Construction Traffic Management Plan – Orchard Hills Station

SMWSASSM-PLD-OHE-TF-PLN-000001

Parklife Metro D&C

Approval Record

Revision	Author	Date	Issue	Reviewed by	Approved by
0	[redacted] Traffic Manager	27/09/2023	Final Issue / IFI	**Discipline Leads**	[redacted] Project Director
1	[redacted] Traffic Manager	11/06/2024	Revision 01	**Discipline Leads**	[redacted] Project Director
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Amendment Record

Date	Revision	Version	Amendment Description
17/07/2023	A	1	First Issue
15/08/2023	B	1	Second Issue
27/09/2023	0	1	Final Issue / IFI
23/05/2024	01	1	Additional Light Vehicle Driveways
11/06/2024	01	2	Response to Metro Comments
18/07/2024	02	1	HVLR – inclusion of Samuel Marsden Drive
19/09/2024	03	1	Update to HVLR – inclusion of Samuel Marsden Drive

Details of Revision Amendments

Document Control

The Management Plan's owner Director or his/her delegate is responsible for updating this plan to reflect changes to the project, construction, legal and other requirements, as required.

Plan Authorisation

The implementation and distribution of this Management Plan is under the authority of the Project Director. All personnel employed on the Project will perform their duties in accordance with the requirements of this Management Plan, supporting management plans and related procedures.

Amendments

Any revisions or amendments must be approved by the Project Director and / or client before being implemented and distributed.

Glossary

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

SBT	Station Boxes and Tunnelling
SMF	Stabling and Maintenance Facilities
SMSWA	Sydney Metro Western Sydney Airport
SRV	Small Rigid Vehicle (as defined by AS2890.2:2018)
SSTOM	Stations, Systems, Trains, Operations and Maintenance
TCAWS	Traffic control at work sites Technical Manual (version 6.1:2022 or the latest)
TGS (TCP)	Traffic Guidance Scheme (formerly known as Traffic Control Plan)
TDT 2013/04a	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
TfNSW	Transport for New South Wales
veh/hr	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 Station.

This site will be handed to SSTOM in four stages from SBT and SCAW contractors where construction of the station buildings will take place initially within Access Portions 02 and rail construction will take place within Access Portions 01, 03 and 04.

This CTMP will be updated following rail design finalisation, for the development of traffic management associated with the rail construction. This will occur prior to works starting onsite following Access Portion 03 and 04 handover.

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 planner 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. TCT0021456

This report has been reviewed bythe 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:

- Kiara Brown Ticket No. TCT1037698

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 has been updated to account for clarifications to the Stage 6 (precinct works) scope and the additional LV driveway on Lansdowne Road.

3 Project Details

3.1 Proposed Works

The Orchard Hills Station is to be delivered in 7 stages:

- Stage 1 - Site Preparation Works
- Stage 2 - Enabling Works
- Stage 3 - Structural Works
- Stage 4 – MEP and Vertical Transport Works
- Stage 5 - Finishes and Above Ground Structures
- Stage 6 - Precinct works including landscaping and external works
- Stage 7 – Rail Systems Construction

3.2 Site Location

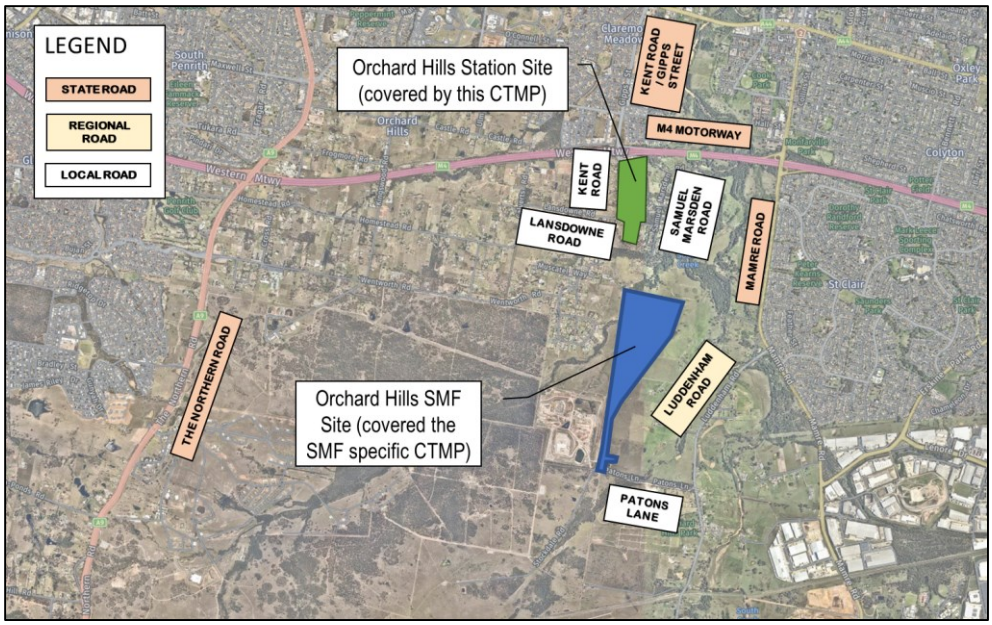


FIGURE 1: SITE LOCATION

The site is located to the south of M4, east of Kent Road, on either sides of Lansdowne Road, west of Samuel Marsden Road and north of South Gully. Access will be via either Kent Road or Lansdown Road, Orchard Hills.

3.3 Timing of Works

There will be 4 handovers to SSTOM dates, as shown in Figure 2:

- Access Portion 01 – N7 (SBT): 26 August 2023
- Access Portion 02 – N5 (SBT): 15 September 2023
- Access Portion 03 – N4 (SBT):15 November 2024
- Access Portion 04 – Area 1 (SCAW): 20 January 2025

FIGURE 2: OHE STATION HANDOVER TIMING

Access Portion 01 (N7) will be used for Station construction works overflow parking only until the Access Portion 04 is handed over at the beginning of 2025 so the at grade Linewide works can start. Site establishment for Station construction will start on 14th September 2023 with the Access Portion 02 handover as the station box is within Access Portion 02 only.

Station construction works timing as outlined in Table 1.

TABLE 1: TIMING OF WORKS

Activity	Access Portion	Start Date	Finish Date
Stage 1 - Site Preparation Works	Access Portion 02	14-Sep-23	11-Dec-23
Stage 2 - Enabling works	Access Portion 02	29-Sep-23	14-Feb-24
Stage 3 - Structural Works	Access Portion 02	13-Jan-24	26-Aug-24
Stage 4 - MEP and VT Works	All portions	03-Dec-24	20-May-25

Stage 5 - Finishes and Above Ground Structures	Access Portion 02	13-May-24	26-Sep-24
Stage 6 - Precinct works including landscaping and external works	All portions	09-Aug-24	27-Feb-26
Stage 7 - Rail System Construction	Access Portions 01, 03, 04	14-Mar-25	13-Apr-26

3.4 Site Related Data

3.4.1 Road Details

The key roads surrounding the Site are identified within Figure 1 and summarised below noting Samuel Marsden Road is not part of the haul route:

TABLE 2: LOCAL ROAD NETWORK

Road Name	Section	Speed Limit	Parking	Traffic Volume and Peak Times	Urban / Rural
Kent Road	M4 to Lansdowne Road	70km/hr (reduced speed authorisation of 40km/hr)	No	-	Rural
Kent Road	Caddens Road to M4	80km/hr	No	-	Urban
Lansdowne Road	Kent Road to Samuel Marsden Road	70km/hr (reduced speed authorisation of 40km/hr)	No	-	Rural
Mamre Road	M4 Interchange	60km/hr – 80km/hr	No	-	Urban
M4	Turn off south onto Mamre Road	Up to 110km/hr	No	-	Urban
Samuel Marsden Road	Lansdowne Road to Samuel	60km/hr	No	-	Rural

