

# **Construction Traffic Management Plan – Orchard Hills Stabling and Maintenance Facility**

SMWSASSM-PLD-1NL-NL000-TF-PLN-000001

Parklife Metro D&C

## Version Control

Version	Author	Date	Comments	Reviewed by	Approved by
<b>A</b>	<b>Wendy Zheng</b> Traffic Manager	01/06/2023	First Issue	<b>Discipline Leads</b>	<b>Richard Graham</b> Project Manager
<b>B</b>	<b>Wendy Zheng</b> Traffic Manager	10/07/2023	Second Issue	<b>Discipline Leads</b>	<b>Richard Graham</b> Project Manager
<b>0</b>	<b>Wendy Zheng</b> Traffic Manager	27/09/2023	Final Issue / IFI	<b>Discipline Leads</b>	<b>Jose Sanchez</b> Project Manager

### Signature

# Contents

<b>1</b>	<b>Introduction .....</b>	<b>9</b>
<b>2</b>	<b>Executive Summary .....</b>	<b>10</b>
<b>3</b>	<b>Project Details .....</b>	<b>11</b>
3.1	Proposed Works .....	11
3.2	Site Location .....	12
3.3	Timing of Works .....	12
3.4	Site Related Data .....	13
3.4.1	Road Details .....	13
3.4.2	Crash History .....	14
3.4.3	Vulnerable Road Users .....	15
<b>4</b>	<b>Works Proposed .....</b>	<b>17</b>
4.1	Stage 01 Site Access .....	17
4.2	Stage 01 Works Proposed .....	18
4.3	Stage 02 Works Proposed .....	19
4.4	Construction Hours .....	19
4.5	Construction Vehicle Movements .....	20
4.5.1	Truck Vehicle Volume .....	20
4.5.2	Truck Routes .....	20
4.6	Temporary Traffic Management Method .....	21
4.6.1	Stage 01 .....	21
4.6.2	Stage 02 .....	24
4.7	Risk Assessment .....	24
<b>5</b>	<b>Traffic Impact Management .....</b>	<b>25</b>
5.1	Vehicle Impact Management .....	25
5.2	Pedestrian / Cyclist Impact Management .....	25
5.3	Public Transport Impact Management .....	26
5.4	Property and Utility Access Impact Management .....	26
5.5	Cumulative Impacts .....	26
5.6	Authorised Traffic Controller .....	26
<b>6</b>	<b>Parking Management .....</b>	<b>28</b>
<b>7</b>	<b>Agency Permits .....</b>	<b>29</b>
7.1	Council Permits .....	29
7.2	Road Dilapidation Report .....	29

7.3	OSOM Permits .....	29
7.4	Speed Zone Authorisation Permits.....	29
<b>8</b>	<b>Community Notification.....</b>	<b>30</b>
8.1	Site Contact.....	30
8.2	Propose Communications .....	30
8.3	Travelling Public.....	31
8.4	Variable Message Signs.....	31
8.5	Stakeholders .....	31
<b>9</b>	<b>Monitoring and Review .....</b>	<b>32</b>
9.1	Road Safety Audit .....	32
9.2	Monitoring Program.....	32
9.3	Work Site Inspections, Recording and Reporting .....	32
9.4	Environmental Maintenance.....	33
<b>Appendix A</b>	<b>Swept Path Assessment .....</b>	<b>34</b>
<b>Appendix B</b>	<b>Traffic Guidance Scheme.....</b>	<b>35</b>
<b>Appendix C</b>	<b>Risk Assessment.....</b>	<b>36</b>
<b>Appendix D</b>	<b>Stakeholder Comments.....</b>	<b>37</b>
<b>Appendix E</b>	<b>Road Safety Audit.....</b>	<b>38</b>
<b>Appendix F</b>	<b>Drivers Code of Conduct.....</b>	<b>39</b>

## Table of figures

FIGURE 1: SITE LOCATION .....	12
FIGURE 2: CRASH MAP .....	14
FIGURE 3: SMF SITE ACCESS .....	17
FIGURE 4: SMF STAGE 01 ARCHITECTURAL (PRELIMINARY) .....	18
FIGURE 5: SMF STAGE 02 ARCHITECTURAL (PRELIMINARY) .....	19
FIGURE 6: PROJECTED SMF HV NUMBERS .....	20
FIGURE 7: CONSTRUCTION VEHICLE ACCESS ROUTE .....	21
FIGURE 8: SMF STAGE 01 ACCESS SET UP .....	22
FIGURE 9: ADDITIONAL PATONS LANE WAYFINDING SIGNAGE.....	23
FIGURE 10: STAGE 01 PATONS LANE ACCESS.....	24
FIGURE 11: PROPOSED SITE ESTABLISHMENT PLAN.....	28



## Table of tables

TABLE 1: DOCUMENT CHANGES / UPDATES .. <b>ERROR! BOOKMARK NOT DEFINED.</b>	
TABLE 1: TIMING OF WORKS.....	12
TABLE 2: LOCAL ROAD NETWORK .....	13
TABLE 3: CRASH HISTORY .....	14
TABLE 4: PUBLIC AND ACTIVE TRANSPORT .....	15
TABLE 5: CONSTRUCTION HOURS.....	19
TABLE 6: PROJECTED VEHICLE NUMBERS.....	25
TABLE 7: PROPOSED COMMUNICATIONS .....	30

# Glossary

Acronym	Description
<b>AGRD</b>	Austrroads Guide to Road Design
<b>AGTM</b>	Austrroads Guide to Traffic Management
<b>Council</b>	Penrith and / or Liverpool Council
<b>CTMP</b>	Construction Traffic Management Plan
<b>DA</b>	Development Application
<b>DCP</b>	Development Control Plan
<b>DoS</b>	Degree of Saturation
<b>DPE</b>	Department of Planning and Environment
<b>HRV</b>	Heavy Rigid Vehicle (as defined by AS2890.2:2018)
<b>LEP</b>	Local Environmental Plan
<b>LGA</b>	Local Government Area
<b>LoS</b>	Level of Service
<b>MOD</b>	Section 4.55 Modification (also referred as a S4.55)
<b>MRV</b>	Medium Rigid Vehicle (as defined by AS2890.2:2018)
<b>NHVR</b>	National Heavy Vehicle Regulator
<b>ONRSR</b>	Office of the National Rail Safety Regulator
<b>OSOM</b>	Oversize and/or overmass (OSOM) vehicles
<b>RMS Guide</b>	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
<b>RIM</b>	Rail Infrastructure Manager
<b>RRV</b>	Road Rail Vehicles
<b>RSO</b>	Rolling Stock Operator
<b>SCAW</b>	Surface and Civil Alignment Work
<b>SBT</b>	Station Boxes and Tunnelling
<b>SMF</b>	Stabling and Maintenance Facilities

<b>SMSWA</b>	Sydney Metro Western Sydney Airport
<b>S96</b>	Section 96 Modification (former process terminology for an S4.55)
<b>SRV</b>	Small Rigid Vehicle (as defined by AS2890.2:2018)
<b>SSTOM</b>	Stations, Systems, Trains, Operations and Maintenance
<b>TCAWS</b>	Traffic control at work sites Technical Manual (version 6.1:2022 or the latest)
<b>TGS (TCP)</b>	Traffic Guidance Scheme (formerly known as Traffic Control Plan)
<b>TDT 2013/04a</b>	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
<b>TfNSW</b>	Transport for New South Wales
<b>veh/hr</b>	Vehicle movements per hour (1 vehicle in & out = 2 movements)

# 1 Introduction

This site-specific Construction Traffic Management Plan (CTMP) was created as per the Sydney Metro Construction Traffic Management Framework (CTMF), the general specification management of the Project and Overarching Construction Management Plan - Sydney Metro Western Sydney Airport.

The scope of this CTMP is to detail the traffic and transport impacts and management measures associated with the traffic management stages required to facilitate the construction of the Orchard Hills Stabling and Maintenance Facility.

Stage 01 will consist of:

- enabling works
- construction of the buildings

All works within Stage 01 will take place within the SMF site with vehicular access off Patons Lane.

Stage 02 will be the construction of the rail infrastructure and power connection works. As the rail construction is projected to start late 2024, this CTMP will be updated with details for rail construction traffic management in early 2024.

This CTMP and the documents referenced in the CTMP have been prepared in accordance with the relevant standards and guidelines listed in the SSTOM Overarching Construction Traffic Management Plan (SMWSASSM-PLD-1NL-PLN-000071).

This plan has been prepared to meet the following requirements including SSI 10051 Planning Approval Condition E103 and will be submitted to the Planning Secretary of the NSW Department of Planning and Environment for information.

- Environmental Impact Statement (EIS) of Sydney Metro Western Sydney Airport – Technical Paper 1 - Transport Mitigation Measures
- EIS Construction Traffic Management Framework
- Conditions of Approval (CoA) for the State Significant Infrastructure (SSI 10051)

This report has been prepared by the traffic manager who holds a SafeWork NSW Work Health & Safety Traffic Control Work card, accredited for the 'Prepare a Work Zone Traffic Management Plan'. Details of the accredited personnel is provided below:

- Wendy Zheng Ticket No. TCT1015144

This report has been reviewed by the consultant who holds a SafeWork NSW Work Health & Safety Traffic Control Work card, accredited for the 'Prepare a Work Zone Traffic Management Plan'. Details of the accredited personnel is provided below:

- Dora Choi Ticket No. TCT10021456

This Construction Traffic Management Plan has been prepared to meet the requirements outlined in Appendix A and Appendix E, Section E.2 of the Transport for NSW Traffic Control at Work Sites Technical Manual (Issue No. 6.1, 2022).

## 2 Executive Summary

This CTMP covers the construction traffic management measures for the construction of Stage 01 (buildings and facilities) of the Orchard Hills Stabling and Maintenance Facility. The construction traffic management measures outlined in this document will allow for the safe interaction between the SSTOM, SCAW and BINGO gates off Patons Lane and to mitigate impact on the public road network. This CTMP will be updated following finalisation of rail design to cover the construction traffic management measures for the construction of Stage 02 (rail infrastructure).

## 3 Project Details

### 3.1 Proposed Works

The Stabling and Maintenance Facility at Orchard Hills is to deliver:

#### Stage 01

- Earthworks, drainage and underground utilities both within and outside of the building footprint
- Construction of buildings:
  - Building 01: Operations Control Centre (OCC)
  - Building 02: Maintenance & Admin
  - Building 03: Security & Fire Control
  - Building 04: Fire Pump & Tanks
  - Building 05: Substation (Including Traction & Distribution)
  - Building 06: Wheel Lathe
  - Building 07: Rail PWAY Store
  - Building 08: Recycling & Services
  - Building 09: Infrastructure Workshop
  - Building 10: Graffiti & Bio Clean
  - Building 11A: Cleaners Store ST.1
  - Building 12: Admin
  - Building 13: Train Wash
  - Building 14: Vehicle equipment Monitoring Systems (VEMS)
  - Building 15: Cleaners Store ST.2
  - Building 16: Bin Store
  - Building 17: Infrastructure Workshop
- Precinct Works and Ancillary Works:
  - Detention Basin
  - Car Park
  - Landscaping works, street lighting and furniture

#### Stage 02

- Construction of Rail Infrastructure:
  - Stabling Yard 1
  - Combined Service Route
  - Track Works and OHW
  - Rail Systems and REL



### 3.2 Site Location

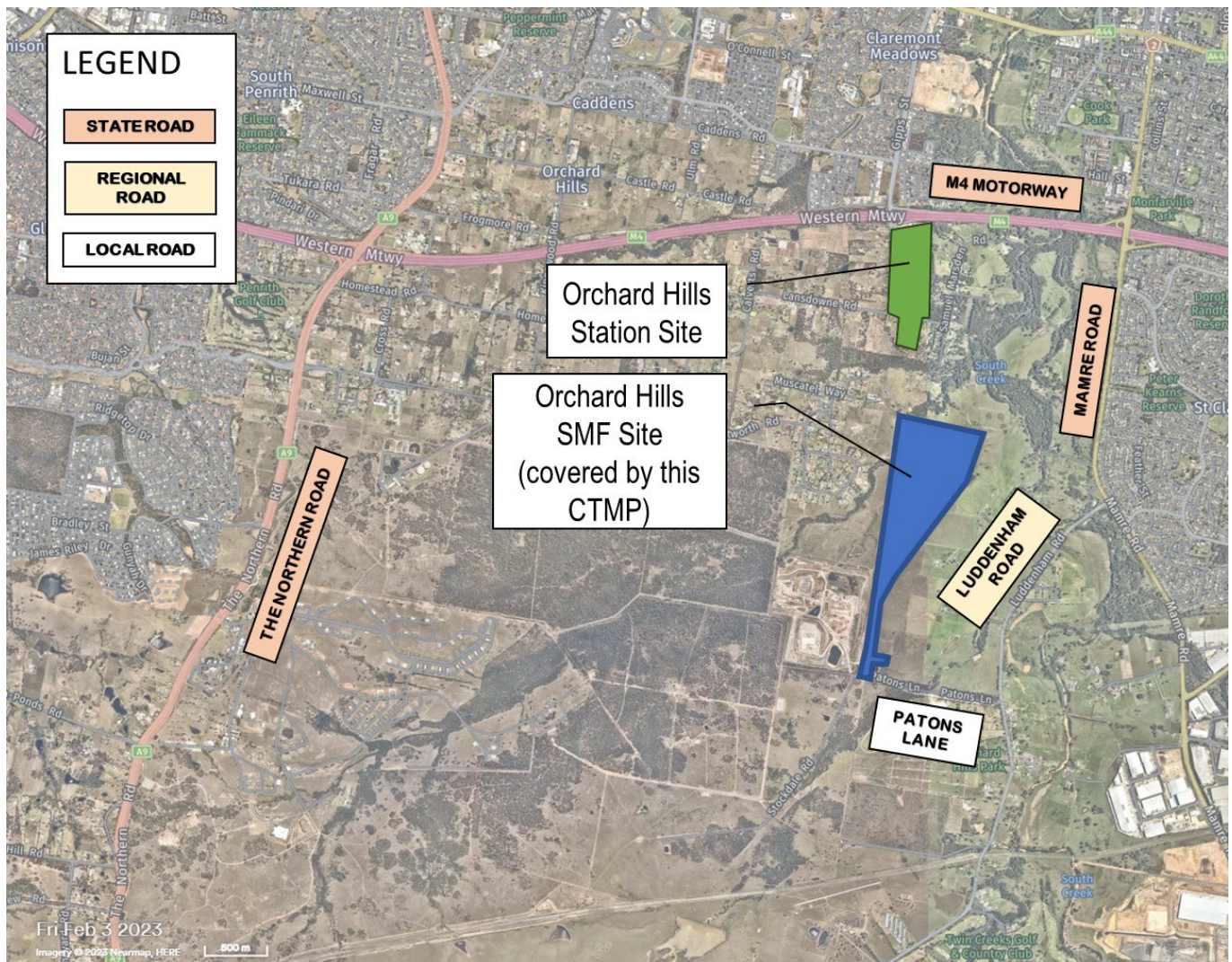


FIGURE 1: SITE LOCATION

The site is located to the south of Blaxland Creek and east of the project alignment. Access will be via Patons Lane, Orchard Hills.

### 3.3 Timing of Works

The site will be handed over to SSTOM on 8<sup>th</sup> August 2023 with the site establishment works to commence on 8<sup>th</sup> August 2023.

TABLE 1: TIMING OF WORKS

Activity	Start Date	Finish Date
Stage 01		

<b>Enabling Works</b>	8-Aug-23	23-Dec-23
<b>Site Establishment &amp; Support</b>	8-Aug-23	9-Jan-24
<b>Utility Services Works</b>	8-Aug-23	20-Sep-24
<b>Surface Works</b>	8-Aug-23	12-Jul-24
<b>Ancillary Works</b>	8-Aug-23	8-Dec-25
<b>Additional and / or balancing items</b>	8-Aug-23	29-May-26
<b>Buildings &amp; Sheds</b>	29-Jan-24	4-Sep-25
<b>Combined Services Route</b>	23-Feb-24	25-Sep-25
<b>Precinct Works</b>	9-Feb-24	8-Dec-25
<b>Stage 02</b>		
<b>Track</b>	16-Jul-24	30-Jan-25
<b>General Power</b>	21-Aug-24	30-Jan-25
<b>Traction Power</b>	9-Jan-25	30-May-25

## 3.4 Site Related Data

### 3.4.1 Road Details

The key roads surrounding the Site are identified within Figure 1 and summarised below:

TABLE 2: LOCAL ROAD NETWORK

Road Name	Section	Speed Limit	Parking	Traffic Volume and Peak Times	Urban / Rural
<b>Patons Lane</b>	Luddenham Road to Stockdale Road	50km/hr	No	-	Rural
<b>Luddenham Road</b>	Mamre Road to Patons Lane	80km/hr – 60km/hr	No	-	Urban



<b>Mamre Road</b>	M4 to Luddenham Road	80km/hr – 60km/hr	No	-	Urban
<b>M4</b>	Turn off south onto Mamre Road	Up to 110km/hr	No	-	Urban

Note the AM / PM peaks on the road network is assumed to occur at 7.30am – 8.30am and 4.30pm – 5.30pm per the SSI-10051 EIS documentation.

