Pre-Construction Minor Works Approval Form

Minor Works are defined as any low impact activities that are undertaken prior to the commencement of 'construction' as defined in the project's applicable planning approval. However, if Minor Works affect or potentially affect heritage items, threatened species, populations or endangered ecological communities, these works are defined as 'construction' unless otherwise determined by the applicable planning authority.

Minor Works approvals do not remove any obligation to comply with the project's applicable planning approval conditions (including requirements prior to 'any works' commencing) or obtain any other applicable permits, licenses or approvals as necessary.

This application and all supporting information must be submitted to Sydney Metro/the Environmental Representative as one (1) PDF file at least 10 business days prior to the commencement of the proposed Minor Works.

Part 1: Application	
Contractor:	Martinus
Project:	South West Metro
Application Title: (e.g. Smith St trenching works)	Corridor Intrusion Risk Assessment (CIRA) – Overbridge Geotechnical Boreholes at Haldon Street Overbridge, Lakemba NSW 2195.
Application Number:	MWA-MR-005
Application Date:	DRAFT: 12/09/2024 REV A: 17/09/2024 REV B: 19/09/2024
Planning Approval:	The following Planning Approvals apply: • Sydney Metro City and Southwest Infrastructure Approval SSI-8256 (inclusive of CSSI 8256 MOD 1 determined 22 October 2020 and accompanying updated REMM's modification report) • Sydney Metro City and Southwest – Sydenham to Bankstown – Environmental Impact Statement (EIS) • Sydney Metro City and Southwest – Sydenham to Bankstown – Submissions and Preferred Infrastructure Report (SPIR) (inclusive of Revised Mitigation Measures: REMM)
Minor Works Categories: • Highlight as applicable. • If Items 4, 8 or 11 are applicable, this form must be endorsed by an Environmental Representative.	1. Survey, survey facilitation and investigations works (including road and building dilapidation survey works, drilling and excavation). 2. Treatment of contaminated sites. 3. Establishment of ancillary facilities (excluding demolition), including construction of ancillary facility access roads and providing facility utilities. 4. Operation of ancillary facilities that have minimal impact on the environment and community. 5. Minor clearing and relocation of vegetation (including native). 6. Installation of mitigation measures, including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments. 7. Property acquisition adjustment works, including installation of property fencing and utility relocation and adjustments to properties. 8. Utility relocation and connections. 9. Maintenance of existing buildings and structures. 10. Archaeological testing under the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010) or archaeological monitoring undertaken in association with other Minor Works to ensure there is no impact on heritage items.

	11. Any other activities that have minimal environmental impact, including construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access.
Planning Authority Determination: Will the proposed works affect or have the potential to affect heritage items, threatened species, populations or endangered ecological communities?	*If 'Yes', this completed form must be endorsed by an Environmental Representative, approved by Sydney Metro and submitted to the applicable planning authority to determine that the works are not defined as 'construction'.* This minor works project involves geotechnical investigations and service location activities, including: • Clearing borehole sites to ensure no underlying services are present. • Minor clearing of vegetation. • Borehole drilling to procure geotechnical data. The minor works are considered 'Low Impact Activities' in accordance with Condition A1 of SSI 8256 and minor works categories 1, 5, 6 and 11. The minor works proposed would have no adverse effects on State Heritage-listed items, areas of potential archaeological significance, threatened species, populations of, or endangered ecological communities. There will be no disturbance or impact on movable heritage items during any phase of the planned works outlined in this application. All environmental constraints have been identified in Environmental Control Maps with associated avoidance and mitigation conditions to ensure the category of Low Impact Activities is adhered to and the environmental, social and economic features and values are protected, retained and conserved. Furthermore, Martinus will adhere to the Sydney Metro Unexpected Heritage Finds Procedure v5.0 and the Sydney Metro Unexpected Finds Contamination and Asbestos Procedure. These protocols will be implemented diligently across all minor works associated with this application, ensuring rigorous environmental and safety controls are in place. A comprehensive summary of compliance measures for corresponding minor works categories is provided below. This minor works approval is for minor works only. Information used to determine heritage impacts have been derived from the Heritage Impact Memorandum dated 21/03/2024. This memorandum is accessible in Appendix 3 and contains, heritage assessments and advice relating to conducting site investigations for the design of the Corridor Intrusion Risk Assessment (CIRA). **Minor Works Categories & Mitigation Measures** **Item 1 – Survey, survey facilitation and investigations works (including road and building dilapidation survey works)** Borehole investigation works are proposed at two locations on Haldon Street Overbridge, Lakemba NSW 2195. The works would require the cutting of superficial concrete and drilling within the areas identified as Borehole BH-HAL-101 and BH-HAL-102 on Appendix 1: Environmental Risk Assessment and Environmental Control Maps. These activities will not impact heritage areas and areas containing threatened species, populations, or endangered ecological communities. The Heritage Impact Assessment defines magnitudes of heritage impacts including: • Minor adverse - Actions that would have a minor adverse impact on a heritage item. This may be the result of the action affecting only a small part of the place or a distant/small part of the setting of a heritage place. The action may also be temporary and/or reversible. • Negligible - Actions that are so minor that the heritage impact is considered negligible. • Neutral - Actions that would have no heritage impact. Geotechnical drilling will be conducted in areas previously excavated and resurfaced for past utility installations and pedestrian walkways. In addition, Haldon Street Overbridge is not located within a mapped heritage area. Therefore, the proposed investigations are expected to have neutral long-term physical and visual impacts on listed heritage items. Although the borehole locations fall adjacent to the boundaries of heritage-listed sites, no significant fabric related to these heritage items will be affected. Given the neutral impact, the threshold for material impact will not be reached, resulting in 'little to no impact' on heritage items. The works will be undertaken during standard construction hours.

	Item 5 – Minor clearing and relocation of vegetation (including native) Desktop assessment using aerial imagery and ecological surveys were undertaken to determine impacts to vegetation within the context of the minor works development footprints. No impacts to native vegetation are anticipated as a result of the work as the borehole locations at Haldon Street are already cleared and paved. Adjacent to these work areas within the corridor, exotic and weed species exist including Green cestrum (*Cestrum parqui*), *Celtis* sp. Ground cover included Crofton weed (*Ageratina adenophora*) African lovegrass (*Eragrostis curvula*), Panic grass (*Ehrharta erecta*), Fireweed (*Senecio madagascariensis*), Lantana (*Lantana montevidensis*), Lambs tongue (*Plantago lanceolata*) and Rhodes grass (*Chloris Gayana*). In summary, there will be no minor clearing and relocation of vegetation however, considering the surrounding areas shown on the ECM (see Appendix 1) it was relevant to identify and confirm these constraints and no impacts. **Item 6 – Installation of mitigation measures, including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments.** The implementation of exclusion zones and safety measures will involve erecting hoardings and temporary fencing (i.e., ATF) at each site. These measures would be strategically placed across platforms and development footprints, as detailed in the following sections. These actions will have no adverse physical or visual effects on State Heritage items, threatened species, populations, or endangered ecological communities. The installation of environmental and safety controls will be diligently maintained at all stations. **Item 11 – Any other activities that have minimal environmental impact, including construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access.** Traffic and pedestrian management would have minimal environmental impacts. These temporary impacts and would be managed as per the Traffic Guidance Scheme presented in Appendix 4 for Haldon Street Overbridge. The works would involve the redirection of pedestrian paths and temporary traffic management for access and egress through the work site. Traffic and pedestrian routes will be generally managed and maintained in accordance with the measures identified in the 'Methodology' Section below. No traffic management measures would impact State Heritage Listed items or threatened species, populations or endangered ecological communities. With respect to OOHW, the scope of works are anticipated to be completed during standard construction hours.

Part 2: Details	
Describe the proposed Minor Works: Including work methodologies, site location(s) and site description(s) (e.g. landscape type, waterways, etc.).	**Site Location and Descriptions:** In accordance with the Environmental Impact Statement (EIS) approved as part of CSSI 8256 under the Environmental Planning & Assessment Act 1979 and associated Conditions of Approval, the Project areas lie within the railway corridor of the T3 Bankstown Line. This corridor encompasses stations, overbridges, overhead wiring structures, tracks, services, and ballast, stretching from Sydenham Station to Bankstown Station. All minor works outlined in this application are situated within the existing project boundaries specified in the approval. **General Biophysical Environment:** In the railway corridor, the majority of the Project sites comprise fill related to railway embankments or exposed bedrock associated with cuttings, overlaid with rail ballast or fill. Saline soils are situated west of Punchbowl Station, with certain isolated areas indicating a high potential for salinity. The Haldon Street Overbridge is situated within the Cooks River catchment area. However, none of the Project sites are located within 250 meters of a crossing point over the Cooks River.

Water quality in the catchment tends to be poor due to runoff from urban areas, although it improves downstream. The nearest watercourse to any of the project sites is an unnamed concrete-lined channel at Wiley Park, approximately 100 meters away from the site.

The area that constitutes Haldon Street Overbridge has been heavily modified and subject to significant disturbance due to anthropogenic factors such as ongoing transport operations, maintenance and monitoring. Vegetation within the development footprint and the rail alignment as a whole has been historically cleared with small patches of native vegetation along the rail corridor surrounded by grasses, small shrubs and scattered canopy trees. Much of this vegetation comprises exotic or planted native species within a highly modified urban setting. This includes street trees in the vicinity of stations, overbridges and the rail corridor and road reserve boundary. There are small, isolated patches of remnant or regrowth native vegetation located within the study area associated with rail cuttings with less disturbed soil profiles.

In the case of Haldon Street Overbridge, no native remnant or regrowth vegetation exists within the works areas.

Land use:

Land use within he surrounding locality of the Project sites is highly urbanised mixed land uses, ranging from high to low medium density residential and commercial with the inclusion of community, health, education, and recreation. The community has been suitably notified of the planned minor works through Community Notifications shown in Appendix 2.

Station locations, Heritage Significance and Impact Assessment:

A Heritage Impact Assessment Memorandum was undertaken by Artefact (Appendix 3) to assess the significance for heritage items at each site including summarising the investigation works and assessing the potential heritage impacts the investigation works will have on the heritage items and outline resulting mitigation measures.

12		S170 Register	Non Destructive Drilling (NDD) Sawcut/vac slit trench (8/No.)

Table 2 identifies the heritage listing in the context of the proposed works locations.

Table 2. *Heritage listing and proposed work locations*

Site No.	Location	State Heritage	Scope	Impact
12	Haldon Road Overbridge / Lakemba Station Borehole ID: BH-HAL-101 and BH-HAL-102	The investigation area is not within the State Heritage 170 register curtilage. The works are not expected to impact any state heritage areas.	Geotechnical investigation	Neutral

Work methodologies, site location & Heritage Impact Assessment

Appendix 3 identifies impacts associated with Non-Destructive Drilling (NDD) and saw cutting for utilities investigations suggesting that said works would result in negligible physical and visual impacts.

The proposed investigations (geotechnical boreholes) are located within areas outside of the mapped heritage area adjacent the overbridge itself. Considering the boreholes are located outside of the mapped area and constitute less of an impact than utility locating, the works are considered to have no ‘physical impact’. Borehole drilling would occur to existing paved pedestrian areas which have been historically excavated and resurfaced.

In accordance with the definition of Low Works Impact (from SSI8256 Planning Approval), the works would have no ‘physical impact’ as there would be no altering of the fabric of heritage significance.

All investigative works should be carried out in accordance with the mitigating measures outlined below.

Mitigating Measures

- Identified heritage items and areas of archaeological potential should be shown on Environmental Control Maps that are made available on site to inform site contractors.

Noise & Vibration

CoA E19 defines standard Sydenham to Bankstown hours of work as:

- Monday to Friday 7am to 6pm and Saturdays 8am to 6pm.

The works associated with this Minor Works Approval would all be undertaken during construction hours as per CoA E19. Any works planned to occur outside standard work hours must be assessed and approved in advance in accordance with Sydney Metro's approved City and Southwest Out of Hours Works Strategy/Protocol with supporting noise and vibration assessment.

Methodologies & Item

Item 1: Survey, survey facilitation and investigations works

Service clearing and geotechnical investigations include:

- Conducting thorough utility locating surveys using appropriate techniques and equipment to identify the presence and location of any underground utilities in the vicinity of the boreholes.
- Drilling using a borehole rig to satisfy the requirements for geotechnical investigations of the area.

Methodology

Service clearing:
Each borehole is to be cleared for services prior to any drilling commencing.

Geotechnical Investigations:
Use of the following to complete geotechnical drilling:

- Ute-mounted borehole rig
- Site Utes
- Vacuum truck
- Concrete saw
- Hand tools
- Handheld survey equipment
- Water cart/trailer (as required for any dust suppression).

Item 5 – Minor clearing and relocation of vegetation (including native)

No impacts to native vegetation are anticipated as a result of the works. However, minor clearing and grubbing of groundcover which include weeds would likely be undertaken.

- Native Vegetation within the works area is to be protected generally in accordance with AS4970 – Protection of trees on development sites
- Tree Protection Zones (TPZ) are to be demarcated prior to commencing works where proposed works impact the TPZ or canopy of retained specimens.

No impacts to native canopy and shrub species are proposed.

Item 6 – Installation of mitigation measures, including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments.
The implementation of exclusion zones and safety measures will involve creating erosion and sediment control measures and ensuring compliance is achieved in accordance with Appendix A.

Item 11 – Any other activities that have minimal environmental impact, including construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access.

