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 TfNSW/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:	Downer EDI Works
Project:	Sydney Metro South West – Package 5 (Punchbowl, Campsie, Dulwich Hill) and Package 6 (Belmore, Wiley Park and Hurlstone Park)
Application Title: (e.g. Smith St trenching works)	Package 5 and Package 6 – WE38 Possession and Minor, Standard Hours Works
Application Number:	Downer PCMWA 002
Application Date:	Rev 0: 05/03/2021 Rev 1: 15/03/2021 Rev 2: 17/03/21
Planning Approval:	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). 2. Treatment of contaminated sites. 3. Establishment of ancillary facilities (excluding demolition) 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.

	Note: for the purposes of this application the three highlighted scenarios shall be referred to as their itemised name of 1, 4, 5, 6, 8 or 11 for the remainder of this application.
Planning Authority Determination: Will the proposed works affect or have the potential to affect heritage items, threatened species, populations or endangered ecological communities?	No – it is anticipated that there will be no impacts associated with the minor works that will affect State Heritage listed items, areas of known or expected archaeological potential (no invasive works planned at Belmore whatsoever or Punchbowl PAD), threatened species, populations or endangered ecological communities. No movable heritage items shall be disturbed or impacted whatsoever during any of the planned works in this application. In addition Downer will implement the *Sydney Metro Unexpected Finds Procedure* v2.0 (heritage) and *Sydney Metro Unexpected Finds Contamination and Asbestos Procedure* throughout the scope of all minor works associated with this application with environmental and safety control measures. A summary of compliance is detailed below: **Item 1:** All survey works (non-invasive) shall be on foot, non-destructive and non-penetrative – limited to handheld digital survey equipment. All survey works (invasive) shall involve NDD and Potholing at various locations (for the purposes of geotechnical, service identification and waste classification investigations), across all non-State Heritage Listed stations (not at Belmore) and outside of any threatened species, populations or endangered ecological communities' locations. It should be noted however that invasive NDD and potholing shall take place at Belmore during standard hours, following WE38 Possession in the MSB footprint. The MSB footprint is outside of the Belmore SHR (no. 01081) curtilage and outside of the AMZ under and AMS. This process and the proposed works have been assessed by the Project Heritage Consultant. Supporting advice from the Projects Heritage Consultants Artefact can be found in Appendix 5. **Item 4:** Operation of ancillary facilities (note the establishment of ancillary facilities has been captured in MWA001) is not be in any areas of threatened species, populations or endangered ecological community locations for any of the stations as identified in the EIS and subsequent SPIR. Operation of ancillary facilities at Punchbowl, Campsie, Wiley Park, Hurlstone Park and Wiley Park have no State Heritage relevance. Operation of one of the Belmore two ancillary facilities as discussed in MWA001 shall involve the operation "C12" on Bridge Road. Compound C12 is an existing permanent ancillary facility which is to be utilised as a Downer and Sydney Metro collaborative working space. This is outside of the State heritage curtilage of Belmore Railway Station Group (SHR no. 01081). Whilst it is noted to be within the Belmore AMZ the operation of C12 does not require any construction activities or any such activity outside of utilising the existing offices for the purposes of project management, requiring no further mitigation measures or consultation. The installation and operation of C9 is outside of the Belmore AMZ requiring no further mitigation measures or consultation. Although C9 is located within the State heritage curtilage of Belmore Railway Station Group (SHR no. 01081), it would not cause any physical impacts to significant fabric and is to be utilised solely for the purposes of project management as per MWA001. However, as the installation does present minor visual impacts to the Belmore SHR, this compound shall not be installed or become operational until the Project is operating under "Construction" and in compliance to the "Construction" impacts as consulted with and endorsed through Heritage NSW and DPI&E. **Item 5:** Minor clearing and relocation of vegetation is scheduled to take place at three of the six stations during the W38 possession and subsequent weeks. These stations are Hurlstone Park (WE38), Wiley Park (WE38) and Dulwich Hill (post WE38). None of the stations are on the State Heritage Register and the locations nominated are not within or adjacent to any threatened species, populations or endangered ecological communities. The planned clearing is consistent with the Biodiversity Impact Assessment prepared as for of the EIS and subsequent SPIR. **Item 6:** Installation of exclusion zones and safeguards shall be conducted through the installation of hoardings (Punchbowl, Campsie, Dulwich Hill, Wiley Park and Hurlstone Park) and temporary fencing (nonpenetrative ATF – Belmore for MSB area only as outside of the SHR curtilage) at various locations across the platforms and MSB building footprints as presented in the below sections. This presents no physical or visual impacts to State Heritage items, threatened species, populations or endangered ecological communities. Installation of environmental and safety controls shall continue to occur across all stations and are strictly nonpenetrative at Belmore and the

	Punchbowl PAD and are not in or adjacent to any threatened species, populations or endangered ecological communities at any station. **Item 8:** Utility relocation is exclusively dedicated to Hurlstone Park for 80m of drainage relocation at the MSB location presenting no impact to any State Heritage Listed items or threatened species, populations or endangered ecological communities **Item 11:** Any other activities that have minimal environmental impact: Various items have been proposed at Hurlstone Park (piling pad), Wiley Park (construction of a minor access road, grubbing and temporary works for piling pad installation) Punchbowl and Campsie (demolition of existing rail corridor structures) and Dulwich Hill (construction of two minor track side footings to facilitate future Overhead Wiring Structures and the removal of a redundant Overhead Wring Structure). None of these activities have any interaction with any State Heritage Listed items or threatened species, populations or endangered ecological communities.

Part 2: Details	
Describe the proposed Minor Wo rks: Including work methodolo gies, 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) and Submissions and Preferred Infrastructure Report (SPIR) the Project areas are within the rail corridor of the T3 Bankstown Line which is comprised of stations, overbridges, overhead wiring structures, track, services and ballast, extending from Sydenham Station to Bankstown Station. Within the Package 5 and Package 6 works area, all minor works described in this application are within the existing project boundaries as per the SPIR as shown in Appendix 1. **General Biophysical environment:** Within the rail corridor, the majority of the Project sites consists of fill associated with railway embankments, or exposed bedrock associated with cuttings and overlain with rail ballast or fill. Saline soils are located west of Punchbowl Station, with some isolated areas of high salinity potential. Acid sulphate soils are located along the Cooks River but outside of any of the Package 5 or 6 Project boundaries. All six of the stations as part of this application are located within the Cooks River catchment. However, none of the Project sites are within a 250m crossing point of the Cooks River. Punchbowl Station is located within the Salt Pan Creek catchment. Within both catchments, water generally drains to nearby watercourses via stormwater drainage infrastructure. Water quality within the two catchments is generally poor because of the influence of run-off from urban areas. However, water quality improves in downstream areas within both catchments. The closest water course to any of the projects sites is the unnamed concrete lined channel at Wiley Park, this approximately 100m from the site and not at risk from the establishment of ancillary facilities, station investigations, survey or any NDD. It is however in proximity to the planned vegetation clearing during WE38 possession and shall be covered and protected with netting to ensure no leaf litter or vegetation debris enters the concrete channel from vegetation litter during works (controls noted on ECM). The majority of the Project sites have been heavily modified by past and ongoing disturbances associated with urban development and the active rail corridor. Vegetation within the Project sites is dominated by grasses, small shrubs, and a variety of weeds, with some scattered trees. The majority of vegetation comprises exotic or planted native species on highly modified landforms. This includes vegetation in the form of street trees in the vicinity of stations and also along the corridor. There are small isolated patches of remnant or regrowth native vegetation in small portions of the study area associated with rail cuttings with less disturbed soil profiles. In accordance with the EIS and REMM B1/B4 two threatened ecological communities, listed under the Threatened Species Conservation Act 1995 (TSC Act), occur in the wider Project area: • Sydney Turpentine Ironbark Forest in the Sydney Basin Bioregion (including Downy Wattle Turpentine and Degraded Turpentine - Grey Ironbark open forest on shale) • Shale Gravel Transition Forest (including the Broad-leaved Ironbark – Grey Box) One threatened fauna species, the Grey-headed Flying-fox, was recorded in the wider study area during site surveys for the EIS. Four other species listed as vulnerable under the TSC Act are likely to occur at least on occasion: the Eastern Bentwing Bat, Large-footed Myotis, Eastern Freetail Bat and Yellow-bellied Sheath-tail Bat. Potential habitat for the endangered Long-nosed Bandicoot population is present in parts. The rail corridor also contains around 650 stems of the endangered Downy Wattle (Acacia Pubescens, which is listed as a vulnerable species under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the TSC Act. These stems are in proximity to Punchbowl Station. **Land use:** All of the six stations and the total scope associated with this application are situated within the active rail corridor of the T3 Bankstown Line and surrounded by highly urbanised mixed land uses, primarily low to medium density residential and commercial plus community, health, education, and recreation. The community has been suitable notified of the planned minor works as per Appendix 3. **Station locations and heritage significance:**

C Dickson Item 11 footnote: Following phone discussions with Gareth O'Brien on 17/03/21, Downer has confirmed that there is no proposed impact or salvage of any moveable heritage components as part of any of the scopes in this application and has been included for completeness purposes only.

Package 6:

Wiley Park:

Wiley Park Station is located to the west of the King Georges Road overbridge. The station area is bounded by Stanlea Parade walkway to the north, by King Georges Road to the east and The Boulevarde to the south. The station entrance is located on the overbridge. Wiley Park Station is listed on the RailCorp S.170 Heritage and Conservation Register (4801946) and Canterbury LEP 2012 (I159) as holding local heritage significance.

Hurlstone Park:

Hurlstone Park Station is located to the west of the Crinan Street overbridge. The station area is bounded by Crinan and Floss streets and residential dwellings to the north, Duntroon Street and residential dwellings to the south, and Crinan Street to the west (on the bridge). The station entrance is on the overbridge. Hurlstone Park Station is listed on the RailCorp S.170 Heritage and Conservation Register (4802051) and Canterbury LEP 2012 (I124) as holding local heritage significance.

Belmore:

Belmore Station is located to the east of the Burwood Road overbridge. To the north and south, the station area is bounded by commuter car parks fronting Redman Parade and Tobruk Avenue respectively. To the west, the station area is bounded by Burwood Road. The existing station entrance is located on the Burwood Road overbridge. Belmore Railway Station Group is listed on the State Heritage Register (SHR) (01081), Canterbury Local Environment Plan (LEP) 2012 (I11) and RailCorp s.170 Heritage and Conservation Register (4801084). Situated adjacent to, but outside of the project boundary are areas of potential archaeological deposits (PAD), S2B PAD01 which is located in a small park between the rail corridor and Redman Parade. S2B PAD01, would not be impacted by works associated with construction and shall be physically excluded as part of project establishment.

Package 5:

Campsie:

Campsie Station is located to the west of the Beamish Street overbridge. The station area is bounded by Lilian Lane/South Parade to the south, Wilfred Avenue/North Parade to the north, and Beamish Street to the east. The station entrance is located on the overbridge. RailCorp S.170 Heritage and Conservation Register (4801101) and Canterbury LEP 2012 (I140) as holding local heritage significance.

Dulwich Hill:

Dulwich Hill Station is located west of the Wardell Road overbridge. The station area is bounded by Bedford Crescent to the north, Ewart Lane to the south, and Wardell Road to the east. The station entrance is on Wardell Road. Dulwich Hill is listed on the RailCorp S.170 Heritage and Conservation Register (4801909) Marrickville Local Environment Plan (LEP) 2011 as "Dulwich Hill Railway Station Group", LEP# I316 as holding local heritage significance.

Punchbowl:

Punchbowl Station is located to the east of the Punchbowl Road overbridge. The station area is bounded by commercial land uses and a car park fronting The Boulevarde to the south, Warren Reserve and Urunga Parade to the north, and Punchbowl Road to the west. The station entrances are located on Punchbowl Road (via Warren Reserve) to the north, and The Boulevarde to the south. Punchbowl Station is listed as local heritage significance on the RailCorp S.170 Heritage and Conservation Register (4802009) and Canterbury LEP 2012 (I155). Punchbowl is also an area of potential archaeological deposits (PAD), S2B PAD02 which is located in a small park between Punchbowl Road and Urunga Parade. S2B PAD02 is within the Project area and would be impacted by works associated with construction of the northern entrance to Punchbowl Station. This is however subject to further assessment and falls outside of the scope of this application.

Appendix 1 and 1.1 identifies the location of the proposed works in relation to environmental sensitive areas and receivers and provides extensive mitigation measures in accordance with the CEMF and the REMM.

Work methodologies and site location:

WE38 Possession and until Construction commencement.

Note: works specific to WE38 Possession have been assessed from the perspective of noise and vibration separately under the OOHWA 001 and shall be undertaken in accordance with OOHWA 001 following approval from Sydney Metro. All works not assessed under OOHWA 001 shall be conducted in standard hours (SH).

Item 1: Survey, survey facilitation and investigations works.

Site investigations (non – invasive) survey. Non-invasive survey using handheld inaudible equipment such as CCTV, 3D scanning, laser measurements, building condition surveys are planned to take place across all six stations at various points within the station precinct to confirm design requirements, heritage documentation and services. These works are considered inaudible with no physical impacts and negligible impacts to station customers, commuters or members of the local community.

Invasive site investigations shall take place across all location not on the State Heritage Register or under archaeological management (not at Belmore within the SHR curtilage or the AMZ) for the duration of the WE38 possession (not Belmore) and as required for the subsequent weeks during standard hours where access permits (all stations including Belmore MSB). The investigations are required to further advise Downer on the current services arrangements (in accordance with CoA E71) and update known geotechnical data and waste classification details (in accordance with CoA E76) .

Invasive investigations shall involve initial saw cuts (where required) to expose sub surface ground conditions, potholing using core drills and or non-destructive digging using either hydro vac truck or dry vac truck. Small (3.5tn) excavators will be used to backfill the test pits / investigation locations with clean material, compacted and resurfaced in asphalt or concrete depending on the original surface.

To prevent any cross contamination during backfill or unlawful removal and disposal from site, any excavated materials shall be stored within Project laydown area to await waste classification results prior to offsite disposal to a suitably licenced facility. Or disposed of directly as liquid waste from the NDD / Vac trucks at facilities licenced accept liquid waste.

The work teams will be moving within the station boundary over the course of WE38 and will be working at each station simultaneously. The locations for the investigations are and illustrated in the diagrams within Appendix 1.1 (Staging diagrams)

Note: *Specific to Belmore as discussed above the only invasive works to be conducted within the Belmore Project boundary is specifically itemised to the locations of the MSB and shall be conducted in the weeks following WE38 during standard hours. As confirmed in Appendix 5, the MSB is outside of both the Belmore SHR and the AMZ under an AMS and as such no further consultation and or mitigation measures are required* (only unexpected finds).. *Downer will delineate physically the SHR curtilage boundary plus a 2-meter buffer zone to the extent of the MSB location for added delineation and assurance. To ensure the PAD01 at Belmore is not encroached during access to the MSB area, physical exclusion zones shall be added by way of water filled barriers / ATF as both options present suitable and non-penetrative exclusion methods.*

WE38 Possession and until Construction commencement

Item 4: Operation of ancillary facilities :

In reference to the SPIR and the Approved MWA001 the Project intends to operate the ancillary facilities in the below table and approved locations. The temporary compounds are to be installed prior to WE38 Possession to allow for "onsite" surveillance during the Possession and the subsequent weeks. The operation of the compounds is fundamental to the delivery of the Projects and shall allow for greater supervision of the workforce during minor works execution. The operation of the compounds shall be limited to general project management deliverables inclusive of meetings, briefings and training.

Each Station compound is expected to have approximately 5 full time staff with intermittent work groups raging from 2 to 50 depending on the time and scope (WE38 for example is anticipated to see a larger number of individuals operating from each compound compared to the subsequent weeks).

The layout and configuration of the compounds has been pre-determined and approved in MWA001. Each compound based on spatial constraints shall have limited parking with team members encouraged to maximise the use of public transport in accordance with REMM TC15 and Downer's Green Travel Policy.

The minor noise generated impacts from the use of the compounds as office space is consistent with the Projects CNVMP and CNVIA. If under temporary generator power supply the operation of ancillary facilities shall be limited to standard hours unless otherwise approved through an Out of Hour Works Application. All ancillary facilities shall be fitted with automatic closing door systems to minimise doors being left open and any nuisance of "people talking".

Waste shall be managed in accordance with the Projects CEMP and associated waste management procedures.

SPIR reference	Location	Existing use
C3	Floss Street, Hurlstone Park	Roads reserve and rail corridor
C12	Bridge Road, Belmore	Sydney Trains maintenance facility
C16	The Boulevarde, Wiley Park	Rail corridor, road verge
C2	Ewart Lane, Dulwich Hill	Rail corridor, parking
C8	Lilian Street, Campsie	Rail corridor, parking
C18	Urunga Parade, Punchbowl	Rail corridor
C19	Urunga Parade, Punchbowl	Rail corridor, road reserve

WE38 Possession and until Construction commencement

Item 5: Minor clearing and relocation of vegetation

Tree trimming and removal is scheduled to take place at two of the six stations during the W38 possession. These stations are Hurlstone Park (approximately 20 trees), Wiley Park (approximately 25 trees). Tree trimming is scheduled to take place at and Dulwich Hill (approximately 10 trees) however this is pending additional arborist and ecologist advice and an update to the submitted E5 Tree Report Rev 0 (or latest revision at time of approval). The tree species are consistent with the existing clusters as assessed by Sydney Metro's Design Contactors in the below reports and subsequent arborist reports conducted by Downer (namely planted exotic and native with clusters of weeds common to the rail corridor with no species identified as threatened or endangered ecological communities). These reports have been used to provide the Projects Tree Report Rev 0 (or latest revision at time of approval) in accordance with CoA E5

and have been submitted to Sydney Metro as a stand-alone approval pathway which shall dictate the timing of tree impact (tree impact subject to E5 approval)

- Hurlstone Park Station Arborist Report SMCSWSWM-MTM-WHP-LA-REP-131000
- Wiley Park Station Arborist Report SMCSWSWM-MTM-WWP-LA-REP-231000
- Dulwich Hill Station Arborist Report SMCSWSWM-MTM-WDH-LA-REP-121000 (note Dulwich Hill tree trimming pending additional arborist and ecologist advice and not submitted as part of Tree Report Rev 0 (or latest revision at time of approval)
- Downer Group - Southwest Metro Package - additional tree removals Wiley Park Station
- Downer Group - Southwest Metro Package - additional tree removals Hurlstone Park Station

In addition, and in accordance with the Downer EMS, no vegetation or land is permitted to be disturbed without the approval and issuing of Downer's *DG-ZH-FM071.3 Land or Vegetation Disturbance Permit* Until (See Appendix 2.1).

In accordance with REMM B2 Downer has sought ecologist advice on the exact number, species and total impact from the proposed works through the required Pre-clearance surveys for each station (Hurlstone Park and Wiley Park at this stage). Further to the compliance with REMM B2, as there is the presence of fauna (namely nesting Ibis's at Wiley Park and a number of native trees) compliance with REMM B6 shall be demonstrated through the attendance of a trained ecologist at Wiley Park during clearing works with the addition of WIRES representation.

At Hurlstone Park the ecologist's Pre-clearance survey evaluated the trees and vegetation as not having potential fauna habitats. To demonstrate compliance with REMM B6 If a nest and/or possum drey is encountered, the works will cease until the ecologist has inspected the area, implement suitable catcher / relocation procedures prior to any works recommencing.

The ecologist Pre-clearance surveys are detailed in Appendix 7 (Wiley Park) and Appendix 8 (Hurlstone Park).

The locations of the intended tree trimming, and removal is illustrated in Appendix 1 for each station.

With respect to the methodology, the tree trimming, and removal shall involve small teams of arborists who will access the trees either from ground level or via EWP's to systematically and safely remove the identified trees. During the felling process the tree branch sections shall be fed through a woodchipper and converted into mulch (where feasible and practical the mulch shall be retained and reused on site for erosion and sediment controls as additional and localised ground cover). The tree trimming and removal has been scheduled during the programmed Sydney Trains possession and power outage to minimise the risk to construction workers and arborists from the potential of clashes with the OHLE and / or risk of falling branches into the live corridor. All tree trimming and removal works shall be conducted in accordance with the mitigation measures and arborist advice as per E5 Tree Report Rev 0 (or latest revision at time of approval) pending Sydney Metro approval.

WE38 Possession and until Construction commencement

Item 6: Installation of mitigation measures, including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments.

Hoarding installation shall take place across all non-State Heritage Listed stations (not at Belmore) for the duration of the WE38 possession. Hoarding installation on platforms and around the MSB's shall involve localised saw cuts and minor hydro excavation (NDD) for hoarding post footings followed by localised minor concrete pours for the post installation and hand tools to fix hoarding panels. Any excavated materials shall be transported offsite as liquid waste to a suitably licenced facility.

Following installation, the hoarding shall provide a safe and secure workspace and provide physical separation between the station's construction activities and members of the public, station staff and active trains.

Installation of additional environmental controls is likely to take place in localised areas during the WE38 possession works and the subsequent weeks for task specific activities. for the purposes of this application this shall be in accordance with the ECM's / ESCP's as listed in Appendix 1 at all stations. The principle environmental controls shall consist of boundary sediment fencing, permeable ground cover such as ballast and blue metal, coir logs, geofabrics and sandbag bunding's. Mulch ground cover shall also be used in localised areas as described in Item 5 above where suitable. Delineation of Tree Protection Zones shall be conducted in accordance with arborist and ecologist advice. The installation of the physical exclusion zone around the PAD at Belmore and Punchbowl shall be installed under consultation and advice from the Projects Heritage Consultant in accordance with Appendix 5. To prevent any penetrative impacts to the PAD location the proposed methodology for the PAD exclusion zone is ATF fencing or water filled barriers with appropriate signage. All future and station specific exclusion zones shall be incorporated into task specific methodologies and ECM's as the project works progress.

