

CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Sydney Metro West – Western Tunnelling Package

Unwin St and Kay St 56hr Closure

12th April 2024 – 15th April 2024

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Revision History

A	March 2024	IFR to Stakeholders

Document Authorisation

Action Type	Position	Name	Signature	Date Signed
Prepared by	Traffic Manager			05/03/2024
Reviewed by	Logistic Project Manager			05/03/2024
<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	Deputy Project Director			05/03/2024

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.

Contents

1.1	Purpose	4
1.2	Clyde/Rosehill Construction Traffic Management Plans	4
1.3	56hr Day to Day Activities	5
2	SITE OPERATIONS	6
2.1	Operating Conditions	6
2.2	Working Hours	6
2.3	Impacts on Properties and Utilities	6
2.4	Community Consultation	7
2.5	Emergency Services	7
2.6	Traffic Guidance Schemes	8
3	56HR SHUT DOWN.....	8
3.1.1	Road Safety Barrier Systems	8
3.1.2	Variable Message Signs (VMS)	8
3.1.3	Pedestrian and Cyclist Impacts	9
3.1.4	Signage and Speed limit changes	11
3.2	Emergency and Incident Management	13
3.3	On-Site Contacts	13
4	APPENDIX A – TGS’S	14
5	APPENDIX B – DESKTOP RSA	15
6	APPENDIX C – STAKEHOLDER CONSULTATION	16
7	APPENDIX D – HOUR BY HOUR PROGRAM FOR 56-HOUR SHUT-DOWN.....	17
8	APPENDIX E - VMS STRATEGY FOR 56-HOUR SHUT	18
9	APPENDIX F – ROAD SAFETY AUDIT FOR STAGES 1 - 3	19

List of Tables

Table 1	56-Hour Shutdown Dates	8
Table 2	Clyde/Rosehill Site Contacts	13

List of Figures

Figure 1	Kay St and Unwin St Closure.....	6
Figure 2	Rosehill Gardens Racecourse Gate 2 Access – Unwin St.....	7
Figure 3	Wentworth St and M4 Underpass Footpath Diversions Overview	10
Figure 4	M4 Motorway Pedestrian Underpass Closure	10
Figure 5	Unwin Street Stage 6 post 56hr closure	12

1.1 Purpose

This document has been prepared to assist GLC with the implementation of the 56hr road closure of Unwin St and Kay St.

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 56hr closure works including but not limited to motorists, pedestrians, cyclists, public transport users, local residents, property owners, business owners and workers/ staff along Unwin Street and Kay St during the 56hr traffic diversion for construction of stages 4 through to Stage 6

1.2 Clyde/Rosehill Construction Traffic Management Plans

Plan #	Plan name	Description	Status
SMWSTWTP-GLO-1NL-NL000-TF-PLN-00001	Project Wide CTMP	Overarching Traffic Management Plan	Approved
SMWSTWTP-GLO-CLJ-TF-PLN-000001	Clyde/Rosehill Site Establishment	For works to establish the Clyde/Rosehill sites	Approved
SMWSTWTP-GLO-CLJ-TF-PLN-000004	Clyde/Rosehill Site Operations	Site Operating Conditions at Clyde/Rosehill	Approved
SMWSTWTP-GLO-CLJ-TF-PLN-000005	Unwin ST and Kay St 56hr Closure	Stage 1A, Stage 1B, Stage 2, and Stage 3 road alignment and associated traffic switch	Approved
SMWSTWTP-GLO-CLJ-TF-PLN-00000X	Unwin ST and Kay St 56hr Closure	Stage 4, Stage 5 and Stage 6 road alignment and associated traffic switch	Pending Approval
Plans have 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 56hr Day to Day Activities

During the 56hr Closure construction staging from Stage 3 through to Stages 4 to Stage 6, below is a brief indication of what works are planned on each day:

On Friday 12th April at 10pm full road closure of Unwin St and Kay St will be implemented, once all Traffic Control Measures, traffic diversions are in place for the closure the following are to occur day to day:

Friday 12/04 10:00pm – 11:59pm;

- Installation of Traffic Control,
- Line marking removal.

Saturday 13/04 12:00am – 11:59pm;

- Removal of existing road at tie-ins
- Removal of existing kerbs and footpath
- Break out and removal of existing AC.
- Excavate to level, confirmation of subgrade at tie-ins
- FRP Kerb
- Northern Tie-in Drainage line
- Southern Tie-in Drainage line
- Place and compact fill and road base layers

Sunday 14/04 12:00am – 11:59pm;

- Place and compact fill and road base layers
- FRP Kerb
- Placement of AC
- Installation of signage and gates
- Installation of temporary fencing to ensure site is secure.
- Installation of Barriers
- Line marking tie in areas on Wentworth St and Unwin St
- Clearing of work areas to ensure road is clear.
- Construct temporary MSF Compound access ramps

Monday 15/04 12:00am – 5:00am;

- Contingency for fix up works.
- Removal of Traffic Control

Refer to [Appendix C](#) for Hour by Hour break down.

2 Site Operations

2.1 Operating Conditions

The 56hr Closure will close Unwin St at the Shirley St Intersection and Kay St at Wentworth St and Martha St intersection shown in [Figure 1](#). Vehicle access to and from the construction site will be managed at each closure point by Traffic Control to maintain a safe access and egress.

General traffic will be detoured around the closure area as per detour routes refer to [Appendix A](#).

Higher mass vehicles access will be directed to use Shirley St turnaround point refer to [Appendix A](#)



Figure 1 Kay St and Unwin St Closure

2.2 Working Hours

The closure for the traffic switch is planned for the following 56hr Period:

2200 Friday 12th April 2024 to 0500 Monday 15th April 2024

2.3 Impacts on Properties and Utilities

During the 56hr closure the following business will be affected:

- ATC (Australian Turf Club),
- Stay Upright Clyde
- Courier Routes (Winning services Warehouse, Courier Please & Team Global Express)

GLC will hold a discussion with the affected business's closer to the date and advise access will be maintained via traffic control, additional signage will be provided stating that the businesses are still open.

Courier's routes will be advised to use alternated route and provided map of route prior to closure.

Post opening of the road after the 56hr closure the following event(s) will be on:

- NSW Caravan, Camping & Holiday Supershow 2024

Event takes place on the following dates 16th April – 21st April 2024.

it is expected that an increased number of deliveries to the racecourse at Gate 2 for the event will take place over the 56hr shutdown weekend.

Refer to Figure 2 for Gate 2 Access Point.

GLC will maintain access to Gate 2 along Unwin St, with the following measures in place:

- Sufficient Traffic Controller presence at closure points & gate access, to cater for event deliveries if required.



Figure 2 Rosehill Gardens Racecourse Gate 2 Access – Unwin St

2.4 Community Consultation

Community Consultation by GLC will be undertaken by TTLG & TCG Meetings established by Sydney Metro for the project,

2.5 Emergency Services

Once all Approvals have been acquired by stakeholders, Relevant Emergency Services will be informed as part of GLC Stakeholder engagement, as per 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.

2.6 Traffic Guidance Schemes

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 A](#).

3 56hr Shut Down

The works associated with 56hr Shut down of Unwin Street and Kay St for Road re-alignment, captured in this CTMP, have been separated into three (3) construction stages, as identified in Table 1

The construction works associated with each stage are completed during the 56hr closure refer to [Appendix A](#) for the TGS and proposed detour routes required for the implementation of the road closure.

Table 1 56-Hour Shutdown Dates

Stage ID	Activity	Proposed Dates
Stage 4 to Stage 6	Complete road re-alignment, including line marking and signage installation/re-locations at Kay St and Unwin St onto the newly constructed road pavement. Installation of safety barrier systems. Form and pour new footpaths on the eastern side of Wentworth Street.	10pm 12 th – 5am 15 th April 2024
		10pm 26 th – 5am 29 th April 2024 (contingency)

3.1.1 Road Safety Barrier Systems

Upon Completion of the 56hr closure GLC will have installed TfNSW approved Temporary Road Safety Barrier. This system is specific for a MASH TL3 containment level (100km/h impact speed) which is conservative for the design speed of this project which is 40km/h however the barriers selected are to the reduced dynamic deflection performance to enable the construction sites working width to be safely maximised as much as possible.

3.1.2 Variable Message Signs (VMS)

The use of A, B and C Class trailer mounted VMS, and Overhead VMS shall be implemented during the construction period. The locations of the VMS and the messages displayed must be agreed with TfNSW. The VMS shall be located at prominent locations on all approaches to Unwin St and Kay St. The primary function of the VMS is to inform road users of any changes to traffic conditions, changes to road conditions and any potential delays.

The placement locations of the VMS must be endorsed by TfNSW and approved by TfNSW.

During the period of operation of the road occupancy, the VMS will be continuously operated to notify all road users of the closure and its effects. The VMS will have a remotely controlled twenty-four-hour message change facility to enable you to make immediate changes to the messages on the VMS. The VMS must be installed at a minimum of seven (7) days to the day of the implementation of the road occupancy, as to provide advance notification to all road users of the future road occupancy.

VMS will be left once traffic switch has been completed during the 56hr closure for 2 weeks as to provide advance notification to all road users on changes of road.

Refer to VMS Strategy in [Appendix E](#) for VMS that will remain for the 2 weeks after

3.1.3 Pedestrian and Cyclist Impacts

During the 56-hour shut down footpaths will be closed from Wentworth St-Martha St intersection through to Unwin St-Shirley St intersection. Access through the area will be by exception under GLC escort.

Upon reopen of Unwin St and Kay St the western footpath along Wentworth Street, between Martha Street and Kay Street, and the pedestrian underpass of the M4 Western Motorway, between James Ruse Drive and Unwin Street, will be permanently closed.

Pedestrian wayfinding signage will be installed as per the long-term footpath closure TGS in [Appendix A](#) and as shown indicatively in Figure 3.

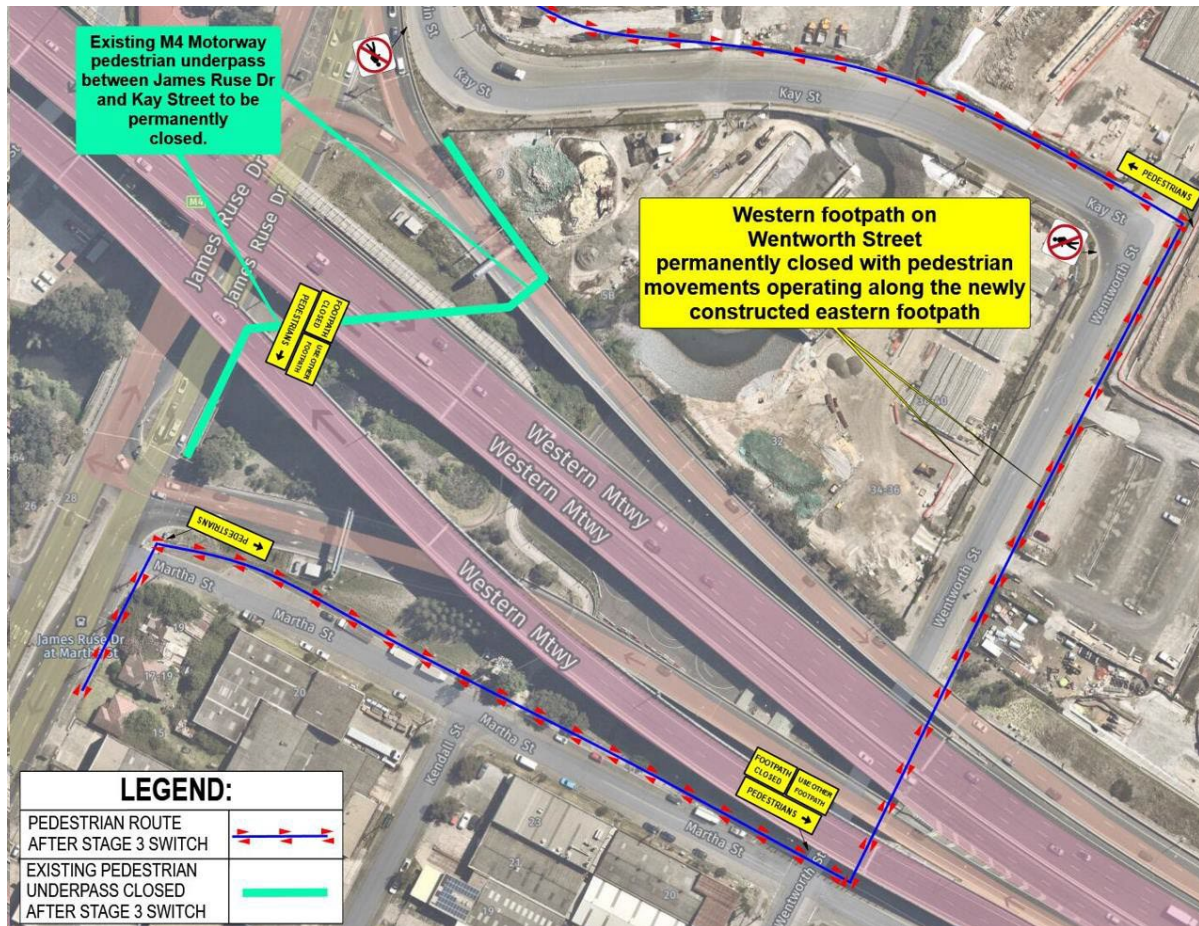


Figure 3 Wentworth St and M4 Underpass Footpath Diversions Overview

The M4 Motorway pedestrian underpass as shown in Figure 4 will be closed long-term. A waterfilled barrier will be installed across the pedestrian access with a pedestrian fence installed on top to prevent pedestrian access to the footpath.



Figure 4 M4 Motorway Pedestrian Underpass Closure

Cyclist using the road network will be unimpacted once road is re-open, and cyclists under 16 years using the footpath will be required to follow the same detour as pedestrians.

3.1.4 Signage and Speed limit changes

During the 56-hour GLC will be installing new signage along Wentworth St, Kay St & Unwin St, which will be out for the long-term during construction,

As part of the signage being installed a long-term speed reduction will be implemented, reducing the speed down to 40km/h RW through the area.

Refer to [Figure 5](#) for Stage of works post 56hr Shutdown as per design drawing SMWSTWTP-GLO-CLJ-TD700-TW-DRG-512001 - 512122



A
6/03/2024



LAING O'ROURKE

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3.2 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) and Customer Journey Planning.

3.3 On-Site Contacts

Table 2 Clyde/Rosehill Site Contacts

4 Appendix A – TGS's

TGS#	Location	Between		Time of Day	Traffic control	Works	Impacts
TGS-61681-GLC 151	Kay St & Unwin St	Wentworth St	Shirley St	56hr Closure	Road Closure	Traffic Switch to Stage 6	Multiple Detours involving Traffic Delays
TGS-61681-GLC 155	Kay St	Wentworth St	Unwin St	Day/ night	Pedestrian management	pavement works – Northern side	Temporary Footpath for pedestrian access around works on existing pavement
TGS-61681-GLC 157	Shirley St	Unwin St	Shirley St	Day/ night	Swept Path	Vehicle's using the turn around site on Shirley St	NA

Locality Map

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	

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:

- Leggenda**
- 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
 - 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	

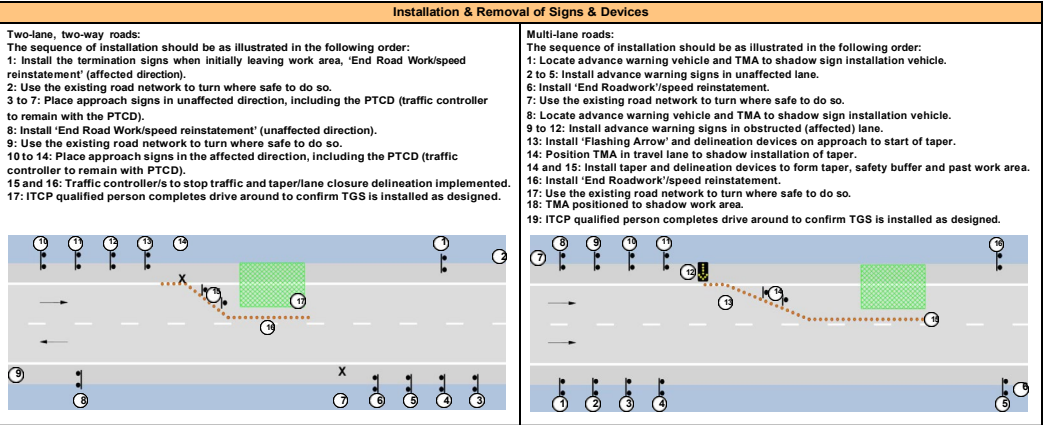
Cyclist Management Options Analysis			
Options Available	THROUGH	PAST	AROUND
Options Selected		Selected	

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	
		Single Lane Shuttle Flow	
THROUGH	Vehicles through work zone	Temporary Road Closure / Hold & Release / Local Traffic Access / Pilot Vehicle	Selected

Edge Clearances

Clearance must be measured to the traffic side edge of the delineating device

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 puporses	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 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

Issue	Desg	Appd	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed By:	Exp: N/A	Signature:	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	PWZTMP:	TCT1010645			
02	AC	PL	07/11/2023 13:15	Amended as per comments	Works Location:					
03	AC	04	AC	PL 07/11/2023 16:30	PL 13/11/2023 12:06	Amended as per	comments	Amended	detour	

Wentworth to
Unwin
Street
- Clyde

Project
Name:

Project Description:

Client Contact: Daniel Kelly

Contact Number: 0437 315 649

05

Scale: 1 : 750

Original Size A3

Sydney Metro Werstern Tunnelling

Construction Stage 6 - Traffic Switch 4

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 PTCds 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. |

More Effective




Less Effective

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				

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	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.	4	1	13
Departures										
2.0	Stop bat used instead of PTCD	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	Y	- 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	N	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 R/W 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	N	- 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 By: PWZTMP: TCT1010645 Exp: N/A Signature: AC			Date of Approval:	Page 2 / 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 By: PWZTMP: TCT0058486 Exp: N/A Signature: 			13/11/2023	
02	AC	PL	07/11/2023 13:15	Amended as per comments	Works Location:		Client Company: Gamuda Australia				
03	AC	PL	07/11/2023 16:30	Amended as per comments	Wentworth to Unwin Street - Clyde		Client Contact: Contact Number: 				
04	AC	PL	13/11/2023 12:06	Amended detour	Project Name:						
05					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.						

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 TNSW 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 Ground 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 on 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 initiated 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

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.