Traffic and pedestrian routes will be generally managed and maintained through the following:

- Pedestrian Safety Measures: Install temporary pedestrian crossings or bridges if footpaths are closed to ensure pedestrians can safely navigate around the work area. Provide clear signage and instructions for pedestrians, especially near

	alternative routes. • Temporary Parking Restrictions: Temporarily restrict parking in specific areas adjacent to the work zone to create space for construction activities, equipment staging, or traffic flow management. Notify affected residents and businesses in advance of parking closures and provide alternative parking options if possible. • Traffic Signal Adjustments: Consider adjusting traffic signal timings at nearby intersections to accommodate changes in traffic patterns due to lane closures or detours. Optimise signal coordination to minimise congestion and improve overall traffic flow. • Public Transport Coordination: Coordinate with public transport operators to ensure minimal disruption to bus routes and schedules. Provide temporary bus stops or rerouting information to passengers if any stops need to be relocated temporarily due to construction activities. • Emergency Vehicle Access: Maintain clear access for emergency vehicles at all times. Designate emergency vehicle lanes or access points and ensure they remain unobstructed throughout the duration of the work. • Traffic Monitoring and Communication: Continuously monitor traffic conditions around the work zone and adjust traffic management measures as needed. Maintain open communication channels with local authorities, residents, and businesses to address any concerns or issues related to traffic management during the project.
Planned Commencement Date:	The minor works scope items planned to commence during standard Construction Hours (CoA E19) from the 1 October 2024 to 4 October 2024 between 0700 and 1630. The intention is to systematically update Sydney Metro at each CIRA fortnightly Environmental meeting following this Minor Works Application Approval with specific dates per location as the project progresses.
Local Sensitivities: Describe the presence (if any) of local sensitive environmental areas and community receptors	There are a number of residential and commercial properties located within close proximity to the Project sites as can be seen within Appendix 1. Due to the proximity of these receivers to the works, these properties may be sensitive to excessive noise. The works specific to this application shall be conducted during construction hours where reasonable and feasible. Any potential impacts to these properties would be managed in accordance with the Construction Noise and Vibration Strategy, including relevant notifications. There are no vibratory activities associated with the works. Noise and vibration will also be managed in accordance with the following criteria: • Construction 'Noise affected' noise management levels established using the Interim Construction Noise Guideline (DECC, 2009); • Vibration criteria established using the Assessing vibration: a technical guideline (DEC, 2006) (for human exposure); • (BS 7385 Part 2-1993 "Evaluation and measurement for vibration in buildings Part 2" as they are "applicable to Australian conditions"; and • The vibration limits set out in the German Standard DIN 4150-3: Structural Vibration- effects of vibration on structures (for structural damage). The proposed works would implement the standard construction noise and vibration mitigation measures required on all Sydney Metro projects and delivered via relevant procedures, systems, environmental assessment, and all relevant contract documentation. Preliminary environmental site assessments identified the potential risk of contamination within the investigation area, with potential contamination sources being historical rail activities, and commercial and residential land use in surrounding areas. Potential contaminants identified in low to medium risk areas included: • Asbestos • Hydrocarbons • Heavy metals • Herbicides. Contamination will be managed in accordance with the Sydney Metro City and Southwest Unexpected Contamination Finds Procedure. Works are non-invasive and therefore risks associated with the disturbance of PASS/ASS are negligible. The proposed investigations are proposed within already existing utility locations which have been historically excavated and resurfaced for utility locating and installation. The works associated with the overbridges within heritage curtilage are superficial in nature and would be impacting areas which have been historically excavated and resurfaced using concrete only.

	No areas within the works area potentially contain aboriginal archaeology, known as PADs (Potential Archaeological Deposit) which are located within the EIS study area. Visual amenity – the visual aspects of the work sites would be consistent with the industrial nature of the rail corridor. Works may occur in the vicinity of local stormwater systems. Localised erosion and sediment controls will be in place at all locations where materials associated with the works may leave the corridor, including via stormwater drainage. Appropriate approvals such as Traffic Guidance Schemes (Appendix 4), must be in place where works on roadways are required. Pedestrian access will be maintained in any area where works are occurring, noting that pedestrian access is not permitted within the rail corridor.

Part 3: Environmental Risk Assessment and Management

Prepare an Environmental Risk Assessment (in accordance with the Sydney Metro Risk Management Standard) and an Environmental Control Map for the proposed Minor Works and attach as Appendix 1.

If an Environmental Risk Assessment and/or an Environmental Control Map for the proposed Minor Works is/are already contained in existing documentation, attach the relevant section(s) as Appendix 1.

Documentation: List any existing documents (including those referenced above) that the proposed Minor Works will be undertaken in accordance with and attach as Appendix 2 (e.g. plans, procedures, procedures, etc.).	• An Environmental Risk Assessment and ECMs for the proposed works are included in Appendix 1 • Community Notifications in Appendix 2 • Artefact Heritage – Heritage Impact Memo in Appendix 3 • Traffic Guidance Schemes in Appendix 4.

Part 4: Workforce Notification

How will the environmental and community risks and associated mitigation measures of the proposed Minor Works be communicated to the contractor's workforce?	Prior to any minor works a site induction will be provided to all personnel working on the project site. The induction will include relevant environmental aspects and risks associated with works on the project site.

Part 5: Community Consultation

What community consultation has been undertaken already?	The Southwest Metro project has been ongoing since 2021 and substantial community consultation has taken place about project activities.
What community consultation is planned to be undertaken?	Ongoing consultation will occur through the Monthly Community Notice with the addition of the installation of signage to advise the community of any impacts to any parking. The community will be notified of any use of these areas outside of standard construction hours in accordance with the Additional Mitigation Measures specified in the Construction Noise and Vibration Strategy.
If drafted already, attach applicable Community Notification as Appendix 2.	

Part 6: Contact Details

Nominate contractor's project manager, environmental and communications contact(s).

Name:	[redacted]	**Position:**	Project Manger	**Phone:**	[redacted]

	[redacted]		Environment Manager		[redacted]
	[redacted]		Communications Manager		[redacted]

Part 7: Signature			
This signature acknowledges that the proposed Minor Works will be undertaken in accordance with this application, have minimal environmental impact and are not defined as 'construction' in accordance with the applicable planning approval.			
Name:	[redacted]		
Signature:	[redacted]	**Date:**	12/09/2024

Determination Page

(Sydney Metro/Environmental Representative Use Only)

12. Endorsement/Approval

These signatures represent formal endorsement/approval for the proposed Minor Works to commence in accordance with this application and the applicable planning approval requirements (subject to any determination from the applicable planning authority as may be required by the planning approval conditions).

	Director Project Communications – Endorsement (required for all applications)	**Director Environment, Sustainability & Planning** – Approval (required for all applications)	**Environmental Representative** – Endorsement (required as necessary in accordance with the applicable planning approval, optional for all other circumstances)
Signature:	[redacted]	[redacted]	[redacted]
Name:	[redacted]	[redacted]	[redacted]
Date:	27/9/2024	27 September 2024	19/09/2024
Comments:			*Supporting letter attached as Appendix 4 if necessary.*
Conditions:			*Supporting letter attached as Appendix 4 if necessary.*

☑	Approved (by Sydney Metro)
☑	Endorsed (by Environmental Representative)
☐	Rejected

Appendix 1: Environmental Risk Assessment and Environmental Control Maps.

ECM – 12 Haldon Street, Lakemba		**PCBU / COMPANY DETAILS: Martinus**	
		Address: 23 – 27 Waratah St, Kirrawee NSW 2232	
		ABN: 87 155 894 894	**Phone no.:** 87 155 894 894
PROJECT: Sydenham to Bankstown Corridor Intrusion Risk Assessment		**CLIENT / PC DETAILS Name**:	
Address: Lakemba Station, Lakemba NSW 2195, Australia	**Start date:** 23/09/2024	**Contact: Phil Matevski**	**Phone no. 0420 353 980**
Document date: 12/09/2024			
Reviewed by: Phil Matevski			

Work Activity

The objective of this project is to conduct utility locating activities, including slit trenching and utility scope investigations, geotechnical investigations as well as to perform out-of-hours work as necessary to minimise disruptions and ensure project efficiency.

SCOPE OF WORK COVERED BY ECM

This Environmental Control Map (ECM) & document provides instruction relating to environmental requirements for geotechnical investigations. This document incorporates environmental legislative requirements, approval conditions and proponent commitments made during the environmental approvals process as well as sound industry practice.

The scope of works includes the following:

- Conduct thorough utility locating surveys using appropriate techniques and equipment to identify the presence and location of underground utilities
- Perform slit trenching in designated areas to visually inspect and verify the location, depth, and type of underground utilities
- Conduct detailed investigations to determine the condition, material, and specifications of identified utilities
- Excavation and resurfacing works at utility locations

The ECM must be updated to reflect any proposed amendments to project approvals, clearing methodology or implemented control measures following risk review. This must then be updated in the relevant work pack and all personnel must resign on to and agree to the changes.

TIMING

Works would be carried out during standard construction hours. The the case scope changes, Out of Hour Works Approval would be applied for separately.

All works would occur in accordance with Sydney Metro OOHW Protocol and City and SW CNVIS, EHVMT Noise and Vibration Construction Management Plan and Heritage Impact Memo prepared by Artefact Heritage.

RELEVANT APPROVALS & LICENCES

The approvals and licences relevant to this ECM include:

- Approved SSI 8256 under the *Environmental Planning & Assessment Act 1979*
- Pre-construction Minor Works Approval.

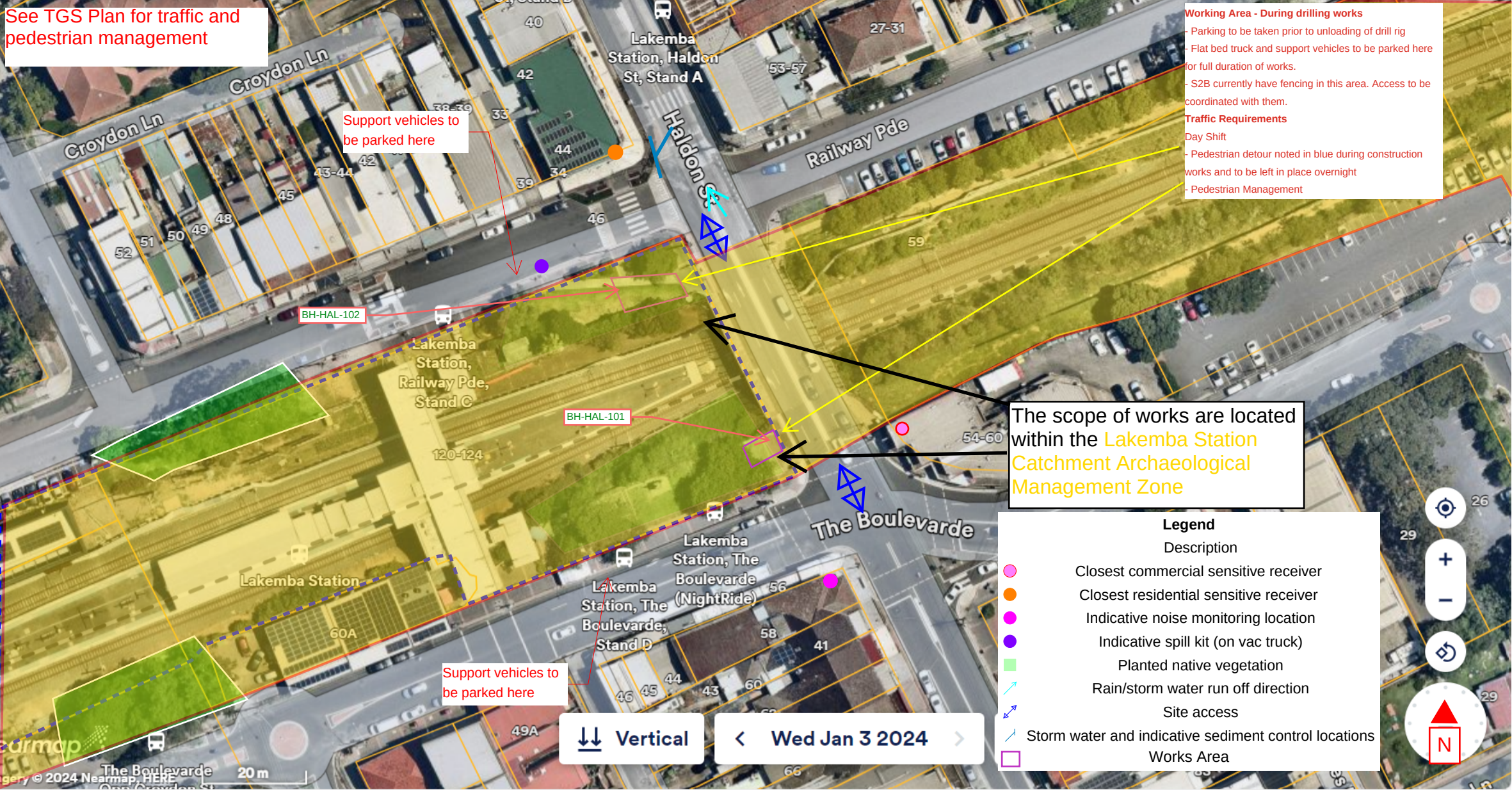
PERMITS/NOTIFICATIONS

☒ Traffic
☒ Other: Specify: Pre-construction minor works approval

INSTRUCTION FOR ECM
Prior to commencing construction, all staff must be inducted as to the requirements of this ECM and all construction activities must adhere to the environmental control measures outlined herein. The ECM must be retained and accessible for the duration of construction works including revised versions. Works will be subject to inspections and approval by TfNSW NER/ER and Martinus Environmental Team.

Environmental high-risk activities (Check any that are applicable to this job)					
	Impacts to soil resources due to soil erosion or contamination from spill or hydrocarbons or other chemicals.		Impacts to **water** resources (surface and groundwater) due to contamination or excessive water use for construction work		Introduction of **invasive plants** or **animals** to the construction site
	Damage to **protected vegetation**, **threatened flora/fauna** and their supporting habitat or other ecological values		Damage to sites of **cultural heritage** significance	✓	**Increased traffic** in local area due to light and heavy vehicle movements to and from the site
	Environmental harm caused due to poor **waste management** practices		Nuisance to sensitive receptors and nearby work camps due to **emissions** from the track construction works		Adverse impact to surrounding environment because of an **environmental emergency**
✓	Communications with **external parties** during construction works		Other: Specify:		