Post WE38 Possession and until Construction commencement

Item 8: Utility relocation and connections

During SH, following the WE38 Possession and specific to Hurlstone Park, in accordance METRON T2M Stage 3 design package Downer intend to install an 80m drainage line for the new MSB to allow for the safe disconnection and decommission of the existing drainage which currently runs under the MSB proposed location.

The works would involve an 80m linear excavation to a depth of 1.5m along the same alignment as the existing drainage system and a minor temporary diversion. Excavated material shall be locally stockpiled within the Project boundary and covered in geofabric sheeting with a sandbag perimeter base bund. Once tested shall be removed from site to a suitably licenced facility.

Once the drainage route has reached design depth imported material shall be used as bedding, the 375mm pipe installed, additional back fill and final compaction completion. Once the line has been fully installed and tied into the existing, the existing can be decommissioned and removed at a date yet to be determined. This methodology shall

ensure there is no period without a continuous drainage solution and shall allow for the existing to be decommissioned and the new line installed to not clash with the new MSB building.

Item 11: Any other activities that have minimal environmental impact:

WE38 possession.

Dulwich Hill: Piling for footing construction and removal of redundant overhead wiring structure

During SH, Minor piling using an excavator with auger attachment and the pouring of the overhead line stanchion footings (following the completion of the minor piling) has been scheduled at Dulwich Hill during the WE38 possession. The works involve utilising a 12tn hi-rail excavator with an auger attachment to bore the piles in proximity to both city and country tracks running either side of the Dulwich Hill island platform. Once the piles have been installed a concrete truck with boom line shall be utilised to pour both piling locations with approximately 1.5m3 of concrete, per footing to complete the required footing design for the future installation of the overhead line stanchion. The footings have been planned to take place during Saturday 20th March between 0800-1800.

Following the completion of the footings the redundant overhead wiring structure which currently sits adjacent to the new footing's location (between the Sydney Trains and ARTC tracks) shall be removed. Due to a clash of work groups the removal of the redundant overhead wiring structure is planned to take place during the evening and night period at Dulwich hill and will involve hand tools and EWP's to safely access the structure and dismantle it. A hi-rail, hi-ab shall be used to lower the dismantled structure items to ground level for removal from site as metal recycling.

Works for the Overhead Wiring Removal are planned from 1800-0800 on Saturday 20th – Sunday 21st March 2021 it should be noted this is the only planned night works for any minor works in this application and is in accordance with the WE38 OOHWA.

Post WE38 possession and until Construction commencement

Wiley Park: Grubbing and temporary piling pad

Following the receipt of approval of the E5 Tree Report Rev 0 and submission to DPI&E, in the week following the WE38 possession the area of trees removed for the MSB shall be grubbed, removing any remaining tree stumps and localised roots. This shall be conducted during standard hours behind the hoarding as erected during WE38. The grubbing shall create a level surface to allow for the subsequent construction of the MSB building. Following the receipt of waste classification results, as the grubbing shall involve ground level vegetation screeding and grading at the MSB designed location, all excess arisings shall be loaded into Bogies and transported for disposal at a suitably licenced facility.

Following the grubbing and level ground profile suitable layers of geofabric followed by temporary DGB20 / road base shall be laid as ground cover and to act as a temporary piling pad for the MSB retaining walls. Additional perimeter sediment fencing shall be installed.

Wiley Park: temporary access road:

JHLOR Contractors have constructed a temporary access road at Wiley Park from the rail corridor access gate on the north side of the station of Shadforth Street, running west along the rail corridor boundary fence line. In the subsequent days following the WE38 possession Downer intends to refresh and extent this temporary access road by an additional 40m to the end of the planned MSB footprint. This shall allow a stabilised access road for future deliveries at works associated with the MSB. The temporary access road shall be constructed on a geofabric base layer creating a barrier between the existing ground conditions (existing temporary access road and unmade ground) following by 200mm of road base. The existing perimeter sediment fence shall be removed and replaced with a new and robust sediment fence which shall run the length of the access road with a return at the end, creating an enclosed and stabilised access point whilst containing and any sediment. The existing grassed area further west of the access road shall remain untouched.

Hurlstone Park: Temporary piling pad

In the week following the WE38 Possession during standard hours, in accordance with the METRON T2M Stage 3 design package Downer intend to install a 50m by 20m temporary piling pad to facilitate the subsequent MSB building piling works required at a later date. The temporary piling pad installation shall involve minor ground stabilisation and grading using excavators to achieve the required profile. Graded material shall be locally stockpiled and covered in geofabric sheeting with a sandbag perimeter base bund. Once tested shall be removed from site to a suitably licenced facility.

Following the level ground profile suitable layers of geofabric followed by temporary DGB20 / road base shall be laid as ground cover and to act as a temporary piling pad for the MSB.

Punchbowl and Campsie: Following the WE38 Possession and during standard hours Downer intends to commence the demolition of the existing buildings at both Campsie and Punchbowl which are marked on the latest design drawings due to their clash with the newly proposed MSB's.

Prior to any demolition additional hazardous material surveys shall be conducted by suitably qualified hygienists. Depending on the results of any condition surveys in consultation with Downer Zero Harm team and engagement with a licenced demolition contractor the demolition is planned to commence in a sequence as determined by the demolition contractors works methodologies. Demolition is considered to take approximately 2 weeks to reach the design finish to allow for preparation of grounds for the future MSB buildings. All waste demolition material shall be stacked within skip bins adjacent to the demolition locations and managed in accordance with the CEMP and waste procedures for the Projects. Atmospheric and occupational air monitoring shall be installed and air quality mitigation such as misters and water suppression shall be utilised as required.

Plant list (all stations)

- Excavators (3t-13t)
- Delivery truck

- Site utes
- 2t tipper
- Road Sweeper
- Handheld survey equipment
- Hiab (hi-rail and standard)
- Water cart/trailer (as required for any dust suppression)
- Hi Rail/On road Sucker truck
- Demo saw
- 12t balloon tyre excavator / hi rail excavator
- Hi-rail dumper
- 2t tipper
- Lighting towers
- Hand tools (including hand held coring drill)
- Concrete truck and pump
- Bogie
- Chain saw (only for stations as per item 5 above)
- Woodchipper (only for stations as per item 5 above)
- Piling rig (Dulwich Hill only)
- Handheld survey equipment
- EWP
- Site utes
- Road sweeper (as required)

Working Hours

All works associated with WE38 are in accordance with the times listed and confirmed within OOHWA WE38 Rev01 (or latest revision at time of approval). All other minor works items are during standard hours (SH) As a summary this includes:

Item 1: SH Monday - Saturday and the below during WE38

Location	Planned Timing	Work Period
Belmore station precinct and MSB (non-invasive)	0800-2000 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Hurlstone Park station precinct and MSB	0800-2000 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Wiley Park station precinct and MSB	0800-2000 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Punchbowl station precinct and MSB	0800-2000 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Campsie station precinct and MSB	0800-2000 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Dulwich Hill station precinct and MSB	0800-2000 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)

Item 4: as per standard hours or non-standard if approved under an OOHWA

Item 5: Wiley Park and Hurlstone Park (WE38) Dulwich Hill (following WE38)

Location	Planned Timing	Work Period
Hurlstone Park MSB location	0800-1800 Saturday	Standard Hours (SH)
Wiley Park MSB location	0800-1800 Saturday	Standard Hours (SH) Out of Hours (Day)

Dulwich Hill MSB location	0800-1800 Monday – Friday	Standard Hours (SH)

Item 6: All during WE38 except ATF for Belmore

Location	Planned Timing	Work Period
Belmore MSB only and during SH mon-fi	0800-1800 Monday – Friday	Standard Hours (SH)
Hurlstone Park station platforms and MSB	0800-2200 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Wiley Park station platforms and MSB	0800-2200 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Punchbowl station platforms and MSB	0800-2200 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Campsie station platforms and MSB	0800-2200 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)
Dulwich Hill station platforms and MSB	0800-2200 Saturday and 0800 – 1800 Sunday	Standard Hours (SH) Out of Hours (Day) and Out of Hours (Evening)

All items below are not to be conducted under OOHW but in the hours as stated.

Item 8: Standard Hours

Items 11:

Dulwich Hill: Piling for footing construction (during SH) followed by the removal of redundant overhead wiring structure – OOH (Evening) and OOH (Night)

Hurlstone Park temporary piling pad - Standard Hours

Wiley Park grubbing and piling pad - Standard Hours

Wiley Park temporary access road – Standard Hours

Campsie and Punchbowl demolition - Standard Hours

Planned Commencement Date:

All minor works scope items are planned to commence simultaneously across the 6 stations listed in this application during Standard Construction Hours (SH) and Out of Hours in accordance with OOHWA WE38 from Saturday 20th March 2021 and be complete by Sunday 21st March. All non-possession related works are planned to be completed during SH by Friday 16th April 2021.

Local Sensitivities:

Describe the presence (if any) of local sensitive environmental areas and community receptors

T3 Line between Dulwich Hill and Punchbowl Station

There are a number of residential properties located within close proximity to the work locations 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, particularly during OOHW . The specific noise and vibration impacts to associated receivers during OOHW for WE38 period is captured with the relevant mitigation measures within the WE38 OOHWA Rev1 (or latest revision at time of approval). For station specific and WE38 targeted noise impacts refer to the WE38 OOHWA Rev1 (or latest revision at time of approval) for relevant information.

The works outside of OOHWA WE38 specific to this application shall be conducted during standard hours (SH) in accordance with the Project CNVMP and CNVIA. Any potential impacts to these properties will be managed in accordance with the Construction Noise and Vibration Strategy, including relevant notifications.

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.

All invasive works (NDD, potholing, localised hoarding installation and minor grading for piling pads) are localised and or shallow therefore risks associated with the disturbance of contamination are considered to be low. Workers will report any finds in accordance with the Sydney Metro unexpected finds procedure for contamination as detailed in Appendix 2.

Acid sulphate soils with respect to Package 5 and 6 stations have been assessed as Class 5 presenting the lowest risk. Works shallow in depth not reaching below 1.5m in any location and therefore risks associated with the disturbance of PASS/ASS are negligible.

Minor works at Belmore Station will occur within the archaeological management zones as defined in the AARD. However, as the works within this zone are specifically related to non-invasive survey the risk is considered as negligible and do not require an AMS. This has been further confirmed by the Projects Heritage and Archaeological Consultants, Artefact and evidenced within Appendix 5.

As discussed above the only invasive works to be conducted within the Belmore Project boundary is specifically itemised to the locations of the MSB and shall be conducted in the weeks following WE38 during standard hours. As confirmed in Appendix 5, the MSB is outside of both the Belmore SHR and the AMZ under an AMS and as such no further consultation and or mitigation measures are required (only unexpected finds). Downer will delineate physically the SHR curtilage boundary plus a 2-meter buffer zone to the extent of the MSB location for added delineation and assurance.

Two areas that potentially contain aboriginal archaeology, known as PADs (Potential Archaeological Deposit) are located within the EIS study area. PAD01 is located outside the Project boundary at Belmore. PAD02 is located within the Project boundary, but outside the rail corridor or any works associated with this application at Punchbowl. No laydown or any works will take place within these areas. In addition, both PAD's shall be physically delineated within non ground penetrative methods to further reduce unintentional impacts (ATF / water filled barriers) this is in accordance with Appendix 5.

As discussed on page three of this application, a number of areas of Endangered Ecological Community (EEC) under the TSC Act have been identified within the vicinity of the work zone. These areas are shown in Appendix 1 where they relate to the proposed work areas. No works will occur within the EEC areas. Appropriate delineation and signage will be in place.

A number of patches of the threatened plant species Acacia Pubescens are located within the rail corridor on the countryside of Punchbowl Station. These areas have been excluded from the project footprint and are shown in Appendix 1. The closest patch is located adjacent to compound "C21" which is not to be utilised or is part of this application. Downy Wattle (Acacia pubescens) is listed as vulnerable under the EPBC Act and TSC Act. The EIS states "The patches of stems recorded are located mainly in the vicinity of Punchbowl Station, with around two stems recorded in the rail corridor, and one stem in a Council reserve around 100 metres east of the Yagoona substation. The project has been designed to avoid impacting on the recorded locations of this species." Works, including trimming or removal of vegetation, will not occur under this PCMW.

In addition, there is an existing stand of degraded Sydney Turpentine-Ironbark Forest (STIF) at Dulwich Hill, within the corridor adjacent to Dudley Street. Whilst this is noted, there are no works planned adjacent to the cluster. Service searches and waste classification testing is planned within the vicinity however suitable exclusions zones / TPZ shall be established prior to any works within any proximity. This is further highlighted on the Projects ECM.

A number of habitat features are present within the work area including;

- Hollow bearing trees (as observed at Wiley Park)
- Habitat for Grey-headed flying-fox
- Habitat for Australian Ibis roosting (as observed at Wiley Park)

In accordance with the Projects Pre-clearance ecology surveys (REMM B2) a number of trees at Wiley Park (not at Hurlstone Park) proposed to be removed contain nesting Ibis and potential habitat due to the hollow bearing nature. Ecologist advice has been obtained and detailed within *20127 - Let4_Wiley_Park_Pre-Clearance* which concludes the presence of a suitably trained ecologist to safely and effectively remove the Ibis nests prior to any tree trimming or removal. Depending on the presence of chicks / eggs at the time of removal the chicks / eggs they will be relinquished to a qualified wildlife carer (WIRES) or taken to the nearest veterinary clinic for treatment if injured by the Project ecologist. shall be taken to WIRES and the nest disposed of, should no eggs be present the nest shall be disposed of.

Once all nests have been inspected and any resident fauna rescued, trees should be vigorously agitated immediately prior to felling in order to encourage any remaining potential resident fauna, such as roosting adult ibis and possums, to self-relocate. Habitat trees containing hollows will be thoroughly inspected by an ecologist immediately following felling. Should fauna be inadvertently injured, it will be taken to the nearest veterinary clinic for treatment, or, if the injuries are deemed too severe, humanely euthanised on site by the attending ecologist. All work should cease until the ecologist has returned and is satisfied that no fauna is likely to be impacted.

In addition, their recommendations in accordance with B6 is to have an ecologist in attendance during native / habitat tree trimming and removal to provide clearance that the potential hollow bearing trees are free from habitat. Following the removal of the habitat trees the Project should provide offset nest boxes as detailed within *20127 - Let4_Wiley_Park_Pre-Clearance.*

"two habitat trees containing five medium hollows and two small hollows are proposed to be removed, it is recommended that seven nest boxes be installed in the surrounding vegetation being retained. Five possum boxes and two microchiropteran bats are recommended as these are the most likely species to utilise the current hollows. The nest boxes should be made of wooden material and installed at a height of approximately 4 m. Furthermore, the nest boxes should face either a north-eastern or south-western direction in order to minimise exposure to the harsh, direct sunlight from the afternoon sun"

Visual amenity – the visual aspects of laydown areas, minor construction impacts (hoardings, piling pads) and site compounds are consistent with the industrial nature of the rail corridor. Lighting towers will be pointed away from receivers to minimise the impacts of lighting spill when required for future OOHW scenarios.

The loss of visual amenity is considered with respect to the removal of a number of identified trees to facilitate the MSB buildings, however these are consistent with the EIS and the SPIR as approved for the Project.

"The biodiversity assessment for the preferred project was undertaken based on the assumption that all vegetation within the rail corridor would need to be removed to construct the preferred project" (SPIR, Section 2.4.4)

	This loss of visual amenity is considered to be temporary with the planned replanting and landscape plans to mitigate such impacts by project completion. Works may occur in the vicinity of local stormwater systems (within 30m). 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. This shall be managed in accordance with the CEMP and sub plans. Appropriate approvals, including Road Occupancy Licences and Traffic Control Plans, must be in place where works on roadways are required. Traffic Control Plans have been provided in relevant to the specific works in Appendix 6 to manage vehicle, construction worker and pedestrian interface during the WE38 Possession and subsequent SH works. It is noted that during the WE38 possession a number of the Station commuter car parks are required to be temporarily closed to facilitate access for the planned works. The temporary closure of these car parks have been communicated to the local residents via the targeted door knocks and to the wider community who do not fall within the door knock zoning via installed and targeted signage. The signage explaining the closures has been installed within the seven-day period prior to the closure. The impact is considered as temporary and limited to the car parks identified as station commuter car parks, considered to have minimal impact due to the station closures during the WE38 works. This is consistent with the identified traffic and parking impacts in accordance with the SPIR. Temporary parking loss per station is summarised below: **- Dulwich Hill:** twelve spaces **- Hurlstone Park:** five spaces **- Campsie:** eight spaces **- Belmore:** zero spaces **- Wiley Park:** five spaces **- Punchbowl:** three spaces Pedestrian access will be maintained through suitable pedestrian diversions in any area where works are occurring, outside of the planned WE38 Possession, where there shall be no public access to any of the stations.

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 ECM for the proposed works are included in Appendix 1. Staging diagrams are included in Appendix 1.1 An Environmental Risk Assessment 1.2 Unexpected finds procedure as detailed in Appendix 2. DG-ZH-FM071.3 Land or Vegetation Disturbance Permit Appendix 2.1 Community Notifications in Appendix 3. Artefact Heritage advice in Appendix 5 Traffic Control Plans in Appendix 6 Ecologist pre-clearance survey (Wiley Park) in Appendix 7 Ecologist pre-clearance survey (Hurlstone Park) in Appendix 8

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 works associated with this application inclusive of WE38 Possession works are included within the March 2021 Monthly Community Notice for each station and included in Appendix 3. Any works which are required to exceed March and continue into April shall be included in the April notification.

What community consultation is planned to be undertaken?	Ongoing consultation will and has occurred through the Monthly Community Notice with the addition of the installation of signage to advise the community of any impacts to any parking (particularly during the WE38 planned possession). The signage has been installed within the specified timeframes prior to any occupancy of commuter carparks. Door knocks detailing the WE38 and general upcoming works have been completed (Friday 12th March) for all those residents within the specified distances in accordance with OOHWA WE38 Rev01. This is in accordance with the seven days prior timeframe.
If drafted already, attach applicable Community Notification as Appendix 3.	

Part 6: Contact Details

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

Name:	Kristo Bugarija	**Position:**	Senior Project Manager	**Phone:**	0428 161 912
	Gareth O'Brien		Environment and Sustainability Manager		0428 194 445
	Julie Henderson		Community Relations Manager		0415 161 810

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:	Gareth O'Brien		
Signature:		**Date:**	Rev 0: 05/03/2021 Rev 1: 16/03/2021 Rev 2: 17/03/2021

Determination Page

TfNSW/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).

	TfNSW Principal Manager, Communication & Engagement – Endorsement (required for all applications)	**TfNSW Principal Manager, Sustainability, Environment & 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:			
Name:	May Li Foong	Fil Cerone	Brett McLennan
Date:	18/3/21	19 March 2021	18/03/21
Comments:	Nil		*Supporting letter attached as Appendix 4 if necessary.* Nil
Conditions:			*Supporting letter attached as Appendix 4 if necessary.* Nil

☒	Approved (by TfNSW)
☒	Endorsed (by Environmental Representative)
☐	Rejected

Appendix 1:

Environmental Control Map and Environmental Risk Assessment.