### 3.4.2 Crash History

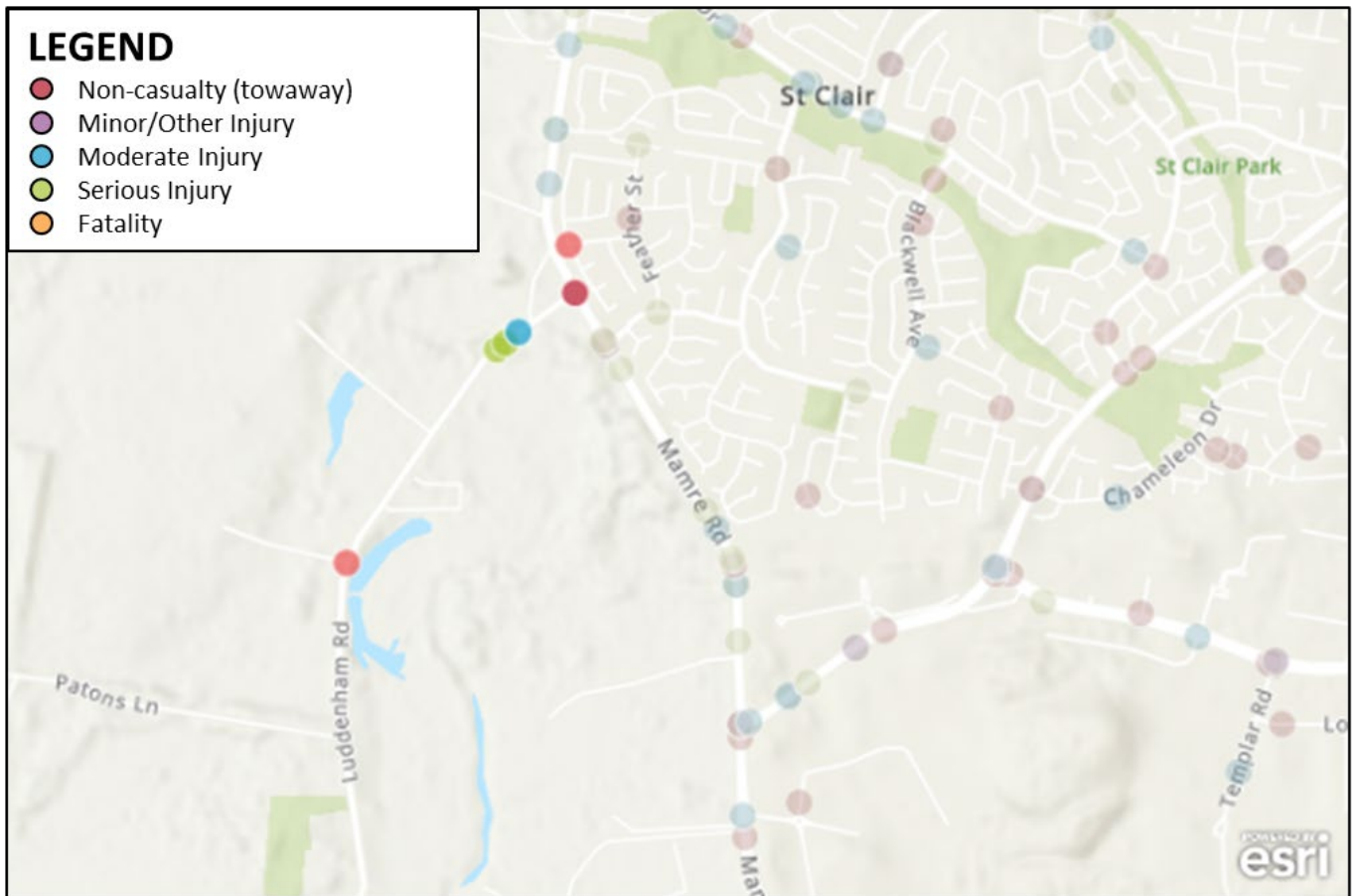


FIGURE 2: CRASH MAP

TABLE 3: CRASH HISTORY

Year	Location	RUM Code	Injury / Death
<b>2017</b>	Mamre Rd near Luddenham Rd	13 - Right near	Non-casualty (towaway)

<b>2018</b>	Mamre Rd near Luddenham Rd	10 - Cross traffic	Moderate Injury (1)
<b>2019</b>	Luddenham Rd near Mamre Road	20 - Head on	Moderate Injury (2)
<b>2019</b>	Mamre Rd near Luddenham Rd	19 - Other adjacent	Non-casualty (towaway)
<b>2020</b>	Mamre Rd near Luddenham Rd	13 - Right near	Minor/Other Injury (1)
<b>2020</b>	Mamre Rd near Luddenham Rd	14 - 2 right turning	Non-casualty (towaway)
<b>2020</b>	Luddenham Rd near Mamre Road	81 - Off left/rt bnd=>obj	Non-casualty (towaway)
<b>2020</b>	Mamre Rd near Luddenham Rd	13 - Right near	Minor/Other Injury (1)
<b>2020</b>	Luddenham Rd near Mamre Road	71 - Off rd left => obj	Serious Injury (1)
<b>2021</b>	Mamre Rd near Luddenham Rd	13 - Right near	Non-casualty (towaway)
<b>2021</b>	Luddenham Rd near Mamre Road	71 - Off rd left => obj	Serious Injury (1)
<b>2021</b>	Mamre Rd near Luddenham Rd	21 - Right through	Serious Injury (2)

An analysis of the crash history shows that four crashes of the same type on Mamre Road near Luddenham Road which resulted in no casualties or minor injuries. It is expected that the NSW Government committed Mamre Road upgrade between the M4 Motorway, St Clair and Erskine Park Road, Erskine Park will alleviate the safety issues in the future.

### 3.4.3 Vulnerable Road Users

Vulnerable road users (VRU) are road users not in a car, bus or truck. In the event of a crash, VRUs have little to no protection from crash forces, therefore, need to be addressed within this CTMP. Table 5 provides context to VRU's surrounding the Site.

TABLE 4: PUBLIC AND ACTIVE TRANSPORT

Road Name	Pedestrian	Cycling	Public Transport
<b>Patons Lane</b>	No	No	No

No dedicated cycle /  
shared path

**Luddenham Road**

No

No

No

No dedicated cycle /  
shared path

**Mamre Road**

No

No

Yes – bus routes 776,  
779, 4036, 4115, 4647

No dedicated cycle /  
shared path

Bus stops along  
roadway

**M4**

No

No

No

No dedicated cycle /  
shared path

## 4 Works Proposed

### 4.1 Stage 01 Site Access

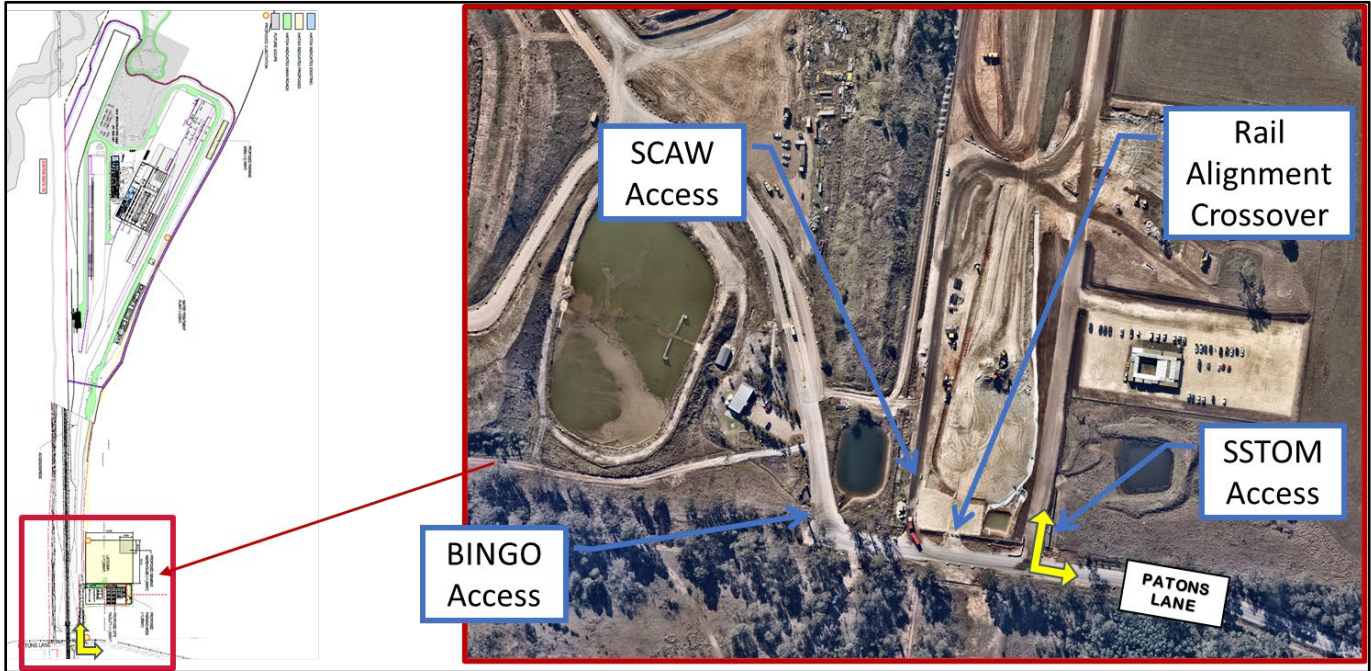


FIGURE 3: SMF SITE ACCESS

Site access for all vehicles into SMF site will be off Patons Lane only. Patons Lane is now a dead-end road closed immediately past the BINGO access and Stockdale Road has also been closed by Council. All access to Site will be off Patons Lane through Luddenham Road and all vehicles will be exiting the site onto Patons Lane connecting back onto Luddenham Road per Figure 7.

All Heavy Vehicles exiting SSTOM site will need to perform a left turn from Patons Lane onto Luddenham Road, due to existing signage installed by Penrith City Council noting vehicles over 5 tonnes are not allowed to perform a right turn at this intersection.

Stage 02 site access will likely continue from the existing Stage 01 site access but will likely add the existing SCAW access as well.



## 4.2 Stage 01 Works Proposed

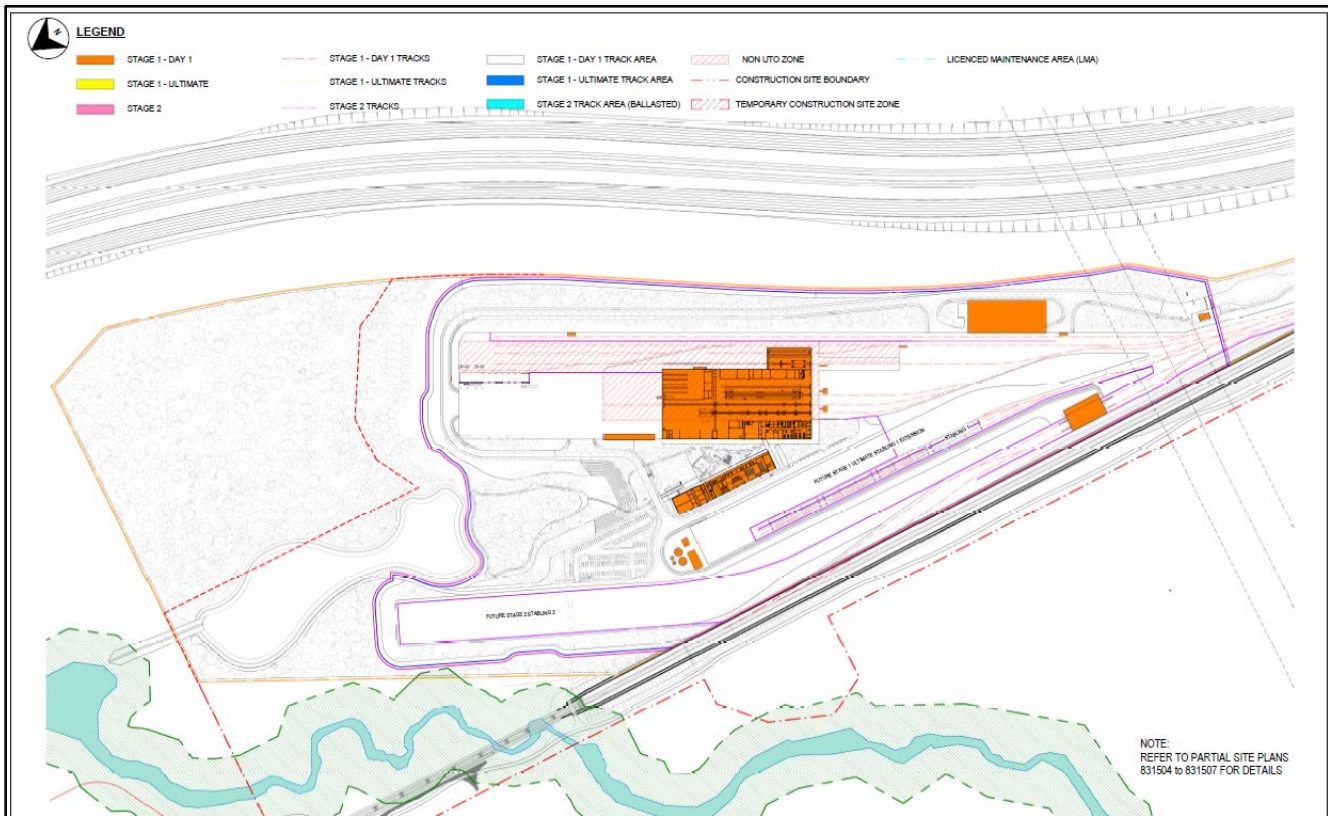


FIGURE 4: SMF STAGE 01 ARCHITECTURAL (PRELIMINARY)

The following key activities would be undertaken within this stage:

- Enabling Works
- Site Establishment & Support
- Utility Services Works
- Surface Works
- Precinct Works
- Ancillary Works
- Additional and / or balancing items
- Buildings & Sheds
- Combined Services Route

## 4.3 Stage 02 Works Proposed

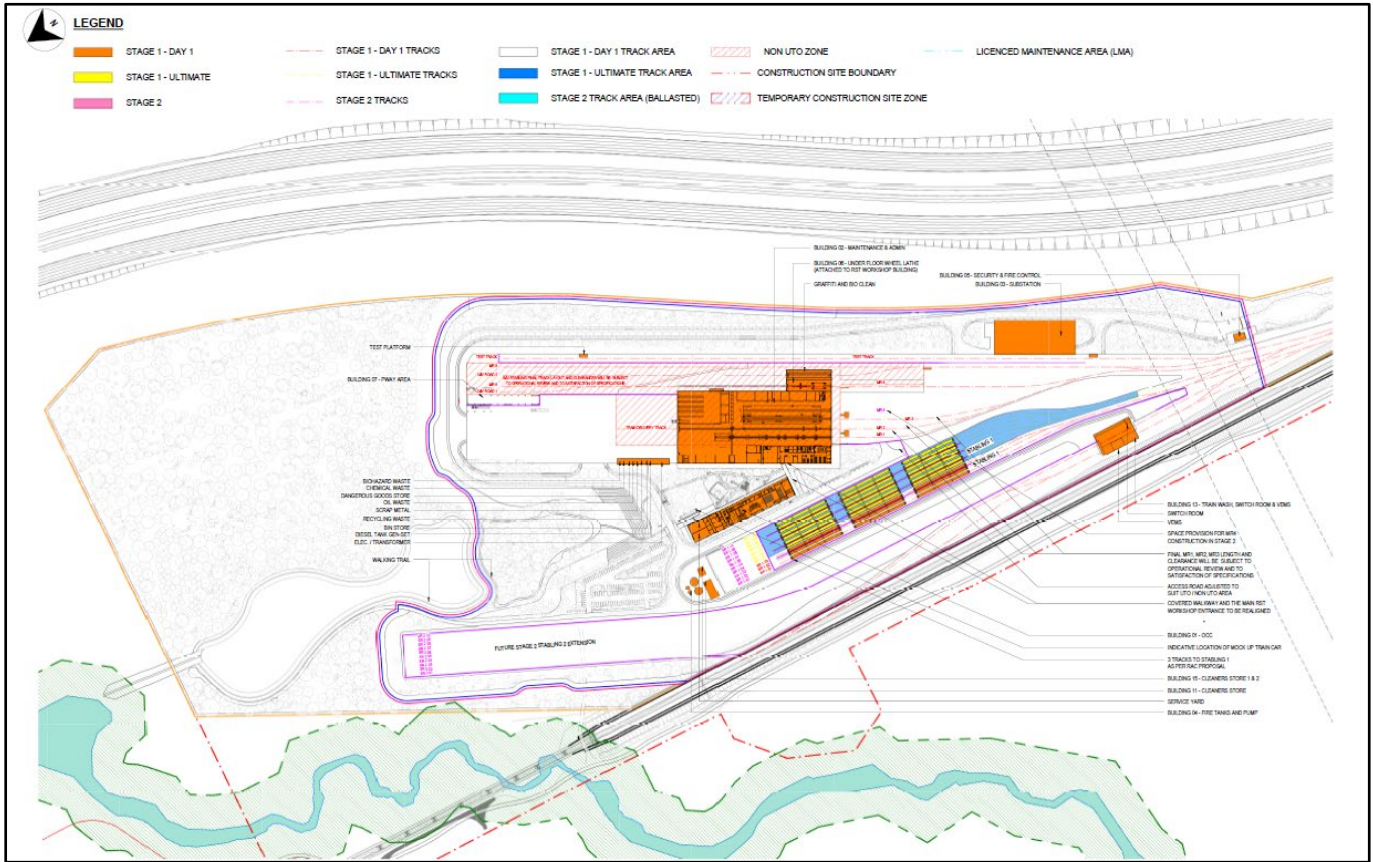


FIGURE 5: SMF STAGE 02 ARCHITECTURAL (PRELIMINARY)

The following key activities would be undertaken within this stage:

- Track Construction
- General Power
- Traction Power

## 4.4 Construction Hours

Construction hours have been outlined below per Condition E38:

TABLE 5: CONSTRUCTION HOURS

Activity	Day	Time
<b>Construction Works</b>	Mondays to Fridays	7:00am to 6:00pm
	Saturdays	8:00am to 1:00pm
	Sundays or Public Holidays	At no time

It is anticipated that construction works may be conducted outside of the hours outlined above. Should out of work hours be required, per Conditions E41 and E42, PLM D&C will lodge an application with DPE to seek approval for these works.

## 4.5 Construction Vehicle Movements

### 4.5.1 Truck Vehicle Volume

The projected daily heavy vehicle volume for all stages of SMF construction is shown in Figure 6.

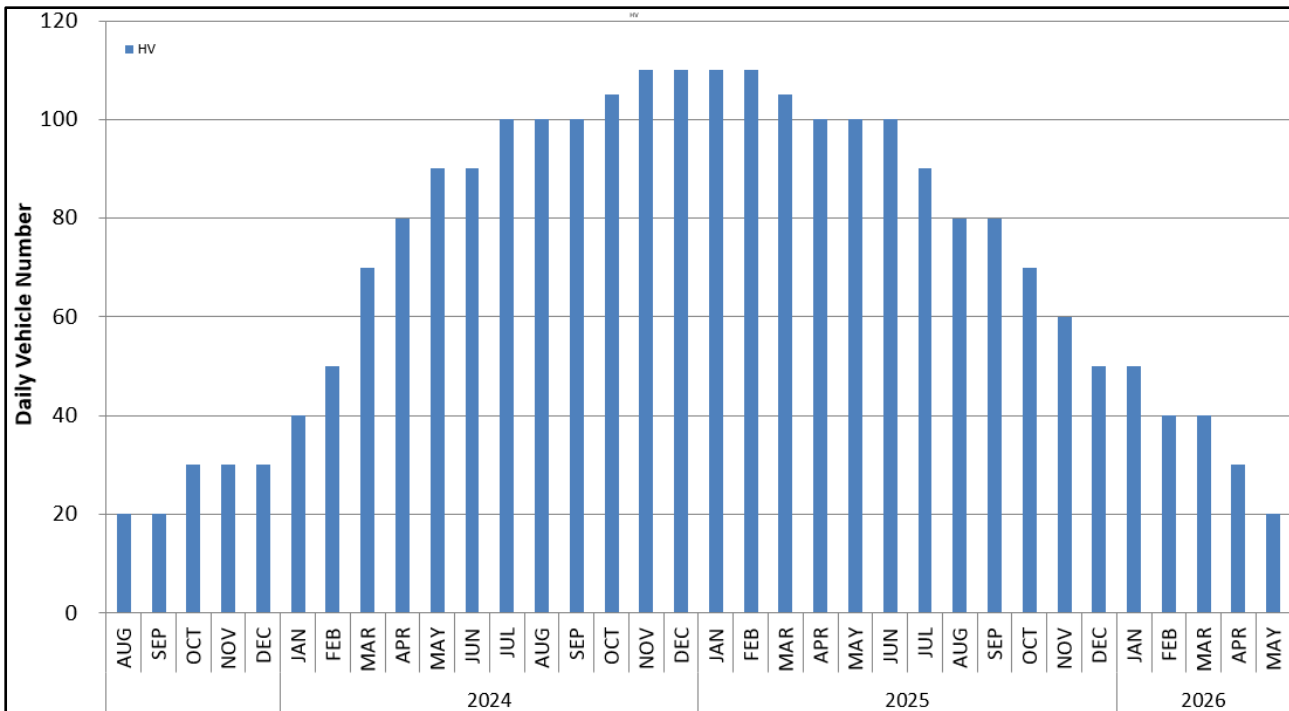


FIGURE 6: PROJECTED SMF HV NUMBERS

The anticipated heavy vehicle volume peak will start following Stage 02 commencement in July 2024 and come to a close following July 2025.