	Marsden Reserve				
Flinders Avenue	Samuel Marsden Road to road termination	50km/hr	No	-	Rural

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

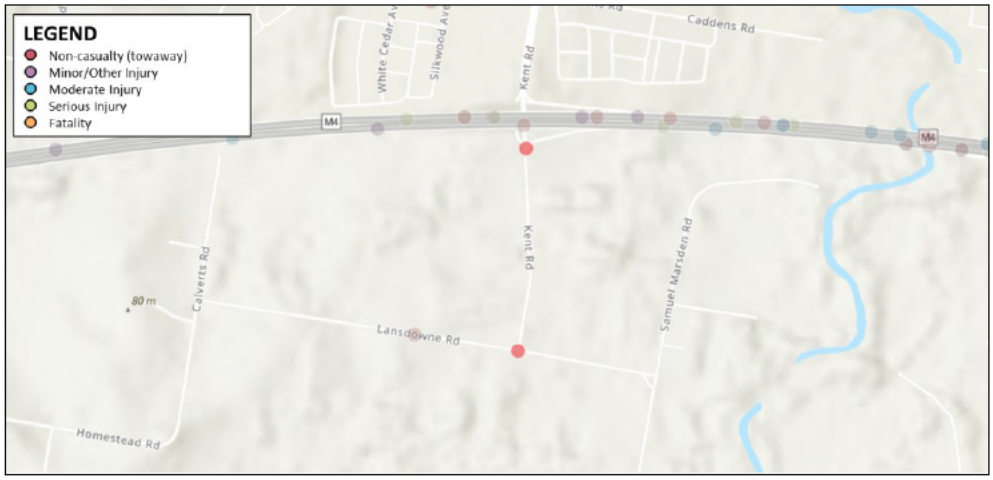


FIGURE 3: CRASH MAP

TABLE 3: CRASH HISTORY

Year	Location	RUM Code	Injury / Death
2017	M4 Westbound Off-Ramp at Kent Road	73 - Right off carriageway into object, parked vehicle	Non-casualty (towaway)
2018	Lansdowne Rd at Kent Road	13 - Right near	Non-casualty (towaway)

An analysis of the crash history shows two crashes only on the frontages roads both resulting in non-casualties. Note that both Kent Road and Lansdowne Roads will be rebuilt as part of the SMWSA delivery programme prior to SMWSA coming online in 2027.

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 4 provides context to VRU's surrounding the Site.

TABLE 4: PUBLIC AND ACTIVE TRANSPORT

Road Name	Pedestrian	Cycling	Public Transport
Kent Road	M4 to Lansdowne Road	No (except near the interchange)	No No dedicated cycle / shared path along (except near interchange)
Lansdowne Road	Kent Road to Samuel Marsden Road	No	No No dedicated cycle / shared path
Samuel Marsden Road	Lansdowne Road to Samuel Marsden Reserve	No	No No dedicated cycle / shared path
Flinders Avenue	Samuel Marsden Road to road termination	No	No No dedicated cycle / shared path

There is an existing shared path along the west side of Kent Road, connecting north along Gipps Street and the Great Western Highway, and across the M4 via a shared pedestrian / bicycle bridge, which terminates approximately 40m south of the Kent Road / M4 motorway off ramp, as shown in Figure 4.

There is no existing formalised pedestrian or off-road bicycle facility along Kent Road, between the M4 Motorway off ramp, Lansdowne Road, Samuel Marsden Road and Flinders Avenue.

FIGURE 4: SHARED PATH ON KENT ROAD LEADING TO THE M4 PEDESTRIAN OVERPASS

Samuel Marsden Road do not provide any direct access to the station site.

Due to sewer mains connection being at the north-eastern end of Samuel Marsden Road, the sewer mains construction works will require heavy vehicle access for construction and reinstatement works. The sewer main connection works will also include the use of the western portion of Flinders Avenue under traffic control arrangements detailed in this report.

4 Works Proposed

4.1 Site Access (Access Portions 01 and 02)

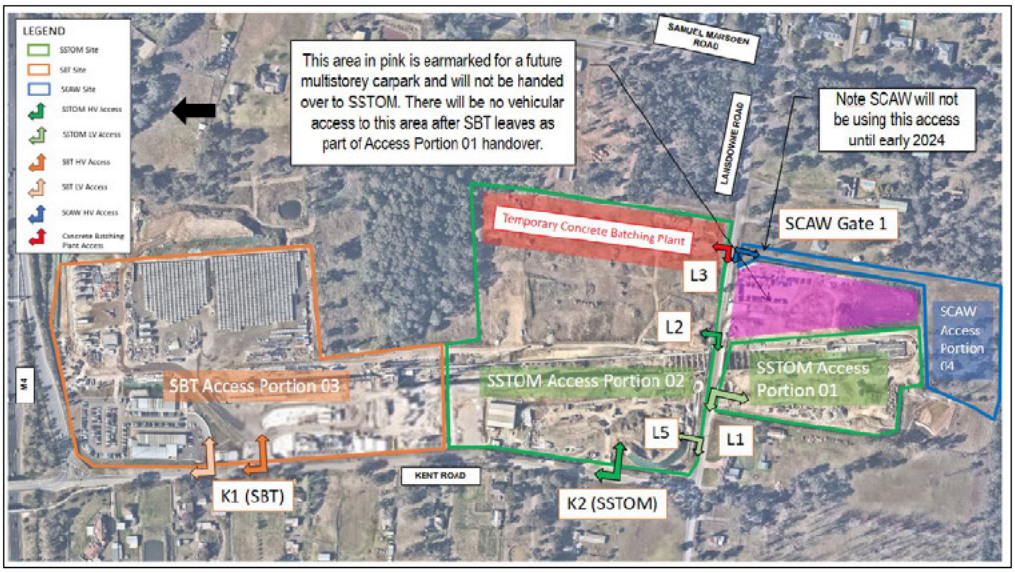


FIGURE 5: OHE SITE ACCESS

Site access for all vehicles into OHE Station Site will be off either Kent Road or Lansdowne Road from the M4 per directional arrows shown in Figure 5.

Prior to handover of Access Portions 03 and 04, HV access to the site will be either left turning off Kent Road (K2) or left turning off Lansdowne Road (L2). LV access to site will be left turning off Lansdowne Road (L5) or right turning off Lansdowne Road (L1) to the overflow carpark in Access Portion 01.

All vehicles accessing the temporary concrete batching plant on the western side of Access Portion 02 will be left turning off Lansdowne Road (L3).

No HVs except those vehicles associated with sewer mains connection works, and road reinstatement works are to access Samuel Marsden Road.

HVs exiting the Site will turn right onto Kent Road / Lansdowne Road only from Access Portion 02 to go back onto the M4 or continue onto Kent Road / Gipps Street.

LVs exiting the Site will turn right onto Kent Road or left onto Lansdowne Road to go back onto the M4 or continue onto Kent Road / Gipps Street.

4.2 Site Access (Post Access Portions 03 and 04 Handover)

Following Access Portions 03 and 04 handover, rail construction will commence in early 2025 with the associated rail deliveries to OHE site to start at the same time. SSTOM will take over the existing SBT and SCAW site accesses

shown in Figure 5 for HV and LV access. The overflow carpark LV access off Lansdowne Road into Access Portion 01 will change to HV access to support the rail deliveries.