4 - Road	TGS Designed By: PWZTMP: TCT1010645 Exp: N/A Signature: 			Date of Approval: 13/11/2023	Page 3 / 10
	TGS Approved By: PWZTMP: TCT0058486 Exp: N/A Signature: 				
	Client Company: Gamuda Australia Client Contact: Contact Number:			 	
Switch 4	d 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	Design	Appel	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed By:	TGS Approved By:	Contact Number:	Exp:	Signature:	Date of Approval:	Page 4 / 10
01	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	Client Company: Gamuda Australia	PWZTMT: TCT0058486	Exp: N/A	Signature:	13/11/2023		
02	AC	PL	07/11/2023 13:15	Amended as per comments	Work Location: LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	Client Company: Gamuda Australia	PWZTMT: TCT0058486	Exp: N/A	Signature:	13/11/2023		
03	AC	PL	07/11/2023 13:15	Amended as per comments	Work Location: LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	Client Company: Gamuda Australia	PWZTMT: TCT0058486	Exp: N/A	Signature:	13/11/2023		
04					Project Name: Sydney Metro Werstern Tunnelling	Project Description: Construction Stage 6 - Traffic Switch 4						
05												
03	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	Client Company: Gamuda Australia	PWZTMT: TCT0058486	Exp: N/A	Signature:	13/11/2023		

05

Client Contact:

Project Description:

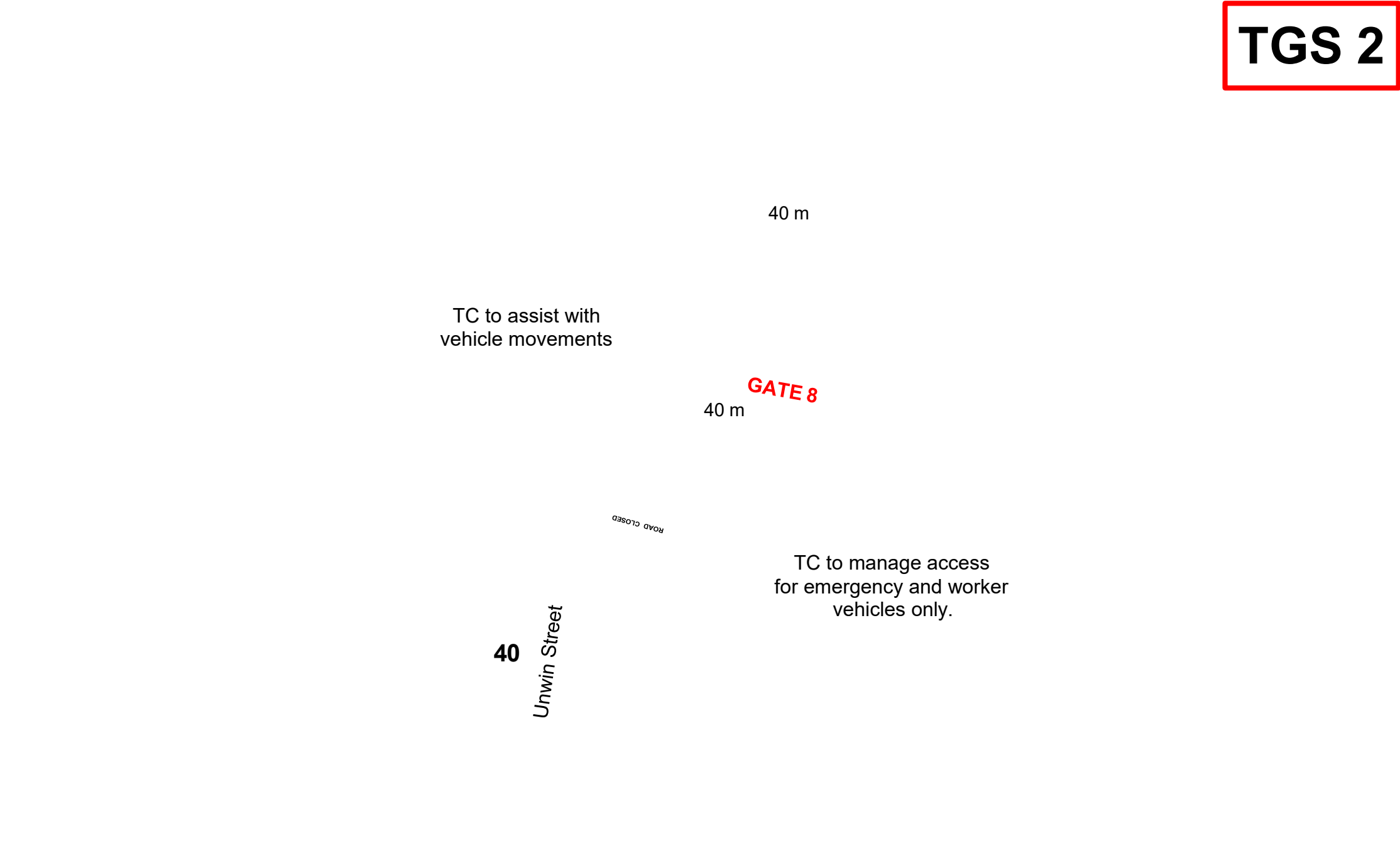
Contact Number: 9

Sydney Metro Werstern Tunnelling

Construction Stage 6 - Traffic Switch 4

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Original Size A3



05

Contact Number:

Project Description:

Sydney Metro Werstern Tunnelling

Construction Stage 6 - Traffic Switch 4

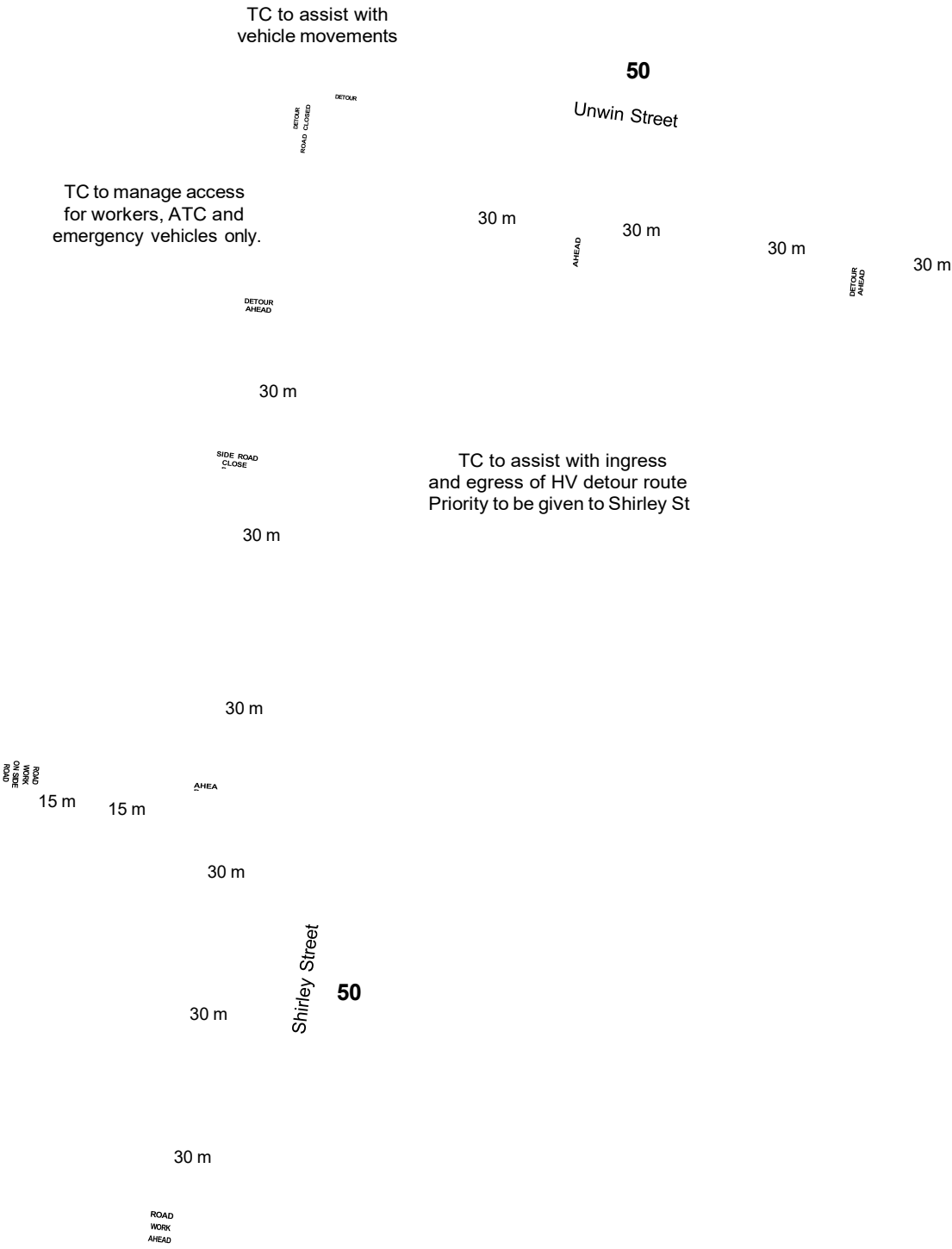
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Scale: 1 : 750

Original Size A3

Original Size A3





01	AC	PL	17/10/2023 22:30
02	AC	PL	07/11/2023 13:15
03	AC	PL	07/11/2023 16:30
04	AC	PI	13/11/2023 12:06

Original Issue
Amended as per comments

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

TGS Ap
Client Company: Gamuda Australia

PWZTMP: TCT0058486 Exp: N/A Signature:

13/11/2023

Amended as per comments
Amended detour

Wentworth to Unwin Street - Clyde
Project Name:

Client Contact

Contact Number:

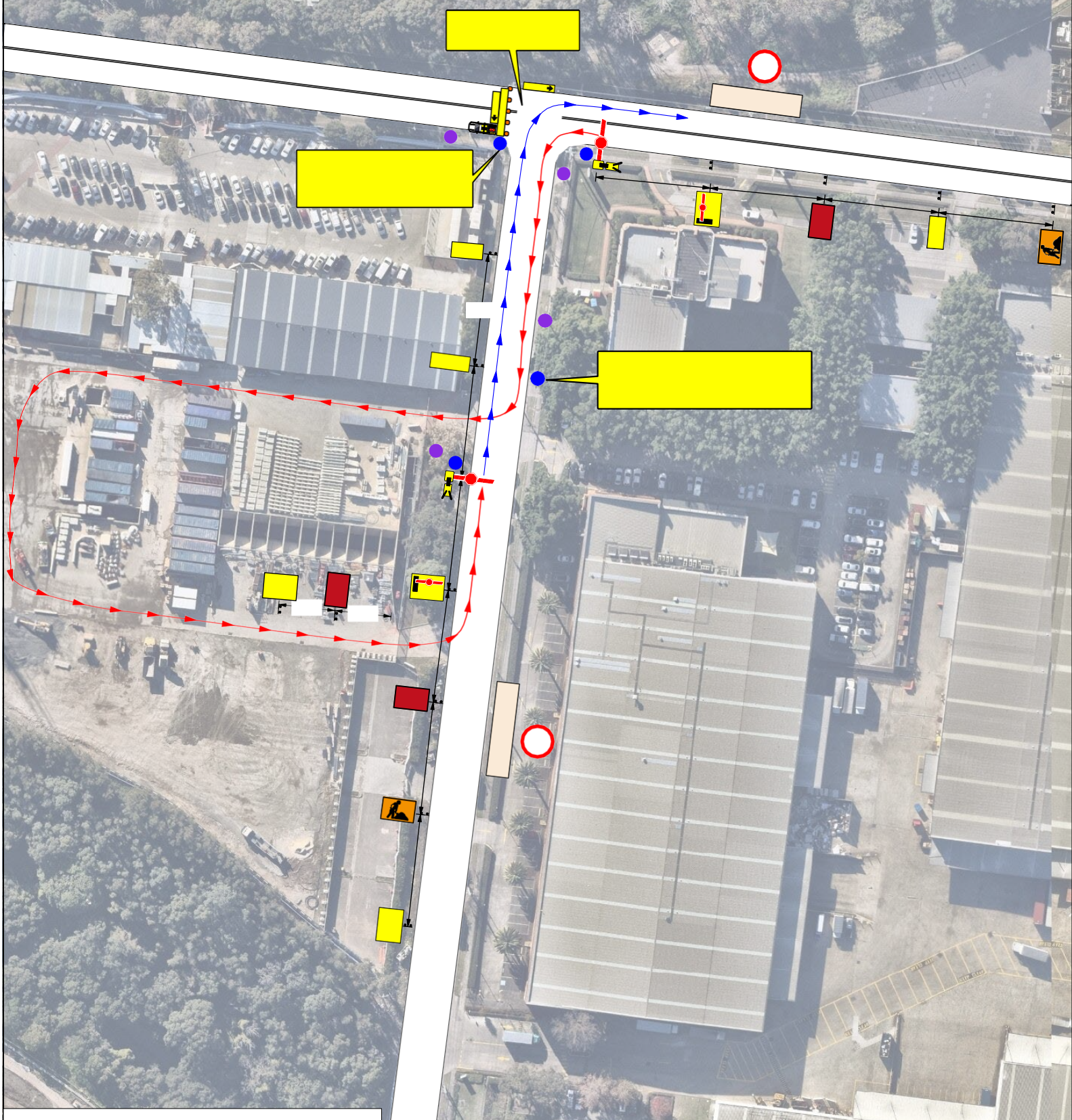
Sydney Metro Werstern Tunnelling

Construction Stage 6 - Traffic Switch 4

Scale: 1 : 750

Original Size A3

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[illegible]

TC to manage access
for workers, ATC and
emergency vehicles only.

Colquhoun Street

ROAD CLOSED

Colquhoun Street

ROAD
WORK
AHEAD

AREA

Devon Street

ROAD
WORK
AHEAD

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

Issue	Desg	Appr	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 15:49	Amended as per comments
04				
05				
03	AC	PL	07/11/2023 16:20	Amended as per comments

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

TGS Designed By:	Alex Pazzan	PWZTMR	Exp: 10/0645	Exp: N/A	Signature:	Date of Approval:	Page 8 / 10
TGS Approved By:	Peter Lozano	PWZTMR	TCT0058486	Exp: N/A	Signature:	13/11/2023	N
Client Company:	Gamuda Australia	PWZTMR	TCT0058486	Exp: N/A	Signature:	13/11/2023	N
Client Contact:	Daniel Kelly	Contact Number:	0437 315 649				
Client Company:	Gamuda Australia						
Amended as per comments							

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.

05

Project Description:

Client Contact:

Contact Number:

Sydney Metro Western Tunnelling

Construction Stage 6 - Traffic Switch 4

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Scale: 1 : 750

Original Size A3

[illegible]AC

Wentworth Closure detour Route (From Wentworth To Unwin)

Detail D

Detail C

Detail F

Detail E

Detail A

Detail B

Detail D

Detail B

Detail C

TOUR

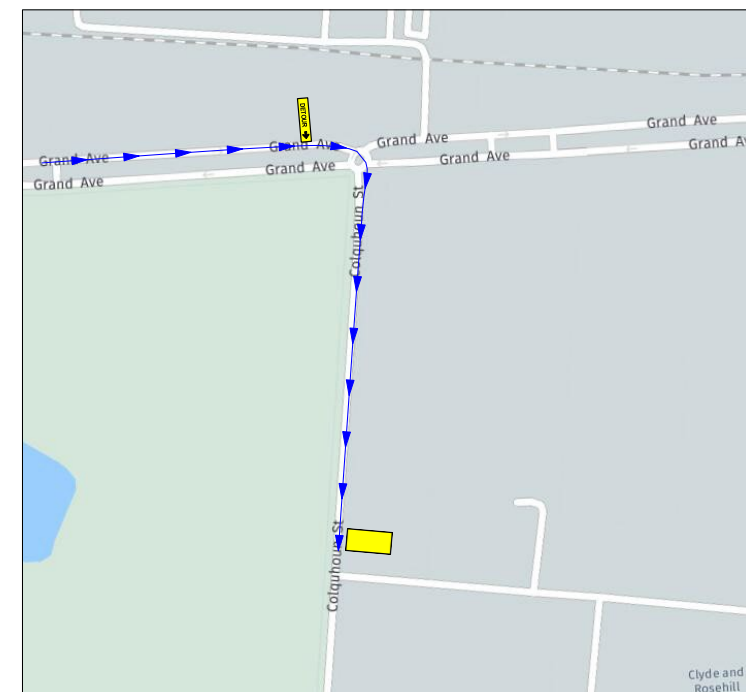
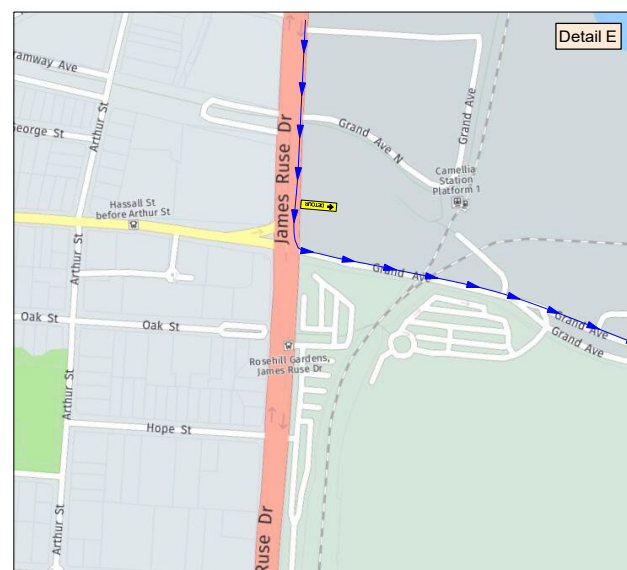
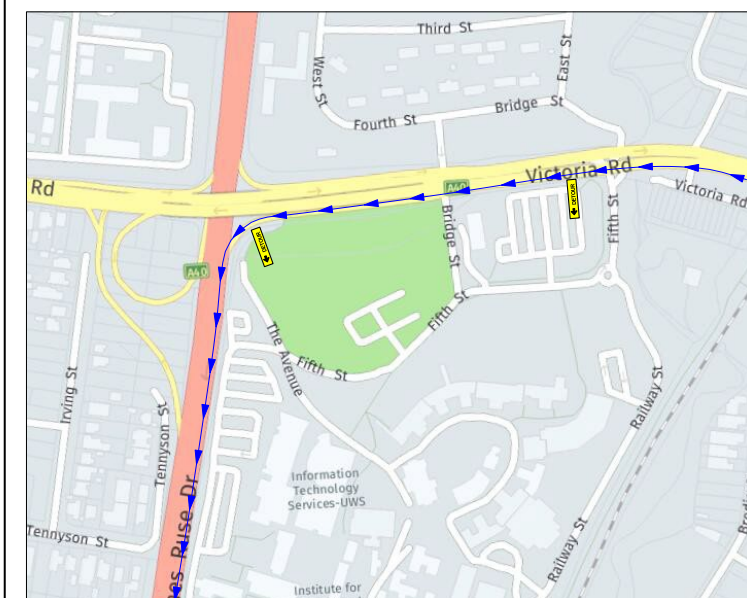
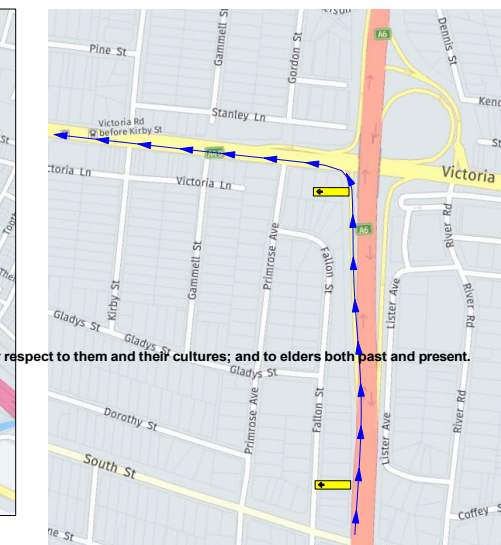
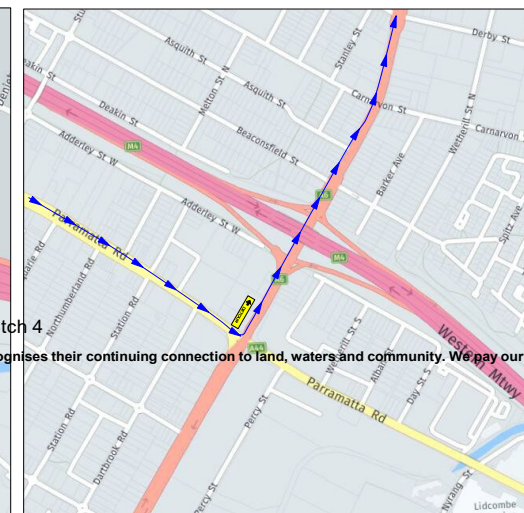
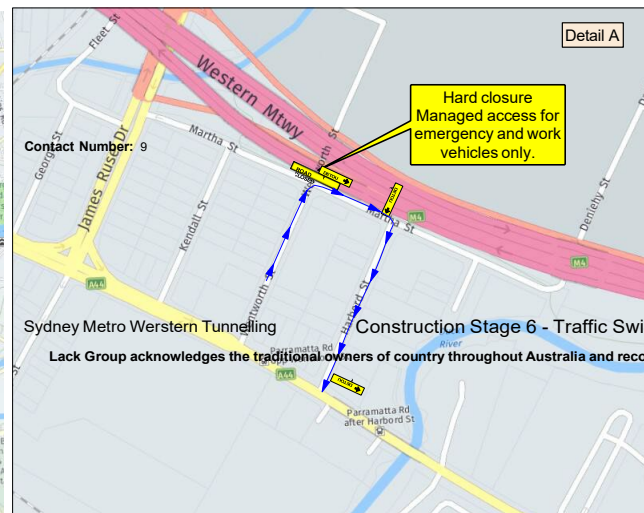
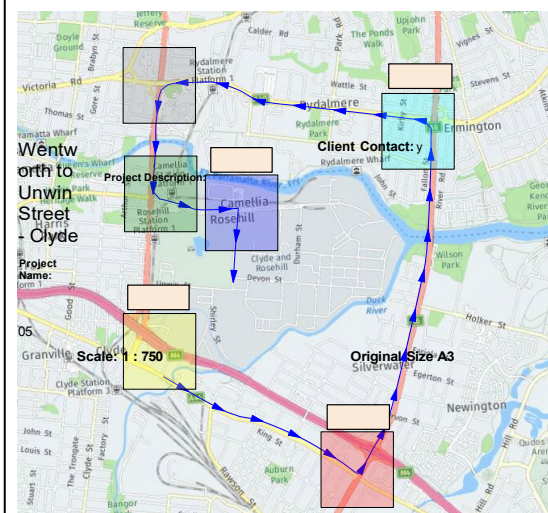
DETOUR

