.23
C	ISSUED FOR STAGE 3 DETAILED DESIGN	M.V.	G.P.	S.D.	24.02.23
B	ISSUED FOR STAGE 2 DETAILED DESIGN	M.V.	G.P.	S.D.	07.10.22
A	ISSUED FOR STAGE 1 DETAILED DESIGN	M.N.	G.P.	S.D.	01.07.22
No.	Amendment Description	Design by	Verified by	Approved by	Date

A1 Original	Co-ordinate System: GDA20/MGA Zone 56	Height Datum: A.H.D.	This sheet may be prepared using colour and may be incomplete if copied
-------------	---------------------------------------	----------------------	---



NOTE: Do not scale from this drawing.

CLIENT:

NSW GOVERNMENT | sydney METRO

INTEGRATING DESIGN AEO:

GHD | SMEC

SMEC | GHD DESIGN JOINT VENTURE

Service Providers

GAMUDA Australia | LAING O'Rourke

GHD | SMEC

GHD / SMEC CIVIL

DRAWN: [Redacted]

DESIGNED: [Redacted]

DRG CHECK: [Redacted]

DESIGN CHECK: [Redacted]

APPROVED: [Redacted]

SYDNEY METRO WEST

MAINTENANCE FACILITY - CLYDE

ROADWORKS

LONGITUDINAL SECTION

DOCUMENT No: [Redacted] SHEET: 2 OF 2

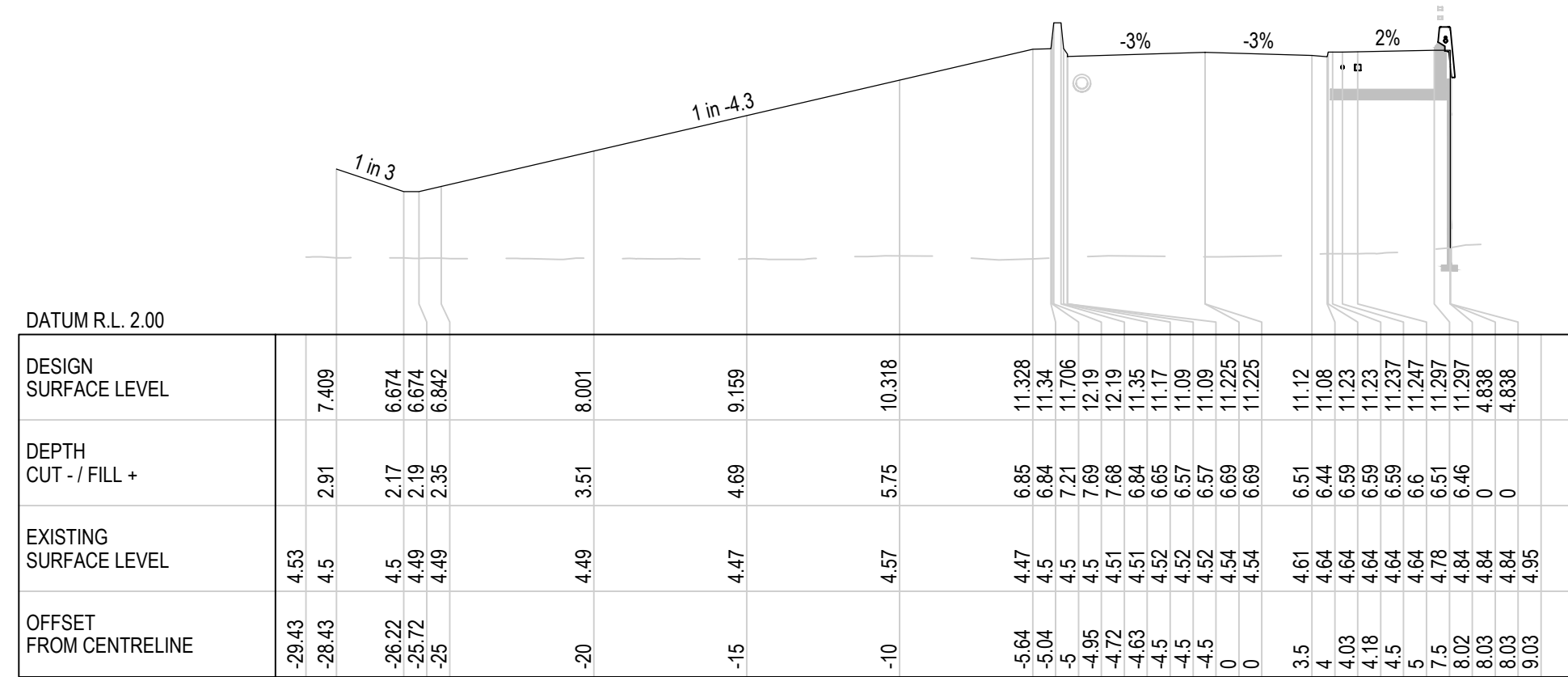
STATUS: STAGE 3 DETAILED DESIGN (AFC) EDMS NO: [Redacted]