Following finalisation of the rail design this CTMP will be updated for construction traffic management requirements for rail construction.

4.3 Station Construction Works Proposed

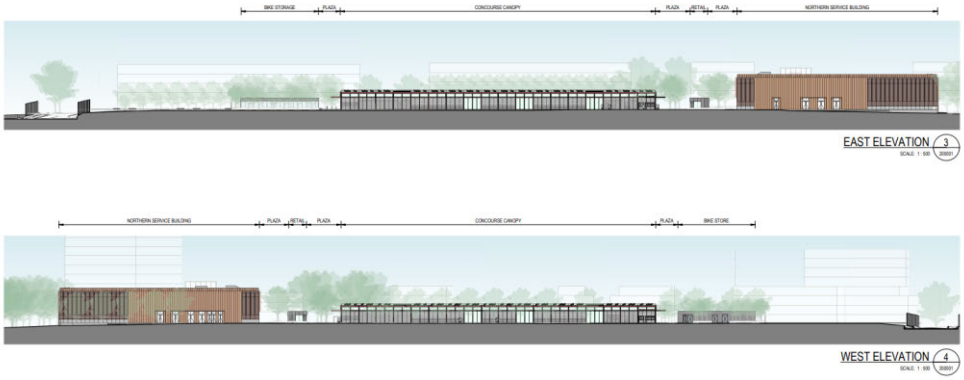


FIGURE 6: OHE STATION ARCHITECTURAL (PRELIMINARY)

The following key activities would be undertaken for the station construction:

- Stage 1. Site Preparation Works
  - Site Survey and Set Out
  - Temporary Batch Plant Relocation (shown below in CTA6)
  - Mobilisation to Commence Works
  - Site Clearing and Grubbing
  - Earthworks & Drainage for Site Compound Areas
  - Temporary Buildings
  - Temporary Building Fitout and Furniture
  - Utility Temporary Connections
  - Access Roads, Hard Stand Areas, piling pad and Carparks
- Stage 2. Enabling works
  - Piling
  - Temporary dewatering system
  - Waterproofing
  - Tower crane/hoist installation
  - Base Slab Construction

  - Perimeter Wall Construction
- Stage 3. Structural Works
  - Internal Walls Construction
  - Perimeter Wall Construction
  - Headwall Construction
  - Precast Beams and Planks Installation
  - Masonry and Blockwork
  - Structural Steel Work
- Stage 4. MEP Works
  - Mech Services
  - Elec/Comm Services
  - Fire Services
  - Earthing & Bonding Testing & Certification
- Stage 5. Finishes and Above Ground Structures
  - FRP Structures
  - Fire Rated Painting
  - Metal Roofing
  - Metalwork
  - Roof Safety Systems
  - Ceilings
  - Wall Linings & Wall Finishes
  - Roofing
  - Façade
  - Louvres & Screens
  - Doors & Hardware
  - Floor Finishes
  - FF&E & Joinery
- Stage 6. Precinct Works
  - Bulk earthworks, drainage, and utilities works
  - Landscaping
  - Footpaths
  - Pavements
  - Urban design and street furniture
- Stage 7. Rail System
  - Rail installation
  - Earthing and Bonding

- Rail signalling

4.4 Temporary Concrete Batching Plant

A temporary concrete batching plant is proposed to be installed within Access Portion 02 in the location marked in red (refer to Figure 5).

Access to the plant will be via Lansdowne Road and there will be an internal access between the plant and the OHE station build in the western side of Access Portion 02.

This concrete batching plant will supply the SSTOM works at Orchard Hills Station (OHE), St Marys Station (STM), Orchard Hills Stabling and Maintenance Facility (SMF) and northern Linewide works (tunnel from OHE and at grade from OHE to the Warramgamba pipeline).

There will be an internal road from the batching plant to Orchard Hills Station construction area to the west within Access Porton 02.

SSTOM is negotiating access with SCAW to the Access Portion 04 Lansdowne Road access to supply SMF off the public road network.

Supply to STM will be via the M4 and Linewide works is through the tunnel in Access Portion 03 or through SMF on the handed over alignment.

4.5 Construction Hours

Construction hours have been outlined below per Condition E38:

TABLE 5: CONSTRUCTION HOURS

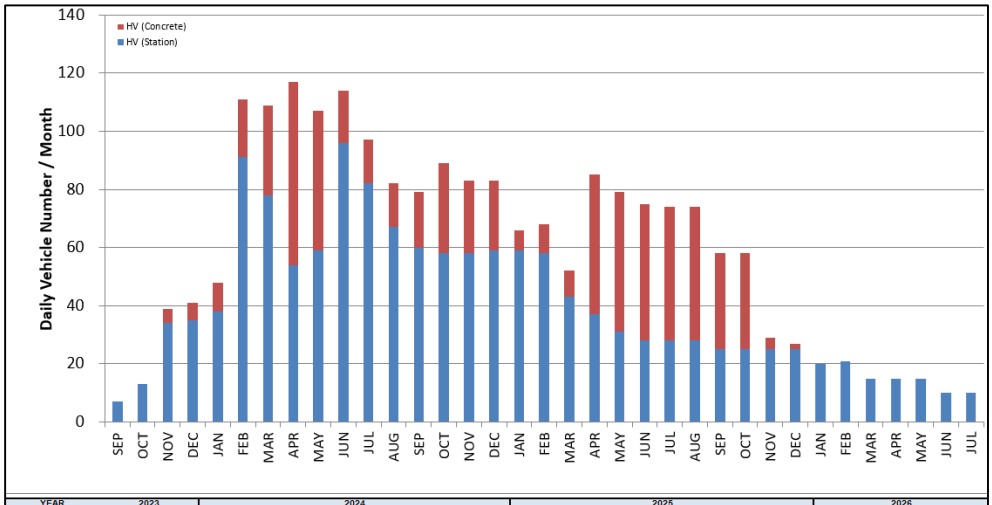
Activity	Day	Time
Construction Works	Mondays to Fridays	7:00am to 6:00pm
	Saturdays	8:00am to 1:00pm
	Sundays or Public Holidays	At no time

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 DPHI to seek approval for these works.

4.6 Construction Vehicle Movements

4.6.1 Truck Vehicle Volume

The projected daily heavy vehicle volume for all stages of OHE construction (indicated in blue, HV (Station)) and the temporary concrete batching plant (indicated in red, (HV (Concrete)) is shown in Figure 7.



YEAR	2023				2024												2025												2026						
MONTH	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
HV (Station)	7	13	34	35	38	91	78	54	59	96	82	67	60	58	58	59	59	58	43	37	31	28	28	28	25	25	25	25	20	21	15	15	15	10	10
HV (Concrete)	0	0	5	6	10	20	31	63	48	18	15	15	19	31	25	24	7	10	9	48	48	47	46	46	33	33	4	2	0	0	0	0	0	0	0

FIGURE 7: PROJECTED OHE HV NUMBERS

The anticipated heavy vehicle volume peak will start in February 2024 and come to a close following April 2025.

4.6.2 Truck Routes

It is proposed that all construction vehicles would enter and exit the Site via the routes shown in Figure 8. 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 Station construction will be 19m long Articulated Vehicles (19m AVs) so no over-size over mass (OSOM) permit will be required for heavy vehicle access to site through Kent Road and Lansdowne Road. 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 8. All construction vehicles will drive forward in and out of the Site onto Kent Road / Lansdown Road via the existing Site access.

There is no pedestrian or cyclist path available along the route from M4 to Site noting the existing shared path bridge parallel to the Kent Road bridge does not connect to any pedestrian / cyclist facilities north and south of the M4.