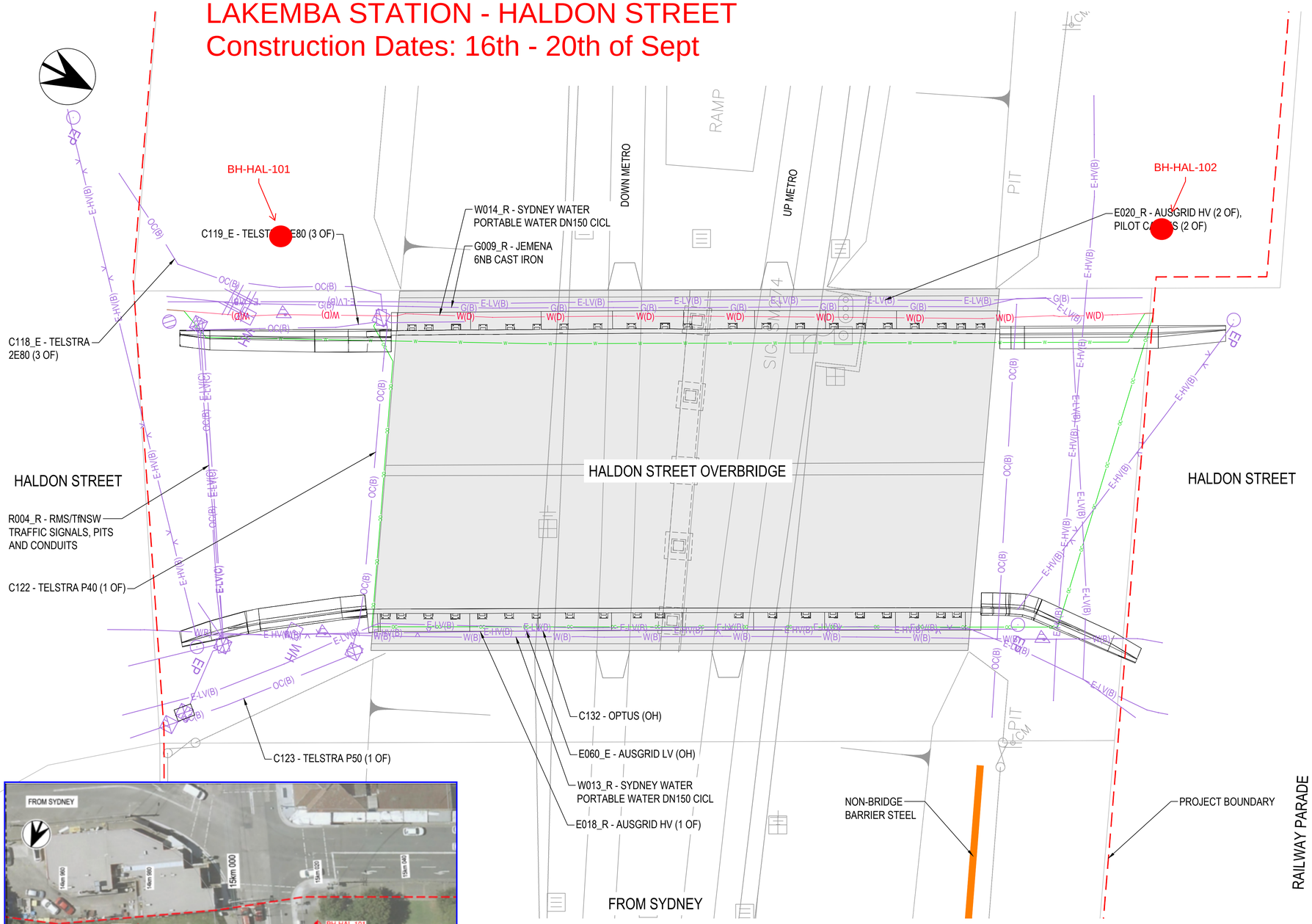
Environmental Control Map

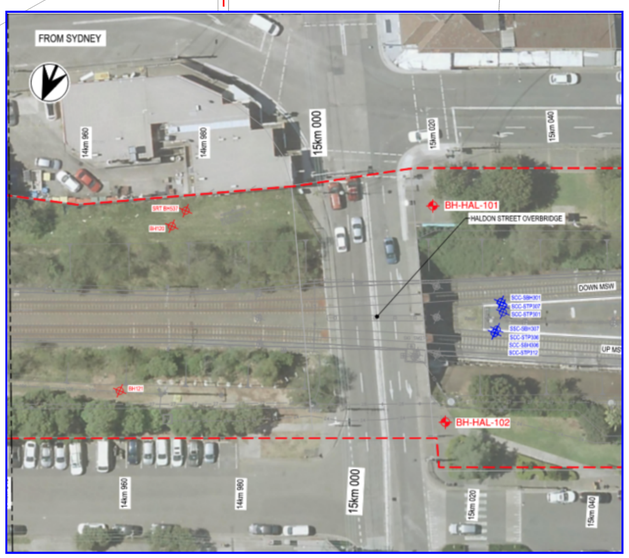

See TGS Plan for traffic and pedestrian management
Working Area - During drilling works
- Parking to be taken prior to unloading of drill rig
- Flat bed truck and support vehicles to be parked here for full duration of works.
- S2B currently have fencing in this area. Access to be coordinated with them.
Traffic Requirements
Day Shift
- Pedestrian detour noted in blue during construction works and to be left in place overnight
- Pedestrian Management
Support vehicles to be parked here
Support vehicles to be parked here
BH-HAL-102
BH-HAL-101
Lakemba Station, Haldon St, Stand A
Lakemba Station, Railway Pde, Stand C
Lakemba Station, The Boulevarde, Stand D
Lakemba Station, The Boulevarde (NightRide)
Lakemba Station
Croydon Ln
Haldon St
Railway Pde
The Boulevarde
The scope of works are located within the Lakemba Station Catchment Archaeological Management Zone
Legend
Description
Closest commercial sensitive receiver
Closest residential sensitive receiver
Indicative noise monitoring location
Indicative spill kit (on vac truck)
Planted native vegetation
Rain/storm water run off direction
Site access
Storm water and indicative sediment control locations
Works Area
Vertical
Wed Jan 3 2024
20 m
N


LAKEMBA STATION - HALDON STREET
Construction Dates: 16th - 18th of Sept
N
Sydney Trains underground
33Kv Feeder
Fenced
Work Area
BORE HOLE
BH-HAL-102
MIN 3.0m from ST Asset


LAKEMBA STATION - HALDON STREET
Construction Dates: 18th - 20th of Sept
N
BH-HAL-101
Fenced
Work Area

LAKEMBA STATION - HALDON STREET
Construction Dates: 16th - 20th of Sept





1 0 2 4m
SCALE 1:100

LAYOUT PLAN
SCALE 1:100

UTILITIES LEGEND

STATUS OF UTILITY BY COLOUR
W(B)
QUALITY LEVEL
UTILITY TYPE

- PROPOSED UTILITIES
- PRESERVED
- DECOMMISSIONED

W(0)	PRESERVED WATER MAIN
W	PROPOSED WATER MAIN
S(0)	PRESERVED SEWER MAIN
S	PROPOSED SEWER MAIN
G(0)	PRESERVED GAS MAIN
G	PROPOSED GAS MAIN
E-HV(0)	PRESERVED UG ELECTRICAL HIGH VOLTAGE
E-HV	PROPOSED UG ELECTRICAL HIGH VOLTAGE
E-LV(0)	PRESERVED UG ELECTRICAL LOW VOLTAGE
E-LV	PROPOSED UG ELECTRICAL LOW VOLTAGE
E HV (0)	PRESERVED OH ELECTRICAL HIGH VOLTAGE
E HV	PROPOSED OH ELECTRICAL HIGH VOLTAGE
E-LV(0)	PRESERVED OH ELECTRICAL LOW VOLTAGE
E-LV	PROPOSED OH ELECTRICAL LOW VOLTAGE
OC(0)	PRESERVED COMMUNICATIONS OPTIC FIBRE
OC	PROPOSED COMMUNICATIONS OPTIC FIBRE
WH	WATER HYDRANT
	WATER STOP VALVE
	WATER METER
	SEWER MANHOLE
EP	POLE - ELECTRICAL - POWER AND LIGHT (PPPL)
EJB	ELECTRICAL CABLE JUNCTION BOX
EMH	ELECTRICAL CABLE MANHOLE
OFP	OPTICAL FIBRE PIT
	COMMUNICATIONS SINGLE CONCRETE PIT
	COMMUNICATIONS TWIN CONCRETE PIT
	COMMUNICATIONS TRIPLE CONCRETE PIT
TSP	MAIN COMMUNICATION PIT
TDP	TELEPHONE DISTRIBUTION PILLAR

E###_$
- ASSET OR DESIGN IDENTIFIER
- ASSET OR DESIGN ID (###)
- ASSET TYPE REFERENCE (TY)

ASSET TYPE REFERENCE
E - ELECTRICAL, G - GAS, C - COMMUNICATION, W - POTABLE WATER, S - WASTE WATER

ASSET OR DESIGN IDENTIFIER
E - EXISTING TO REMAIN, R - EXISTING TO REMOVE OR ABANDON, P - EXISTING TO PROTECT, M - EXISTING TO MODIFY, D - DESIGN/PROPOSED ASSET

NOTE

1. FOR GENERAL NOTES REFER TO DRAWING SMCSWSW7-MRL-WLS-CE-DWG-926011 TO 926019.
2. FOR ASSET TREATMENT REGISTER REFER TO REPORT SMCSWSW7-MRL-WLS-EN-REP-926001.

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

PRELIMINARY ISSUE
NOT FOR CONSTRUCTION

AMD	DESCRIPTION	DESIGNER SIGN./DATE	VERIFIED SIGN./DATE	APPROVED SIGN./DATE
A	PRELIMINARY DESIGN REVIEW - STAGE 2 (IDC)	MA / 04.06.24		

CO-ORDINATE SYSTEM: MGA 94 | HEIGHT DATUM: AHD | SCALE: AS SHOWN

aurecon
AURECON UTILITIES

DRAWN MIA D
DESIGNED MOUS
DRG CHECK TONY
DESIGN CHECK JACK
APPROVED SCOTT HENDERSON 04.06.2024

SYDNEY METRO CITY & SOUTHWEST

Sydney Metro South West
Site 6 - Haldon St - Lakemba Station
Utilities investigation area

SMCSWSW7-MRL-WLS-UT-DWG-926101 | A | A1

DF 801*554

File Plotted:SMCSWSW7-MRL-WLS-UT-DWG-926101.dwg
Plot Date & Time:4/06/2024 8:06:13 AM
Plotted by:Mia Domingo

ENVIRONMENTAL CONTROL MEASURES				
Key Environmental Risks	**Environmental Controls**	**Timing**	**Responsibilities**	**Check**
General	All site personnel to be inducted as to the requirements of this ECM including but not limited to the key environmental risks: • Heritage • Noise and vibration and nearest sensitive receivers • Vegetation protection • Access and egress • Unexpected finds procedure for sensitive areas.	Pre-construction and during construction	Site Manager, Project Manager, Environmental Representative	
	Pre-start register and toolbox attendance register signed by all site personnel.	Pre-construction	Site Manager, Project Manager, Environmental Representative and all inducted staff	
	Clearly ID and segregate work zones from public as required ensuring no works outside approved project boundary as per SSI 8256 and associated approvals.	During construction	Site Manager	
	Ensure all service identification activities have been completed with ground-truthed service locations marked out	During construction	Site Manager	
	Working areas would be maintained, kept free of rubbish and cleaned up at the end of each working day.	Pre-construction and during construction	Site Manager	
Soil and Water (CoA 8, 9, 38 – 41)	The spill kit and clean up gear is located within plant operating zone/s. Ensure the following controls are implemented:	Pre-construction, during construction and post construction	Site Manager, Project Manager, Environmental Representative and all inducted staff	
	When refuelling, follow ‘Refuelling Procedure’.			
	In the event of a pollution incident, cease working in the immediate vicinity and report all spills to the SM. SM is to notify the PM, who would then notify NER/ER.			
	Plant and equipment (including deliveries) to be refuelled within site compound or protected area and will be checked regularly for oil and fuel leaks. No contaminants to enter rail Corridor or stormwater system.			

	Subcontractors are to have spill kits readily accessible from work vehicles or placed on site during bulk liquid movement or when operating plant.			
	To adhere to Australian Standards, EPA Guidelines, and Transport for NSW's Chemical Storage and Spill Response Guidelines (Transport for NSW, 2018e), all fuels, chemicals, and hazardous liquids must be stored in an impervious bunded area situated away from drainage lines. This designated area is specifically designed to contain spills and leaks effectively.			
	Hazardous Materials storage container is located in in the ancillary site compound (please see Ancillary Site Facility Approval).			
Erosion and Sediment Controls (CoA 8, 9, 38 – 41)	All erosion and sediment controls will be conducted in accordance with the Blue Book. The following measures are to be implemented:	During construction	Site manager, Environmental Representative and all inducted staff	
	Minimise the disturbance footprint.			
	Minimise the duration of the disturbance, backfill or cover in timely manner.			
	Implement clean water diversions where practical including coir logs below each borehole location.			
	Construction water from excavations shall be consumed by the deignated sucker truck and managed in accordance with the TfNSW guidelines.			
	Street sweeping will be used as an additional contingency measure where sediment is observed.			
	Implement an effective monitoring and maintenance program for the site that includes periodic checks & inspections of all environmental controls.			
	Heavy rainfall controls: • Monitor the weather forecast for heavy rainfall events		Site manager	

	• Undertake risk assessments based on the forecast and site conditions • Where appropriate, works will be rescheduled to avoid heavy rain • During heavy rain events, exposed areas will be protected to prevent erosion.			
	Excavation controls: • Monitor weather forecast to avoid opening workfaces during rainfall events. • Implement suitable sediment controls including sediment fencing or coir logs on the low side of disturbed areas. • A sump may be excavated within the disturbance footprint to enable construction water to be pumped to holding tanks • Spoil will be progressively removed from site and/or stored in designated stockpiling area at the approved Ancillary site. In the event of heavy rainfall, sandbags are to be laid out to divert clean water from disturbed areas and prevent sediment laden runoff egress from works area.	Pre-construction and during construction	Site manager	
Heritage **(CoA E10 – E17)**	All relevant personnel and contractors involved in the Project will be advised of the relevant heritage considerations, legislative requirements and mitigation measures and recommendations in the Noise and Vibration Assessment by Renzo & Tonin and the Heritage Impact Assessment by Artefact.	Pre-construction and during construction	Site manager, Environmental Representative and Project manager	
	Appoint a suitably qualified Project Heritage Advisor.			
	• Any heritage items or relics that are uncovered as part of the works will be reported to TfNSW as required. Implement Sydney Metro Unexpected Finds Procedure (SM-18-00105232).	Pre-construction and during construction		
	If unanticipated archaeological deposits are identified within the project site during construction: • Stop work immediately • Notify ESR, Site Manager, Environmental Representative (ER) and PM • Notify the Heritage Advisor • Notify Sydney Metro • Do not recommence work without explicit approval to do so. If unforeseen Aboriginal objects are uncovered during construction: • Stop work immediately • Notify EM, SM and PM • Notify the Heritage Advisor • Notify Sydney Metro Do not recommence work without explicit approval to do so.			

