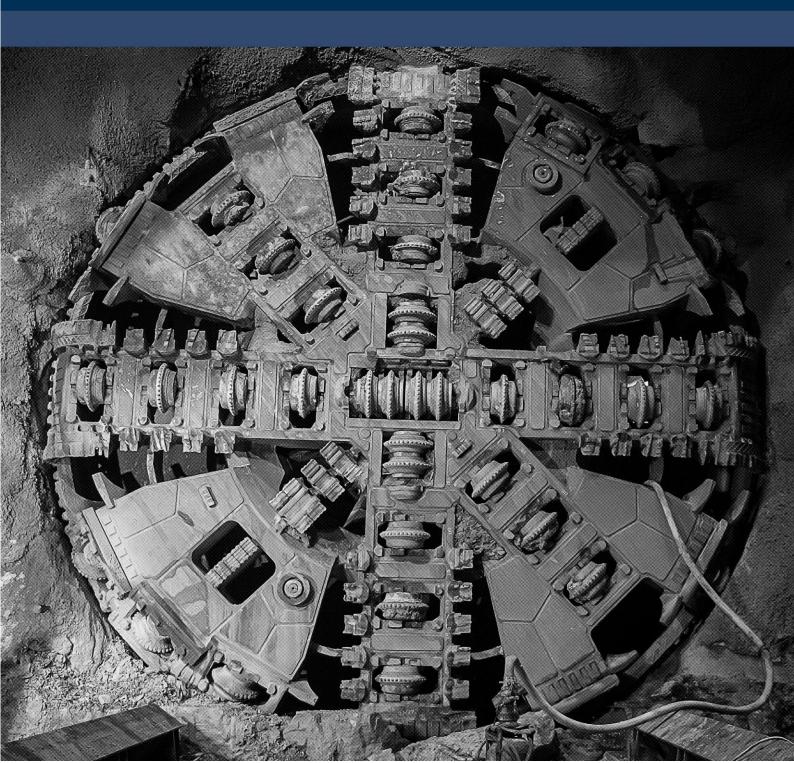


Heavy Vehicle Local Road Report for Use of Local Roads

Pyrmont East and West Construction Sites

Rev 4





Heavy Vehicle Local Road Report for Use of Local Roads

Pyrmont East and West Construction Sites

Project number	7040
Document number	SMWSTETP-JCG-PYR-SN150-TF-RPT-093005

Document approval

	Date	Prepared by	Reviewed by	Comments	Approved by
0			<u>.</u>		
1	20 July 23			Section 5, Consultation, updated,	
				TCG Minutes attached in Appendix C	
2	21 Feb 24			Darling Drive "U" turn route added	
3	14 March 24			Addressing Rev 2 comments	
4	18 March 24			Closed out comments log attached in Appendix D	
Sign	ature:				



Update Summary

Rev	Updates	Reference in this CTMP
02	This HVLR has been updated to incorporate additional construction haulage routes along Darling Drive by performing a "U" turn at the Pier St roundabout	Section 2.0
03	Addressing Rev 2 Comments	



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1. Introduction

1.1. Project Background

Sydney Metro West is a new 24-kilometre metro line that will connect Greater Parramatta with the Sydney CBD via stations at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and Hunter Street (Sydney CBD).

The planning process for Sydney Metro West was assessed as a staged infrastructure application under section 5.20 of the Environment Planning and Assessment Act 1979 (EP&A Act).

Stage 1 of the development, the Sydney Metro West Concept and major civil construction work for Sydney Metro West between Westmead and The Bays (SSI-10038 Schedule 2), was approved on 11 March 2021 and includes:

- Construction of a new passenger rail infrastructure between Westmead and the central business district of Sydney, including:
 - Tunnels, stations (including surrounding areas) and associated rail facilities
 - Stabling and maintenance facilities (including associated underground and overground connections to tunnels)
- Modification of existing rail infrastructure, including stations and surrounding areas
- Ancillary development.

Stage 2 of the planning approval process, the ETP Works, includes all major civil construction work including station excavation Pyrmont Station and Hunter Street Station (Sydney CBD) and tunnelling between The Bays and Sydney CBD (Figure 1).

It is noted that the existing Sydney Metro West precast facility at Eastern Creek will be utilised in the delivery of concrete segments.

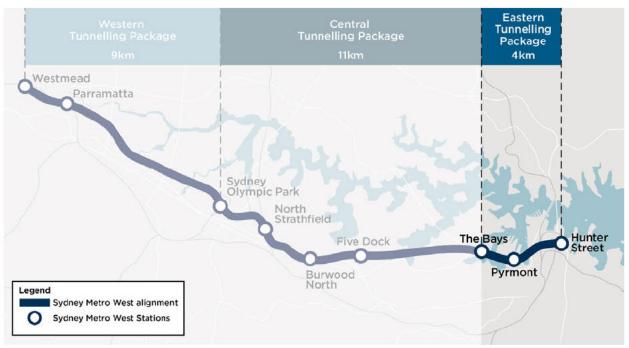


Figure 1: Sydney Metro West alignment



1.2. Pyrmont East and West Construction Sites

As part of the Sydney Metro West Eastern Tunnelling Package, the Pyrmont East and West construction sites are located in Pyrmont. The site at Pyrmont East is bounded by Union Street and Edward Street, and the site at Pyrmont West is located to the north of Pyrmont Bridge Road, extending between Paternoster Row and Pyrmont Street. The two construction sites are shown in Figure 2.

As shown in Figure 2, the Pyrmont East site would access via Edward Street and Pyrmont Bridge Road, and egress via Pyrmont Bridge Road. Pyrmont West site would access via Pyrmont Bridge Road and egress via Pyrmont Street.

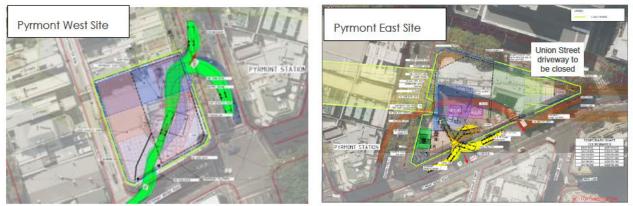


Figure 2: Proposed Pyrmont East and West Construction Site Access Locations

The largest heavy vehicle to access off Pyrmont East and West sites will be a 19m long articulated truck for the delivery of long steel members for the construction of acoustic sheds and access decks during the site establishment stage. The material will be unloaded in a slow lane closure on the Pyrmont Bridge Road site frontage.

1.3. Purpose and Scope of this HVLR

The scope of this Heavy Vehicle Local Road (HVLR) report is to provide an additional outbound routes that will be used by 19m articulated trucks for haulage of steelwork required for site establishment and the mobilisation/ demobilisation of plant and equipment. The HVLR is also required to provide a suitable route for the use of Truck and Trailer combinations which may be used for the removal of spoil during the excavation phase.

The proposed routes deviate from the haulage routes approved through the EIS as detailed in Figure 3 due to the following reasons:

- To reduce the potential risk between truck movements and cyclists whilst construction vehicles perform the "U" turn at the roundabout (north of Convention light rail stop) should the approved outbound route be followed.
- The "U" turning path for a 19m semi-trailer is not possible without encroaching into the cycleway along Darling Drive roundabout northbound (north of Convention light rail stop).
- The existing approved haulage routes cannot accommodate a truck and trailer (truck & dog) due to the required swept paths
- Reducing pedestrian and cyclist interface at the Darling Drive Roundabout by not performing a "U" turn (larger turning path) but rather just travelling through.
- Reduce the pavement wear and tear along the haulage route by reducing the number of heavy vehicle movements.

The following assessments have been undertaken in this HVLR to address the Ministerial Conditions of Approval:

 Swept path analysis assessment for the largest design vehicle (19m long semi-trailer and Truck and Dog HV) along the proposed haulage route as depicted by the dotted orange line in

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Figure . The swept path diagrams include all intersections where turning movements of the design vehicle will occur along these haulage route.

- Road Safety Audit undertaken independently on the swept path assessment with a site inspection to identify safety issues associated with pedestrians, cyclists and two-way traffic flow.
- Details on the dates of the road dilapidation survey for the proposed haulage routes.
- Measures to avoid schools, aged care facilities, and childcare facilities during their peak operation times.
- Development of recommendations on the suitability of the proposed haulage routes taking into consideration the above assessment results.

1.4. Ministerial Conditions of Approval

This report complies with the following Condition of Approvals (CoA) and Revised Environmental Management Measures requirements.

Table 1: Compliance to CoA

ID	Conditions	Reference in this HVLR Report
D73	Local roads proposed to be used by heavy vehicles to directly access construction sites that are not identified in the documents listed in Condition A1 must be approved by the Planning Secretary and be included in the CTMPs.	This HVLR report
D74	All requests to the Planning Secretary under Condition D73 must include the following:	-
	(a) a swept path analysis;	Section 0 Appendix A
	(b) demonstration that the use of local roads by heavy vehicles for the CSSI will not compromise the safety of pedestrians and cyclists or the safety of two-way traffic flow on two-way roadways;	Section 4
	(c) details as to the date of completion of the road dilapidation surveys for the subject local roads;	Section 2.8
	(d) measures that will be implemented to avoid where practicable the use of roads past schools, aged care facilities and child care facilities during their peak operation times; and	N/A (Section 2.5 and Section 2.6) Refer to Section 2.7.2 for pedestrian and cyclist management
	 (e) written advice from an appropriately qualified professional on the suitability of the proposed heavy vehicle route which takes into consideration items (a) to (d) of this condition. 	Section 6

Table 2: Compliance to REMM

ID	Conditions	Reference in this HVLR Report
TT6	All trucks would enter and exit construction sites in a forward direction, where feasible and reasonable.	N/A 19m articulated truck would not enter the site. Unloading would occur on the site frontage on Pyrmont Bridge Road
TT7	Construction site traffic would be managed to minimise movements during peak periods.	Section 2.7.3



TT8	Construction site traffic would be managed to minimise vehicle movements through school zones during pick up	N/A (Section 2.5 and Section 2.6)
	and drop off times.	Refer to Section 2.7.2 for pedestrian and cyclist management

Refer to Construction Traffic Management Plan Pyrmont East – Stage 2 – Site Establishment and Excavation – Rev 4, and Construction Traffic Management Plan Pyrmont West – Stage 2 – Excavation – Rev 1 for the compliance for other REMM requirements.