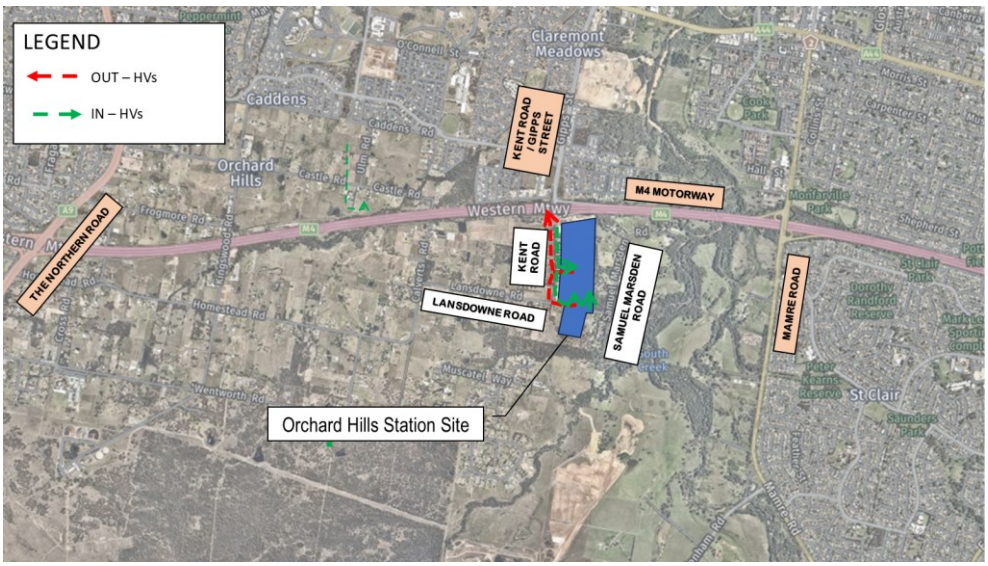


FIGURE 8: CONSTRUCTION VEHICLE ACCESS ROUTE

Note that following Access Portion 03 and 04 handover construction vehicles for rail segment delivery will be required to follow the same route when utilizing the public road network to access the site. However, as the rail segment lengths have not been finalised, maximum vehicle size will be determined in the subsequent CTMP update.

4.6.3 Truck Routes – Sewer Mains Works along Samuel Marsden Road

Forming part of the Stage 6 precinct works are sewer mains connection works between the Orchard Hills Station site and the associated precinct works, along Lansdowne Road and Samuel Marsden Road for connection to the agreed connection point on the south side of the M4.

It is proposed that all construction vehicles would enter and exit the works area along Samuel Marsden Road via the routes shown in Figure 9. The routes shown are to be utilised by all construction vehicles travelling to and from the works area along Samuel Marsden Road 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 involved in the sewer mains works before their arrival to Site.

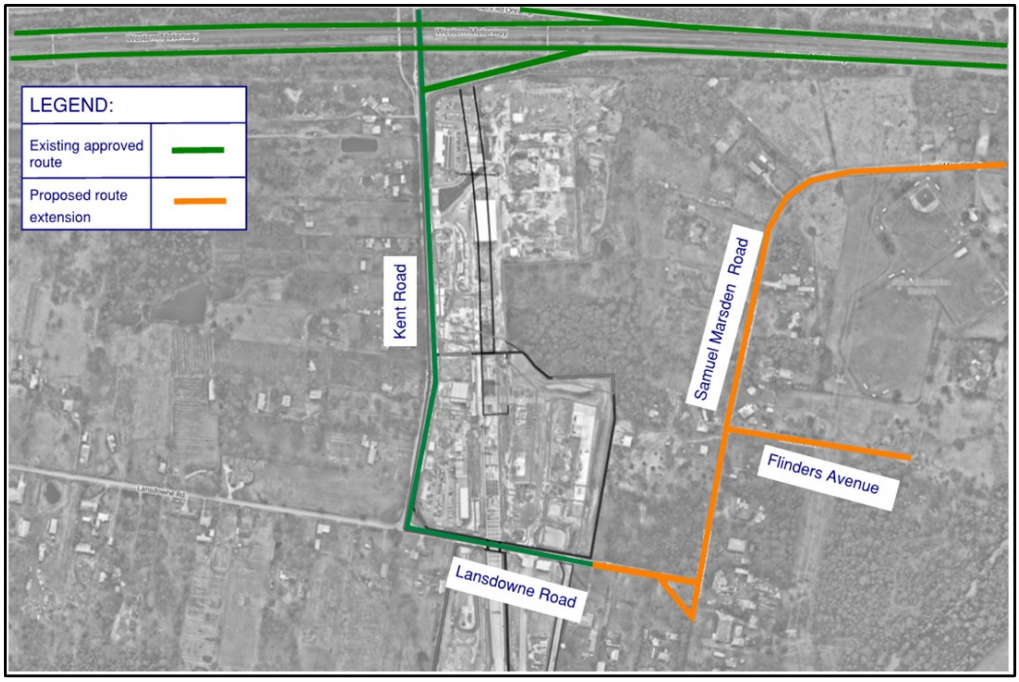


FIGURE 9: TRUCK ROUTES – SEWER MAINS WORKS ONLY

The largest truck required for sewer mains works will be 19m long Articulated Vehicles (19m AVs) so no over-size over mass (OSOM) permit will be required for heavy vehicle access to site through Samuel Marsden Road.

The swept paths (attached in Appendix H) demonstrate all critical turns at along the route shown in Figure 9.

Only heavy vehicles required for sewerage connection works, reinstatement works, road repair works, and occasional water carts to maintain road conditions will be allowed to access Samuel Marsden Road and Flinders Avenue. No queuing or parking of heavy vehicles will be allowed along Samuel Marsden Road and Flinders Avenue.

4.7 Temporary Traffic Management Method

4.7.1 Station Construction (Access Portion 01 and 02 Handover)

No works external to the Site will take place during Station construction and all deliveries will be undertaken by heavy vehicles 19m AV sized or smaller.

PLM will be maintaining the existing SBT site accesses on Kent Road (K2) and Lansdowne Road (L1, L2) for station construction. A third PLM site access on Lansdowne Road (L3) will be constructed for temporary concrete batching plant use. A fourth PLM site access on Lansdowne Road (L5) will be constructed for access to/from the site office car parking area. Traffic controllers will manage all site accesses when HV access is required. When the SCAW access gate is in use, SSTOM and SCAW traffic management will coordinate for HV access off Lansdowne Road.