	In the event human remains are found, work would cease, the site would be secured and the NSW Police and Heritage NSW would be notified. Where required, further archaeological investigations and an Aboriginal Heritage Impact Permit would be obtained prior to works recommencing at the location.	During construction	Pre-construction and during construction	
	All works to significant heritage fabric should be coordinated with the contractor's heritage advisor to ensure they are conducted in accordance with relevant heritage controls in the heritage memo by Artefact Heritage and other heritage related documents.			
	All relevant personnel and contractors involved in the Project will be advised of the relevant heritage considerations, legislative requirements and mitigation measures and recommendations in the Heritage Impact Memo and Statement of Heritage Impact by Artefact Heritage.	Pre-construction and during construction	Site manager, Environmental Representative and Project manager	
Noise and Vibration (CoA E18 – E38)	Staff are to be inducted as to the requirements outlined in the Noise and Vibration assessment for the project and corresponding sensitive receivers.	Pre-construction	Site manager, Environmental Representative and Project manager	
	Staff are expected to: • Respect neighbours by refraining from swearing or shouting • Minimise noise by using appropriate equipment in good condition • Limit engine idling to the necessary minimum • Turn off plant and machinery when not in active use.	During construction	All inducted staff	
	Non-tonal reversing/movement alarms such as broadband (nontonal) alarms or ambient noise sensing alarms would be used for all plant used regularly onsite (greater than one day), and for any OOHW.		Site manager, Project manager and all inducted staff	
	Works must comply with the minimum working distances for vibration intensive activities as set out in the Sydney Metro Construction Noise and Vibration Strategy.		Site manager, Project manager and all inducted staff	
	All relevant personnel and contractors involved in the Project will be advised of the relevant noise and vibration considerations, legislative requirements and mitigation measures and recommendations in the Noise and Vibration Assessment.		Site manager and Project manager	

	Any OOHW would be subject to OOHW approval and will need to be undertaken in accordance with the Approval Conditions.	Pre-construction, during construction and post construction (V monitoring)	Site manager, Environmental Representative and all staff	
		During construction		
	Regular maintenance of all plant and machinery used for the project will assist in minimising noise emissions, including the reporting of the results.		All staff	
Waste and Sustainability (E74 – E76)	All recyclable waste would be recycled where practicable. Apply waste management hierarchy (avoid, reuse, recycle and finally dispose at landfill).	Pre-construction, during construction and post construction	Site manager, Environmental Representative and Project manager	
	All waste would be separated and classified in accordance with the NSW EPA Waste Classification Guidelines 2014 and disposed of to a suitably licensed facility.			
	<u>Minimising waste during construction</u> Undertake the following steps with 'a' being preferred: a. Implement waste avoidance, including action to reduce the amount of waste generated b. Implement resource recovery, including reuse, recycling, reprocessing and energy recovery c. Implement waste disposal, including management of all disposal options in the most environmentally responsible manner and in line with legislative requirements.		Site manager, Project manager and all inducted staff	
	Order quantities of material as required only.			
	Recycle maximum packaging and waste.			
	Use energy efficient plant/equipment and conserve water wherever possible.			
	The importation of waste and the storage, treatment, processing, reprocessing or disposal of such waste must comply with the Protection of the Environment Operations Act 1997, under the Protection of the Environment Operations (Waste) Regulation 2014, and orders or exemptions made under the regulation			
Traffic and Pedestrian Management	Traffic and pedestrians are to be management in accordance with the Traffic Management Plan (TMP) and/or Traffic Guidance Scheme (TGS).	Pre-construction and during construction	Site manager and Project manager	
	Local traffic laws and controls are to be observed for incoming/outgoing deliveries.		Site manager, and all inducted staff	

(CoA E46 – E53, E54)	Pedestrians and vehicle movements are to be managed in accordance with approved Project TGS and TTMP. Pedestrian access to the commuter carpark and station would remain throughout construction.		Site manager and all inducted staff	
	Parking • Legal street parking is available within the surrounding locality • Construction personnel to utilise legal street parking available within the surrounding locality • Plant and machinery is not to be left idling.		Site manager and all inducted staff	
Air Quality (CoA E2)	Air quality will be periodically monitored (qualitative) for dust leaving the site. If required, additional dust controls will involve scheduling works to avoid high wind events, wetting down of works areas, covering any materials or stockpiles.	During construction	Site manager, Environmental Representative and all inducted staff	
		During construction and post construction	Site manager	
	Excavation works will be scheduled to avoid windy conditions.			
	Work areas would be subject to water application to dampen exposed surfaces if required preferentially with recycled/non-portable water.	Pre-construction and during construction		
Flora & Fauna (CoA E3 – E6)		Pre-construction and during construction	Site manager, Environmental Representative, Project manager	
	Where impacts to threatened ecological communities or endangered species cannot be avoided, they must be offset in accordance with the requirements of the NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014) in agreement with OEH. No areas would be impacted as a result of these works.	Pre-construction	Site manager, Environmental representative and all inducted staff	
	In the event, threatened species are encountered, call the project ecologist/fauna spotter catcher for advice.	Pre-construction, during construction and post construction		

	Vegetation protection is unlikely to be required however, in the even it is required: • Vegetation within the impact area is to be protected generally in accordance with AS4970 – Protection of trees on development sites • Tree Protection Zones (TPZ) are to be demarcated prior to commencing works where proposed works impact the TPZ or canopy of retained specimens • Vegetation spotters should be utilised when machinery is operating within the canopy or TPZ of retained specimens.			
	In the event common fauna is encountered, avoid the area, and wait for the fauna to disperse. Contact the environmental representative as required.			
	Areas of biodiversity value including Planted Native Vegetation and Plant Community Type mapping are identified on the environmental control map. These areas would be fenced where appropriate and practicable and their locations identified to all personnel during induction. No areas would be impacted as a result of these works.	Pre-construction and during construction		
	Detailed design and construction planning would avoid direct impacts to vegetation mapped as threatened ecological communities or native plant community types, specifically Downy Wattle Turpentine - Grey Ironbark open forest on shale and Degraded Turpentine - Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box. These areas are outside of the works area and located within the active rail corridor, sufficiently separated from the works. See ECM for Biodiversity Areas.			
	Weed inspection & controls: Undertake the following measures to manage the potential dispersal and establishment of weeds during construction: • Periodically inspect access road for weeds • Undertake all weed control measures in accordance with TfNSW's Weed Management and Disposal Guideline (DMS-SD-110). This guideline is to be implemented periodically as required based on inspections • Where weed spraying is scheduled to occur, undertake a pesticides application record and submit the document to the relevant stakeholders • Weed disposal is to be undertaken in accordance with the Biosecurity Act 2015.	Pre-construction and during construction		
Services, risk and unexpected finds	Potentially contaminated materials: • If previously unidentified contamination (including acid sulfate soils) is found within the site, cease work and follow the Unexpected Find Procedure. • In the event, contamination is identified, notify SM, PM and ER • Clearance Certificate must be retained for all recycled material imported to site, and contaminated material leaving site.	Pre-construction and During construction	Site manager, Environmental representative and all inducted staff	

	Stormwater services: • The existing drainage systems would remain operational.			
Other Environmental Mitigation Measures	Inspections: • Site inspections to monitor environmental compliance and performance would be undertaken at appropriate intervals. Existing permanent fencing: • Where temporary removal of existing fencing for access purposes occurs, the fence is to be relocated and reinstalled in accordance with Sydney Metro standards.	Pre-construction and during construction	Site manager and Environmental Representative	

PROJECT CONTACTS		
Position	**Name**	**Contact**
Site Manger	Andrew Osborn	0438 977 274
Project Manger	Luis Barroso	0481 302 347
Environment Manager	Phil Matevski	0420 353 980
Sydney Metro Manager	Robel Chowdhury	0481 059 128
Sydney Metro Environment Manager	Emmanuel Smith	0488 310 438
Construction Response Team	-	1800 755 465
Transport Projects Delivery Office Infoline	-	1800 684 490
Heritage Advisor	Sandra Wallace	(02) 9518 8411
Community Manager	Shelley Addison-Bell	0434 370 740
EPA/OEH Pollution Hotline	-	131 555
WIRES	-	1300 094 73
Emergency	-	000

EMPLOYEE'S ACCEPTANCE

We, the undersigned, confirm that we have been consulted on the development and given opportunity to provide inclusions of the ECM nominated above and the details have been explained and clearly understood. We also confirm that our required qualifications to undertake this activity are current. We also clearly understand that the controls in this ECM must be applied as documented, otherwise work is to cease immediately.

WORKER CONSULTATION, INSTRUCTION AND SIGN OFF			
Date	**Name**	**Employer**	**Signature**

Environmental risk assessment

This appendix includes a risk assessment for the Project. All relevant environmental issues have been assessed in accordance with the table below:

Risk Assessment Rankings:

- >31 Very High;
- 22 to 30 High;
- 11 to 21 Medium; and
- 1 to 10 Low.

Issues or activities that represent a Very High risk after the application of control measures are not to be undertaken.

Sydney Metro Consequence Criteria

	ENTERPISE RISK CONSEQUENCES					
	C6 Insignificant	C5 Minor	C4 Moderate	C3 Major	C2 Severe	C1 Catastrophic
Environment	No appreciable changes to environment and/or highly localised event.	Change from normal conditions within environmental regulatory limits & environmental effects are within site boundaries.	Short-term and/or well-contained environmental effects. Minor remedial actions probably required.	Impacts external ecosystem & considerable remediation is required.	Long-term environmental impairment in neighbouring or valued ecosystems. Extensive remediation required.	Irreversible large-scale environmental impact with loss of valued ecosystems.

Sydney Metro Likelihood Criteria and Risk Matrix

Probability: One off event How likely?	Frequency: Repeated How often?	Likelihood		Consequences C6 Insignificant	C5 Minor	C4 Moderate	C3 Major	C2 Severe	C1 Catastrophic *Transformational for opportunities*
Expected to occur frequently during time of activity or project. Greater than a 90% chance of occurring.	10 times or more every year	Almost certain	L1	20	22	29	32	34	36
Expected to occur occasionally during time of activity or project. A 75-90% chance of occurring.	1-10 times every year	Very Likely	L2	14	18	23	28	31	35
More likely to occur than not occur during time of activity or project A 50-75% chance of occurring.	Once each year	Likely	L3	9	12	16	24	27	33
More likely not to occur than occur during time of activity or project. A 25-50% chance of occurring.	Once every 1 to 10 years	Unlikely	L4	6	7	11	17	25	30
Not expected to occur during the time of activity or project. A 10-25% chance of occurring.	Once every 10 to 100 years	Very Unlikely	L5	3	4	8	13	19	26
Not expected to ever occur during time of activity or project. Less than 10% chance of occurring.	Less than once every 100 years	Almost Unprecedented	L6	1	2	5	10	15	21

Aspect	Potential Environmental Impact	Initial Rating L x	C	Risk	Control Measures	Residual Rating L x	C	Risk	Management of Residual Risk
Approvals and Licensing									
Not identifying appropriate approvals, licenses or permits required and proceeding without them	Works delayed, infringements, prosecution, poor community relations and reputational loss.	L4	C3	17	Review the project planning approval and statutory documentation for requirements relevant to the Project. Follow the advice of Subject Matter Experts providing advice to the Minor Works Approval. Check contract documentation. Identify and implement requirements from the Contract. Establish a register of approvals, licenses and permits.	L5	C4	8	Maintain Compliance Risk Matrix
Noise									
Noise from general construction activities resulting in impact to residents	Disturbance to residents or neighbouring businesses. Potential for complaints.	L3	C5	12	Respond to community enquiries and complaints in accordance with Sydney Metro requirements and implement the OCCS. Consult with the community in relation to upcoming activities that may result in concern. Apply noise mitigation measures during entire project, using noise-reducing plant on site where feasible. Noise screening near the source, provided the screening breaks line of sight to the surrounding receivers Demobilisation would not occur simultaneously with site clean-up which would use non-powered hand tools.	L5	C5	4	Noise performance will be continually monitored as per the mitigation measures of the Construction Noise and Vibration Impact Statement (CNVIS) for this Minor Works Approval. The Sydney Metro Construction Noise and Vibration Strategy (CNVS) is to be implemented. Works would be undertaken during standard construction hours. If scope of works change and OOHW is required, the respective OOHW approval will be applied for separately.
Noise during works required to be undertaken out of standard construction hours	Disturbance to residents or neighbouring businesses with potential for complaints.	L2	C5	18	For this scope of works, no OOHW works are required	L5	C4	7	Works would be undertaken during standard construction hours. If scope of works change and OOHW is required, the respective OOHW approval will be applied for separately.
Vibration									
Vibration intensive activities undertaken on the site such as hammering, vibratory rolling, etc (noted not	Disruption, annoyance and nuisance to residents.	L4	C5	7	Mitigation measures as per the CNVIS are to be implemented. Determine vibration limits and structure/receiver offset distances.	L4	C5	7	Standard and additional mitigation measures for sensitive receptors around the Project works will be applied as per the CNVS and CNVIS.

Aspect	Potential Environmental Impact	Initial Rating L x	C	Risk	Control Measures	Residual Rating L x	C	Risk	Management of Residual Risk
occurring but monitoring to be conducted)	Potential damage to adjacent residential and commercial residences and structures. Disruption to businesses as a result of vibration nuisance				Consult with potentially affected parties prior to commencement of works on their upcoming activities that may be impacted by construction vibration. Ongoing vibration monitoring during vibration intensive works, if required.				No vibratory intensive equipment would be used.
Water Quality, Erosion and Sedimentation									
Sediment laden runoff from construction works leaving site	Degradation of local watercourses. Increased turbidity in local water ways resulting in impact on aquatic life. Fines for sediment escaping site.	L5	C4	8	Install erosion and sediment controls within the project area, where Non-destructive digging (NDD) is occurring, to ensure stormwater drains are protected. Ensure measures are inspected and maintained and also prior to and post rainfall events. Provide training and awareness on the need to prevent pollution. Relevant people to undertake Erosion and Sediment Control training.	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Waste									
Waste disposal during site investigations	Incorrect disposal of waste, further costs incurred for classifications and disposal, fines may be issued.	L3	C5	12	Provide facilities on site for source separation and recycling. Ensure accurate waste records are retained. Removal of wastes from the site would only be undertaken by a licensed contractor as required by the POEO Act and with appropriate approvals, if required, for contaminated materials, etc. All material to be recovered off-site to be appropriately classified in accordance with the Resource Recovery Exemptions. All material that requires off-site disposal to be appropriately tested and classified against the Waste Classification Guidelines (NSW EPA, 2014)	L4	C5	7	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Monitor and ensure reporting of all movements of waste form the worksite.

Aspect	Potential Environmental Impact	Initial Rating L x	C	Risk	Control Measures	Residual Rating L x	C	Risk	Management of Residual Risk
Contamination									
Potential for discovery of unexpected contaminated spoil during site establishment .	Health effects resulting from airborne contamination, e.g. asbestos. Complaints received from odours released during excavations. Classification of spoil is changed and disposal options altered, costs incurred associated with disposal of higher classification of waste.	L5	C4	8	If contaminated soil is encountered, all works are to stop in the vicinity of the find and investigations commence. Unexpected finds procedure within this Minor Works Approval to be implemented. Induct personnel on location, type, nature, concentration of contaminants on site if found.	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Complete regular toolbox talks on how to manage unexpected finds.
Hazardous Materials									
Storage of hazardous substances, leaking plant and equipment and spillage from refuelling.	Localised ground contamination / pollution of stormwater and requiring clean-up and/or receiving fines. Risk of igniting volatile substances. Unauthorised access to site / potential vandalism/damage leading to pollution.	L4	C4	12	Induction, toolbox talks and training on appropriate handling and storage of liquids. All storm water drains should be identified prior to works and protection installed. Environmental Control Maps show storage locations and associated controls e.g. spill kits, etc. Training in use of spill kits. Reduce/eliminate need for hazardous substances. Ensure all work sites are secure before leaving the site.	L5	C4	8	Regular inspections of temporary storage areas during site investigation works
Heritage									
Unexpected heritage items encountered.	Work delays, additional studies, approvals required, damage to heritage item.	L4	C4	12	Implement the mitigation measures within the Heritage Impact Memo (Appendix 3). General inductions toolbox training on heritage management protocols. Label any known heritage items on Environmental Control Maps.	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Provide frequent toolbox talks on Unexpected Heritage Finds Procedure

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					If suspected heritage item encountered. Works to stop immediately and implement the Sydney Metro Unexpected Heritage Finds Procedure (within this Minor Works Approval).				
Impact to Heritage Items	Damage to heritage fabric of heritage items by Project works	L4	C4	12	Implement the mitigation measures within the Heritage Impact Memo (Appendix 3). General inductions toolbox training on heritage management protocols. Label any known heritage items on Environmental Control Maps. No subsurface impact of removal of asphalt without prior heritage and environmental approval. Undertake vibration compliance monitoring as required.	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. Provide frequent toolbox talks on managing change.
Biodiversity									
Loss, damage or injury to endangered or threatened species or localised trees within compounds.	Removal, death, damage or injury to endangered or threatened species by plant and equipment	L5	C4	8	Implement the controls within the ECMs within Appendix 1 of this Minor Works Approval. All personnel attending site will be advised of controls and management during the onsite induction. Toolbox talks will be carried out prior to ground disturbance /site clearing works to ensure onsite personnel are made aware of potential loss of endangered species. If threatened flora or fauna species are identified on site, work in the vicinity of these species would stop immediately. (for the purposes of this application this specifically relates to the identified presence of the Ibis and potential habitat trees) spotter/catcher/botanist/ ecologist to be present during fauna removal works in accordance with ecologist advice and mitigation measures.	L5	C5	4	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. No native vegetation would be impacted as a result of the works.