1.5. Existing Approved Routes 1.5.1. Existing approved EIS routes

The existing approved EIS routes for the Pyrmont East and West construction sites are shown in Figure 3, as identified in the Response to Submission (RTS).



Figure 3: Existing Approved Haulage Routes

1.5.2. Approved Modified Haulage route

An additional outbound haulage route from the Pyrmont East and West construction sites has been approved utilising Darling Drive, Pier Street and Harbour Street, as detailed in Figure 4.



This route has been approved to provide an outbound haulage route for 19m articulated trucks

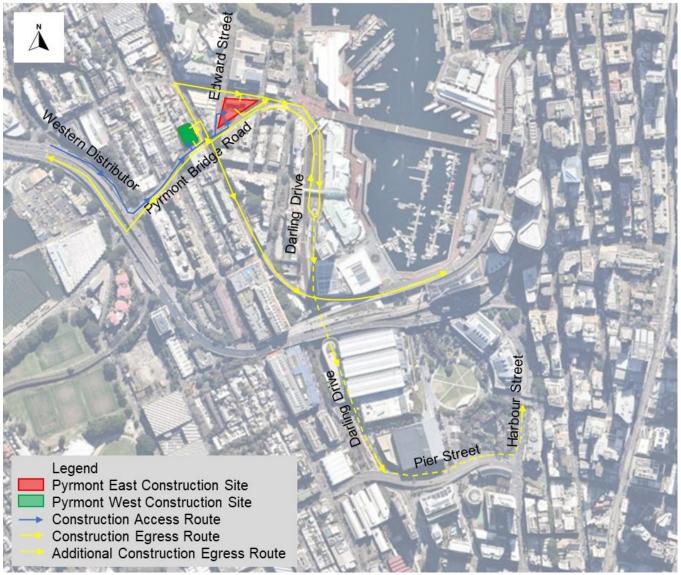


Figure 4: Modified Approved Haulage Route

The full extent of the approved modified outbound route as shown in Figure are described as follows:

- Turn left out of the Pyrmont East site onto Pyrmont Bridge Road eastbound (as consistent with EIS)
- Continue straight onto Darling Drive and continue southbound (as consistent with EIS)
- At the roundabout (just north of Convention light rail stop), continue southbound on Darling Drive.
- Turn left at the roundabout onto Pier Street.
- To access Harbour Bridge via Harbour Street.

2. Proposed Modified Route and Local Roads to be Used

2.1. Proposed Modified Routes and Local Roads

The haulage routes to the Pyrmont East and West sites are consistent with the modified EIS haulage routes, as illustrated by solid arrows in Figure 3.

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The orange dotted line depicts the proposed modified outbound traversing route for both, 19m and a Truck and Dog HV, back to the ANZAC bridge and out to the west. The proposed route is not identified in Condition A1 of the Conditions of Approval (CoA) for this project.



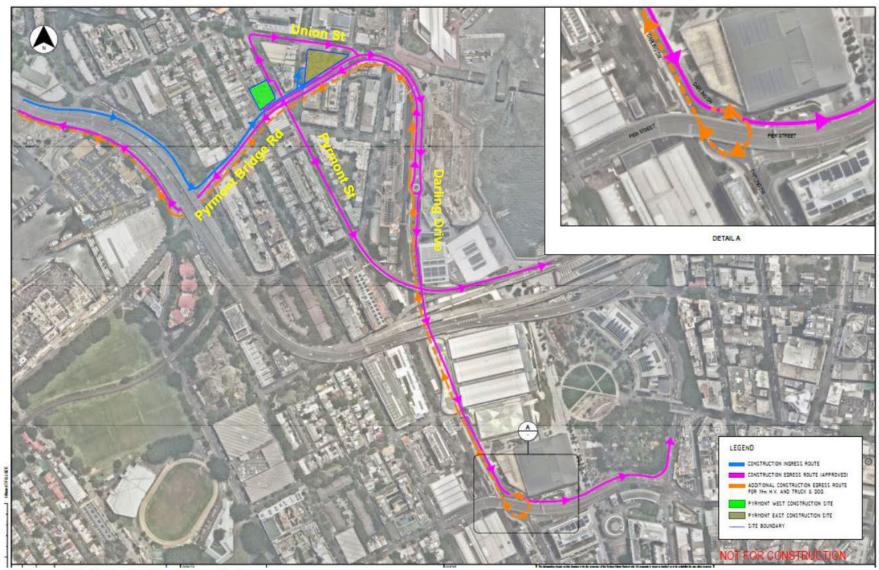


Figure 5: Proposed Modified and existing Haulage Routes

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The full extent of modified outbound route as shown in Figure are described as follows:

- Turn left onto Pyrmont Bridge Road eastbound (approved)
- Turn onto Darling Drive and continue southbound (approved)
- At the roundabout (just north of Convention light rail stop), continue southbound on Darling Drive (approved)
- Perform a "U" turn at the Pier Street roundabout (proposed)
- Travel northbound on Darling Drive (proposed)
- Turn left onto Pyrmont Bridge Rd and travel southbound. (approved)
- Turn right onto ANZAC bridge on ramp northbound and onto ANZAC bridge. (approved)

As the proposed route was not captured as part of the modified EIS routes as shown in the Response to Submission (RTS), it is likely to trigger planning approval conditions D73 and D74 as shown in Table 1.

This report is in relation to an assessment of the haulage routes that JCG JV propose to travel from Pyrmont East and West sites via Darling Drive, performing a "U" turn at the Pier Street roundabout and back onto ANZAC bridge by a 19m and a Truck and Dog.

By utilising the Truck and trailer combinations, it could reduce the number of heavy vehicle movements within the Pyrmont precinct during the length of the project. This would reduce the traffic flow impact on the approved project haulage routes and intersections. It will assist in making the haulage routes safer and less congestive for pedestrians and cyclist. Reduce the pavement wear and tear along the haulage route by reducing the number of heavy vehicle movements.

2.2. Existing Road Environment

Existing road environment and the road network surrounding the subject site and the proposed haulage routes are described as follows:

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Pyrmont Bridge Road is generally a four-lane, two-way classified state road connecting Bridge Road to the west and Union Street to the east. Pyrmont Bridge Road intersects with Pyrmont Street via a signalised junction with formal pedestrian crossings provided on all approaches of the intersection. On-street parking is prohibited on Pyrmont Bridge Road at all times. Pyrmont Bridge Road is a 40km/h Local Traffic Area in the vicinity of the Pyrmont East construction site.

Pyrmont Street is a two-lane, two-way road to the north of Pyrmont Bridge Road, connecting to Point Street. To the south of Pyrmont Bridge Road, it is a four-lane, one-way road with two lanes connecting to Western Distributor on ramp and two southbound lanes terminating at a cul-de-sac before Pier Street. Outside of clearway restriction hours, 2P on-street metered parking is generally available on both sides of Pyrmont Steet. Pyrmont Street is a 40km/h Local Traffic Area in the vicinity of the Pyrmont East construction site.

Union Street, to the east of Pyrmont Street, is a two-lane, two-way road whereas to the west of Pyrmont Street, it is a one-lane, one-way road for eastbound traffic in a 10km/h shared zone. Union Street connects with Darling Drive / Murray Street to the east and with Harris Street / Miller Street to the west. Shared bicycle paths and metered parking are available along sections of Union Street. To the east of Pyrmont Street, the eastbound and westbound kerbside lanes generally provide 2P metred parking zone for 24 hours. To the west of Pyrmont Street, the kerbside lane is a 1P metred parking zone for 24 hours.

Edward Street is a two-lane, two-way road, connecting Pyrmont Bridge Road to the south and a cul-de-sac just north of Union Street. To the south of Union Street, the southbound kerbside lane is a 2P metred parking lane for 24 hours whereas the northbound kerbside lane consists of unrestricted motorbike parking and a loading zone / 2P metred parking area. The loading zone applies between 7am and 6pm (Monday – Friday) and the 2P metred parking area applies between 6pm and 10pm (Monday – Friday) and 8am-10pm on Saturdays and public holidays. To the north of Union Street, the northbound kerbside lane is a No Parking zone between 6pm and 10pm (Friday – Saturday) and a 2P metred parking zone at all other times whereas the southbound kerbside lane is a 2P metred parking zone for 24 hours.

Paternoster Row is a one-lane, one-way northbound road connecting Pyrmont Bridge Road to the south and Union Street to the north. It is a 10km/h shared zone shared by vehicles and pedestrians, with provision of road humps for traffic calming. 'No Parking' zones are provided on both sides of Paternoster Row. Access to Paternoster Row is restricted for vehicles over three tonnes.

Darling Drive is a two-way divided road connecting Union Street / Murray Street to the north and Ultimo Road to the south. On-street parking is prohibited along this road. Darling Drive intersects with Pier Street via an on ramp provided off a roundabout interchange, adjacent to ICC Sydney Theatre.

Pier Street provides a single lane on ramp connecting the roundabout intersects with Darling Drive to the west, and Harbour Street to the north.

Harbour Street connecting towards Harbour Bridge has various lane configuration, with the initial segment connecting Pier Street on ramp a six-lane, two-way divided road.

2.3. Public Transport Network

The Pyrmont East and West construction sites are served by extensive public transport services as it is located within close proximity to commercial and retail, shopping centres and Darling Harbour precincts. Public transport services around the site vicinity includes trains, buses, light rail and ferries.

The nearest train services can be accessed at Town Hall train station, which provides connection to other suburban hubs across the Sydney Greater Metropolitan Area. Town Hall train station is located approximately 1km walking distance (13-minute walk) from the Pyrmont East and West construction sites via the Pyrmont footbridge.

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Light rail services can be accessed at the surrounding light rail stops, including Pyrmont Bay, Convention, the Star Sydney, John Street Square, Fish Market and Wentworth Park light rail stops. All of these light rail stops form part of the L1 Dulwich Hill Line, which provides connection between Central and Dulwich Hill. The closest light rail stop to the Pyrmont East and West construction sites is Pyrmont Bay, which is located approximately 130m walking distance (1minute walk) from the site.

Bus stops are located along Harris Street, Pirrama Road and Miller Street with bus services providing connection to a number of major precincts including the Sydney CBD, Bondi, Rozelle and Parramatta. Night bus services are also available within the vicinity of the construction site to accommodate the night travel demand induced by the surrounding licenced and entertainment venues. The closest bus stop is located on Harris Street, just north of Pyrmont Bridge Road, which is a 210m walking distance (3-minute walk) from the Pyrmont East construction site. The closest bus stop to Pyrmont West site is located on Harris Street, just north of Pyrmont Bridge Road, which is a 100m walking distance (1-minute walk).