### 4.5.2 Truck Routes

It is proposed that all construction vehicles would enter and exit the Site via the routes shown in Figure 7. The routes shown are to be utilised by all construction vehicles travelling to and from the site and represents the shortest route available from / to a State Road – hence minimising the impacts of the construction process. A copy of the approved routes will be distributed by PLM D&C to all drivers before their arrival to Site.

The largest truck required for Stage 01 construction will be 12.5m long Heavy Rigid Vehicles (HRVs) so an over-size over mass (OSOM) permit will not be required for heavy vehicle access to site through Luddenham Road and Patons Lane. However, in the event that an oversized or over-mass vehicles is required to travel to the Site, PLM D&C will obtain an OSOM permit from the National Heavy Vehicle Register (NHVR).

The swept paths (attached in Appendix A) demonstrate all critical turns at along the route shown in Figure 7. All construction vehicles will drive forward in and out of the Site onto Patons Lane via the existing Site access.



There is no pedestrian or cyclist path available along the route from M4 to Site.

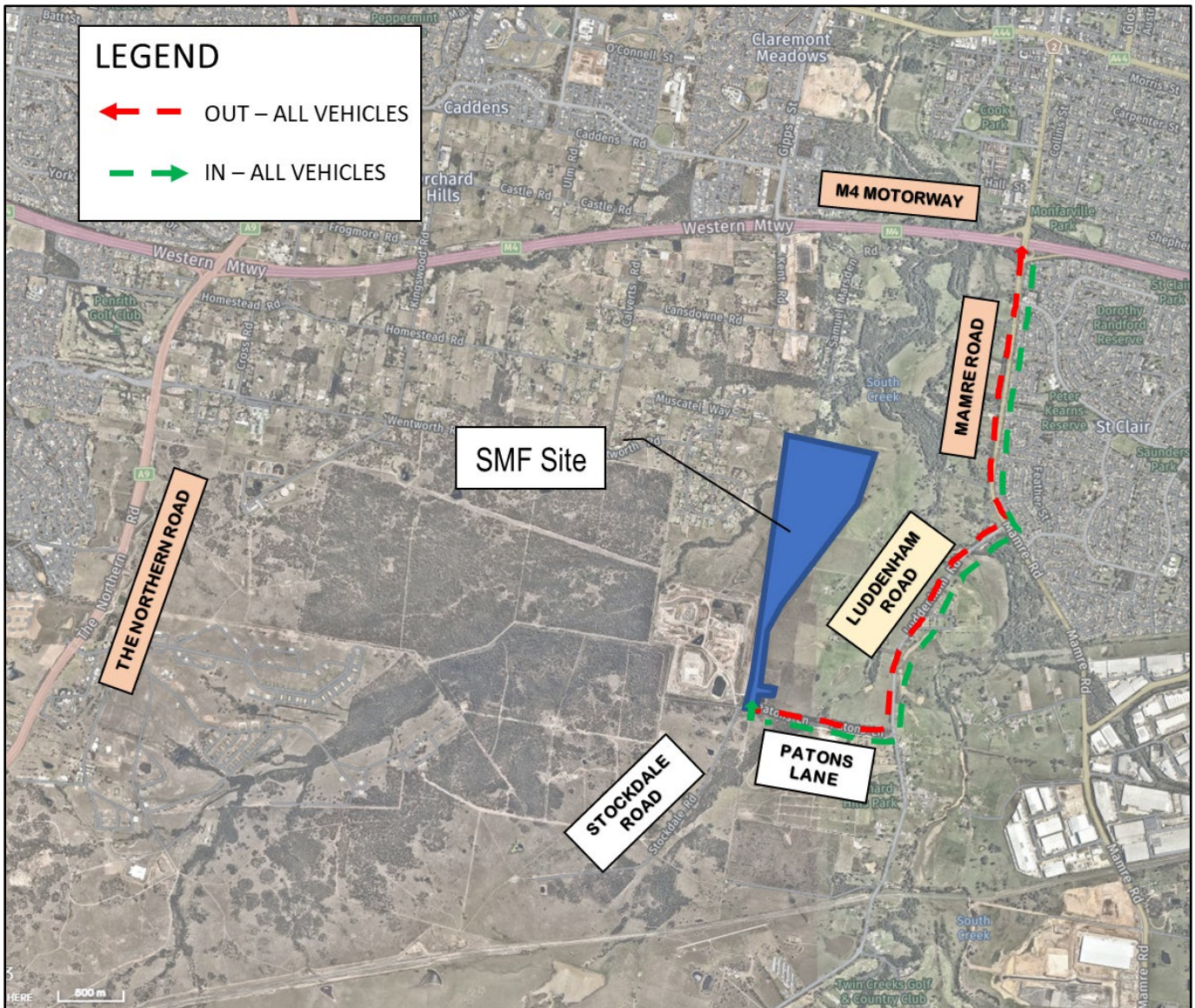


FIGURE 7: CONSTRUCTION VEHICLE ACCESS ROUTE

Note that Stage 02 heavy vehicles will be required to follow the same route when utilizing the public road network to access the site.

## 4.6 Temporary Traffic Management Method

### 4.6.1 Stage 01

No works external to the Site will take place within Stage 01 and all deliveries will be undertaken by heavy vehicles HRV sized or smaller.

Due to the utility box located at the site access to SMF, the construction driveway width for SSTOM is too narrow to allow comfortable simultaneous access for two HRVs. To ensure queuing on Patons Lane is minimised, traffic controller at the Patons Lane gate will give priority to entering vehicles at all times and the set up in Figure 8 will be implemented for Stage 01 works.



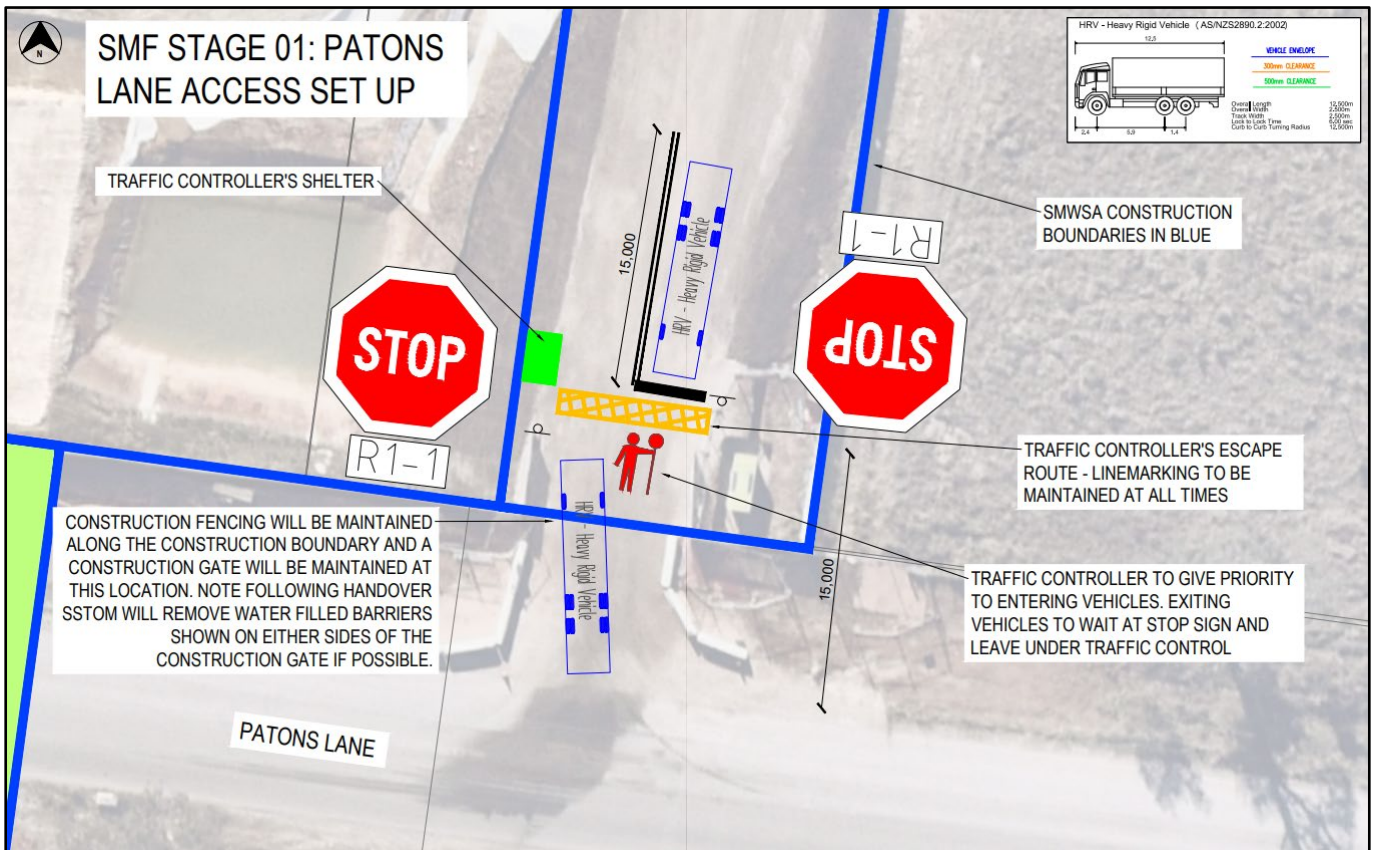


FIGURE 8: SMF STAGE 01 ACCESS SET UP

All vehicles accessing the SSTOM will have to register on the PLM logistics software for a timeslot on site. If a vehicle arrives early or late and there is no delivery slots immediately available, vehicles will be directed to queue on the shoulder of the access road which is one kilometre long between gate and SMF site.

External to the site, to mitigate the confusion of having the SSTOM, Linewide, SCAW and BINGO accesses all within 150m of each other, an advance direction (diagrammatic type) sign will be installed on Patons Lane after the Endeavour Energy site for wayfinding purposes. Additional wayfinding signage will be installed adjacent to the SSTOM and SCAW site gates to notify and reinforce the different construction accesses.

Figure 9 shows the Metro branded wayfinding signage which will be installed on Patons Lane. Refer to the TGS in Appendix B for exact locations and layout. PLM is currently liaising with BINGO regarding SSTOM site start up as well as the wayfinding signage installation.

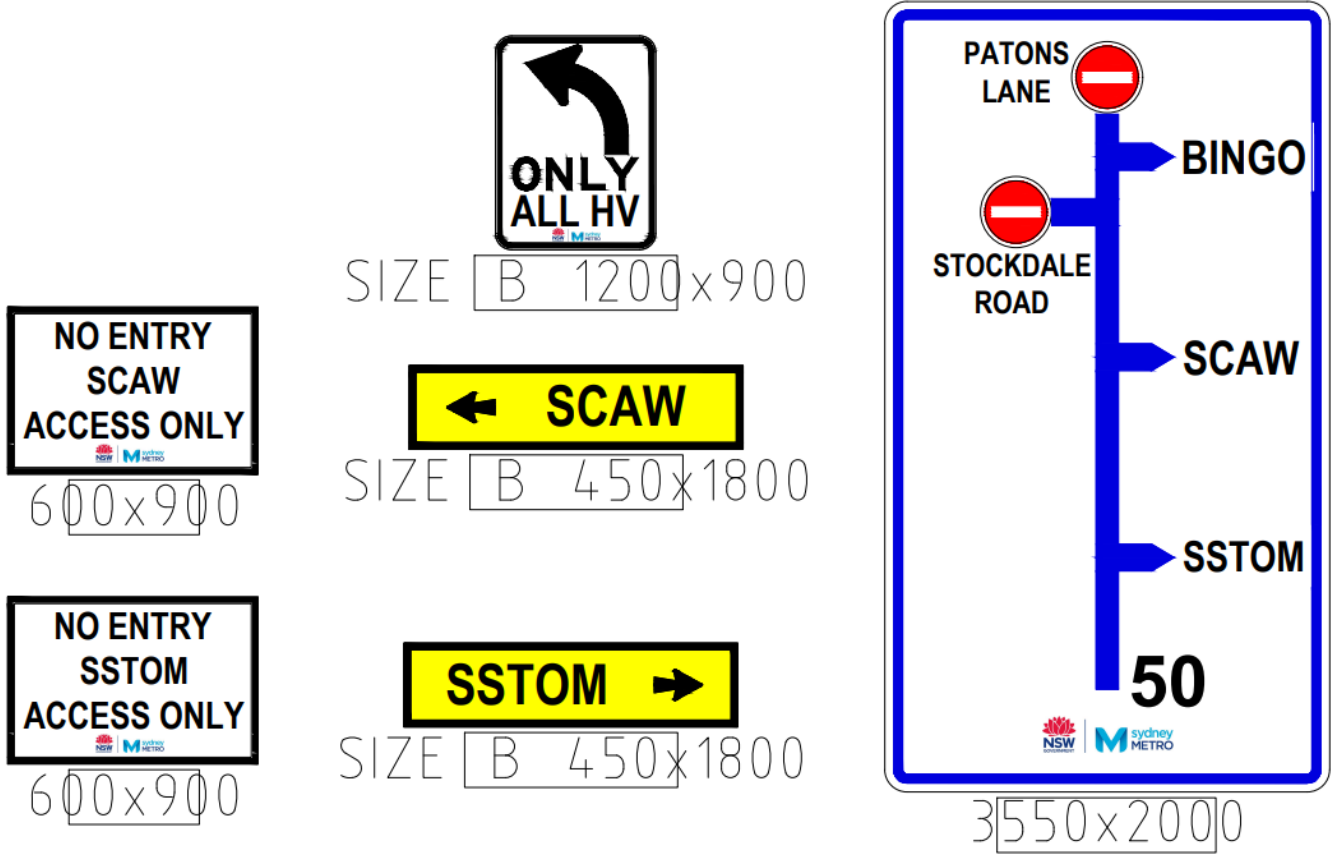
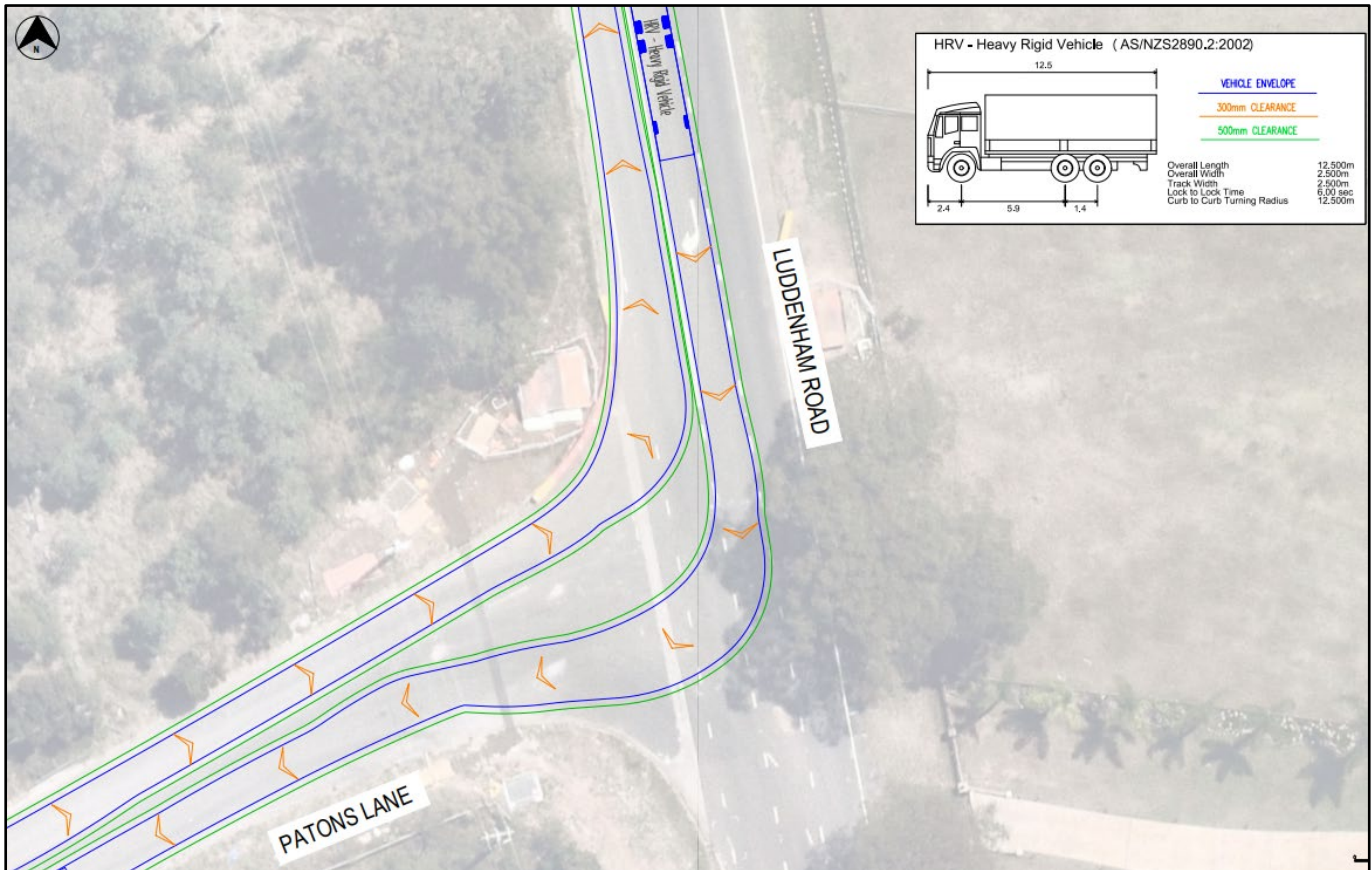


FIGURE 9: ADDITIONAL PATONS LANE WAYFINDING SIGNAGE

HRV access to Patons Lane from Luddenham Road will not impact the existing operations of either roads per swept paths show in Figure 10.



**FIGURE 10: STAGE 01 PATONS LANE ACCESS**

There is a lack of any pedestrian or cyclist facilities at the site access on Patons Lane. The traffic controller on duty (one hour before and one hour after construction hours) will facilitate access and to direct any general traffic if required.

This arrangement outlined is likely to be in place until July 2024.

The Traffic Guidance Scheme for Stage 01 outlined in Appendix B has been prepared to meet the requirements outlined in TfNSW Traffic Control At Work Sites Technical Manual (Issue 6.1, 2022).

## 4.6.2 Stage 02

Deliveries of rail segments for Stage 02 construction of the rail infrastructure is expected to start in July 2024 which will necessitate deliveries utilizing Class 01 or 03 heavy vehicles. Temporary traffic management arrangements will change to accommodate the deliveries and this CTMP will be updated following finalisation of rail design.

## 4.7 Risk Assessment

A risk assessment is aimed to identify the hazards and risks associated with the works. The purpose of this risk assessment is to determine the controls required for the protection of the road workers and road users. A Risk assessment has been completed and is attached in Appendix C.