Aspect	Potential Environmental Impact	Initial Rating L x	Initial Rating C	Risk	Control Measures	Residual Rating L x	Residual Rating C	Risk	Management of Residual Risk
Clearing and grubbing of vegetation within work site.	Potential for injury to native fauna.	L5	C4	8	Implement the controls within the ECMs within Appendix 1 of this Minor Works Approval. Inductions and toolbox training on erosion and sediment controls. No vegetation is to be removed as part of these works.	L5	C4	8	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Loss, damage or injury to endangered or threatened species.	Removal, death, damage or injury to endangered or threatened species by plant and equipment	L5	C4	8	Implement the controls within the ECMs within Appendix 1 of this Minor Works Approval. All personnel attending site will be advised of controls and management during the onsite induction. Toolbox talks will be carried out prior to ground disturbance /site clearing works to ensure onsite personnel are made aware of potential loss of endangered species. If threatened flora or fauna species are identified on site, work in the vicinity of these species would stop immediately. spotter/catcher/botanist would be engaged to survey the	L5	C5	4	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Air Quality									
General Construction works; site establishment	Dust activity in close proximity to residential and commercial premises, complaints received.	L4	C5	7	Toolbox training on dust and air quality Management. Provide dust mitigation measures through water sprays/misting as required.	L4	C5	7	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Exhaust from plant and equipment.	Emissions resulting in air pollution.	L4	C5	7	Inductions and toolbox training on dust and air quality management. Well maintained plant/ equipment and prestart checks and servicing. Non-compliant vehicles removed from site / repaired.	L4	C5	7	Review plant check list prior to operating on site. Undertake verification checks as required.
Traffic									
Loss of on-street car parking in adjacent residential streets and commercial areas / existing station	Loss of parking availability to adjacent residential and commercial properties could	L3	C5	12	Community notifications via monthly notifications and VMS boards / signage and consultation with adjacent businesses (localised cafes for example) in accordance with the OCCS.	L4	C5	7	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
carparks during construction.	result in community complaints.				Follow and implement the TGS within Appendix 4 of this Minor Works Approval.				Supervisor and traffic controller to enforce traffic management requirements
General construction traffic disturbing public access between local roads.	Disturbance to local residents resulting in complaints being made, limited access, potential for delays at local road access points resulting in complaints.	L3	C5	12	Following the TGS in Appendix 4 of this Minor Works Approval. Scheduled road movements shall be minimised where possible.	L4	C5	7	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets.
Visual Amenity									
Plant and equipment movement, Lighting and Mobile Crib	Surrounding aesthetic temporary altered during construction Lighting towers used during out of hours works may spill on nearby residents	L3	C5	12	The work area shall be maintained in an orderly manner Lighting required during night works shall be directed towards the work area and away from adjacent sensitive receivers	L4	C5	7	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.
Utilities									
Utility Management	Service strike leading to environmental degradation	L3	C4	16	Develop and implement the Utilities Management Strategy in accordance with the Utilities Management Framework Engage a Utilities Coordination Manager (UCM) to oversee the coordination of utility works across the project and with third part service providers. The UCM will collaborate with the Community and Stakeholder Manager, the Place Manager and, where required, the Community Complaint Mediator to mitigate impacts to the local community during utility works and to resolve any community complaints relating to utility works. Implement a Permit to Disturb Induction and toolbox talks	L5	C4	8	Permit to Disturb Service searching Detailed Site Survey management

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					Detailed Site Survey to be managed by an appropriately qualified surveyor.				

Appendix 2: Community Notifications

Sydney Metro City & Southwest

Construction Notification – Lakemba Station

September 2024

Sydney Metro is Australia's biggest public transport project.

By 2030, Sydney will have a network of four metro lines, 46 stations and 113km of new metro rail.

Sydney Metro is revolutionising how Australia's biggest city travels, connecting Sydney's north west, south west and greater west to fast, reliable turn-up-and-go metro services with fully accessible stations.

The T3 Bankstown Line will close later this year for up to 12 months to complete the final metro conversion works and in 2025, Southwest Sydney will have turn-up-and-go metro services every four minutes in the peak directly into Sydney CBD.

In September, work will continue along the corridor and at Lakemba Station (weather and site conditions permitting). Work will be undertaken during standard construction hours, **Monday to Friday 7am-6pm** and **Saturday 8am-6pm.**

What work are we doing?

Location	Work during standard hours
Lakemba (along the rail corridor)	• Site investigations, surveys and associated activities • Mobilisation and demobilisation of plant and materials • Work related to security fence installation • De-vegetation and tree clearing around the rail corridor where required • Parking removal and lane closures to facilitate plant/truck operation, parking and access at various locations along the corridor • Signalling related work • Temporary footpath closure along the rail corridor on The Boulevarde between Ernest Street and King Georges Road • Temporary footpath closure along the rail corridor between Railway Parade and King Georges Road (pedestrian diversion via Alice Street Nth and Lakemba Street to King Georges Road) • Installation and modification of combined service route (CSR), cables and trackside equipment • Testing and commissioning of services and equipment and trackside inspection • Devegetation and site preparation activities at the Moreton Street overbridge
Around Lakemba station (Railway Parade and The Boulevarde):	• Minor defect remediation work as required • Minor civil electrical and containment work at station building/platforms as required • Installation and modification of CSR • Security fence installation • Installation of brackets and containments on station platform • Installation of equipment, cables, cable tray and cabinets in station rooms and buildings • Site investigations, surveys and associated activities • Mobilisation of site compound • Parking removal and lane closures to facilitate plant/truck operation • Ongoing termination and cabling work within the station and platforms • Testing and commissioning of equipment and services • Establishment of laydown areas for temporary storage of construction materials and facilities
Services building site off Railway Parade near Bellevue Avenue	• Ongoing termination and cabling work, electrical fit out and finishing work • Testing and commissioning of equipment and services
Lakemba substation, off The Boulevarde, near Taylor Street:	• Ongoing termination and cabling work • Testing and commissioning of equipment and services • Traffic control to facilitate truck movements on The Boulevarde as required

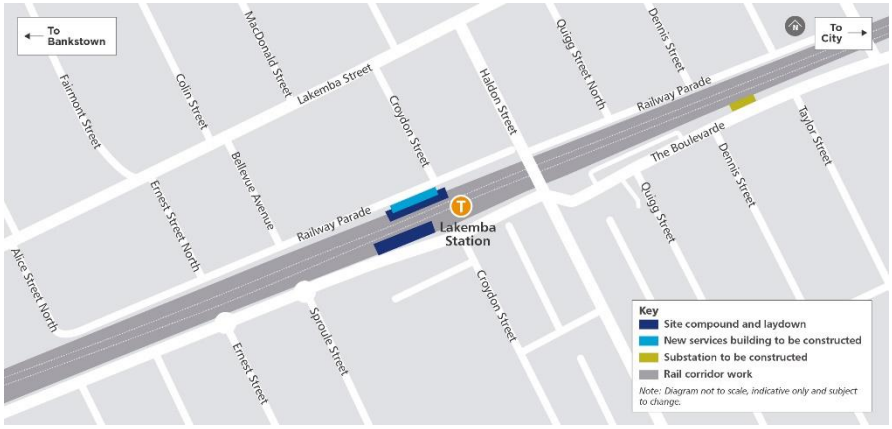
**From time to time we may finish work later than 6pm as we complete concrete pours. This will entail finishing off poured concrete using manual and powered floats and may continue until 10pm. This may occur on up to four separate evenings during the month. The noise impacts from this work will be very low.*

Out-of-hours (night) work – due to the nature of some activities and for the safety of community and workers, some work will occur outside standard construction hours

Date/Time	Out-of-hours work
Mid-week between 6pm and 7am (for no more than 3 nights per week)	• Site investigations, surveys and associated activities • Mobilisation and demobilisation of plant and materials • Signalling related work • Installation of brackets and containments on station platform • Testing and commissioning of equipment and services, and trackside inspections

What to expect

- Equipment used includes, but is not limited to excavators (including rock hammering equipment), concrete trucks and pumps, concrete vibrators, mobile cranes, elevated work platforms, loaders, rail tamper, hammer drill, rail grinder, hi-rail vehicles, generators, lighting towers, milling machine, paver, water cart, light and heavy vehicles, tippers, dump and delivery trucks, hand-held and electric tools, demolition and road saws, jack hammers, power drills, vacuum truck, asphalt paver, welding equipment, rail and circular saws and compaction equipment including a roller.
- The project team will take every step possible to minimise noise impacts, however some of this work will be noisy. A range of measures are in place to reduce noise and meet the project's approval conditions, including noise barriers, using only the necessary equipment for each task, turning off equipment when not in use and equipping machinery with non-tonal movement alarms. Respite hours will be implemented in line with the project's approvals. Highly impacted residents will be notified separately.
- Some equipment may be transported outside of standard construction hours in line with Transport for NSW requirements for transporting oversized vehicles.
- Access to buildings and driveways will be maintained at all times.



- We will park our vehicles along the rail corridor where possible however, please be aware that on-street parking may be limited near worksites, particularly during planned rail possessions.

Thank you for your cooperation and understanding while we complete this essential work

Contact us

24-hour Community Information Line **1800 171 386**

southwestmetro@transport.nsw.gov.au

Sydney Metro City & Southwest, PO Box K659,
Haymarket NSW 1240

Translating and interpreting service

If you need help understanding this information, please contact the Translating and Interpreting Service on **131 450** and ask them to call us on **1800 171 386**

Appendix 3: Heritage Impact Memo – Artefact Heritage

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Memo: Heritage Impact for Site Investigations for Sites Not Listed on the State Heritage Register

Project: Southwest Metro Errant and Hostile Vehicle Project	**Date:**21 March 2024
To: Arch Artifex/ Martinus	**From:** Artefact Heritage and Environment

Introduction

Martinus, on behalf of Sydney Metro, have engaged Artefact Heritage to provide desktop assessments and heritage advice relating to conducting site investigations for the design of the Southwest Metro Errant and Hostile Vehicle Project. These works will be undertaken under the SSI provisions of the *Environmental Planning & Assessment Act 1979* in line with the previous Sydenham to Bankstown Sydney Metro (SSI 8256 consent) and its relevant conditions of approval. The investigations will contribute to the final design as well as to inform a Heritage Management Plan that is incorporated into the project Construction Environmental Management Plan (CEMP).

Sydney Metro are proposing to complete a series of investigations relating to the upgrade of approximately 13km of the southwest metro line into a fully segregated transport corridor. The scope of this Errant and Hostile Vehicle project includes installation of anti-throw screens and concrete bollards within the intersections of 15 bridges along the alignment as shown on Figure 1, as well as 66 individual locations along the corridor between Sydenham to Bankstown where safety improvements will be required. This memo refers to the 12 bridges that are not included in the curtilage of items listed on the State Heritage Register (SHR).

This Heritage Impact Memo report draws from existing Southwest Metro SSI reporting for an assessment of significance for the heritage items, a summary of the investigation works including relevant plans, an assessment of the potential heritage impacts the investigation works will have on the heritage items and mitigation measures. This report is high level and assumes that investigative works are low impact works under the SSI. Much of the information is tabulated and a detailed assessment of significance or impact assessment is not provided in line with the expected minor impacts and nature of the works in relation to the SSI approval.

The proposed investigations are planned to be undertaken as low impact works under the Conditions of Approval (CoA).1 Under the CoA Low Impact Works include:

b) investigations including investigative drilling, contamination investigations and excavation

> *The CoA for the project state in relation to Low Impact Work undertaken prior to construction that:*

where heritage items on the State heritage register, areas of known or expected archaeological potential, or threatened species or threatened ecological communities (within the meaning of the Biodiversity Conservation Act 2016) are affected by any Low Impact Work, that activity is construction, unless otherwise determined by the Planning Secretary following consultation by the Proponent with OEH or DoI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation).

The low impact work described here becomes Construction, with the approval or endorsement of a CEMP. Where Low Impact Work has already commenced, this is considered to remain as Low Impact Work, and is managed in accordance with the framework under which it commenced.

Fifteen bridge locations have been identified on the with the scope of investigation works proposed for each. The reference numbers are shown in Figure 1.

The following twelve bridges are located on sites which are not listed on the State Heritage Register. Their associated heritage listings are outlined below.

Project location and works

Table 1: Road/Rail Overbridges, Non State heritage listings and proposed works

Numbers as shown in Figure 1.	**Road / Rail Overbridge**	**Heritage Listing**	**Proposed Investigation Works**
2	Livingston Road Overbridge / Marrickville	None	Non Destructive Drilling (NDD) sawcut/vac slit trenches (6/No.)
3	Albermarle Street Overbridge / Marrickville	LEP Conservation Area	NIL
4	Wardell Road Overbridge / Dulwich Hill Station	S170 Register, LEP Heritage Conservation Area	Core holing of bridge deck (2/No.)
5	Garnet Street Overbridge / Marrickville	None	Non Destructive Drilling (NDD) sawcut/vac slit trenches (3/No.),
6	Duntroon Street Overbridge / Hurlstone Park Station	S170 Register, LEP Heritage Conservation Area	Mortar sampling, Non Destructive Drilling (NDD) sawcut/vac slit trench (10/No.),
7	Melford Street Overbridge / Hurlstone Park	Adjacent LEP Heritage Conservation Area	Non Destructive Drilling (NDD) sawcut/vac slit trenches (6/No.),
9	Loch Street Overbridge / Campsie	None	Non Destructive Drilling (NDD) sawcut/vac slit trench (6/No.),

			Geotech investigation for piles 6/No.)
11	Moreton Street Overbridge / Lakemba	None	Non Destructive Drilling (NDD) sawcut/vac slit trench (4/No.)
12	Haldon Road Overbridge / Lakemba Station	S170 Register	Non Destructive Drilling (NDD) sawcut/vac slit trench (8/No.)
13	King Georges Road Overbridge / Wiley Park Station	S170 Register	Non Destructive Drilling (NDD) sawcut/vac slit trenches (10/No.),
14	Punchbowl Road Overbridge / Punchbowl Station	S170 Register	Non Destructive Drilling (NDD) sawcut/vac slit trenches (8/No.)
15	Stacey Street Overbridge / Bankstown	None	Non Destructive Drilling (NDD) sawcut/vac slit trenches (6/No.),

Report limitations

This heritage assessment is based on historical and archaeological research provided in the previously prepared heritage reports for the Southwest Metro project.