Ferry services can be accessed at Pyrmont Bay wharf, which is located approximately 300m walking distance (4-minute walk) from the Pyrmont East construction site. The F4 Pyrmont Bay ferry line services this wharf, which provides connection between Pyrmont Bay and Circular Quay.

The public transport network context in the vicinity of the subject site is shown in Figure .

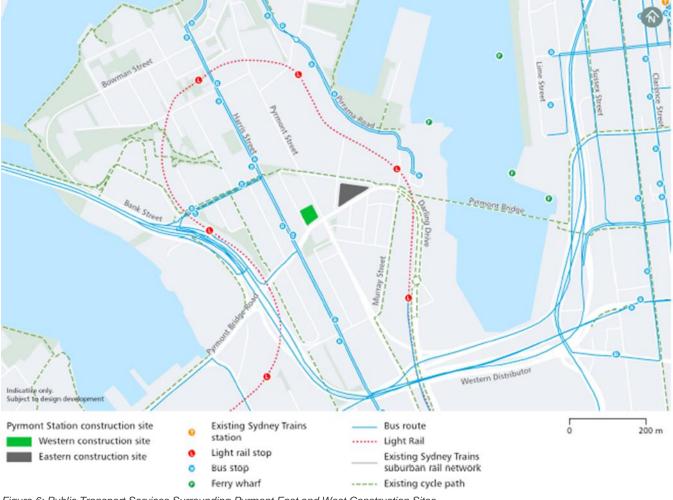


Figure 6: Public Transport Services Surrounding Pyrmont East and West Construction Sites

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2.4. Pedestrian and Cyclist Routes

Footpaths are generally provided along the majority of roads in the vicinity of the proposed Pyrmont East construction site, except for Western Distributor. Signalised crossings are available at majority of the intersections. Pedestrian activity is generally high considering the proximity of the site to commercial and retail land uses, as well as licensed entertainment venues. A 40km/h Local Traffic Area has been established around the site vicinity on Pyrmont Bridge Road, Edward Street and Union Street.

Cycling infrastructure around the construction site consists of an off-road shared user path along Pyrmont Bridge Road, cycling route along Miller Street and Darling Drive north of the Convention light rail stop, and an off-road shared path along Darling Drive south of Convention light rail stop.



The existing cycling infrastructure around the vicinity of the site is shown in Figure .

Figure 7: Cycle Infrastructure and Routes Surrounding Pyrmont East and West Construction Site

2.5. School Zones

There are no public schools or high schools within the vicinity of the proposed haulage route.

2.6. Aged Care and Childcare Facilities

There are no known aged care and childcare centres located on the proposed haulage route.



2.7. Construction Traffic

2.7.1. Construction Traffic Management

Construction vehicles are managed through monitoring, marshalling and communication between vehicles and the sites.

2.7.1.1. Real Time Monitoring

The locations of all heavy vehicles used for spoil haulage are monitored in real time and the records of monitoring will be made available electronically to the Planning Secretary and the Environmental Protection Authority (EPA) upon request for a period of no less than one year following the completion of the construction.

The real time monitoring is undertaken using a Telematic system to track and analyse construction vehicle movements. Telematics is able to analyse real-time traffic data, allowing JCG JV to manage its spoil haulage vehicles fleet more efficiently by predicting arrival times and communicate directly with the construction workers.

The GPS tracking feature allows JCG JV to determine the speed and location of the fleet to better manage the spoil haulage vehicle movements by determining pinch-points and adjust accordingly. If drivers are found to not comply with the posted speed limit, the traffic manager will receive notifications, enabling immediate action to mitigate the unsafe driver behaviour.

The spoil haulage vehicles are restricted to use only the approved vehicle routes and avoid any unapproved local roads unless it is permitted for specific works by the authorities.

2.7.1.2. Inspection and Monitoring

Regular inspections will be conducted by the Foremen regarding compliance of the implementation of the relevant Pyrmont East and West CTMP in conformance with the Construction Traffic Management Framework and TCAWS manual. All critical safety defects will be rectified as soon as practicable.

Long-term traffic management setups will be inspected weekly with minor issues recorded and rectified within a reasonable timeframe. More significant issues will be recorded for rectification. The inspections will be documented.

Daily inspections will be undertaken to ensure all traffic management signs and devices are properly located, oriented and maintained in an effective condition.

All critical safety defects caused by the project activities, to any road, footpath, shared path or cycleway which is open to the public will be rectified as soon as practicable. Temporary rectification (e.g. cold mix, plating and etc.) might be used as an interim solution prior to permanent rectification works to the conditions it was in prior to the occurrence of the damage.

2.7.1.3. Marshalling

All truck marshalling will be contained at The Bays site, with the site capable of holding eight trucks. Therefore, no on-street parking is required for truck marshalling in the vicinity of the site, and no layover would occur in any public roads nor the proposed haulage route.



2.7.1.4. Communication

The haulage route will be communicated and adhered to by drivers through the implementation of a Drivers Code of Conduct, which would be made available to the relevant personnel during the site induction training. All drivers will undergo the mandatory project-specific induction training provided by JCG JV.

As mentioned above, the Telematic system is able to provide details of the construction vehicle movements through real time monitoring. Telematics allow JCG JV to communicate directly with construction truck drivers.

2.7.1.5. Pilot Vehicle

A small rigid vehicle will be used as a pilot vehicle with flashing lights and arrow board to guide the 19m semi-trailer along the proposed outbound route from the Pyrmont Street East / West site towards Harbour Street. This is because the 19m semi-trailer will need to straddle across two left turn lanes on the departure side of the intersection when turning left from Pier Street onto Harbour Street. Refer to Appendix A.

The use of the pilot vehicle is intended to raise general motorists' awareness of the semi-trailer and to avoid collision with vehicles in the adjacent lane. This mitigation measure is commonly used to manage large vehicle movements amongst general traffic, where required.

Subsequently, the pilot vehicle will leave the haulage route and turn right from Harbour Street onto Erskine Street to make its way back to the Pyrmont East/ West site.

The pilot vehicle driver must be qualified either as Traffic Controller or Implement Traffic Control Plans. Two-way radio will be used to communicate with the semi-trailer driver.

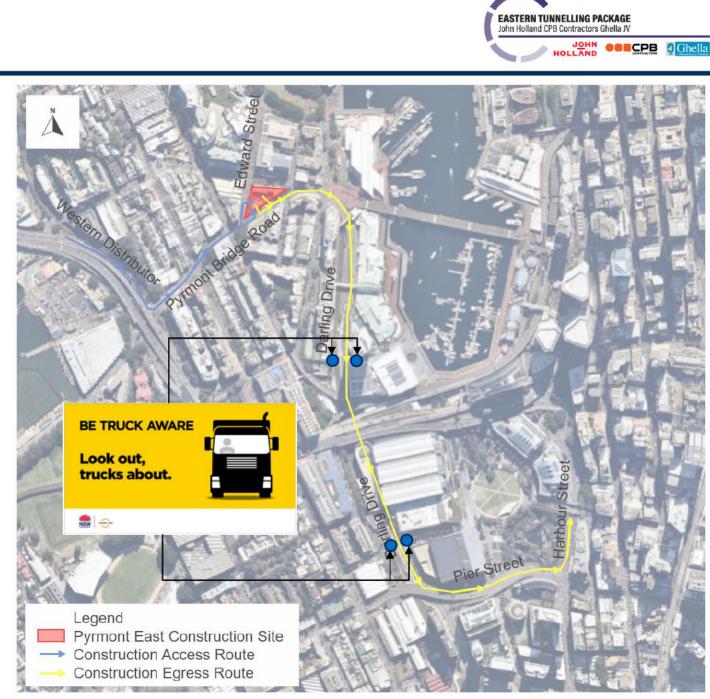
2.7.2. Pedestrian and Cyclist Safety Management

The proposed works will not result in any major pedestrian impacts as pedestrian movements will be maintained on the existing footpath and crossing facilities.

Warning signage will be erected to warn and inform pedestrians of the changes in travel conditions and the traffic arrangement in place. TfNSW have implemented a 'Be Truck Aware' campaign which aims to show road users, the challenges that truck drivers face every day. Where the proposed haulage route crosses a pedestrian crossing facility along the proposed haulage route, truck awareness decals (Figure) will be placed on the footpath on either side of the pedestrian crossings on Darling Drive, as shown in Figure subject to Place Management's approval. As this HVLR report only assesses the impact of the proposed haulage route within local road, the decals are proposed to be provided on the Darling Drive footpath to raise pedestrian awareness of the trucks on this local road.



Reference: <u>https://roadsafety.transport.nsw.gov.au/campaigns/be-truck-aware/index.html</u> Figure 8: Truck Aware Decals



Basemap Source: Nearmap, last accessed on 22/12/2022 Figure 9: Proposed Location for Truck Aware Decals on Both Sides of Pedestrian Crossings on Darling Drive

The proposed haulage route will not result in any major impacts on cyclist activities in close proximity to the construction site. All cycle routes will be maintained for the duration of the proposed works. A cycle route painted in green runs along Darling Drive and it is observed to be prominent to motorists. During the night time, the cycle path is visible under the well-lit environs.

Toolbox talks will be held regularly during construction works and investigations. They will reinforce and reiterate information from inductions. Toolbox talks will advise drivers of any risk areas especially the proposed haulage route where two pedestrian crossings are located on Darling Drive.

Driver training will consider current best practice and information, including cycle awareness training. The contractor must ensure that regular briefings are provided to drivers on routes, potential changes and impacts on the routes in the form of toolbox talks.



2.7.3. Construction Traffic Volumes

Construction traffic generated by the Pyrmont East construction sites is expected to be consistent with the traffic generation identified in the Response to Submissions Report (RTS, Construction traffic would be managed to minimise movements during AM and PM peak periods.

Note: Movement means one way. A vehicle entering then leaving the site represents two movements.