## 5 Traffic Impact Management

### 5.1 Vehicle Impact Management

There will be minimal impact on the surrounding road network as the vehicle numbers are significantly less for Stage 01 works before Stage 02 starts. The project vehicle number at peak is shown in Table 7 noting that PLM D&C defines the AM peak as being between 7.30am – 8.30am and PM peak as being 4.30pm – 5.30pm Monday to Friday which is consistent with the EIS defined AM and PM peaks.

TABLE 6: PROJECTED VEHICLE NUMBERS

Vehicle Type	IN	OUT	TOTAL	IN	OUT	TOTAL
	<b>EIS AM Peak Construction Movements</b>			<b>EIS PM Peak Construction Movements</b>		
<b>LV Staff</b>	56	0	56	0	56	56
<b>LV Deliveries</b>	1	1	2	1	1	2
<b>HV</b>	11	11	22	11	11	22
	<b>PLM AM Peak Construction Movements (Stages 01 and Stage 02 combined peak)</b>			<b>PLM PM Peak Construction Movements (Stages 01 and Stage 02 combined peak)</b>		
<b>LV Staff</b>	30	0	30	0	50	50
<b>LV Deliveries</b>	1	1	2	1	1	2
<b>HV</b>	8	8	16	8	8	16

No queuing will be permitted on Patons Lane at any time. Heavy vehicle access to the Site will be managed and monitored by PLM D&C with all subcontractors to register for a delivery timeslot and location on the construction logistic software prior being granted access to Site.

The site superintendent will ensure that the minimum number of vehicles possible is scheduled to come in during the EIS peak hours and given that there is a kilometre of vehicle storage area on site, release the minimum number of vehicles possible from site during the EIS peak hours to minimise impact on the surrounding road network.

### 5.2 Pedestrian / Cyclist Impact Management

There is no formal pedestrian or cyclist facilities on the haul route between M4 and the Site. However, there are informal links to the nearest side streets or paths on Mamre Road especially around the bus stops.

All delivery drivers will be briefed to be aware of pedestrians and / or cyclists at all times. This is also enforced in the Drivers Code of Conduct in Appendix F.



## 5.3 Public Transport Impact Management

There is no impact on public transport during Stage 01 works as the only road along the haul route between M4 and the Site with public transport is Mamre Road which is an OSOM route.

However, all delivery drivers will be briefed that buses are always given priority along the haul route. This is also enforced in the Drivers Code of Conduct in Appendix F.

## 5.4 Property and Utility Access Impact Management

Noting that there are no residential properties with access off Patons Lane, utility providers / maintenance access along Patons Lane will be maintained at all times.

The traffic controller on the Site access gate will be briefed to direct general traffic when necessary.

## 5.5 Cumulative Impacts

Endeavour Energy is currently undertaking works to construct the Orchard Hills Switching Station south of Patons Lane near the Luddenham Road intersection. The construction works is projected to be largely complete before the end of 2023 with the Station operational in July 2024. Endeavour Energy has informed SSTOM that the switching station construction will be largely completed before March 2024 which is before SMF construction ramps up for slab pours.

Heavy vehicle movement required for SMF Stage 01 works prior to July 2024 is projected to be well under the EIS maximum cap for SMF. SCAW will be operating in the adjacent portion utilising the Linewide EIS numbers until mid 2024. Note that SCAW currently is operating outside of the EIS construction hours so their vehicle numbers are spread across a longer time period than SSTOM.

SSTOM traffic management will ensure the vehicle generation numbers (heavy and light) will be within the numbers identified in the EIS Transport Tech Paper for SMF.

Additionally, SSTOM traffic management is an active participant in the TTLG, TCG and the Luddenham Transport Working Group meetings ensuring ongoing monitoring and discussion will occur over the life of the project.

## 5.6 Authorised Traffic Controller

One traffic controller will be provided to manage delivery traffic and contractor access at the Site access and be responsible for opening the site gate on Patons Lane starting one hour before construction hours and ending one hour after. The traffic controller will coordinate with the second traffic controller within site via radios to manage parking on site and will direct general traffic when required within the site boundary.

A second traffic controller will float within the Site to coordinate the parking within the site with the traffic controller on gate via radio and if necessary, manage the unloading and loading of heavy vehicles.

Whilst on Site, the responsibilities of the Traffic Controller include:

- Implementation of the Traffic Guidance Scheme.
- Pedestrian and cyclist management, to ensure that adverse conflicts between vehicle movements and pedestrians do not occur.

- Supervision of all loading and unloading of construction materials during the deliveries in the construction phase of the project.

## 6 Parking Management

PLM D&C will ensure the SMF construction works will have minimal impact on parking in the area.

There will be no contractor parking allowed on Patons Lane nor Luddenham Road.

The on-site parking area within the SMF compound can accommodate the projected 350 light vehicle parking requirement within three parking areas as shown in Figure 11.

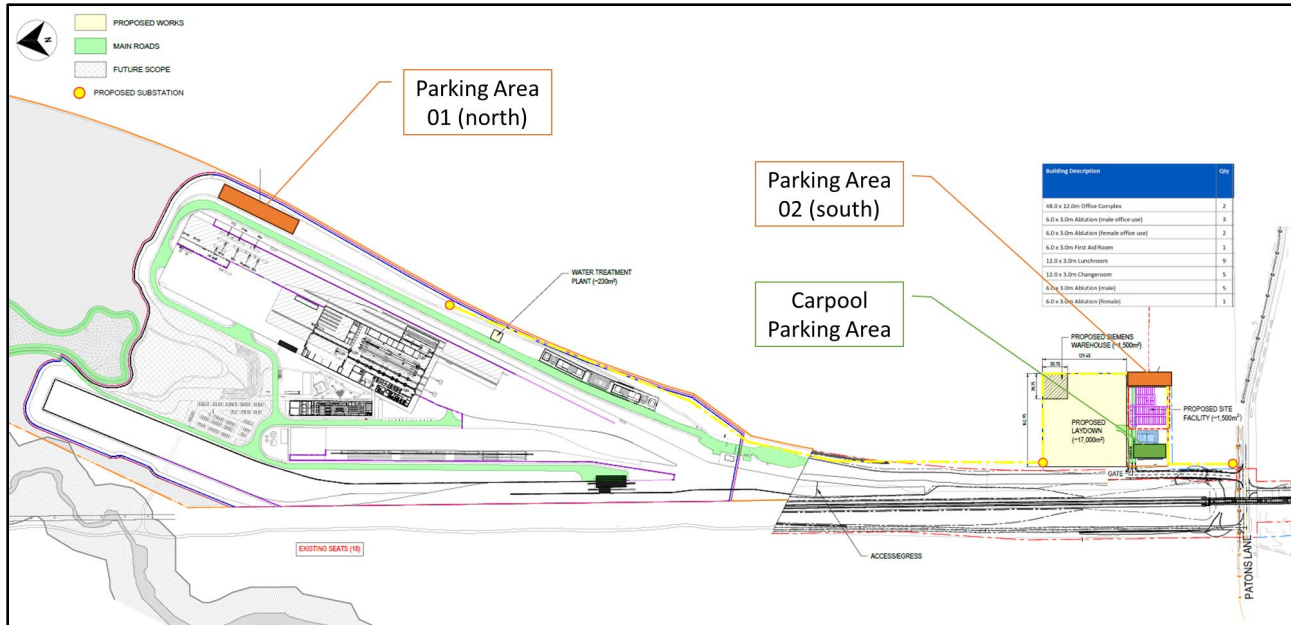


FIGURE 11: PROPOSED SITE ESTABLISHMENT PLAN

Within the Carpool Parking Area, carpool spaces will be maintained and assigned to the three 12-seater minibuses and five pool utility vehicles that will be allocated to the SMF site to allow for transport within and external to Site. Subcontractors can register carpool vehicles to be allocated parking within the Carpool Parking Area.

All visitors to Site will arrange the visit with PLM D&C and be picked up by minibus or pool car from a centralised location (Railway Station or another pre-arranged location) to be transported to Site.

Subcontractors will have to register their car parking requirements with PLM D&C prior to starting on-site and will be encouraged to carpool noting that secure tool storage areas and amenities will be available within the Site. Aside from the carpool vehicles, all drivers will be directed to park in Parking Area 01 until it is full before parking can start in Parking Area 02 to avoid queuing on Patons Lane. SMF minibuses will be available to transport workers between the northern and southern ends of the site as required.

Traffic controllers will be stationed at each parking area to coordinate parking and communicate with the traffic controller at the gate to direct car parking traffic between parking areas from one hour before construction hours to end of construction hours.

PLM D&C will ensure that all personnel, including sub-contractors are aware of the specific requirements of TfNSW customers, general public, residents and businesses, prior to attending site through the induction process and regular updates through tool-box talks.

PLM D&C will implement a booking system to enable scheduling of shuttle bus services between St Marys Railway Station and the Site. All contractors going to site will be able to sign up for shuttle bus service going to and from site a week before their start date to allow PLM D&C to schedule shuttle buses at set times between St Marys Railway Station and the Site. The shuttle buses will be operated using the three 12-seater minibuses.

## 7 Agency Permits

### 7.1 Council Permits

No Council permits is required for Stage 01. However, it is noted that PLM D&C is required to apply for the following permits with Council for the following activities which affect Council assets:

- Driveway Construction: Construction of driveways and footpath connections over the Council road reserve including kerb and gutter modifications.
- Road Reserve Occupancy: Temporary occupation or closure of a road reserve for construction or events.
- Road Reserve Opening / Excavation: Surface or deep excavation of the road reserve.
- Construction Work Zone: Dedicated right of access and parking allocation on a local road outside a development.

### 7.2 Road Dilapidation Report

Before any local road, i.e. Patons Lane and Luddenham Road, is used by Heavy Vehicles, a Road Dilapidation Report will be prepared. A copy of that report will be provided to Penrith City Council within three (3) weeks of completion of the survey and no later than one (1) month before the road is used by Heavy Vehicles associated with the project.

If damage to roads occurs as a result of the construction of the project PLM D&C will either (at Penrith City Council's discretion):

- Compensate Penrith City Council for the damage caused; or
- Rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report.

### 7.3 OSOM Permits

No OSOM permit is needed for Stage 01.

### 7.4 Speed Zone Authorisation Permits

No SZA permit is required for Stage 01.



## 8 Community Notification

PLM JV will be responsible for the dissemination of information to the community including affected residents, relevant Councils, businesses and the public.

### 8.1 Site Contact

The current site contact for the works identified in this CTMP is:

Hanna Shehwaro (Project Engineer): 0414 549 004

### 8.2 Propose Communications

- Community Notices (Notifications) issued at least 7 days prior to:
  - start of work
  - new work with a new activity that has the potential to impact on stakeholders and the community
  - handover of a construction site to a new contractor
  - activities requiring notification to comply with relevant Environmental Protection Licence (EPL) usually out of hours work.
- Precinct updates/e-update (Newsletters) - published 2x/year and for changes to planning approvals
- Email and internet updates – done with publication and delivery to letterboxes of Notifications and Newsletters.
- Advertisements – published in advance of significant traffic management changes, detours, traffic disruptions
- Advance warning sign – as noted in the CTMP, where required

Table 8 provides the proposed communications to be implemented for this CTMP.

TABLE 7: PROPOSED COMMUNICATIONS

Notification	Stage 01
Community Notice	Yes
Precinct Update / e-updated	Yes
Email	Yes
Internet	Yes
Print Advertising	Yes
Advance Warning Sign	Yes

## 8.3 Travelling Public

Where the SSTOM works will impact on the travelling public, PLM D&C will undertake the following communications:

- Public transport interruptions will be communicated via on site signage
- Motoring public will be forewarned of any changes including road closures, road changes and lane changes well in advance using appropriate signs including Variable Message Signs (VMS)
- Active transport users will be provided with advance warning signs.

## 8.4 Variable Message Signs

Variable messages signs are not required for Stage 01 works. If they are required for OSOM deliveries to this site in stage 02, the VMS strategy and messages will be forwarded to CJP for comment prior to installation.

If they are required at any stage of the project, they will be installed 7 days prior to any change to existing traffic conditions and per TfNSW “Instructions for the use of portable variable message signs: May 2021”.

## 8.5 Stakeholders

PLM D&C will liaise with relevant stakeholders regarding all relevant construction traffic management measures and will raise any potential conflict with stakeholder at the earliest time.

This will be done through the following groups:

- Traffic and Transport Liaison Group (TTLG)
- Traffic Control Group (TCG)
- Luddenham Traffic Working Group

There are a number of stakeholders PLM D&C will consult with during the development of this CTMP:

- Customer Journey Planning (CJP)
- Sydney Metro project team
- Penrith City Council (PCC)
- Transport for NSW (TfNSW)

A copy of their review comments will be provided in Appendix D.

## 9 Monitoring and Review

### 9.1 Road Safety Audit

Road safety audits has been undertaken on this CTMP as noted in the section 10 of the Construction Traffic Management Framework. A copy of the road safety audits is provided in Appendix E.

### 9.2 Monitoring Program

This CTMP shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by a holder of a SafeWork NSW “Prepare a Work Zone Traffic Management Plan” or equivalent. Review of the CTMP shall occur monthly. All and any reviews undertaken should be documented, however key considerations regarding the review of the CTMP shall be:

- Tracking deliveries against the volumes outlined within report. Deliveries will be tracked against approved volumes and will keep a vehicle log - including Rego & time of entry - for the purpose of assessing the effectiveness of these monitoring programs.
- To identify any shortfalls and develop an updated action plan to address issues that may arise during construction (Parking and access issues)
- To ensure TGS's are updated (if necessary) by “Prepare a Work Zone Traffic Management Plan” card holders to ensure they remain consistent with the set-up on-site.

The development of a program to monitor the effectiveness of this CTMP shall be established by the Contractor. This process is expected to form part of the monitoring plan required to be included as part of the overarching Construction Environmental Management Plan (CEMP), of which this CTMP forms a part.

The roadway (including footpath) will be kept in a serviceable condition for the duration of construction. At the direction of Council, undertake remedial treatments such as patching at no cost to Council.

### 9.3 Work Site Inspections, Recording and Reporting

Recording and reporting of the monitoring programs shall be done in accordance within the TCAWs Manual. As such, the structure, schedule and frequency of these activities have been considered and identified.

To inspect, review and audit the temporary traffic management (TTM) arrangements implemented on site, the following actions are to be undertaken by suitably qualified personnel in accordance with TCAWS 6.1 requirements during all phases of construction, being:

- TGS Verification
- Shift / Daily
- Weekly
- Post Completion
- Portable VMS / VSLS (when required)

All inspection forms per TCAWS 6.1 Appendix E will be uploaded into the GLAASS safety system for all site inspection purposes and data retained for monitoring.

## **9.4 Environmental Maintenance**

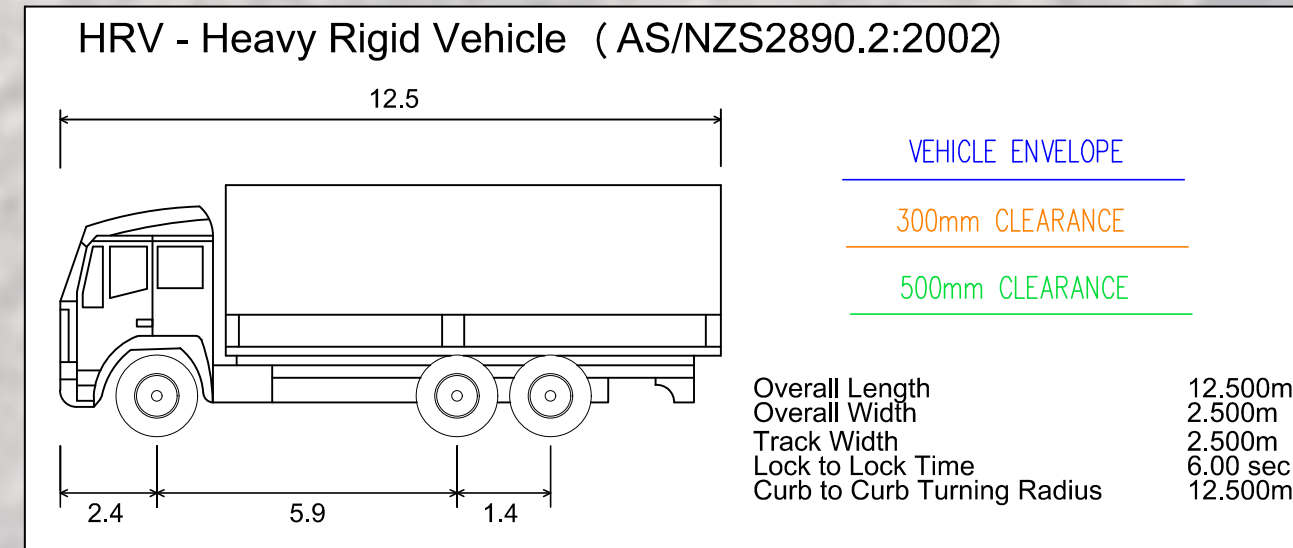
All works will be undertaken in accordance with the SSTOM works Site Establishment Management Plan and associated procedures and the Construction Environmental Management Plan and associated sub plans. The SSTOM works are regulated by the NSW Environment Protection Authority and works to be undertaken outside of standard construction hours will need to comply with the requirements of the Environmental Protection License (EPL).

# Appendix A Swept Path Assessment





# SMF STAGE 01: PATONS LANE ACCESS SET UP



TRAFFIC CONTROLLER'S SHELTER



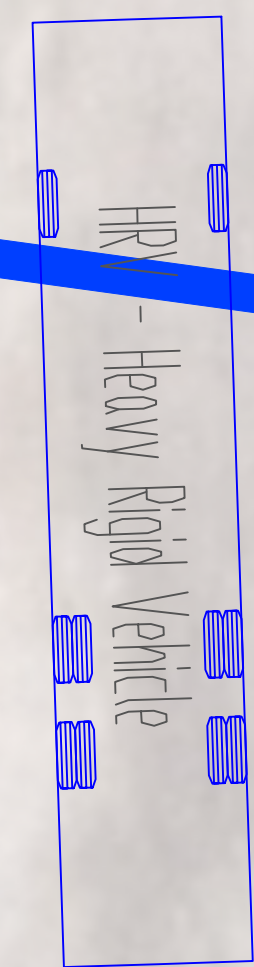
SMWSA CONSTRUCTION BOUNDARIES IN BLUE

TRAFFIC CONTROLLER'S ESCAPE ROUTE - LINEMARKING TO BE MAINTAINED AT ALL TIMES

TRAFFIC CONTROLLER TO GIVE PRIORITY TO ENTERING VEHICLES. EXITING VEHICLES TO WAIT AT STOP SIGN AND LEAVE UNDER TRAFFIC CONTROL

CONSTRUCTION FENCING WILL BE MAINTAINED ALONG THE CONSTRUCTION BOUNDARY AND A CONSTRUCTION GATE WILL BE MAINTAINED AT THIS LOCATION. NOTE FOLLOWING HANDOVER SSTOM WILL REMOVE WATER FILLED BARRIERS SHOWN ON EITHER SIDES OF THE CONSTRUCTION GATE IF POSSIBLE.