General Recommendations

- Heritage-specific briefings to be held with construction crews ahead of works commencing, ensuring that heritage significant aspects of the area are communicated
- In the case unexpected heritage items are uncovered, the Sydney Metro Unexpected Finds Procedure will be followed
- Labelling of any known items of Heritage significance on Environmental Control Maps
- All investigation works are to be reinstated "like for like" and match the existing fabric.

Works methodology

All impacts resulting from the investigation works will be temporary and reversible. Any rectification works will be carried out to match the existing fabric (like for like).

Utilities investigations

Non-destructive digging will be undertaken to ascertain the location and depth of services. Several slit trenches or potholes will be excavated using a vacuum truck, excavator or hand tools, following saw cut removal of rigid wearing surface for each location. Excavation will conclude utility services are identified and recorded.

Mortar Sampling

The mortar sampling will consist of acid digestion, sieve analysis of aggregate showing particle size distribution to AS 1141.11.1, and mix ratio of sand/aggregate to cement or cement/lime. Several samples of approximately 200g gram mortar will be required to confidently assess and determine the required composition.

All locations for mortar testing will be repointed with mortar to match or paint to match where bricks are painted.

Survey

Surveyor to set up survey equipment and pick up existing levels of the required infrastructure and utilities.

Archaeological management

Following the recommendation within the SWC non-Aboriginal Heritage Impact Statement, it is recommended that archaeological monitoring is conducted for works at Dulwich Hill Station. However, as works are occurring on the overbridge and within pre-disturbed surfaces, the appropriate management is adhering to the Sydney Metro Unexpected Finds Procedure.

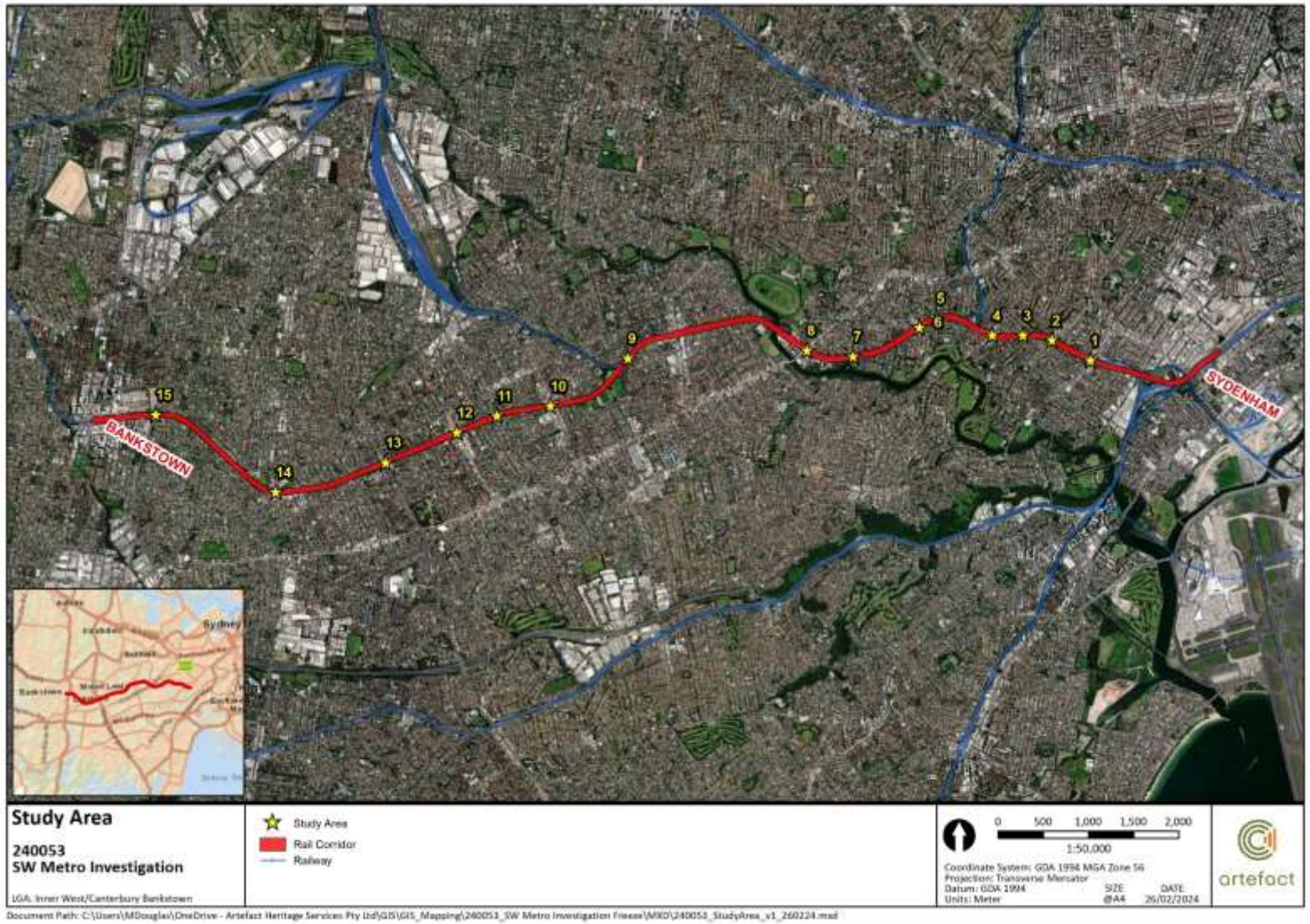

Figure 1: Metro development corridor with stars indicating the overbridges along the route. This report refers to bridges at sites 2,3,4,5,6,7,9,11,12,13,14,15

Heritage item impact assessment

This section provides a discussion and assessment of the physical and visual impacts of the proposed early enabling works on heritage items within and in the vicinity of the 12 overbridges within the project corridor.

Table 2: Terminology for assessing the magnitude of heritage impact.

Grading	Definition
Minor adverse	Actions that would have a minor adverse impact on a heritage item. This may be the result of the action affecting only a small part of the place or a distant/small part of the setting of a heritage place. The action may also be temporary and/or reversible.
Negligible	Actions that are so minor that the heritage impact is considered negligible.
Neutral	Actions that would have no heritage impact.

Table 3: Terminology for heritage impact types

Impact	Definition
Physical	Impacts resulting from works located within or outside the curtilage boundaries of the heritage item, caused by removing or altering the item or fabric of heritage significance
Visual	Impact to views, vistas and setting of the heritage item resulting from proposed works inside or outside the curtilage boundaries of the heritage item.
Potential	Impacts resulting from increased noise, vibrations and construction works located inside or outside the curtilage boundaries of the heritage item.
Archaeological	Impacts to potential archaeological remains located within the curtilage boundaries of the heritage item.

Site 2: Livingston Road Overbridge

Location

Livingstone Road, Marrickville

Physical description

Livingstone Road Overbridge spans north-east to south-west across the rail corridor. The bridge consists of a concrete road deck support by metal girders which span the width of the rail corridor and are supported by two brick piers and the embankments. The existing barrier between road and the rail corridor consist of the painted brick parapet walls.

Figure 2: Livingstone Road Overbridge (Source: Google maps)

Historical summary

The Sydenham to Bankstown line opened on the 1 February 1895. The Livingstone Road Overbridge was originally a timber structure, but this was replaced by the current structure in the 1910s to accommodate the Sydney to Sydenham quadruplication.

Assessment of significance

The Livingstone Road Overbridge is not heritage listed on any statutory or non-statutory registers.

Heritage Impacts

Physical: Neutral physical heritage impacts

Visual: Neutral visual heritage impacts

Figure 3: Location of Livingston Road overbridge (far left B24) (Source: Sydney Metro)

Figure 4: Location of Livingstone Road Overbridge and surrounding heritage items

Site 3: Albermarle Street Overbridge

Location

Albermarle Street - Marrickville

Physical description

Albermarle Street Overbridge consists of a concrete road deck atop girders which span between the embankments on either side of the rail corridor. The girders are supported by metal piers. A metal balustrade and safety fence line each side of the road deck.

Figure 5: Albermarle Street Overbridge (Source: Google Maps)

Historical summary

The Sydenham to Bankstown Line was opened on 1 February 1895. The overbridge was constructed after 1915.

Assessment of significance

The Albermarle Street Overbridge is encompassed in the South Dulwich Hill Conservation Area, which is listed as a Heritage Conservation Area (HCA) of local significance on the Inner West LEP 2022 (item no.C107). The statement of significance for the South Dulwich HCA has been derived from the SHI listing:

> *The South Dulwich Hill Heritage Conservation Area is of historical significance as an area developed in the Federation period as a series of c. 1910 subdivisions in the vicinity of the Wardell Road (now Dulwich Hill) Railway Station which opened in 1889. The Area is of aesthetic significance for its many good quality individual examples and small groups of Federation bungalows that retain original timber joinery, window hoods and detailing to gables and verandas to a quality and consistency rare in the Council area. The area includes excellent examples of the Marrickville Iron Palisade fence, particularly in Cannonbury Grove. The area*

contains a good collection of a locally significant variation of the 'standard' Federation bungalow design with a low ridgeline set parallel to the street alignment. The Area also includes streetscapes of a high quality. This quality is derived from the consistency of subdivision pattern, setbacks, built forms, roof volumes, materials, detailing, and garden spaces. The built forms of the area are representative of the Marrickville area in the early years of the 20th Century as it transformed from a dense urban to detached suburban cultural landscape which includes detached late Federation bungalows and wide lots allowing asymmetrical siting of houses to provide for a side driveway (later development).[1]

The Albermarle Street Overbridge has not been identified as a contributory item in the HCA

Proposed works

NIL

Heritage Impacts

Physical: Negligible physical heritage impacts

Visual: Neutral visual heritage impacts

[1] Heritage NSW, "South Dulwich Hill Conservation Area," State Heritage Inventory https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=2030484

Figure 6: Location of Albermarle Street overbridge (centre B23) (Source: Sydney Metro)

Figure 7: Location of Albermarle Street Overbridge and surrounding heritage items

Site 4: Dulwich Hill Station – Wardell Road Overbridge

Location

Wardell Road Overbridge, Dulwich Hill

Physical description

The Wardell Road Overbridge consists of a modern, pre-stressed concrete road deck spanning between lateral concrete beams. These beams bear on the original face brick platform and the embankment piers on each side.[2]

Figure 8: Wardell Road Overbridge (Source: Google Maps)

Historical Summary

The Sydenham to Belmore line was opened in 1895, and was extended to Bankstown in 1909. Dulwich Hill Station was opened on 1 February 1895, originally names Wardell Road and was renamed Dulwich Hill in 1920, the platform station buildings were replaced in the 1930s. The Wardell Road Overbridge was built in c. 1930 and was renewed in c.1970.[3]

Assessment of significance

Dulwich Hill Railway Station is listed on the following heritage registers as an item of local heritage significance:

[2] OEH 2013. "Dulwich Hill Railway Station Group SHI inventory", accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801909
[3] OEH 2013. "Dulwich Hill Railway Station Group SHI inventory", accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801909

- Inner West LEP 2022 as “Dulwich Hill Railway Station Group, including interiors”, LEP# I1024
- RailCorp s170 Heritage Inventory Register as “Dulwich Hill Railway Station Group”, SHI# 4801909.

The following statement of significance has been drawn from the SHO listing for Railcorp s170 “Dulwich Hill Railway Station Group item”

> *Dulwich Hill Railway Station has local historical significance as it is one of the stations to be located on the Sydenham to Bankstown Line which was built to take pressure off the traffic on the Main South Line as well as promote agriculture and suburban development in the late 19th and early 20th centuries. While the original 1895 station buildings are no longer extant, the replacement 1935 group of structures including both the overhead booking office and the platform building are significant as they represent typical examples of the Inter-War Eclectic style utilised by NSW Railways. The overhead booking office is of high significance and rare as it retains its original configuration and much of its original fabric.*
>
> *The Dulwich Hill footbridge is of high heritage significance as a typical example of a 1935 platform access stair with a timber overhead booking office attached. The stair is substantially intact including balusters and newels.*[4]

The Wardell Road Overbridge is not included in the s170 register listing.

The *Draft Sydney Metro City and Southwest – Dulwich Hill Metro Station Detailed (stage 2) Design Heritage Impact and Consistency Assessment*, prepared by Artefact in 2019, assessed the Wardell Road Overbridge as being in good condition and is of moderate significance.[5]

Proposed works

- Core holing of bridge deck (2/No.)

Heritage Impacts

Physical: Minor adverse physical heritage impacts

Visual: Negligible visual heritage impacts

[4] OEH 2013. “Dulwich Hill Railway Station Group SHI inventory”, accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801909
[5] Artefact, *Draft Sydney Metro City and Southwest – Dulwich Hill Metro Station Detailed (stage 2) Design Heritage Impact and Consistency Assessment,* 2019.

Figure 9: Location of Wardell Road overbridge (far left B22) (Source: Sydney Metro)

Figure 10: Location of Wardell Road Overbridge and surrounding heritage items

Site 5: Garnet Street Overbridge

Location

Garnet Street, Marrickville

Physical description

The Garnet Street Overbridge consists of a concrete road deck atop concrete and brick piers, spanning between embankments on either side of the rail corridor. The road deck is lined with a modern metal balustrade and metal sheet and mesh safety barriers.

Figure 11: Garnet Street Overbridge (Source: Google Maps)

Historical summary

The Sydenham to Belmore line was opened on 1 February 1895 and was extended to Bankstown in 1909.

Assessment of significance

The Garnet Street Overbridge is not heritage listed on any statutory heritage registers.