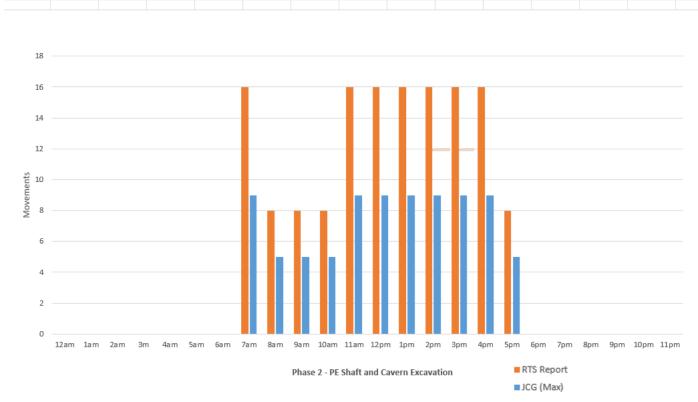
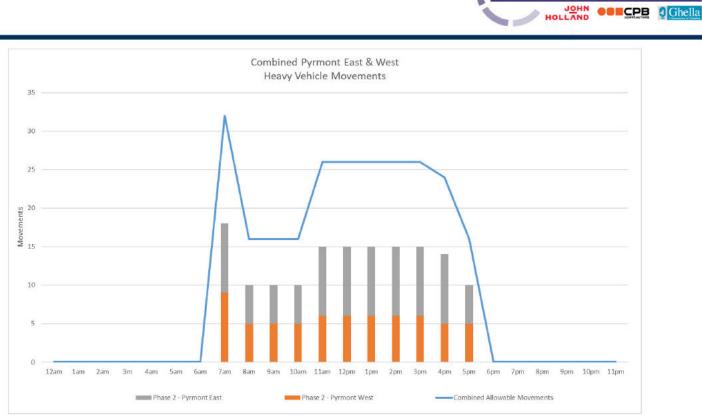


Figure 10: Proposed Truck and Dog HV movements generated by the Pyrmont East site during Phase 2

Provision of the additional route along Darling Drive will allow for the use of truck and trailer combinations and reduce the total number of heavy vehicle movements in the Pyrmont Precinct. There are existing truck and

Figure 10 details the maximum number of daily heavy vehicle movements that would be required to use the additional route. By utilising a truck and trailer movements, the figure indicates that the proposed volumes are well below the approved RTS numbers.

The Pyrmont precinct road network is being utilised by number of truck and trailer HV including the Quad Dogs configuration (5 axle trailers). Truck and trailer HV movements are permissible along the proposed route.



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Figure 11: Proposed Truck and Dog HV movements generated by Pyrmont East and West site combined during Phase 2

Figure 11 shows the combined volumes from Pyrmont East and Pyrmont West sites. By utilising a truck and trailer movements, the figure indicates that the proposed volumes are well below the approved RTS numbers.

Pyrmont West site will not be utilising the proposed route. Vehicles exiting the Pyrmont West site will exit by the approved haulage route, a right turn onto Pyrmont St, right turn onto Pyrmont Bridge Road and proceed to ANZAC Bridge westbound, or alternatively proceed along Pyrmont St southbound to Sydney Harbour Bridge northbound.

2.8. Dilapidation

A road dilapidation survey was completed at the end of April 2023. A copy of the dilapidation report has been provided to Sydney City Council.



3. Swept Path Assessment

Swept path assessment is presented in Appendix A for all intersections as encircled in Figure 5 where turning movements of a 19m long articulated truck and Truck and Dog will occur along the proposed haulage route.

One off and special oversize deliveries will be managed under a separate application.

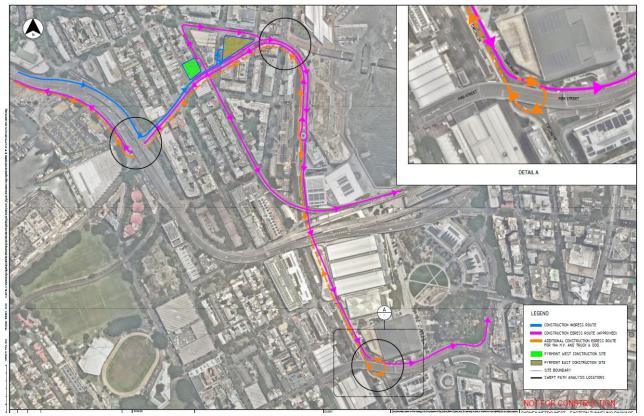


Figure 5: Intersections Included in Swept Path Assessment

The swept path assessment as shown in Appendix A demonstrates that the proposed haulage route is suitable for 19m articulated trucks and Truck and trailer combinations.

4. Road Safety Audit

A road safety audit was conducted on the proposed haulage route based on the swept path assessment in conjunction with a site inspection along the proposed haulage route via Darling Drive "U" turn which is deviated from the approved modified EIS route as shown in Figure . The road safety audit report is presented in Appendix B.

There were no high risk items identified, and two medium risk item was categorised as "rare" in terms of likelihood and "serious" severity level. Refer to the risk matrix in the road safety audit report.

Designer responses are shown in the last column in Table 4.2 in the road safety audit report in Appendix B.

5. Consultation

Consultation of the Pyrmont East and West CTMP was undertaken in accordance with the requirements of the CTMP.

JCG JV presented and discussed the proposed haulage route in the TCG meeting 60, held on 19 October 2023. City of Sydney representative sits on the TCG meetings. Copy of Minutes attached in Appendix C.

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6. Qualification

This HVLR report in relation to the proposed haulage route has been prepared by , an 'experience in traffic engineering and transport planning, and is an accredited Level 3 Road Safety Auditor and

The road safety audit was carried out by the following team:

has certification to prepare work zone traffic management plans.

are registered road safety auditors with the TfNSW Register of Road Safety Auditors and are experienced in traffic engineering and design/ inspection of traffic management schemes. Both auditors are independent of the design process.

7. Conclusion

The swept path assessment demonstrates that the intersections along the proposed haulage route can provide sufficient clearance to accommodate the turning movements of a 19m semi-trailer and a Truck and Dog HV.

There were no high risk items identified, and two medium risk item was categorised as "rare" in terms of likelihood, and "serious" in terms of severity.

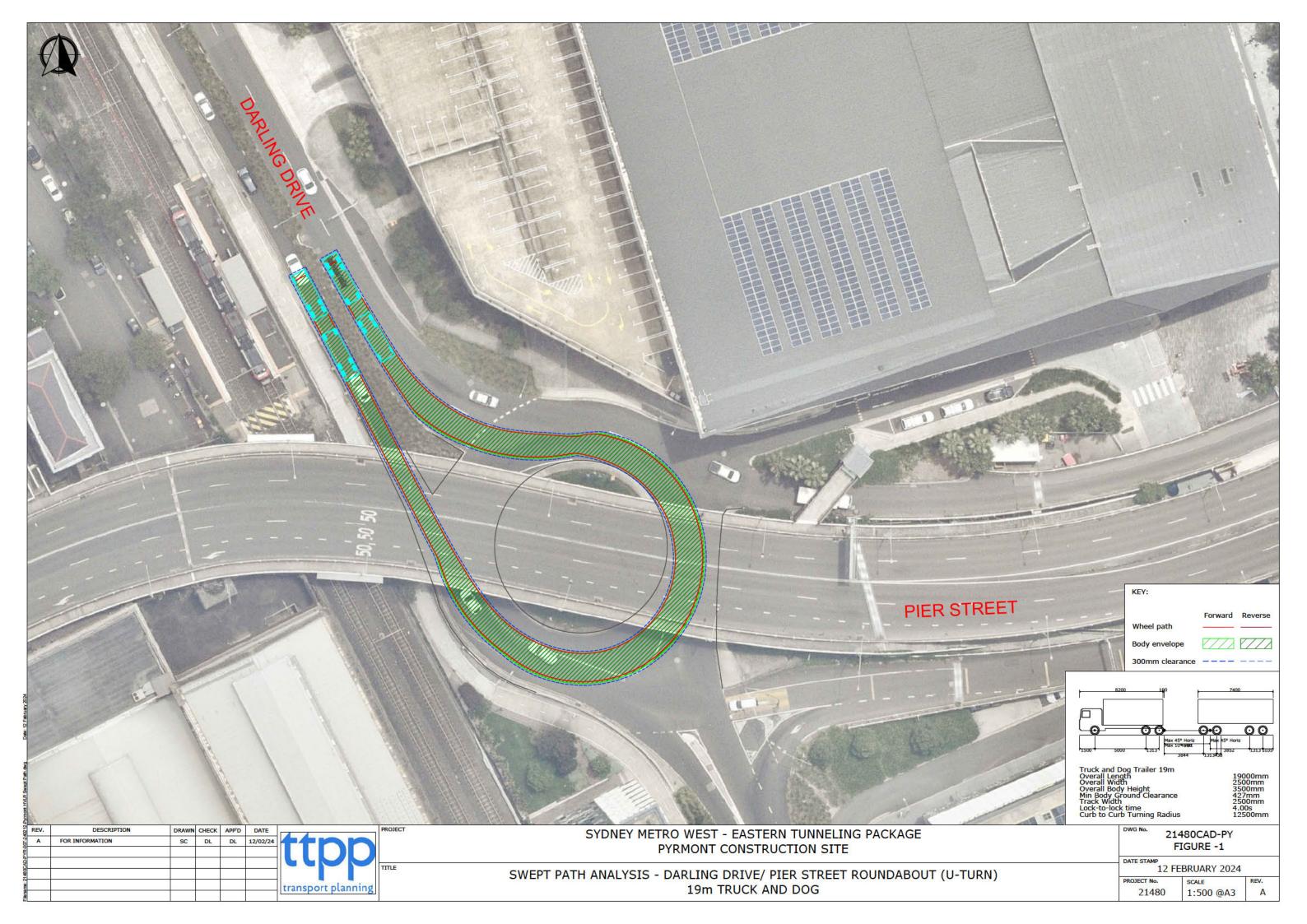
Truck awareness decals will be placed on the footpath on either side of the two pedestrian crossings along Darling Drive near Convention and Exhibition Centre light rail stops, subject to Place Management's approval. This will raise pedestrian awareness of the trucks on this local road.