DRG No. SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190302

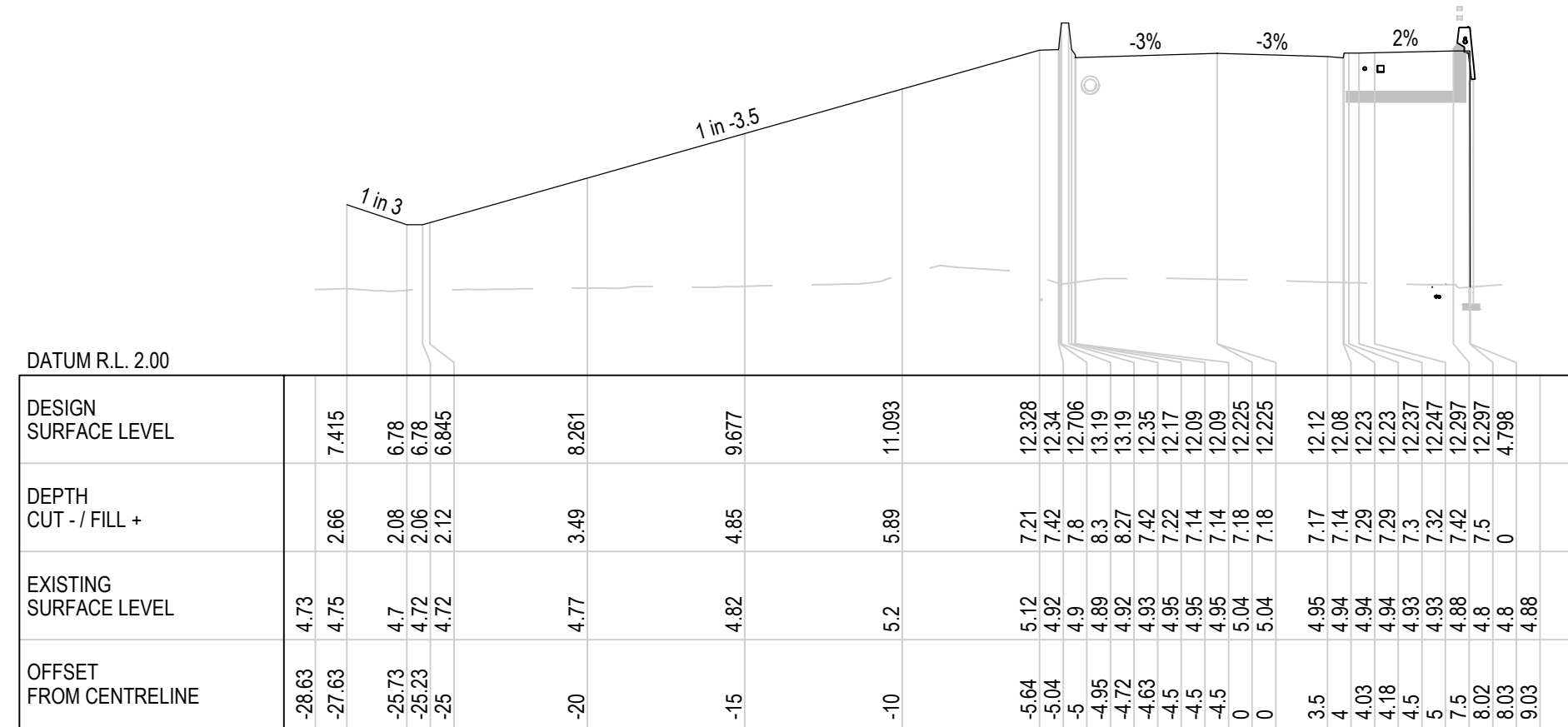
REV 00 VER

Plot Date: 29/06/23 - 22:35
100mm AT FULL SIZE
Card File: C:\pwworkdir\p\ms4711\SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190404.dwg