Detail F

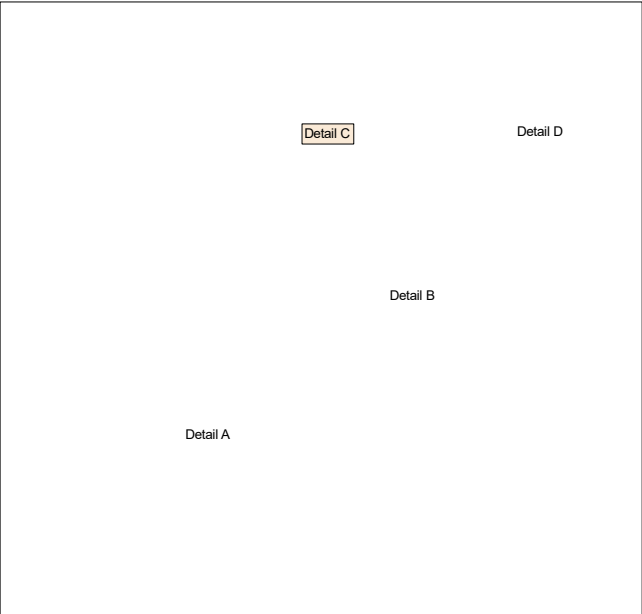
END
DETOUR

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

Issue	Desg	Appl	Date & Time	Amendment Description	TGS Name & Number:	TGS Designed By:	PWTZTMRCT	PWZTMP:	Exp:	Signature:	Date of Approval:	Page # / 10
01	AC	PL	17/10/2023 22:30	Original Issue	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	Alex Petrovski	PWTZTMRCT	EXP: 19/0645	Exp: N/A	Signature:	13/11/2023	
02	AC	PL	07/11/2023 13:15	Amended as per comments	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	Peter Lozano	PWZTMP:	TCT0058486	Exp: N/A	Signature:	13/11/2023	N
03	AC	PL	07/11/2023 22:30	Amended as per comments	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	Gamuda Australia	PWZTMP:	TCT0058486	Exp: N/A	Signature:	13/11/2023	N
04	AC	PL	07/11/2023 13:15	Amended as per comments	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road	Daniel Kelly	Contact Number:	0437 315 649				
05	AC	PL	17/10/2023 22:30	Original Issue	Sydney Metro Werstern Tunnelling	Construction Stage 6 - Traffic Switch 4						
06	AC	PL	17/10/2023 22:30	Original Issue	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.							



Unwin St Closure detour Route (From Unwin To Wentworth)



Detail A

Detail B

Detail C

Detail D

Detail B

Detail A

Detail D

Detail C

detour

road

road

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

Issue	Desg	Appr	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 13:30	Amended as per comments
04				
05				
03	AC	PL	07/11/2023 16:30	Original Issue

Scale: 1 : 750

Original Size A3

TGS Name & Number:	LGP - 63822 - GLC 151 - Wentworth to Unwin St - Clyde - CS6 TS4 - Road
Works Location:	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
PL	13/11/2023 17:28

TGS Designed By: Alec Czaplinski	PWZTMP: PWZTMP: TCT0058486	Exp: N/A	Signature:	Date of Approval:	Page 10 / 10
TGS Approved By: Peter Lozano	PWZTMP: TCT0058486	Exp: N/A	Signature:	13/11/2023	N
Client Company: Gamuda Australia	PWZTMP: TCT0058486	Exp: N/A	Signature:	13/11/2023	N
Client Contact: Daniel Kelly	Contact Number: 0437 315 649				
Client Company: Gamuda Australia					
Comments: Amended detour					
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.					

05

05

Scale: 1 : 750

Sydney Metro Werstern Tunnelling

Leak 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.

Construction Stage 6 - Traffic Switch 4

Client Contact:

Contact Number:

Project Description:

Original Size A3

Lack Group acknowledges the trade

AC



Locality Map

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

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:

Legends
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 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	
		Single Lane Shuttle Flow	
THROUGH	Vehicles through work zone	Temporary Road Closure / Hold & Release / Local Traffic Access / Pilot Vehicle	

Edge Clearances

Clearance must be measured to the traffic side edge of the delineating device

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

Installation & Removal of Signs & Devices	
<p>Two-lane, two-way roads:</p> <p>The sequence of installation should be as illustrated in the following order:</p> <p>1: Install the termination signs when initially leaving work area, 'End Road Work/speed reinstatement' (affected direction).</p> <p>2: Use the existing road network to turn where safe to do so.</p> <p>3 to 7: Place approach signs in unaffected direction, including the PTCD (traffic controller to remain with the PTCD).</p> <p>8: Install 'End Road Work/speed reinstatement' (unaffected direction).</p> <p>9: Use the existing road network to turn where safe to do so.</p> <p>10 to 14: Place approach signs in the affected direction, including the PTCD (traffic controller to remain with PTCD).</p> <p>15 and 16: Traffic controller/s to stop traffic and taper/lane closure delineation implemented.</p> <p>17: ITCP qualified person completes drive around to confirm TGS is installed as designed.</p>	<p>Multi-lane roads:</p> <p>The sequence of installation should be as illustrated in the following order:</p> <p>1: Locate advance warning vehicle and TMA to shadow sign installation vehicle.</p> <p>2 to 5: Install advance warning signs in unaffected lane.</p> <p>6: Install 'End Roadwork/speed reinstatement'.</p> <p>7: Use the existing road network to turn where safe to do so.</p> <p>8: Locate advance warning vehicle and TMA to shadow sign installation vehicle.</p> <p>9 to 12: Install advance warning signs in obstructed (affected) lane.</p> <p>13: Install 'Flashing Arrow' and delineation devices on approach to start of taper.</p> <p>14: Position TMA in travel lane to shadow installation of taper.</p> <p>14 and 15: Install taper and delineation devices to form taper, safety buffer and past work area.</p> <p>16: Install 'End Roadwork/speed reinstatement'.</p> <p>17: Use the existing road network to turn where safe to do so.</p> <p>18: TMA positioned to shadow work area.</p> <p>19: ITCP qualified person completes drive around to confirm TGS is installed as designed.</p>

Dimension "D" (Main Roads)	70, 50, 40	metres
Dimension "D" (Minor Roads)	70, 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 puporses	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

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 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				

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	Y	<ul style="list-style-type: none">- Design and implement TGS in accordance with TCAWS, AS1742.3 and AGTMM.- 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 PTCD	Traffic controller hit by vehicle	5	4	24	N	<ul style="list-style-type: none">- 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	<ul style="list-style-type: none">- 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	<ul style="list-style-type: none">- Always install RWA (T1-1) on long-term road work sites- Consider using VMSs	3	3	12
3.2	Delays or Queue extends beyond advanced warning signs	Motorist collides with end of queue	4	4	20	N	<p>Always:</p> <ul style="list-style-type: none">- 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) <p>Consider:</p> <ul style="list-style-type: none">- Working outside peak periods- Liaising with TMC for assistance with traffic signal phasing- Using VMSs- 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	<p>Always:</p> <ul style="list-style-type: none">- 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 <p>Use Traffic Control to manage changed traffic conditions where required.</p> <ul style="list-style-type: none">- Check setup before commencing work- Ensure appropriate permission for any detours- Speed reduction installed to suit road conditions- Consider using VMSs	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	N	- 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	N	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	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. - 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 By: i	PWZTMP: TCT1010645	Exp: N/A	Signature: AC	Date of Approval:	Page 2 / 5
01	AC	GA	27/10/2023 14:05	Original Issue	LGP - 66688 - GLC 155 - Unwin to Martha - CS3 - Pedestrian detour	TGS Approved By:	PWZTMP: TCT0027348	Exp: N/A	Signature: [Signature]	27/10/2023	
02					Works Location:	Client Company:	Gamuda Australia	Client:	 		
03					Unwin St to Martha St and James Ruse Dr	Client Contact:	Contact Number:				
04					Project Name:	Project Description:					
05					Sydney Metro Werstern Tunnelling	Construction Stage 3 - Pedestrian Detour					
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.						

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 TNSW 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 Ground 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 on 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 initiated 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

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.

<p>Client Company: Gamuda Australia</p> <p>Client Contact: _____</p> <p>Contact Number: _____</p>	<p>TGS Designed By: PWZTMP: TCT1010645 Exp: N/A Signature: </p> <p>TGS Approved By: PWZTMP: TCT0027348 Exp: N/A Signature: </p>	<p>Date of Approval: 27/10/2023</p>	<p>Page 3 / 5</p>
	<p>Client:</p> <div style="text-align: center;">   </div>	<div style="text-align: center;">  </div>	
	<p>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.</p>		

PEDESTRIAN
USE OTHER
FOOTPATH
CLOSED

GATE 7

PEDESTRIAN
USE OTHER
FOOTPATH

GATE 6

New gate
(Location may vary)

Existing footpath closed

Existing M4 Motorway
pedestrian underpass
between James Ruse Dr
and Kay Street
permanently closed

To be posted
on footpath and
NOT on M4.

PEDESTRIAN
USE OTHER
FOOTPATH
CLOSED

PEDESTRIAN

Western Motorway

Joins page 4 Joins page 5

James Ruse Dr

PEDESTRIAN

PEDESTRIAN

Permanent footpat

Kendall St

PEDESTRIAN
USE OTHER
FOOTPATH

PEDESTRIAN
USE OTHER
FOOTPATH

PEDESTRIAN
USE OTHER
FOOTPATH

Martha St

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 By: Alec Czarnowski

PWZTMP: TCT1010645

Exp: N

Signature:

Date of Approval:

Page 4 / 5

01 AC GA 27/10/2023 14:05

Original Issue

LGP - 66688 - GLC 155 - Unwin to Martha - CS3 - Pedestrian detour

Works Location:

TGS Approved By: Greg Allsopp
Client Company: Gamuda Australia

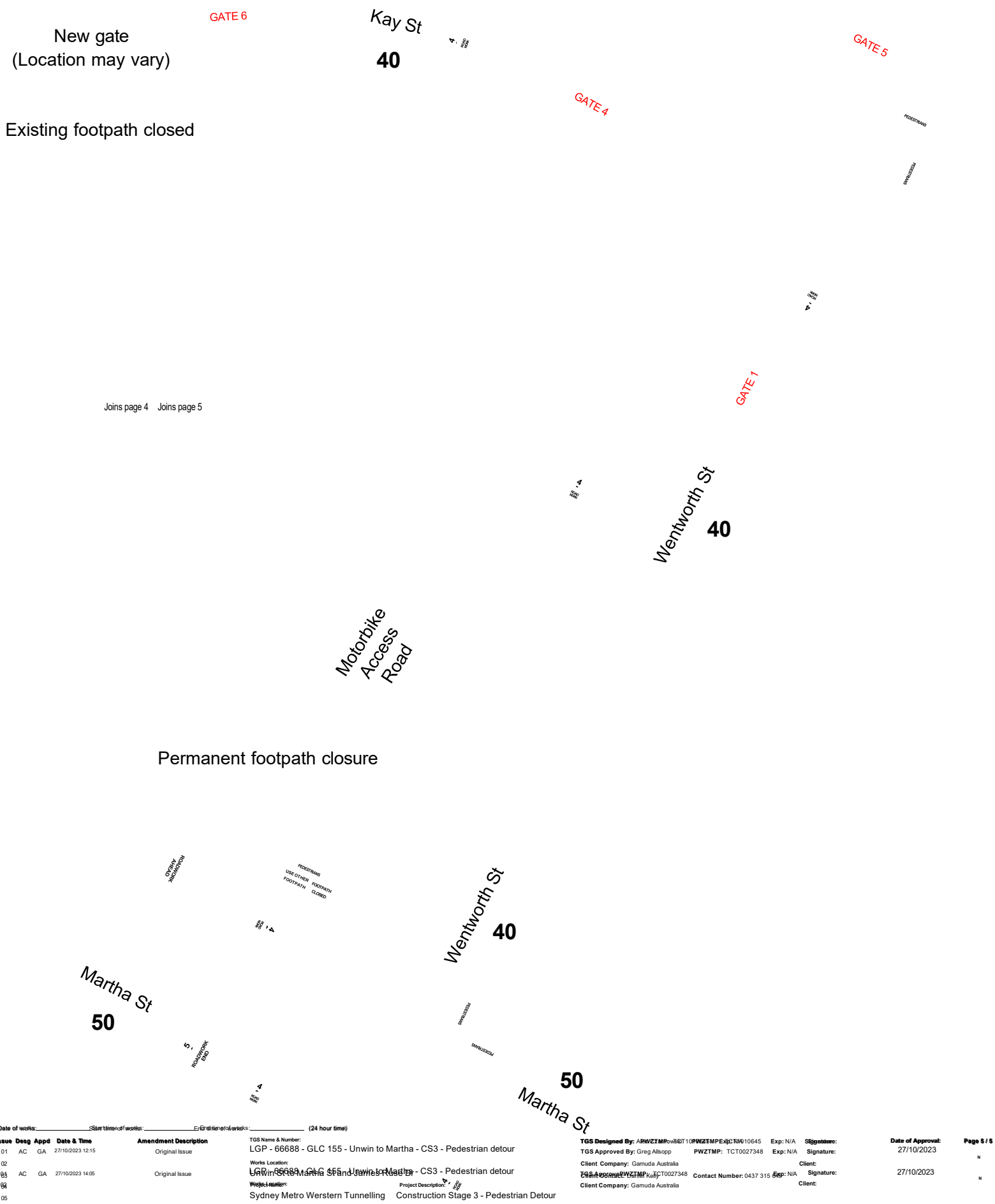
PWZTMP: TCT0027348

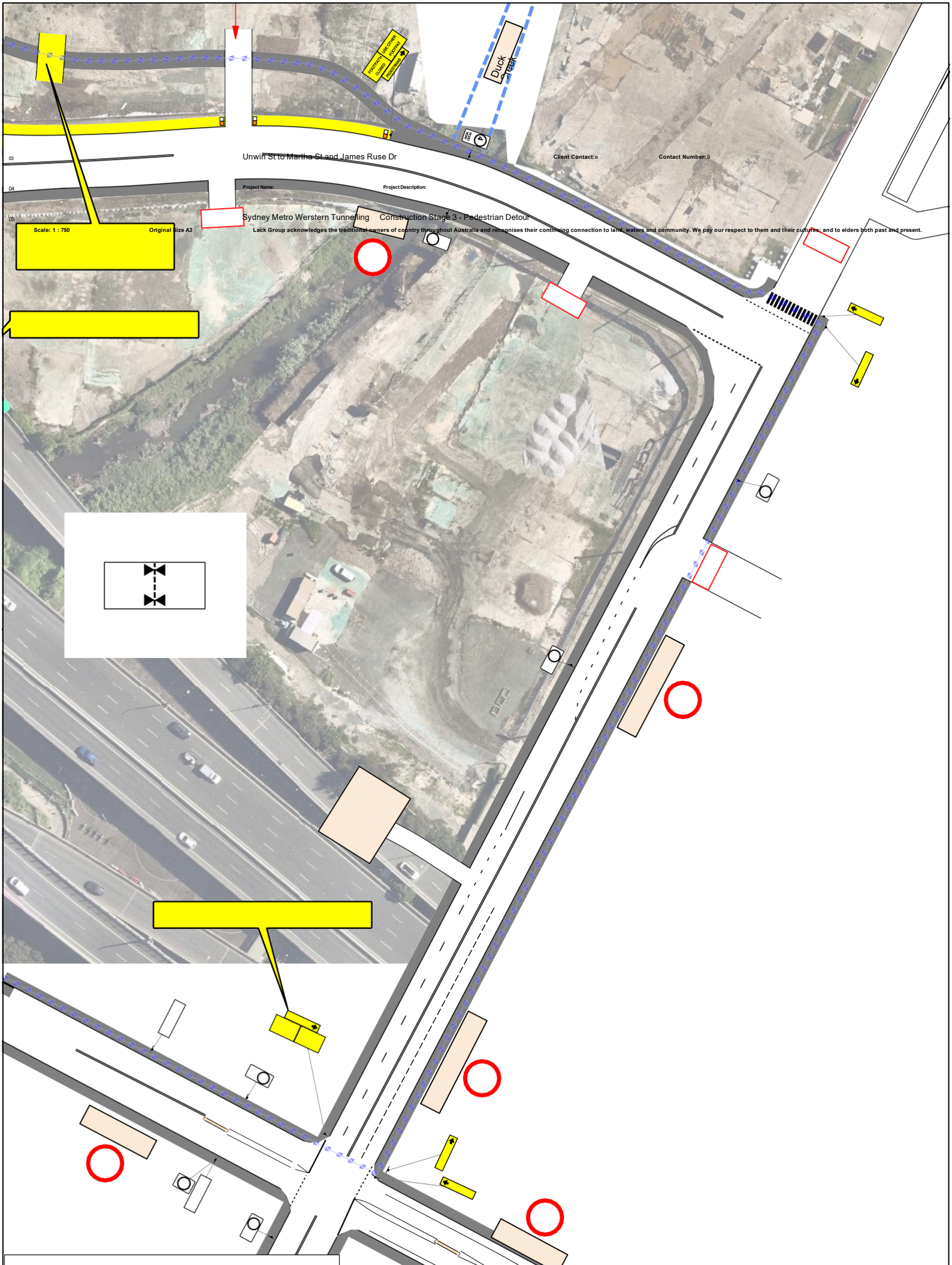
Exp: N/A

Signature:
Client:

27/10/2023

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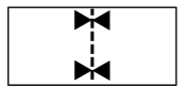
Unwin St to Martha St and James Ruse Dr

Client Contact:

Contact Number:

Project Name: Sydney Metro Western Tunneling Construction Stage 3 - Pedestrian Detour
Project Description: 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.