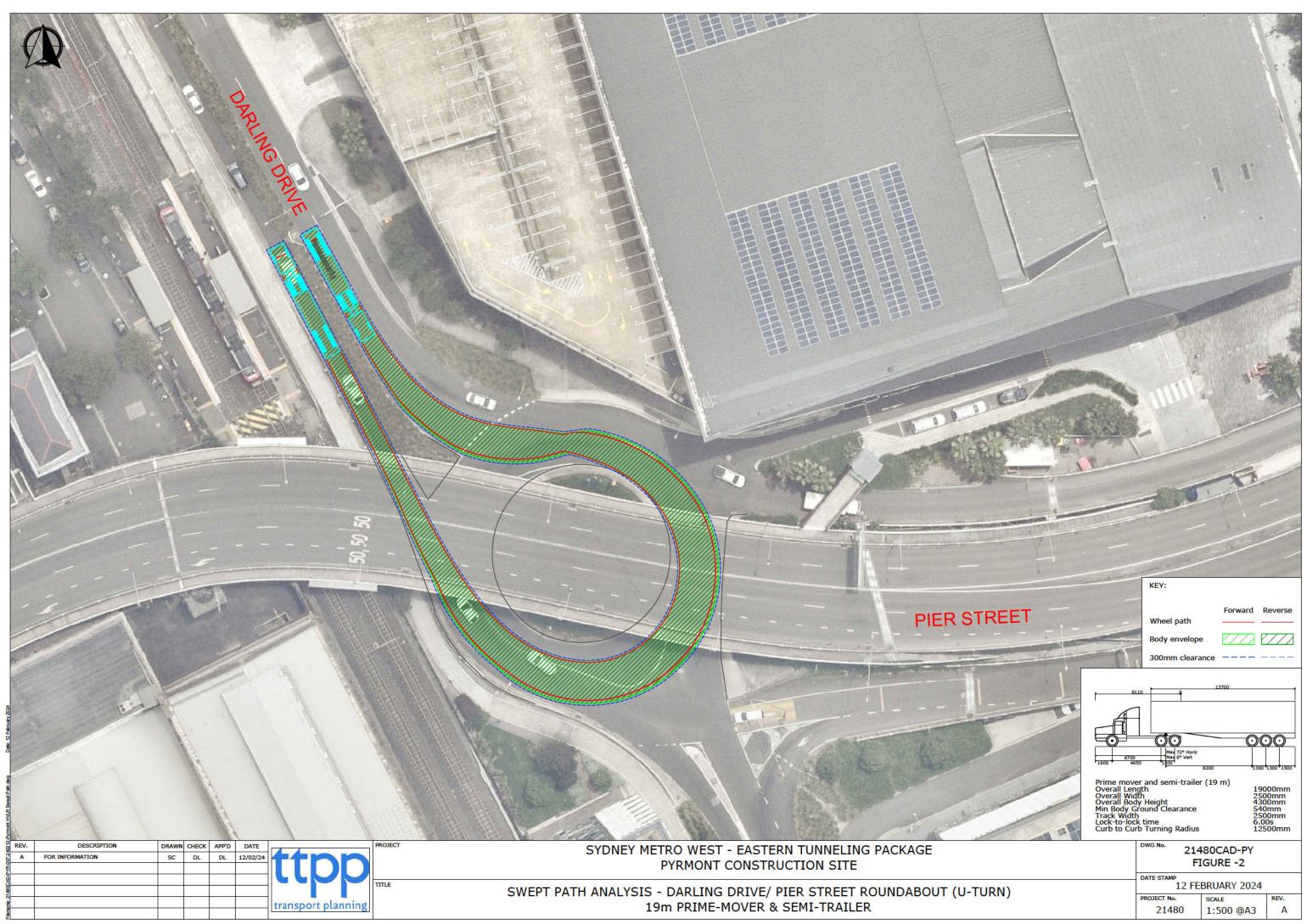
A road dilapidation survey was completed at the end of April 2023.

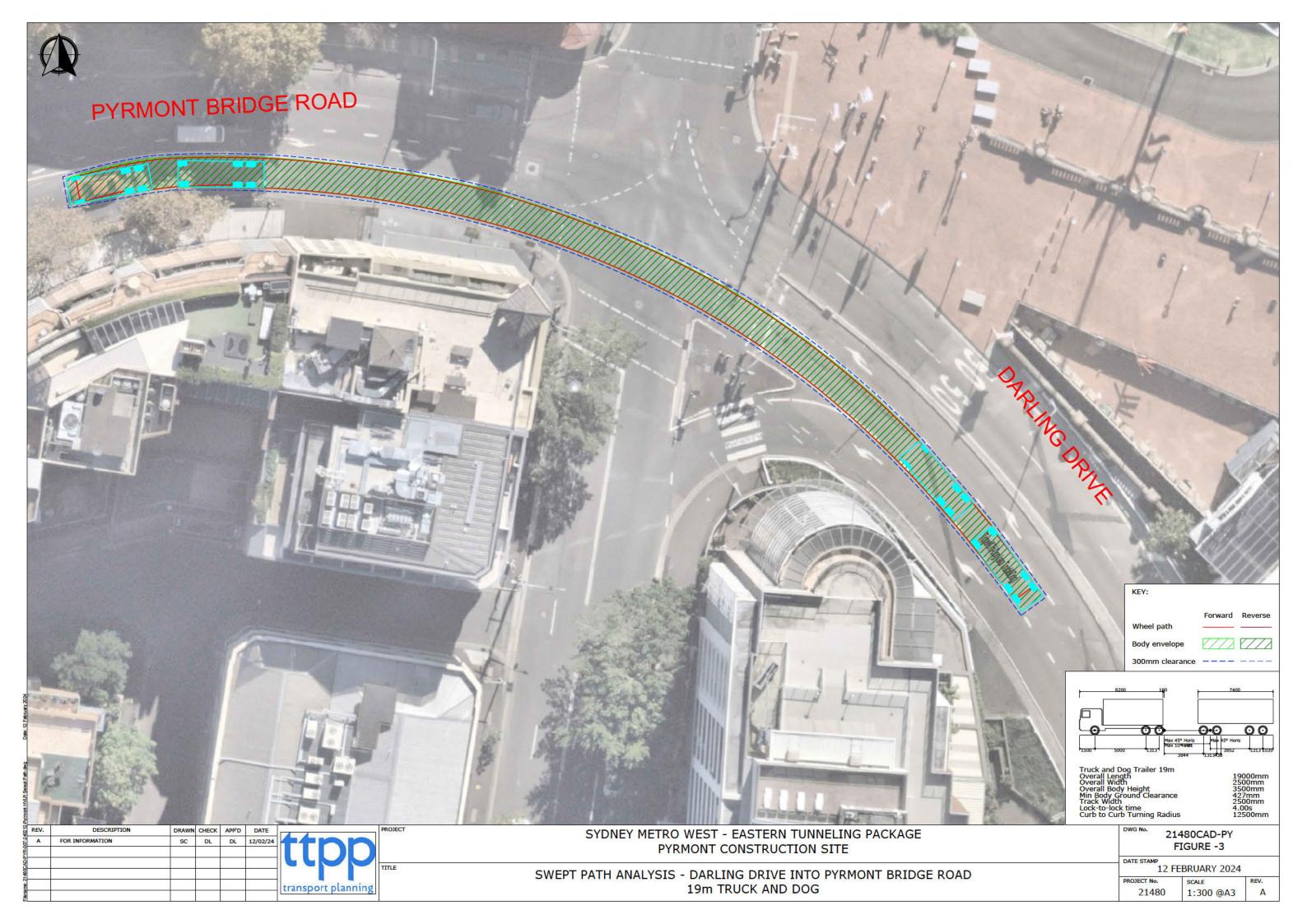
Finally, there are no known aged care facilities or childcare facilities along the proposed heavy vehicle route, and one high school is located adjacent to the approved EIS route. Therefore, the proposed haulage route is suitable for use and are recommended for approval.