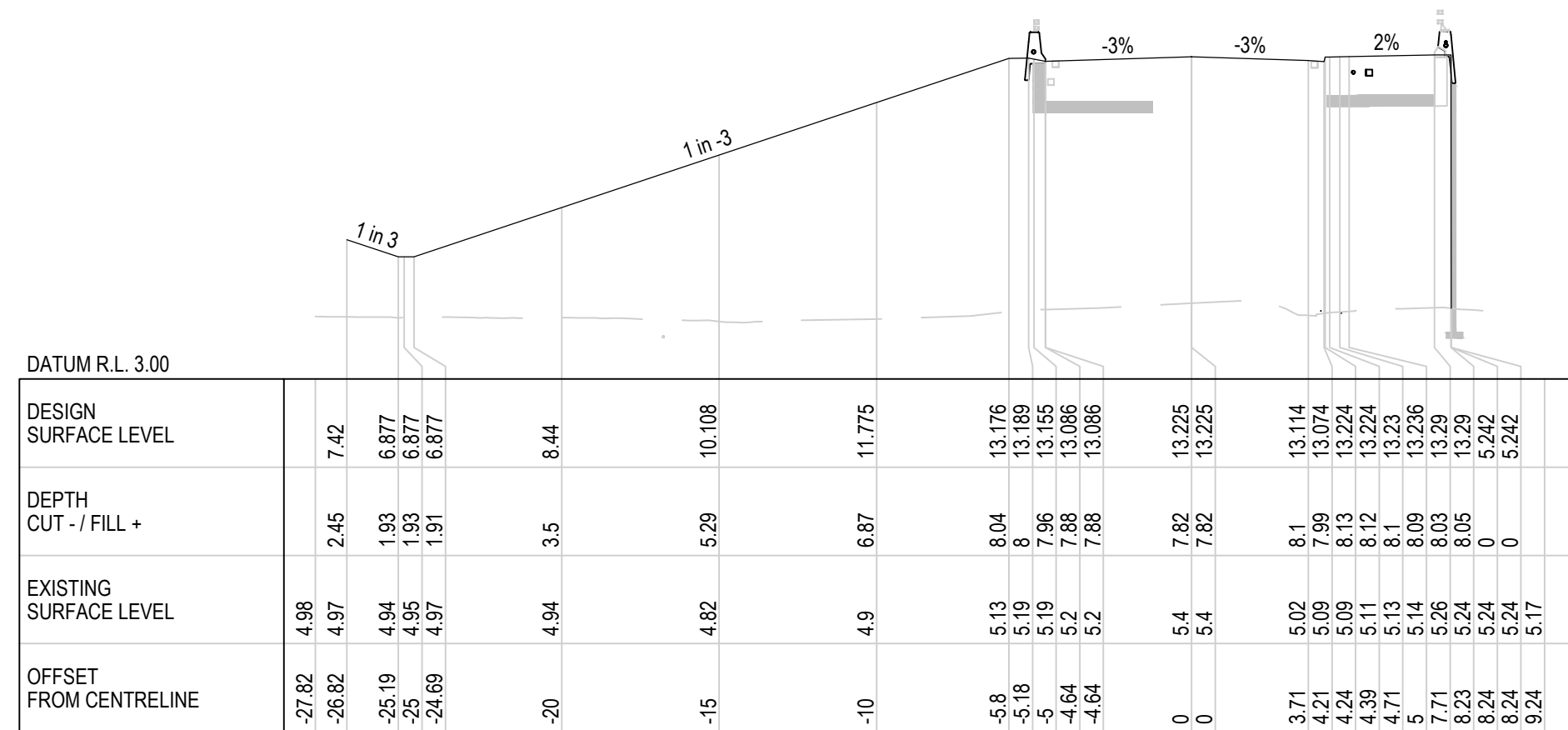
HP2



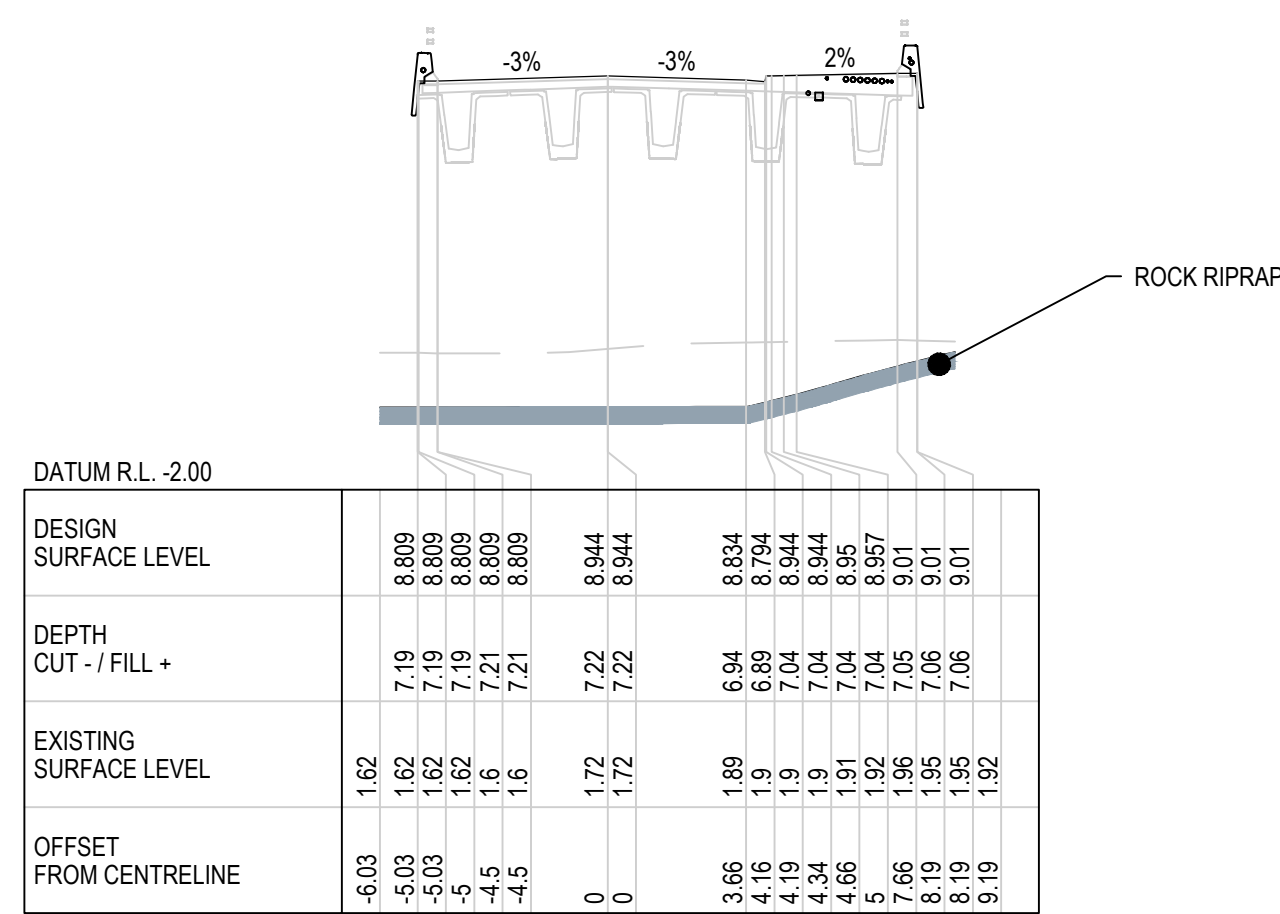
CH 340



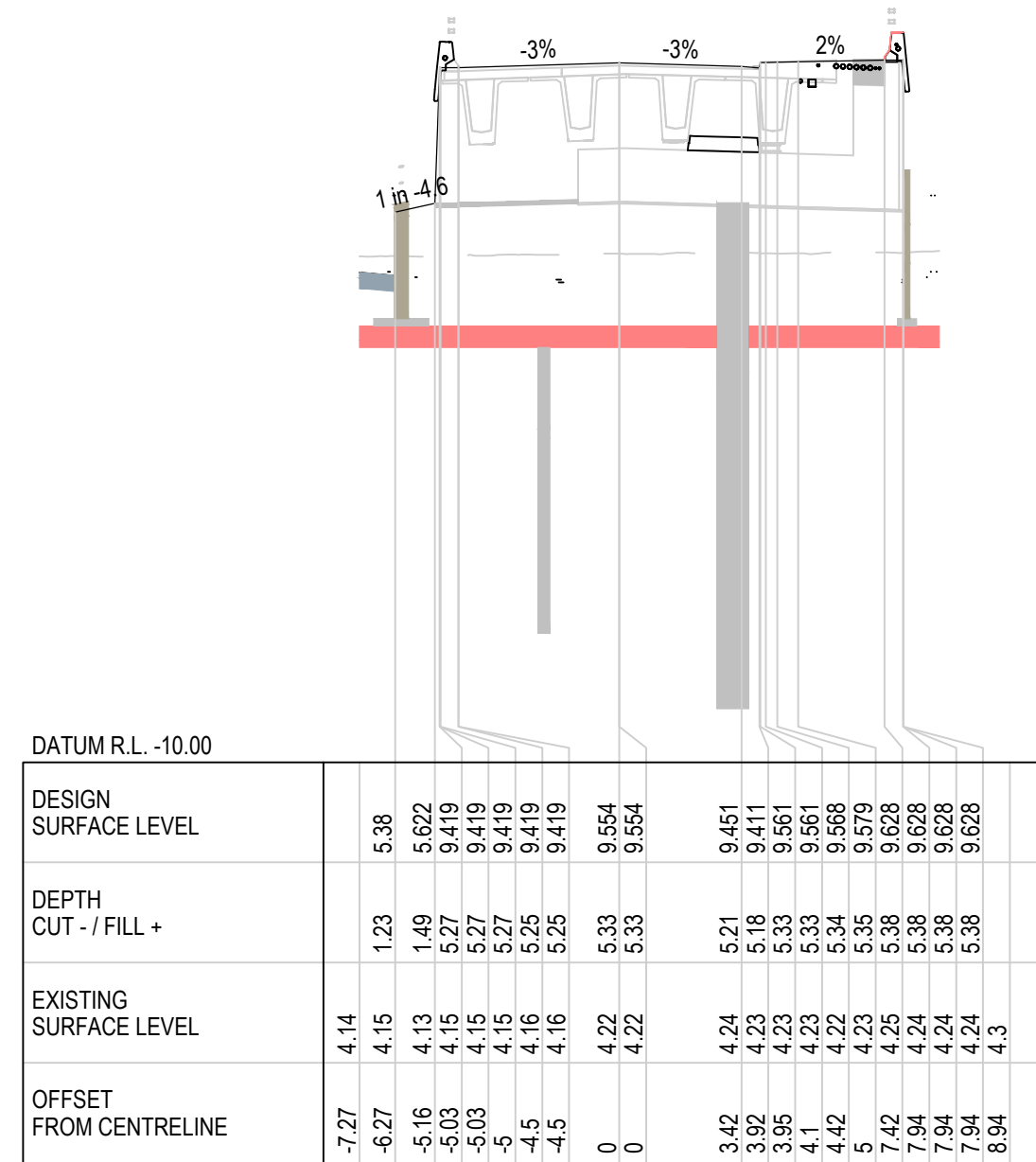
CH 320



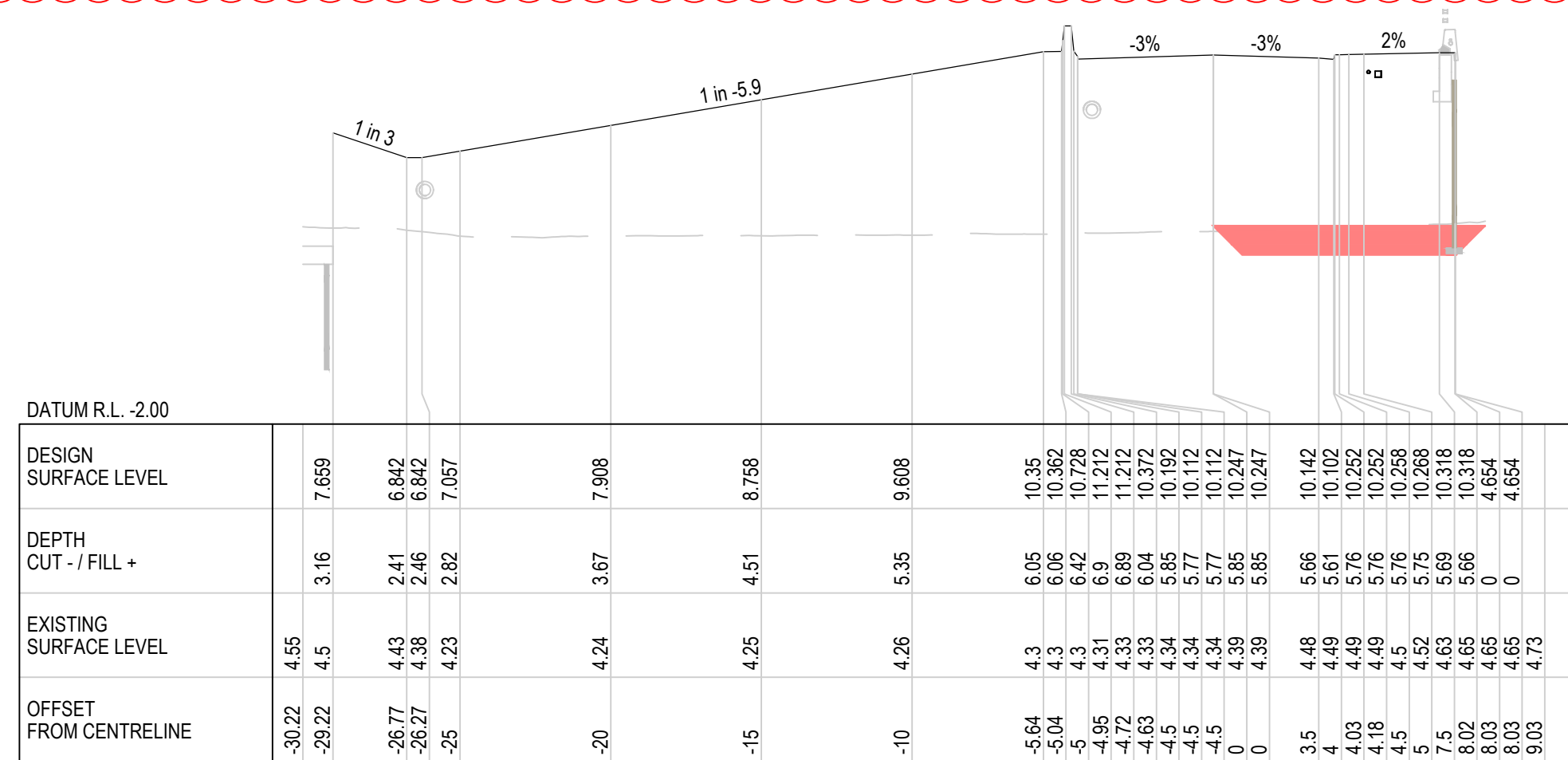
CH 300



CH 400



CH 380



CH 360

UNWIN ST CROSS SECTIONS

SCALE 1:200

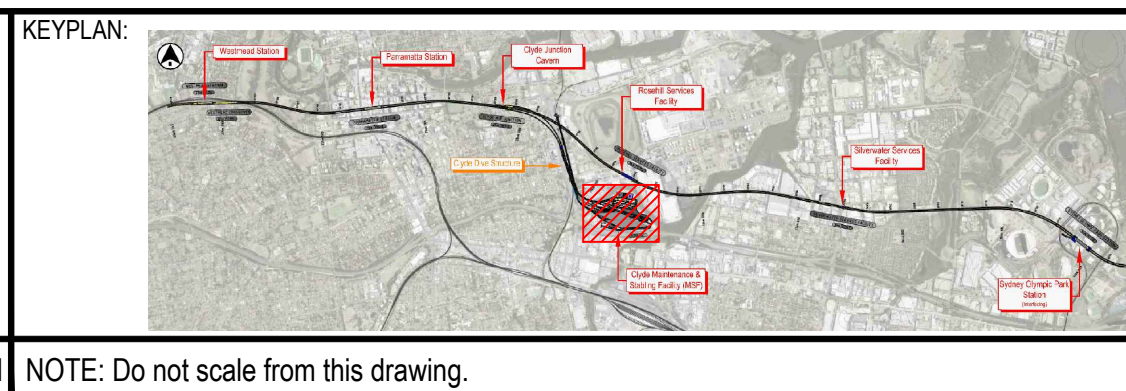
OFFICIAL

FOR CONSTRUCTION

No.	Amendment Description	Design by	Verified by	Approved by	Date
00	STAGE 3 APPROVED FOR CONSTRUCTION PART A	M.V.	G.P.	C.F.	23.06.23
D	REISSUED FOR STAGE 3 DETAILED DESIGN	M.V.	G.P.	C.F.	05.05.23
C	ISSUED FOR STAGE 3 DETAILED DESIGN	M.V.	G.P.	S.D.	24.02.23
B	ISSUED FOR STAGE 2 DETAILED DESIGN	M.V.	G.P.	S.D.	07.10.22
A	ISSUED FOR STAGE 1 DETAILED DESIGN	M.N.	G.P.	S.D.	01.07.22

A1 Original Co-ordinate System: GDA20/MGA Zone 56 Height Datum: A.H.D. This sheet may be prepared using colour and may be incomplete if copied

SCALES:
1:200 @ A1
0 2 4 6 8 10 m



NOTE: Do not scale from this drawing.



SERVICE PROVIDERS
GHD / SMEC CIVIL

DRAWN	DESIGNED	DRG CHECK	DESIGN CHECK	APPROVED
-------	----------	-----------	--------------	----------

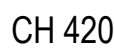
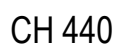
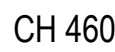
SYDNEY METRO WEST	
MAINTENANCE FACILITY - CLYDE	
ROADWORKS	
UNWIN STREET CROSS SECTIONS	
DOCUMENT No:	SHEET: 4 OF 7
STATUS: STAGE 3 DETAILED DESIGN (AFC)	EDMS NO:
DRG No. SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190404	REV 00

EXISTING SURFACE LEVEL

DESIGN SURFACE LEVEL

EXISTING/PROPOSED UTILITIES (FOR DETAILS REFER TO SEPARATE DESIGN PACKAGE CLJ-02)


HP2 - DESIGN ON HOLD. TO BE DEVELOPED AS PART OF CLJ-19 B STAGE 3 SUBMISSION.