PATONS LANE



15,000

TfNSW\_SecurityClassificationDesc

FOR INFORMATION

Cad File: C:\Users\WendyZheng\OneDrive - Parklife - Parklife - J:\Documents\02\_SMF\Lead\SMWSA\SM-FLD-SWD-DE-TMP-000004\_SMF.dwg Plot Date: 07/07/23 - 17:07 Plot Date & Time: 100mm AT FULL SIZE

REV.	AMENDMENT DESCRIPTION	Design by	Verified by	Approved by	Date
A1	Co-ordinate System: tbCoordSys				

Rev No	Desc	Date	Scale
Rev7	tbAMDsgt	07/07/23	1:1
Rev6	tbAMDsgt	07/07/23	1:1
Rev5	tbAMDsgt	07/07/23	1:1
Rev4	tbAMDsgt	07/07/23	1:1
Rev3	tbAMDsgt	07/07/23	1:1
Rev2	tbAMDsgt	07/07/23	1:1
Rev1	tbAMDsgt	07/07/23	1:1

CLIENT:

Parklife Metro D&C

TAO DESIGN COMPANY/CONTRACTOR:

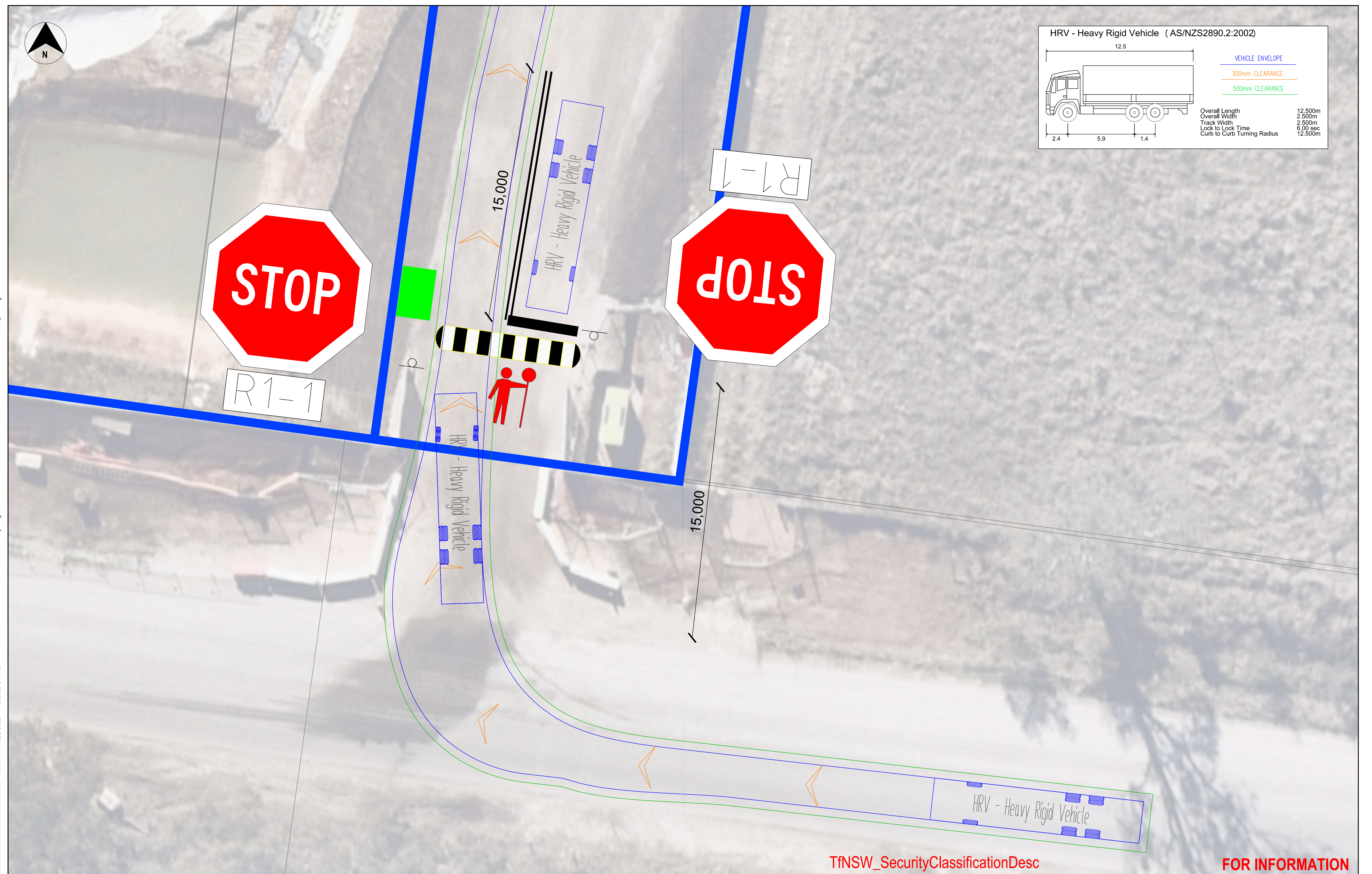
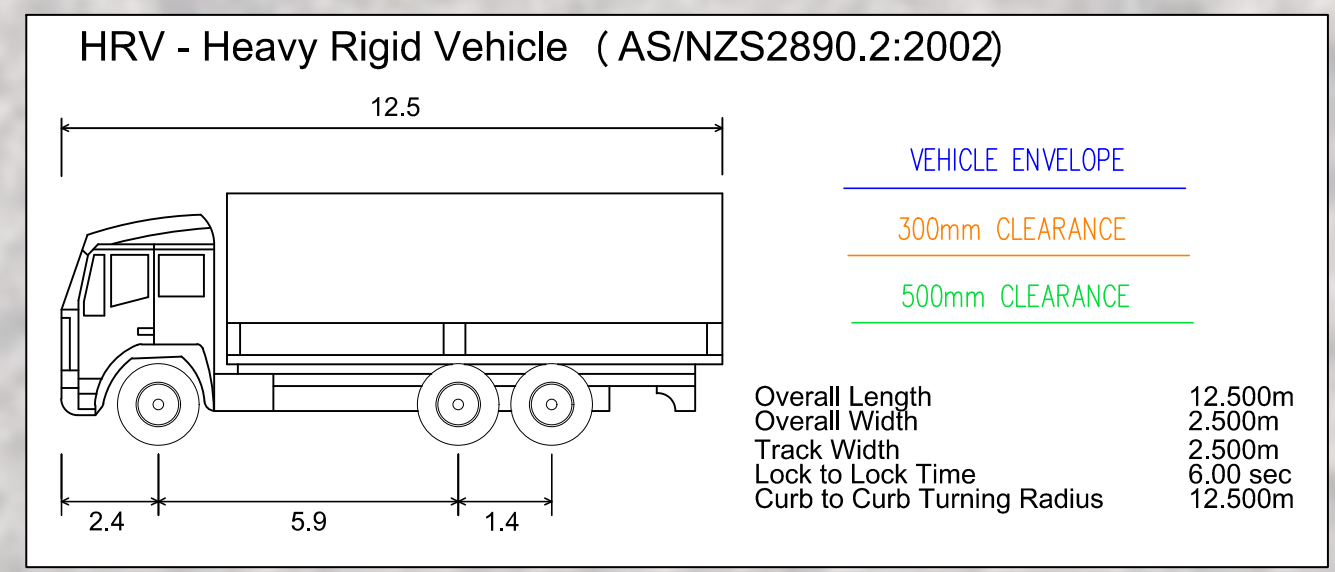
DRAWN	tbDrwnName	tbDrwnDate
DESIGNED	tbDsnName	tbDsnDate
DRG CHECK	tbDrgChkName	tbDrgChkDate
DESIGN CHECK	tbDsnChkName	tbDsnChkDate
APPROVED	tbApprName	tbApprDate

SYDNEY METRO - WSA - SSTOM

tbLine	tbDetail1	tbDetail2	tbDetail3
FILE No: tbFileNo	SHEET No: tbSheetNo	OF SHEETS: tbOfSheets	
STATUS: tbStatus	EDMS No: tbEDMS	REV: tRev	VER: Ver
DRG No: tbAEOOrgNo			

NOTE: Do not scale from this drawing.





TfNSW\_SecurityClassificationDesc

FOR INFORMATION

REV.	AMENDMENT DESCRIPTION	Design by	Verified by	Approved by	Date
REV7					
REV6					
REV5					
REV4					
REV3					
REV2					
REV1					

NOTE: Do not scale from this drawing.

CLIENT:

Parklife Metro D&C

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

TAO DESIGN COMPANY/CONTRACTOR:

DRAWN:

DESIGNED:

DRG CHECK:

DESIGN CHECK:

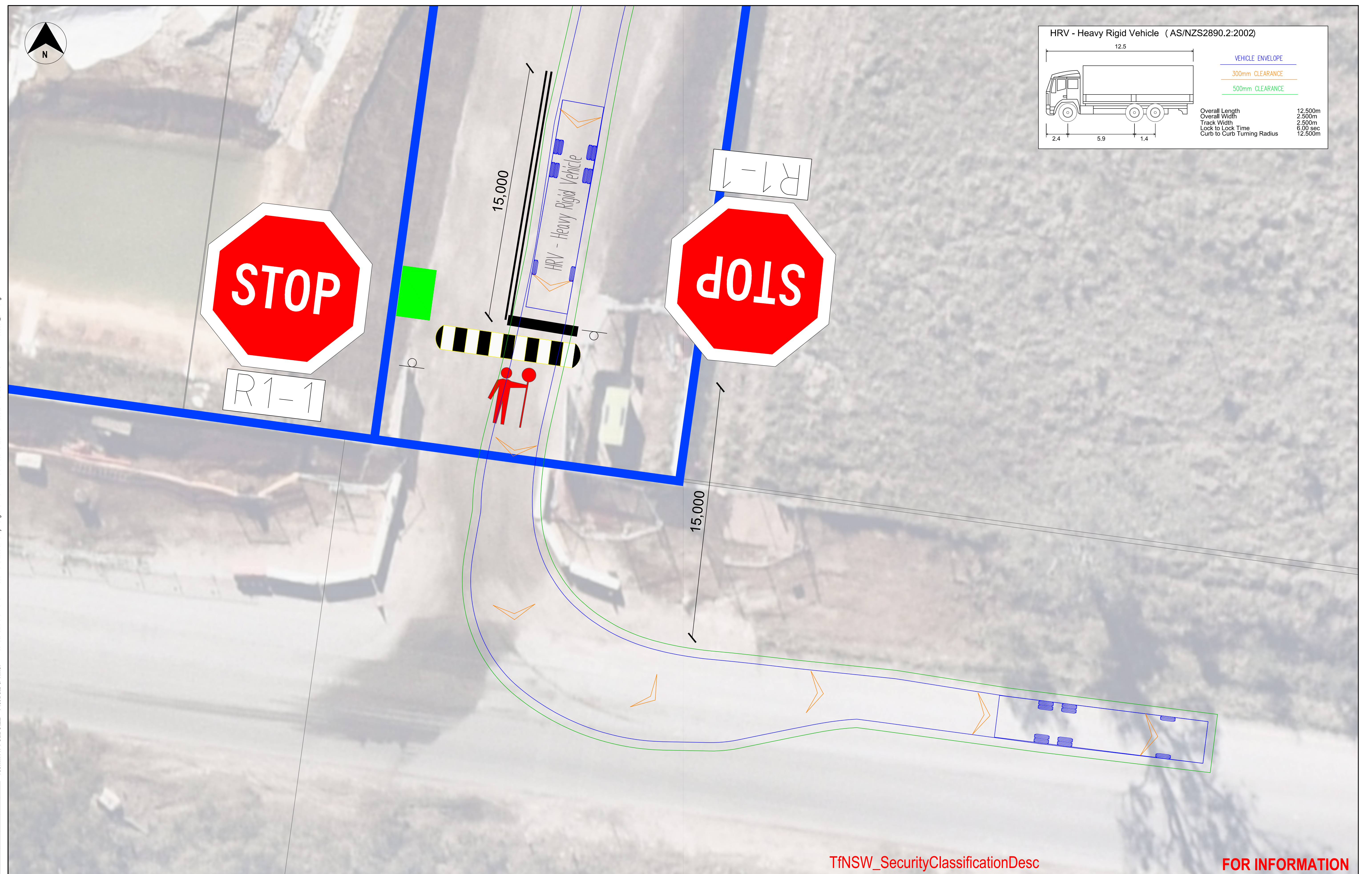
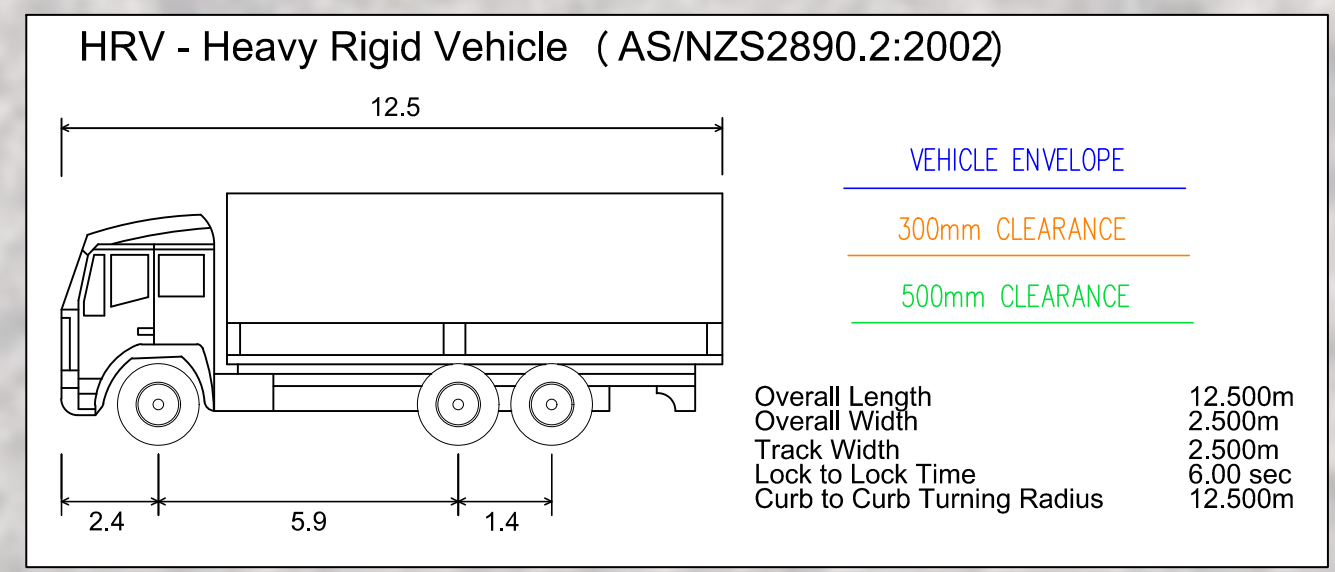
APPROVED:

SYDNEY METRO - WSA - SSTOM

tbLine	tbDetail1	tbDetail2	tbDetail3
FILE No: <input type="text"/>	SHEET No: <input type="text"/>	TOTAL SHEETS: <input type="text"/>	
STATUS: <input type="text"/>	EDMS No: <input type="text"/>	REV: <input type="text"/>	VER: <input type="text"/>
DRG No: <input type="text"/>	tbAEOdrgNo	tRev	Ver

100mm AT FULL SIZE Plot Date & Time: Plot Date: 06/07/23 - 20:49 Cad File: C:\Users\WendyZheng\OneDrive - Parklife - \Documents\02\_SMF\cad\SMF\SSM\FLD\SWD-DE-TMP-000004\_SMF.dwg





Plot Date: 06/07/23 - 20:48 Plot Date & Time: 100mm AT FULL SIZE

REV.	AMENDMENT DESCRIPTION	Design by	Verified by	Approved by	Date
A1	Co-ordinate System: tbCoordSys				

Height Datum: tbHght  
This sheet may be prepared using colour and may be incomplete if copied

NOTE: Do not scale from this drawing.

CLIENT:

Parklife Metro D&C

tbAEOCompName  
tbAEODisciplineDesc

TfNSW\_SecurityClassificationDesc

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

TAO DESIGN COMPANY/CONTRACTOR:

DRAWN: tbDrwnName, tbDrwnDate  
DESIGNED: tbDsnName, tbDsnDate  
DRG CHECK: tbDrgChkName, tbDrgChkDate  
DESIGN CHECK: tbDsnChkName, tbDsnChkDate  
APPROVED: tbApprName, tbApprDate