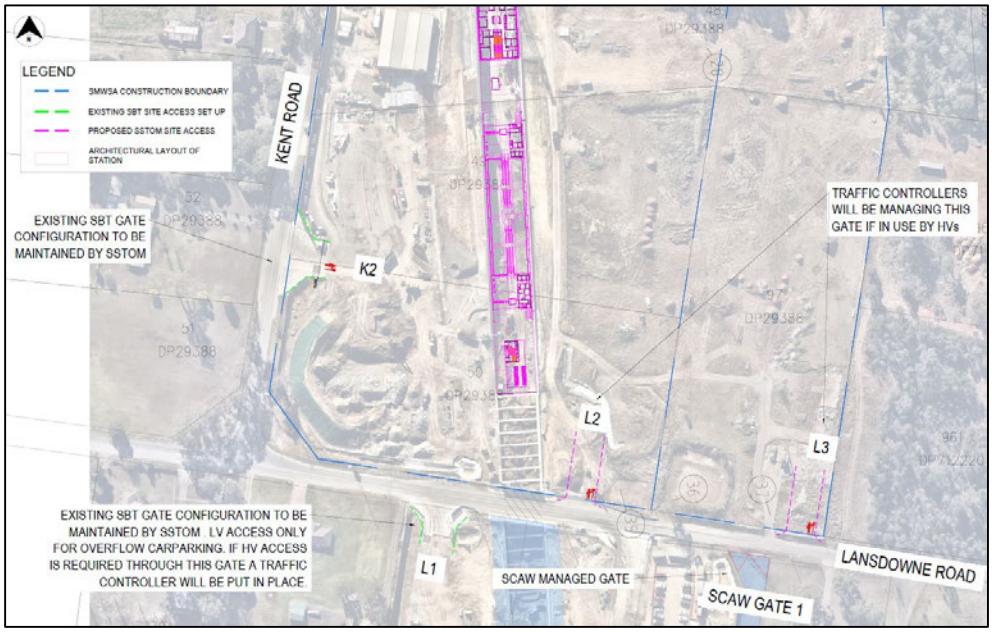


FIGURE 10: SSTOM OHE SITE ACCESS MANAGEMENT

PLM will be maintaining the SBT access gate configuration at the Kent Road Access Portion 01 site access. This site access is wide enough to accommodate simultaneous two-way movement between two 19m AVs as shown in Figure 11. A traffic controller will be managing traffic at this gate as light vehicles will be sharing this gate with the heavy vehicles to access the two on-site parking areas north and south of the site access. However, given the width of the gate and width of Kent Road, the traffic controller will be managing traffic inside of the site boundary only with no need to stop / slow traffic on Kent Road.

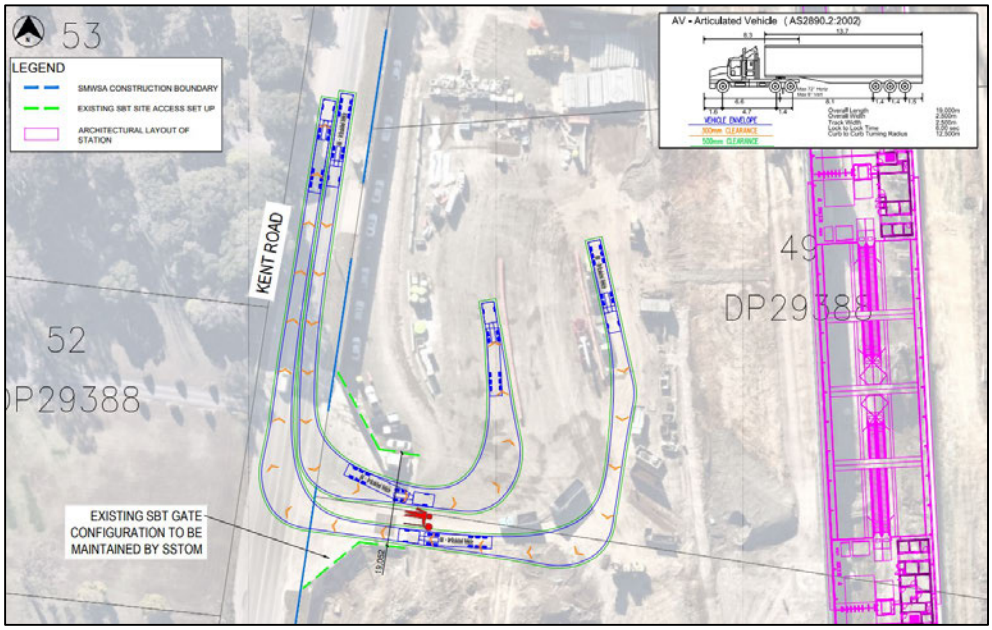


FIGURE 11: KENT ROAD SHARED HV / LV ACCESS (K2)

19m Avs can achieve simultaneous two-way access at the Lansdowne Road / Kent Road priority intersection as shown in Figure 12. No additional traffic management measure is required.

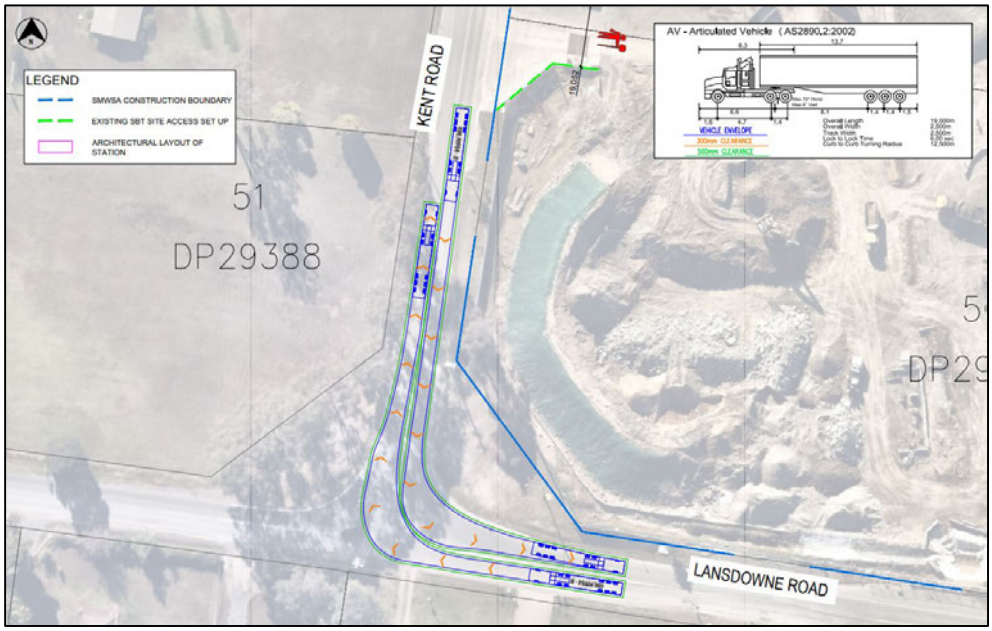


FIGURE 12: KENT ROAD / LANSDOWNE ROAD INTERSECTION SWEPT PATH

PLM will construct a new LV site access gate (L5) along Lansdowne Road for access to / from the site office car parking area.

The access gate has been designed to allow for simultaneous movement of vehicles up to the size of a B99 vehicle, in accordance with AS2890.1:2004. Refer to Appendix F for the design drawings and associated swept path assessment. The access gate will be signed posted for LV only.

PLM will be retaining the Permanent Lansdowne Road Bridge Traffic Guidance Scheme SBT currently has for the site shown in Figure 13. Note that the arrangement shown in Figure 13 does not include the combined Variable Message Signs (VMSs) and Radar Activated Speed Signs (RASSs) signs required to manage the reduced speed zone granted for Kent Road and Lansdowne Road and the directional signs for the LV only / HV only gates.

PLM has negotiated with SBT for the retention of the combined VMS / RASS signboards to enforce the 40km/hr speed zone and to maintain the roadworks speed zone authorisation for Kent Road and Lansdowne Road.