Haulage Route (note Ewart Ln one way from west to east)	Retain Heritage Prior consultation must with Environment/Heritage Officer on moveable heritage, refer table 10	Rain/storm water run off direction to nearest existing drainage	Site laydown / ongoing works areas/ designated parking areas ATF fencing (sediment fencing/coir log to be installed at perimeter)	Tree protection measures to be installed as required (fencing, No-Go/TPZ signage). Non-native vegetation.
Traffic Management Control		Native Vegetation Protection (fencing, No-Go/TPZ signage		Proposed footbridge
Spil Kit	Site Access	GSW	Concrete Line Pump for overhead wiring pile	Hoarding for new stairs/lift pit/central pier/Platform 1and 2
Nearest Residential Receiver	Nearest Commercial Receiver		Storm water inlet	
Noise Monitoring locations				

Downer / sydney METRO	ECM	Dulwich Hill	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–DU - 05032021 v.1	Sheet No	1

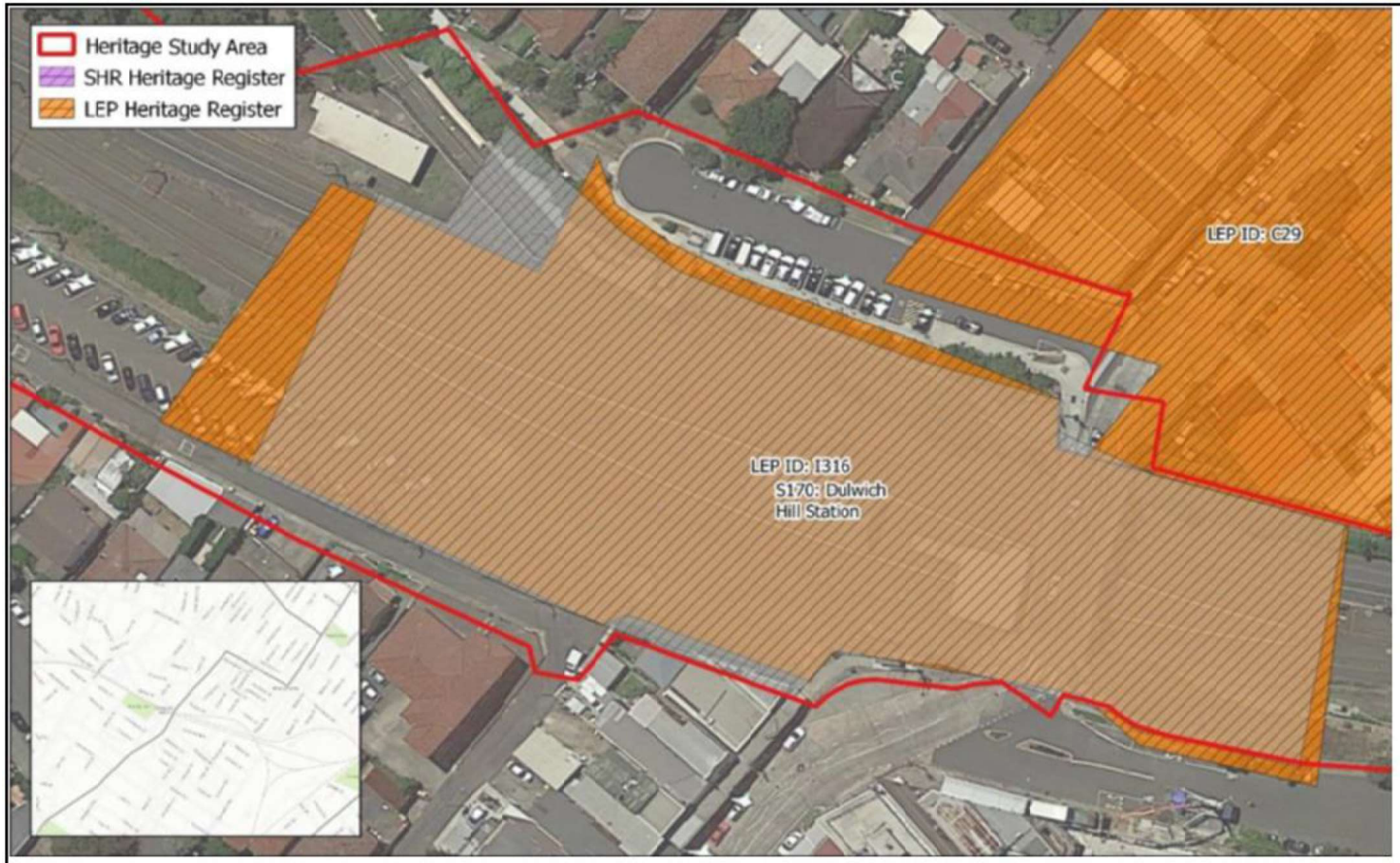

Figure 1 – Detailed view of Heritage Areas, refer to Table 10 on Moveable Heritage

Downer / sydney METRO	ECM	Dulwich Hill	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–DU - 05032021 v.0	Sheet No	2

Table 10: Dulwich Hill Station moveable heritage

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance / Condition (2019)	Artefact Significance/ Condition (2020)	Likely impacts	Recommended Action	Image
DHL0001	Furnishing	Green cast iron safe	Overhead Booking Office	Standard 'off the shelf' safe used throughout entire rail network for select work practices i.e. cash handling, safety and security of assets.	Little to Moderate/ Good	Little to Moderate/ Good	Overhead booking office to be preserved, refitted for Metro operations	Temporarily remove during works, restore to original location on completion of works.	
DHL0002	Safe	White cast iron safe	Platform building	Standard 'off the shelf' safe used throughout entire rail network for select work practices i.e. cash handling, safety and security of assets. Might contribute to the interpretation of historical ticketing practice in the railways; historical railway furnishings; historical methods of security in the railways etc.	Little to Moderate/ Good	Little to Moderate/ Good	Station platform building rooms to be heavily modified.	Temporarily remove during works, restore to platform building storage if possible; relocate to overhead booking office if no platform storage available.	

Downer / sydney METRO	ECM	Dulwich Hill	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–DU - 05032021 v.0	Sheet No	3

Erosion Sediment Control Plan – Hoardings, Surveying, Pot Holing, Vegetation Clearance (section 5.1.4 of CEMP)
Clearly delineate access points
Exclusion zones would be designated on construction sites to limit disturbance
No stockpiles of materials or storage of fuels or chemicals would be located adjacent to the existing culverts
Diversion drains/bunds are to be installed on the high side of stockpiles if run—off from upslope lands could impact on the stockpile
Water is likely to head west away from the station towards the open culvert near the MSB. Install jute mesh post work completion, sed fence boundary and culvert protection.
Undertake progressive stabilisation of ground surfaces as quickly as possible as they are completed rather than at the end of the works program
Temporary ground covers such as hydraulic soil stabilisers or geotextile fabric will be used as much as possible to stabilise batters, stockpiles and large surface areas
To cover the scope of works such as surveying and pot holing install localised controls including sediment bags, silt socks, spill kit and geofab to avoid spillage of sediments.
Locations of nearest existing drainage channels and stormwater inlets to the works are displayed on the ECM (ESCP) map
Silt socks and or coir logs will be installed around stormwater inlet pits where appropriate and where they will not cause or exacerbate flooding
All erosion and sediment controls will be inspected by the Environmental Manager (or delegate) at least weekly, before forecast rainfall exceeding 20 mm in 24 hours, after rainfall exceeding 20 mm in 24 hours and before a site closure of two days or more. Maintenance will be carried out as required prior to the next forecast rainfall event
Site supervisors will undertake daily erosion and sediment control checks and record any issues within site diaries. Site supervisors will ensure controls are maintained and in working order

←	Rail corridor rain/storm water run off direction to nearest existing drainage channels and stormwater inlets
▭	Vegetation Clearance, Install jute mesh after works as ground cover to mitigate dust/air pollution and erosion
★	Storm water inlet

Concrete washout will be confined to designated concrete washout bags within (site compound) check with Environmental Manager on recycling of concrete waste. Concrete washout (to be installed prior to pours, temporarily)

Downer / sydney METRO	ECM - ESCP	Dulwich Hill	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–DU - 05032021 v.1	Sheet No	4

SMSU6: ENVIRONMENTAL CONTROL MAP – DULWICH HILL STATION

GENERAL	
Project	Southwest Metro Station Upgrade Works Package 6
ECM	This ECM is a supplementary document to the SMSU6 CEMP and prepared in accordance with CoA SSI 8256, SM City & Southwest Sydenham to Bankstown Environmental Impact Statement, SPIR and SR.
Activity	Station Upgrade to Metro Standards
Site	Dulwich Hill Station
Planning Approval	SSI 8256
Document Version	0
Site Awareness	The team will be trained on this ECM, general environmental issues, location of sensitive areas and ERSD controls; Works will be subject to inspections and approval by TfNSW NER/ER and Downer Environmental Team; This document will be displayed on site notice board at all times.

PROJECT CONTACT DETAILS		
Title	Name	Number
SM/TfNSW Environment Manager (NER)	Tim Solomon	0400034207
Downer Project Director	Kristo Bugarija	0428 161 912
Downer Project Engineer	Peter D'Costa	0478 074 294
Downer Site Supervisor	Nick De Palma	0418 555 130
Downer Environment Sustainability Manager	Gareth O'Brien	0428 194 445
Downer Environment Advisor	Abe Sharman	0420 989 193
Community Manager	Julie Henderson	0415 161 810
Heritage Advisor	Sandra Wallace	02 9518 8411 (Artefact Heritage)
SM Project Info Line	1800 171 386 1800 612 173 (West)	
TfNSW 24-hr Complaint Line	1800 775 465	
EPA/OEH Pollution Hotline	131 555	
Emergency	000	
WIRES	1300 094 73	

ACTIVITY DETAIL
Description
Early works, site establishment, minor ancillary facilities
Duration
Feb20-Mar20; continual update of this ECM will be undertaken to suit any specific requirements for each stages of works, with all mitigation measures approved by SM NER/ER prior to possession.

KEY ENVIRONMENTAL RISKS	
Heritage	**Dulwich Hill is item of local significance listed on Marrickville LEP 2011 (#I316) and RailCorp s170 heritage register listing #4801909. All works need to be contained within the approved work boundary. Moderate direct and visual impact to items of heritage significance that must be delineated, and all works to proceed in accordance with** Moveable Heritage Strategy (Section 5.2.6 of HMP, Table 10) and Heritage Salvage Register (N/A for Construction as per Section 5.2.7 of HMP) and Unexpected Finds Procedure.
Air quality	Monitor access points to public roads; debris on public roads generated by construction is to be removed/cleared.
Contamination	Medium risk of unexpected contamination finds; Low risk of plant/equipment spills; Low risk of sedimentation runoff; Works to cease immediately if suspected contamination is encountered with area of contamination delineated with signage; Occupational hygienist to attend and provide recommendations in accordance with SM/TfNSW/EPA/Downer guidelines.
Traffic and Transport	Works located on active train lines with public transport commuters with impacts to current traffc conditions including a mix of pedestrians, cyclists, local paring and road traffic.
Noise	Work compounds situated near sensitive receivers including commercial, educational, industrial, residential and place of worship, active and passive recreation areas.

INCIDENT RESPONSE AND REPORTING - Appendix F of CEMP
All incidents would be reported in accordance with SM Environmental Incident Classification and Reporting Procedure (SM-17-00000096).

WORKING HOURS - City and Southwest Construction Noise and Vibration Strategy (SM ES-ST-210)	
• Section 3.6 of CEMP and Section 5 of NVMP • CoA E19 – E26	
Mon – Fri:	07h00 to 18h00
Sat:	08h00 to 18h00
No works on Sundays or public holidays	
As per CoAE24 high noise generating works during standard working hours to be completed during the following periods:	
Mon – Fri:	08h00 to 18h00
Sat:	08h00 to 13h00

* High noise generating activities near receivers should be carried out in blocks that do not exceed three hours each, with a one-hour respite period in between.

Out of Hours Works Assessment Procedure (SM ES-PW-310) to be applied, all works outside standard working hours are considered Out of Hours Works (OOHW) and require approval prior to commencing. The OOHW application form SM-17-00000115 (enclosed in Appendix D of NVMP) to be used in accordance with SM-17-00005396 City & Southwest out of hours work protocol.

MITIGATION MEASURES

Mitigation measures are based on CoA, REMM, CEMF and CEMP and sub-plans (awaiting approval).

General	
Control/Mitigation	Resp
All site personnel (including sub-contractors) to have completed the project induction, including: ▪ Location and proximity of nearest sensitive receivers; ▪ Heritage present on site; ▪ Vegetation to be removed or protected; ▪ Access and egress points; ▪ Unexpected finds procedure for sensitive areas not limiting to contamination, heritage, flora & fauna.	SS / EA / PE
Emergency and Incident response includes incident notification to be undertaken in accordance with the requirements of CoA A36 and A37 and the Sydney Metro Incident and Non-compliance Reporting Procedure SM-17-00000096.	All
Pre-start attendance register, and toolbox attendance register are signed by all site personnel.	SS
No works outside the approved marked boundary.	
Ensure all service identification tasks have been completed and service locations are marked out prior to commencing work.	

Noise and Vibration - CoA E18-34, SPIR REMM: NVC1 – NVC16, Section 9 of CEMF	
Control/Mitigation	Resp
Stationary noise sources such as generators will be enclosed or shielded where practicable.	SS
No swearing or unnecessary shouting or loud stereos/radios on site.	All
No dropping of materials from height, throwing of metal items and slamming of doors.	
Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided.	
Plan traffic flow, parking and loading/ unloading areas to minimise reversing movements within the site.	SS
Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.	All
Loading and unloading of materials/deliveries to occur as far as possible away from sensitive receivers.	
Plant used intermittently to be throttled down or shut down.	
As required by OOHW approval, attended noise monitoring to be undertaken at the most impacted receiver location.	SS / EA / PE
Ongoing noise and / or vibration monitoring not limiting to OOHW would be undertaking during construction at sensitive receivers during critical periods (ie times when noise emissions are expected to be at their highest) to identify and assist in managing high risk noise events.	
Residential grade mufflers are to be fitted on all mobile plant used on Sydney Metro construction projects.	SS
Regular inspection and maintenance of all plant and machinery	
Identifies defective silencing equipment on the items of plant by regular compliance checks on the noise emissions of all plant and machinery used for the Project would indicate whether noise emissions from plant items were higher than predicted.	
Air brake silencers are correctly installed and fully operational for any heavy vehicle	

Soil and Water ESCP as per section 5.1.4 of SWMP and Mitigation Measures as per: ▪ CoA E8 , E9, E38-E41 ▪ SPIR REMM: SC1 – SC8, FHW1 – FHW10, HRS4, ▪ Section 15 of CEMF	
Control/Mitigation	Resp
All chemicals and hazardous liquids would be stored away from drainage lines in a bunded and impervious enclosure.	PE
Spill kits to be located close to active work areas and near chemical and hazardous liquid storage areas as indicated in the ECM.	SS
All staff would be made aware of the location of the spill kits.	SS EA
Vehicles and machinery would be properly maintained and routinely inspected to minimise the risk of fuel/oil leaks.	SS
In the event of a pollution incident, works would cease in the immediate vicinity and Site Supervisor would immediately notify the Downer Project Manager who would notify NER/ER and SM Project Director.	All
All spoil to be removed from site would be classified according to the NSW Waste Classification Guidelines and disposed at an appropriate landfill. Material to be reused or stockpiled on site permanently is to be tested for contamination per the NEPM (ASC) criteria for commercial/industrial land use.	SS/ PE
Immediately report incidents where water has been discharged and not wholly contained within the project boundary.	All
Application as per Water Discharge and Reuse Procedure (SM ES-PW-309) required followed by approval from Environmental Advisor for any reuse or discharge of water.	SS
Any contaminated material stockpiles (asbestos) will be covered on-site and short-term material stockpiles (>5 days not in use) with potential to generate dust will be wetted down or covered to prevent fugitive dust emissions or run-off during wet weather. Long-term stockpiles (>30 days) will be stabilised and /or covered in accordance with "Blue Book" requirements	SS EA

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SMSU6: ENVIRONMENTAL CONTROL MAP – DULWICH HILL STATION

A dewatering permit is to be in place for all dewatering activities, including the dewatering of any groundwater.	EA / PE/ SS
Air Quality - Appendix D: Environmental Procedures CEMP CoA E2, SPIR REMM AQ1	
Control/Mitigation	Resp
Cover stockpiles when not in use to prevent wind erosion and dust.	SS / SE
Cover loads on trucks transporting material to and from the construction site and securely fix tailgates of road transport trucks prior to loading and immediately after unloading.	
Prevent mud and dirt being tracked onto sealed road surfaces. If mud or dirt has been tracked out of site, sweep/remove this material.	
Apply water (with an onsite water cart) on to dampen exposed surfaces (e.g., unpaved roads, stockpiles, hardstand areas and other exposed surfaces).	
Plant and machinery not to be left idling.	
All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.	
Machinery and plant that will be kept on site will be serviced as per manufactures specifications.	
Vehicle movements would be limited to designed entries and exits, work areas, haulage routes and parking areas.	
Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.	
Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.	
Stabilisation of any exposed surfaces as soon as practicable.	
Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken.	SS
Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust.	
Heritage • CoA E10-E17 • SPIR REMM: AH1 – AH5, NAH1 – NAH23 • Section 10 of CEMF	
Control/Mitigation	Resp
All personnel working on site are to be aware of all the heritage elements in the work area and "No go" areas to be clearly communicated.	All
Multiple items of heritage significance to consider (refer this ECM, Section 5.2 Built Heritage Mgt and Table 10 in Moveable Heritage Strategy of HMP) **includes platform buildings, booking offices, retail shop. All these needs to be visibly delineated to minimise the risk of undertaking disturbance.**	

Stop all work immediately when items/ areas of potential heritage are suspected and notify Downer Project Manager and Environment Heritage Officer.	
Sydney Metro Unexpected Heritage Finds Procedure [SM-18-00105232] – Appendix D of HMP will be implemented in case of any unexpected aboriginal or non-aboriginal heritage item is found on site; The site to be delineated with signage as 'no' go' zone, and heritage advisor will be immediately informed and consulted for advise.	
Flora & Fauna - Appendix D: Environmental Procedures CEMP CoA – E3-E6, REMM SPIR REMM, CEMF Section 11	
Control/Mitigation	Resp
Unless stated on the ECM or prior approved by Environmental Advisor, no vegetation is to be removed on site as per section 3.13 Hold Points of CEMP.	SS / SE
Any vegetation not approved for removal or trimming to follow the Flow Chart on clearing procedure under Appendix E (Procedure 1: Biodiversity) of CEMP.	EA
REMM B2 - Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.	EA
REMM B3 - Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	SS / EA
REMM B4 - Impacts to Native and Non Native Vegetation (Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine – Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box) would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.	
REMM B5 - Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	SS
REMM B6 - A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	EA
REMM B7 - Priority weeds would be managed in accordance with the *Biosecurity Act 2015*. Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide.	
REMM LV12 - Trees to be retained would be protected by establishing Tree Protection Zone prior to the commencement of construction including any tree pruning to be undertaken guided by a tree report prepared by a qualified arborist and upon approval from Sydney Metro.	
Immediately report any damage to 1) threatened species 2) retained trees or trees that have been trimmed or removed without approval, and all work to stop immediately;	SS

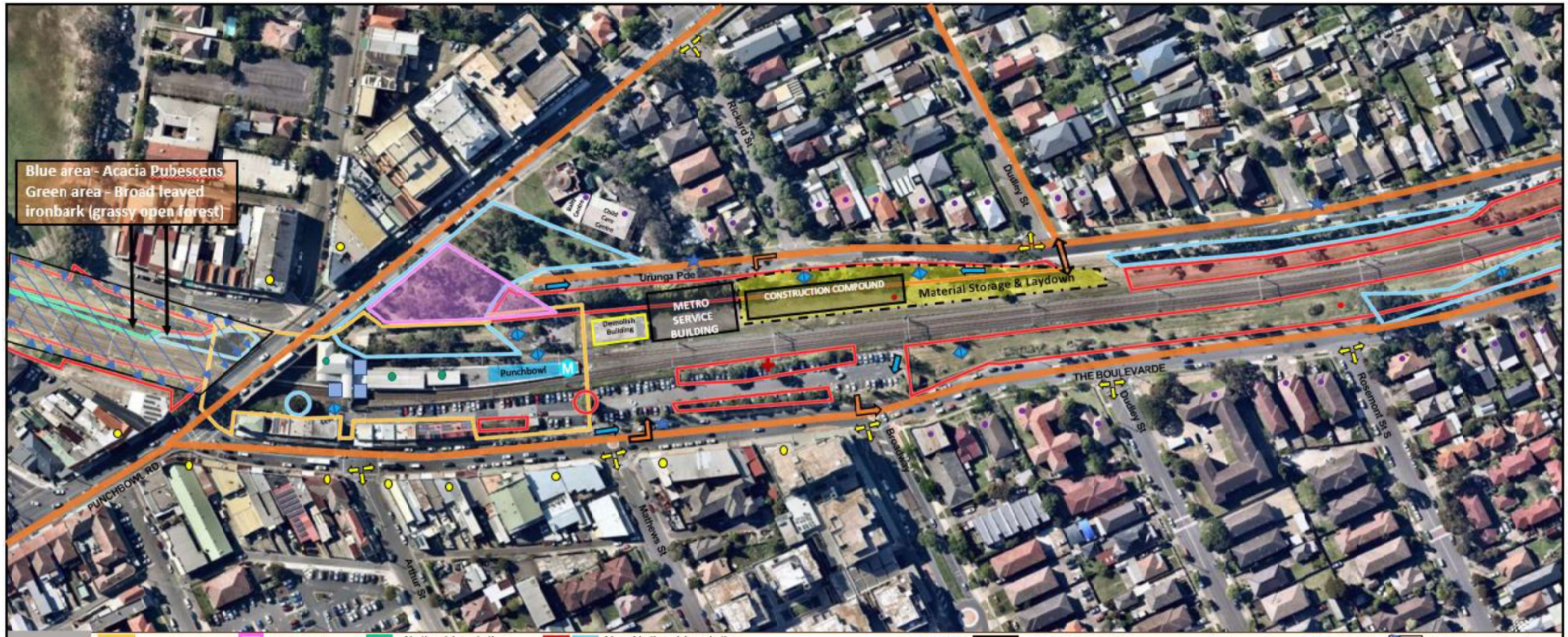
Call a Project Ecologist/spotter/catcher onsite for advise.	
If animals are encountered, leave them alone and contact Site Supervisor and Environmental Advisor.	All
Protection 'nogo zone' to be place for any threatened species	All
Modify the route of trenching to avoid any damage to trees and tree roots.	SS
All stockpiles must be located outside of Tree Protection/Drip Zone	SS
Soil with weed material be removed prior to any movement off site. To reduce the spread of weeds no soil in to be transported into the works areas. Ensure that all machinery, vehicles and equipment are free of weed material before entering and exiting the works areas.	SS
Waste and Spoil - Appendix D: Environmental Procedures CEMP CoA – E73 to E76 REMM – WM1 to WM7	
Control/Mitigation	Resp
Waste disposal locations and applicable EPLs are to be identified prior to disposal and are subject to Downer approval prior to removal from site. – HOLD POINT	All
All recyclable waste would be recycled where possible.	
Material or spoil that has the potential to contain asbestos or other contaminants will be tested and will be managed by an appropriately licensed contractor as required.	
All wastes will be removed from site at the completion of the project and will be tracked.	SS
In accordance with CoA E40, the Unexpected Contaminated Land Procedure and Asbestos Finds Procedure (refer Appendix B of CEMP) to be followed in the event of an unexpected find.	All
Any construction waste generated will be stored in bins as appropriate.	SS
Cover stockpiles with geofab or like material and secure the base to avoid erosion and sediment controls.	
CoA E73 - Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub-plan (Condition C3). Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.	
CoA E74 - 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.	EA / SS
CoA E75 - Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	
CoA E76 - All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with	

appropriate records and disposal dockets retained for audit purposes.	
REMM WM2 - A recycling target of at least 90 per cent would be adopted.	All
REMM WM3 - Spoil would be managed in accordance with the spoil management hierarchy.	
REMM WM4 - Target 100 per cent reuse of reusable spoil.	SS / EA
Traffic • CoA E46 – E53, E54 (Visual amenity. Lighting) • SPIR REMM: • Section B of CEMF	
Control/Mitigation	Resp
Manage traffic in accordance with mitigation measures from Traffic Management Plan.	SS / PM
Obtain Road Occupancy License as when required.	PM
Implement Traffic Controls as per conditions of approval of TCP by the relevant council.	SS
All vehicles to enter rail corridor from designated access points on site.	All
Plant and machinery not to be left idling.	
Pedestrian or cyclist access will be maintained in public spaces or redirected as appropriate.	
Chemical, Fuel Storage and Use	
Control/Mitigation	Resp
No chemicals or fuel required to be stored onsite.	All
Any required chemicals on site must be verified and registered in SDS and SDS kept on site.	WHS / SS
Place spill kits in compound and portable spill kits in vehicles	SS
Refuelling to occur in designated/approved area only with spill tray, absorbent pads, socks placed	
All plant and machinery to be daily checked (pre-starts) to ensure n leaking oil, fuel or other liquids.	
Imported Material	
Control/Mitigation	Resp
All imported material will be sourced from a licensed supplier with onsite storage to only occur with controls in place.	All
No Go Zone	
Control/Mitigation	Resp
All construction activities will be restricted to the project boundary. Any activity outside the project boundary must be approved prior by SM /ER	All