SCALE 1:200










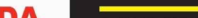
FOR CONSTRUCTION

KEYPLAN:



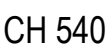
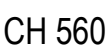
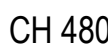
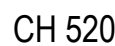
NOTE: Do not scale from this drawing

The information shown on this drawing is for the purposes of the Sydney Metro Project only. No warranty is given or implied as to its suitability for any other purpose. The Service Providers accept no liability arising from the use of this drawing and the information shown thereon for any purpose other than the Sydney Metro Project.

SERVICE PROVIDERS			
		DRAWN	23.06.2023
		DESIGNED	23.06.2023
		DRG CHECK	23.06.2023
		DESIGN CHECK	23.06.2023
		APPROVED	23.06.2023

<h1 style="margin: 0;">SYDNEY METRO WEST</h1> <p style="margin: 0;">MAINTENANCE FACILITY - CLYDE ROADWORKS UNWIN STREET CROSS SECTIONS</p>			
DOCUMENT No:		SHEET: 5 OF 7	
STATUS: STAGE 3 DETAILED DESIGN (AFC)		EDMS NO:	
DRG No. SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190405			<div style="display: flex; justify-content: space-between;"> <div>REV 00</div> <div>VER</div> </div>

HP2 - DESIGN ON HOLD. TO BE DEVELOPED AS PART OF CLJ-19 B STAGE 3 SUBMISSION.



SCALE 1:200

A1 Original	Co-ordinate System: GDA20/MGA Zone 56	Height Datum: A.H.D.	This sheet may be prepared using colour and may be incomplete if copied
-------------	---------------------------------------	----------------------	---

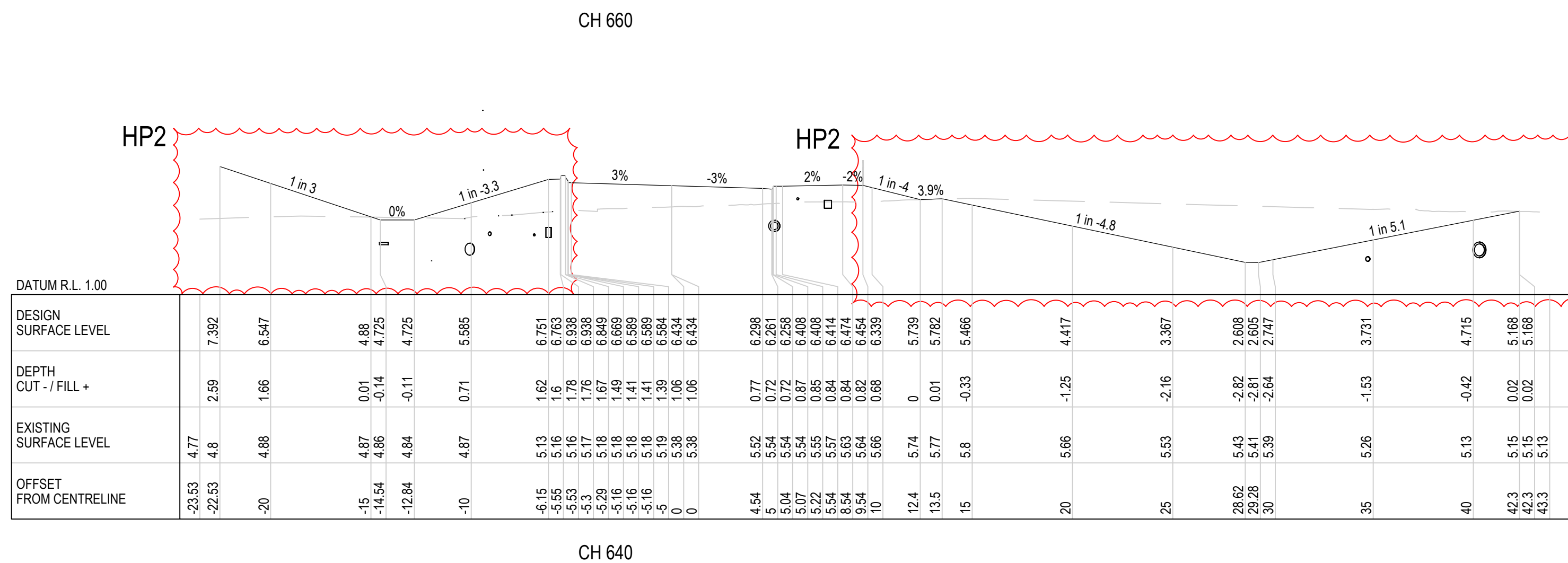
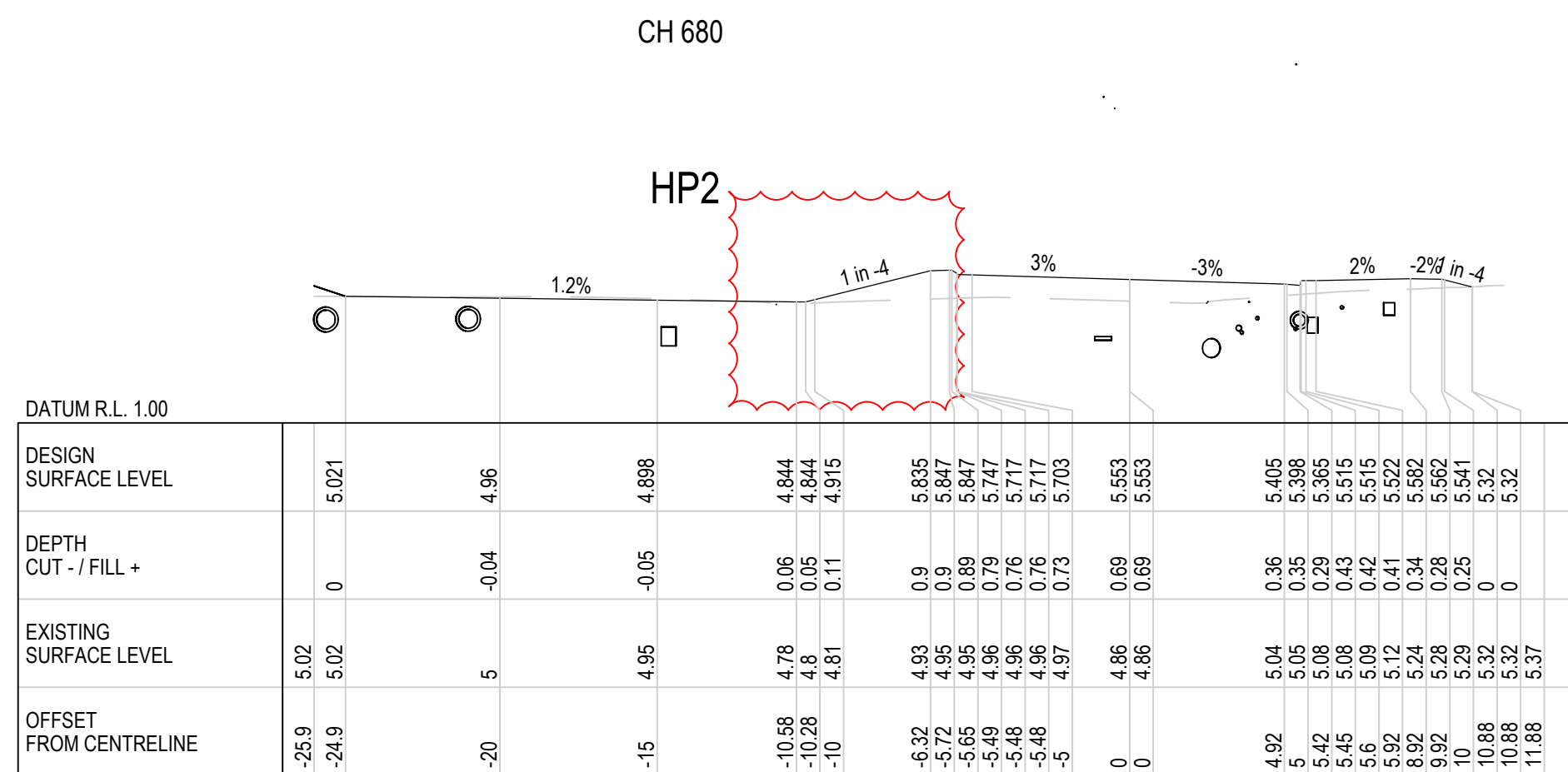
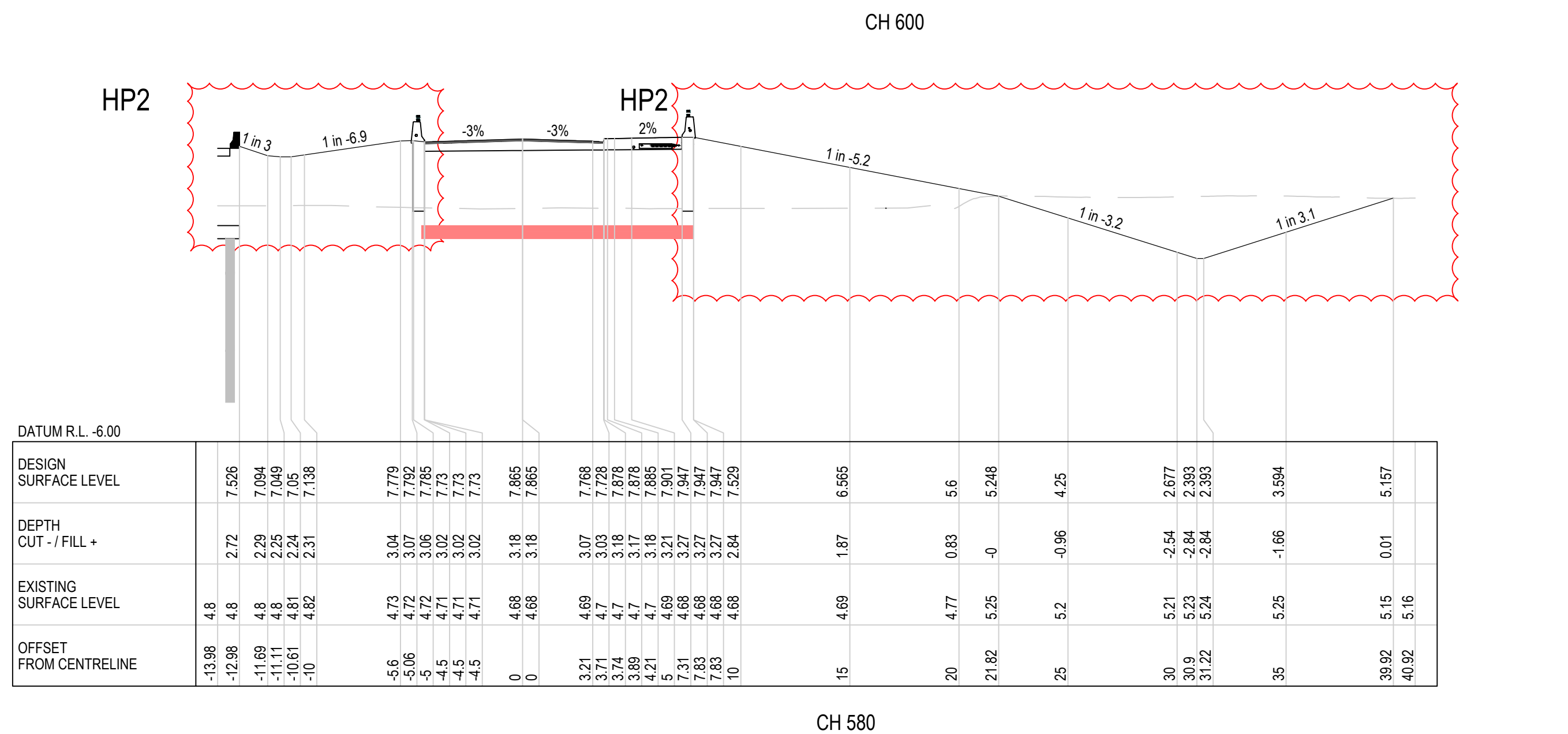
prepared using colour and may be incomplete if copied