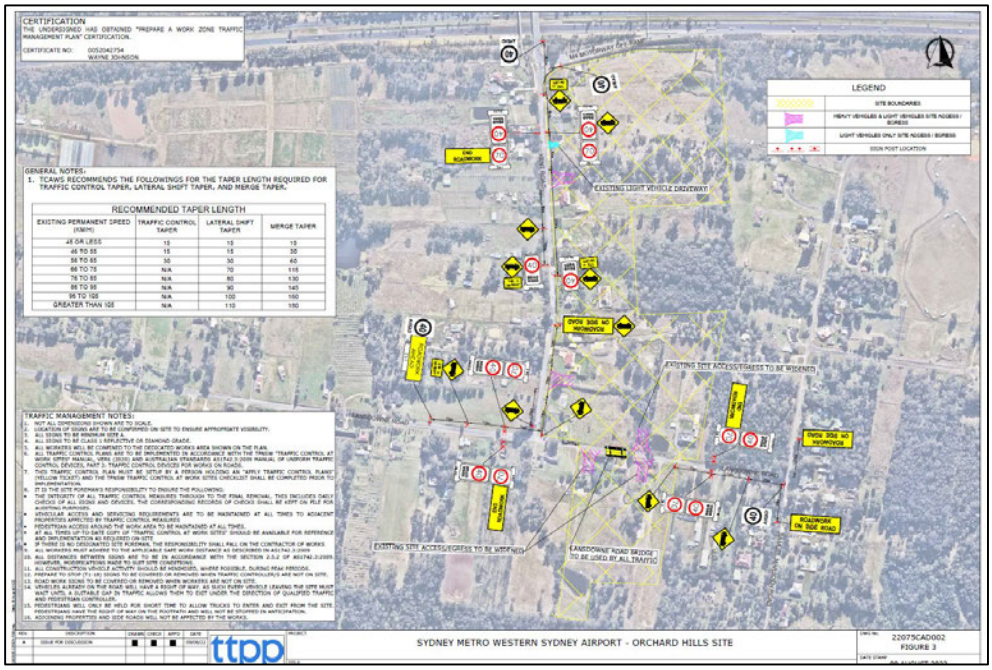


FIGURE 13: SBT CURRENT TGS (EXTRACTED FROM SMWSASBT-CPG-OHE-SN150-TF-PLN-202038 REV 00)

PLM will have a secondary heavy vehicle only site access on Lansdowne Road. Due to the width restraints on Lansdowne Road, heavy vehicles will not be able to achieve simultaneous two-way access per Figure 14.

All drivers of heavy vehicles requiring access to this site access will be briefed to radio ahead to the traffic controller managing this site access while on Kent Road so the traffic controller can hold all exiting vehicles within the site so to minimise any queuing on Lansdowne Road.

This site access will be utilised on the occasional heavy traffic day only and closed when not required for use.

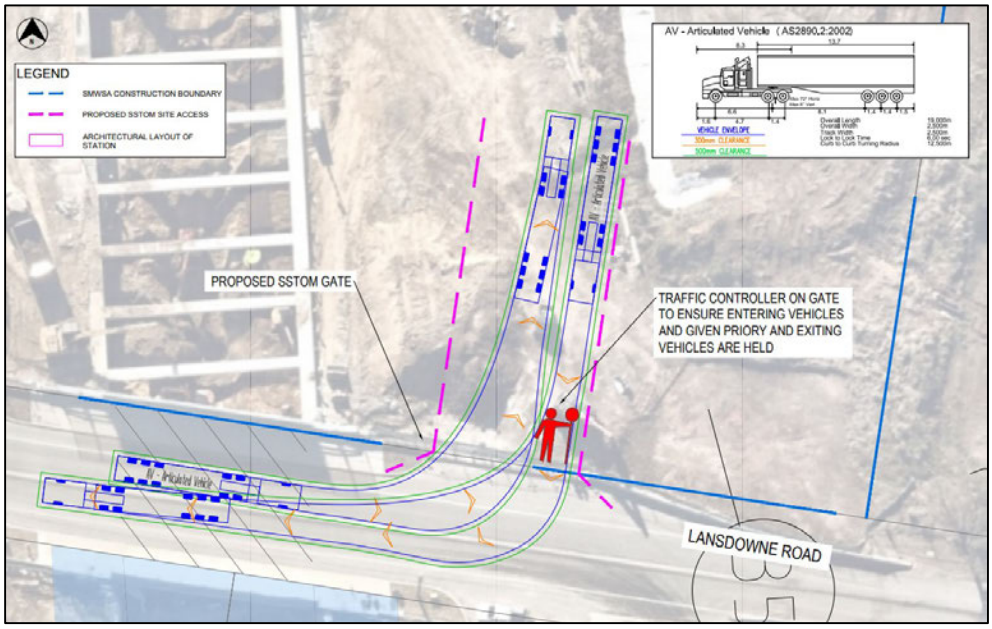


FIGURE 14: LANSDOWNE ROAD HV ONLY ACCESS (L2)

Aggregate delivery to the temporary concrete batching plant will be undertaken by 19m AVs once or twice a day depending on concrete demand. Concrete from the batching plant will be delivered using 12.5m long agitator vehicles (12.5m HRV equivalent). Notwithstanding, due to the width of Lansdowne Road, the site access to the temporary concrete batching plant cannot accommodate simultaneous two-way access for either 19m AVs or 12.5m HRVs.

Access to the temporary concrete batching plant off Lansdowne Road utilising the largest vehicle required (19m AVs) is shown in Figure 15.

All drivers of heavy vehicles requiring access to this site access will be briefed to radio ahead to the traffic controller managing this site access while on Kent Road so the traffic controller can hold all exiting vehicles within the site so to minimise any queuing on Lansdowne Road.

The driveway shown indicatively in Figure 15 will be constructed by PLM. PLM will apply through Council's Driveway Application process for this temporary construction driveway.

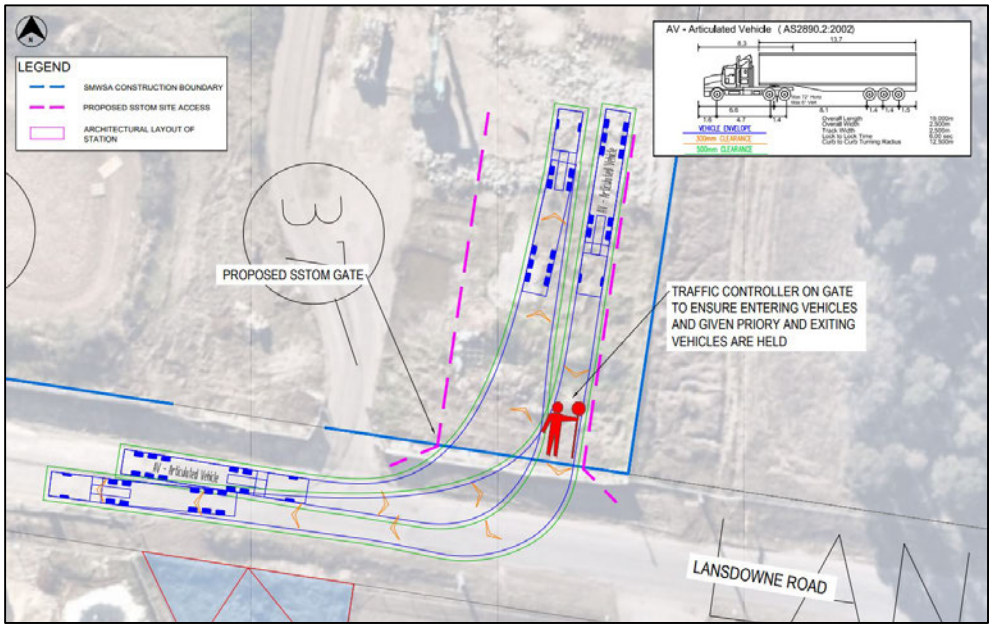


FIGURE 15: TEMPORARY BATCHING PLANT ONLY ACCESS (L3)

There is a lack of any pedestrian or cyclist facilities at the site accesses on either Kent Road or Lansdowne Road. 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.