Overall Scope of Works as per Preferred Project Works – SPIR Volume 1 June 2018	
Station Works	**Location/Feature**
The existing entrance would be retained and upgraded.	Entry/Exit
New elevated concourse, accessed from a new station entrance at Bedford Crescent (northern side). The future extension of the new elevated	Concourse

SMSU6: ENVIRONMENTAL CONTROL MAP – DULWICH HILL STATION

concourse to Ewart Lane has been safeguarded.	
New elevated concourse provided with new lifts and stairs connecting platform to light rail stop	Lift & Stairs
The existing heritage listed overhead booking office and heritage buildings on platform 1 and 2 retained and repurposed.	Heritage - Booking Office & Platforms 1&2
Existing retail within overhead booking office retained.	Retail Outlet
Station Area	**Location/Feature**
Existing bus stops on Dudley St and Wardell Rd retained	Bus Stops
Existing pedestrian pathways surrounding the station would be upgraded, including from Ewart Lane to Wardell Road and from Keith Lane to Bedford Crescent.	Pedestrian pathways
The two existing accessible parking spaces on the southern side of the Bedford Crescent retained	Parking - retained
One new accessible parking space provided on the southern side of the Bedford Crescent.	Parking - new
Existing bike parking on Wardell Rd to the south of station and on Bedford Crescent retained and new parking provided.	Bike Parking existing & new
New kiss and ride and taxi facilities provided on the southern side of Bedford Crescent at its eastern end.	Kiss Ride, Taxi



Legend

- Local Heritage S170
- Aboriginal Heritage
- Native Vegetation * All vegetation must be protected, check with site supervisor prior to any works
- Non Native Vegetation TPZ Protection * All vegetation must be protected, check with site supervisor prior to any works
- Hoarding Lift Shafts 1,2,3
- Ancillary Facility Construction Compound
- Hazardous Waste
- GSW
- GSW w Asbestos
- Retain Heritage, prior consultation must with Environment/Heritage Officer on moveable heritage, refer table 12
- Haulage Route
- Rain/storm water run off direction to nearest existing drainage
- Nearest Sensitive Residential Receiver
- Nearest Sensitive Commercial Receiver
- Noise Monitoring locations
- Nearest storm water inlets – not within 50 meters of work
- Managed Traffic Control
- Spill Kit
- Ingress / Egress

Downer / sydney METRO	ECM	Punchbowl	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–PB-05032021 v.1	Sheet No	1

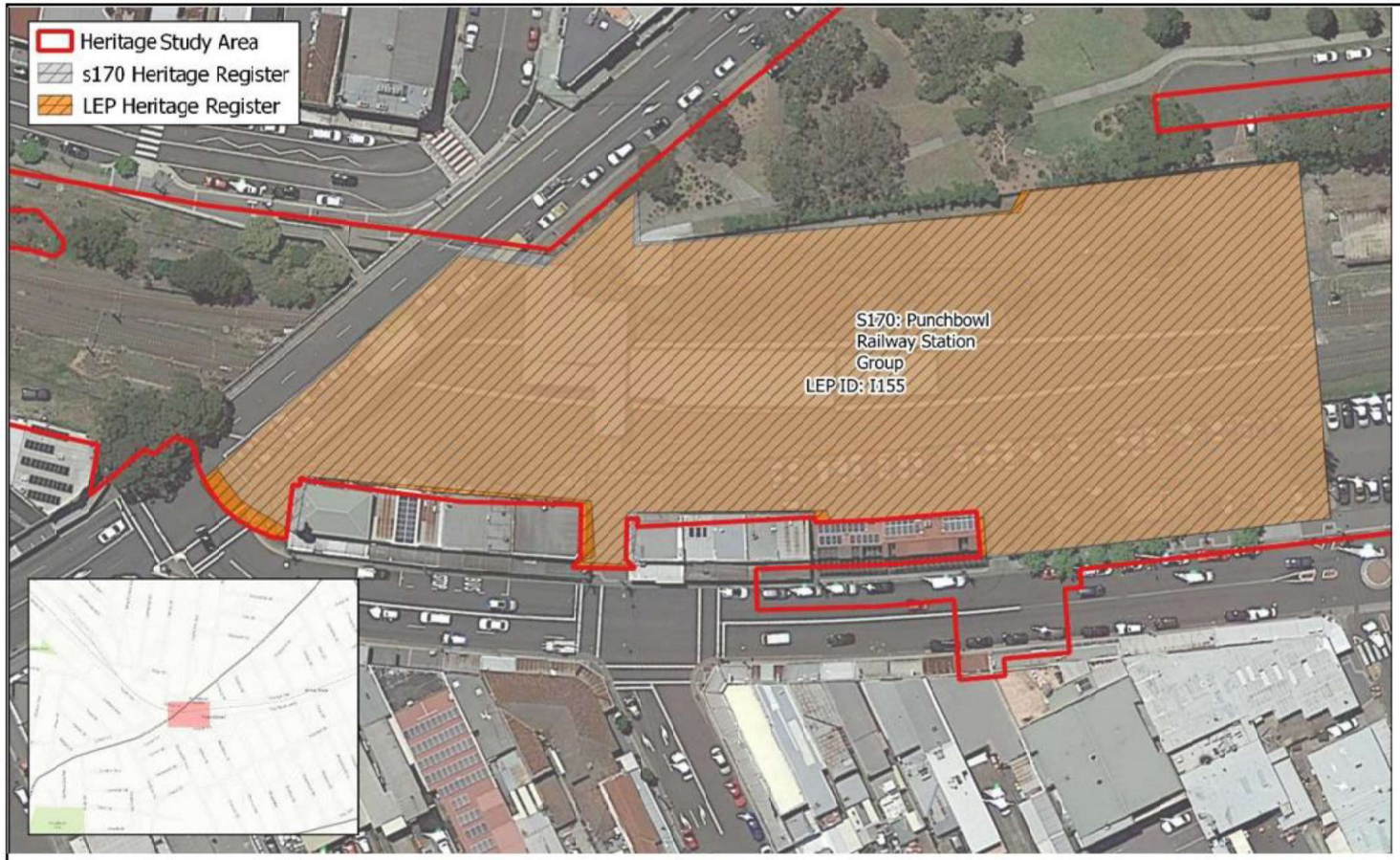


Figure 1 – Detailed view of Heritage Areas, refer to Table 12 on Moveable Heritage

Downer / sydney METRO	ECM	Punchbowl	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–PB-05032021 v.0	Sheet No	2

Table 12: Punchbowl Station moveable heritage

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance / Condition (2020)	Likely impacts	Recommended Action	Image
PUN0001	Clock	Concourse Wall Clock	Overhead Booking Office, external	It was the establishment of a rail network in the mid-1850s that brought about a standard time measure for NSW. The need for accurate time to allow for the timetabling of trains and for passenger movements meant that a common, standard time	High / Good	High / Good	No works to outside of overhead booking office in this location	Retain and protect in situ during works	

Downer / sydney METRO	ECM	Punchbowl	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–PB-05032021 v.0	Sheet No	3 A

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance / Condition (2020)	Likely impacts	Recommended Action	Image
				had to be known at Punchbowl Station. This SRA modern design is representative of a continuation of this railway tradition and relationship of time and the railways					
PUN0002	Furniture	Cast Iron Safe	Overhead Booking Office	Standard 'off the shelf' safe used throughout entire rail network for select work practices i.e. cash handling, safety and security of assets. Might contribute to the interpretation of historical ticketing practice in the railways; historical railway furnishings; historical methods of security in the railways etc.	Little to Moderate / Good	Little to Moderate / Good	Booking office to be converted for Sydney Metro multipurpo se room	Temporarily remove during works and restore to original room.	
PUN0003	Furniture	Subfloor Safe	Overhead Booking Office	Standard 'off the shelf' safe used throughout entire rail network for select work practices i.e. cash handling, safety and security of assets. Might contribute to the interpretation of historical ticketing practice in the railways; historical railway furnishings; historical methods of security in the railways etc.	Little to Moderate / Good	Little to Moderate / Good	Booking office to be converted for Sydney Metro multipurpo se room	Temporarily remove during works and restore to original room.	

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance / Condition (2020)	Likely impacts	Recommended Action	Image
PUN0004	Art and prints	Historic Photo	Overhead Booking Office	Reprint. Historic image depicting railway workers laying track - presumably at Punchbowl Station. Not located at the Australian Railway Historical Society (ARHS).	Little / Good	Little / Good	Booking office to be converted for Sydney Metro multipurpo se room	Temporarily remove during works and restore to original room. Opportunities to digitise image for heritage interpretation.	
PUN0005	Furniture	Timber desk organiser	Overhead Booking Office storeroom	Typical railway office furniture - timber desk organiser. Potential prop.	Little / Good	Little / Good	Storeroom function and fabric to be conserved	Retain and conserve in this location	
PUN0006	Operation al objects	Orange Hand Lamp - Signalling	Overhead Booking Office storeroom	Representative example of a typical railway signalling lamps; signaller's hand lamp emblematic of continued signalling work processes and practices. Illustrative of the developmental change in technologies in signalling and safe working functions in the railways. Also illustrates Sydney Trains previous corporate identity and history of Sydney Trains' and predecessor agencies: Public Transport Commission c. 1970s-80s	Moderate / Good	Moderate / Good	Storeroom function and fabric to be conserved	Retain and conserve in this location	

Downer / sydney METRO	ECM	Punchbowl	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–PB-05032021 v.0	Sheet No	3 C

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance / Condition (2020)	Likely impacts	Recommended Action	Image
PUN0008	Furniture	Timber desk Tray	Overhead Booking Office storeroom	Timber desk organiser. Potential prop.	Little / Good	Little / Good	Storeroom function and fabric to be conserved	Retain and conserve in this location	
PUN0009	Maps	Network Map with Ticket Codes	Overhead Booking Office storeroom	Snapshot of Sydney rail network wit relevant ticketing codes, rare and no longer used across network now that tickets have been largely replaced by electronic system. Tangible link to the past in terms of historic ticketing practice in the railways.	Moderate / Good	Moderate / Good	Storeroom function and fabric to be conserved	Retain and conserve in this location	

Downer / sydney METRO	ECM	Punchbowl	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–PB-05032021 v.0	Sheet No	3 D

Figure 1 – Magnified vision of MSB and Construction Compound for scope of works including investigations, surveying and dilapidation

Figure 2 – Magnified vision of station for scope of works hoarding for lift shafts 1, 2, 3 and site investigations

	Nearest stormwater inlets located west towards Rickard St on Urunga Pde (not within 50m of work)
	Non Native Vegetation Protection
	Ancillary Facility Construction Compound
	GSW
	Install sediment controls to ensure no mud/soil tracking off-onsite from vehicles
	Ingress / Egress
	Kerb side rain/storm water run off direction to nearest existing drainage channels
	Hoarding
	Local Heritage

Erosion Sediment Control Plan – Hoardings, Surveying, Pot Holing (section 5.1.4 of CEMP)
Clearly delineate access points
Exclusion zones would be designated on construction sites to limit disturbance
No stockpiles of materials or storage of fuels or chemicals would be located adjacent to the existing culverts
Diversion drains/bunds are to be installed on the high side of stockpiles if run—off from upslope lands could impact on the stockpile
Undertake progressive stabilisation of ground surfaces as quickly as possible as they are completed rather than at the end of the works program
Temporary ground covers such as hydraulic soil stabilisers or geotextile fabric will be used as much as possible to stabilise batters, stockpiles and large surface areas
To cover the scope of works such as surveying and pot holing install localised controls including sediment bags, silt socks, spill kit and geofab to avoid spillage of sediments.
Locations of nearest existing drainage channels and stormwater inlets to the works are displayed on the ECM/ESCP map
Silt socks and or coir logs will be installed around stormwater inlet pits where appropriate and where they will not cause or exacerbate flooding
All erosion and sediment controls will be inspected by the Environmental Manager (or delegate) at least weekly, before forecast rainfall exceeding 20 mm in 24 hours, after rainfall exceeding 20 mm in 24 hours and before a site closure of two days or more. Maintenance will be carried out as required prior to the next forecast rainfall event
Site supervisors will undertake daily erosion and sediment control checks and record any issues within site diaries. Site supervisors will ensure controls are maintained and in working order

Downer / sydney METRO	ECM - ESCP	Punchbowl	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–PB-05032021 v.1	Sheet No	4

SMSU6: ENVIRONMENTAL CONTROL MAP – PUNCHBOWL STATION

GENERAL	
Project	Southwest Metro Station Upgrade Works Package 6
ECM	This ECM is a supplementary document to the SMSU6 CEMP and prepared in accordance with CoA SSI 8256, SM City & Southwest Sydenham to Bankstown Environmental Impact Statement, SPIR and SR.
Activity	Station Upgrade to Metro Standards
Site	Punchbowl Station
Planning Approval	SSI 8256
Document Version	0
Site Awareness	The team will be trained on this ECM, general environmental issues, location of sensitive areas and ERSD controls; Works will be subject to inspections and approval by TfNSW NER/ER and Downer Environmental Team; This document will be displayed on site notice board at all times.

PROJECT CONTACT DETAILS		
Title	Name	Number
SM/TfNSW Environment Manager (NER)	Tim Solomon	0400034207
Downer Project Director	Kristo Bugarija	0428 161 912
Downer Project Engineer	Peter D'Costa	0478 074 294
Downer Site Supervisor	Nick De Palma	0418 555 130
Downer Environment Sustainability Manager	Gareth O'Brien	0428 194 445
Downer Environment Advisor	Abe Sharman	0420 989 193
Community Manager	Julie Henderson	0415 161 810
Heritage Advisor	Sandra Wallace	02 9518 8411 (Artefact Heritage)
SM Project Info Line	1800 171 386 1800 612 173 (West)	
TfNSW 24-hr Complaint Line	1800 775 465	
EPA/OEH Pollution Hotline	131 555	
Emergency	000	
WIRES	1300 094 73	

ACTIVITY DETAIL
Description
Early works, site establishment, minor ancillary facilities
Duration
Feb20-Mar20; continual update of this ECM will be undertaken to suit any specific requirements for each stages of works, with all mitigation measures approved by SM NER/ER prior to possession.

KEY ENVIRONMENTAL RISKS	
Heritage	Punchbowl is item of local significance listed on Canterbury LEP 2012 (#I155) and RailCorp s170 heritage register listing #4802009. All works need to be contained within the approved work boundary. Moderate direct and visual impact to items of heritage significance that must be delineated, and all works to proceed in accordance with Moveable Heritage Strategy (Section 5.2.6 of HMP, Table 12) and Heritage Salvage Register (N/A for Construction as per Section 5.2.7 of HMP) and Unexpected Finds Procedure. Construction may disturb potential Aboriginal archaeological deposit of moderate significance and low to moderate potential for intact deposits (S2B PAD 02) adjacent to station.
Air quality	Monitor access points to public roads; debris on public roads generated by construction is to be removed/cleared.
Contamination	Medium risk of unexpected contamination finds; Low risk of plant/equipment spills; Low risk of sedimentation runoff; Works to cease immediately if suspected contamination is encountered with area of contamination delineated with signage; Occupational hygienist to attend and provide recommendations in accordance with SM/TfNSW/EPA/Downer guidelines.
Traffic and Transport	Works located on active train lines with public transport commuters with impacts to current traffic conditions including a mix of pedestrians, cyclists, local paring and road traffic.
Noise	Work compounds situated near sensitive receivers including commercial, educational, industrial, residential and place of worship, active and passive recreation areas.

INCIDENT RESPONSE AND REPORTING - Appendix F of CEMP
All incidents would be reported in accordance with SM Environmental Incident Classification and Reporting Procedure (SM-17-00000096).

WORKING HOURS - City and Southwest Construction Noise and Vibration Strategy (SM ES-ST-210)
• Section 3.6 of CEMP and Section 5 of NVMP • CoA E19 – E26
Mon – Fri: 07h00 to 18h00
Sat: 08h00 to 18h00
No works on Sundays or public holidays
As per CoAE24 high noise generating works during standard working hours to be completed during the following periods: Mon – Fri: 08h00 to 18h00 Sat: 08h00 to 13h00 * High noise generating activities near receivers should be carried out in blocks that do not exceed three hours each, with a one-hour respite period in between.
Out of Hours Works Assessment Procedure (SM ES-PW-310) to be applied, all works outside standard working hours are considered Out of Hours Works (OOHW) and require approval prior to commencing. The OOHW application form SM-17-00000115 (enclosed in Appendix D of NVMP) to be used in accordance with SM-17-00005396 City & Southwest out of hours work protocol.