FOR INFORMATION

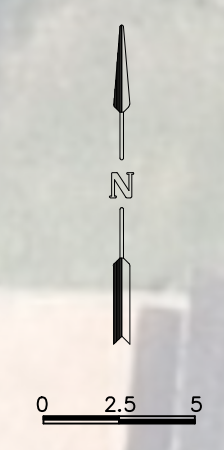
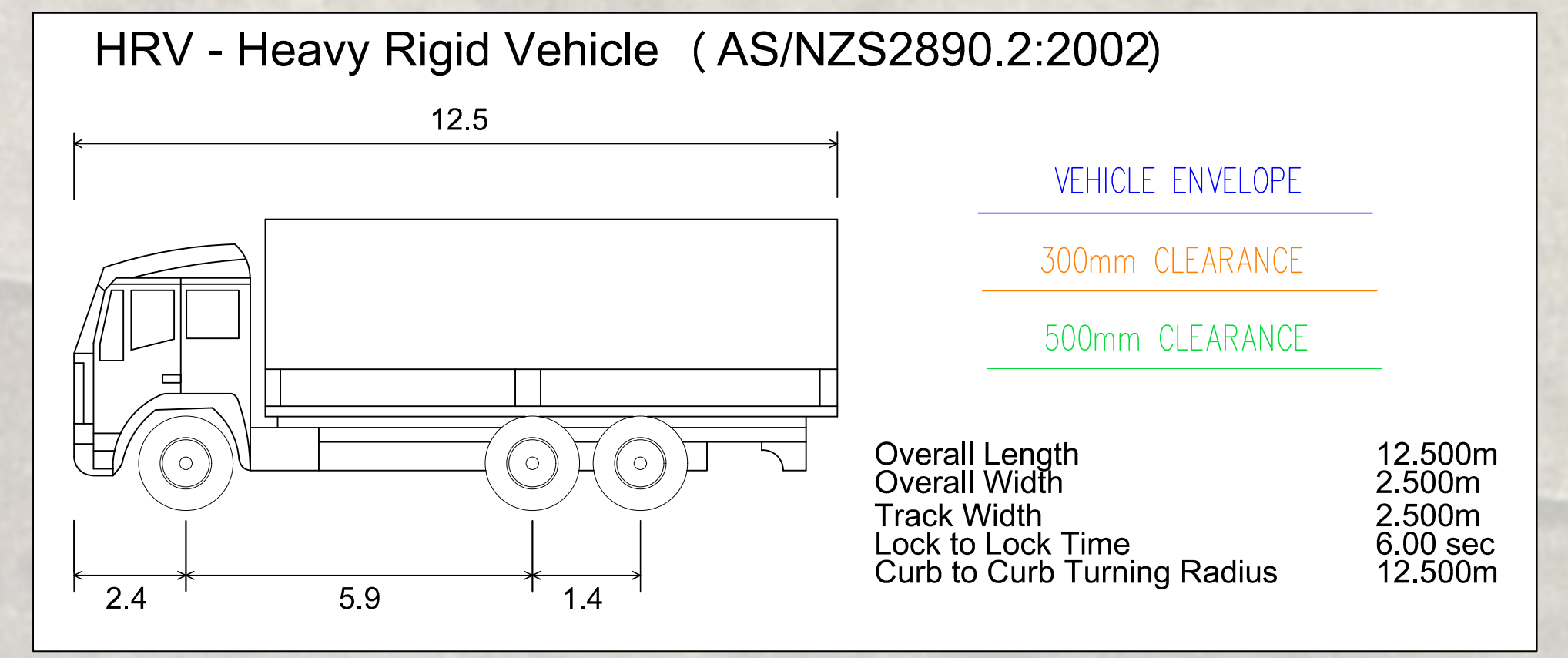
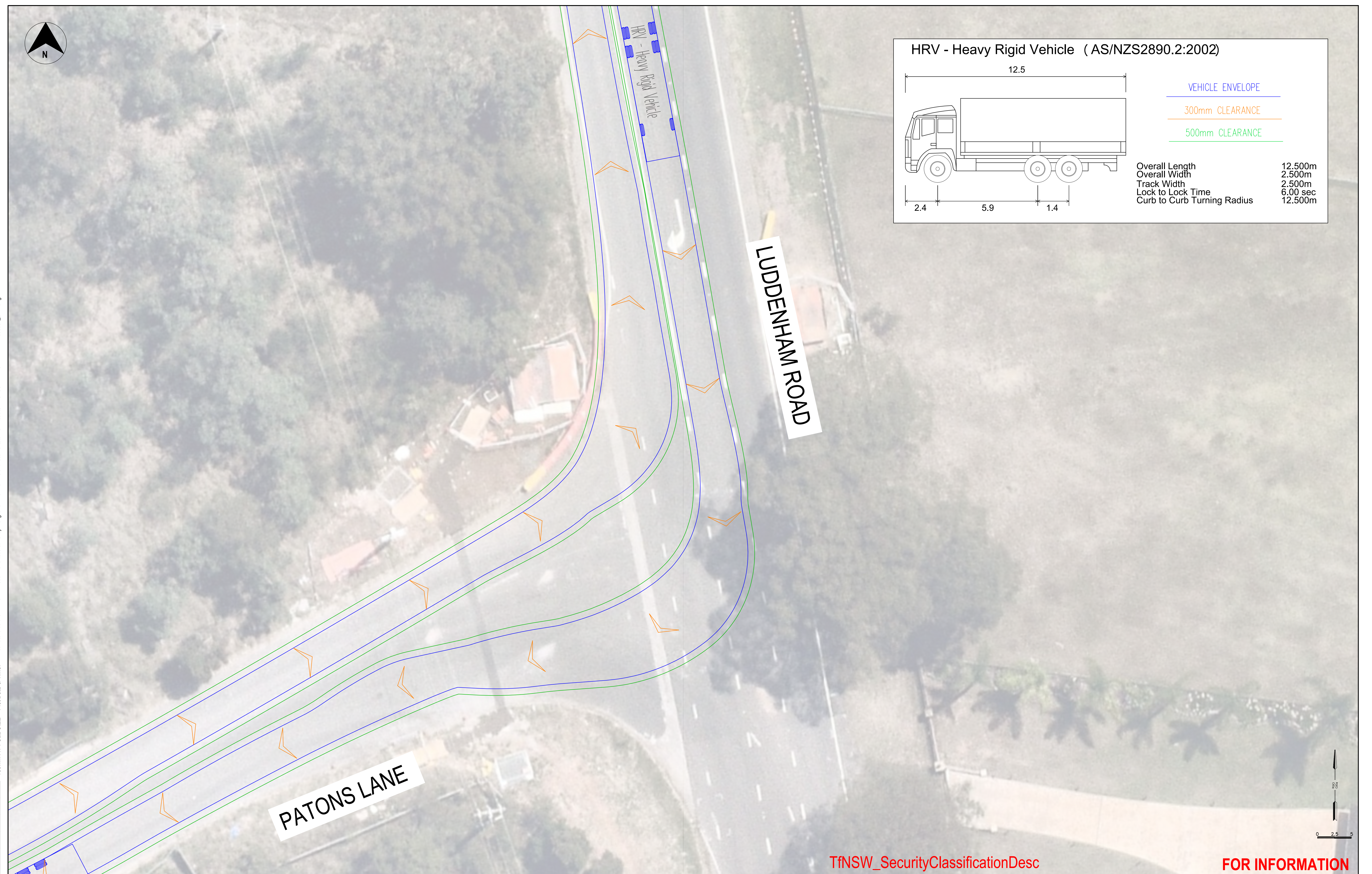
SYDNEY METRO - WSA - SSTOM

tbLine	tbDetail1	tbDetail2	tbDetail3
FILE No: tbFileNo	SHEET No: tbSheetNo	OF SHEETS: tbOfSheets	©
STATUS: tbStatus	EDMS No: tbEDMS	REV: tRev	VER: Ver
DRG No: tbAEOOrgNo			





Cad File: C:\Users\WendyZheng\OneDrive - Parklife - My Documents\02\_SMF\cad\SMWS\SSM\PLD-SWD-DE-TMP-000002\_SMF.dwg  
Plot Date: 07/07/23 - 17:13  
100mm AT FULL SIZE Plot Date & Time:



TfNSW\_SecurityClassificationDesc

FOR INFORMATION

REV.	AMENDMENT DESCRIPTION	Design by	Verified by	Approved by	Date
Rev7					
Rev6					
Rev5					
Rev4					
Rev3					
Rev2					
Rev1					

NOTE: Do not scale from this drawing.

This sheet may be prepared using colour and may be incomplete if copied

CLIENT:

Parklife Metro D&C

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

TAO DESIGN COMPANY/CONTRACTOR:

DRAWN	tbDrwnName	tbDrwnDate
DESIGNED	tbDsnName	tbDsnDate
DRG CHECK	tbDrgChkName	tbDrgChkDate
DESIGN CHECK	tbDsnChkName	tbDsnChkDate
APPROVED	tbApprName	tbApprDate

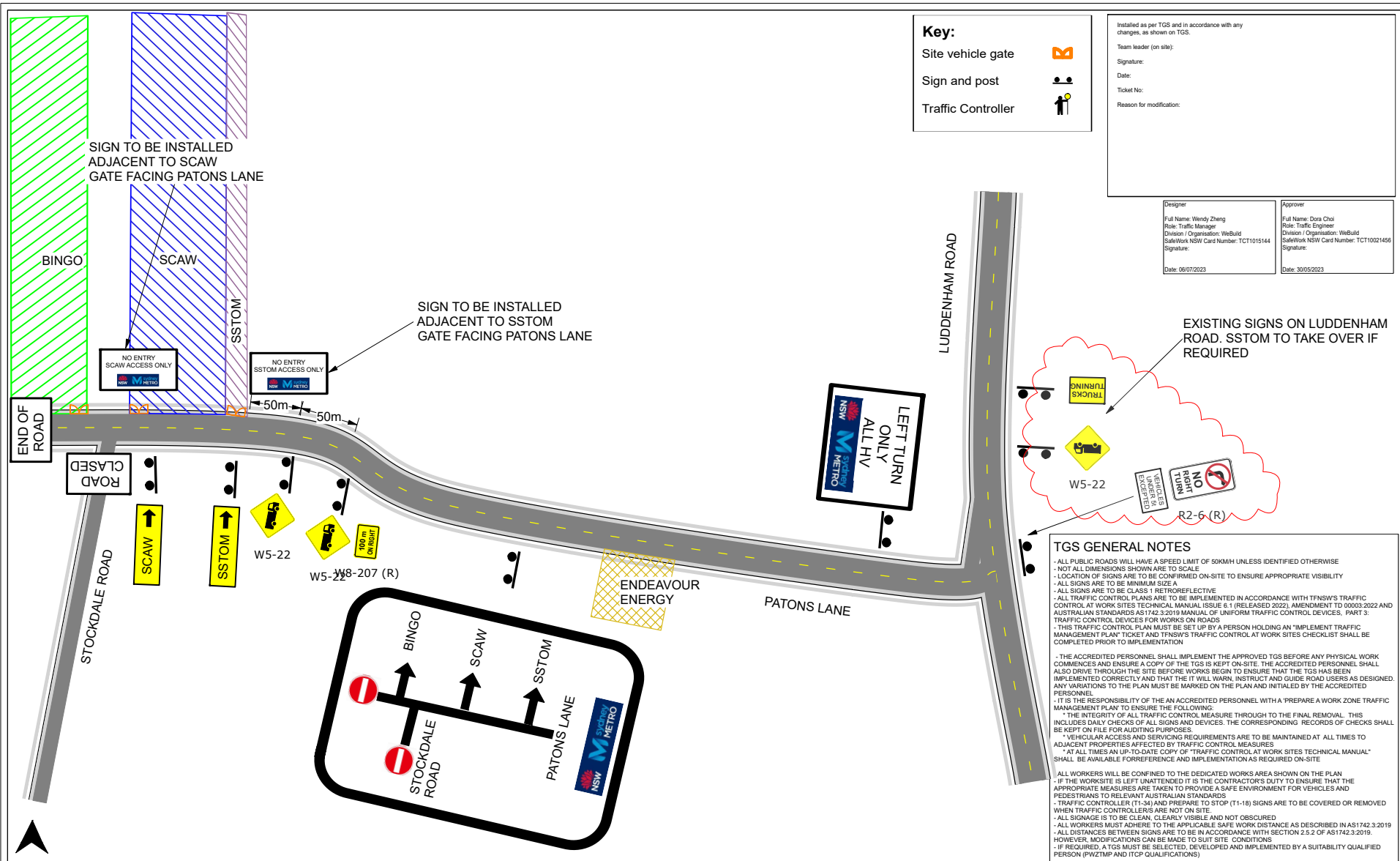
SYDNEY METRO - WSA - SSTOM

tbLine	tbDetail1	tbDetail2	tbDetail3
FILE No:	tbFileNo	SHEET No:	tbOfSheets
STATUS:	tbStatus	EDMS No:	tbEDMS
DRG No:	tbAEOOrgNo	REV	VER
		tRev	tVer



## **Appendix B      Traffic Guidance Scheme**

THIS DRAWING IS THE PROPERTY OF INVARION AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF INVARION. THE USER OF THIS DRAWING AGREES TO HOLD INVARION HARMLESS FROM ALL LIABILITY, INCLUDING NEGLIGENCE, IN CONNECTION WITH THE USE OF THIS DRAWING. THE USER OF THIS DRAWING AGREES TO HOLD INVARION HARMLESS FROM ALL LIABILITY, INCLUDING NEGLIGENCE, IN CONNECTION WITH THE USE OF THIS DRAWING. THE USER OF THIS DRAWING AGREES TO HOLD INVARION HARMLESS FROM ALL LIABILITY, INCLUDING NEGLIGENCE, IN CONNECTION WITH THE USE OF THIS DRAWING.



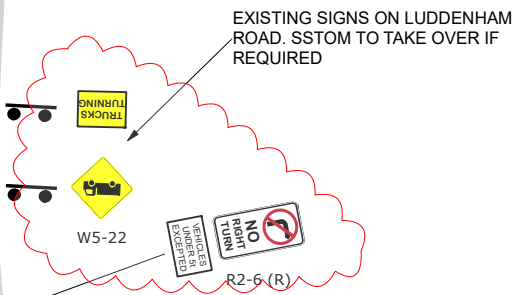
**Key:**

- Site vehicle gate
- Sign and post
- Traffic Controller

Installed as per TGS and in accordance with any changes, as shown on TGS.

Team leader (on site):  
Signature:  
Date:  
Ticket No:  
Reason for modification:

Designer Full Name: Wendy Zheng Role: Traffic Manager Division / Organisation: WeBuild SafeWork NSW Card Number: TCT1015144 Signature: Date: 06/07/2023	Approver Full Name: Dora Choi Role: Traffic Engineer Division / Organisation: WeBuild SafeWork NSW Card Number: TCT10021456 Signature: Date: 30/05/2023
---	---



**TGS GENERAL NOTES**

- ALL PUBLIC ROADS WILL HAVE A SPEED LIMIT OF 50KMH UNLESS IDENTIFIED OTHERWISE
- NOT ALL DIMENSIONS SHOWN ARE TO SCALE
- LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY
- ALL SIGNS ARE TO BE MINIMUM SIZE A
- ALL SIGNS ARE TO BE CLASS 1 RETROREFLECTIVE
- ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH TfNSW'S TRAFFIC CONTROL AT WORK SITES TECHNICAL MANUAL ISSUE 6.1 (RELEASED 2022), AMENDMENT TO 00002:2022 AND AUSTRALIAN STANDARDS AS1742.3:2019 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS
- THIS TRAFFIC CONTROL PLAN MUST BE SET UP BY A PERSON HOLDING AN 'IMPLEMENT TRAFFIC MANAGEMENT PLAN' TICKET AND TfNSW'S TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION
- THE ACCREDITED PERSONNEL SHALL IMPLEMENT THE APPROVED TGS BEFORE ANY PHYSICAL WORK COMMENCES AND ENSURE A COPY OF THE TGS IS KEPT ON-SITE. THE ACCREDITED PERSONNEL SHALL ALSO DRIVE THROUGH THE SITE BEFORE WORKS BEGIN TO ENSURE THAT THE TGS HAS BEEN IMPLEMENTED CORRECTLY AND THAT IT WILL WARN, INSTRUCT AND GUIDE ROAD USERS AS DESIGNED. ANY VARIATIONS TO THE PLAN MUST BE MARKED ON THE PLAN AND INITIALED BY THE ACCREDITED PERSONNEL
- IT IS THE RESPONSIBILITY OF THE AN ACCREDITED PERSONNEL WITH A 'PREPARE A WORK ZONE TRAFFIC MANAGEMENT PLAN' TO ENSURE THE FOLLOWING:
  - \* THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURE THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
  - \* VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES
  - \* AT ALL TIMES AN UP-TO-DATE COPY OF 'TRAFFIC CONTROL AT WORK SITES TECHNICAL MANUAL' SHALL BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE
- ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN
- IF THE WORKSITE IS LEFT UNATTENDED IT IS THE CONTRACTOR'S DUTY TO ENSURE THAT THE APPROPRIATE MEASURES ARE TAKEN TO PROVIDE A SAFE ENVIRONMENT FOR VEHICLES AND PEDESTRIANS TO RELEVANT AUSTRALIAN STANDARDS
- TRAFFIC CONTROLLER (T1-34) AND PREPARE TO STOP (T1-18) SIGNS ARE TO BE COVERED OR REMOVED WHEN TRAFFIC CONTROLLERS ARE NOT ON SITE.
- ALL SIGNAGE IS TO BE CLEAN, CLEARLY VISIBLE AND NOT OBTUSCURED
- ALL WORKERS MUST ADHERE TO THE APPLICABLE SAFE WORK DISTANCE AS DESCRIBED IN AS1742.3:2019
- ALL DISTANCES BETWEEN SIGNS ARE TO BE IN ACCORDANCE WITH SECTION 2.5.2 OF AS1742.3:2019. HOWEVER, MODIFICATIONS CAN BE MADE TO SUIT SITE CONDITIONS
- IF REQUIRED, A TGS MUST BE SELECTED, DEVELOPED AND IMPLEMENTED BY A SUITABILITY QUALIFIED PERSON (PWZ/MPM AND ITCP QUALIFICATIONS)

AMENDMENTS			
REV	DATE	DESCRIPTION	APP
DFT	06.07.23	TGS OHE SMF (STAGE 01)	WZ DC
REV	DATE	DESCRIPTION	DRW

GENERAL NOTES	
DESIGNED	WENDY ZHENG
CHECKED BY	WENDY ZHENG
APPROVED BY	DORA CHOI

DESIGNED	PAPER SIZE
WENDY ZHENG	A3
CHECKED BY	DATE
WENDY ZHENG	06.07.2023
APPROVED BY	SCALE
DORA CHOI	NTS

CLIENT	PROJECT
NSW Sydney METRO	Sydney Metro - Western Sydney Airport

DOCUMENT INFORMATION	
ORCHARD HILLS STABLING AND MAINTENANCE FACILITY	
Stage 01 - Traffic Guidance Scheme	
DRAWING STATUS	FINAL

FILE NAME	SHEET
SMWSASSM-PLD-OHE-SF-TF-000001	01

## **Appendix C      Risk Assessment**

# Sydney Metro WSA – Stabling and Maintenance Facility

## Risk Assessment and Communication Tool

Site Name	Orchard Hills Stabling and Maintenance Facility		
Site Location	Patons Lane, Orchard Hills		
Date of Assessment	01 June 2023		
Revision	Issue I		
<b>Document Control</b>			
Date Issued	Revision	Issued By	Checked By
01/06/2023	Issue I	W. Zheng	D. Odobasa

Risk Matrix							
Likelihood \ Impact		Insignificant	Minor	Moderate	Major	Severe	Catastrophic
		C6	C5	C4	C3	C2	C1
Almost certain	L1	8	19	27	29	34	36
Very Likely	L2	7	18	21	28	31	35
Likely	L3	6	11	20	23	30	33
Possible	L4	4	10	13	22	25	32
Very Unlikely	L5	3	9	12	15	24	26
Rare	L6	1	2	5	14	16	17

Risk Consequences						
	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
	C6	C5	C4	C3	C2	C1
Health and Safety	Illness, first aid or injury not requiring medical treatment.	Illness or minor injuries requiring medical treatment.	Single recoverable lost time injury or illness, alternate/restricted	1-10 major injuries requiring hospitalisation and numerous days lost,	Single fatality and/or 10-20 major injuries/permanent	Multiple fatalities and/or >20 major injuries/permanent

			duties injury, or short-term occupational illness.	or medium-term occupational illness.	disabilities/chronic diseases.	disabilities/chronic diseases.
Environment	No appreciable changes to environment and/or highly localised event.	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries.	Short-term and/or well-contained environmental effects. Minor remedial actions probably required.	Impacts external ecosystem and considerable remediation is required.	Long-term environmental impairment in neighbouring or valued ecosystems. Extensive remediation required.	Irreversible large-scale environmental impact with loss of valued ecosystems.