PLM will be retaining the existing SBT Permanent Lansdowne Road Bridge Traffic Guidance Scheme and provide two additional roadwork speed zone repeater signs on Lansdowne Road east of Kent Road to reinforce the speed zone authorisation. Directional signage will be provided at the K2, L1, L2 and L3 gates for PLM site operations as shown in Figure 16.

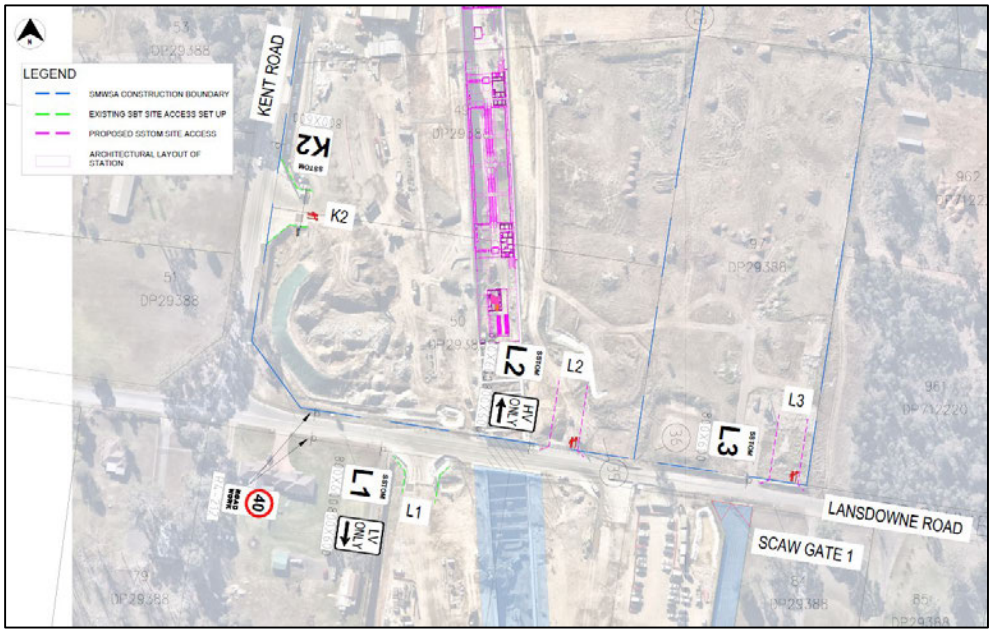


FIGURE 16: SSTOM DIRECTIONAL SIGNAGE PLAN

SCAW has informed PLM that the SCAW Gate 1 access off Lansdowne Road will likely be completed by the end of September 2023. However due to the access road's proximity to the residential property immediately to the east, SCAW intends to minimise the use of this gate as much as possible in order to mitigate impact.

Per the SCAW Lansdowne Road Gate 1 CTMP (SMWSASCA-CPU-1NL-NL000-TF-PLN-000002, approved Feb 2023), SCAW intends to use stop / slow to manage HV access through this gate with entering vehicles given priority. The closest SSTOM site access to SCAW Gate 1 is L3 which is offset clear of the SCAW Gate 1. PLM traffic controller on L3 gate will if required coordinate with the SCAW Gate 1 traffic controller to manage vehicle access.

If required, PLM will prepare Traffic Guidance Schemes to meet the requirements outlined in TfNSW Traffic Control At Work Sites Technical Manual (Issue 6.1, 2022).

4.7.2 Rail Construction (Access Portion 03 and 04 Handover)

Deliveries of rail segments for construction of the rail infrastructure is expected to start in early 2025 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.

4.7.3 Sewer Mains Works – Samuel Marsden Road

The sewer connection works comprises investigation works, micro tunnelling at 19 Samuel Marsden Road, bulk earthworks, installation of DN300 sewer and final restoration and testing of the lines between the Station site and the Sydney Water approved sewerage connection point on the south side of the M4 motorway.

Heavy vehicles up to the size of 19m AVs transporting plant, equipment and DN300 pipes are expected along the works area.

Due to the nature of the works, two crew will be undertaking the works concurrently along Samuel Marsden Road.

The swept path assessment prepared indicated that there is no suitable turnaround point along Samuel Marsden Road north of Flinders Avenue.

Investigation undertaken include the testing of potential use of the Samuel Marsden Reserve Car Park as a turn-around point and found this arrangement to be not feasible due to the narrow driveway width and existing culverts either side of the driveway.

The swept path assessment tested options to facilitate 19m reverse manoeuvre and found that the only option that is workable involve the heavy vehicle performing a right turn from Lansdowne Road into Samuel Marsden Road, before reversing into the northern section of Samuel Marsden Road.

For trucks up to the dimensions of a 14m articulated vehicle, it can turn from Samuel Marsden Road onto Flinders Avenue before reversing onto Samuel Marsden Road to access the northern portion of sewerage works.

The swept path assessment as shown in Appendix H demonstrates that access can be achieved entering the Lansdowne Road / Samuel Marsden Road intersection with traffic management support.

To support the sewerage connection works, a series of traffic guidance schemes (TGS) has been developed to support the following scenarios:

- Surveying work along Samuel Marsden Road (Appendix I)
- Reverse manoeuvres to support the transportation of plant and materials (Appendix J)
- Trenching Works (Appendix K)

A Road Safety Audit has been completed and included in the Heavy Vehicle Local Road Report for Use of Local Roads – Orchard Hills (HVLR) (SMWSASSM-PLD-OHE-SN150-TF-RPT-000001, Revision B). Findings of the Road Safety Audit has been fully considered in the HVLR.

As Samuel Marsden Road and Flinders Avenue are local roads that do not impact any existing arterial roads or traffic signals, Penrith City Council permits (TRRO) will be obtained using a combination of the TGS to support specific construction activities.

4.8 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 6 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
	EIS AM Peak Construction Movements			**EIS** PM Peak Construction Movements		
LV Staff	178	0	178	0	178	178
LV Deliveries	2	2	4	2	2	4
HV	20	20	40	20	20	40
	PLM AM Peak Construction Movements (OHE construction and concrete batching plant combined peak)			**PLM** PM Peak Construction Movements (OHE construction and concrete batching plant combined peak)		
LV Staff	60	0	60	0	120	120
LV Deliveries	1	1	2	1	1	2
HV	11	11	22	9	9	18

No queuing will be permitted on either Kent Road, Lansdowne Road, Samuel Marsden Road, and Flinders Avenue at any time. Heavy vehicles entering / exiting the site are to be contained wholly within the site at all times and not to overhang the boundary or queue on the surrounding roads. 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 a lack of pedestrian and cyclist facilities and negligible foot traffic / cyclists in the area.

Works proposed in this CTMP will not change or impact the operations of the cycle path. Trained on-site personnel will assist pedestrians and pedestrians past the work site access along Kent Road as required.

PLM delivery drivers will be made aware of the access to / from the Kent Road shared path connection and potential presence of pedestrian and bicycle movements. The access point to the shared path is approximately 40m south of

the Kent Road exit ramp from the M4, located on the west side of Kent Road, on the south approach to the Kent Road / M4 Off Ramp intersection.

In addition, all PLM delivery drivers will always be made aware of existing road conditions and pedestrians and cyclists (at the interchange) around Site and instructed through site inductions and toolbox talks of site-specific traffic risks and the requirement to allow safe passage to vulnerable road users at site access/ egress locations. 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 these works as there are no public transport services that operate within the immediate frontages of the site and the immediate surrounding area.

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

Access to the residential properties along Kent Road and Lansdowne Road will be maintained at all times and access for utilities providers/maintainers will not be impacted.