Scale: 1 : 750
Original size A3



AC



Notes:

1. Swept path analysis has adopted the B-double vehicle with 25.0m length

2. Swept path has been developed based on an aerial image and not from a scaled drawing.

LEGEND

Blue outline on swept path - Vehicle outline

Red outline on swept path - vehicle clearance - clearance is marked at 0.5m on each side

Yellow outline - Gutter edge line

Unwin Street

50

Unwin Street

50

Shirley Street

Vehicle dimensions used:

0.90 8.10 2.00
0.40

1.00 4.00 1.30 0.20 9.40 2.90

B-double (25m)

Length: 25.00 m
Max width: 2.50 m
Lock to lock time: 4.0 s
Max steering angle: 20.69°
Turn radius (curb to curb): 12.50 m
Turn radius (wall to wall): 12.85 m

Issue Desg Appd Date & Time				Amendment Description	TGS Name & Number:	TGS Designed By: PWZTMP: TCT1010645 Exp: N/A	Signature:	Date of Approval:	Page 1 / 1
01	AC	GA	08/11/2023 12:00	Original Issue	LGP - 69246 - SPA - GLC 157 - Unwin St - Rosehill - Swept Path	TGS Approved By: PWZTMP: TCT0027348 Exp: N/A	Signature:	08/11/2023	N
02					Works Location:	Client Company: Sydney Metro Western Tunnelling Package	Client:		
03					Unwin Street x Shirley St - Rosehill				

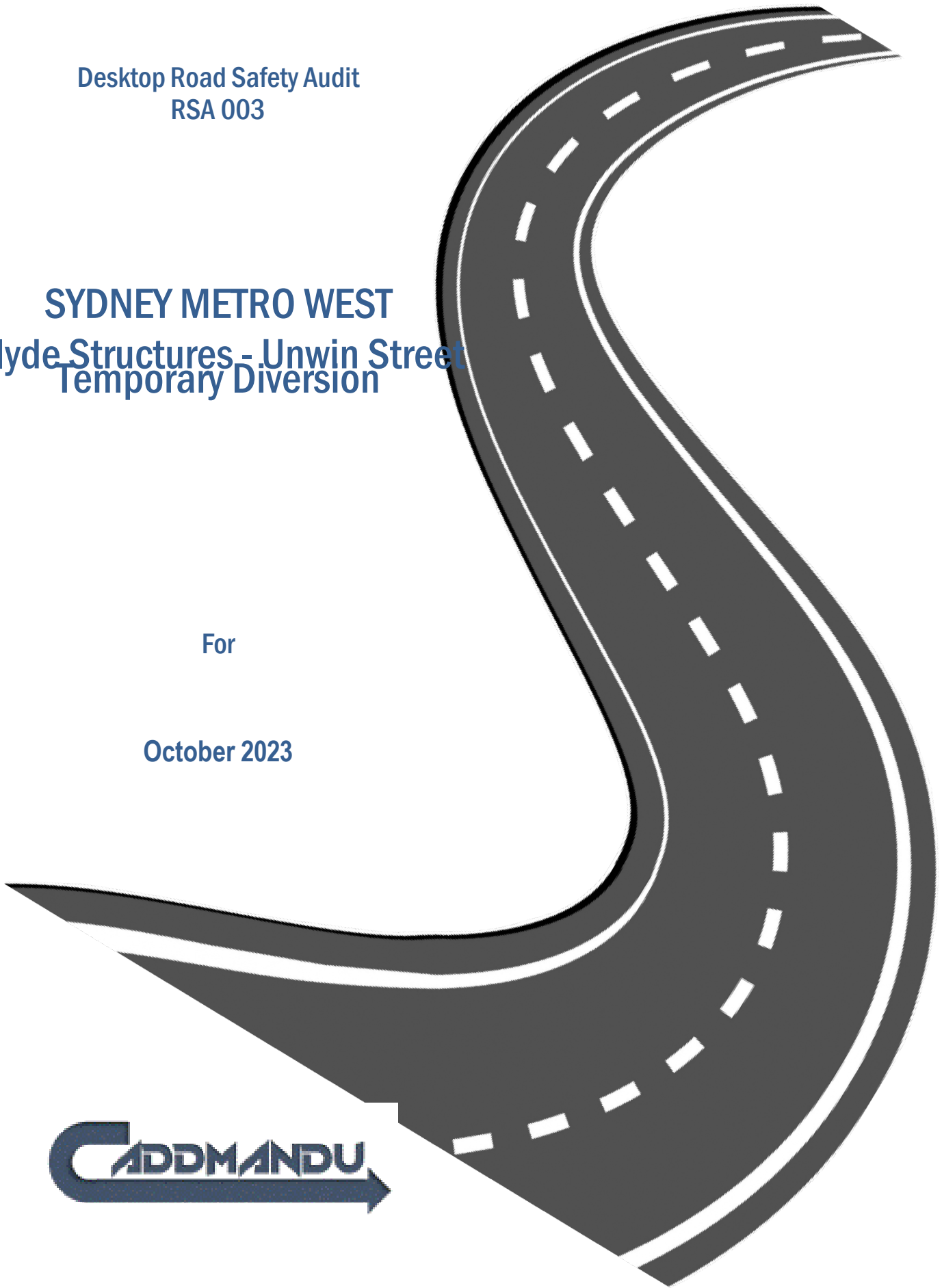
5 Appendix B – Desktop RSA

Desktop Road Safety Audit
RSA 003

SYDNEY METRO WEST
Clyde Structures - Unwin Street
Temporary Diversion

For

October 2023



Document Information Sheet

Edition / Revision No.	
Document Status	
Prepared By	
Reviewed By	
Date	
Issued To	

Disclaimer

This report contains findings and recommendations based on examination of the site and / or relevant documentation. The report is based on the conditions viewed on the day of inspection and is relevant at the time of production of the report. Information and data contained within this report is prepared with due care by the Road Safety Audit Team. While the Road Safety Audit Team seeks to ensure accuracy of the data, it cannot guarantee its accuracy.

Readers should not solely rely on the contents of this report or draw inferences to other sites. Users must seek appropriate expert advice in relation to their own particular circumstances.

The Road Safety Audit Team does not warrant, guarantee or represent that this report is free from errors or omissions or that the information is exhaustive. Information contained within may become inaccurate without notice and may be wholly or partly incomplete or incorrect. Before relying on the information in this report, users should carefully evaluate the accuracy, completeness and relevance of the data for their purposes.

Subject to any responsibilities implied in law which cannot be excluded, the Road Safety Audit Team is not liable to any party for any losses, expenses, damages, liabilities or claims whatsoever, whether direct, indirect or consequential, arising out of or referable to use of this report, however caused whether in contract, tort, statute or otherwise.

StreetWise Road Safety & traffic Services Pty Ltd
PO BOX 1395
Port Macquarie
NSW 2444

www.streetwisersa.com.au



CONTENTS

1. INTRODUCTION	4
1.1 Scope of Audit.....	4
1.2 Scope Project Description	4
1.3 Reference Material	5
1.4 Audit Team	5
1.5 Stakeholders	6
1.6 Site Inspection	6
2. ROAD SAFETY AUDIT PROCESS	6
3. SAFE SYSTEM AND RSA	6
3.1 Safe System Matrix Analysis	7
3.2 Road Safety Criteria	8
3.3 Previous Audits	10
3.4 Identified Road Safety Issues.....	10
3.5 Responding to the Audit Report.....	10
4. BACKGROUND DATA.....	10
4.1 Design Plans & Documentation	10
4.2 Traffic Data.....	11
5. TABLE 5 – AUDIT FINDINGS.....	12
6. CONCLUDING STATEMENT	15

1. INTRODUCTION

1.1 Scope of Audit

StreetWise Road Safety and Traffic Services has been engaged by the Caddmandu Design & Drafting to complete a Desktop Road Safety Audit of design plans for a proposed temporary diversion of Unwin Street, as part of the Sydney Metro (light rail) construction works at Clyde NSW.

This Road Safety Audit will be conducted in accordance with the Austroads Guide to Safety Part 6: Road Safety Audit (2022).

1.2 Scope Project Description

Sydney Metro is Australia's biggest public transport project, and by 2030, Sydney will have a network of four metro lines, 46 stations and 113km of new metro rail. Sydney Metro will connect Sydney's north west, west, south west and greater west to fast, reliable light rail services with fully accessible stations.

The metro program includes the operational Metro North West Line and three projects under construction:

- City & Southwest
- West
- Western Sydney Airport

There will be ultimate capacity for a metro train every two minutes in each direction under the city. Sydney's new metro railway will have a target capacity of about 40,000 customers per hour, similar to other metro systems worldwide. Sydney's current suburban system can reliably carry 24,000 people an hour per line.

Sydney Metro, together with signalling and infrastructure upgrades across the existing Sydney rail network, will increase the capacity of train services entering the Sydney CBD – from about 120 an hour today to up to 200 services beyond 2024.

The Western 24-kilometre metro line will double rail capacity between Greater Parramatta and the Sydney CBD, linking new communities to rail services and supporting employment growth and housing supply. Stations are confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street in the Sydney CBD. Construction started in 2020, with the project on track to be completed by 2030.

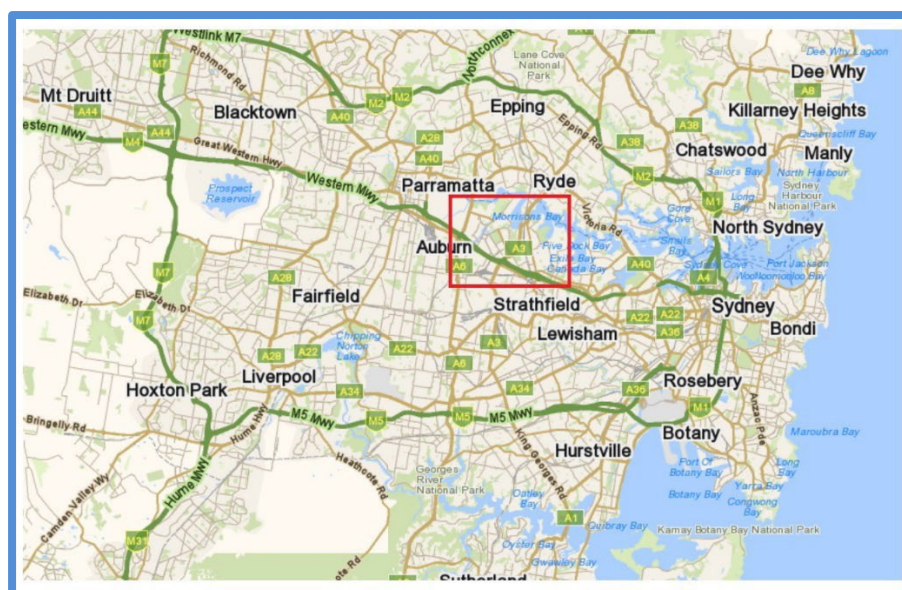


Figure 1: Locality Plan

- 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.

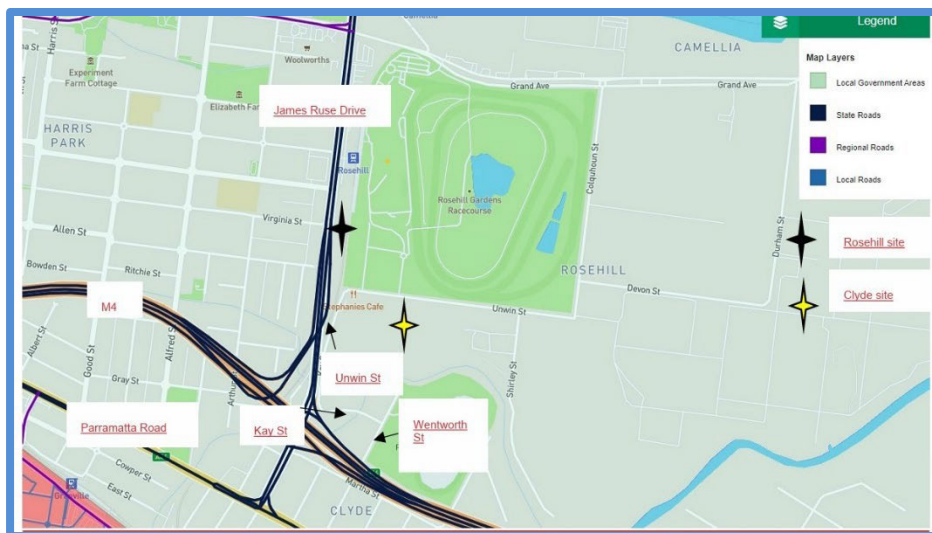


Figure 1: Site Plan

The audit was undertaken by a team lead by Andy Davis of StreetWise Road Safety & Traffic Services in compliance with the audit brief. (See Section 1.3 for Audit Team details)

StreetWise were provided Traffic Guidance Scheme plans detailing traffic management plans for a number of streets impacted by the Clyde road works.

1.3 Reference Material

- Austroads 'Guide to Road Safety Part 6: Road Safety Audit (Jan 2022)'
- Austroads 'Guide to Temporary Traffic Management: Parts 1 to 10';
- Austroads 'Guide to Road Design';
- TfNSW Guidelines for Road Safety Audit Practices
- TfNSW Supplements to Austroads Guides
- TfNSW Traffic Control at Work Sites Manual
- Australian Standards

1.4 Audit Team

Auditor No. / Accreditation	Role	Organisation
RSA-02-0230 Level 3 Auditor	Audit Team Member	StreetWise Road Safety & Traffic Services
RSA-02-0678 Level 3 Auditor	Audit Team Leader	StreetWise Road Safety & Traffic Services

Table 1: List Of Audit Team Members

1.5 Stakeholders

The following people / organisations are listed as stakeholders in the completion of this Detailed Design Desktop Road Safety Audit.

Name	Role / Status	Job Title & Organisation
Jason Cox	Project Manager	(Client)

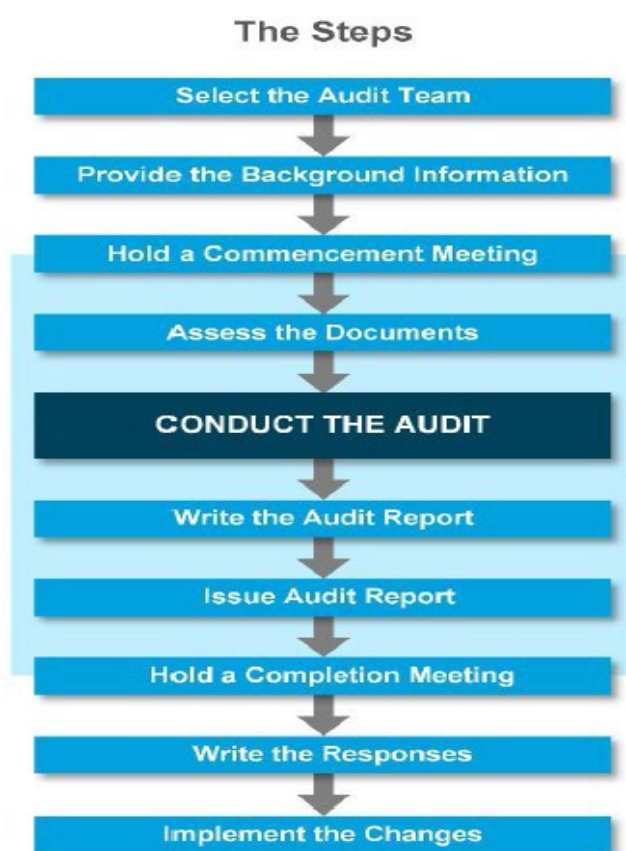
Table 2: List Of Stakeholders

1.6 Site Inspection

This is a desktop road safety audit. There was no requirement as part of the scope of the audit for a site inspection to be completed.

2. ROAD SAFETY AUDIT PROCESS

The following flow chart is reproduced from Austroads *Guide to Road Safety – Part 6: Road Safety Audits*, Figure 8.1



A more detailed illustration of the process appears in Section 8.4.

Figure 2: Steps In a Road Safety Audit

3. SAFE SYSTEM AND RSA

The Safe System Assessment follows the principles outlined in Austroads *Guide to Road Safety Part 6: Road Safety Audit (2022)*.

The aim of Safe System assessment is to identify any safety risks and hazards, including those not identified or addressed in any earlier, feasibility (strategic/concept) or preliminary design stage audit/s undertaken, and to ensure that the design considers all foreseeable road users.

The additional annotation “IMPORTANT” shall be used to provide emphasis to any road safety audit finding that has the potential to result in fatal or serious injury or findings that are likely to result in the following crash types above the related speed environment.

- Head- on (>70km/h)
- Right angle (>50km/h)
- Run off road impact object (>40km/h)
- Crashes involving vulnerable road users (>30km/h)

These crash types are known to result in higher severity outcomes at relatively lower speed environments. The exposure and likelihood of crash occurrence shall then be considered for all findings deemed “IMPORTANT” and evaluated based on an auditor’s professional judgement. Auditors should consider factors such as:-

- traffic volumes and movements
- speed environment
- crash history
- road environment

and apply road safety engineering and crash investigation experience to determine the likelihood of crash occurrence. The likelihood of crash occurrence shall be considered either:-

- VERY HIGH
- HIGH
- MODERATE
- LOW

This additional annotation shall be displayed following the “IMPORTANT” on applicable findings provided in Table 5 – Audit Findings.

3.1 Safe System Matrix Analysis

A safe system matrix analysis has been applied to this infrastructure to assess its conformance to the safe system principles as provided in Austroads Guide to Road Safety Part 6: Managing Road Safety Audits.