MITIGATION MEASURES	
Mitigation measures are based on CoA, REMM, CEMF and CEMP and sub-plans (awaiting approval).	
General	
Control/Mitigation	Resp
All site personnel (including sub-contractors) to have completed the project induction, including: • Location and proximity of nearest sensitive receivers; • Heritage present on site; • Vegetation to be removed or protected; • Access and egress points; • Unexpected finds procedure for sensitive areas not limiting to contamination, heritage, flora & fauna.	SS / EA / PE
Emergency and Incident response includes incident notification to be undertaken in accordance with the requirements of CoA A36 and A37 and the Sydney Metro Incident and Non-compliance Reporting Procedure SM-17-00000096.	All
Pre-start attendance register, and toolbox attendance register are signed by all site personnel.	SS
No works outside the approved marked boundary.	
Ensure all service identification tasks have been completed and service locations are marked out prior to commencing work.	
Noise and Vibration - CoA E18-34, SPIR REMM: NVC1 – NVC16, Section 9 of CEMF	
Control/Mitigation	Resp
Stationary noise sources such as generators will be enclosed or shielded where practicable.	SS
No swearing or unnecessary shouting or loud stereos/radios on site.	All
No dropping of materials from height, throwing of metal items and slamming of doors.	
Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided.	
Plan traffic flow, parking and loading/ unloading areas to minimise reversing movements within the site.	SS
Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.	All
Loading and unloading of materials/deliveries to occur as far as possible away from sensitive receivers.	
Plant used intermittently to be throttled down or shut down.	
As required by OOHW approval, attended noise monitoring to be undertaken at the most impacted receiver location.	SS / EA / PE
Ongoing noise and / or vibration monitoring not limiting to OOHW would be undertaking during construction at sensitive receivers during critical periods (ie times when noise emissions are expected to be at their highest) to identify and assist in managing high risk noise events.	
Residential grade mufflers are to be fitted on all mobile plant used on Sydney Metro construction projects.	SS
Regular inspection and maintenance of all plant and machinery	
Identifies defective silencing equipment on the items of plant by regular compliance checks on the noise emissions of all plant and machinery used for the Project would indicate whether noise emissions from plant items were higher than predicted.	
Air brake silencers are correctly installed and fully operational for any heavy vehicle	
Soil and Water ESCP as per section 5.1.4 of SWMP and Mitigation Measures as per: • CoA E8 , E9, E38-E41 • SPIR REMM: SC1 – SC8, FHW1 – FHW10, HR54, • Section 15 of CEMF	
Control/Mitigation	Resp
All chemicals and hazardous liquids would be stored away from drainage lines in a bunded and impervious enclosure.	PE
Spill kits to be located close to active work areas and near chemical and hazardous liquid storage areas as indicated in the ECM.	SS
All staff would be made aware of the location of the spill kits.	SS EA
Vehicles and machinery would be properly maintained and routinely inspected to minimise the risk of fuel/oil leaks.	SS
In the event of a pollution incident, works would cease in the immediate vicinity and Site Supervisor would immediately notify the Downer Project Manager who would notify NER/ER and SM Project Director.	All
All spoil to be removed from site would be classified according to the NSW Waste Classification Guidelines and disposed at an appropriate landfill. Material to be reused or stockpiled on site permanently is to be tested for contamination per the NEPM (ASC) criteria for commercial/industrial land use.	SS/ PE
Immediately report incidents where water has been discharged and not wholly contained within the project boundary.	All
Application as per Water Discharge and Reuse Procedure (SM ES-PW-309) required followed by approval from Environmental Advisor for any reuse or discharge of water.	SS

SMSU6: ENVIRONMENTAL CONTROL MAP – PUNCHBOWL STATION

Any contaminated material stockpiles (asbestos) will be covered on-site and short-term material stockpiles (>5 days not in use) with potential to generate dust will be wetted down or covered to prevent fugitive dust emissions or run-off during wet weather. Long-term stockpiles (>30 days) will be stabilised and /or covered in accordance with "Blue Book" requirements	SS EA
A dewatering permit is to be in place for all dewatering activities, including the dewatering of any groundwater.	EA / PE/ SS
Air Quality - Appendix D: Environmental Procedures CEMP CoA E2, SPIR REMM AQ1	
Control/Mitigation	Resp
Cover stockpiles when not in use to prevent wind erosion and dust.	SS / SE
Cover loads on trucks transporting material to and from the construction site and securely fix tailgates of road transport trucks prior to loading and immediately after unloading.	
Prevent mud and dirt being tracked onto sealed road surfaces. If mud or dirt has been tracked out of site, sweep/remove this material.	
Apply water (with an onsite water cart) on to dampen exposed surfaces (e.g., unpaved roads, stockpiles, hardstand areas and other exposed surfaces).	
Plant and machinery not to be left idling.	
All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.	
Machinery and plant that will be kept on site will be serviced as per manufactures specifications.	
Vehicle movements would be limited to designed entries and exits, work areas, haulage routes and parking areas.	
Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.	
Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.	
Stabilisation of any exposed surfaces as soon as practicable.	
Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken.	SS
Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust.	
Heritage • CoA E10-E17 • SPIR REMM: AH1 – AH5, NAH1 – NAH23 • Section 10 of CEMF	
Control/Mitigation	Resp
All personnel working on site are to be aware of all the heritage elements in the work area and "No go" areas to be clearly communicated.	All
Multiple items of heritage significance to consider (refer this ECM, Section 5.2 Built Heritage Mgt and Table 12 in Moveable Heritage Strategy of HMP) **includes platform, station building, booking offices. All these needs to be visibly delineated to minimise the risk of undertaking disturbance.**	
Stop all work immediately when items/ areas of potential heritage are suspected and notify Downer Project Manager and Environment Heritage Officer.	
Sydney Metro Unexpected Heritage Finds Procedure (SM-18-00105232) – Appendix D of HMP will be implemented in case of any unexpected aboriginal or non-aboriginal heritage item is found on site; The site to be delineated with signage as 'no' go' zone, and heritage advisor will be immediately informed and consulted for advise.	
Flora & Fauna - Appendix D: Environmental Procedures CEMP CoA – E3-E6, REMM SPIR REMM, CEMF Section 11	
Control/Mitigation	Resp
Unless stated on the ECM or prior approved by Environmental Advisor, no vegetation is to be removed on site as per section 3.13 Hold Points of CEMP	SS / SE
Any vegetation not approved for removal or trimming to follow the Flow Chart on clearing procedure under Appendix E (Procedure 1: Biodiversity) of CEMP.	EA
REMM B2 - Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.	EA
REMM B3 - Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	SS / EA
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REMM B5 - Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	SS
REMM B6 - A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	EA
REMM B7 - Priority weeds would be managed in accordance with the *Biosecurity Act 2015*. Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide.	
REMM LV12 - Trees to be retained would be protected by establishing Tree Protection Zone prior to the commencement of construction including any tree pruning to be undertaken guided by a tree report prepared by a qualified arborist and upon approval from Sydney Metro.	
Immediately report any damage to 1) threatened species 2) retained trees or trees that have been trimmed or removed without approval, and all work to stop immediately; Call a Project Ecologist/spotter/catcher onsite for advise.	SS
If animals are encountered, leave them alone and contact Site Supervisor and Environmental Advisor.	All
Protection 'no go zone' to be place for any threatened species	All
Modify the route of trenching to avoid any damage to trees and tree roots.	SS
All stockpiles must be located outside of Tree Protection/Drip Zone	SS
Soil with weed material be removed prior to any movement off site. To reduce the spread of weeds no soil in to be transported into the works areas. Ensure that all machinery, vehicles and equipment are free of weed material before entering and exiting the works areas.	SS
Waste and Spoil - Appendix D: Environmental Procedures CEMP CoA – E73 to E76 REMM – WM1 to WM7	
Control/Mitigation	Resp
Waste disposal locations and applicable EPLs are to be identified prior to disposal and are subject to Downer approval prior to removal from site. – HOLD POINT	All
All recyclable waste would be recycled where possible.	
Material or spoil that has the potential to contain asbestos or other contaminants will be tested and will be managed by an appropriately licensed contractor as required.	
All wastes will be removed from site at the completion of the project and will be tracked.	SS
In accordance with CoA E40, the Unexpected Contaminated Land Procedure and Asbestos Finds Procedure (refer Appendix B of CEMP) to be followed in the event of an unexpected find.	All
Any construction waste generated will be stored in bins as appropriate.	SS
Cover stockpiles with geofab or like material and secure the base to avoid erosion and sediment controls.	
CoA E73 - Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub-plan (Condition C3). Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.	
CoA E74 - 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.	EA / SS
CoA E75 - Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	
CoA E76 - All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	
REMM WM2 - A recycling target of at least 90 per cent would be adopted.	All
REMM WM3 - Spoil would be managed in accordance with the spoil management hierarchy.	
REMM WM4 - Target 100 per cent reuse of reusable spoil.	SS / EA
Traffic • CoA E46 – E53, E54 (Visual amenity, Lighting) • SPIR REMM: • Section 8 of CEMF	
Control/Mitigation	Resp
Manage traffic in accordance with mitigation measures from Traffic Management Plan.	SS / PM
Obtain Road Occupancy License as when required.	PM
Implement Traffic Controls as per conditions of approval of TCP by the relevant council.	SS
All vehicles to enter rail corridor from designated access points on site.	All
Plant and machinery not to be left idling.	
Pedestrian or cyclist access will be maintained in public spaces or redirected as appropriate.	
Chemical, Fuel Storage and Use	
Control/Mitigation	Resp
No chemicals or fuel required to be stored onsite.	All
Any required chemicals on site must be verified and registered in SDS and SDS kept on site.	WHS / SS
Place spill kits in compound and portable spill kits in vehicles	SS
Refuelling to occur in designated/approved area only with spill tray, absorbent pads, socks placed	
All plant and machinery to be daily checked (pre-starts) to ensure n leaking oil, fuel or other liquids.	
Imported Material	
Control/Mitigation	Resp
All imported material will be sourced from a licensed supplier with onsite storage to only occur with controls in place.	All
No Go Zone	
Control/Mitigation	Resp
All construction activities will be restricted to the project boundary. Any activity outside the project boundary must be approved prior by SM /ER	All

Overall Scope of Works as per Preferred Project Works – SPIR Volume 1 June 2018	
Station Works	**Location/Feature**

SMSU6: ENVIRONMENTAL CONTROL MAP – PUNCHBOWL STATION

The existing entrance would be retained and upgraded.	Entry/Exit
Existing concourse footbridge extended for new lifts and stairs.	Concourse
Three new lifts and two new stairs provided & replace existing stairs to both entrances.	Lift & Stairs
The existing heritage listed platform relevelled & retain station building plus overhead booking office..	Heritage – Platform, station building & booking office
Station Area	**Location/Feature**
Retain existing bus stops on Punchbowl Road and The Boulevarde.	Bus Stops
New pedestrian crossing on Punchbowl Road north-east of Bruest Place.	Pedestrian crossing
Retain & upgrade existing pedestrian underpass below Punchbowl Road.	Pedestrian underpass
Retain existing parking adjacent to the southern station entrance.	Parking - retained
New bike parking at Northern and Southern station entrances.	Bike Parking new
	Kiss Ride, Taxi
Kerbside facilities provided on the The Boulevarde	Kerbside

Downer	Environmental Control Map	Hurlstone Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–HP-05032021 v.1	Sheet No	1

Table 10: Hurlstone Park Station moveable heritage

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance / Condition (2019)	Artefact Significance/ Condition (2020)	Likely impacts	Recommended Action	Image
HRL0001	Clock	Timatic Clock 'PTC of NSW'	Overhead Booking Office	It was the establishment of a rail network in the mid1850s that brought about a standard time measure for NSW. The need for accurate time to allow for the timetabling of trains and for passenger movements meant that a common, standard time had to be known at Hurlstone Park Station. This PTC modern design is representative of a continuation of this railway tradition and relationship of time and the railways. PTC c. 1970-80s.	High / Good	High / Good	Overhead booking office to be reused as "multipurpose room"	Temporarily remove during works and restore to original room.	
HRL0002	Clock	Timatic Clock 'SRA of NSW'	Overhead Booking Office	This SRA modern design is representative of a continuation of this railway tradition and relationship of time and the railways. SRA c. 1980s-2003.	High / Good	High / Good	Overhead booking office to be reused as "multipurpose room"	Temporarily remove during works and restore to original room.	

Downer / sydney METRO	Environmental Control Map	Hurlstone Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–HP-05032021 v.0	Sheet No	2

Erosion Sediment Control Plan – Hoardings, Surveying, Pot Holing, Vegetation Clearance (section 5.1.4 of CEMP)	
Clearly delineate access points	
Exclusion zones would be designated on construction sites to limit disturbance	
No stockpiles of materials or storage of fuels or chemicals would be located adjacent to the existing culverts	
Diversion drains/bunds are to be installed on the high side of stockpiles if run—off from upslope lands could impact on the stockpile	
Undertake progressive stabilisation of ground surfaces as quickly as possible as they are completed rather than at the end of the works program	
Temporary ground covers such as hydraulic soil stabilisers or geotextile fabric will be used as much as possible to stabilise batters, stockpiles and large surface areas	
To cover the scope of works such as surveying and pot holing install localised controls including sediment bags, silt socks, spill kit and geofab to avoid spillage of sediments.	
Locations of nearest existing drainage channels and stormwater inlets to the works are displayed on the ECM (ESCP) map	
Silt socks and or coir logs will be installed around stormwater inlet pits where appropriate and where they will not cause or exacerbate flooding	
All erosion and sediment controls will be inspected by the Environmental Manager (or delegate) at least weekly, before forecast rainfall exceeding 20 mm in 24 hours, after rainfall exceeding 20 mm in 24 hours and before a site closure of two days or more. Maintenance will be carried out as required prior to the next forecast rainfall event	
Site supervisors will undertake daily erosion and sediment control checks and record any issues within site diaries. Site supervisors will ensure controls are maintained and in working order	
⬅	Figure 2: Storm water run off direction from west to east on Floss St, no storm water inlet within 80m of works. Figure 1: Tree clearance on the embankment within rail corridor, the flow of water is southwards towards Railway St. Ensure a combination of silt socks, sediment fence, coir logs is installed to separate onsite & offsite water. Protect storm water drains by installing above combinations od sediment controls.
▭	Vegetation Clearance, Install jute mesh after works as ground cover to mitigate dust/air pollution and erosion
•	Spill Kit
★	Storm water inlet

Downer / sydney METRO	Environmental Control Map - ESCP	Hurlstone Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–HP-05032021 v.1	Sheet No	3 A

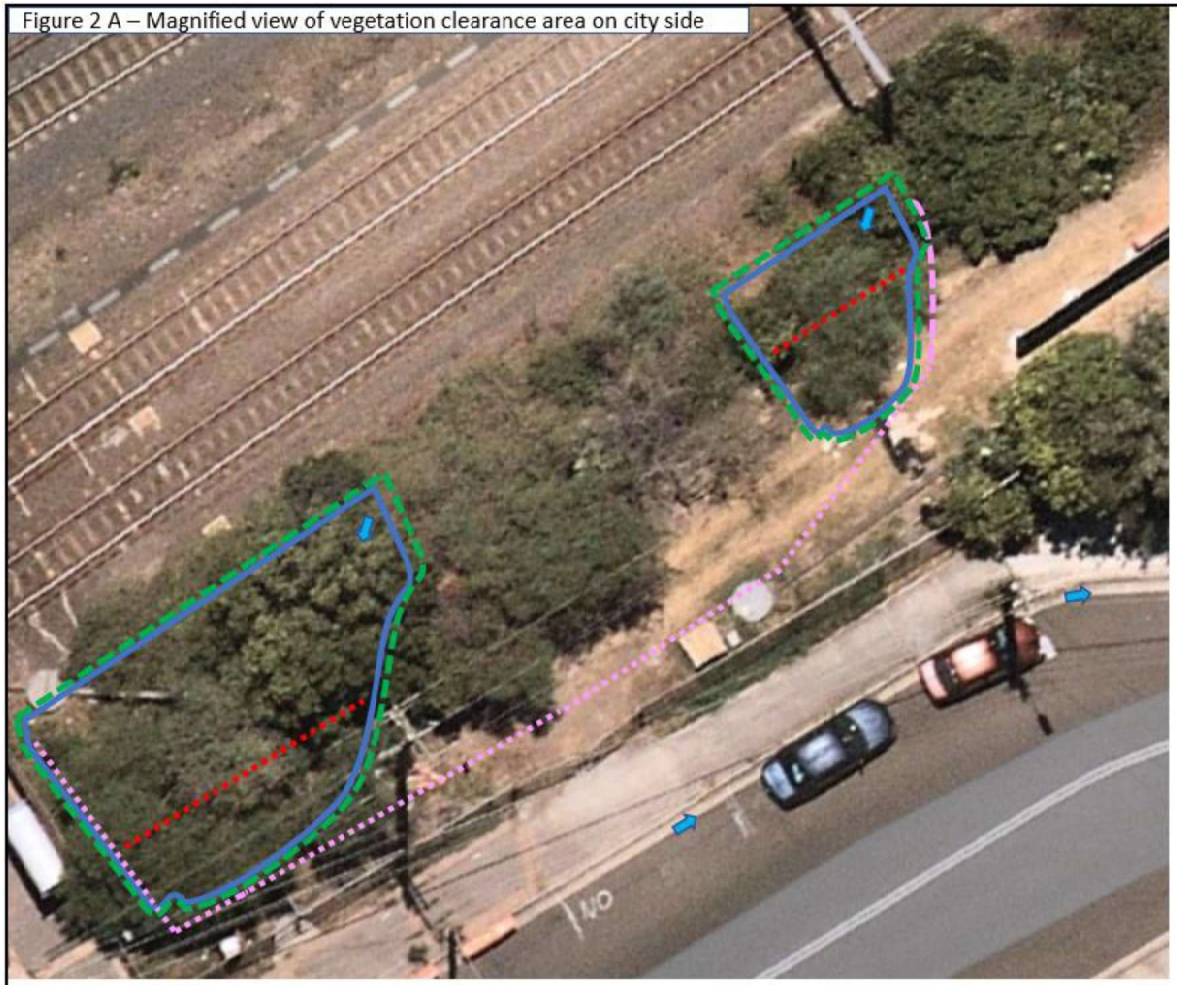
Figure 1 A – Magnified view of vegetation clearance area on country side

Erosion Sediment Control Plan – Hoardings, Surveying, Pot Holing, FRP (section 5.1.4 CEMP)
Install sediment fence at the bottom the embankment and coir logs in the middle of the embankment to ensure no sediment falls in the water channel.
Cover any open/exposed storm water drains (located on Railway St). Where feasible use netting during tree removal to contain vegetation debris, minor spoil and sediments arising from devegetation.
Upon the completion of works install jute mesh (100% biodegradable) on the embankment from tree clearance area towards stormwater channel.
Jute mesh to be rolled out and pinned on the embankment.
Ensure coir logs are pinned.
The onsite environment manager and site supervisor to regularly check the condition of jute mesh before/during/after works.
Update and replenish existing sediment fence at the boundary to separate off/onsite water.
All erosion and sediment controls will be inspected by the Environmental Manager (or delegate) at least weekly, before forecast rainfall exceeding 20 mm in 24 hours, after rainfall exceeding 20 mm in 24 hours and before a site closure of two days or more. Maintenance will be carried out as required prior to the next forecast rainfall event
Site supervisors will undertake daily erosion and sediment control checks and record any issues within site diaries. Site supervisors will ensure controls are maintained and in working order

	Rain/Storm water drain inlet located on Railway St. Inlet to be protected with sediment socks.
	Vegetation Removal in accordance with E5 tree report
	Install jute mesh after works as ground cover to mitigate dust/air pollution and erosion
	Install coir logs and secure by pinning to ground
	Install sediment fence at the bottom of the embankment
	Direction of storm/rain water flow
	Install geofab pre works at storm water inlet located in work area

Downer / sydney METRO	Environmental Control Map - ESCP	Hurlstone Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–HP-05032021 v.1	Sheet No	3 B

Figure 2 A – Magnified view of vegetation clearance area on city side



Erosion Sediment Control Plan – Hoardings, Surveying, Pot Holing, FRP (section 5.1.4 CEMP)
Install sediment fence at the bottom the embankment and coir logs in the middle of the embankment to ensure no sediment falls in the water channel.
Cover any open/exposed storm water drains (located on Railway St). Where feasible use netting during tree removal to contain vegetation debris, minor spoil and sediments arising from devegetation.
Upon the completion of works install jute mesh (100% biodegradable) on the embankment from tree clearance area towards stormwater channel.
Jute mesh to be rolled out and pinned on the embankment.
Ensure coir logs are pinned.
The onsite environment manager and site supervisor to regularly check the condition of jute mesh before/during/after works.
Update and replenish existing sediment fence at the boundary to separate off/onsite water.
All erosion and sediment controls will be inspected by the Environmental Manager (or delegate) at least weekly, before forecast rainfall exceeding 20 mm in 24 hours, after rainfall exceeding 20 mm in 24 hours and before a site closure of two days or more. Maintenance will be carried out as required prior to the next forecast rainfall event
Site supervisors will undertake daily erosion and sediment control checks and record any issues within site diaries. Site supervisors will ensure controls are maintained and in working order

✖	**Rain/Storm water drain inlet located east on Floss St (not within 80m of works and not shown on map).**
▭	**Vegetation Removal in accordance with E5 tree report**
▭	**Install jute mesh after works as ground cover to mitigate dust/air pollution and erosion**
·····	**Install coir logs and secure by pinning to ground**
···	**Install sediment fence at the bottom of the embankment**
⇦	**Direction of storm/rain water flow**

Downer / sydney METRO	Environmental Control Map - ESCP	Hurlstone Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–HP-05032021 v.1	Sheet No	3 C

SMSU6: ENVIRONMENTAL CONTROL MAP – HURLSTONE PARK STATION

GENERAL	
Project	Southwest Metro Station Upgrade Works Package 6
ECM	This ECM is a supplementary document to the SMSU6 CEMP and prepared in accordance with CoA SSI 8256, SM City & Southwest Sydenham to Bankstown Environmental Impact Statement, SPIR and SR.
Activity	Station Upgrade to Metro Standards
Site	Hurlstone Park Station
Planning Approval	SSI 8256
Document Version	0
Site Awareness	The team will be trained on this ECM, general environmental issues, location of sensitive areas and ERSD controls; Works will be subject to inspections and approval by TfNSW NER/ER and Downer Environmental Team; This document will be displayed on site notice board at all times.

PROJECT CONTACT DETAILS		
Title	Name	Number
SM/TfNSW Environment Manager (NER)	Tim Solomon	0400034207
Downer Project Director	Kristo Bugarija	0428 161 912
Downer Project Engineer	Peter D'Costa	0478 074 294
Downer Site Supervisor	Nick De Palma	0418 555 130
Downer Environment Sustainability Manager	Gareth O'Brien	0428 194 445
Downer Environment Advisor	Abe Sharman	0420 989 193
Community Manager	Julie Henderson	0415 161 810
Heritage Advisor	Sandra Wallace	02 9518 8411 (Artefact Heritage)
SM Project Info Line	1800 171 386 1800 612 173 (West)	
TfNSW 24-hr Complaint Line	1800 775 465	
EPA/OEH Pollution Hotline	131 555	
Emergency	000	
WIRES	1300 094 73	

ACTIVITY DETAIL
Description
Early works, site establishment, minor ancillary facilities
Duration
Feb-20-Mar20; continual update of this ECM will be undertaken to suit any specific requirements for each stages of works, with all mitigation measures approved by SM NER/ER prior to possession.

KEY ENVIRONMENTAL RISKS	
Heritage	Hurlstone Park is listed on RailCorp s170 heritage register listing underbridge #4805737 & Canterbury LEP 2012 #I126 and Floss Street #4802051 & Canterbury LEP 2012 #I124. All works need to be contained within the approved work boundary. Moderate direct/visual impacts to items of heritage significance that must be delineated, and all works to proceed in accordance with Moveable Heritage Strategy (Section 5.2.6 of HMP, Table 10) and Heritage Salvage Register (N/A for Construction as per Section 5.2.7 of HMP) and Unexpected Finds Procedure. Some significant heritage items include 1911-1919 Type 11 Buildings would be conserved and three footbridges with moderate significance.
Air quality	Monitor access points to public roads; debris on public roads generated by construction is to be removed/cleared.
Contamination	Medium risk of unexpected contamination finds; Low risk of plant/equipment spills; Low risk of sedimentation runoff; Works to cease immediately if suspected contamination is encountered with area of contamination delineated with signage; Occupational hygienist to attend and provide recommendations in accordance with SM/TfNSW/EPA/Downer guidelines.
Traffic and Transport	Works located on active train lines with public transport commuters with impacts to current traffic conditions including a mix of pecestrians, cyclists, local paring and road traffic.
Noise	Work compounds situated near sensitive receivers including commercial, educational, industrial, residential and place of worship, active and passive recreation areas.