DESIGN JOINT VENTURE
SMC | LGHD DESIGN JOINT VENTURE



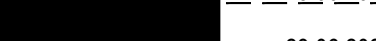


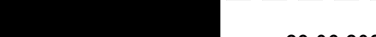
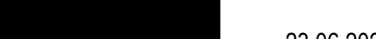
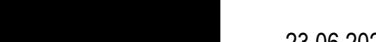

GHD / SMEC CIVIL	APPROVED	23.06.2023
---------------------	----------	------------

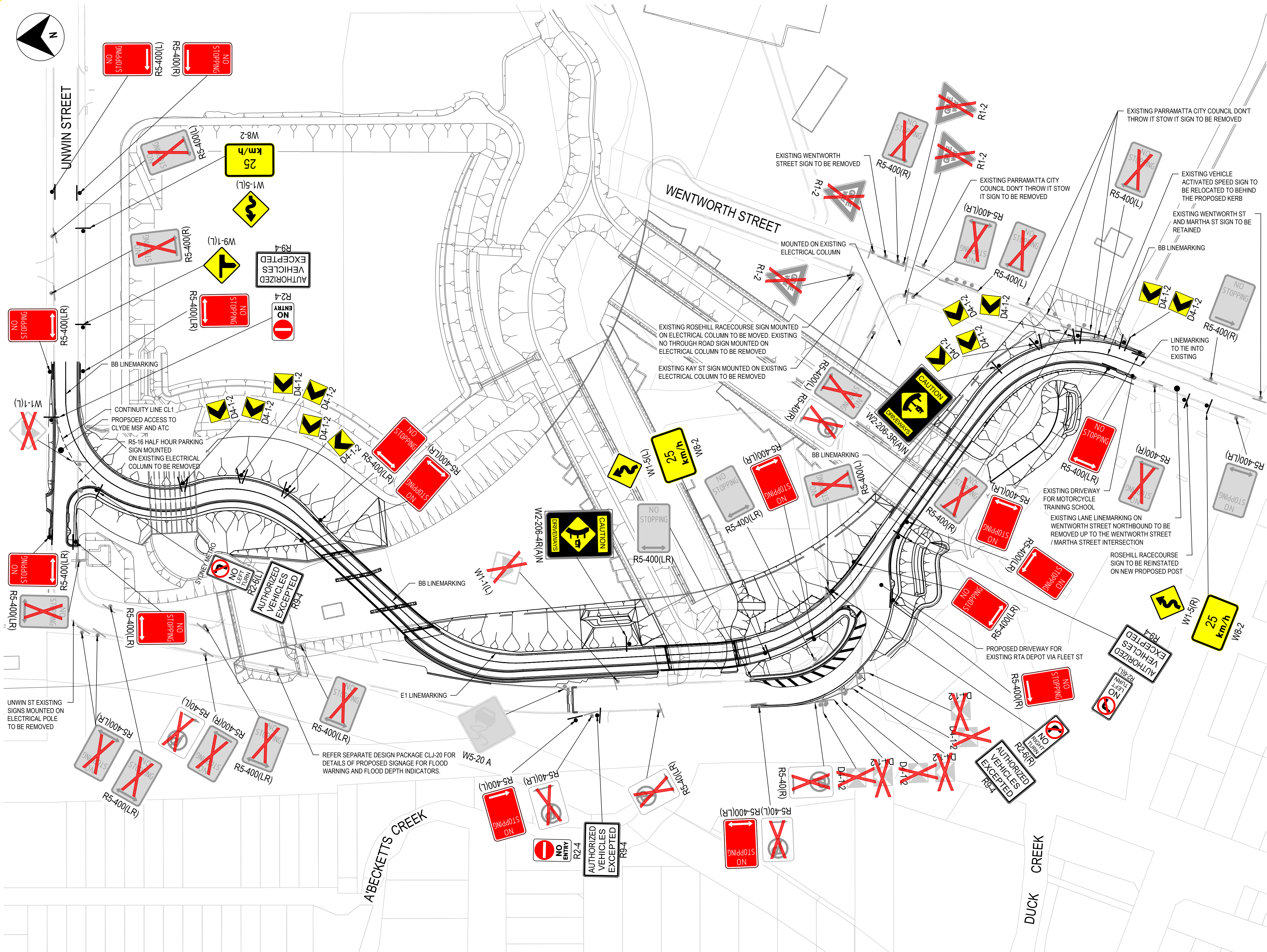
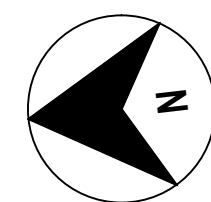
DOCUMENT No:		SHEET: 6 OF 7		©
STATUS: STAGE 3 DETAILED DESIGN (AFC)			EDMS NO:	
DRG No. SMWSTWTP-GLO-CLJ-BD700-RW-DRG-190406				REV 00 VER



HP2 - DESIGN ON HOLD. TO BE DEVELOPED AS PART OF CLJ-19 B STAGE 3 SUBMISSION.

The information shown on this drawing is for the purposes of the Sydney Metro Project only. No warranty is given or implied as to its suitability for any other purpose. The Service Providers accept no liability arising from the use of this drawing and the information shown thereon for any purpose other than the Sydney Metro Project.

SERVICE PROVIDERS			
		DRAWN	 — 23.06.2023
		DESIGNED	 — 23.06.2023
		DRG CHECK	 — 23.06.2023
		DESIGN CHECK	 — 23.06.2023
GHD / SMC CIVIL		APPROVED	 — 23.06.2023



NOTE

1. ENSURE SIGNS ARE PLACED WITH APPROPRIATE CLEARANCE TO FOOTPATH USER ENVELOPE.
2. ALL NOTES ARE TO SIZE A UNLESS NOTED OTHERWISE.
3. CONTRACTOR TO UNDERTAKE BALL BANK INDICATOR TEST AS PER AS1742.2 TO VERIFY ADVISORY SPEED OF 25KM/H PRIOR TO ROAD OPENING.

LEGEND

	PROPOSED SIGN POST
	EXISTING SIGN POST
	PROPOSED SIGN
	EXISTING SIGN
	EXISTING SIGN TO BE REMOVED
	PROPOSED DESIGN
	ADJACENT PACKAGE DESIGN
	SURVEY

HOLD POINT

H1 - LOCATION OF KERB RAMPS AT DRIVEWAY CROSSING TO BE CONFIRMED WITH SYDNEY METRO PRIOR TO CONSTRUCTION WORKS

SIGNS AND LINEMARKING PLAN

SCALE 1:1000

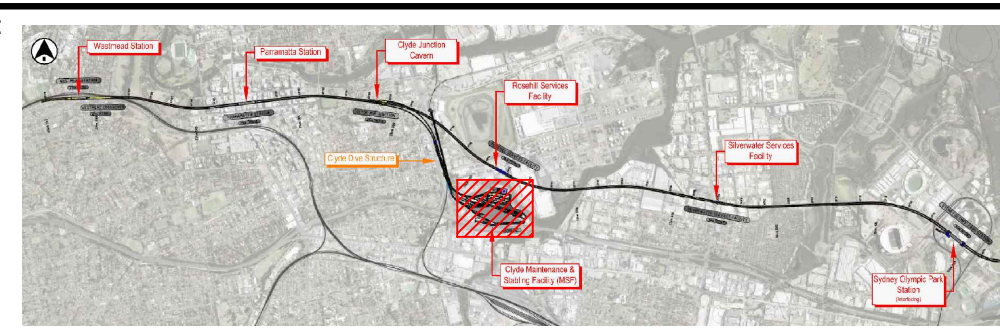
OFFICIAL

FOR CONSTRUCTION

05	STAGE 3 APPROVED FOR CONSTRUCTION	M.V.	G.P.	C.F.	05.12.23
04	REISSUE FOR STAGE 3 DETAILED DESIGN PART B	M.V.	G.P.	C.F.	07.11.23
03	REISSUE FOR STAGE 3 DETAILED DESIGN PART B	M.V.	G.P.	C.F.	14.09.23
02	REISSUE FOR STAGE 3 DETAILED DESIGN PART B	J.T.	G.P.	C.F.	25.08.23
01	ISSUED FOR STAGE 3 DETAILED DESIGN PART B	M.V.	G.P.	C.F.	10.07.23
00	STAGE 3 APPROVED FOR CONSTRUCTION PART A	M.V.	G.P.	C.F.	23.06.23
D	REISSUE FOR STAGE 3 DETAILED DESIGN	M.V.	G.P.	C.F.	05.05.23
No.	Amendment Description	Design by	Verified by	Approved by	Date

SCALES:
1:1000 @ A1
0 10 20 30 40 50 m

KEYPLAN:



CLIENT:



The information shown on this drawing is for the purposes of the Sydney Metro Project only. No warranty is given or implied as to its suitability for any other purpose. The Service Providers accept no liability arising from the use of this drawing and the information shown thereon for any purpose other than the Sydney Metro Project.