The height of powerlines over gates is a minimum of 7m high.

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

5.5 Cumulative Impacts

SSTOM, SBT and SCAW will be sharing Kent Road and Lansdowne Road to access the OHE site between September 2023 and end of 2024.

SSTOM projected heavy vehicle traffic generation is well within the EIS peak construction movements for all phases of construction even accounting for the temporary concrete batching plant.

SCAW has indicated that they will have minimal heavy vehicle traffic generation during the EIS peak times and will refrain from using the Lansdowne Road Gate 1 when possible to mitigate impact to residents.

SSTOM has liaised with SBT to determine SBT traffic generation requirements and due to the unknown nature of the timing surrounding the TBM launch, SBT was not able to provide projected vehicle numbers with any certainty to add to SSTOM projected HV numbers.

Therefore, to mitigate the impact on the public road network, SSTOM and SBT's senior project management team for OHE will meet every week starting 2 weeks prior to Portion N5 handover to discuss HV deliveries and timing to coordinate the use of Kent Rd.

Similarly, the SSTOM interface team will have regular meetings with the SCAW interface team to coordinate the use of Lansdowne Road when required.

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

K2 site access will have one traffic controller to manage delivery traffic and contractor access at the Site access and be responsible for opening the site gate on Kent Road starting one hour before construction hours and ending one hour after. The traffic controller will coordinate with the traffic controllers within site via radios to manage parking on site and will direct general traffic when required within the site boundary.

Two more traffic controller will float within Access Portion 02 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.

When L2 site access is open or HVs require access through L1, one traffic controller will manage delivery traffic and contractor access at the Site access and be responsible for opening the site gate on Lansdowne Road starting one hour before construction hours and ending one hour after or as required.

The L3 access to the temporary concrete batching plant will have one traffic controller managing delivery traffic and contractor access at the Site access and be responsible for opening the site gate on Lansdowne Road starting one hour before concrete batching plant operating hours and ending one hour after. This traffic controller will be in contact via radio with the site manager of the concrete batching plant to ensure queuing within the site is managed and if necessary, turn away heavy vehicles at the gate.

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 OHE construction works will have minimal impact on parking in the area.

There will be no contractor parking allowed on the surrounding road network including Kent Road, Lansdowne Road or Samuel Marsden Road.

The on-site parking area within the OHE site can accommodate the projected 320 light vehicle parking requirement within four parking areas as shown in Figure 17.

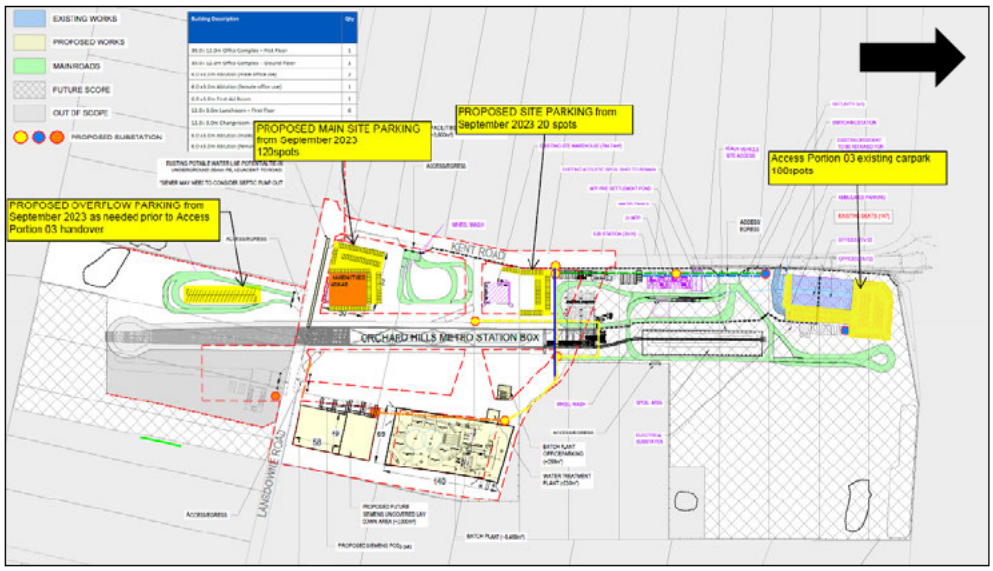


FIGURE 17: PROPOSED SITE ESTABLISHEMENT PLAN

Commented [DC1]: @Wendy Zhang - insert north point as this plan is oriented differently to the TGS and swept paths.

All visitors to Site will arrange the visit with PLM D&C and be provided with guidance on the exact location of the on-site visitor parking area and ensure vehicle license plate is provided in advance with visitation timeline to the traffic controllers on-site to provide guidance and be supplied with a visitor permit to display on the dashboard. The capturing of visitation timeframe is to ensure that visitor access timeframes and demand for parking can be adequately managed and do not exceed approved traffic volumes and on-site parking availability.

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.

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 one 12-seater minibus.

7 Agency Permits

7.1 Council Permits

No Council permits is required for Station construction.

PLM will apply for a Driveway Construction permit with Penrith Council for the construction of the temporary driveway for the temporary concrete batching plant.

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.

The proposed works and associated construction traffic management measures covered in this CTMP does not result in any changes or additional regulatory signage, line marking or traffic facilities along Kent Road or Lansdowne Road frontages of the site. Therefore, there is no known elements of works covered in this CTMP that requires referral to the Local Traffic Committee.

7.2 Road Dilapidation Report

Before any local road, i.e. Kent Road and Lansdowne 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 station construction.

7.4 Speed Zone Authorisation Permits

PLM will be taking over the Speed Zone Authorisation Permits for Kent Road and Lansdowne Road from SBT prior to Access Portion 03 handover.

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:

Juan Gomez de Lucas (Project Manager): +61 457 457 848

Sherville Hall (Site Superintendent): +61 474 204 047

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 7 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:

- 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).
- Public transport interruptions will be communicated via on site signage.
- Active transport users will be provided with advance warning signs.

8.4 Variable Message Signs

Variable messages signs are required for taking over the Speed Zone Authorisation Permit. PLM will confirm the VMS strategy on site with CJP prior to SZA takeover. If any additional VMSs are required for OSOM deliveries to this site in, 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 will be undertaken on this CTMP as noted in the section 10 of the Construction Traffic Management Framework. A copy of the road safety audits will be provided in Appendix E in Revision B.

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 Construction Environmental 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

Appendix B Risk Assessment

Appendix C Stakeholder Comments

Appendix D Road Safety Audit

Appendix E Drivers Code of Conduct

Drivers Code of Conduct

Safe Driving Policy for Construction of Orchard Hills Station

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, especially pedestrians and cyclists;
- 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.
- Drivers must register with the PLM logistics software and receive a delivery slot before proceeding to site.
- Drivers must radio ahead whilst on Kent Road if Lansdowne Road access is required.
- Drivers must not use Lansdowne Road east of Samuel Marsden Road nor west of Kent Road for station construction work.
- Drivers working or delivering material and plant associated with sewer mains works can access Samuel Marsden Road and Flinders Avenue only after daily work briefing at the Orchard Hills Station site with express permission provided by the Site Supervisor.

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.

Appendix F Light Vehicle Access Driveway Design

Appendix G Traffic Guidance Scheme (TGS)

Appendix H Swept Path Assessment – Sewer Mains Works

Appendix I TGS – Samuel Marsden Road – Survey Work

Appendix J TGS – Samuel Marsden Road – Reverse Manoeuvres

Appendix K TGS – Samuel Marsden Road – Trenching Work