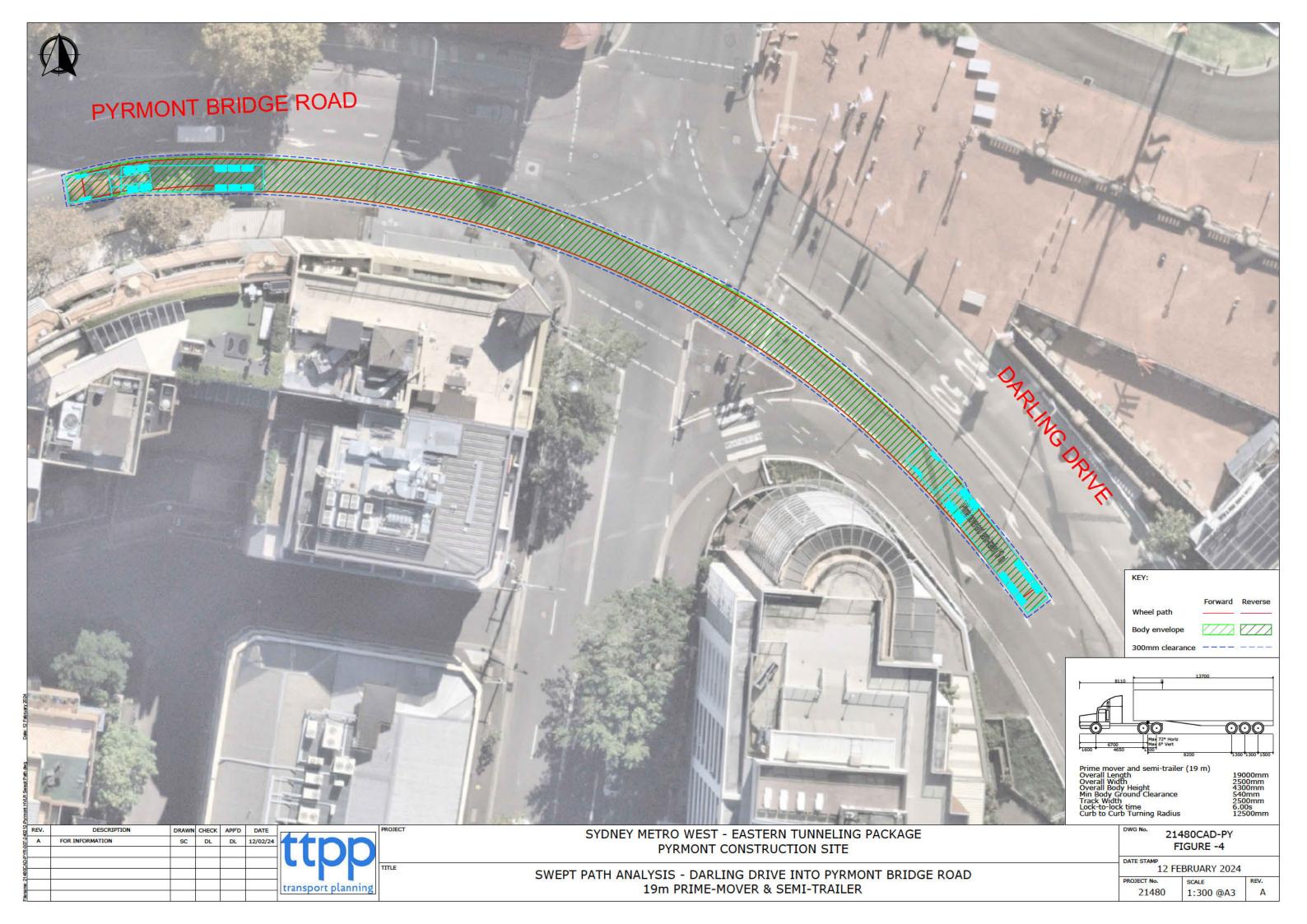


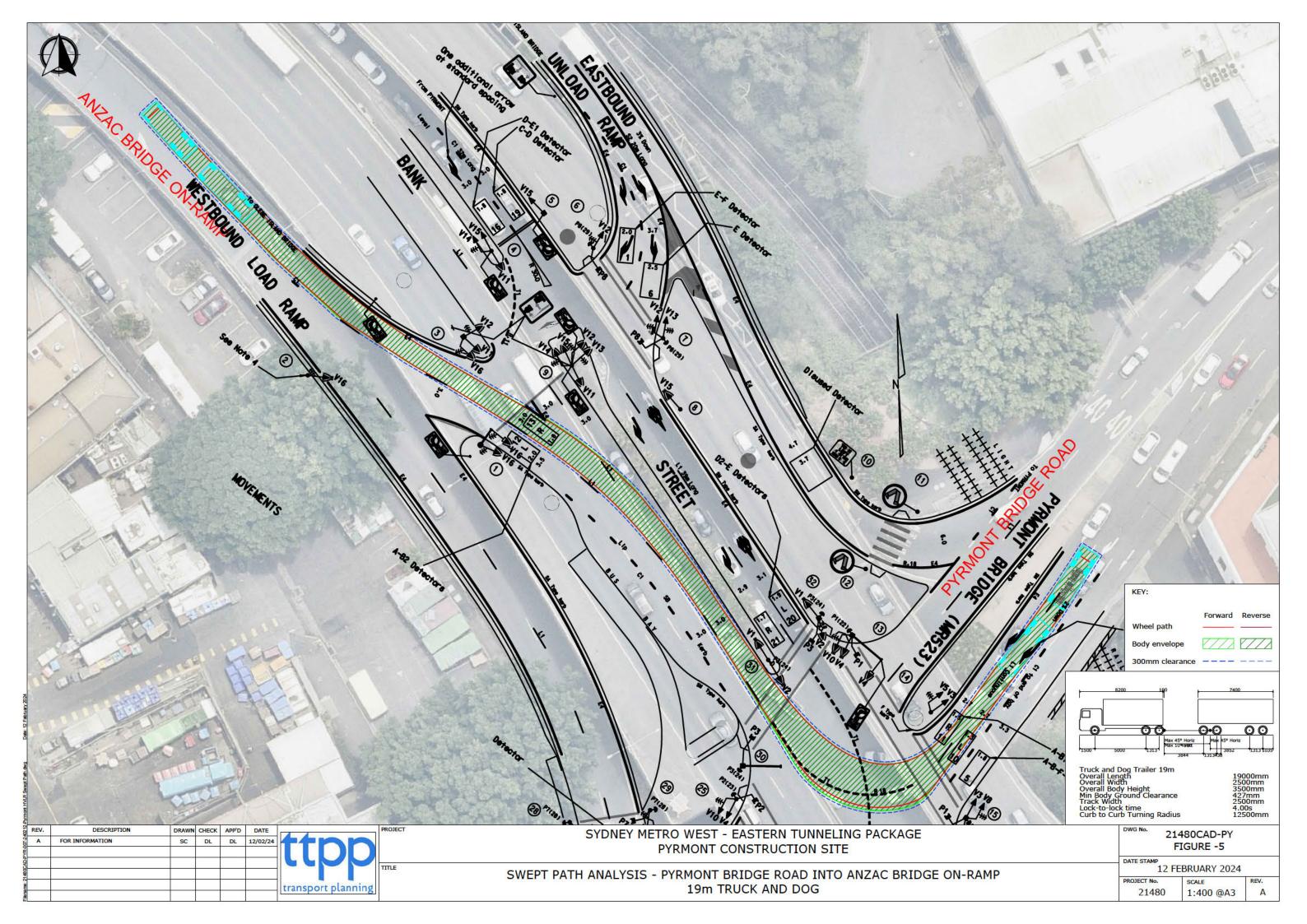
Appendix A Swept Path Assessment

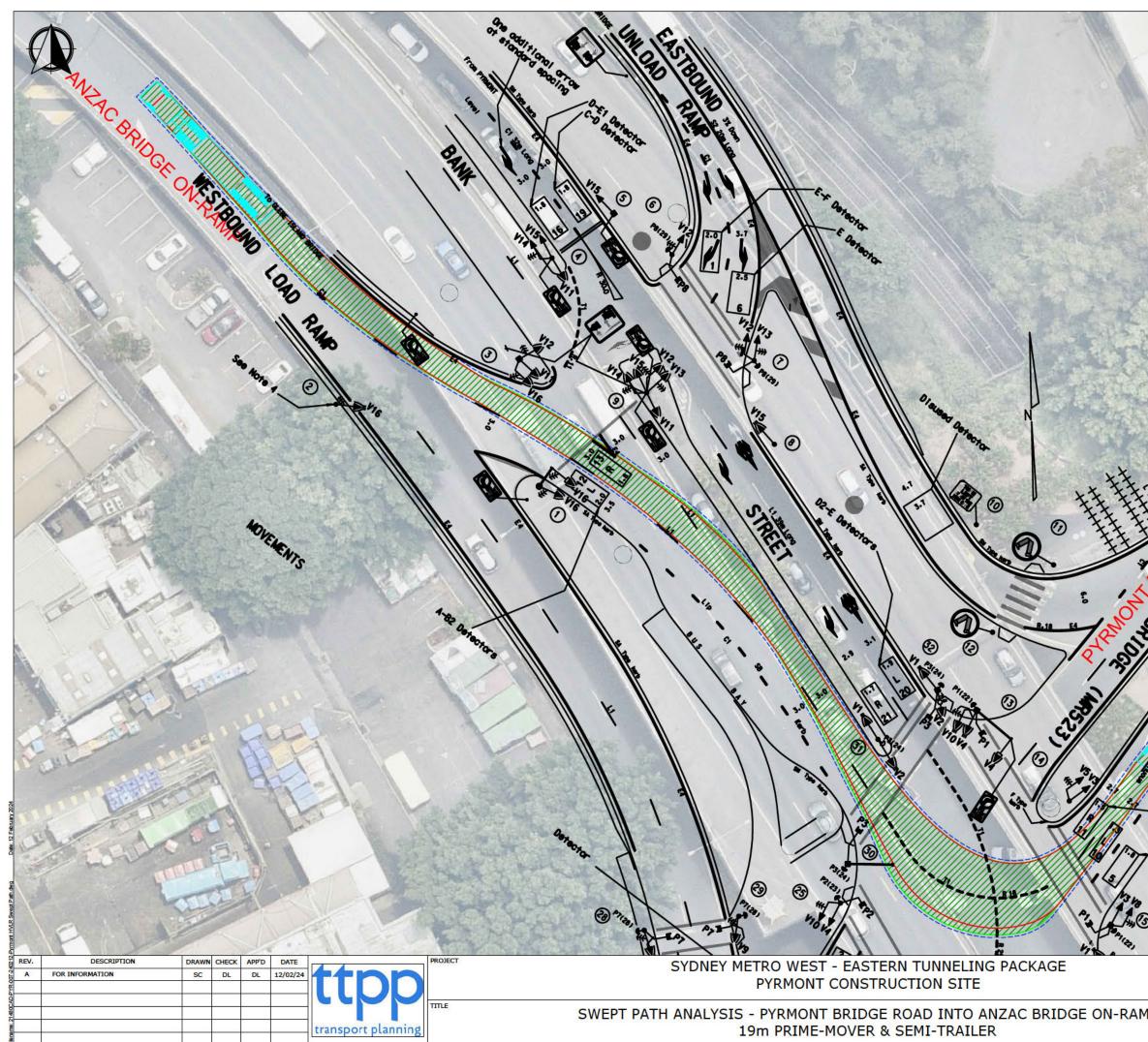




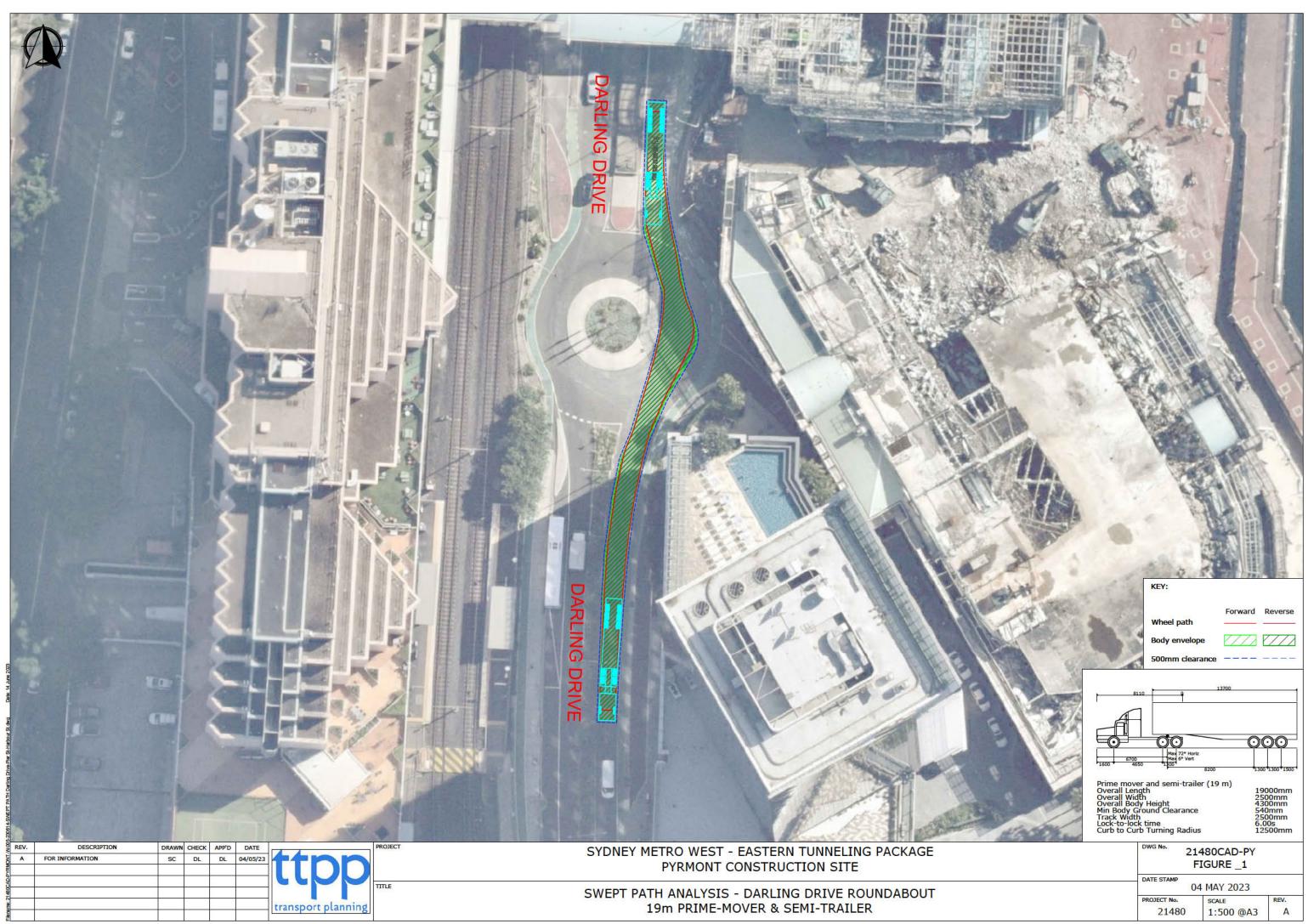








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	Prime mover and semi-trailer (19 m) Dverall Length 19000mm Dverall Width 2500mm Vorrall Body Height 4300mm Min Body Ground Clearance 540mm Frack Width 2500mm Jock-to-lock time 6.00s Curb to Curb Turning Radius 12500mm
	DWG No. 21480CAD-PY FIGURE -6
MP	DATE STAMP 12 FEBRUARY 2024 PROJECT No. SCALE REV. 21480 1:400 @A3 A



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transport planning	SWEPT PATH ANALYSIS - DARLING DRIVE TURNING ONTO PIER STR 19m PRIME-MOVER & SEMI-TRAILER



PILOT VEHICLE WITH FLASHING LIGHT AND ARROW BOARD TO BE USED TO GUIDE CONSTRUCTION VEHICLE FOR THE LEFT-TURN MOVEMENT, WHICH IS TO BE MADE ACROSS TWO LANES. THIS IS TO AVOID COLLISION WITH VEHICLES ON THE ADJACENT LANE.

PIER STREET

SYDNEY METRO WEST - EASTERN TUNNELING PACKAGE PYRMONT CONSTRUCTION SITE

SWEPT PATH ANALYSIS - PIER STREET TURNING ONTO HARBOUR STREET 19m PRIME-MOVER & SEMI-TRAILER

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Appendix B Road Safety Audit



Pyrmont East and West Sites – Darling Drive U-turn Existing C<u>onditions Road Safety Audit</u>

> Prepared for: JCG JV

13 February 2024

The Transport Planning Partnership



Pyrmont East and West Sites – Darling Drive U-turn Existing Conditions Road Safety Audit

Client: JCG JV

Version: V02

Date: 13 February 2024

TTPP Reference: 21480

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
V01	13/2/2024			r.	
V02	13/2/2024				



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	2.2	Audit Objective	3
	2.3	Procedures and Reference Material	3
	2.4	Audit Team	3
3	Road	l Safety Audit Program	4
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Tables

Table 4.1:	Risk Matrix	5
Table 4.2:	Road Safety Audit Findings	7

APPENDICES

NO TABLE OF CONTENTS ENTRIES FOUND.



1 Road Safety Audit Summary

Audited project:	Pyrmont East and West Sites – Darling Drive U-turn
Client:	JCG JV
Project manager:	
Email address:	
Telephone:	
Audit Team:	
Audit type:	Existing Conditions
Commencement meeting:	N/A
Audit date:	12 February 2024
Completion meeting:	Not required



2 Introduction

2.1 Background

This report has been prepared on behalf of JCG JV to present road safety audit findings that have been identified from the proposed modified haulage route that utilises a roundabout to U-turn in Darling Drive then Pyrmont Bridge Road to access Anzac Bridge.

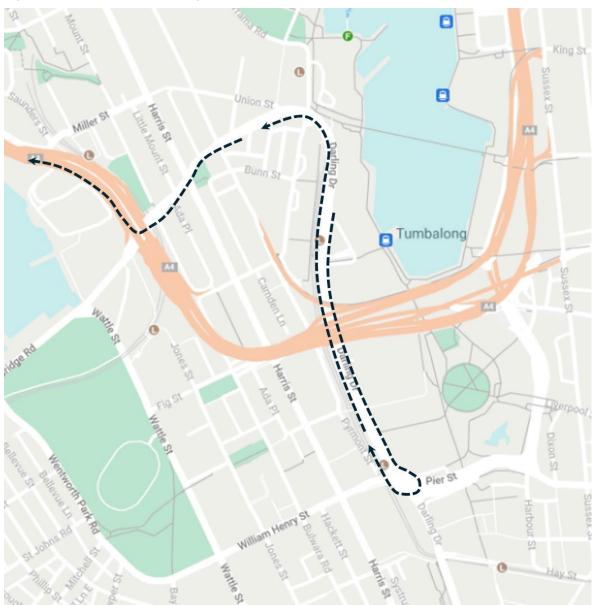


Figure 2.1: Propose Haulage Route



2.2 Audit Objective

The objective of this Audit is to examine the road safety issues associated with the proposed revised haulage route for trucks associated with the Pyrmont Sites for the Sydney Metro West (Eastern Tunnelling Package).

2.3 Procedures and Reference Material

The procedures used are described in the following guidelines:

- Roads and Maritime Services' 2011 Guidelines for Road Safety Audit Practices
- Austroads Guide to Road Safety 2022: Part 6 Road Safety Audits

2.4 Audit Team

The RSA was carried out by the following team:

are registered road safety auditors with the NSW Centre for Road Safety and are experienced in traffic engineering and design/ inspection of traffic management schemes. Both auditors are independent of the road design process.



3 Road Safety Audit Program

3.1 Commencement Meeting

A formal meeting was not held.

3.2 Site and Field Audit

The audit team has undertaken a site inspection in day and night conditions on 12 February 2024. The route was driven and intersections were inspected by foot. The audit was recorded using video and photographs.

3.3 Completion Meeting

Not required.



4 Road Safety Audit Findings

4.1 Introduction

Table 4.1 provides specific details of the road safety deficiencies and a risk rating as extreme, high, medium, low or negligible. The risk ratings have been based on the risk matrix presented in Table 4.1, which has been adopted from the latest Austroads Guide to Road Safety: Road Safety Audit (2022).

					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 the crash
	Almost Certain	One per quarter	Medium	High	High	Extreme (FSI)	Extreme (FSI)
hood exposure)	Likely	Quarter to 1- year	Medium	Medium	High	Extreme (FSI)	Extreme (FSI)
	Possible	1 to 3 years	Low	Medium	High	High (FSI)	Extreme (FSI)
Likeli (includes	Unlikely	3 to 7 years	Negligible	Low	Medium	High (FSI)	Extreme (FSI)
	Rare	7 years+	Negligible	Negligible	Low	Medium (FSI)	High (FSI)

Table 4.1: Risk Matrix

The terms in Table 4.1 are described below.

Likelihood:

- Almost certain occurrence once per quarter
- Likely occurrence once per quarter to once per year
- Possible occurrence once per year to once every three years
- Unlikely occurrence once every three years to once every seven years
- Rare occurrence less than once every seven years.

Severity:

- Insignificant property damage
- Minor minor first aid
- Moderate major first aid and/or presents to hospital (not admitted)
- Serious admitted to hospital
- Fatal at scene or within 30 days of the crash.



Priority:

- Negligible no action required
- Low should be corrected or the risk reduced if the treatment cost is low
- Medium should be corrected or the risk significantly reduced, if the treatment cost is moderate, but not high
- High should be corrected or the risk significantly reduced, even if the treatment cost is high
- Extreme must be corrected regardless of cost.

4.2 Responding to the Audit Report

As set out in the road safety audit guidelines, the responsibility for the road rests with the project manager, not with the auditor. The project manager is under no obligation to accept the audit findings. Neither is it the role of the auditor to agree to, or approve the project manager's responses to the audit.

The audit provides the opportunity to highlight potential road safety problems and have them formally considered by the project manager in conjunction with all other project considerations.

4.3 Road Safety Audit Findings

The audit findings are documented in Table 4.2 which provides:

- specific details of the road safety issues identified during the audit
- a risk level rating for each of the road safety audit findings.

It should be acknowledged that positive attributes of the audited road section have not been discussed. Deficiencies that do not cause a safety problem are also not listed.

In-line with TfNSW's best practice recommendations have not been included in the road safety audit findings.