INCIDENT RESPONSE AND REPORTING - Appendix F of CEMP
All incidents would be reported in accordance with SM Environmental Incident Classification and Reporting Procedure (SM-17-00000096).

WORKING HOURS - City and Southwest Construction Noise and Vibration Strategy (SM ES-ST-210)
• Section 3.6 of CEMP and Section 5 of NVMP • CoA E19 – E26
Mon – Fri: 07h00 to 18h00
Sat: 08h00 to 18h00
No works on Sundays or public holidays
As per CoAE24 high noise generating works during standard working hours to be completed during the following periods: Mon – Fri: 08h00 to 18h00 Sat: 08h00 to 13h00 * High noise generating activities near receivers should be carried out in blocks that do not exceed three hours each, with a one-hour respite period in between.
Out of Hours Works Assessment Procedure (SM ES-PW-310) to be applied, all work outside standard working hours are considered Out of Hours Works (OOHW) and require approval prior to commencing. The OOHW application form SM-17-00000115 (enclosed in Appendix D of NVMP) to be used in accordance with SM-17-00005396 City & Southwest out of hours work protocol.

MITIGATION MEASURES	
Mitigation measures are based on CoA, REMM, CEMF and CEMP and sub-plans (awaiting approval).	
General	
Control/Mitigation	Resp
All site personnel (including sub-contractors) to have completed the project induction, including: ▪ Location and proximity of nearest sensitive receivers; ▪ Heritage present on site; ▪ Vegetation to be removed or protected; ▪ Access and egress points; ▪ Unexpected finds procedure for sensitive areas not limiting to contamination, heritage, flora & fauna.	SS / EA / PE
Emergency and Incident response includes incident notification to be undertaken in accordance with the requirements of CoA A36 and A37 and the Sydney Metro Incident and Non-compliance Reporting Procedure SM-17-00000096.	All
Pre-start attendance register, and toolbox attendance register are signed by all site personnel.	SS
No works outside the approved marked boundary.	
Ensure all service identification tasks have bees completed and service locations are marked out prior to commencing work.	
Noise and Vibration - CoA E18-34, SPIR REMM: NVC1 – NVC16, Section 9 of CEMF	
Control/Mitigation	Resp
Stationary noise sources such as generators will be enclosed or shielded where practicable.	SS
No swearing or unnecessary shouting or loud stereos/radios on site.	All
No dropping of materials from height, throwing of metal items and slamming of doors.	
Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided.	
Plan traffic flow, parking and loading/ unloading areas to minimise reversing movements within the site.	SS
Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.	All
Loading and unloading of materials/deliveries to occur as far as possible away from sensitive receivers.	
Plant used intermittently to be throttled down or shut down.	
As required by OOHW approval, attended noise monitoring to be undertaken at the most impacted receiver location.	SS / EA / PE
Ongoing noise and / or vibration monitoring not limiting to OOHW would be undertaking during construction at sensitive receivers during critical periods (ie times when noise emissions are expected to be at their highest) to identify and assist in managing high risk noise events.	
Residential grade mufflers are to be fitted on all mobile plant used on Sydney Metro construction projects.	SS
Regular inspection and maintenance of all plant and machinery	
Identifies defective silencing equipment on the items of plant by regular compliance checks on the noise emissions of all plant and machinery used for the Project would indicate whether noise emissions from plant items were higher than predicted.	
Air brake silencers are correctly installed and fully operational for any heavy vehicle	
Soil and Water ESCP as per section 5.1.4 of SWMP and Mitigation Measures as per: • CoA E8 , E9, E38-E41 • SPIR REMM: SC1 – SC8, FHW1 – FHW10, HRS4, • Section 15 of CEMF	
Control/Mitigation	Resp
All chemicals and hazardous liquids would be stored away from drainage lines in a bunded and impervious enclosure.	PE
Spill kits to be located close to active work areas and near chemical and hazardous liquid storage areas as indicated in the ECM.	SS
All staff would be made aware of the location of the spill kits.	SS EA
Vehicles and machinery would be properly maintained and routinely inspected to minimise the risk of fuel/oil leaks.	SS
In the event of a pollution incident, works would cease in the immediate vicinity and Site Supervisor would immediately notify the Downer Project Manager who would notify NER/ER and SM Project Director.	All
All spoil to be removed from site would be classified according to the NSW Waste Classification Guidelines and disposed at an appropriate landfill. Material to be reused or stockpiled on site permanently is to be tested for contamination per the NEPM (ASC) criteria for commercial/industrial land use.	SS/ PE
Immediately report incidents where water has been discharged and not wholly contained within the project boundary.	All
Application as per Water Discharge and Reuse Procedure (SM ES-PW-309) required followed by approval from Environmental Advisor for any reuse or discharge of water.	SS

SMSU6: ENVIRONMENTAL CONTROL MAP – HURLSTONE PARK STATION

Any contaminated material stockpiles (asbestos) will be covered on-site and short-term material stockpiles (>5 days not in use) with potential to generate dust will be wetted down or covered to prevent fugitive dust emissions or run-off during wet weather. Long-term stockpiles (>30 days) will be stabilised and /or covered in accordance with "Blue Book" requirements	SS EA
A dewatering permit is to be in place for all dewatering activities, including the dewatering of any groundwater.	EA / PE/ SS
Air Quality - Appendix E: Environmental Procedures CEMP CoA E2, SPIR REMM AQ1	
Control/Mitigation	Resp
Cover stockpiles when not in use to prevent wind erosion and dust.	SS / SE
Cover loads on trucks transporting material to and from the construction site and securely fix tailgates of road transport trucks prior to loading and immediately after unloading.	
Prevent mud and dirt being tracked onto sealed road surfaces. If mud or dirt has been tracked out of site, sweep/remove this material.	
Apply water (with an onsite water cart) on to dampen exposed surfaces (e.g., unpaved roads, stockpiles, hardstand areas and other exposed surfaces).	
Plant and machinery not to be left idling.	
All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.	
Machinery and plant that will be kept on site will be serviced as per manufactures specifications.	
Vehicle movements would be limited to designed entries and exits, work areas, haulage routes and parking areas.	
Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.	
Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.	
Stabilisation of any exposed surfaces as soon as practicable.	
Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken.	SS
Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust.	
Heritage • CoA E10-E17 • SPIR REMM: AH1 – AH5, NAH1 – NAH23 • Section 10 of CEMF • SPIR REMM: AH1 – AH5, NAH1 – NAH23	
Control/Mitigation	Resp
All personnel working on site are to be aware of all the heritage elements in the work area and "No go" areas to be clearly communicated.	All
Multiple items of heritage significance to consider (refer this ECM, Section 5.2 Built Heritage Mgt and Table 10 in Moveable Heritage Strategy of HMP) includes islands, platform buildings, booking offices, footbridge, overbridges. All these needs to be visibly delineated to minimise the risk of undertaking disturbance.	
Stop all work immediately when items/ areas of potential heritage are suspected and notify Downer Project Manager and Environment Heritage Officer.	
Sydney Metro Unexpected Heritage Finds Procedure [SM-18-00105232] – Appendix D of HMP will be implemented in case of any unexpected aboriginal or non-aboriginal heritage item is found on site; The site to be delineated with signage as 'no' go' zone, and heritage advisor will be immediately informed and consulted for advise.	
Flora & Fauna - Appendix E: Environmental Procedures CEMP CoA – E3-E6, REMM SPIR REMM, CEMF Section 11	
Control/Mitigation	Resp
Unless stated on the ECM or prior approved by Environmental Advisor, no vegetation is to be removed on site as per section 3.13 Hold Points of CEMP	SS / SE
Any vegetation not approved for removal or trimming to follow the Flow Chart on clearing procedure under Appendix E (Procedure 1: Biodiversity) of CEMP.	EA
REMM B2 - Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.	EA
REMM B3 - Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	SS / EA
REMM B4 - Impacts to Native and Non Native Vegetation (Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine – Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box) would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.	
REMM B5 - Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	SS
REMM B6 - A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	EA
REMM B7 - Priority weeds would be managed in accordance with the *Biosecurity Act 2015*. Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide.	
REMM LV12 - Trees to be retained would be protected by establishing Tree Protection Zone prior to the commencement of construction including any tree pruning to be undertaken guided by a tree report prepared by a qualified arborist and upon approval from Sydney Metro.	
Immediately report any damage to 1) threatened species 2) retained trees or trees that have been trimmed or removed without approval, and all work to stop immediately; Call a Project Ecologist/spotter/catcher onsite for advise.	SS
If animals are encountered, leave them alone and contact Site Supervisor and Environmental Advisor.	All
Protection 'no go zone' to be place for any threatened species	All
Modify the route of trenching to avoid any damage to trees and tree roots.	SS
All stockpiles must be located outside of Tree Protection/Drip Zone	SS
Soil with weed material be removed prior to any movement off site. To reduce the spread of weeds no soil in to be transported into the works areas. Ensure that all machinery, vehicles and equipment are free of weed material before entering and exiting the works areas.	SS
Waste and Spoil - Appendix E: Environmental Procedures CEMP CoA – E73 to E76 REMM – WM1 to WM7	
Control/Mitigation	Resp
Waste disposal locations and applicable EPLs are to be identified prior to disposal and are subject to Downer approval prior to removal from site. – HOLD POINT	All
All recyclable waste would be recycled where possible.	
Material or spoil that has the potential to contain asbestos or other contaminants will be tested and will be managed by an appropriately licensed contractor as required.	
All wastes will be removed from site at the completion of the project and will be tracked.	SS
In accordance with CoA E40, the Unexpected Contaminated Land Procedure and Asbestos Finds Procedure (refer Appendix B of CEMP) to be followed in the event of an unexpected find.	All
Any construction waste generated will be stored in bins as appropriate.	SS
Cover stockpiles with geofab or like material and secure the base to avoid erosion and sediment controls.	
CoA E73 - Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub-plan (Condition C3). Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.	
CoA E74 - 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.	EA / SS
CoA E75 - Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	
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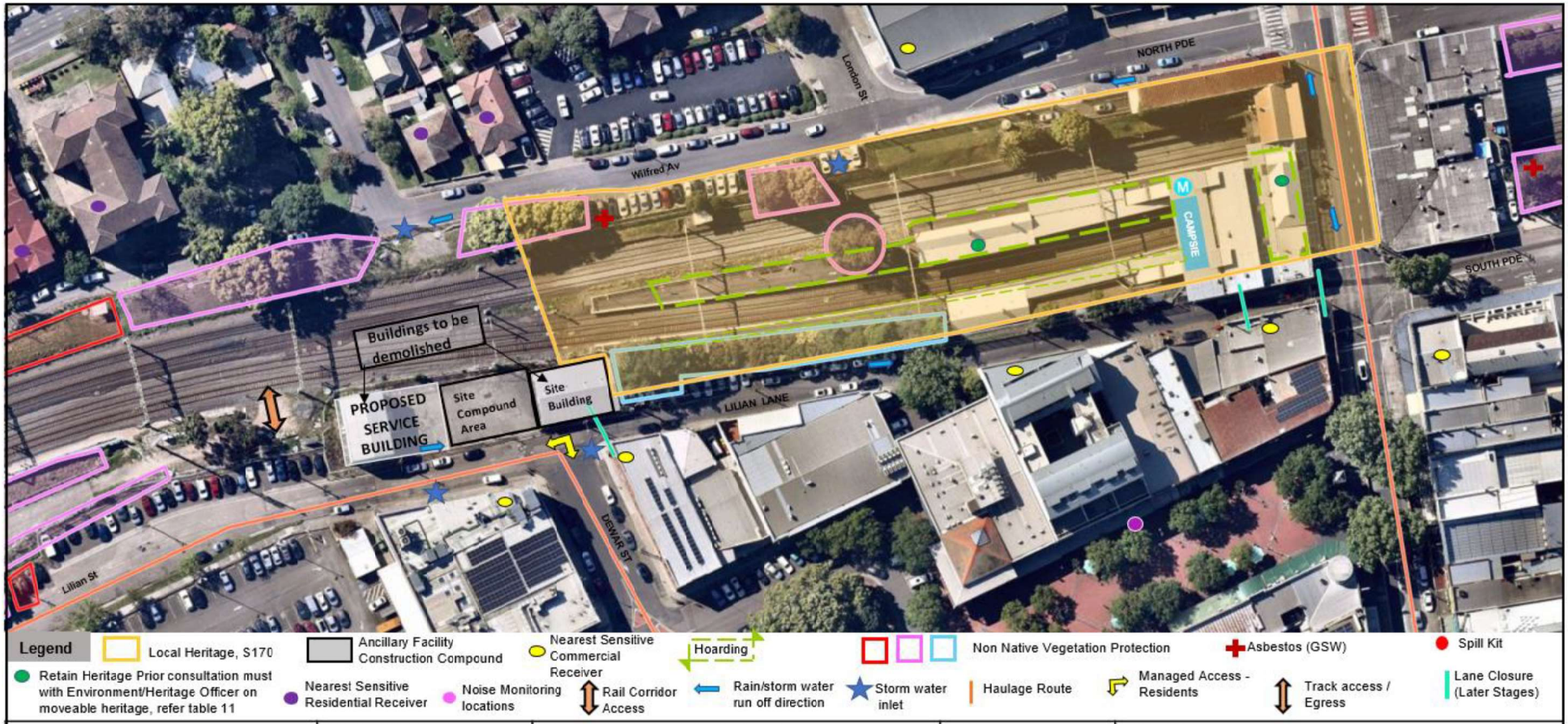
REMM WM2 - A recycling target of at least 90 per cent would be adopted.	All
REMM WM3 - Spoil would be managed in accordance with the spoil management hierarchy.	
REMM WM4 - Target 100 per cent reuse of reusable spoil.	SS / EA
Traffic • CoA E46 – E53, E54 (Visual amenity, Lighting) • SPIR REMM: • Section 8 of CEMF	
Control/Mitigation	Resp
Manage traffic in accordance with mitigation measures from Traffic Management Plan.	SS / PM
Obtain Road Occupancy License as when required.	PM
Implement Traffic Controls as per conditions of approval of TCP by the relevant council.	SS
All vehicles to enter rail corridor from designated access points on site.	All
Plant and machinery not to be left idling.	
Pedestrian or cyclist access will be maintained in public spaces or redirected as appropriate.	
Chemical, Fuel Storage and Use	
Control/Mitigation	Resp
No chemicals or fuel required to be stored onsite.	All
Any required chemicals on site must be verified and registered in SDS and SDS kept on site.	WHS / SS
Place spill kits in compound and portable spill kits in vehicles	SS
Refuelling to occur in designated/approved area only with spill tray, absorbent pads, socks placed	
All plant and machinery to be daily checked (pre-starts) to ensure n leaking oil, fuel or other liquids.	
Imported Material	
Control/Mitigation	Resp
All imported material will be sourced from a licensed supplier with onsite storage to only occur with controls in place.	All
No Go Zone	
Control/Mitigation	Resp
All construction activities will be restricted to the project boundary. Any activity outside the project boundary must be approved prior by SM /ER	All

Overall Scope of Works as per Preferred Project Works – SPIR Volume 1 June 2018	
Station Works	Location/Feature

SMSU6: ENVIRONMENTAL CONTROL MAP – HURLSTONE PARK STATION

The existing entrance would be retained and upgraded.	Entry/Exit
Two new lifts would be provided.	Lifts
Existing stairs removed and replaced.	Stairs
The existing heritage listed overhead booking office and heritage buildings on platform 1 and 2 retained and repurposed.	Heritage - Booking Office & Platforms 1&2
Station Area	**Location/Feature**
Existing bus stops on the overbridge retained	Bus stops – overbridge
New kerbside facilities would be located on Floss St, on the eastern side on the overbridge adjacent to the station.	Kerbside uses
Existing accessible parking spaces on Floss ST & Duntroon St on the northern side of the rail corridor would be retained.	Parking - retained
New accessible parking would be provided on Duntroon St on the southern side of the rail corridor.	Parking - new
Existing bike parking on Crinan St outside the station entrance would be retained and additional bike parking provided.	Bike Parking existing & new



Downer	DRAWING TITLE	ENVIRONMENTAL CONTROL MAP	DRAWN	DOWNER
	PROJECT NAME	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU5)	REVIEWED	A. SHARMAN
	LOCATION	CAMPSIE STATION	REVISION NO.	MWA – WE38 - ECM – CP - 05032021 v.1
	SHEET NUMBER	1	REVISION DATE	16/03/21

Legend

- Local Heritage, S170
- Laydown Area / ERSD Controls (Later Stage)
- Non Native Vegetation Protection
- Asbestos (GSW)
- Spill Kit
- Nearest Sensitive Residential Receiver
- Ancillary Facility Construction Compound
- Rail Corridor Access
- Storm water inlet
- Access / Egress
- Haulage Route
- Managed Access - Residents
- Lane Closure (Later Stages)

DRAWING TITLE	ENVIRONMENTAL CONTROL MAP	DRAWN	DOWNER
PROJECT NAME	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU5)	REVIEWED	A. SHARMAN
LOCATION	CAMPSIE STATION	REVISION NO.	MWA – WE38 - ECM – CP - 05032021 v.1
SHEET NUMBER	2	REVISION DATE	16/03/21

Figure 1 – Detailed view of Heritage Areas, refer to Table 11 on Moveable Heritage

Downer	DRAWING TITLE	ENVIRONMENTAL CONTROL MAP	DRAWN	DOWNER
	PROJECT NAME	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU5)	REVIEWED	A. SHARMAN
	LOCATION	CAMPSIE STATION	REVISION NO.	MWA – WE38 - ECM – CP - 05032021 v.0
	SHEET NUMBER	3	REVISION DATE	TBA

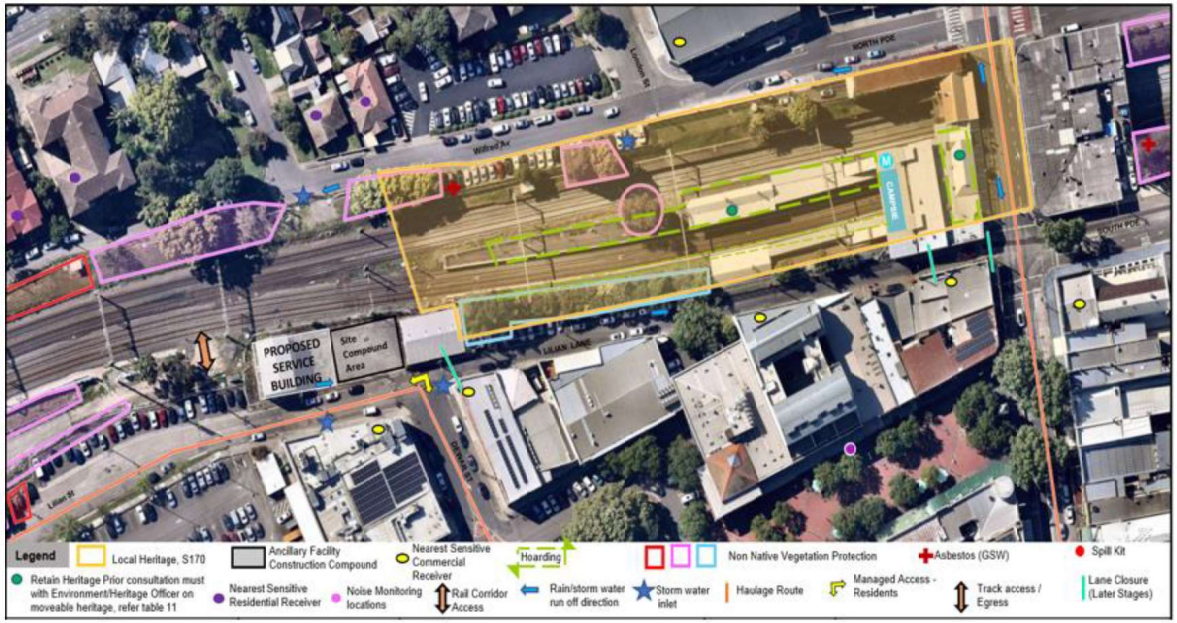
Table 11: Campsie Station moveable heritage

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance/ Condition (2020)	Likely Impacts	Recommended Action	Image
No item code. Listed on the SHI.[1]	Operational objects	Timber trays	Platform building	Timber box located in closed cistern room. Appears to have been part of the early operations of the station	Not assessed by Sydney Trains	Moderate / Good	Station platform building rooms to be heavily modified.	Temporarily remove during works, restore to platform building storage if possible; relocate to overhead booking office if no platform storage available.	
No item code. Listed on the SHI.[2]	Furnishing	Fitted timber waiting room benches	Platform building	Timber fitted seating within waiting room of station platform building (two seats)	Not assessed by Sydney Trains	Moderate/ Good	Waiting room to be converted to Sydney Metro equipment room	Retain at station to provide public seating	

Downer Relationships creating success / sydney METRO	DRAWING TITLE	ENVIRONMENTAL CONTROL MAP	DRAWN	DOWNER
	PROJECT NAME	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU5)	REVIEWED	A. SHARMAN
	LOCATION	CAMPSIE STATION	REVISION NO.	MWA – WE38 - ECM – CP - 05032021 v.0
	SHEET NUMBER	4	REVISION DATE	TBA

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance/ Condition (2020)	Likely Impacts	Recommended Action	Image
No item code	Timber box	Timber box adjoined to exterior wall	Platform 1 Building, external wall	Timber box located along the exterior wall of the platform 1 building.	Not assessed by Sydney Trains	Moderate / Good	External wall not to be modified	Conserve in situ	
No item code	Art and Prints	Campsie station upgrade poster	Platform 2 building male bathroom	Faded poster from recent station upgrade works. Depicts old and new entrances.	Not assessed by Sydney Trains	Little / Good	Bathroom to be converted into Sydney Metro equipment room	Not considered significant, do not retain.	