Project Safe System Matrix Analysis	
Project	Construction of the Sydney Metro (West) in the vicinity of Unwin Street, Clyde.
Project Objective	Safely direct local traffic movements around project site.
Road Function	<p><u>Unwin Street</u> Unwin Street is a local road under the care and control of the City of Parramatta Council. Unwin Street runs in a north south direction with an existing speed limit of 50km/hr. No public transport operates along Unwin Street. The precinct previously contained industrial premises which have been demolished by the Sydney Metro works.</p> <p><u>Martha Street</u> Martha Street is a local road under the care and control of the</p>

	<p>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.</p> <p><u>Shirley Street</u> 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 50km/hr.</p> <p><u>Kay Street</u> Existing local road under the care and control of the City of Parramatta Council.</p> <p><u>Wentworth Street</u> Existing local road under the care and control of the City of Parramatta Council.</p>
Speed Environment	<p><u>Unwin Street</u> 50km/hr.</p> <p><u>Martha Street</u> 50km/hr.</p> <p><u>Shirley Street</u> 50km/hr.</p> <p><u>Kay Street</u> 50km/hr.</p> <p><u>Wentworth Street</u> 50km/hr.</p>
Road Users / Facilities / Vehicle Composition	<p><u>Unwin Street</u> Existing low speed environment that generally caters for low volumes of local traffic.</p> <p><u>Martha Street</u> As above</p> <p><u>Shirley Street</u> As above</p> <p><u>Kay Street</u> As above</p> <p><u>Wentworth Street</u> As above</p>

Table 3: Safe System Matrix Summary

3.2 Road Safety Criteria

The list of road safety issues contained in Table 5 – Audit Findings, of the report contains rankings of safety issues which are based on Criteria set out in the Austroads *Guide to Road Safety Part 6: Road Safety Audit, (Feb 2022)*. The assessment of risk uses these principles. The tables from Austroads are reproduced below:

Austrroads RSA Risk Matrix

			Severity*				
			Insignificant	Minor	Moderate	Serious	Fatal
			Property Damage	Minor First Aid	Major First Aid and/or presents to Hospital	Admitted to Hospital	Death within 30 days of crash
Likelihood (includes exposure)	Almost Certain	One per Quarter	Medium	High	High	Extreme (FSI)	Extreme (FSI)
	Likely	Quarter to 1 Year	Medium	Medium	High	Extreme (FSI)	Extreme (FSI)
	Possible	1 to 3 Years	Low	Medium	High	High (FSI)	Extreme (FSI)
	Unlikely	3 to 7 Years	Negligible	Low	Medium	High (FSI)	Extreme (FSI)
	Rare	7 Years Plus	Negligible	Negligible	Low	Medium	High (FSI)

*See Severity Guidance Sheet

Safe System crash outcome threshold

Austrroads Severity Guidance Sheet

		Crash Speed (km/h)										
		<10	10	20	30	40	50	60	70	80	90	100
Crash Type	Pedestrian (vs HV)	<div> <div>Moderate Injury</div> <div>Serious Injury</div> <div>Fatal</div> </div>										
	Motorcyclists (vs HV)											
	Pedestrian (vs Car)											
	Cyclist (vs Car)											
	Pole / Tree Impact (Car)											
	Motorcyclist (vs Car)											
	Side Impact (HV v Car)											
	Side Impact (Car vs Car)											
	Head On (HV vs Car)											
	Head On (Car vs Car)											

Note

It is stressed that the information contained within the severity guidance sheet is a general indication only and that professional engineering judgement is required with its usage.

Note

It is stressed that the information contained within the severity guidance sheet is a general indication only and that professional engineering judgement is required with its usage.

Austrroads Priorities for Mitigation

Risk	Suggested Action
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.

3.3 Previous Audits

Streetwise Road Safety and Traffic Services has recently completed a desktop road safety audit the for the temporary design package for this component of the works.

3.4 Identified Road Safety Issues

A summary of the audit findings are provided in Table 5 of this report.

Every effort has been made to identify potential safety hazards in this audit, no guarantee can be made that every issue has been identified. This will be the case with any road safety audit.

3.5 Responding to the Audit Report

As set out in the road safety audit guidelines, the responsibility for planning, road design and construction of the project always remains with the client and the implementation team, and not with the auditor/s. It is not the role of the auditor to redesign or take over construction implementation of projects but to provide independent advice via audit findings and / or recommendations where requested by the client.

The client / implementation team are under no obligation to accept all the audit findings and or recommendations. Also, it is not the role of the auditor to agree to or approve of the client / implementation team's response to the audit. Rather, the audit provides the opportunity to highlight potential problems and have them formally considered by the client / implementation team, in conjunction with all other project considerations.

This formal road safety audit report should be responded to in writing following a completion meeting where the findings are explained to the client / implementation team. This response should indicate acceptance or rejection of the suggested remedial measures. Reasons are usually provided where a road safety deficiency or suggested remedial measure is rejected.

4. BACKGROUND DATA

The following data information was used as part of the assessment process in this audit:

- Design Plans,
- Traffic Data.

4.1 Design Plans & Documentation

A summary of the plan information and documentation used in this assessment is provided below:

Document No.	Rev	Title	Issue	Date
SMWSTWTP-GLO-CLJ-TD700-TW-DRG-Sheets 512001 - 512132	D	SYDNEY METRO UNWIN STREET TEMPORARY DIVERSION TRAFFIC STAGING DESIGN	Approved	27/10/23

4.2 Traffic Data

A draft Traffic Management Plan prepared by GAMUDA / Laing O'Rourke for these works provides the following daily traffic volumes:

- Unwin Street 5,000
- Kay Street 4,200
- Wentworth St 4,100

1. TABLE 5 – AUDIT FINDINGS

Audit Results	Audit Finding (Risk / Hazard, extent, crash type)	Risk Level	Recommendation/s	Client Response	
Audit Finding Ref.				Accept (Yes / No)	Action / comments
Unwin Street Temporary Diversion Traffic Staging Design Stage 5 Temporary Traffic Diversion General Arrangement					
SMWSTWTP-GLO-CLJ-TD700-TW-DRG-512016					
Sheet 5 of 77	<ul style="list-style-type: none">There appears to be a potential for pedestrians to enter the marked work area. Is there sufficient separation between the temp pedestrian path and the work area at the northern end?Has there been any consideration of a safe route through the worksite for cyclists?There does not seem to be any indication of the provision of shoulders on the plans.				<ul style="list-style-type: none">Traffic Control will be situated at the start of each point of entry as to negate the effect of pedestrians entering the work site.Cyclists on the road will be under the same conditions as motorists through the work area.Lane Widths are at 4.5m as road lane have been reduced to staging requirement
Sheet 6 of 77	<ul style="list-style-type: none">Will there be on ground workers in the red zone? If so, is there adequate separation between the work zone and the temp pavement area where traffic will be running?				<ul style="list-style-type: none">workers will be separated as per the Deflection zone of barriers, if required to be with in the deflection zone works will be done under temporary traffic management


1. TABLE 5 – AUDIT FINDINGS

Audit Results	Audit Finding (Risk / Hazard, extent, crash type)	Risk Level	Recommendation/s	Client Response	
Audit Finding Ref.				Accept (Yes / No)	Action / comments
Sheet 7 of 77	<ul style="list-style-type: none"> There appears to be safety barriers placed between the pedestrian path and the traffic area (when they are not indicated on the previous plan). It is not clear if the left turn out of the construction gate in Kay Street is safe for light vehicles. 				<ul style="list-style-type: none"> The Barriers are from Stage 1A, as such they are Existing Barriers are shown as grey to indicated as existing. Swept path analyse provides details on access and egress details, if deemed to be unsafe egress's will be done under Temporary Traffic management
Sheet 8 of 77	<ul style="list-style-type: none"> It is not clear if the left turn out of the construction gate in Kay Street is safe for light vehicles. 				<ul style="list-style-type: none"> Swept path analyse provides details on access and egress details, if deemed to be unsafe egress's will be done under Temporary Traffic management

1. TABLE 5 – AUDIT FINDINGS

Audit Results	Audit Finding (Risk / Hazard, extent, crash type)	Risk Level	Recommendation/s	Client Response	
Audit Finding Ref.				Accept (Yes / No)	Action / comments
Sheet 9 of 77	<ul style="list-style-type: none"> It is not clear if the left turn out of the construction gate in Kay Street is safe for light vehicles. 				<ul style="list-style-type: none"> Swept path analyse provides details on access and egress details, if deemed to be unsafe egress's will be done under Temporary Traffic management
Sheet 10 of 77	<ul style="list-style-type: none"> It is not clear if the left turn out of the construction gate in Kay Street is safe for light vehicles. 				<ul style="list-style-type: none"> Swept path analyse provides details on access and egress details, if deemed to be unsafe egress's will be done under Temporary Traffic management.

1. TABLE 5 – AUDIT FINDINGS

Audit Results	Audit Finding (Risk / Hazard, extent, crash type)	Risk Level	Recommendation/s	Client Response	
Audit Finding Ref.				Accept (Yes / No)	Action / comments
<p>Sheet 11 of 77</p>	<ul style="list-style-type: none"> Will there be on ground workers in the red zone? If so, is there adequate separation between the work zone and the temp pavement area where traffic will be running? The alignment of the right turn from Unwin St (at bottom of sheet) onto the newly diverted road is poor and may result in drivers' vision of oncoming traffic being obscured. 				<ul style="list-style-type: none"> workers will be separated as per the Deflection zone of barriers, if required to be with in the deflection zone works will be done under temporary traffic management Swept path analyse on the egress of the side road onto the permanent Unwin St Road arrangement,

1. TABLE 5 – AUDIT FINDINGS

Audit Results	Audit Finding (Risk / Hazard, extent, crash type)	Risk Level	Recommendation/s	Client Response	
Audit Finding Ref.				Accept (Yes / No)	Action / comments
<u>General Comment</u>	There may some safety issues with the placement of the large amount of temporary signage in relation to sight lines between pedestrians and vehicles.				<i>Signage will be placed in a way that they don't impact sight lines and will be placed at Heights as to avoid impacting pedestrian movements</i>

6. CONCLUDING STATEMENT

The audit team certify as identified in this report it has examined the documentation provided and have inspected the site in undertaking this RSA. The audit team also confirm that this audit has been carried out in accordance with the *Austroads Guide to Road Safety, Part 6 –Road Safety Audit (2022)* and in accordance with the Transport for NSW Works Authorisation Deed requirements.

The audit has been completed for the sole purpose of identifying any risks found within the design which could be mitigated to improve the road safety of the project.

The accompanying risks and associated recommendations and mitigation measures have been recorded for consideration by the Client for implementation.

- a) Prior to construction to improve the safety of the scheme. (Design Desktop Audits)
- b) ~~To improve the safety of the implemented constructed works / traffic scheme, (Pre or Post Opening / Traffic Scheme Audits) or~~
- c) ~~Identify any road safety issues that may be present as part of an existing traffic scheme. (Existing Conditions / Traffic Scheme Audits)~~
(delete inapplicable statement/s above)

Lead Road Safety Auditor StreetWise Road Safety
& Traffic Services Pty Ltd Level 3 #RSA-02-0230

, Lead Road Safety Auditor
StreetWise Road Safety & Traffic Services Pty Ltd
Level 3 # RSA-02-0678

6 Appendix C – Stakeholder Consultation

UNWIN STREET TEMPORARY CLOSURE – COMMUNICATIONS PLAN

Sydney Metro West – Western Tunnelling Package

ISSUE DATE: 10 NOVEMBER 2023

INTRODUCTION..... 3

COMMUNITY AND STAKEHOLDER ANALYSIS 3

COMMUNICATION APPROACH 19

CHANNELS FOR FEEDBACK 22

COMMUNITY NOTIFICATION 23

1.1 Community Notification – Letter Box distributed on the 10th January 2024 23

1.2 Community Notification – Eblast distributed on the 19th January 2024..... 25

CHANGES TO PEDESTRIAN AND TRAFFIC SIGNAGE 26

SIGNAGE PLAN..... 27

INTRODUCTION

PURPOSE

The purpose of this plan is to outline Gamuda Australia and Laing O'Rourke Consortium's (GLC) communications approach for the Unwin Street realignment work and associated weekend road closures.

Stage 1 road closure – complete

Stage 2 road closure – planned for 10pm 5 April to 5am 8 April

Stage 3 road closure - TBC

COMMUNITY AND STAKEHOLDER ANALYSIS

The temporary closure of sections of Unwin, Wentworth and Kay streets will be led by the Clyde Stabling and Maintenance Facility site team with support from the Communication and Stakeholder Engagement team.

Key stakeholders for this temporary road diversion include businesses within 500m of the work area. Businesses were doorknocked by the Place Manager and Communication Advisor in November 2023 to identify impacts a closure of sections of Unwin, Wentworth and Kay Street would have on their business.

Information collected from businesses include;

- General weekend operating hours
- Business and customer use of Unwin Street
- Impact of proposed works on the business
- Updated contact details

Upon completion of the Stage 1 closure, 19 to 22 January 2024, feedback was requested from businesses identified as highly impacted. Feedback received from businesses indicate there were no issues or concerns regarding the closure.

Businesses identified as highly impacted on the 29 January 2024 post closure were asked the following questions;

- Did the closure impact your customers/staff/tenants?
- Did you receive any feedback from your customers/staff/tenants?
- The next closure is proposed for early April (pending approval), can you foresee any issues?

The remaining businesses were given the opportunity to provide feedback via the 1800 number and project email address as highlighted in the community notification distributed on the 10 January 2024.

Businesses identified for consultation are outlined in the following tables below;

- Businesses identified as highly impacted and located within close proximity to the work area.

Business	Address	Operating hours during proposed closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Sektor Sydney	2 Unwin Street, Rosehill	Saturday – Closed Sunday - Closed	Work has no impact to business.	Last pickup Friday night is 7pm, first pickup Monday morning is 5am.	Feedback received from building manager; no complaints or issues were raised.
Chestnut Café	2 Unwin Street, Rosehill	Saturday – Closed Sunday - Closed	Work has no impact to business.	Closed from 2pm Friday, no weekend trading hours.	Feedback received from building manager; no complaints or issues were raised.
Winning Services Warehouse	15 Shirley Street, Rosehill	Open 24 hours for deliveries.	Work impact courier route. Will advise couriers to use alternate routes during closure. Requested a notification when works are approved.	Most deliveries occur between 4am and 9am with 3pm being the cut off time to receive deliveries over the weekends. Business has no issue with work occurring.	Feedback received from building manager; no complaints or issues were raised.
Courier Please	7 Shirley Street, Rosehill	Open 24 hours for deliveries	Work impact to courier route. Will advise couriers to use alternate route for closure. Requested map when works are approved.	Business has no issue with work occurring.	Feedback received from building manager; no complaints or issues were raised.

Business	Address	Operating hours during proposed closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Prodrive Compliance Group	11 Shirley Street, Rosehill	Saturday – Closed Sunday - Closed	Work has no impact to business.	Not open on weekends.	Feedback received from building manager; no complaints or issues were raised.
Team Global Express	2 Unwin Street, Rosehill	Saturday – 4am to 7pm Sunday – 4am to 7pm	Work impact to courier route. Will advise couriers to use alternate route for closure. Requested map when works are approved.	Business has no issue with work occurring.	Feedback received from building manager; no complaints or issues were raised.
Stay Upright	30 Wentworth Street, Clyde	Saturday – 7am to 5pm Sunday – 7am to 5pm	Discussion held with business to advise access will remain via traffic control. Business uses Unwin Street for some courses but have an alternate route that can be utilised. Additional signage will be provided advising Stay Upright is open and accessible.	Stay upright operate all weekend are located within the road closure. Business did not raise any immediate concerns but would like the confirmed date as soon as possible so they can plan for courses run on that weekend. Further discussions with Stay upright will be held once approvals are in place.	Feedback from Operations Manager after the January closure was positive, with no issues to report.

- Businesses south of the work area on Martha, Kendall, Wentworth, Harbord, and Darcy Streets in Clyde.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
ZATMAS	16-28 Martha Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Thrifty Bathrooms and Plumbing	16-28 Martha Street, Clyde	Saturday – 8am to 4pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Adaptas Solutions	2-8 Martha Street, Clyde	Saturday – 6:30pm to 2:00pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Doug Smith Appliance Spares	28 Martha Street, Clyde	Saturday – 9am to 12pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Melcar Wines	28 Martha Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Technology City	28 Martha Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.		No feedback received.
Turbans 4 Australia	14 Martha Street, Clyde	Saturday – 7am to 2pm Sunday – 9am to 12pm	Business was not open at time of doorknock.		No feedback received.
The Great Ozzy Bakehouse / Hooked 'n' Smoked	23 Kendall Street, Clyde	Warehouse	Business was not open at time of doorknock.		No feedback received.
AutoJoy	21 Kendall Street, Clyde	Saturday - 9am to 1pm Sunday - Closed	Work has no impact to business.	No concerns raised. Will use alternate route to test cars.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
AutoJoy	19 Kendall Street, Clyde	Saturday - 9am to 1pm Sunday – Closed			
AUSFF	15 Kendall Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
PlastaMasta Granville	14 – 22 Kendall Street, Clyde	Saturday – 6am to 11am Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Access Print Solutions	9 Kendall Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Coates	25 Parramatta Road, Granville	Saturday- 7am to 12pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Maison Furniture	8-10 Kendall Street, Clyde	Warehouse	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Ey United Pty Ltd	11-13 Kendall Street, Clyde	Saturday - 7am to 5pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
AG Pulie Pty Ltd	27 Wentworth Street, Clyde	Saturday – Open for workers Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Cowper Smash Repairs	19 Wentworth Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Otemac Engineering / Alfa Triton	18 Wentworth Street, Clyde	Otemac Engineering Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
		Alfa Triton Open 24 hours			
Team K Kustoms	14-16 Wentworth Street, Clyde	Saturday – 8:30pm to 12:30pm Sunday - Closed	Customers use Unwin Street/ Wentworth Street.	Requested a poster to inform customers of detour and a notification once approved.	No feedback received.
Hydraulink Hose and Fittings	12 Wentworth Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised.	No feedback received.
Ma Belle Cherri	8 Wentworth Street Clyde	24 hours	Was not open at time of doorknock.	Nil	No feedback received.
Green Goanna	10 Wentworth Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
APCD Australasian PC Distributors / SensaTEK	16 Harbord Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Taubmans Professional Paint Care	8 Harbord Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
HP Solutions	12 Harbord Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Kartel Logistics	4 Harbord Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
PPG	4 Harbord Street, Clyde	Saturday – 8:30am – 12pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Precision Automotive Equipment	4 Harbord Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Sus Stone & Marble Granite Pty Ltd	9 Harbord Street, Clyde	Saturday – 8am to 2pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Clyde Ayto Mechanical Repair	3 - 5 Harbord Street, Clyde	Saturday – 8am to 2pm Sunday – Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Star Copper Scrap Yard	Harbord Street	Saturday – 7:30am to 2:pm Sunday – Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
D Moto Motorcycle Engineering	3-5 Harbord Street, Clyde	Saturday – 9am to 12pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Fresh Star Enterprises	11 Harbord Street, Clyde	Saturday – 9am to 6pm Sunday – 9am to 6pm	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Triplenine Group Pty Ltd	2 Darcy Street, Clyde	Saturday – Closed Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.