Likelihood		One off event (How likely?)		Repeated (How often?)
Almost certain	L1	Expected to occur frequently during time of activity or project.	> 90%	10 times or more every year
Very Likely	L2	Expected to occur occasionally during time of activity or project.	75 - 90 %	1-10 times every year
Likely	L3	More likely to occur than not occur during time of activity or project.	50 - 75 %	Once each year
Possible	L4	More likely not to occur than occur during time of activity or project.	25 - 50 %	Once every 1 to 10 years
Very Unlikely	L5	Not expected to occur during the time of activity or project.	5 - 25 %	Once every 10 to 100 years
Rare	L6	Not expected to ever occur during time of activity or project.	< 5 %	Less than once every 100 years



## Risk Assessment and Communication Tool

ID. Ref	Risk and/ or Hazard	Risk Description	Location	Existing Control	Initial Risk Rating			Design Response to risk and /or hazard	Status of Risk	Assignment of risk or hazard	Residual risk rating		
					L	I	RR				C	L	RR
1	Unauthorized Access to the Site	Site prevents unauthorised access	Entire Site	Nil	L3	C2	High 28	Boundary fence will be provided as part of the main works. The design provides a defined separation between public areas and work area. Admin area is located in front of the site to minimise unauthorised visitor access	Design Solution	Main Contractor	L6	C2	Low 16
2	Interaction between pedestrians / cyclists and vehicles	Vehicles and pedestrians /cyclists to be separates as best possible	Entire Site & Access Roads	Nil	L3	C1	High 33	Dedicated footpath, pedestrian crossings and additional signage shall be provided to separate vehicles and pedestrians as best possible.	Design Solution	Main Contractor	L6	C2	Low 16
3	Potential vehicle conflict points	Vehicles can crash with each other while manoeuvring through the site	Entire Site & Access Roads	Nil	L4	C1	High 32	One-way manoeuvring around the site limits any interaction for oncoming vehicles to the access only, coupled with low speeds throughout the site.	Design Solution	Main Contractor	L6	C2	Low 16

4	Fatigue	Injury caused by fatigue	Entire Site	Nil	L3	C2	High 30	Toolbox meetings and regular breaks (in line with WHS practices) to minimise fatigue	Design Solution	Main Contractor	L6	C2	Low 16
5	Fall risks	Injury due to falls (in general)	Entire Site	Nil	L4	C1	High 32	Ensuring level changes across the site to be minimised as best possible, with additional black & yellow hazard tape/markings being installed where appropriate. Installation of handrails where level changes / ramps grades are significant.	Design Solution	Main Contractor	L6	C2	Low 16
6	Misdirected access in to neighbouring site	Vehicle in unsafe locations	Entire Site	Nil	L4	C3	Medium 22	Ensuring appropriate directional signage has been provided to ensure vehicles do not access the wrong construction site, which could create potential safety breaches and hazards for all parties	Design Solution	Main Contractor	L5	C4	Low 12
7	Conflicting Traffic Management	Coordinating Traffic Controllers could create misleading and wrong advice	Entire Site	Nil	L4	C3	Medium 22	Toolbox meetings, regular liaison with all construction teams and review of signage plans on site in order to minimise contradicting signage.	Design Solution	Main Contractor	L5	C4	Low 12

## Appendix D Stakeholder Comments

NO.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESPONSE	COMMENT CATEGORY*	LINKED ITEM NO	CLOSED OUT
01	7/06/2023	SMD	PBROGAN	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Sections 4.1 and 4.2	CTMF	For Berin - the Site layout drawings in Section 4.1 and 4.2 (and the TGS) do not clearly show how the gate is managed, will there be STOP signs for construction vehicles exiting? NO ENTRY CONSTRUCTION ONLY signs to advise lost members of public? Project signage? Why is the traffic controller so far back from the gate? What is the driveway type? Why is there PREPARE TO STOP at the gate? Review and provide specific detail on the Gate and its management.	Actual Non-Compliance		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Sections 4.1 and 4.2	CTMF	Sections 4.1 and 4.2 are for site specific project context. Section 4.3 and 4.6.1 has been updated to discuss in further detail how the site access is being managed and the TGS is updated accordingly.	Actual Non-Compliance		N
02	7/06/2023	SMD	PBROGAN	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Sections 4.1 and 4.2	CTMF	For Berin - the Site layout drawings in Section 4.1 and 4.2 do not provide street names or context. The CTMP is to provide detail on how traffic will be managed, at the site, during construction, during a time. These drawings are great for context but need to be updated to show how the site will operate day to day.	Actual Non-Compliance		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Sections 4.1 and 4.2	CTMF	Sections 4.1 and 4.2 are for site specific project context. Section 4.3 and 4.6.1 has been updated to discuss in further detail how the site access is being managed and the TGS is updated accordingly.	Actual Non-Compliance		N
03	7/06/2023	SMD	PBROGAN	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Section 4.2	CTMF & Deed	For Berin - the Site layout drawings in Section 4.2 has a statement on it that stating it is: "preliminary", "for review and comment" and that it "should not be issued to Sydney Metro". Please provide accurate, relevant drawings.	Actual Non-Compliance		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Section 4.2	CTMF & Deed	The site layout drawings showing the 2 stages of construction at SMF provided in Sections 4.1 and 4.2 have been updated for the most recent version that PLM currently has.	Actual Non-Compliance		N
04	7/06/2023	SMD	PBROGAN	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Appendix B	CTMF & Relevant Standards	For Berin - the TGS in Appendix B is not in line with TC@WS Manual Worksites layout D.4.7. Signs are missing and the actual distance to Stockdale Rd (from site access) needs to be checked as the truck turning sign on Stockdale may not be required IF a vehicle leaving Stockdale will see the sign on Patons Ln.	Actual Non-Compliance		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Appendix B	CTMF & Relevant Standards	TGS in Appendix B has been updated to comply with TCAWS. Do note that it has been observed on a site visit at the end of June that Stockdale Road is now closed and so is Patons Lane west of the BINGO gate. This has been confirmed by Penrith Council.	Actual Non-Compliance		N
05	7/06/2023	SMD	PBROGAN	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	General	CTMF	For Berin - RSA is not included; it is assumed it is coming in the next version?	Actual Non-Compliance		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	General	CTMF	The RSA can now be found in Appendix E with the responses to it.	Actual Non-Compliance		N
06	7/06/2023	SMD	PBROGAN	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Figure 8	CTMF & Relevant standards	For Berin - Figure 8 shows the swept path crossing unformed earth/land. Is this drainage swale? Soft earth? Does the driveway need to be rebuilt, extended? Please review and update.	Actual Non-Compliance		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Figure 8	CTMF & Relevant standards	Figure 8 has been updated with the latest Nearmap base from 21 Jun. The site access gate shown in the updated figure is the one that SCAW will be handing over to SSTOM. SCAW is currently using this site access gate and it is formed and paved for haul road usage.	Actual Non-Compliance		N
07	7/06/2023	SMD	PBROGAN	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	General	CTMF	For Berin - it is stated only one type of truck will use the site, is this correct? While it may be one type for spoil haul, will there be shed deliveries? Agitators? 19m semis? If so, please provide swept paths for these vehicles as well.	Actual Non-Compliance		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	General	CTMF	The maximum sized truck used on this site for deliveries is the 12.5m HRV. Agitators will be 12.5m in length at most according to our suppliers and until the rail segment deliveries are finalised, there is no need for any vehicle longer than 12.5m HRVs to access the site. This is discussed in sections 4.5.2 and 4.6.1	Actual Non-Compliance		N
08	7/06/2023	SMD	PBROGAN	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	General	CTMF	For Berin - a CTMP is to be specific, statements like: "However if any access to existing properties is affected by construction vehicle access to site, traffic controllers or appropriate traffic management would be available on the accesses to direct existing property users while guiding construction vehicles" need to be reviewed to ensure the message about cyclist /pedestrian management is not vague. What this means is the contractor must know if construction and associated activities will impact pedestrians or cyclists and this CTMP should detail how the impact will be managed. Is the risk assessment specific to this site? It appears to be. If so, Item 2 makes some specific statements that may or may not apply in the context of the comment above. This is a great risk assessment, but it seems the risk assessment is design based, while a CTMP is operationally based i.e., how is traffic managed during the implementation/construction of the design. Be careful not to mix design and on-site, actual construction.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	General	CTMF	Wording in the CTMP updated to remove ambiguous wording such as the sample wording provided in comment. Risk assessment updated in response to the comments.	Observation		N
09	8/06/2023	TFN	LWILBY	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	4.5.2 Truck routes	NA	Please confirm within this section if the routes are EIS approved routes. If they are not, please make it clear how they differ, why they differ and what mitigation measures have been put in place to address road safety risk.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	4.5.2 Truck routes	NA	The vehicle routes shown on Figure 7 is compliant with the EIS approved routes shown in Section 4.1 of Technical Paper 1: Transport (Figure 4-1).	Observation		N
10	8/06/2023	TFN	LWILBY	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Appendix A - Swept Path assessment	NA	The swept path for the right turn from Luddenham Road into Patons Lane indicates that the vehicles will swing into lane 2 south bound as it makes the turn. This may lead to side swipe crashes or run off road crashes for other vehicles as they are not expecting the movement and attempt to avoid the truck. Two large trees within the clear zone at this location increase the likely severity of any crash. Please consider the risk and demonstrate how it will be mitigated SFAIRP - including through advanced warning signage and additional driver training on site specific awareness.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Appendix A - Swept Path assessment	NA	The swept path has been revised for the right turn from Luddenham Road into Patons Lane. On the swept paths, the blue line indicate the wheel / body width, and the green line indicate the 500mm clearance line. The right turn vehicle uses an existing auxilliary right turn lane along Luddenham Road, that is regularly used by trucks accessing Bingo for a number of years. The Crash Stats outlined in Section 3.4.2 indicated that there were no casualty crashes recorded at this intersection over the last 5 years. It is further noted that SCAW has been using the same access for approximately 2 years. The two large trees within the clear zone are existing, and any mitigation of clear zone issues should be the responsibility of Penrith City Council being the relevant road authority.	Observation		N

NO.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESPONSE	COMMENT CATEGORY*	LINKED ITEM NO	CLOSED OUT
11	8/06/2023	TFN	LWILBY	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Appendix E - Road safety audit	CTMF requirements	There is no road safety audit attached in appendix E, although page numbers suggest it may have been left off. Please attach a completed road safety audit as per CTMF requirements.	Potential Non-Compliance		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Appendix E - Road safety audit	CTMF requirements	The RSA can now be found in Appendix E with the responses to it.	Potential Non-Compliance		N
13	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	General	NA	This CTMP will be conditionally approved for Stage 01 only, with an addendum or new CTMP required for Stage 02. In parts it unclear whether the document is meant for only for Stage 01, or parts of Stage 02 as well.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	General	NA	The document is intended to provide context of the SMF project as a whole, and to ensure the assessment team is aware of what works will form Stage 02. And yes PLD is aware that this CTMP will have to be conditioned to provide the Stage 02 construction traffic management plan update. Section 2 has been updated to make this clear.	Observation		N
14	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	3.4.1	NA	The following website provides access to some traffic volume data which may assist in understanding the surrounding road network; <a href="https://scatter.aai.transport.nsw.gov.au/scatter_map">https://scatter.aai.transport.nsw.gov.au/scatter_map</a>	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	3.4.1	NA	I have tried to access the scatter.aai website and I can not get access to it. It appears that access is restricted to TfNSW only.	Observation		N
15	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	3.4.2	NA	Crash map does not have a legend, nor is it very clear.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	3.4.2	NA	Crash map in Figure 2 is now updated with a legend and resized for clarity.	Observation		N
16	19/06/2023	TFN	FLARUE	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	3.4.3	NA	Important to note that while Mamre Rd may not have a formal path, there are informal links to the nearest side streets or paths especially in and around the bus stops. If you are to say 'No' then there does need to be some justification or some evidence to support the claim.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	3.4.3	NA	Section 5.2 has been updated to acknowledge the informal links on Mamre Road and a Driver's Code of Conduct has been added in Appendix F to enforce driver behaviour.	Observation		N
17	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	4.3 to 4.6	NA	There is no TGS showing the traffic control arrangements proposed to be put in place. These should be included as an appendix.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	4.3 to 4.6	NA	TGS with traffic control arrangements is provided in Appendix B	Observation		N
18	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	4.5.1	NA	Where possible it would be beneficial to reduce movements during the AM and PM peak periods	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	4.5.1	NA	Refer to updated Table 7 for the reduced movements during AM and PM peak period following consultation with SSTOM SMF construction team.	Observation		N
19	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	5.5	NA	Is there any crossover with SCAW works and access requirements at this location?	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	5.5	NA	SCAW will be using the adjacent construction access to SSTOM. Refer to updated Section 4.3 and 4.6.1 for site access clarification off Patons Lane and proposed mitigation. Cumulative impacts are addressed in the updated Section 5.5.	Observation		N
20	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	5.5	NA	It should be noted that the Mamre Rd upgrade project (M4 to Erskine Park Rd) is currently in planning with construction expected to commence in 2024.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	5.5	NA	Noted - I have had a meeting with Jan Haddad in June to coordinate and have input into her tender to mitigate the cumulative impact.	Observation		N
21	19/06/2023	TFN	FLARUE	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	6	NA	Is there any planned dedicated bus service from St Marys Station to minimise or reduce the need for all contractors to drive to site, in addition to the shuttle operating within the site?	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	6	NA	PLM has secured and will assign 3 x 12-seater buses to SMF, which will be used as shuttle buses between St Marys train station and the site. This will be a booking system created to allow subcontractors to book shuttle bus services at set times a week prior to starting on site. Refer to updated Section 6.	Observation		N
22	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	8.2	NA	If there are no significant traffic management changes or disruptions expected, then what is the purpose of the print advertising indicated in Table 8?	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	8.2	NA	Print advertising is an optional communication outlined in the approved OCTMP. We have received concerned emails from residents on Cabernet Circuit and the PLM communications team want to issue print advertising to reassure residents that they will be looked after and to provide residents of relevant contact details for the PLM team in a pro-active manner.	Observation		N
23	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	8.4	NA	If required, a proposed VMS strategy and messages can be forwarded to CJP for comment.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	8.4	NA	Noted and Section 8.4 has been updated accordingly	Observation		N
24	19/06/2023	TFN	JHODDER	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Appendix E	NA	No RSA has been included in the document. Please provide.	Observation		N
	5/07/2023	PLD	WZHENG	SMWSASSM-PLD-1NL-NL000-TF-PLN-000001	Appendix E	NA	The RSA can now be found in Appendix E with the responses to it.	Observation		N

## **Appendix E      Road Safety Audit**



**Traffic Management Road Safety Audit Report**

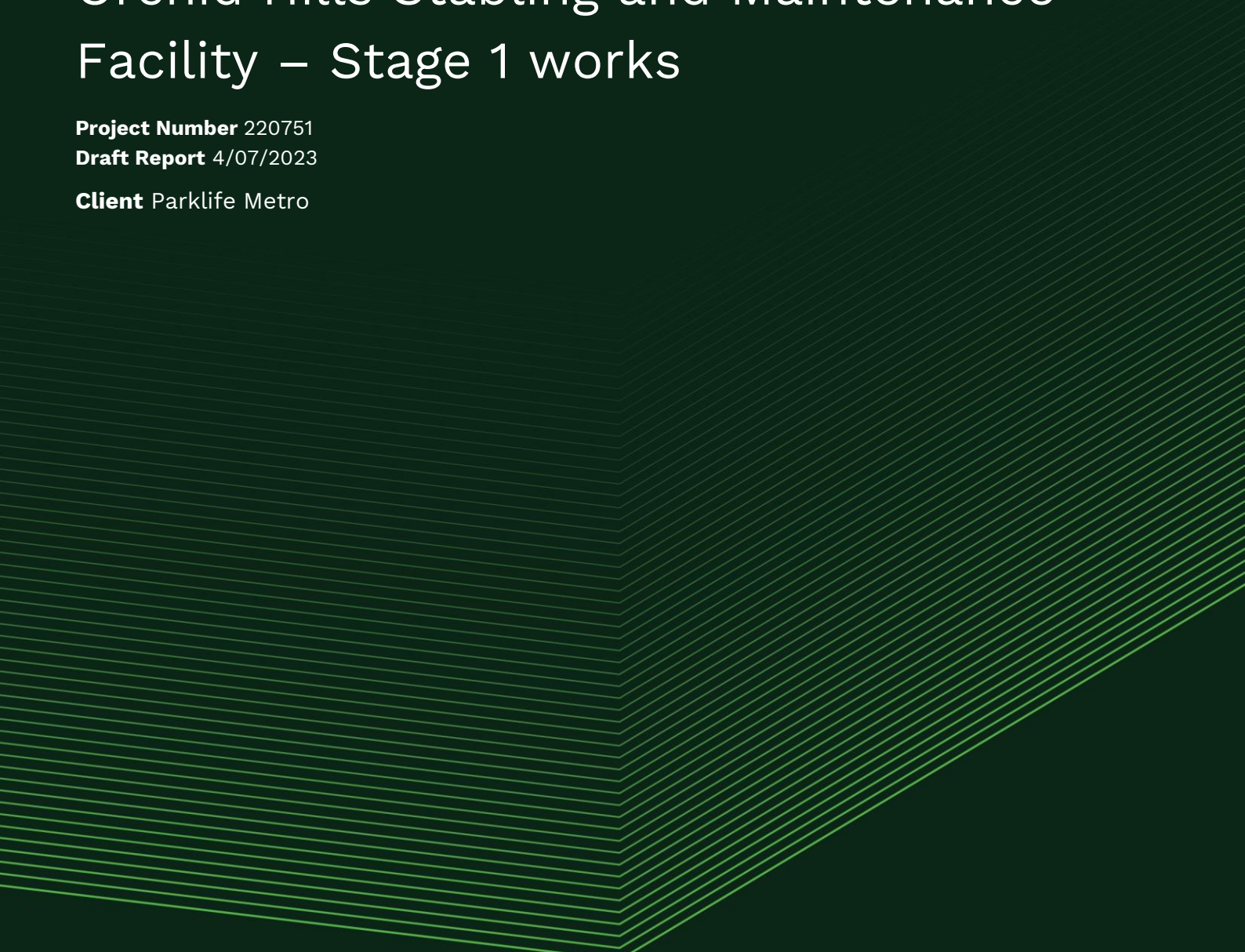
# Sydney Metro – Western Sydney Airport

## Orchid Hills Stabling and Maintenance Facility – Stage 1 works

**Project Number** 220751

**Draft Report** 4/07/2023

**Client** Parklife Metro



## Document control record

### Document prepared by:

Trafficworks Pty Ltd

ABN 59 125 488 977

1<sup>st</sup> Floor 132 Upper Heidelberg Rd Ivanhoe Vic 3079

PO Box 417 Ivanhoe Vic 3079

Ph (03) 9490 5900

[www.trafficworks.com.au](http://www.trafficworks.com.au)

### Disclaimer

The information contained in this document is intended to be received, used and relied upon by the named addressee or client only for the purpose for which it has been prepared. Trafficworks Pty Ltd does not warrant the accuracy or relevance of the information, including by implication, contained in this document if it is used or relied upon by any person other than the named addressee or client. Copying, reproduction including by electronic means, unauthorised use or disclosure of this document is prohibited except with the express written authorisation of Trafficworks Pty Ltd.

### Document control

Report title	Sydney Metro – Western Sydney Airport Orchid Hills Stabling and Maintenance Facility (SMF) Stage 1
Project number	220751
Client	Parklife Metro
Client contact	Wendy Zheng (0401 969 768)

Revision	Date issued	Revision details / status	Prepared by	Authorised by
Draft	4/07/2023	Preliminary draft	Bernard Chan	Paul Mihailidis

## Table of Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
<b>2</b>	<b>Road safety audit (RSA) overview .....</b>	<b>3</b>
2.1	<b>Audit team .....</b>	<b>3</b>
2.2	<b>Commencement meeting .....</b>	<b>3</b>
2.3	<b>Inspection.....</b>	<b>3</b>
2.4	<b>Risk ratings .....</b>	<b>3</b>
2.5	<b>Safe System approach.....</b>	<b>5</b>
2.6	<b>Supporting information used in the audit.....</b>	<b>5</b>
<b>3</b>	<b>Site Description.....</b>	<b>6</b>
3.1	<b>Existing conditions .....</b>	<b>6</b>
3.2	<b>Proposed conditions.....</b>	<b>7</b>
<b>4</b>	<b>Findings .....</b>	<b>8</b>
<b>5</b>	<b>Conclusion.....</b>	<b>13</b>
	<b>Appendix 1 – Severity guidance sheet.....</b>	<b>14</b>
	<b>Appendix 2 – Likelihood / severity risk matrix.....</b>	<b>15</b>

# 1 Introduction

The Sydney Metro – Western Sydney Airport project involves the construction and operation of a 23 km new metro rail line between St Marys to the north and the Western Sydney Airport Aerotropolis to the south.