SERVICE PROVIDERS	DRAWN	05.12.2023
GAMUDA Australia	DESIGNED	05.12.2023
LAING OROURKE	DRG CHECK	05.12.2023
GHD	DESIGN CHECK	05.12.2023
SMEC	APPROVED	05.12.2023
GHD / SMEC CIVIL		

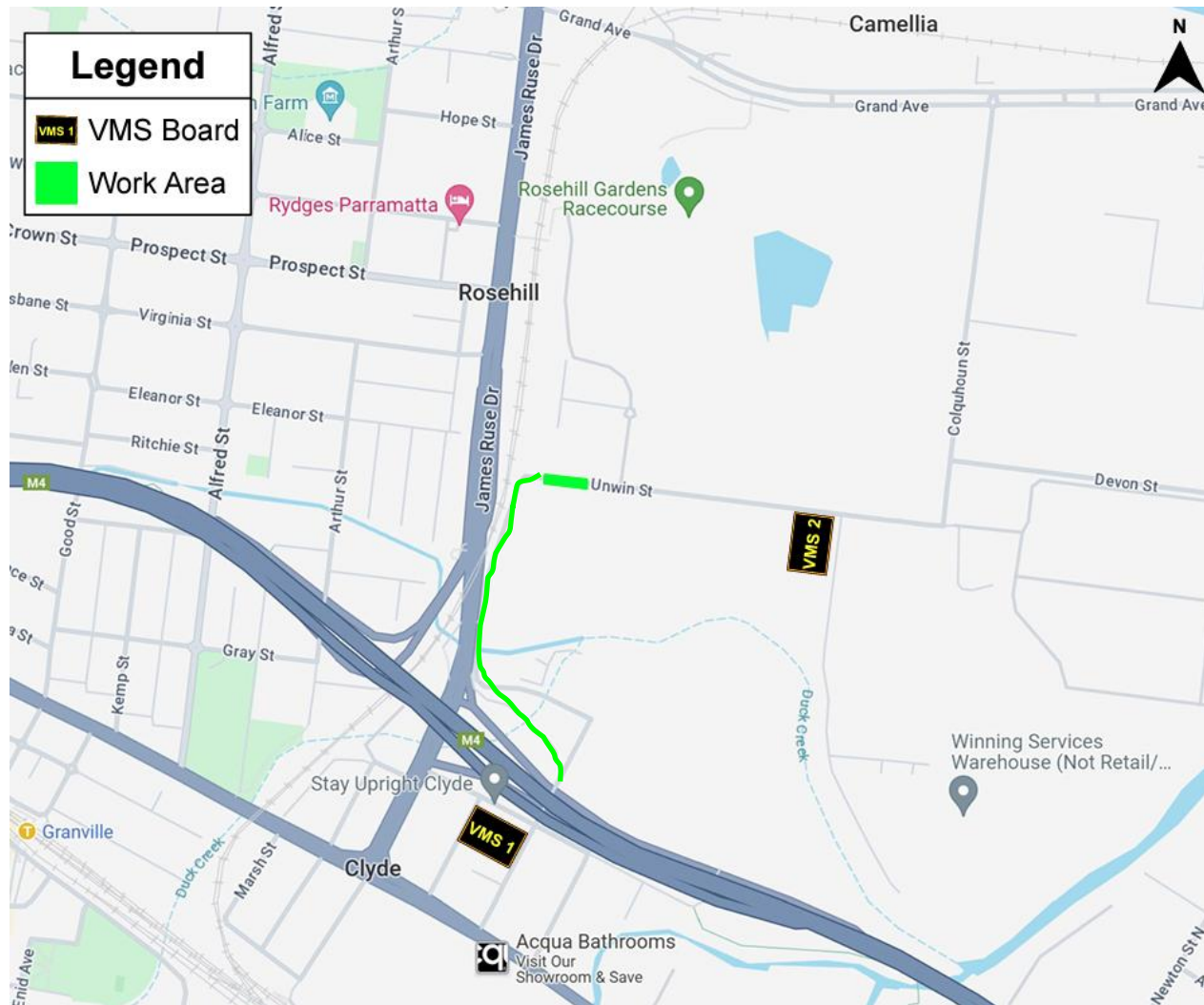
SYDNEY METRO WEST
MAINTENANCE FACILITY - CLYDE
ROADWORKS
SIGNAGE AND LINE MARKING PLAN



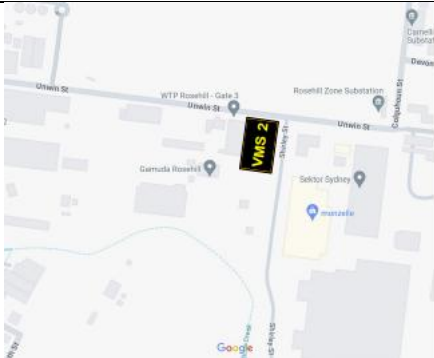
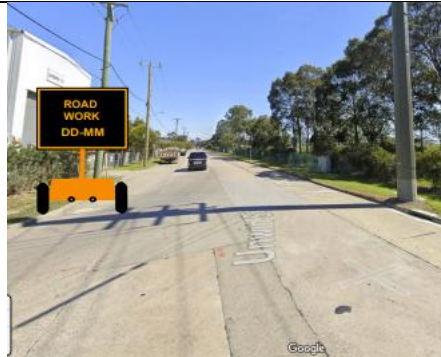
DOCUMENT No:	SHEET: 1 OF 1	©
STATUS: STAGE 3 DETAILED DESIGN (AFC)	EDMS NO:	
DRG No. SMWSTWTP-GLO-CLJ-BD700-RW-DRG-193101	REV 05	VER

A1 Original Co-ordinate System: GDA20/MGA Zone 56 Height Datum: A.H.D. This sheet may be prepared using colour and may be incomplete if copied

NOTE: Do not scale from this drawing.

H PORTABLE VARIABLE MESSAGE SIGNS



VMS Unit	Street location	Specific location	Aerial Location	Street View location	During construction messaging Shift times		Between shift messaging Outside shifts
1	Wentworth St, Clyde	Wentworth St facing south approx. 20-30m south of Martha St			Screen 1	ROADWORK AHEAD UNWIN ST	CHANGED CONDS' AHEAD
					Screen 2	EXPECT DELAYS	PROCEED WITH CAUTION
2	Unwin St, Rosehill	Unwin St facing east approx. 20m west of Shirley St			Screen 1	ROADWORK AHEAD UNWIN ST	CHANGED CONDS' AHEAD
					Screen 2	EXPECT DELAYS	PROCEED WITH CAUTION