- Businesses north of the work area on Grand Ave and Colquhoun Street in Camellia/Rosehill.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Armagaard	11c Grand Avenue, Camellia	Open 24 hours	Work has no impact to businesses on Shirley or Grand Avenue. All trucks use Grand Avenue.	No concerns were raised. Requested notification once approved.	No feedback received.
Caravan and Camping Industry Association NSW	1 Grand Avenue, Camellia	Saturday – Closed Sunday - Closed	Work has no impact to business. Business uses Grand Avenue.	No concerns were raised. Requested notification once approved.	No feedback received.
HSM IT Solutions	1c Grand Avenue, Camellia	Saturday – Closed Sunday - Closed	Work has no impact to business. Business uses Grand Avenue.	No concerns were raised. Requested notification once approved.	No feedback received.
Explore and Develop Parramatta – Early Learning Centre	1c Grand Avenue, Camellia	Saturday – Closed Sunday - Closed	Work has no impact to business. Business uses Grand Avenue.	No concerns were raised. Requested notification once approved.	No feedback received.
Go Logistics	11 Grand Avenue, Camellia	Saturday – Closed	Not available at time of contact.		No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
		Sunday - Closed			
Andrew Crane Hire Pty Ltd	Grand Avenue, Camellia	Open 24 hours	Not available at time of contact.		No feedback received.
Greenmark / PAC trading	11B Grand Avenue, Camellia	Saturday – Closed Sunday - Closed	Not available at time of contact.		No feedback received.
Compu-Stor	11A Grand Avenue, Camellia	Saturday – Closed Sunday - Closed	Work has no impact to business. Not open on the weekends.	No concerns were raised.	No feedback received.
Pie Face Pty Ltd	7 Grand Avenue, Camellia	Saturday – Closed Sunday – Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.
Parramatta – Motor Group Service Centre	3-5 Grand Avenue, Camellia	Saturday – 8am to 2pm Sunday - Closed	Work has no impact to business.	No concerns were raised. Requested notification once approved.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Trilox Pty Ltd / Signature Training	1C Grand Avenue, Camellia		Work has no impact to business.	No Concerns were raised.	No feedback received.
Veolia Environmental Services	37 Grand Avenue, Camellia	Saturday – 6am to 11:30am Sunday - Closed	No impacts currently identified by business.	No immediate concerns. Requested notification once approved.	No feedback received.
Just Skip Bins	39 Grand Avenue, Camellia	Saturday – 7am to 12pm Sunday - Closed	Work has no impact to business. Business uses Grand Avenue.	No concerns were raised.	No feedback received.
Enhance Cameilla	17 Grand Avenue, Camellia	Open 24 hours	Not available at time of contact.		No feedback received.
AB Mauri Australia	15 Grand Avenue, Camellia	Saturday – Closed Sunday - Closed	Not available at time of contact.		No feedback received.
SAMI Bitumen Technologies	12 Grand Avenue, Camellia		Work has no impact to business. Not open on the weekends.	No concerns were raised.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Hymix	14 Grand Avenue, Rosehill		Not available at time of contact.		No feedback received.
CSR Monier Roofing – Manufacturing only	10 Grand Avenue, Rosehill	Saturday – Closed Sunday - Closed	Work has no impact to business. Not open on the weekends.	No concerns were raised.	No feedback received.
KLF Holdings	16 Grand Avenue, Camellia	Saturday - 6:30am to 4:30pm Sunday - Closed	Work has no impact to business. Business uses Grand Avenue.	No complaints received after road closure in January.	No feedback received.
Café on Camellia	21 Grand Avenue, Camellia	Saturday – 4:30am to 4pm Sunday - Closed	Work has no impact to business. Business uses Grand Avenue.	No concerns were raised. Requested notification once approved.	No feedback received.
Wolves Sports Association / Billbergia Indoor Sports Centre	9 Grand Avenue, Camellia	Saturday – 9am to 9pm Sunday - Closed	Work has no impact to business.	Requested signage be provided for their office to inform customers of detours once approved.	No feedback received.

Business	Address	Operating hours during closure	Impact to business	Feedback from initial doorknock of businesses prior to work commencing	Stage 1 completion feedback from businesses
Carlton United Brewery Warehouse	Colquhoun St, Rosehill	Saturday – 8am to 5pm Sunday – Closed	Work has no impact to business. Business uses Grand Avenue.	No concerns were raised. Requested notification once approved.	No feedback received.

COMMUNICATION APPROACH – STAGE 2

The table below outlines the communications process to engage with the property owners and tenants.

Planned activity	Timing	Detail	Status
March monthly notification – include high level details of upcoming closure	25 February	Hard copy of the notification letterbox dropped to stakeholders and businesses 500m+ around work area plus additional areas to include areas affected by the closure; Martha Street Shirley Street Wentworth Street Colquhoun Street Harbord Street Kendell Street Darcy Street Grand Avenue Devon Street Durham Street Thackeray Street.	To-do
March monthly notification e-blast – include high level details of upcoming closure	25 February and 25 March	Email monthly letter notification to stakeholders signed up to the Clyde distribution list.	To-do
Stakeholder briefing – Stay Upright - 30 Wentworth Street, Clyde and Goodman Estate Building Manager	8 March	Provide briefing of proposed works and communications plan to Stay Upright - 30 Wentworth Street, Clyde and the building manager of Goodman Estate.	To-do
April monthly notification – include high level details of upcoming	22 March	Hard copy of the notification letterbox dropped to stakeholders and businesses 500m+ around work area plus additional areas to include areas affected by the closure; Martha Street	To-do

Planned activity	Timing	Detail	Status
closure (or with specific detail if approved)		Shirley Street Wentworth Street Colquhoun Street Harbord Street Kendell Street Darcy Street Grand Avenue Devon Street Durham Street Thackeray Street.	
Letterbox drop – specific letter notification detailing upcoming closure	27 March – pending approval	Notification letterbox dropped to businesses affected by the closure; Martha Street Shirley Street Wentworth Street Colquhoun Street Harbord Street Kendell Street Darcy Street Grand Avenue Devon Street Durham Street Thackeray Street.	To-do
Door knock businesses identified as highly impacted by the closure.	27 March – pending approval	Doorknock the following businesses who are identified as highly impacted or requested signage during stage 1 of the Unwin Street road closure; <ul style="list-style-type: none"> - Stay Upright - Goodman Estate - Team K Kustoms - Wolves Sports Association / Billbergia Indoor Sports Centre 	To do

Planned activity	Timing	Detail	Status
Provide the Interface team signage for the ATC	27 March – pending approval	Provide both traffic change and pedestrian change signages to the Interface team to distribute to ATC.	To-do
Signage installation and distribution of signage to businesses that requested.	27 March – pending approval	Installation of signage around streets impacted by the road closure and pedestrian access.	To do
Reminder email notification to stakeholders identified as highly impacted by the road closure	2 April – pending approval	Email reminder notification reminder to businesses highly impacted by the road closure.	To-do
Survey stakeholders identified as highly impacted by road closure.	12 April – pending approval	Email business highly impacted by the road closure requesting feedback.	To do

CHANNELS FOR FEEDBACK

In the event of any complaints or feedback from the public, the complaint shall be directed to Sydney Metro West Community Infoline at 1800 612 173 or sydneymetrowest@transport.nsw.gov.au

COMMUNITY NOTIFICATION

1.1 Community Notification – Letter Box distributed on the 10th January 2024



Notification – Clyde and surrounds

10 January 2024

Sydney Metro is Australia's biggest public transport project.

The NSW Government is delivering Sydney Metro West, a new underground metro railway which will double rail capacity between Parramatta and the Sydney CBD.

Sydney Metro has been granted planning approval to construct twin underground rail tunnels between Westmead and Hunter Street in the Sydney CBD for Sydney Metro West.

Gamuda Australia and Laing O'Rourke Consortium (GLC) has been awarded the contract to deliver nine kilometres of twin metro rail tunnels between Westmead and Sydney Olympic Park, excavation for two new metro stations, a stabling and maintenance facility at Clyde and a precast facility at Eastern Creek.

Temporary road closure planned for Wentworth, Unwin and Kay Streets – 19-22 January 2024

To prepare for the realignment of Unwin Street, sections of Wentworth, Unwin, and Kay Streets will be closed from 10pm Friday 19 January to 5am Monday 22 January 2024.

Works will be continuous throughout this period and will involve a planned road closure between the intersection of Wentworth and Martha Street and the intersection of Shirley and Unwin Street, see map overleaf for details.

Entry and exit to the industrial area will be via Grand Avenue from James Ruse Drive.

Detour from the intersection of Wentworth Street and Martha Street - Vehicles travelling northbound on Wentworth Street will detour via Martha Street using Parramatta Road in both directions.

Detour from the intersection of Unwin Street and Shirley Street - Vehicles travelling westbound on Unwin Street will detour via Colquhoun Street and Grand Avenue to James Ruse Drive in both directions.

Traffic management and signage will be in place. Please keep to speed limits and follow the detours. Pedestrian access will be maintained along a pedestrian walkway detour from under the bridge along James Ruse Drive to the corner of Kay and Unwin Streets, see map overleaf for details.

Works will involve:

- Surveying and line marking on Wentworth and Unwin Street to locate services.
- Setting up traffic management, VMS signage and detours around the area.
- Installing temporary road safety barriers along the southern verge of Unwin Street.
- Saw cutting and excavating concrete kerbs and footpaths.
- Installing, connecting, and backfilling a new drainage service line.
- Restoring the work area, once complete.

What to expect

- Some activities will generate noise and this will be minimised as much as possible.
- Access to properties and businesses will be maintained at all times.
- Traffic control and signage to assist motorists, pedestrians and cyclists with changes to traffic conditions will be in place, including contraflow, boom gate operations, temporary barriers, stop-slow traffic control.
- Allow extra time when travelling near these areas.

Detour map



Contact us

Please contact GLC's Community team on **1800 612 173** or by email if you have any questions, complaints or would like to provide feedback about the work, including appropriate respite periods. We will continue to keep you updated on the progress of work in your area. If you would prefer to receive updates by email, please send a request to metrotunnelsGLC@transport.nsw.gov.au and we will add you to the distribution list.

Thank you for your cooperation while we complete these essential works.

1800 612 173 Community information line open 24 hours
metrotunnelsGLC@transport.nsw.gov.au
Sydney Metro West, PO Box K658, Haymarket NSW
1240



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100 languages

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the App Store or get it on Google Play.



If you need help understanding this information, please contact the Translating and Interpreting Service
on **131 450** and ask them to call us on **1800 612 173**

1.2 Community Notification – Eblast distributed on the 19th January 2024



West

Traffic Changes - Clyde and Surrounds

Good morning,

Tunnelling contractor, Gamuda and Laing O'Rourke Consortium (GLC) will continue major construction at Clyde site.

From 10pm on Friday 19 January to 6am on Monday 22 January 2024, sections of Wentworth, Unwin, and Kay Streets will be closed to prepare for the realignment of Unwin Street.

Traffic and pedestrian changes will include:

- **Entry and exit to the industrial area will be via Grand Avenue** from James Ruse Drive.
- **Detour from the intersection of Wentworth Street and Martha Street** - Vehicles travelling northbound on Wentworth Street will detour via Martha Street using Parramatta Road in both directions.
- **Detour from the intersection of Unwin Street and Shirley Street** - Vehicles travelling westbound on Unwin Street will detour via Colquhoun Street and Grand Avenue to James Ruse Drive in both directions.
- **Pedestrian access** will be maintained along a pedestrian walkway detour from under the bridge along James Ruse Drive to the corner of Kay and Unwin Streets.

In preparation for this work, a temporary closure of the southbound lane from the corner of Kay Street to Unwin Street is in effect.

Traffic management and signage will be in place. Please keep to speed limits and follow the detours.



CHANGES TO PEDESTRIAN AND TRAFFIC SIGNAGE

Temporary road closure

Due to ongoing construction of the Unwin Street realignment, sections of Wentworth, Unwin, and Kay Streets in Clyde will be temporarily closed from:

10pm Friday 19 January to 5am Monday 22 January 2024.

Traffic management and detours will be in place. Entry and exit to the industrial area will be via Grand Avenue.

A pedestrian walkway under the M4 bridge from James Ruse Drive to the corner of Kay and Unwin Streets will remain open.

Thank you for your cooperation while we complete these essential works.

For more information visit sydnymetro.info



Scan the QR code to download Sydney Metro Connect on the App Store or Google Play.



Contact us
1800 612 173 Community infoline open 24 hours
metrotunnelsGLC@transport.nsw.gov.au
Sydney Metro, PO Box K659, Haymarket NSW 1240



Temporary footpath diversion

Due to ongoing construction of the Unwin Street realignment, sections of Wentworth, Unwin, and Kay Streets in Clyde will be temporarily closed from:

10pm Friday 19 January to 5am Monday 22 January 2024.

Pedestrian access will be maintained via a walkway from under the bridge along James Ruse Drive to the corner of Kay and Unwin Streets, please see map for details.

Thank you for your cooperation while we complete these essential works.

For more information visit sydnymetro.info



Scan the QR code to download Sydney Metro Connect on the App Store or Google Play.

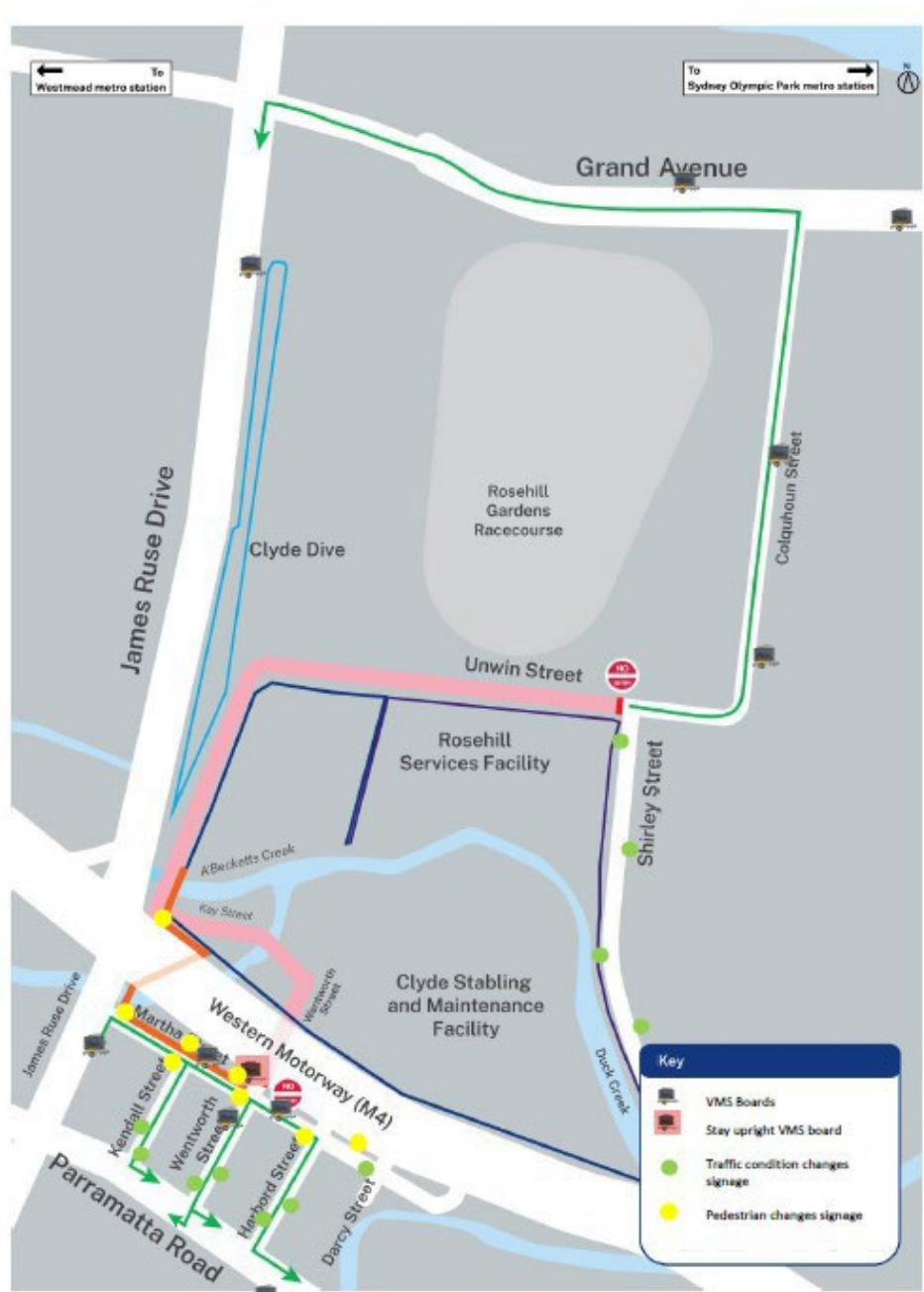


Contact us
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metrotunnelsGLC@transport.nsw.gov.au
Sydney Metro, PO Box K659, Haymarket NSW 1240