Downer Relationships creating success / sydney METRO	DRAWING TITLE	ENVIRONMENTAL CONTROL MAP	DRAWN	DOWNER
	PROJECT NAME	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU5)	REVIEWED	A. SHARMAN
	LOCATION	CAMPSIE STATION	REVISION NO.	MWA – WE38 - ECM – CP - 05032021 v.0
	SHEET NUMBER	5	REVISION DATE	TBA



Erosion Sediment Control Plan – Hoardings, Surveying, Pot Holing (section 5.1.4 of CEMP)
Clearly delineate access points
Exclusion zones would be designated on construction sites to limit disturbance
No stockpiles of materials or storage of fuels or chemicals would be located adjacent to the existing culverts
Diversion drains/bunds are to be installed on the high side of stockpiles if run—off from upslope lands could impact on the stockpile
Undertake progressive stabilisation of ground surfaces as quickly as possible as they are completed rather than at the end of the works program
Temporary ground covers such as hydraulic soil stabilisers or geotextile fabric will be used as much as possible to stabilise batters, stockpiles and large surface areas
Locations of nearest existing drainage channels and stormwater inlets to the works are displayed on the ECM (ESCP) map (nearest storm water pits are not within 80 meters of works).
To cover the scope of works such as surveying and pot holing install localised controls including sediment bags, silt socks, spill kit and geofab to avoid spillage of sediments.
Silt socks and or coir logs will be installed around stormwater inlet pits where appropriate and where they will not cause or exacerbate flooding (nearest storm water pits are not within 80 meters of works)
All erosion and sediment controls will be inspected by the Environmental Manager (or delegate) at least weekly, before forecast rainfall exceeding 20 mm in 24 hours, after rainfall exceeding 20 mm in 24 hours and before a site closure of two days or more. Maintenance will be carried out as required prior to the next forecast rainfall event
Site supervisors will undertake daily erosion and sediment control checks and record any issues within site diaries. Site supervisors will ensure controls are maintained and in working order

Downer Relationships creating success sydney METRO	**DRAWING TITLE**	**ENVIRONMENTAL CONTROL MAP (ERSD Controls, ESCP)**	DRAWN	DOWNER
	PROJECT NAME	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU5)	REVIEWED	A. SHARMAN
	LOCATION	CAMPSIE STATION	REVISION NO.	MWA – WE38 - ECM – CP - 05032021 v.0
	SHEET NUMBER	6	REVISION DATE	TBA

SMSU6: ENVIRONMENTAL CONTROL MAP – CAMPSIE STATION

GENERAL	
Project	Southwest Metro Station Upgrade Works Package 6
ECM	This ECM is a supplementary document to the SMSU6 CEMP and prepared in accordance with CoA SSI 8256, SM City & Southwest Sydenham to Bankstown Environmental Impact Statement, SPIR and SR.
Activity	Station Upgrade to Metro Standards
Site	Campsie Station
Planning Approval	SSI 8256
Document Version	0
Site Awareness	The team will be trained on this ECM, general environmental issues, location of sensitive areas and ERSD controls; Works will be subject to inspections and approval by TfNSW NER/ER and Downer Environmental Team; This document will be displayed on site notice board at all times.

PROJECT CONTACT DETAILS		
Title	Name	Number
SM/TfNSW Environment Manager (NER)	Tim Solomon	0400034207
Downer Project Director	Kristo Bugarija	0428 161 912
Downer Project Engineer	Peter D'Costa	0478 074 294
Downer Site Supervisor	Nick De Palma	0418 555 130
Downer Environment Sustainability Manager	Gareth O'Brien	0428 194 445
Downer Environment Advisor	Abe Sharman	0420 989 193
Community Manager	Julie Henderson	0415 161 810
Heritage Advisor	Sandra Wallace	02 9518 8411 (Artefact Heritage)
SM Project Info Line	1800 171 386 1800 612 173 (West)	
TfNSW 24-hr Complaint Line	1800 775 465	
EPA/OEH Pollution Hotline	131 555	
Emergency	000	
WIRES	1300 094 73	

ACTIVITY DETAIL
Description
Early works, site establishment, minor ancillary facilities
Duration
Feb20-Mar20; continual update of this ECM will be undertaken to suit any specific requirements for each stages of works, with all mitigation measures approved by SM NER/ER prior to possession.

KEY ENVIRONMENTAL RISKS	
Heritage	Campsie is item of local significance listed on Canterbury LEP 2012 (#I40) and RailCorp s170 heritage register listing #4801101. All works need to be contained within the approved work boundary. Moderate direct and visual impact to items of heritage significance that must be delineated, and all works to proceed in accordance with Moveable Heritage Strategy (Section 5.2.6 of HMP, Table 11) and Heritage Salvage Register (N/A for Construction as per Section 5.2.7 of HMP and Unexpected Finds Procedure.
Air quality	Monitor access points to public roads; debris on public roads generated by construction is to be removed/cleared.
Contamination	Medium risk of unexpected contamination finds; Low risk of plant/equipment spills; Low risk of sedimentation runoff; Works to cease immediately if suspected contamination is encountered with area of contamination delineated with signage; Occupational hygienist to attend and provide recommendations in accordance with SM/TfNSW/EPA/Downer guidelines.
Traffic and Transport	Works located on active train lines with public transport commuters with impacts to current traffic conditions including a mix of pedestrians, cyclists, local paring and road traffic.
Noise	Work compounds situated near sensitive receivers including commercial, educational, industrial, residential and place of worship, active and passive recreation areas.

INCIDENT RESPONSE AND REPORTING - Appendix F of CEMP
All incidents would be reported in accordance with SM Environmental Incident Classification and Reporting Procedure (SM-17-00000096).

WORKING HOURS - City and Southwest Construction Noise and Vibration Strategy (SM ES-ST-210)
• Section 3.6 of CEMP and Section 5 of NVMP • CoA E19 – E26
Mon – Fri: 07h00 to 18h00 Sat: 08h00 to 18h00 No works on Sundays or public holidays As per CoAE24 high noise generating works during standard working hours to be completed during the following periods: Mon – Fri: 08h00 to 18h00 Sat: 08h00 to 13h00
* High noise generating activities near receivers should be carried out in blocks that do not exceed three hours each, with a one-hour respite period in between. Out of Hours Works Assessment Procedure (SM ES-PW-310) to be applied, all works outside standard working hours are considered Out of Hours Works (OOHW) and require approval prior to commencing. The OOHW application form SM-17-00000115 (enclosed in Appendix D of NVMP) to be used in accordance with SM-17-00005396 City & Southwest out of hours work protocol.

MITIGATION MEASURES	
Mitigation measures are based on CoA, REMM, CEMF and CEMP and sub-plans (awaiting approval).	
General	
Control/Mitigation	Resp
All site personnel (including sub-contractors) to have completed the project induction, including: ▪ Location and proximity of nearest sensitive receivers; ▪ Heritage present on site; ▪ Vegetation to be removed or protected; ▪ Access and egress points; ▪ Unexpected finds procedure for sensitive areas not limiting to contamination, heritage, flora & fauna.	SS / EA / PE
Emergency and Incident response includes incident notification to be undertaken in accordance with the requirements of CoA A36 and A37 and the Sydney Metro Incident and Non-compliance Reporting Procedure SM-17-00000096.	All
Pre-start attendance register, and toolbox attendance register are signed by all site personnel.	SS
No works outside the approved marked boundary.	
Ensure all service identification tasks have been completed and service locations are marked out prior to commencing work.	
Noise and Vibration - CoA E18-34, SPIR REMM: NVC1 – NVC16, Section 9 of CEMF	
Control/Mitigation	Resp
Stationary noise sources such as generators will be enclosed or shielded where practicable.	SS
No swearing or unnecessary shouting or loud stereos/radios on site.	All
No dropping of materials from height, throwing of metal items and slamming of doors.	
Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided.	
Plan traffic flow, parking and loading/ unloading areas to minimise reversing movements within the site.	SS
Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.	All
Loading and unloading of materials/deliveries to occur as far as possible away from sensitive receivers.	
Plant used intermittently to be throttled down or shut down.	
As required by OOHW approval, attended noise monitoring to be undertaken at the most impacted receiver location.	SS / EA / PE
Ongoing noise and / or vibration monitoring not limiting to OOHW would be undertaking during construction at sensitive receivers during critical periods (ie times when noise emissions are expected to be at their highest) to identify and assist in managing high risk noise events.	
Residential grade mufflers are to be fitted on all mobile plant used on Sydney Metro construction projects.	SS
Regular inspection and maintenance of all plant and machinery	
Identifies defective silencing equipment on the items of plant by regular compliance checks on the noise emissions of all plant and machinery used for the Project would indicate whether noise emissions from plant items were higher than predicted.	
Air brake silencers are correctly installed and fully operational for any heavy vehicle	
Soil and Water ESCP as per section 5.1.4 of SWMP and Mitigation Measures as per: • CoA E8 , E9, E38-E41 • SPIR REMM: SC1 – SC8, FHW1 – FHW10, HRS4, • Section 15 of CEMF	
Control/Mitigation	Resp
All chemicals and hazardous liquids would be stored away from drainage lines in a bunded and impervious enclosure.	PE
Spill kits to be located close to active work areas and near chemical and hazardous liquid storage areas as indicated in the ECM.	SS
All staff would be made aware of the location of the spill kits.	SS EA
Vehicles and machinery would be properly maintained and routinely inspected to minimise the risk of fuel/oil leaks.	SS
In the event of a pollution incident, works would cease in the immediate vicinity and Site Supervisor would immediately notify the Downer Project Manager who would notify NER/ER and SM Project Director.	All
All spoil to be removed from site would be classified according to the NSW Waste Classification Guidelines and disposed at an appropriate landfill. Material to be reused or stockpiled on site permanently is to be tested for contamination per the NEPM (ASC) criteria for commercial/industrial land use.	SS/ PE
Immediately report incidents where water has been discharged and not wholly contained within the project boundary.	All
Application as per Water Discharge and Reuse Procedure (SM ES-PW-309) required followed by approval from Environmental Advisor for any reuse or discharge of water.	SS
Any contaminated material stockpiles (asbestos) will be covered on-site and short-term material stockpiles (>5 days not in use) with potential to generate dust will be wetted down or covered to prevent fugitive dust emissions or run-off during wet weather. Long-term stockpiles (>30 days) will be stabilised and /or covered in accordance with "Blue Book" requirements	SS EA

SMSU6: ENVIRONMENTAL CONTROL MAP – CAMPSIE STATION

A dewatering permit is to be in place for all dewatering activities, including the dewatering of any groundwater.	EA / PE/ SS
Air Quality - Appendix D: Environmental Procedures CEMP CoA E2, SPIR REMM AQ1	
Control/Mitigation	Resp
Cover stockpiles when not in use to prevent wind erosion and dust.	SS / SE
Cover loads on trucks transporting material to and from the construction site and securely fix tailgates of road transport trucks prior to loading and immediately after unloading.	
Prevent mud and dirt being tracked onto sealed road surfaces. If mud or dirt has been tracked out of site, sweep/remove this material.	
Apply water (with an onsite water cart) on to dampen exposed surfaces (e.g., unpaved roads, stockpiles, hardstand areas and other exposed surfaces).	
Plant and machinery not to be left idling.	
All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.	
Machinery and plant that will be kept on site will be serviced as per manufactures specifications.	
Vehicle movements would be limited to designed entries and exits, work areas, haulage routes and parking areas.	
Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.	
Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.	
Stabilisation of any exposed surfaces as soon as practicable.	
Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken.	SS
Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust.	
Heritage • CoA E10-E17 • SPIR REMM: AH1 – AH5, NAH1 – NAH23 • Section 10 of CEMF	
Control/Mitigation	Resp
All personnel working on site are to be aware of all the heritage elements in the work area and "No go" areas to be clearly communicated.	All
Multiple items of heritage significance to consider (refer this ECM, Section 5.2 Built Heritage Mgt and Table 11 in Moveable Heritage Strategy of HMP) includes platforms buildings. All these needs to be visibly delineated to minimise the risk of undertaking disturbance.	

Stop all work immediately when items/ areas of potential heritage are suspected and notify Downer Project Manager and Environment Heritage Officer.	
Sydney Metro Unexpected Heritage Finds Procedure (SM-18-00105232) – Appendix D of HMP will be implemented in case of any unexpected aboriginal or non-aboriginal heritage item is found on site; The site to be delineated with signage as 'no' go' zone, and heritage advisor will be immediately informed and consulted for advise.	
Flora & Fauna - Appendix D: Environmental Procedures CEMP CoA – E3-E6, REMM SPIR REMM, CEMF Section 11	
Control/Mitigation	Resp
Unless stated on the ECM or prior approved by Environmental Advisor, no vegetation is to be removed on site as per section 3.13 Hold Points of CEMP	SS / SE
Any vegetation not approved for removal or trimming to follow the Flow Chart on clearing procedure under Appendix E (Procedure 1: Biodiversity) of CEMP.	EA
REMM B2 - Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.	EA
REMM B3 - Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	SS / EA
REMM B4 - Impacts to Native and Non Native Vegetation (Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine – Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box) would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.	
REMM B5 - Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	SS
REMM B6 - A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	EA
REMM B7 - Priority weeds would be managed in accordance with the *Biosecurity Act 2015*. Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide.	
REMM LV12 - Trees to be retained would be protected by establishing Tree Protection Zone prior to the commencement of construction including any tree pruning to be undertaken guided by a tree report prepared by a qualified arborist and upon approval from Sydney Metro.	
Immediately report any damage to 1) threatened species 2) retained trees or trees that have been trimmed or removed without approval, and all work to stop immediately;	SS

Call a Project Ecologist/spotter/catcher onsite for advise.	
If animals are encountered, leave them alone and contact Site Supervisor and Environmental Advisor.	All
Protection 'no go zone' to be place for any threatened species	All
Modify the route of trenching to avoid any damage to trees and tree roots.	SS
All stockpiles must be located outside of Tree Protection/Drip Zone	SS
Soil with weed material be removed prior to any movement off site. To reduce the spread of weeds no soil in to be transported into the works areas. Ensure that all machinery, vehicles and equipment are free of weed material before entering and exiting the works areas.	SS
Waste and Spoil - Appendix D: Environmental Procedures CEMP CoA – E73 to E76 REMM – WM1 to WM7	
Control/Mitigation	Resp
Waste disposal locations and applicable EPLs are to be identified prior to disposal and are subject to Downer approval prior to removal from site. – HOLD POINT	All
All recyclable waste would be recycled where possible.	
Material or spoil that has the potential to contain asbestos or other contaminants will be tested and will be managed by an appropriately licensed contractor as required.	
All wastes will be removed from site at the completion of the project and will be tracked.	SS
In accordance with CoA E40, the Unexpected Contaminated Land Procedure and Asbestos Finds Procedure (refer Appendix B of CEMP) to be followed in the event of an unexpected find.	All
Any construction waste generated will be stored in bins as appropriate.	SS
Cover stockpiles with geofab or like material and secure the base to avoid erosion and sediment controls.	
CoA E73 - Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub-plan (Condition C3). Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.	
CoA E74 - 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.	EA / SS
CoA E75 - Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	
CoA E76 - All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with	

appropriate records and disposal dockets retained for audit purposes.	
REMM WM2 - A recycling target of at least 90 per cent would be adopted.	All
REMM WM3 - Spoil would be managed in accordance with the spoil management hierarchy.	
REMM WM4 - Target 100 per cent reuse of reusable spoil.	SS / EA
Traffic • CoA E46 – E53, E54 (Visual amenity, Lighting) • SPIR REMM • Section 8 of CEMF	
Control/Mitigation	Resp
Manage traffic in accordance with mitigation measures from Traffic Management Plan.	SS / PM
Obtain Road Occupancy License as when required.	PM
Implement Traffic Controls as per conditions of approval of TCP by the relevant council.	SS
All vehicles to enter rail corridor from designated access points on site.	All
Plant and machinery not to be left idling.	
Pedestrian or cyclist access will be maintained in public spaces or redirected as appropriate.	
Chemical, Fuel Storage and Use	
Control/Mitigation	Resp
No chemicals or fuel required to be stored onsite.	All
Any required chemicals on site must be verified and registered in SDS and SDS kept on site.	WHS / SS
Place spill kits in compound and portable spill kits in vehicles	SS
Refuelling to occur in designated/approved area only with spill tray, absorbent pads, socks placed	
All plant and machinery to be daily checked (pre-starts) to ensure n leaking oil, fuel or other liquids.	
Imported Material	
Control/Mitigation	Resp
All imported material will be sourced from a licensed supplier with onsite storage to only occur with controls in place.	All
No Go Zone	
Control/Mitigation	Resp
All construction activities will be restricted to the project boundary. Any activity outside the project boundary must be approved prior by SM /ER	All
Overall Scope of Works as per Preferred Project Works – SPIR Volume 1 June 2018	
Station Works	**Location/Feature**
The existing station entrance at Beamish St retain and upgraded.	Entry/Exit
The existing heritage listed platforms re-levelled.	Heritage - Platforms
Retain and repurpose existing heritage buildings on platform 1 & 2.	Heritage - Buildings
Station Area	**Location/Feature**
Retain existing bus stop near the station.	Bus Stop
Retain existing accessible parking on North Parade, Wilfred Avenue and South Parade.	Parking - retained

SMSU6: ENVIRONMENTAL CONTROL MAP – CAMPSIE STATION

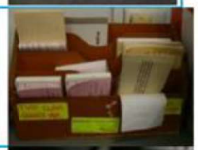
Provide new bike parking at North Parade.	Bike Parking - new
Retain existing bike parking on Beamish St	Bike Parking - existing
Retain existing kiss and ride facility on the South Parade and provide new accessible park.	Kiss & Ride
Retain existing taxi stand on North Parade.	Taxi

	Hi-Rail Access, Site Ingress/Egress
	Spill Kit
	Nearest Commercial Receiver
	Local Heritage
	Nearest Residential Receiver
	Retain Heritage Prior consultation must with Environment/Heritage Officer on moveable heritage, refer table 12
	Carpark NOT approved for use
	Install a protective layer such as geofab on the ground surface before placing concrete wash bay, refer to ESCP for ERSD controls.
	Site laydown / ongoing works areas/ designated parking areas ATF fencing (sediment fencing/coir log to be installed at perimeter)
	Tree protection measures (native and non native vegetation) to be installed includes fencing, No-Go/TPZ signage when works in close proximity
	Noise Monitoring locations
	Rain/storm water run off direction to nearest existing drainage
	Vegetation removal approved as per Urban Arbor report
	ERSD – Coirlogs at the base of the embankment to prevent flow of sediments from hoarding works at top of the platform, refer to ESCP
	Timber Hoarding (no surface digging on platform)
	Vortok fencing

Downer / sydney METRO	Environmental Control Map	Wiley Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–WP-05032021 v.1	Sheet No	1 A

Downer / sydney METRO	Environmental Control Map	Wiley Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–WP-05032021 v.0	Sheet No	1 B

Table 12: Wiley Park Station moveable heritage

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance / Condition (2020)	Likely impacts	Recommended Action	Image
WLY0001	Furniture	Safe - yellow	Overhead Booking Office	Standard 'off the shelf' safe used throughout entire rail network for select work practices i.e. cash handling, safety and security of assets. Might contribute to the interpretation of historical ticketing practice in the railways; historical railway furnishings; historical methods of security in the railways etc.	Little to Moderate / Good	Little to Moderate / Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
WLY0002	Furniture	Subfloor safe	Overhead Booking Office	Standard 'off the shelf' safe used throughout entire rail network for select work practices i.e. cash handling, safety and security of assets. Might contribute to the interpretation of historical ticketing practice in the railways; historical railway furnishings; historical methods of security in the railways etc.	Little / Good	Little / Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
WLY0003	Furniture	Stationery Organiser	Overhead Booking Office	Timber stationary organiser located in the booking office.	Little / Good	Little / Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
WLY0004	Furniture	File drawer	Overhead Booking Office	Timber filing drawer located in the overhead booking office	Little / Good	Little / Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	

Downer / sydney METRO	Environmental Control Map	Wiley Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–WP-05032021 v.0	Sheet No	2 A

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance / Condition (2020)	Likely impacts	Recommended Action	Image
WLY0005	Furniture	Timber Step Ladder	Overhead Booking Office	Example of earlier railway timber furniture constructed by railways for railway use, specific relationship to site and staff with 'SM Wiley Park' lettering.	Little to Moderate/ Good	Little to Moderate/ Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
WLY0008	Ticketing	Ticket Punch	Overhead Booking Office	Half fare ticket clippers were used to take a piece out of a cardboard ticket to change it to a half fare entitlement. Representative of historic ticketing practices in the railways prior to the introduction of automated ticketing systems now in use today.	High/ Good	High/ Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
WLY0009	Work processes	Metal Box with batteries'	Overhead Booking Office	Appears to be non-significant item. Investigate object to confirm.	Pending/ Good	Little/ Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
WLY0010	Clock	SRA Timatic Wall Clock	Overhead Booking Office	It was the establishment of a rail network in the mid1850s that brought about a standard time measure for NSW. The need for accurate time to allow for the timetabling of trains and for passenger movements meant that a common, standard time had to be known at Wiley Park Station. This SRA modern design is representative of a continuation of this railway tradition and relationship of time and the railways.	High / Good	High / Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	