Table 4.2: Road Safety Audit Findings

ltem No.	Location	Descriptions of Findings	Photo / Image	Likelihood	Severity	Risk Rating	Designer Response
3	Pyrmont Bridge Road right turn to Bank Street	Trucks are required to undertake the right turn using two lanes. While this manoeuvre is legal for trucks displaying the appropriate signage, there is a risk of side swipe type crashes with cars in adjacent lanes. However, we noted onsite that many heavy vehicles perform this movement straddling both lanes, including buses.		Unlikely	Minor	Low	This route is regularly used by existing 19m and Truck and Dog vehicles, therefore the right turn movement is satisfactory.



ltem No.	Location	Descriptions of Findings	Photo / Image	Likelihood	Severity	Risk Rating	Designer Response
2	Intersection of Darling Drive, Pyrmont Bridge Road and Murray Street	Truck and dog vehicles are generally considered unsafe in high pedestrian areas. The intersection of Pyrmont Bridge Road and Darling Drive has many pedestrians during commuter peaks and there is a pedestrian desire line to cross diagonally to Pyrmont Bridge. This issue was observed worse at night time when there were lower traffic volumes on the road so pedestrians were more willing to cross diagonally or when the pedestrian walk signal was red, increasing the risk of pedestrian-vehicle conflicts. There is also a risk of pedestrians misjudging the gap between the trailer and truck or trying to step over the drawbar and being struck by the truck.	<image/>	Rare	Serious	Medium	This route is regularly used by existing 19m and Truck and Dog vehicles as part of the Darling Harbour redevelopment. There is a signalised pedestrian crossing on the eastern arm of the subject intersection where pedestrian can cross safely.



ltem No.	Location	Descriptions of Findings	Photo / Image	Likelihood	Severity	Risk Rating	Designer Response
3	Darling Drive Pedestrian Crossing	A large number of pedestrians were observed using the midblock crossings on Darling Drive against the signals (i.e. when the pedestrian walk signal was red). These people are at risk at being struck by a truck. Increased truck movements along this road may increase this risk as laden trucks have longer stopping distances.		Rare	Serious	Medium	Darling Drive is a 50km/h speed zone with provision of pedestrian crossing facilities. JCG will install Truck Aware Decals and/or signage on the footpath where jaywalking is common to warn and inform pedestrians of the changes in travel conditions and the traffic arrangement in place.



ltem No.	Location	Descriptions of Findings	Photo / Image	Likelihood	Severity	Risk Rating	Designer Response
4	Intersection of Darling Drive, Pyrmont Bridge Road and Murray Street	Line marking at this intersection is very faded and worn. This may contribute to poor lane discipline through the intersection and side swipe type crashes.		Rare	Minor	Negligible	JCG JV will approach Council to have the turn lines and pedestrian cross walk line marking repainted to improve delineation of the intersection.



5 Concluding Statement

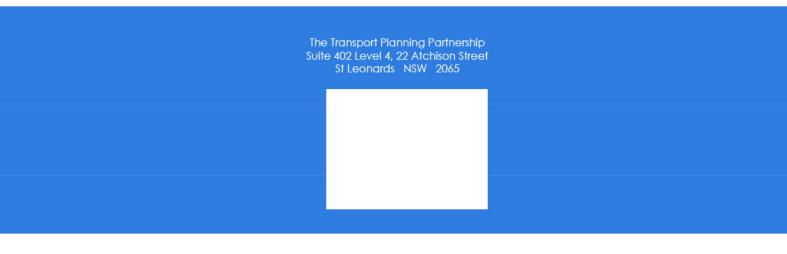
The findings and opinions in the report are based on the examination of the specific road and environs, and might not address all concerns existing at the time of the audit.

The auditors have endeavoured to identify features of the road that could be modified in order to improve safety, although it must be recognised that safety cannot be guaranteed since no road can be regarded as absolutely safe.

While every effort has been made to ensure the accuracy of this report, it is made available strictly on the basis that anyone relying on it does so at their own risk without any liability to

Level 3 Lead Road Safety Auditor The Transport Planning Partnership

Level 2 Road Safety Auditor The Transport Planning Partnership





Appendix C Traffic Control Group (TCG) # 60 Minutes



Objective Ref: <insert>

Minutes

Sydney Metro West – Traffic Control Group – Meeting 60

Date	Thursday 19 October 20	023	Time	3:30pm – 4:05pm	
Venue	Microsoft Teams meetin	ıg			
	Name	Initials	Organisation	Role	
Chair		100	1.000		
Attendees	Ì				
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Item		Overview / Action by	Actions
1. Welcome and Introductions			 Acknowledgment of Country. GF welcomed all to the meeting and asked for council/state government attendees to introduce themselves.
			 The Minutes of TCG Meeting 59 (5 October 2023) were accepted as an accurate record of the meeting and were adopted by the TCG Group.
2.	Actions Arising	<u></u>	Nil actions arising

3. Western Tunnelling Package (WTP) Works	 spoke to the tabled slides noting as follows: Traffic document status
	 Traffic document status Sydney Olympic Park Site Operations CTMP has been issued for comment CTMP has been issued for comment Site Operations CTMP in preparation Unwin St temporary footpath realignment Localise footpath diversion The existing gate has been removed Proposed to realign footpath and to concrete barriers to be used Shade cloth provided on site side only to manage sight lines along road New alignment to commence from 3 November for one month and following the "56 day Shutdown". Following this, the old path will be reinstated Road closures (Unwin Street and Wentworth St) – "56 day Shutdown" Proposed from 10pm 9 December 2023 to 5 am 11 December 2023 to close Unwin St and Wentworth Street The closures at Unwin/Shirley St and Unwin/Martha St intersections proposed to allow the opportunity for an errant vehicle to turn around if missed the traffic diversion Errant vehicles can use Shirley St for Unwin St diversion Errant vehicles can use the existing street around the Wentworth St diversion Contingency date for the closure 15 to 17 December 2023. Further "shutdowns" will be required in March and November 2024 Questions from the Attendees PK: Suggested consideration be given to the provision of traffic controllers at the intersection of Devon/Co
	 December 2023. Further "shutdowns" will be required in March and November 2024 Questions from the Attendees PK: Suggested consideration be given to the provision of traffic controllers at the intersection of Devon/Colquhoun St to capture heavy vehicles prior to the closure and consultation to business given the high use of heavy vehicles in the area. DK noted that communication plans include VMS, 2 week notices to residents/businesses etc
	 BG: Queried if there are any further queries for CJP. PK noted that CJP will develop a traffic alert list MT queried if any engagement has been made with Australian Turf Club. DK advised that preliminary consultation has been undertaken and further consultation is ongoing MT queried if any works involved high level of noise. DK advised works will be carried out within environmental approvals PB queried if 26m long Heavy Vehicles can be accommodated during the closure. DK advised such vehicles could be via Unwin St or the site if needed
	Actions: • Nil

ltem		Overview / Action by	Actions
4.	Westmead Utility Relocation Works Overview - Nil report		Nil report
5.	Central Tunnelling Package (CTP) Works Overview - Nil report	5	Nil report

Item	Overview / Action by	Actions
6. Eastern Tunnelling Package (ETP) Works Overview - Traffic Plans Status update - Pyrmont East Construction Site - Alternate outbound HV Route		 NB spoke to the tabled slides noting as follows: Traffic Plans Status update The Bays CPAS (Stage 2) and Tunnelling CTMP due at the end of the month Pyrmont Circulation Route HVLR due for submission next week Pyrmont East Construction Site – Alternate outbound HV Route Currently HVLR approved route along Darling Drive, Pier St and Harbour St Proposed to amend HLVR for heavy vehicles to use the southern roundabout on Darling Drive (under Pier St) to carry out a U-Turn to then travel north along Darling Drive hose to the EIS approved route of Darling Drive (under Pier St) to carry out a U-Turn to then travel north along Darling Drive (north of the northern roundabout) and Pyrmont Bridge Road. Additionally proposed to use Truck and Dog (19m) heavy vehicle in lieu of rigid trucks By using Truck and Dog (19m) it is anticipated to reduce truck movements by over 20,000 (approx. 40% reduction) over the life of the project Benefits of the use of truck and Dog include reduce truck numbers reduce interfacing heavy vehicle turn movements with cyclists (occurring at the northern roundabout), which turn movements proposed to be carried out at the southern roundabout, where there is a separated cycleway from the roundabout NB noted the graph on slide 8 shows the current approved heavy vehicle movements, which would be reduced with the use of Truck and Dog vehicles. Questions from the Attendees MR noted that most events have bump in and bump out between the two roundabouts on Darling Drive and need to be considered. NB noted that the use of Truck and Dog would reduce the number of interactions with pedestrians. Additionally, the site driveways is and will remain managed by traffic controllers. MR noted that poste events have bump in and bump out between the two roundabouts on Darling Drive and need to be considered. NB noted that the use of Truck and Dog would redu

ltem		Overview / Action by	Actions
7.	Other Matters:	All	Nil other matters raised.
8.	Next Meeting		The next TCG meeting is scheduled for 2 November 2023 at 3:30 pm.



Appendix D

Comments Log



COMMENTS SHEET

DOCUMENT NO.	TITLE	VER	STATUS	NO.	DATE	COMPANY	RAISED BY	REVIEW DOC. NO.*	DOCUMENT REF*	DEED REF*	COMMENTS / RESP
SMWSTETP-JCG-PYR- SN150-TF-RPT-093005	TITLE Sydney Metro West - ETP - Pyrmont - Heavy Vehicle Local Road Report for Use of Local Roads - Pyrmont East and West										
	Construction Sites										
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Appendix E Approval

Department of Planning, Housing and Infrastructure



Our Ref: SSI-19238057-PA-114

Director Environment, Sustainability and Planning - Metro West Sydney Metro PO Box K659 HAYMARKET NSW 1240

15/04/2024

Subject: Sydney Metro West – Eastern Tunnelling Package – Pyrmont Heavy Vehicle Local Roads

Thank you for submitting the Heavy Vehicle Local Road Report for Use of Local Roads – Pyrmont East and West Construction Sites, Heavy Vehicle Local Road Report for Use of Local Roads – Pyrmont East and West Construction Sites, (Pier St & Darling Dr), Revision 4, dated 18 March 2024.

I note the HVLR:

- Has been prepared in consultation with TfNSW, City of Sydney and Sydney Metro;
- Has been reviewed by Sydney Metro and no issues have been raised with the department; and
- Has been endorsed by a Level 3 Road Safety Auditor.

Accordingly, as nominee of the Planning Secretary, I approve the use of roads by heavy vehicles as outlined in the HVLR under condition D73 of SSI-19238057. For the avoidance of doubt, my approval is only for heavy vehicles using Darling Drive between Union Street and Pier Street applies for an additional outbound route.

Please ensure that the relevant Construction Traffic Management Plan is updated with reference to the HVLR and that the HVLR is made publicly available on the project website as soon as possible.

If there are any inconsistencies between the document and the conditions of approval, the conditions prevail.

If you have any enquiries, please contact

Infrastructure Management

Department of Planning, Housing and Infrastructure



As nominee of the Planning Secretary