SIGNAGE PLAN


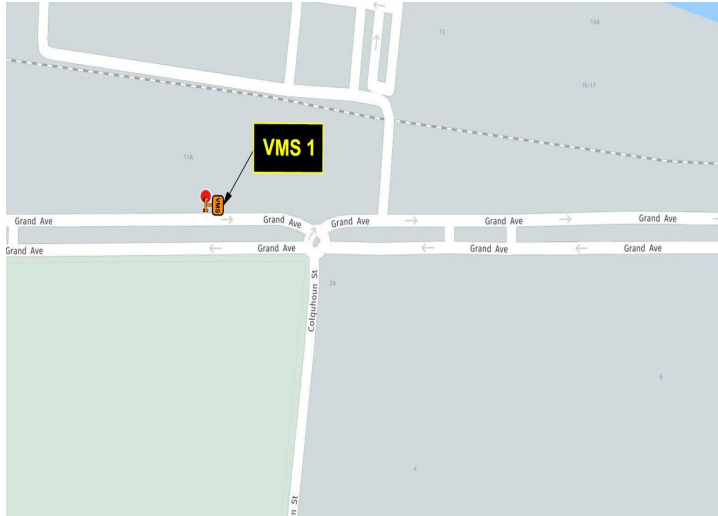

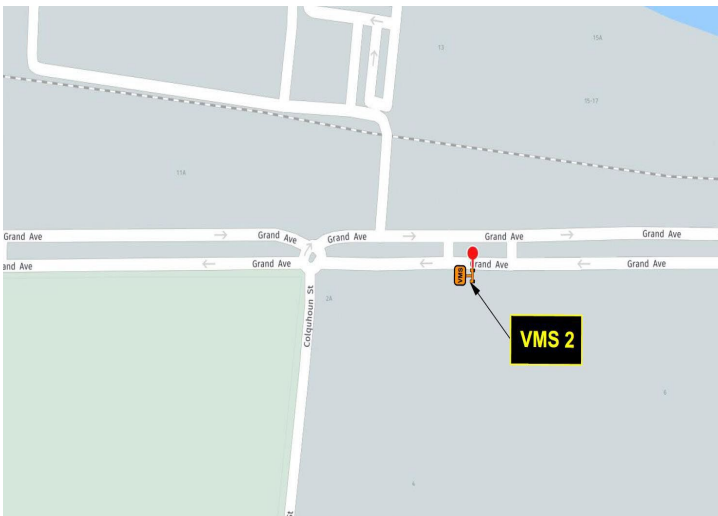
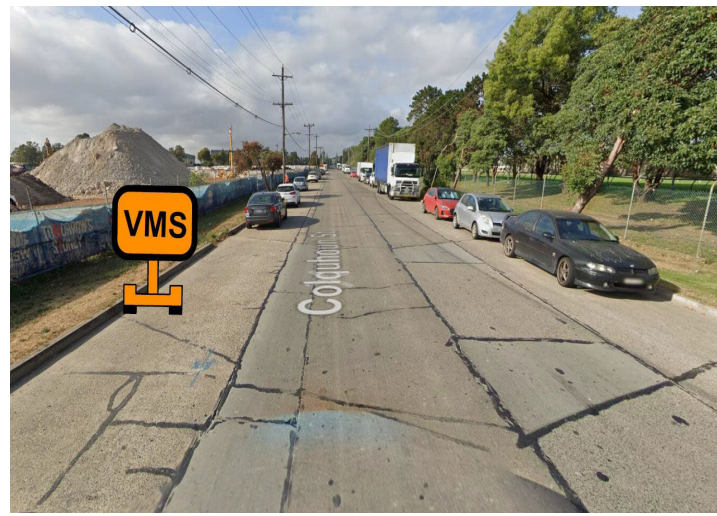
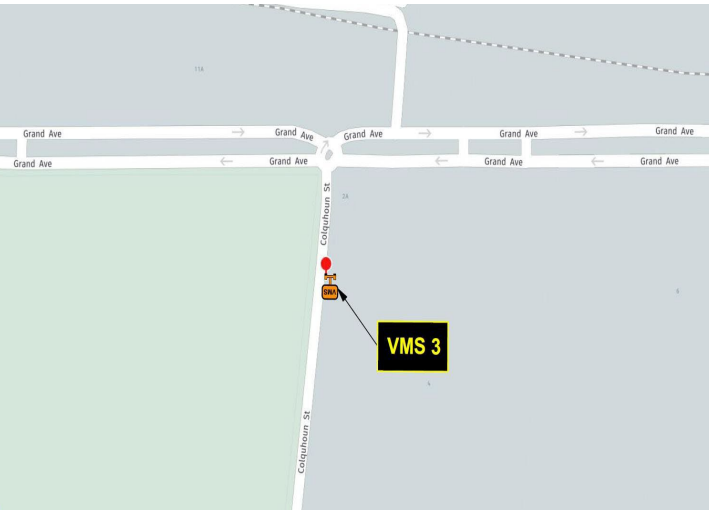

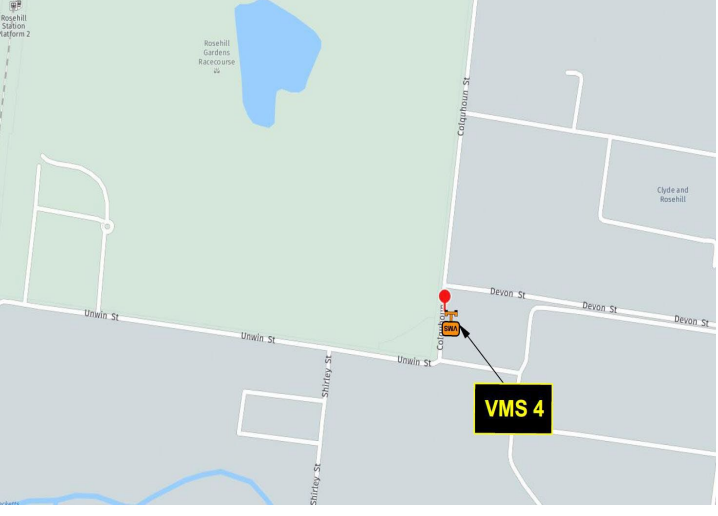

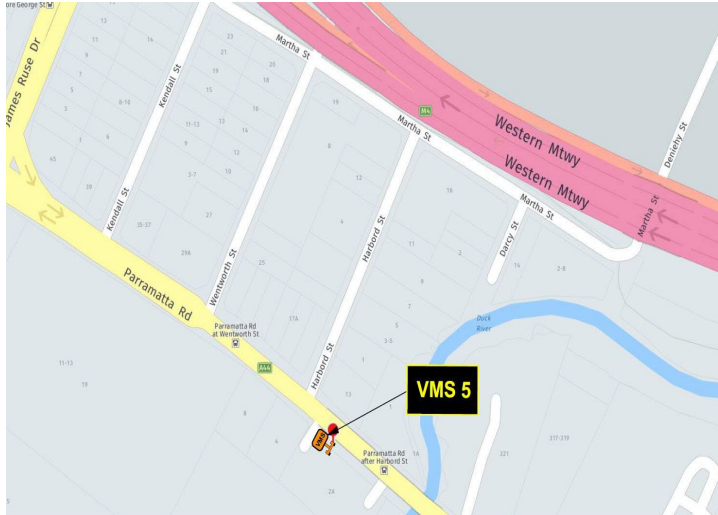

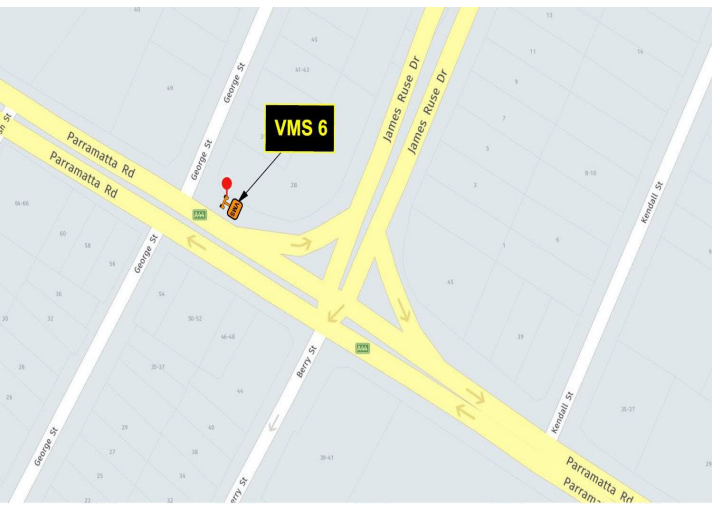
An updated signage plan for the April closure will be provided once CTMP has been approved.


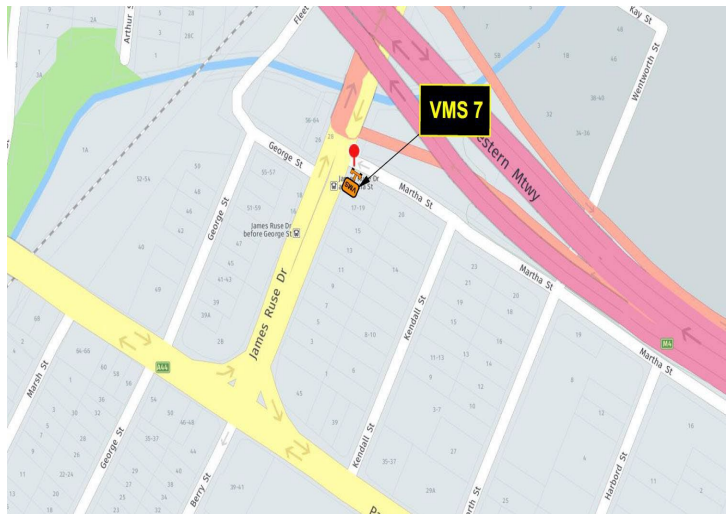

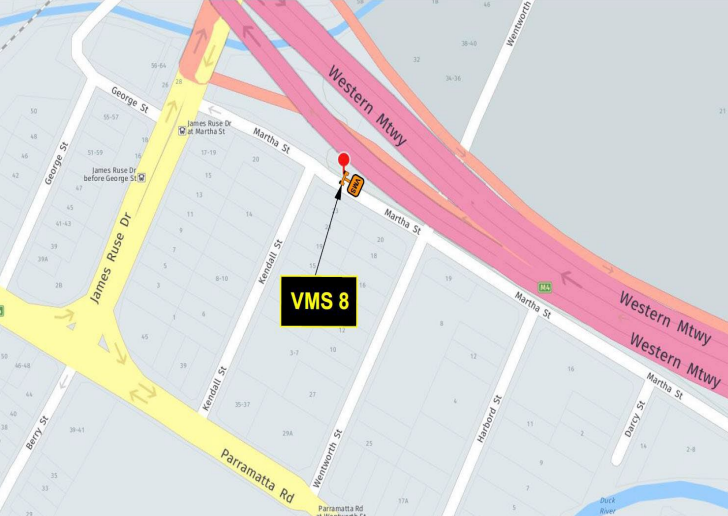

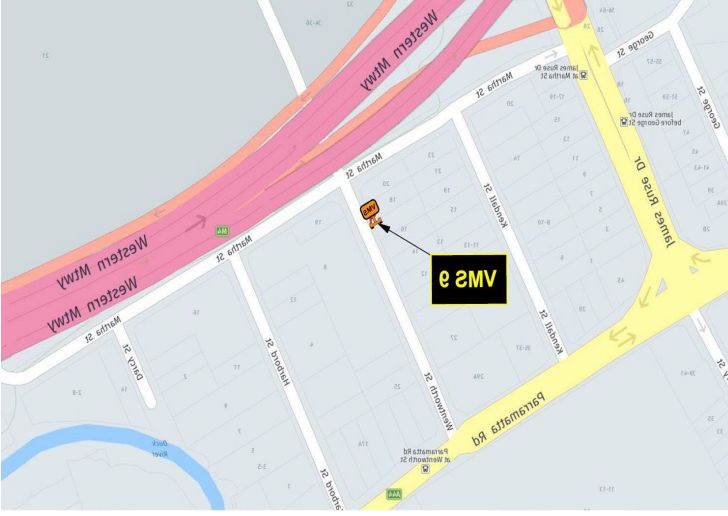
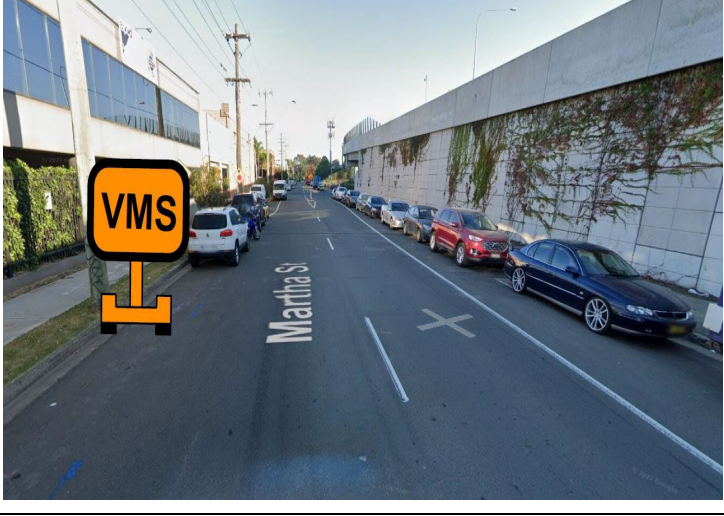
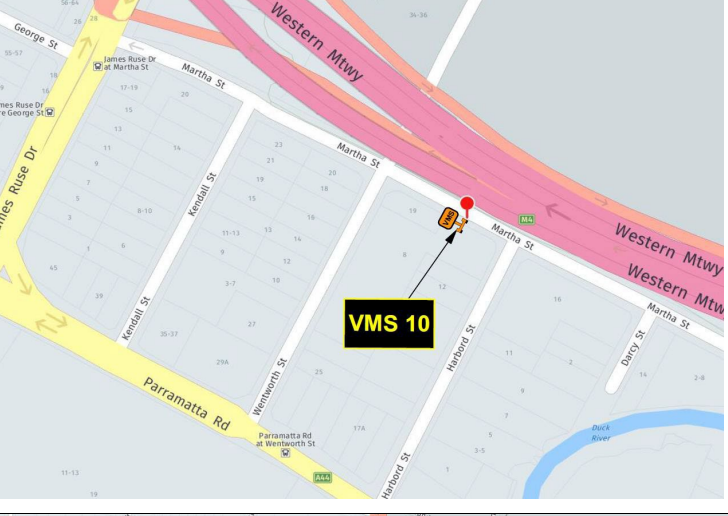