Figure 1: Overview of Sydney Metro – Sydney Airport project

**Parklife Metro** engaged Trafficworks to undertake a road safety audit (RSA) of the Construction Traffic Management Plan (CTMP) prepared for the Orchid Hills Stabling and Maintenance Facility (SMF). The focus of this RSA will be for the Stage 01 works, which will consist of:

- Enabling works
- Construction of the buildings.

The site is scheduled to be handed over to SSTOM on 8 August 2023, with the site establishment works to commence on 8 August 2023.

The CTMP will be updated for Stage 02 works following finalisation of the rail design and will be subject to a separate RSA.

We conducted this RSA in line with the procedures set out in the Austroads Guide to Road Safety Part 6: Road Safety Audits (2022). For more information, see section 2, Road Safety Audit (RSA) overview.

Both the site and the supporting documentation were reviewed to identify issues that impact road user safety – for more information, see section:

- section 2.6, Supporting information used in the audit
- section 3, Site Description.

Our findings are presented in section 4.

Note that the auditor cannot guarantee that every issue that impacts road user safety has been identified.



## 2 Road safety audit (RSA) overview

### 2.1 Audit team

The audit was conducted by:

**Paul Mihailidis [BEng (Civil), GradCert Mgt, MIEAust, CPEng, NER]**

RSA-03-0796 – Level 3 road safety auditor (lead auditor)

and

**Bernard Chan [BEng(Civil)(Hons), CPEng, NER]**

RSA-03-1649 – Level 3 road safety auditor (team member)

### 2.2 Commencement meeting

A commencement meeting was held at the Parklife offices on the morning of Thursday 29 June 2023.

### 2.3 Inspection

The audit included an inspection of the site during the:

- Morning of 29/06/2023

The audited sections were driven along in each direction. Video footage were captured and have been referenced in the audit findings.

The conditions during the daytime inspection were fine and sunny.

### 2.4 Risk ratings

The findings of this audit have been assigned a risk rating based on the likelihood of a crash occurring, together with the potential severity of that crash. For more information about:

- crash severity – see Appendix 1
- the likelihood/severity risk matrix, see Appendix 2.

The risk ratings adopted for this audit are as follows:

- Extreme – must be corrected regardless of cost
- High – should be corrected or the risk significantly reduced, even if the treatment cost is high

- Medium – should be corrected or the risk significantly reduced, if the treatment cost is moderate, but not high
- Low – should be corrected or the risk reduced if the treatment cost is low
- Negligible – no action required.

Trafficworks also denotes a risk rating of ‘Note only’ for:

- drafting errors, omissions and issues that are outside the scope of works
- items within the scope of works that do not represent a road safety risk.

## 2.5 Safe System approach

The basic principles of the Safe System approach are:

- Humans are fallible, and will inevitably make mistakes when driving, riding, or walking.
- Despite this, road trauma should not be accepted as inevitable. No one should be killed or seriously injured on our roads.
- To prevent serious trauma, the road system must be forgiving, so that the forces of collisions do not exceed the limits that the human body can tolerate.

Therefore, as far as is practically possible, infrastructure should be designed, and travel speeds managed, so that crash impact speeds are below the thresholds outlined in Appendixes 1 and 2.

Each road safety issue has been assessed based on:

- its kinetic energy transfer
- the likelihood of a serious injury or fatality occurring assessed against the thresholds outlined in Appendixes 1 and 2.

## 2.6 Supporting information used in the audit

The following document was used when conducting the audit:

- SSTOM – Orchid Hills Stabling and Maintenance Facility – Construction Traffic Management Plan, prepared by Parklife Metro D&C. Document no. SMWSASSM-PLD-1NL-NL000-TF-PLN-000001, Rev A, dated 01/06/2023

It is noted that the swept path assessment which forms part of the CTMP is outdated and does not reflect the current site conditions. It is understood that an updated swept path assessment will be undertaken, however this has not been provided for this audit.

### 3 Site Description

#### 3.1 Existing conditions

Patons Lane is a local road aligned in an east to west direction, connecting onto Luddenham Road on the eastern end, extending for approximately 1.2 km and is truncated on the western end. It provides access to the Bingo Recycling Centre and Landfill and is currently utilised by construction vehicles for the construction of the SMF site. Patons Lane has a sealed carriageway width of approximately 10 m, accommodating two-way traffic flow. Patons Lane has a posted speed limit of 50 km/h.

The SMF site access is located on the western end of Patons Lane. Three separate access points have been created from Patons Lane within close proximity of each other. Each of the site access points will be utilised by a different contractor to construct separate parts of the SMF site. It is understood that SSTOM will be taking over the easternmost site access point.

Stockdale Road connects to the south side of Patons Lane, located opposite the SMF site access points. At the time of the inspections, Stockdale Road was gated and closed to all traffic.

The study area is shown in Figure 2 below.



Figure 2: Study area

### **3.2 Proposed conditions**

The following details the traffic management arrangements proposed as part of the Stage 01 works of the SMF site:

- largest vehicle required will be the 12.5 m Heavy Rigid Vehicle (HRV)
- all construction vehicles will be arriving from / departing to the north from Luddenham Road
- all vehicles will access the site via the easternmost site access point on Patons Lane
- construction works will occur between 7 am – 6 pm Mon-Fri and 8 am – 1 pm Saturday
- heavy vehicle access will be monitored with all subcontractors to register for a delivery timeslot before being granted access to the site
- a traffic controller will be situated 50 m from the Patons Lane access gate.



## 4 Findings

Table 1 outlines the findings of this audit, noting the columns to the right of the table will be completed by the client after receiving and reviewing this report.

RSAs are a formal process and the client is required to respond to the audit's findings in writing. A client is under no obligation to accept all of the audit findings and should consider these in conjunction with all other project considerations. If the client does not accept the findings, then reasons should be included within the written response.

It is not the role of the auditor to approve the client's response to the audit.

Table 1: Audit findings

No	Audit findings	Photos	Risk rating	Client response
				Accept: Yes/No Reasons/Comments

**1 General issues**

1.1. Multiple contractors will be utilising Patons Road during the construction of works on the SMF site and will be using the adjacent access points.

Additionally, heavy vehicles associated with the Bingo site will continue to use Patons Lane.

This CTMP has been prepared to manage the construction traffic associated with the enabling works and construction of the buildings.

It is important to coordinate consistent messaging across all sites to reduce the risk of trucks queuing on Patons Road, which could create a rear end crash risk, particularly near the curve where sightlines may be limited.




Likelihood: Yes  
Rare  
Severity: Moderate  
Risk rating: **LOW**

SSTOM Traffic Manager and/or representative will continue to attend TTLG, TCG, and Luddenham Traffic Working Group meetings to ensure adequate coordination between contractors are maintained.

The level of Light Vehicle and Heavy Vehicle traffic expected are included in Table 7 of the CTMP Report.

No	Audit findings	Photos	Risk rating	Client response
				Accept: Yes/No    Reasons/ Comments
				<p>SSTOM will implement a construction logistic software to ensure maximum vehicle numbers are not exceeded by SSTOM related traffic movements.</p> <p>A monitoring program will be implemented to ensure any queuing is minimised along Patons Lane.</p>

No	Audit findings	Photos	Risk rating	Client response	
				Accept: Yes/No	Reasons/ Comments
1.2.	The aerial base used for the swept path assessment is superceeded and does not reflect the site conditions. For example, Stockdale Road has been closed to traffic. (see closed gate in the photo)		NOTE ONLY	Yes	SSTOM is in the process of sourcing new aerial base to allow for the preparation of revised swept path assessment

No	Audit findings	Photos	Risk rating	Client response	
				Accept: Yes/No	Reasons/ Comments
1.3.	<p>The easternmost access on Patons Lane will be used for all vehicles to access the site.</p> <p>This will result in heavy and light vehicles gaining access at the same location.</p> <p>Swept paths of a 12.5 m heavy rigid vehicle were prepared for the centre access but not for the easternmost access point, so we cannot verify if truck movements can be undertaken safely.</p> <p>If truck movements cannot occur concurrently, there is a risk of conflict between opposing movements, resulting in a crash.</p>		<p>Likelihood: Unlikely</p> <p>Severity: Minor</p> <p>Risk rating: <b>LOW</b></p>	Yes	<p>Re-run swept path assessment using new Site Establishment Plan.</p>



No	Audit findings	Photos	Risk rating	Client response	
				Accept: Yes/No	Reasons/ Comments
1.4.	<p>The CTMP indicates that all trucks are required to turn right in and left out at the intersection of Luddenham Road and Patons Lane.</p> <p>It is understood that the approved routes will be distributed to all drivers before their arrival on site.</p> <p>Signs have not been proposed to provide guidance of the approved construction vehicle movements.</p> <p>There is still risk that drivers will undertake movements against the approved routes, which can lead to logistical or safety issues, resulting in a crash.</p>		<p>Likelihood: Unlikely</p> <p>Severity: Minor</p> <p>Risk rating: <b>LOW</b></p>	Yes	<p>Additional signage to be provided to direct SSTOM related / Metro Construction Vehicles at the intersection of Luddenham Road and Patons Lane.</p>

Client response completed by:

Name: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

## 5 Conclusion

This Road Safety Audit has been conducted in accordance with the procedures set out in the *Austrroads Guide to Road Safety Part 6: Road Safety Audits (2022)*.

The site was inspected and supporting documentation examined.

The findings presented in the previous section of this document are provided for consideration by the client and any other interested parties.

### Auditors



**Tuesday, 4 July 2023**

Paul Mihailidis [BEng (Civil), GradCert Mgt, MIEAust, CPEng, NER]

RSA-03-0796 – Level 3 road safety auditor (lead auditor)



**Tuesday, 4 July 2023**

Bernard Chan [BEng(Civil)(Hons), CPEng, NER]

RSA-03-1649 – Level 3 road safety auditor (team member)

## Appendix 1 – Severity guidance sheet

Research has found the chances of surviving a crash decrease markedly above certain speeds, depending on the type of crash. It should be noted that the road user, as well as the angle of impact of a collision are also factors that impact the severity of a crash.

Figure 2 provides a severity guidance sheet.

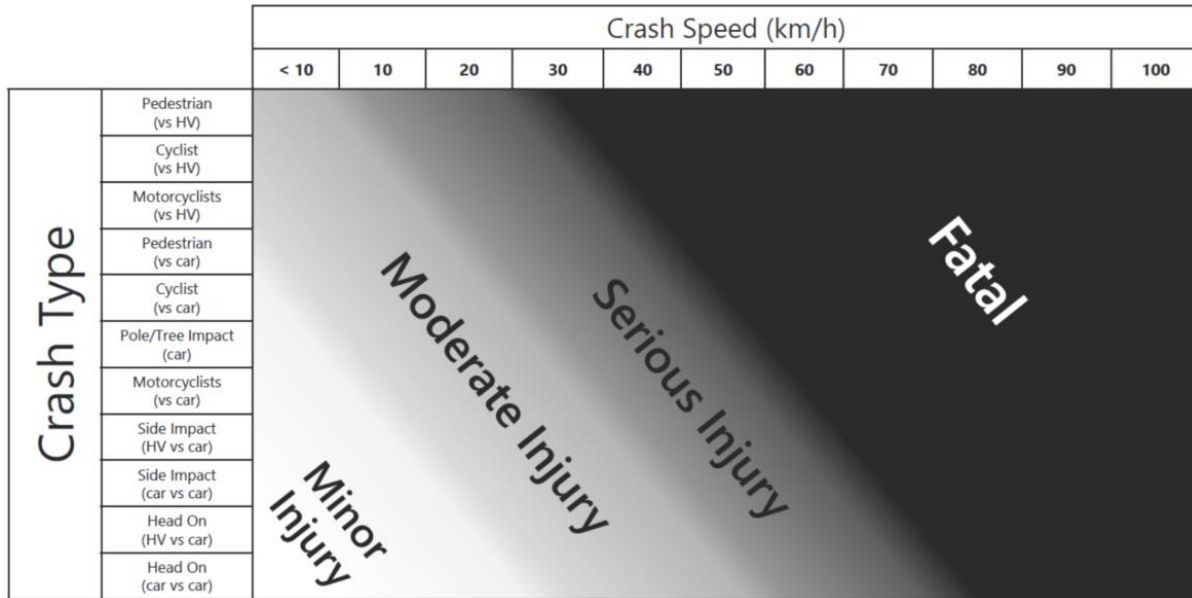


Figure 2: Severity guidance sheet

## Appendix 2 – Likelihood / severity risk matrix

Figure 3 presents the likelihood / severity risk matrix.

			Severity*				
			Insignificant	Minor	Moderate	Serious	Fatal
			Property damage	Minor first aid	Major first aid and/or presents to hospital (not admitted)	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 +	Negligible	Negligible	Low	Medium (FSI)	High (FSI)

\*see Severity Guidance Sheet

Safe System crash outcome threshold

Figure 3: Likelihood / severity risk matrix (Source: Austroads Guide to Road Safety Part 6 – Road Safety Audit (2022))

## Appendix F Drivers Code of Conduct

### Drivers Code of Conduct

Safe Driving Policy for Construction of Orchard Hills Stabling and Maintenance Facility

#### Objectives of the Drivers Code of conduct

- To minimise the impact of earthworks on the local and regional road network;
- To minimise conflict with other road users;
- To minimise road traffic noise; and
- To ensure truck drivers use specified heavy vehicles routes between the Site and the sub-regional road network.

#### Code of Conduct

The code of conduct requires that while driving any vehicle for work-related purposes.

Drivers are to be issued with a copy of the Drivers Code of Conduct, and must comply with all of the following:

- Demonstrate safe driving and road safety activities.
- Abide by traffic, road and environmental legislations.
- Follow site signage and instructions.
- Drivers must only enter and exit the site via the approved entry and exit points and travel routes.

The below activities in any vehicles will be considered as a breach of conduct and will result in removal from site:

- Reckless or dangerous driving causing injury or death.
- Driving whilst disqualified or not correctly licensed.
- Drinking or being under the influence of drugs while driving
- Failing to stop after an incident.
- Loss of demerit points leading to suspension of licence.
- Any actions that warrant the suspension of a licence
- Exceeding the speed limit in place on any permanent or temporary roads.

#### Driver Responsibilities

All Drivers on site must:

- Be responsible and accountable for their actions when operating a company vehicle or driving for the purposes of work.
- Display the highest level of professional conduct when driving a vehicle at all times.
- Ensure they have a current driver licence for the class of vehicle they are driving, and this licence is to be carried at all times.
- Immediately notify their supervisor or manager if their drivers' licence has been suspended, cancelled, or has had limitations applied.
- Comply with all traffic and road legislation when driving.
- Assess hazards while driving.

- Undertake daily pre-start checks of oil, tyre pressures, radiator and battery levels of company vehicles they regularly use.
- Drive within the legal speed limits, including driving to the conditions.
- Not drive outside of the approved heavy vehicle routes. All drivers must obey weight, length and height restrictions imposed by the National Vehicle Regulator, and other Government agencies. Heavy Vehicles shall adhere to the selected routes.
- Heavy vehicle drivers must have completed the Sydney Metro Safe Heavy Vehicle Driver Introduction Programme or equivalent competency
- Be cognisant of the noise and emissions requirements imposed within the NSW/ Australian Road Rules. Works must be constructed with the aim of achieving the construction noise management levels detailed in the Construction Noise Guideline.
- Do not queue on public roads unless a prior approval has been sought.
- Be aware that at no time may a tracked plant be permitted or required on a paved road.
- Never drive under the influence of alcohol or drugs, including prescription and over the counter medication if they cause drowsiness – to do so will merit disciplinary measures.
- All drivers to report to their supervisor if they have been prescribed medication prior to the start of work.
- Wear a safety seat belt at all times when in the vehicle.
- Avoid distraction when driving – the driver will adjust car stereos/mirrors etc. before setting off or pull over safely to do so.
- Report ALL near-misses, crashes and scrapes to their manager,
- Report infringements to a manager at the earliest opportunity.
- Report vehicle defects to a manager prior to the next use of the vehicle.
- Follow the approved site access/egress routes only.
- Follow speed limits as imposed within the estate.
- Keep loads covered at all times.

## The Site Team Responsibilities

The Contractor is responsible to take all steps necessary to ensure company vehicles are as safe as possible and will not require staff to drive under conditions that are unsafe.

This will be achieved by undertaking the following:

- Ensuring all vehicles are well maintained and that the equipment enhances driver, operator and passenger safety by way of:
  - Pre-commencement checks for all new plant arriving on-site and prior to undertaking any work.
  - Daily prestart inspections for all plant, vehicles and equipment currently on-site.
  - All construction plant must be fitted with a flashing light, fire extinguisher and reverse alarms (or squawkers).
  - Ensure all operators onsite have a current driver's licence of the appropriate class.
  - Ensure maintenance requirements are met and recorded.
- Identify driver training needs and arranging appropriate training or re-training. This may include providing the below:
  - Operator VOC assessment as part of all inductions.
  - Regular Toolbox discussions on safety features, managing fatigue, approved heavy routes, driver responsibility and drink-driving.
- Encouraging Safe Driving behaviour by:
  - Ensuring the subcontractor is informed if their staff become unlicensed.



- Not covering or reimbursing staff speeding or other infringement notices
- Ensuring Legal use of mobile phones in vehicles while driving only and that illegal use is not undertaken.
- Encouraging better fuel efficiency by:
  - Use of other transport modes or remote conferencing, whenever practical.
  - Providing training on, and circulating information about, travel planning and efficient driving habits.

## Crash or incident Procedure

- Stop your vehicle as close to it as possible to the scene, making sure you are not hindering traffic. Ensure your own safety first, then help any injured people and seek assistance immediately if required.
- Ensure the following information is noted:
  - Details of the other vehicles and registration numbers (photos with time stamps)
  - Names and addresses of the other vehicle drivers.
  - Names and addresses of witnesses.
  - Insurers details
- Give the following information to the involved parties:
  - Name, address and company details
- If the damaged vehicle is not occupied, provide a note with your contact details for the owner to contact the company.
- Ensure that the police are contacted should the following circumstances occur:
  - If there is a disagreement over the cause of the crash.
  - If there are injuries.
  - If you damage property other than your own.
- As soon as reasonably practical, report all details gathered to your manager.

## Environmental Procedures.

A range of measures shall be implemented to ensure the following;

- No dirt or debris from the construction vehicles is tracked on to the public road network.
- Reduce the impacts to sensitive receivers, including, where practicable, starting noisy equipment away from sensitive receivers and implementing respite periods.
- Watering of dusty activities will be undertaken, or activities temporarily halted and then resumed once weather conditions have improved.
- Containment measures for spillages will be provided at appropriate locations and in close proximity to staff car park areas, dangerous goods stores areas and main Project work areas.
- Keep an accurate record which includes the range of measures undertaken to reduce environmental impacts.