Proposed works

- Non Destructive Drilling (NDD) sawcut/vac slit trenches (3/No.),

Heritage Impacts

Physical: Neutral physical heritage impacts

Visual: Neutral visual heritage impacts

Figure 12: Location of Garnet Street overbridge (Centre) (Source: Sydney Metro)

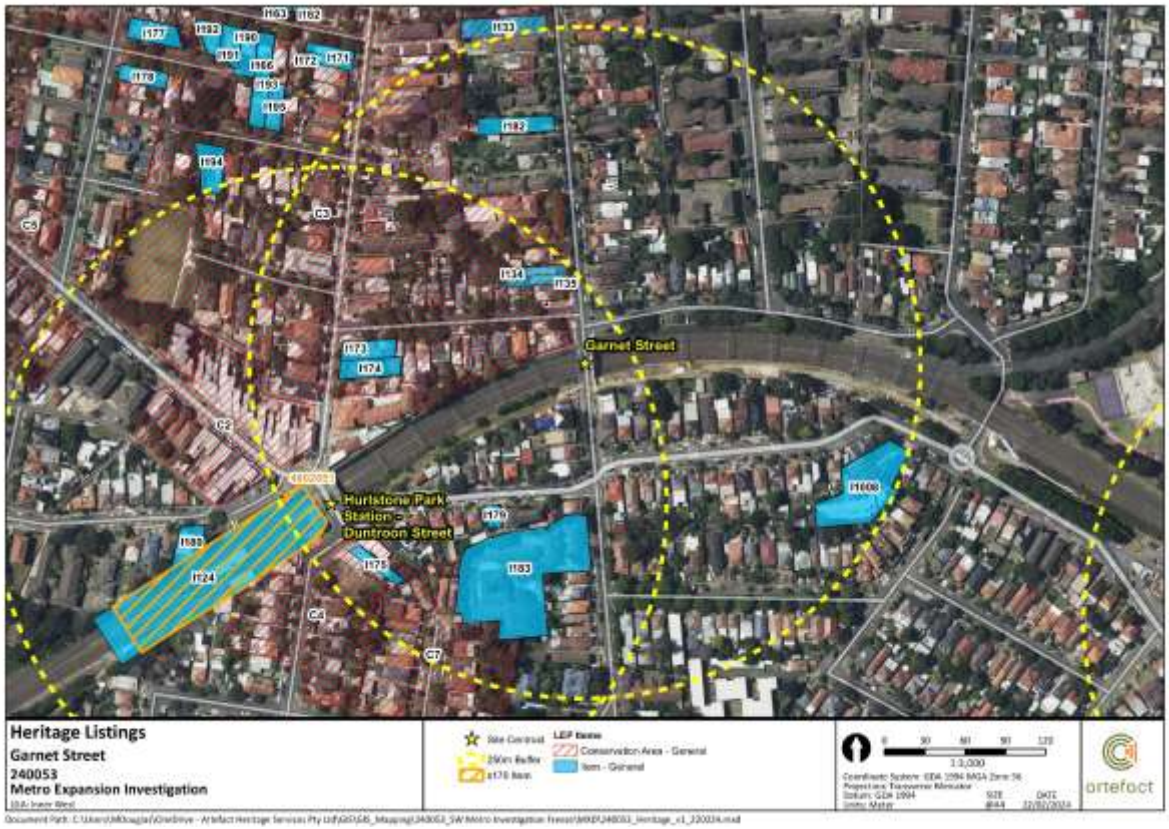

Figure 13: Location of Garnet Street overbridge and surrounding heritage items

Site 6: Hurlstone Park Station – Duntroon Street

Location

Duntroon Street, Hurlstone Park

Physical Description

The Hurlstone Park Overbridge consists of steel girders supported on face brick embankments and central brick piers, and modern balustrading.[6]

Figure 14: Duntroon Street Overbridge (Source: Google Maps)

Historical summary

Hurlstone Park Station was opened, originally named Fern Hill, on 27 November 1894. The station was renamed Hurlstone Park on 19 August 1911, at which time a new Down Platform was constructed to accommodate the Metropolitan Goods Line. In 1915 the original timber station buildings were replaced with brick buildings and an overhead booking station office was also constructed, however this office was replaced in 1980.[7]

Assessment of significance

Hurlstone Park Railway Station is listed on the following heritage registers as an item of local heritage significance:

- Canterbury Bankstown LEP 2023 as “Victorian and Federation Railway station buildings”, LEP# I175

[6] OEH 2017. “Hurlstone Park Railway Station Group SHI inventory”, accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802051
[7] OEH 2017. “Hurlstone Park Railway Station Group SHI inventory”, accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802051

- RailCorp s170 Heritage Inventory Register as “Hurlstone Park Railway Station Group”, SHI# 4802051.

The following statement of heritage significance has been derived from the State Heritage Inventory (SHI) listing for the RailCorp s170 “Hurlstone Park Railway Station Group” item:[8]

> *Hurlstone Park Railway Station has local historical significance as it is one of the stations to be located on the Sydenham to Bankstown Line which was built to take pressure off the traffic on the Main South Line as well as promote agriculture and suburban development in the late 19th and early 20th centuries. The platform buildings, footbridge and stairs are significant as examples of the designs used by NSW Railways during the period 1910 to 1920. The wayside platform buildings are good examples of their type, being relatively intact, with the original 1915 men's toilet on Platform 2, although long disused, still retaining its original configuration.*

The Duntroon Street overbridge is excluded from the S170 listing as the Overbridge has undergone upgrades which has resulted in the general loss of integrity.[9] However in the *Draft Sydney Metro City and Southwest – Hurlstone Park Metro Station Detail (stage 2) Design Heritage Impact and Consistency Assessment* prepared by Artefact in 2019, the face brick abutments, constructed in 1951 which support the overbridge are considered to be in good condition and have high heritage significance.[10]

Proposed Works

- Mortar sampling
- Non Destructive Drilling (NDD) sawcut/vac slit trench (10/No.),

Heritage Impacts

Physical: Negligible physical heritage impacts

Visual: Negligible visual heritage impacts

[8] OEH 2017. “Hurlstone Park Railway Station Group SHI inventory”, accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802051
[9] OEH 2017. “Hurlstone Park Railway Station Group SHI inventory”, accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802051
[10] Artefact, *Draft Sydney Metro City and Southwest – Hurlstone Park Metro Station Detail (stage 2) Design Heritage Impact and Consistency Assessment,* 2019.

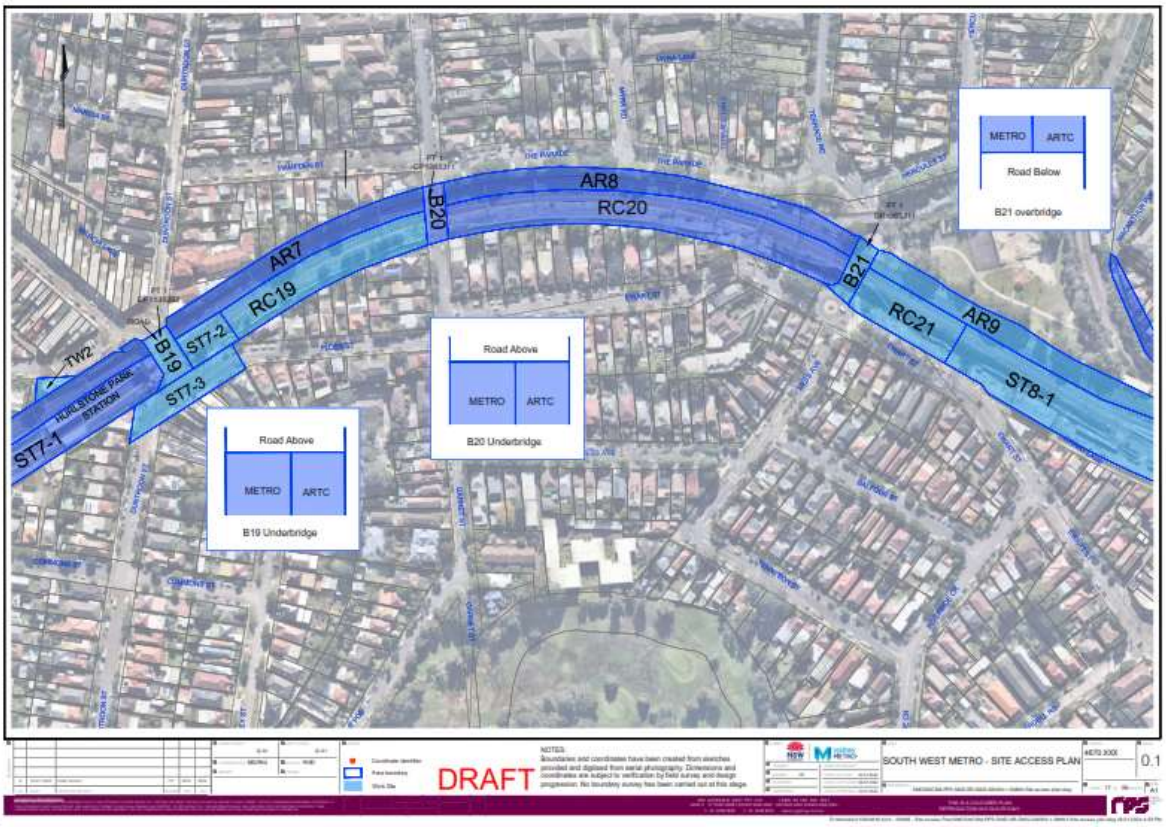

Figure 15: Location of Duntroon Street overbridge (Far left B19) (Source: Sydney Metro)

Figure 16: Location of Duntroon Street overbridge and surrounding heritage items

Site 7: Melford Street Overbridge, Hurlstone Park

Location

Melford Street, Hurlstone Park

Physical description

The Melford Street Overbridge is a three span bridge concrete girder bridge, crossing four railway tracks. It is 26 metres in length sitting atop concrete and brick piers.[11]

Figure 17: Melford Street Overbridge (Source: Google Maps)

Historical summary

The Sydenham to Belmore Railway line was opened on 1 February 1895 and extended to Bankstown in 1909.

Assessment of significance

The Melford Street Overbridge is not registered as a heritage item on any statutory heritage register. It is located physically adjacent to the Melford Street HCA, which is a locally listed conservation area on the Canterbury Bankstown LEP 2023 (Item no. C5).[12]

Proposed works

- Non Destructive Drilling (NDD) sawcut/vac slit trenches (6/No.),
- Geotech investigation for piles (4/No.)

[11] AECOM, *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*, 2017, https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf

[12] Heritage NSW, "Melford Street Heritage Conservation Area," State Heritage Inventory, https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=1300455

Heritage Impacts

Physical: Neutral physical heritage impacts

Visual: Neutral visual heritage impacts

Figure 18: Location of Melford Street Overbridge (Far left B17) (Source: Sydney Metro)

Figure 19: Location of Melford Street Overbridge and surrounding heritage items

Site 9: Loch Street Overbridge, Campsie

Location

Loch Street, Campsie

Physical descriptions

Loch Street Overbridge is a four span concrete rock deck supported by girders, and concrete and brick piers and abutment on each side of the rail corridor. It is lined with a metal mesh balustrade.[13]

Figure 20: Loch Street Overbridge (Source: Google Maps)

Historical summary

The Sydenham to Belmore railway line was opened on 1 February 1895 and extended to Bankstown in 1909.

Assessment of significance

The Loch Street Overbridge is not listed as a heritage item on any statutory heritage registers.

Proposed works

- Non-Destructive Drilling (NDD) sawcut/vac slit trench (6/No.),
- Geotech investigation for piles (6/No.)

[13] AECOM, *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*, 2017, https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf

Heritage Impacts

Physical: Neutral physical heritage impacts.

Visual: Neutral visual heritage impacts.

Figure 21: Location of Loch Street overbridge B10 (Source: Sydney Metro)

Figure 22: Location of Loch Street overbridge and surrounding heritage items

Site 11: Moreton Street overbridge, Lakemba

Location

Moreton Street, Lakemba

Physical description

The Moreton Street Overbridge is a four-span bridge with concrete road deck and girders supported by brick and concrete piers.[14]

Figure 23: Moreton Street Overbridge (Source: Google Maps)

Historical Summary

The Sydney to Belmore Line was opened on 1 February 1895 and extended to Bankstown in 1909.

Assessment of Significance

The Moreton Street Overbridge is not listed as a heritage item on any statutory heritage registers.

Proposed works

- Non Destructive Drilling (NDD) sawcut/vac slit trench (4/No.)

[14] AECOM, *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*, 2017, https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf

Heritage Impacts

Physical: Neutral physical heritage impacts

Visual: Neutral visual heritage impacts

Figure 24: Location of Moreton Street overbridge (top right B7) (Source: Sydney Metro)

Figure 25: Location of Moreton Street overbridge and surrounding heritage items

Site 12: Haldon Street Overbridge, Lakemba Station

Location

Haldon Street, Lakemba

Physical description

Haldon Street Overbridge is a two span concrete girder structure, stretching approximately 27m. [15]

Figure 26: Haldon Street Overbridge (Source: Google Maps)

Historical summary

The Sydenham-Bankstown Railway line was extended to Bankstown in 1909, and Lakemba Station opened on 14 April 1909. The station was originally an island platform with entrance steps from the Haldon Street Overbridge and a small timber station building. A brick station building at the Bankstown end of the platform replace the original timber structure on 24 December 1919. A beam footbridge and overhead booking office was opened in 1926 as the line was electrified.[16]

Assessment of Significance

Lakemba Railway Station is listed on the following heritage registers as an item of local heritage significance:

- Canterbury-Bankstown LEP 2023 as “Federation railway station buildings”, LEP# I208

[15] AECOM, *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*, 2017, https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf

[16] https://www.hms.heritage.nsw.gov.au/App/Item/ViewItem?itemId=4801916

- RailCorp s170 Heritage Inventory Register as “Lakemba Railway Station Group”, SHI# 4801916.

The following statement of heritage significance has been derived from the State Heritage Inventory (SHI) listing for “Lakemba Railway Station Group”:[17]

> *Lakemba Railway Station has local historical significance as it was one of the stations to be located on the Sydenham to Bankstown Line which was built to take pressure off the traffic on the Main South Line as well as promote agriculture and suburban development in the late 19th and early 20th centuries. The station reflects the extension of the line to Bankstown in 1909 and the platform building, and associated stairs reflect the development of suburbs in the area after World War I. The platform building and stairs are also significant as examples of the design and technology of these structures built by NSW Railways between 1910 and the 1950s*

The Haldon Street Overbridge is not within the curtilage of the above heritage listings.

Proposed Works

- Non Destructive Drilling (NDD) sawcut/vac slit trench (8/No.)

Impacts

Physical: Negligible physical heritage impacts**.**

Visual: Negligible visual heritage impacts**.**

[17] OEH 2008. “Lakemba Railway Station Group”, accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801916https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802051

Figure 27: Location of Haldon Street overbridge (Far left B6) (Source: Sydney Metro)

Figure 28: Location of Haldon Street overbridge and surrounding heritage items

Site 13: King Georges Road Overbridge, Wiley Park Station

Location

King Georges Road, Wiley Park

Physical description

The King Georges Overbridge is a three span concrete girder structure spanning approximately 31 metres.[18]

Figure 29: King Georges Road Overbridge (Source: Google Maps)

Historical summary

Wiley Park Station was opened on 19 June 1938, which is significantly later than other stations on the line. The station was constructed during the 30s at the expense of Canterbury Council due to the suburban growth in the area and the need for an interchange at King George's Road. The major station building was the overhead booking office with ramps leading down to the two platforms and the small brick shelters on the platform. The King Georges Road Overbridge dates to 1974.[19]

[18] AECOM, *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*, 2017, https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf

[19] OEH 2008. "Wiley Park Railway Station Group", accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801946

Assessment of significance

Wiley Park Railway Station is listed on the following heritage registers as an item of local heritage significance:

- Canterbury Bankstown LEP 2023 as “Interwar railway station building”, LEP# I236
- RailCorp s170 Heritage Inventory Register as “Wiley Park Railway Station Group”, SHI# 4801946.