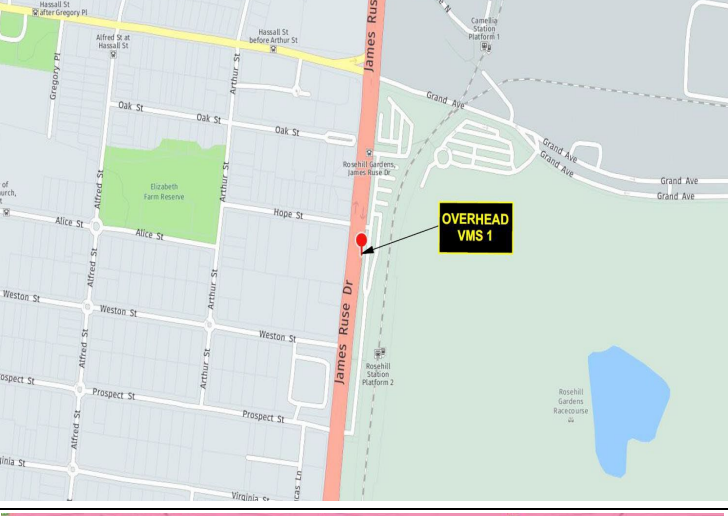

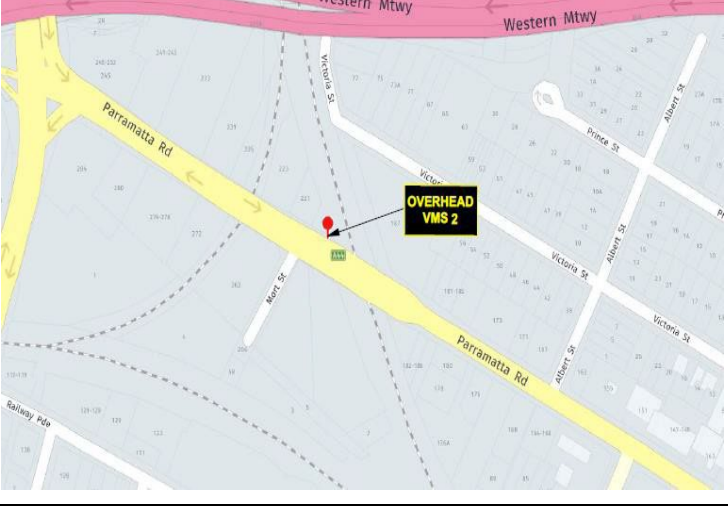


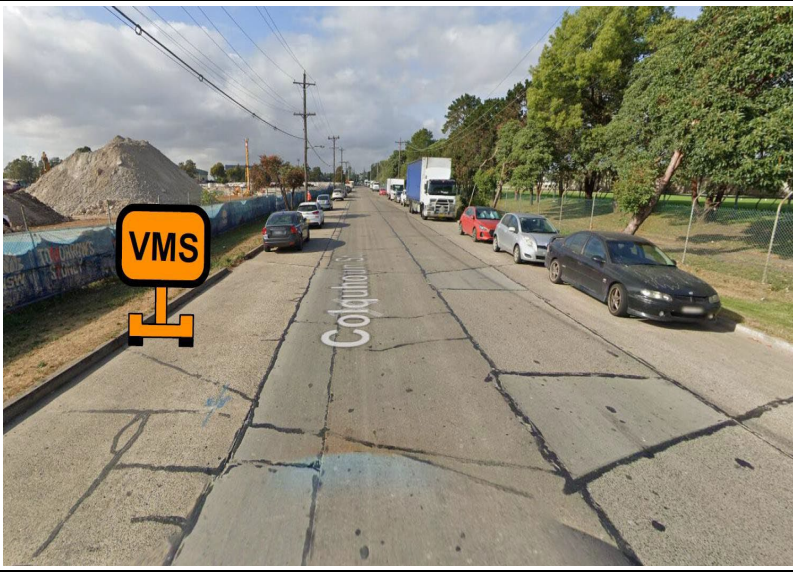

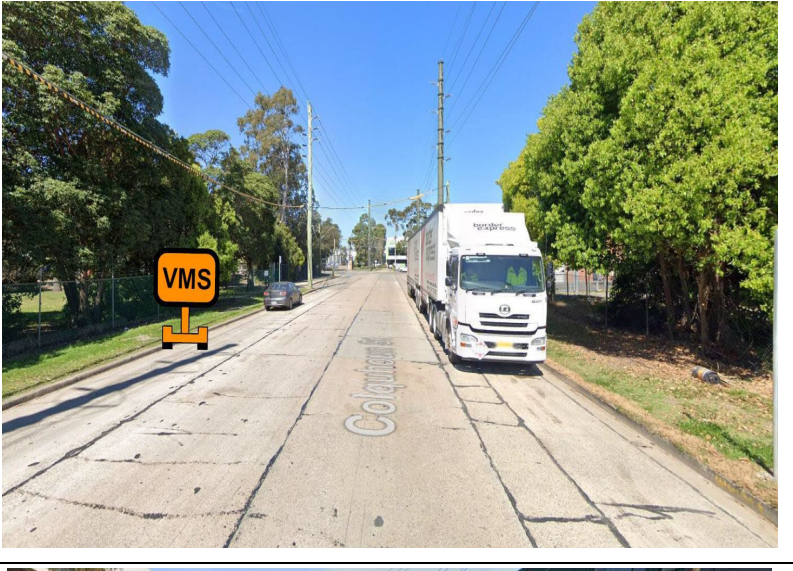
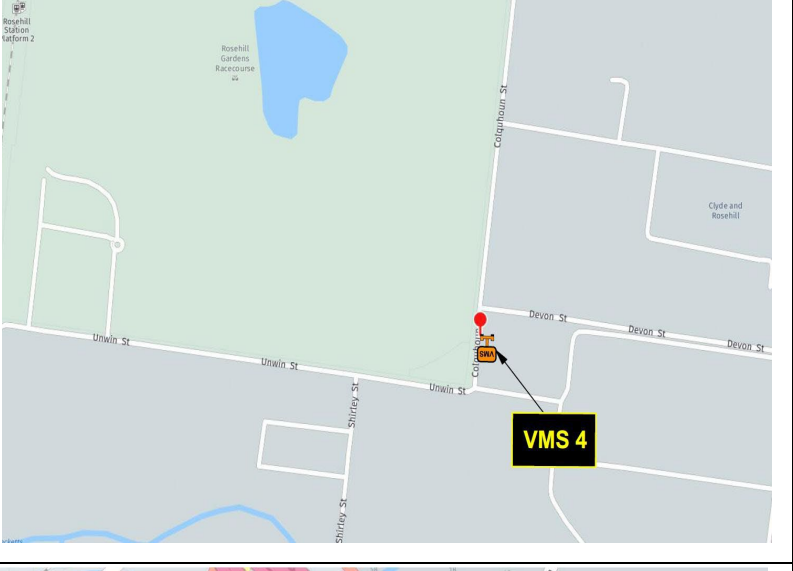
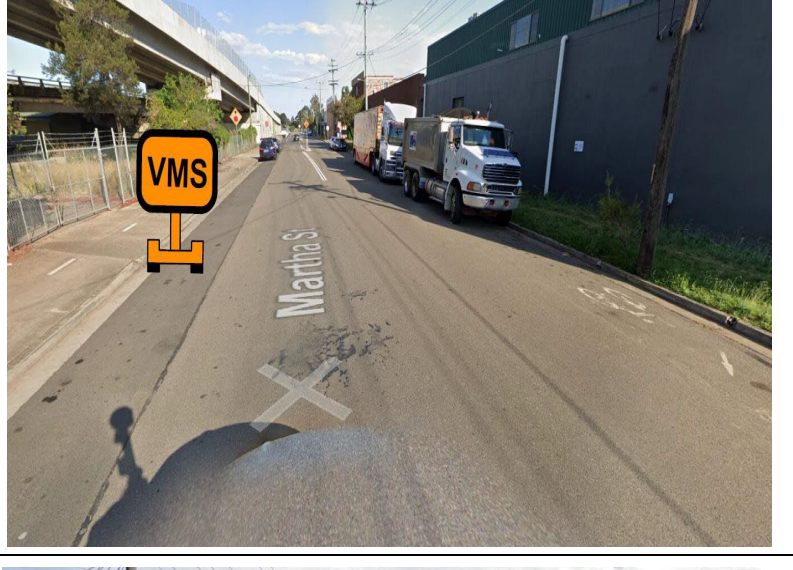
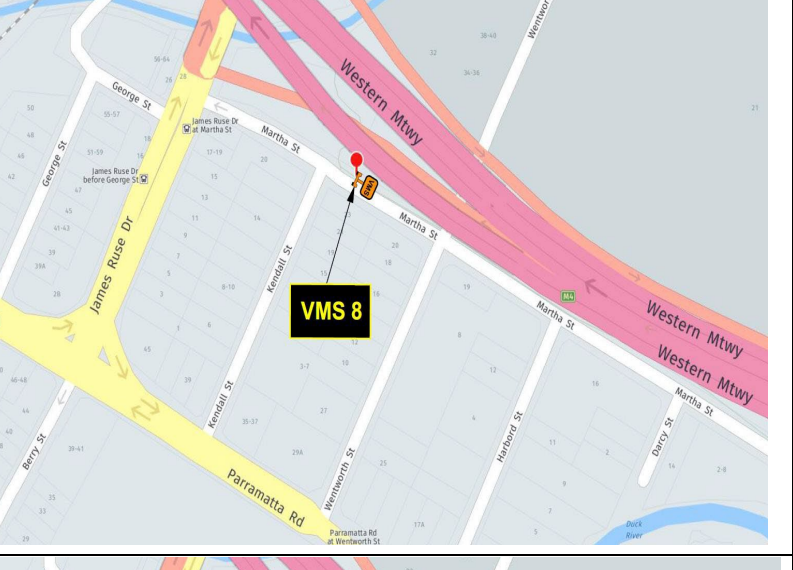

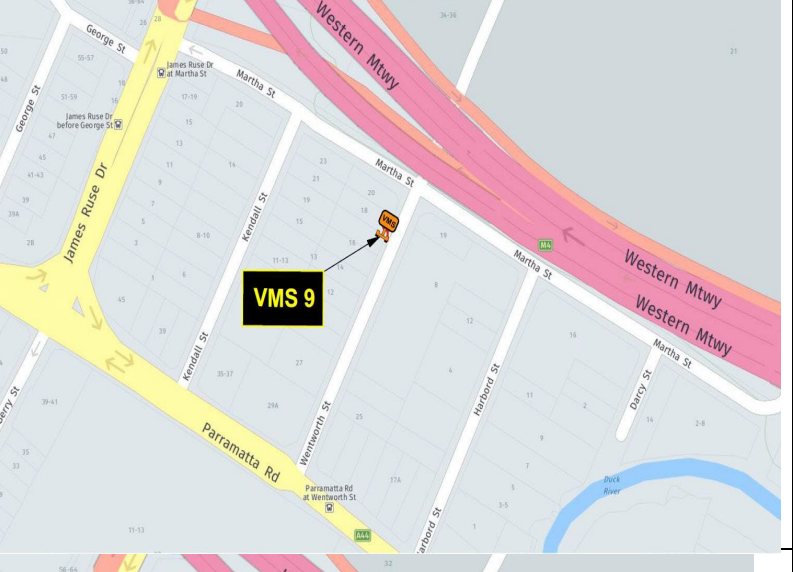

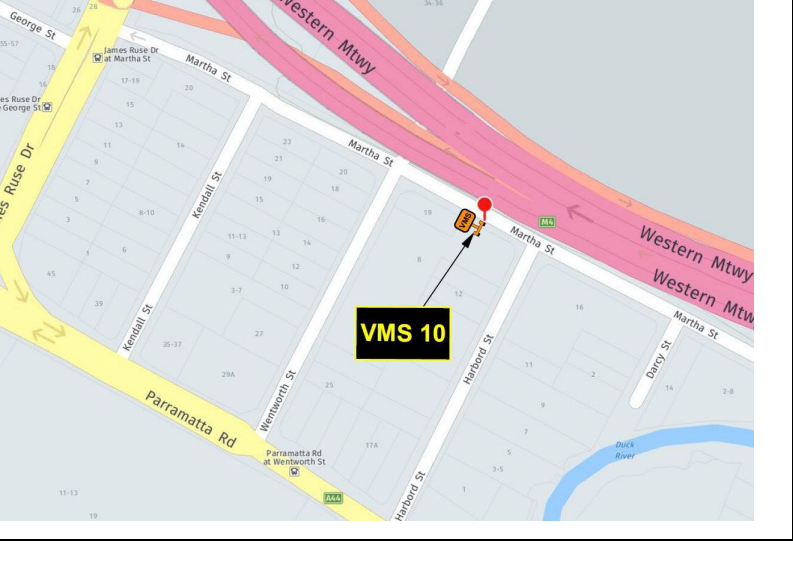
TRAFFIC AND PEDESTIRAN CHANGES SIGNS	LOCATION
TRAFFIC CHANGES SIGNAGE	<p>Signage will be produced and given to the following businesses as requested;</p> <ul style="list-style-type: none"> - Stay Upright - Team K Kustoms - Wolves Sports Association / Billbergia Indoor Sports Centre - ATC <p>Signage will be displayed as outlined on the map. Note: Location of signage may change depending on site conditions.</p>
PEDESTRIAN CHANGES SIGNAGE	<p>Signage will be produced and given to the following businesses as requested;</p> <ul style="list-style-type: none"> - ATC <p>Signage will be displayed as outlined on the map. Note: Location of signage may change depending on site conditions.</p>

7 Appendix D – Hour by Hour Program for 56-Hour Shut-Down

8 Appendix E - VMS Strategy for 56-Hour Shut

VMS UNIT	STREET VIEW	AERIAL LOCATION	LOCATION	DIRECTION		MESSAGING (PRIOR TO CONSTRUCTION)	MESSAGING DURING CONSTRUCTION
						Friday 05/04 to 2200 Friday 12/04	2200 Friday 12/04 to 0500 Monday 15/04
VMS 1 (C Class)			GRAND AVE, ROSEHILL NSW 2142	FACING EASTBOUND TRAFFIC ON GRAND AVE, 100m WEST OF COLQUHOUN ST	SCREEN 1	UNWIN ST CLOSURE	UNWIN ST CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 2 (C Class)			GRAND AVE, ROSEHILL NSW 2142	FACING WESTBOUND TRAFFIC ON GRAND AVE, 130m EAST OF COLQUHOUN ST	SCREEN 1	UNWIN ST CLOSURE	UNWIN ST CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 3 (C Class)			COLQUHOUN ST, CAMELLIA NSW 2142	FACING SOUTHBOUND TRAFFIC ON COLQUHOUN ST, 70m SOUTH OF GRAND AVE	SCREEN 1	UNWIN ST CLOSURE	UNWIN ST CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 4 (C Class)			COLQUHOUN ST, CAMELLIA NSW 2142	FACING SOUTHBOUND TRAFFIC ON COLQUHOUN ST, 40m SOUTH OF DEVON ST	SCREEN 1	UNWIN ST CLOSURE	UNWIN ST CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 5 (C Class)			PARRAMATTA RD, CLYDE NSW 2142	FACING WESTBOUND TRAFFIC ON GREAT WESTERN HWY, ON GRASS AREA OUTSIDE 2B PARRAMATTA RD	SCREEN 1	WENTW'TH STREET CLOSURE	WENTW'TH STREET CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 6 (C Class)			10 JAMES RUSE DR, CLYDE NSW 2142	FACING EASTBOUND TRAFFIC ON GREAT WESTERN HWY, ON GRASS AREA OUTSIDE 10 JAMES RUSE DR	SCREEN 1	WENTW'TH STREET CLOSURE	WENTW'TH STREET CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR

						Friday 05/04 to 2200 Friday 12/04	2200 Friday 12/04 to 0500 Monday 15/04
VMS 7 (A Class)			19 JAMES RUSE DR, CLYDE NSW 2142	FACING SOUTHBOUND TRAFFIC ON JAMES RUSE DR, ON THE CORNER OF MARTHA ST AND JAMES SMALL DR	SCREEN 1	WENTW'TH STREET CLOSURE	WENTW'TH STREET CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 8 (B Class)			MARTHA ST, CLYDE NSW 2142	FACING EASTBOUND TRAFFIC ON MARTHA ST, 60m WEST OF WENTWORTH ST	SCREEN 1	WENTW'TH STREET CLOSURE	WENTW'TH STREET CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 9 (B Class)			WENTWORTH ST, CLYDE NSW 2142	FACING NORTHBOUND TRAFFIC ON WENTWORTH ST, 20m SOUTH OF MARTHA ST	SCREEN 1	WENTW'TH STREET CLOSURE	WENTW'TH STREET CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 10 (B Class)			MARTHA ST, CLYDE NSW 2142	FACING WESTBOUND TRAFFIC ON MARTHA ST, 50m EAST OF WENTWORTH ST	SCREEN 1	WENTW'TH STREET CLOSURE	WENTW'TH STREET CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 11 (Overhead VMS)			OVERHEAD VMS - JAMES RUSE DR, CLYDE NSW 2142	SOUTHBOUND LANE ON JAMES SMALL DR, 40m SOUTH OF HOPE ST	SCREEN 1	UNWIN ST WENTW'TH CLOSURE	UNWIN ST WENTW'TH CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR
VMS 12 (Overhead VMS)			OVERHEAD VMS - PARRAMATTA RD, CLYDE NSW 2142	SOUTHBOUND LANE ON JAMES SMALL DR, EAST OF MORT ST	SCREEN 1	UNWIN ST WENTW'TH CLOSURE	UNWIN ST WENTW'TH CLOSED
					SCREEN 2	10pm 12/04 to 5am 15/04	FOLLOW DETOUR

VMS UNIT	STREET VIEW	AERIAL LOCATION	LOCATION	DIRECTION	MESSAGING (POST CONSTRUCTION)	
					0500 Monday 15/04 to Friday 22/04	
VMS 1 (C Class)			COLQUHOUN ST, CAMELLIA NSW 2142	FACING SOUTHBOUND TRAFFIC ON COLQUHOUN ST, 70m SOUTH OF GRAND AVE	SCREEN 1	CHANGED TRAFFIC CONDITIONS
					SCREEN 2	REDUCE SPEED
VMS 2 (C Class)			COLQUHOUN ST, CAMELLIA NSW 2142	FACING SOUTHBOUND TRAFFIC ON COLQUHOUN ST, 40m SOUTH OF DEVON ST	SCREEN 1	CHANGED TRAFFIC CONDITIONS
					SCREEN 2	REDUCE SPEED
VMS 3 (B Class)			MARTHA ST, CLYDE NSW 2142	FACING EASTBOUND TRAFFIC ON MARTHA ST, 60m WEST OF WENTWORTH ST	SCREEN 1	CHANGED TRAFFIC CONDITIONS
					SCREEN 2	REDUCE SPEED
VMS 4 (B Class)			WENTWORTH ST, CLYDE NSW 2142	FACING NORTHBOUND TRAFFIC ON WENTWORTH ST, 20m SOUTH OF MARTHA ST	SCREEN 1	CHANGED TRAFFIC CONDITIONS
					SCREEN 2	REDUCE SPEED
VMS 5 (B Class)			MARTHA ST, CLYDE NSW 2142	FACING WESTBOUND TRAFFIC ON MARTHA ST, 50m EAST OF WENTWORTH ST	SCREEN 1	CHANGED TRAFFIC CONDITIONS
					SCREEN 2	REDUCE SPEED

9 Appendix F – Road Safety Audit for Stages 1 - 3

ROADWORKS ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM
UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



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 TEMPORARY DIVERSION IMPLEMENTATION



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	6
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	17

ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



Document Control

Title:	Description
Ref No.:	20240122 – GLC – WTP – RSA 0004 - 00
Description:	Roadworks road safety audit on the changes in Rosehill Racecourse area as part of the temporary diversion of Unwin Street as part of the Sydney Metro West, Western Tunnel Package works.

Role	Name	Position	Date	Signed
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Author: Level 3 Road Safety Auditor 22.01.2024

Document Revisions

No.	Date	Issue / Description
00	22.01.2024	ORIGINAL ISSUE

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ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



Executive Summary

Audited Project:	Sydney Metro – Western Tunnel Package
Audit for:	Gamuda Australia and Laing O'Rourke Consortium (Western Tunnel Package)
Email Address:	
Clients Contact:	
Auditors:	(Level 3 Road Safety Auditor – ID:0908), Director / Senior Civil Engineer – Civlink Consulting Pty Ltd (Level 2 Road Safety Auditor – ID:1475) Traffic Engineer
Audit Type:	Roadworks road safety audit
Commencement Meeting:	18 th January 2024
Site Visit:	Night inspection at approximately 11:30pm on 21 st of January 2024. Day inspection at approximately 8am on the 22 nd of January 2024.
Completion Meeting:	To be advised
Previous Audit:	N/A

ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



1. Introduction

1.1 Purpose of Audit

This report presents findings of a roadworks road safety audit. The audit will review the installation of temporary controls and traffic changes in the Rosehill Racecourse area of works as part of the Western Tunnel Package construction works for the Sydney Metro West projects.

The audit is conducted to verify the implemented site arrangement for the works, 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 temporary diversion of Unwin Street and Kay Street through the site. The areas that are the subject of this audit is the red area shown in Figure 1, below;



Figure 1: Desktop Road Safety Audit Scope

[Source: Nearmap]



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:

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 Thursday the 18th of January 2024 a commencement email was received from Martin O'Shea (GLC) requesting a field audit be conducted on the opening of the new arrangement and controls in Rosehill Racecourse area in Parramatta as 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 Anthony Swann. The audit was to be conducted on the new realignment of Unwin Street and Kay Street through the site.

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 since no road can be regarded as safe.

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.

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GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



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


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UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



4. Audit Findings

No.	Location	Description of Deficiency / Observation	Risk level
1	Unwin Street, southern end	<p>There is a section of temporary barriers installed where the gawk screens are positioned to have the brackets on the trafficked side. The brackets sit proud of the barriers and may see the barriers not perform as tested or intended. The brackets may increase the severity of a run-off road incident. It is noted however that the operating speed of the section of road is very low.</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 TEMPORARY DIVERSION IMPLEMENTATION



2 Unwin Street – General note

The new end terminals and crash cushions installed throughout the site are installed typically without any delineation devices installed on the approach end of the terminals. This may increase the likelihood of an impact. It is noted however that the operating speed of this section of road is very low, and is reflected in the likelihood and severity.



Likelihood – Unlikely

Severity – Minor

Risk Rating – Low

ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



3 Unwin Street – General note	<p>There are areas where items are placed within the clearance / no-go zone of the temporary crash cushions. These areas are typically required to be kept clear to allow the cushion to operate freely if impacted. It may increase the severity of incidents involving the crash cushions on the barriers.</p> <p>It is noted that the operating speed of the section of road is very low, and is reflected in the likelihood and severity of an incident.</p>	<p>Likelihood – Unlikely</p> <p>Severity – Minor</p> <p>Risk Rating – Low</p>
4 Unwin Street – Southbound	<p>There is a run of barriers within Unwin Street which is installed without an end terminal. It is noted that the approach end of the barrier is a long way from the low speed traffic lane and highly unlikely to be struck. Notwithstanding, the installation is not in accordance with normal barrier installation requirements.</p> 	<p>Note only</p>

ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



5 Kay Street – Eastbound

There are sections of barriers installed on Kay Street next to the road and footpath which are not properly connected. Incorrectly installed barriers may contribute to an increased severity of run-off road incidents.

It is noted however that the operating speed of this section of road is very low, and is reflected in the likelihood and severity of an incident.



Likelihood – Unlikely

Severity – Minor

Risk Rating – Low

ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



6 Wentworth Street

There are areas of pavement failure and crocodile cracking throughout the site. Pavement failure and potholes may pose a hazard to cyclists and motorcycles navigating the site. It is noted however that some of these pavement failures may have been pre-existing conditions.



Likelihood – Unlikely

Severity – Minor

Risk Rating – Low

ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



7 Unwin Street

There is a section where a new refuge has been constructed. The pram ramp on the eastern side is very steep, and is not in accordance with the standard pram ramp requirements. The use of this ramp may be difficult for disabled and wheelchair operators. It is noted that pedestrian volumes in these areas is likely vevry low.



Likelihood – Unlikely

Severity – Minor

Risk Rating – Low

ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



- 8 Unwin Street – General note

There are a number of areas throughout the site where the footpath is deteriorated, with cracking and hazards for pedestrians. It is noted that some of these elements may be pre-existing conditions.

Notwithstanding, they pose a hazard to pedestrians navigating the site.



Likelihood – Unlikely

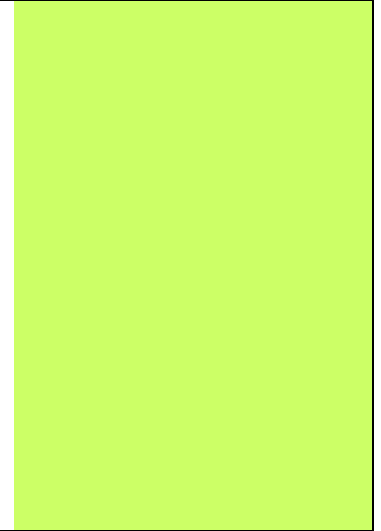
Severity – Minor

Risk Rating – Low

ROADWORKS - ROAD SAFETY AUDIT

GAMUDA AND LAING O'ROURKE CONSORTIUM

UNWIN STREET TEMPORARY DIVERSION IMPLEMENTATION



9 Night inspection – general notes

During the night inspection it was identified that

- some of the overhead lights were not operating
- linemarking was incomplete
- reflectors were not installed on barriers
- reflectors were not installed on the end terminals.

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 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 since no road can be regarded as safe. 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: 22.01.2024

Civlink Consulting Pty Ltd
M +61 432 544 458

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