The following statement of heritage significance has been derived from the State Heritage Inventory (SHI) listing for “Wiley Park Railway Station Group”:[20]

> *Wiley Park Railway Station is historically significant at a local level as it was the last of the stations erected on the Sydenham to Bankstown Line which had been built to relieve congestion on the Main Southern Line and to promote agriculture and suburban development in the late 19th and early 20th centuries. The brick platform building and overhead booking office reflect the need to service the growing population in the area in the 1930s. The station is significant as unlike other stations in the Metro network it was a station which was not financed and constructed by the State Government, but by the Local Council. While the overall integrity of the complex has been compromised by alterations and additions the overhead booking office and brick waiting room on platform 2 have a moderate level of integrity and are representative of the Inter-War Railway Domestic style utilised by NSW Railways at the time.*

The 1974 King George Street Overbridge has been excluded from this listing,

Proposed Works

- Non Destructive Drilling (NDD) sawcut/vac slit trenches (10/No.),

Heritage Impacts

Physical: Negligible physical heritage impacts**.**

Visual: Negligible visual heritage impacts**.**

[20] OEH 2008. “Wiley Park Railway Station Group”, accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4801946 https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802051

Figure 30: Location of King Georges overbridge B5 (Source: Sydney Metro)

Figure 31: Location of King Georges Road Overbridge and surrounding heritage items

Site 14: Punchbowl Road Overbridge, Punchbowl Station

Location

Punchbowl Road, Punchbowl

Physical description

Punchbowl Road Overbridge, constructed in 1979, is s two span concrete girder bridge spanning approximately 48 metres.[21]

Figure 32: Punchbowl Road overbridge (Source: Google Maps)

Historical summary

Punchbowl Station was opened on 14 April 1909, when the line was extended to Bankstown. The station building was constructed by George Leggo of Paddington. Alterations include the addition of a good siding in 1919, which was removed in 1981, the addition of a station building awning in 1924, and modifications associated with the electrification if the line 1926. In 1929, an overhead booking office was built, the platforms were lengthened and the stairway to the Punchbowl Overbridge was removed**.** The current Punchbowl Overbridge was constructed in 1979.[22]

[21] AECOM, *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*, 2017, https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf

[22] OEH 2017. "Punchbowl Railway Station Group SHI listing", accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802009

Assessment of significance

Punchbowl Railway Station is listed on the following heritage registers as an item of local heritage significance:

- Canterbury Bankstown LEP 2023 as “Federation railway station building”, LEP# I226
- RailCorp s170 Heritage Inventory Register as “Punchbowl Railway Station Group”, SHI# 4802009.

The following statement of heritage significance has been derived from the State Heritage Inventory (SHI) listing for the State Heritage Register “Punchbowl Railway Station Group” item:[23]

> *Punchbowl Railway Station has local historical significance as it was one of the stations to be located on the Sydenham to Bankstown Line which was built to take pressure off the traffic on the Main South Line as well as promote agriculture and suburban development in the late 19th and early 20th centuries. The station reflects the extension of the line to Bankstown in 1909 and the overhead booking office, footbridge and stairs, reflect the development of suburbs in the area during the Interwar period.*

The Punchbowl Road Overbridge is excluded from the above listings.

Works

- Non-Destructive Drilling (NDD) sawcut/vac slit trenches (8/No.)

Heritage Impacts

Physical: Negligible physical heritage impacts

Visual: Negligible visual heritage impacts

[23] OEH 2017. “Punchbowl Railway Station Group SHI listing”, accessed online at https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802009https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4802051

Figure 33: Location of Punchbowl Road overbridge B4 (Source: Sydney Metro)

Figure 34: location of Punchbowl overbridge and surrounding heritage items

Site 15: Stacey Street overbridge, Bankstown

Location

Stacey Street, Bankstown

Physical description

The Stacey Street Overbridge is a three span concrete girder bridge which stretches approximately 90m, crossing both the rail corridor and South Terrace.[24]

Figure 35: Stacey Street Overbridge (Source: Google Maps)

Historical Summary

The Sydenham to Belmore line opened on 1 February 1895 and the line was extended to Bankstown in 1909. Tenders for Stacey Street Bridge were opened on 1 August 1970, and it was completed by 1973. [25]

Assessment of significance

The Stacey Street Overbridge is not listed on any statutory heritage registers.

Proposed works

- Non Destructive Drilling (NDD) sawcut/vac slit trenches (6/No.)

[24] AECOM, *Sydney Metro City and Southwest Sydenham to Bankstown Upgrade – Technical Paper 1 – Traffic, Transport and Access*, 2017, https://www.sydneymetro.info/sites/default/files/document-library/Sydenham%20to%20Bankstown%20Environmental%20Impact%20Statement%20Volume%202%20Traffic%20Part%204%20Report.pdf

[25] Artefact, *Draft Stacey Street Widening Statement of Heritage Impact Stage 2*, 2021.

Heritage Impacts

Physical: Neutral physical heritage impacts

Visual: Neutral visual heritage impacts

Figure 36: map showing location of the Stacey Street Overbridge B3 (Source: Sydney Metro)

Figure 37: Map showing location of Stacey Street overbridge and surrounding heritage items

Conclusion and Recommendations

The heritage impacts resulting from the investigative works for Errant and Hostile Vehicle project will result in neutral to minor adverse. The scope of works in this project includes installation of anti-throw screens and concrete bollards within the intersections of the 12 bridges that are not included in the curtilage of an item on the SHR, along the alignment of the Southwest Metro between Sydenham Station and Bankstown Station.

All proposed works relating to the investigations to the upgrade of approximately 13km of the southwest metro line are low impact works and have been assessed as resulting in heritage impacts ranging from neutral to minor adverse. Neutral heritage impacts result from actions that would have no negative impact. Negligible heritage impacts result from actions that are so minor that the heritage impact is considered negligible. Minor adverse heritage impacts result from actions that would have a minor adverse impact on a heritage item. This may be the result of the action affecting only a small part of the place or a distant/ small part of the setting of a heritage place. The action may also be temporary and/ or reversible.

All investigative works should be carried out in accordance with the mitigating measures outlined below.

Mitigating Measures

- Heritage-specific briefings to be held with construction crews ahead of works commencing, ensuring that heritage significant aspects of the area are communicated
- In the case unexpected heritage items are uncovered, the Sydney Metro Unexpected Finds Procedure will be followed
- Labelling of any known items of Heritage significance on Environmental Control Maps
- All investigation works are to be reinstated "like for like" and match the existing fabric.

Recommended Archaeological Management

The regulators stated where the AMS zones were mapped in the context of the work areas, an assessment be provided in the report which provided justifications to not undertaking AMS monitoring. Previous assessments had acknowledged the work areas mapped under the AMZ would have lower archaeological sensitivity or that alternative measures are in place to mitigate any potential impacts on cultural heritage.

The following stations are mapped under AMS:

- Lakemba
- Wiley Park

For Dulwich Hill Station there will be monitoring required in accordance with the AMS.

Appendix 4: Traffic Guidance Schemes

TGS Ref No:	R24-MAR-CIRA-TGS-337				PAGE 1 of 2
Revision No:					
REV 0	Designed by:	Name: Katherine Fabro	PWZTMP Licence: TCT0039320	Date: 09.09.24	Signature
	Approved by:	Michael Kell	TCT0053683	09.09.24	

Work Area

Railway St pedestrian crossing

Haldon St Northbound

Temporary footpath closure required when the plant is moving from the laydown area and the works area at the start and the end of the shifts.

The footpath is to remain open at all other times to allow for maximum pedestrian access to the train station entrance.

Haldon St

Railway Pde

Croyden St

40.0 m

40.0 m

PARKING LANE

PEDESTRIANS

ROADWORK ON SIDE ROAD

N

SITE SPECIFIC NOTES

Implementation:

1.1 - Signs are NOT to be positioned such that they block a pedestrian pathway
1.2 - Signs placed along parking bays should be positioned to ensure clear sight distance is maintained
1.3 - Sign spacing may be adjusted within the allowable tolerance as stated in TCAWs v6.1

Operation:

2.1 - Access to the adjacent driveways must not be obstructed
2.2 - Traffic controllers to direct pedestrians past the work area, a min 1.5m wide pathway is to be maintained at all times
2.3 - Clearance of less than 1.5m to live traffic is acceptable, in this instance, TC is to act as a spotter.
2.4 - Demobilisation must be in reverse to the worksite mobilisation.

LEGEND

- Permanent/Temp Compound
- Temporary Work Area
- Safety Buffer
- Traffic Cone/Delineation
- Water Filled Barrier
- Concrete Barrier
- Permanent Fencing
- Klemmfix
- Tiger bars
- Relocated Bus Stop
- Closed Bus Stop
- Traffic Controller (TC)
- Arrow Board
- TMA
- Work Vehicle
- General Traffic
- Detour Route
- Local Traffic Only
- Construction Vehicles
- Bus travel Path
- Pedestrian Ramp
- Pedestrian Route

Client : Martinus Rail **Project** SWM4 (CIRA)
Contact : Graeme Kyle
Location: Railway Pde, Lakemba Train Station

Scope of works
Bore Hole Investigations
TC onsite to assist construction vehicle and plant access/egress and manage and assist the pedestrians past the work areas.
Temporary Footpath Closures may be required for short durations.

*To implement this TGS the below checked approvals must be obtained

ROL (Road Occupancy Licence) ☐ Council ☒ Bus ☒

Temporary Traffic Management

Road Closure/Detour ☐ Standard lane merge ☐ Contra Flow ☐ Shuttle Flow ☐
Intermittent Stoppages ☐ Parking lane/Shoulder ☒ Speed reduction ☐ PTCD ☐

TGS MODIFICATIONS

Modified by: _____ Date: Signature:
PWZTMP Licence: _____ Time:

Modification Reason:

_____
_____
_____

GENERAL NOTES 1. This TGS has been designed by a PWZTMP accredited person in accordance with AS1742.3 and requirements of TfNSW TCAWS Manual v6.1, and was developed in line with Retro Traffic's QSE Policies and Procedures 2. A site specific Risk assessment was undertaken prior to development, and this TGS and incorporates the recommended measures of control for site specific risks identified during the Hazard Identification and Risk Management Process undertaken for these works 3. Modifications to this TGS must be approved by a person holding a PWZTMP qualification and must also be supported by a TMP or Risk Assessment 4. An ITCP qualified person may vary the positioning of signs and devices provided the requirements outlined in 'Section 7.10.3 - Tolerances on positioning of signs and devices' of TCAWS Manual v6.1 are met.

RETRO TRAFFIC

Traffic Guidance Scheme Risk Assessment & TGS Verification Checklist

Location Details

Road: Railway Pde Suburb: Lakemba Road Speed: 50 km/hr

Direction: N E S (W) Nearest Cross Street: Haldon St

Temporary Traffic Management **Method:** Around (Past) Through

Reason method selected: Acceptable worker/traffic offset can be maintained past the work area

Risk Assessment

Section 1 - General	Yes	No	Description of risks if answered no to any question	Enter Risk Rating
1.1 - Does the TGS define minimum clearances required of workers to live traffic, are distances compliant?	X			
1.2 - Are worker symbolic signs to be placed in advance of areas where workers will be visible to traffic?	X			
1.3 - Are all signs placed at correct distances? i.e. D for multiple signs, 2D for single sign above 60km/h		X	Estimated Speed of vehicles <40km/h	2 M
1.4 - Are Taper lengths compliant and not placed in areas with poor sight distance?	X			
1.5 - Are lane status signs placed in advance of a lane merge?			N/A	
1.6 - Are the correct Tapers being used? i.e. Merge Taper, Traffic Control Taper, Lateral Shift Taper.	X		Delineation only	
1.7 - Does the TGS clearly define transition zones between tapers on multilane roads, are they compliant?			N/A	
1.8 - Does the TGS clearly define Buffer areas, are they compliant and at least 30m in length?			N/A	
1.9 - Does the TGS clearly define site access and egress for work vehicles, is impact to traffic managed?	X			
1.10 - Does the TGS clearly define pedestrian routes, are the routes suitable for all pedestrians?	X			
1.11 - Does the TGS consider Cyclists, can Cyclists transverse the site safely?	X			

Section 2 - Does the TGS Involve Stoppages? Yes (No) (If answered no proceed to section 3)	Yes	No	Description of risks if answered no to any question	Enter Risk Rating
2.1 - Is a PTCD used in place of a manual Traffic Controller where existing speed is greater than 45km/h?		*		
2.2 - Is the operating speed of the road 60km/h or less where Traffic Control or PTCD are in use?				
2.3 - Are x4 Traffic Cones placed on the edge or center line, approaching the Traffic Controller or PTCD?				
2.4 - Is Prepare to stop and Traffic Control or PTCD symbolic signs installed?				
2.5 - Do Traffic Control and PTCD positions have adequate lighting during low light conditions?				
2.6 - Does sight distance of at least 1.5D exist on approach to Traffic Control or PTCD				

Section 3 - Does the TGS Involve Detours of Traffic Yes (No) (If answered no proceed to section 4)	Yes	No	Description of risks if answered no to any question	Enter Risk Rating
3.1 - Are detour routes suitable for all vehicle classes being detoured?				
3.2 - Is access to local residence and business maintained?				
3.3 - Are detour signs located at decision points to clearly guide motorists through detour?				
3.4 - Can roads and intersections used as detour routes accommodate the additional traffic volume?				
3.5 - Is the same level of safety maintained for turn movements? e.g. Traffic using signalized intersections Being sent through a detour route that involves turn movements at non-signalised intersections.				

Section 4 - Other Hazards & Risks	Enter Risk Rating
4.1 -	
4.2 -	
4.3 -	
4.4 -	

Risk Management

If 'No' selected for any question in items 1, 2, 3 or 4 in the Risk Assessment, a control needs to be assigned in the table below to mitigate any additional risk

Item	Control Measures	Remaining Risk Rating

Consequence					
Likelihood	Insignificant	Minor	Moderate	Major	Catastrophic
Almost certain	3 High	3 High	4 Acute	4 Acute	4 Acute
Likely	2 Moderate	3 High	3 High	4 Acute	4 Acute
Possible	1 Low	2 Moderate	3 High	4 Acute	4 Acute
Unlikely	1 Low	1 Low	2 Moderate	3 High	4 Acute
Rare	1 Low	1 Low	2 Moderate	3 High	3 High

TGS Verification Checklist

Section 5 - Verification: Have the below items been addressed on the TGS for this location?	Yes	No
Traffic Volumes	X	
Predicted Queue Length	X	
Shoulder Widths	X	
Sight Distances	X	
Existing Infrastructure	X	
Transport Services (i.e. Bus Stops)	X	
Appropriate Site Access	X	
Appropriate Escape Route for Traffic Controllers	X	

Section 6 - Confirmation (Completed on Site as per Daily HAC)		
Does the TGS require adjustments within tolerances?		
Does the TGS require any additional modifications?		
Is the TGS appropriate for use for works?		
Have key risks been addressed on site?		

Additional Comments

TGS Ref: R24-MAR-CIRA-TGS-337

REV 0		Name	PWZTMP Licence	Date	Signature
	Designed by:	Katherine Fabro	TCT0039320	09.09.24	
	Approved by:	Michael Kell	TCT0053683	09.09.24	
	1 Up Manager:				

* Denotes approval from one up manager required

Appendix 5: Environmental Representative Supporting Letter