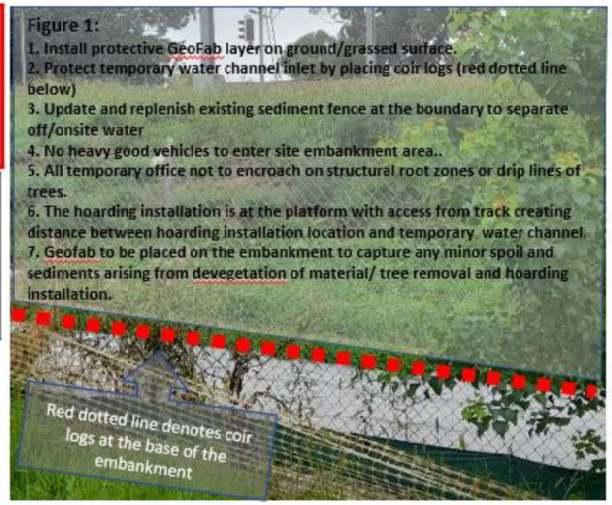
Downer / sydney METRO	Environmental Control Map	Wiley Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–WP-05032021 v.0	Sheet No	2 B

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance / Condition (2020)	Likely impacts	Recommended Action	Image
WLY0011	Work processes	Box of booking office objects	Overhead Booking Office	Assortment of potential significant and non-significant items. To be reviewed at periodic audit. Assortment of significant and non-significant booking office objects - to be reviewed and revised at periodic review.	Little to Moderate/ Good	Little to Moderate/ Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
No item code. Listed on the SHI.[2]	Signage	Freestanding heritage information panel	Overhead Booking Office	Modern heritage interpretation panel located along concourse	Not assessed by Sydney Trains	Little/ Good	Overhead booking office converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
No item code. Listed on the SHI.[3]	Furniture	Timber benches	Platform 2 Building waiting room	Original timber benches	Not assessed by Sydney Trains	Moderate / Good	Room to be conserved for waiting room use	Retain and protect during works	

Downer / sydney METRO	Environmental Control Map	Wiley Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–WP-05032021 v.0	Sheet No	2 C

Concrete washout will be confined to designated concrete washout locations or using a Concrete Waste Separation Unit (CWSU), check with Environmental Manager on discharge for recycling of concrete waste

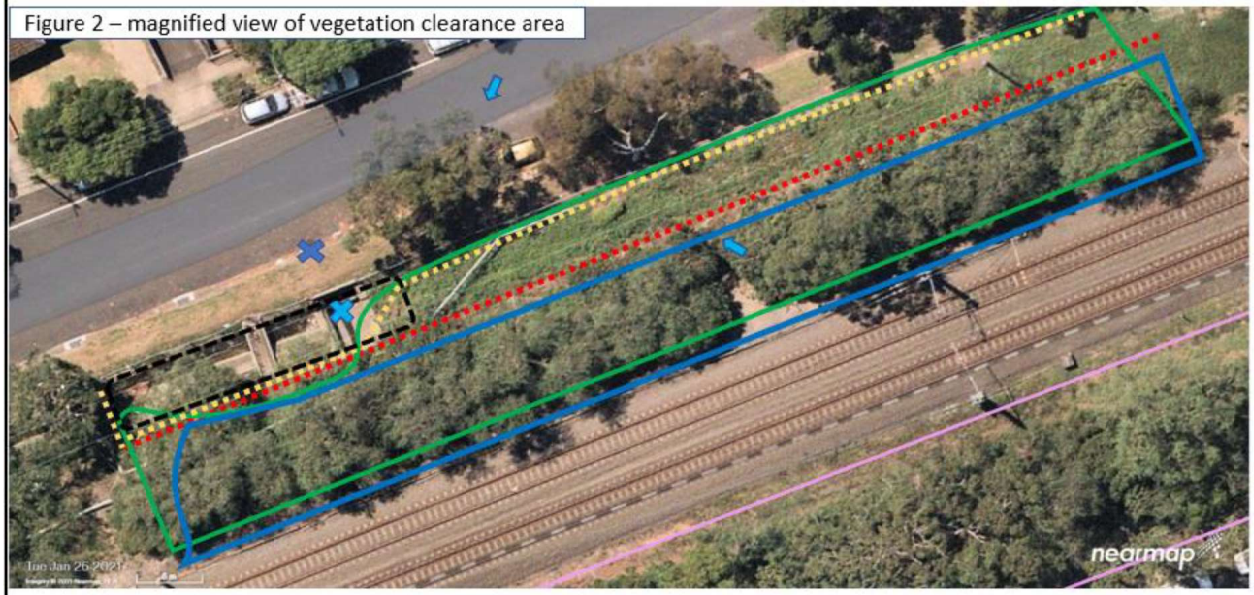
	Concrete plant and mobile crane access area, to mitigate ground disturbance in car park install a protective layer such as geofab before placing plant. Concrete washout (to be installed prior to pours, temporarily)



Erosion Sediment Control Plan – Hoardings, Surveying, Pot Holing, FRP (section 5.1.4 CEMP)	
Clearly delineate access points	
Exclusion zones would be designated on construction sites to limit disturbance	
No stockpiles of materials or storage of fuels or chemicals would be located adjacent to the existing culverts	
Diversion drains/bunds are to be installed on the high side of stockpiles if run—off from upslope lands could impact on the stockpile	
Undertake progressive stabilisation of ground surfaces as quickly as possible as they are completed rather than at the end of the works program	
Temporary ground covers such as hydraulic soil stabilisers or geotextile fabric will be used as much as possible to stabilise batters, stockpiles and large surface areas	
To cover the scope of works such as surveying and pot holing install localised controls including sediment bags, silt socks, spill kit and geofab to avoid spillage of sediments.	
Locations of nearest existing drainage channels and stormwater inlets to the works are displayed on the ESCP map	
Silt socks and or coir logs will be installed around stormwater inlet pits where appropriate and where they will not cause or exacerbate flooding	
All erosion and sediment controls will be inspected by the Environmental Manager (or delegate) at least weekly, before forecast rainfall exceeding 20 mm in 24 hours, after rainfall exceeding 20 mm in 24 hours and before a site closure of two days or more. Maintenance will be carried out as required prior to the next forecast rainfall event	
Site supervisors will undertake daily erosion and sediment control checks and record any issues within site diaries. Site supervisors will ensure controls are maintained and in working order	
	Rain/storm water run off direction to nearest existing drainage channels and inlets
Site Office	Site laydown / ongoing works areas/ designated parking areas ATF fencing (sediment fencing/coir log to be installed at perimeter)
	Vegetation Clearance, Install jute mesh after works as ground cover to mitigate dust/air pollution and erosion
	Storm water drain inlet, install geofab protection
	Hoarding – install sediment socks at the base during installation works

Downer / sydney METRO	Environmental Control Map - ESCP	Wiley Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–WP-05032021 v.1	Sheet No	3 A

Figure 2 – magnified view of vegetation clearance area



Erosion Sediment Control Plan – Hoardings, Surveying, Pot Holing, FRP (section 5.1.4 CEMP)
Install sediment fence at the bottom the embankment and coir logs in the middle of the embankment to ensure no sediment falls in the water channel.
Cover the open/exposed storm water channel including culvert with netting during tree removal to contain vegetation debris, minor spoil and sediments arising from devegetation.
Upon the completion of works install jute mesh (100% biodegradable) on the embankment from tree clearance area towards stormwater channel.
Jute mesh to be rolled out and pinned on the embankment.
Ensure coir logs are pinned.
The onsite environment manager and site supervisor to regularly check the condition of jute mesh before/during/after works.
Update and replenish existing sediment fence at the boundary to separate off/onsite water.
All erosion and sediment controls will be inspected by the Environmental Manager (or delegate) at least weekly, before forecast rainfall exceeding 20 mm in 24 hours, after rainfall exceeding 20 mm in 24 hours and before a site closure of two days or more. Maintenance will be carried out as required prior to the next forecast rainfall event
Site supervisors will undertake daily erosion and sediment control checks and record any issues within site diaries. Site supervisors will ensure controls are maintained and in working order

	Rain/Storm water drain inlet located on Urunga Pde. Inlet to be protected with sediment socks
	Vegetation Removal in accordance with E5 tree report
	Install jute mesh after works as ground cover to mitigate dust/air pollution and erosion
	Install coir logs and secure by pinning to ground
	Install sediment fence at the bottom of the embankment
	Storm water culvert running under the tracks
	Direction of storm/rain water flow

	Tree protection measures (native and non native vegetation) to be installed includes fencing, No-Go/TPZ signage when works in close proximity
	Install netting across the storm water channel particularly the culvert and area leading into the culvert to protect any leaf litter

Downer / sydney METRO	Environmental Control Map - ESCP	Wiley Park	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–WP-05032021 v.1	Sheet No	3 B

SMSU6: ENVIRONMENTAL CONTROL MAP – WILEY PARK STATION

GENERAL	
Project	Southwest Metro Station Upgrade Works Package 6
ECM	This ECM is a supplementary document to the SMSU6 CEMP and prepared in accordance with CoA SSI 8256, SM City & Southwest Sydenham to Bankstown Environmental Impact Statement, SPIR and SR.
Activity	Station Upgrade to Metro Standards
Site	Wiley Park Station
Planning Approval	SSI 8256
Document Version	0
Site Awareness	The team will be trained on this ECM, general environmental issues, location of sensitive areas and ERSD controls; Works will be subject to inspections and approval by TfNSW NER/ER and Downer Environmental Team; This document will be displayed on site notice board at all times.

PROJECT CONTACT DETAILS		
Title	Name	Number
SM/TfNSW Environment Manager (NER)	Tim Solomon	0400034207
Downer Project Director	Kristo Bugarija	0428 161 912
Downer Project Engineer	Peter D'Costa	0478 074 294
Downer Site Supervisor	Nick De Palma	0418 555 130
Downer Environment Sustainability Manager	Gareth O'Brien	0428 194 445
Downer Environment Advisor	Abe Sharman	0420 989 193
Community Manager	Julie Henderson	0415 161 810
Heritage Advisor	Sandra Wallace	02 9518 8411 (Artefact Heritage)
SM Project Info Line	1800 171 386 1800 612 173 (West)	
TfNSW 24-hr Complaint Line	1800 775 465	
EPA/OEH Pollution Hotline	131 555	
Emergency	000	
WIRES	1300 094 73	

ACTIVITY DETAIL
Description
Early works, site establishment, minor ancillary facilities
Duration
Feb20-Mar20; continual update of this ECM will be undertaken to suit any specific requirements for each stages of works, with all mitigation measures approved by SM NER/ER prior to possession.

KEY ENVIRONMENTAL RISKS	
Heritage	Wiley Park is listed on Canterbury LEP 2012 and RailCorp s170 heritage register #4801946. This station is being fully redeveloped and constituting the loss of Inter-War railway architecture building and would no longer meet the threshold for local significance and would likely to be delisted. Three footbridges of moderate significance would be removed. All works need to be contained within the approved work boundary. Any direct/visual impacts to items of heritage significance that must be carefully assessed & delineated, and all works to proceed in accordance with Moveable Heritage Strategy (Section 5.2.6 of HMP, Table 12) and Heritage Salvage Register (N/A for Construction as per Section 5.2.7 of HMP and Unexpected Finds Procedure.
Air quality	Monitor access points to public roads; debris on public roads generated by construction is to be removed/cleared.
Contamination	Medium risk of unexpected contamination finds; Low risk of plant/equipment spills; Low risk of sedimentation runoff; Works to cease immediately if suspected contamination is encountered with area of contamination delineated with signage; Occupational hygienist to attend and provide recommendations in accordance with SM/TfNSW/EPA/Downer guidelines.
Traffic and Transport	Works located on active train lines with public transport commuters with impacts to current traffic conditions including a mix of pedestrians, cyclists, local paring and road traffic.
Noise	Work compounds situated near sensitive receivers including commercial, educational, industrial, residential and place of worship, active and passive recreation areas.

INCIDENT RESPONSE AND REPORTING - Appendix F of CEMP
All incidents would be reported in accordance with SM Environmental Incident Classification and Reporting Procedure (SM-17-00000096).

WORKING HOURS - City and Southwest Construction Noise and Vibration Strategy (SM ES-ST-210)
• Section 3.8 of CEMP and Section 5 of NVMP • CoA E19 – E26
Mon – Fri: 07h00 to 18h00 Sat: 08h00 to 18h00 No works on Sundays or public holidays
As per CoAE24 high noise generating works during standard working hours to be completed during the following periods: Mon – Fri: 08h00 to 18h00 Sat: 08h00 to 13h00 * High noise generating activities near receivers should be carried out in blocks that do not exceed three hours each, with a one-hour respite period in between.
Out of Hours Works Assessment Procedure (SM ES-PW-310) to be applied, all works outside standard working hours are considered Out of Hours Works (OOHW) and require approval prior to commencing. The OOHW application form SM-17-00000115 (enclosed in Appendix D of NVMP) to be used in accordance with SM-17-00005396 City & Southwest out of hours work protocol.

MITIGATION MEASURES	
Mitigation measures are based on CoA, REMM, CEMF and CEMP and sub-plans (awaiting approval).	
General	
Control/Mitigation	Resp
All site personnel (including sub-contractors) to have completed the project induction, including: ▪ Location and proximity of nearest sensitive receivers; ▪ Heritage present on site; ▪ Vegetation to be removed or protected; ▪ Access and egress points; ▪ Unexpected finds procedure for sensitive areas not limiting to contamination, heritage, flora & fauna.	SS / EA / PE
Emergency and Incident response includes incident notification to be undertaken in accordance with the requirements of CoA A36 and A37 and the Sydney Metro Incident and Non-compliance Reporting Procedure SM-17-00000096.	All
Pre-start attendance register, and toolbox attendance register are signed by all site personnel.	SS
No works outside the approved marked boundary.	
Ensure all service identification tasks have been completed and service locations are marked out prior to commencing work.	
Noise and Vibration - CoA E18-34, SPIR REMM: NVC1 – NVC16, Section 9 of CEMF	
Control/Mitigation	Resp
Stationary noise sources such as generators wil be enclosed or shielded where practicable.	SS
No swearing or unnecessary shouting or loud stereos/radios on site.	All
No dropping of materials from height, throwing of metal items and slamming of doors.	
Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided.	
Plan traffic flow, parking and loading/ unloading areas to minimise reversing movements within the site.	SS
Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.	All
Loading and unloading of materials/deliveries to occur as far as possible away from sensitive receivers.	
Plant used intermittently to be throttled down or shut down.	
As required by OOHW approval, attended noise monitoring to be undertaken at the most impacted receiver location.	SS / EA / PE
Ongoing noise and / or vibration monitoring not limiting to OOHW would be undertaking during construction at sensitive receivers during critical periods (ie times when noise emissions are expected to be at their highest) to identify and assist in managing high risk noise events.	
Residential grade mufflers are to be fitted on all mobile plant used on Sydney Metro construction projects.	SS
Regular inspection and maintenance of all plant and machinery	
Identifies defective silencing equipment on the items of plant by regular compliance checks or the noise emissions of all plant and machinery used for the Project would indicate whether noise emissions from plant items were higher than predicted.	
Air brake silencers are correctly installed and fully operational for any heavy vehicle	
Soil and Water ESCP as per section 5.1.4 of SWMP and Mitigation Measures as per: ▪ CoA E8 , E9, E38-E41 ▪ SPIR REMM: SC1 – SC8, FHW1 – FHW10, HRS4, ▪ Section 15 of CEMF	
Control/Mitigation	Resp
All chemicals and hazardous liquids would be stored away from drainage lines in a bunded and impervious enclosure.	PE
Spill kits to be located close to active work areas and near chemical and hazardous liquid storage areas as indicated in the ECM.	SS
All staff would be made aware of the location of the spill kits.	SS EA
Vehicles and machinery would be properly maintained and routinely inspected to minimise the risk of fuel/oil leaks.	SS
In the event of a pollution incident, works would cease in the immediate vicinity and Site Supervisor would immediately notify the Downer Project Manager who would notify NER/ER and SM Project Director.	All
All spoil to be removed from site would be classified according to the NSW Waste Classification Guidelines and disposed at an appropriate landfill. Material to be reused or stockpiled on site permanently is to be tested for contamination per the NEPM (ASC) criteria for commercial/industrial land use.	SS/ PE
Immediately report incidents where water has been discharged and not wholly contained within the project boundary.	All
Application as per Water Discharge and Reuse Procedure (SM ES-PW-309) required followed by approval from	SS

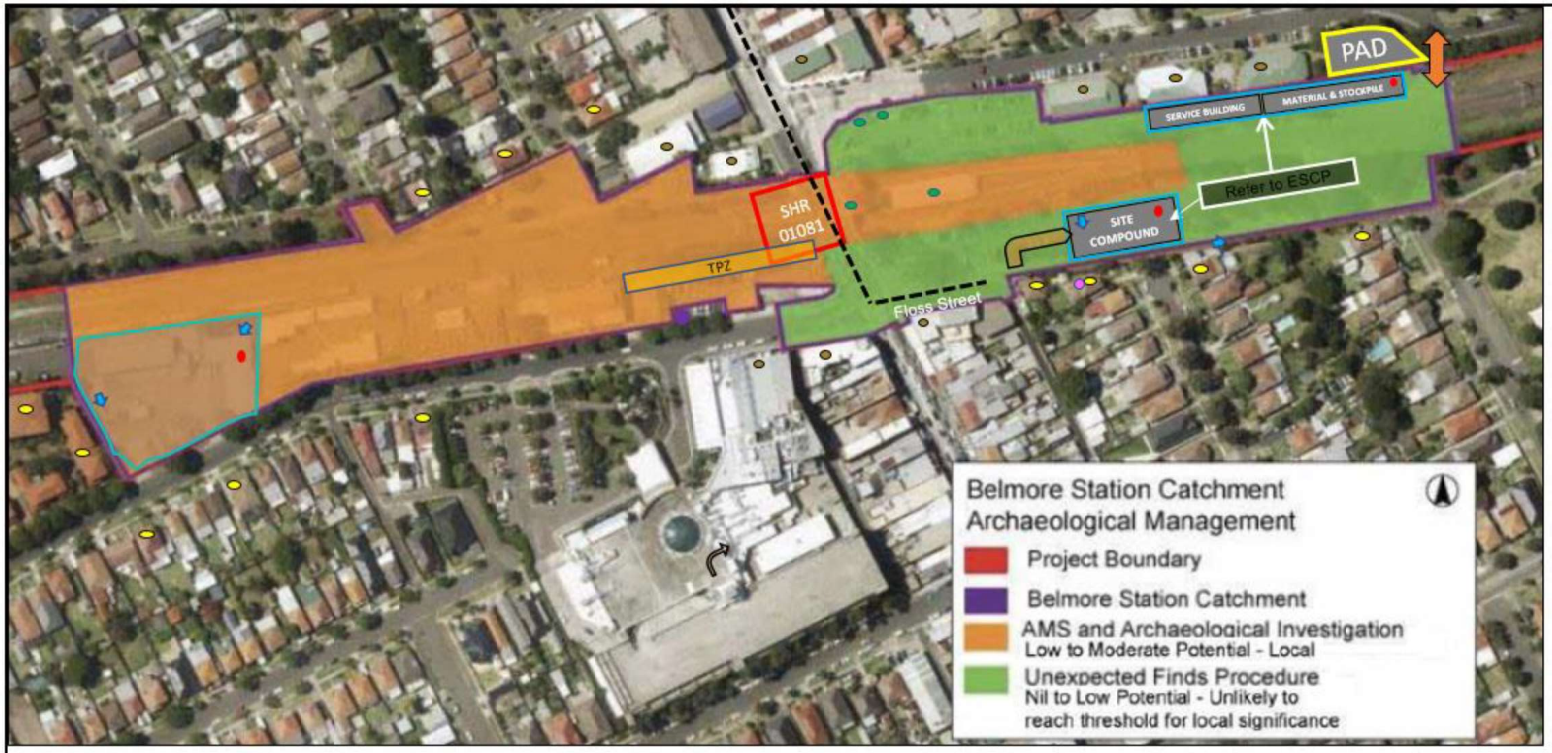
SMSU6: ENVIRONMENTAL CONTROL MAP – WILEY PARK STATION

Environmental Advisor for any reuse or discharge of water.	
Any contaminated material stockpiles (asbestos) will be covered on-site and short-term material stockpiles (>5 days not in use) with potential to generate dust will be wetted down or covered to prevent fugitive dust emissions or run-off during wet weather. Long-term stockpiles (>30 days) will be stabilised and /or covered in accordance with "Blue Book" requirements	SS EA
A dewatering permit is to be in place for all dewatering activities, including the dewatering of any groundwater.	EA / PE/ SS
Air Quality - Appendix E: Environmental Procedures CEMP CoA E2, SPIR REMM AQ1	
Control/Mitigation	Resp
Cover stockpiles when not in use to prevent wind erosion and dust.	SS / SE
Cover loads on trucks transporting material to and from the construction site and securely fix tailgates of road transport trucks prior to loading and immediately after unloading.	
Prevent mud and dirt being tracked onto sealed road surfaces. If mud or dirt has been tracked out of site, sweep/remove this material.	
Apply water (with an onsite water cart) on to dampen exposed surfaces (e.g., unpaved roads, stockpiles, hardstand areas and other exposed surfaces).	
Plant and machinery not to be left idling.	
All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.	
Machinery and plant that will be kept on site will be serviced as per manufactures specifications.	
Vehicle movements would be limited to designed entries and exits, work areas, haulage routes and parking areas.	
Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.	
Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.	
Stabilisation of any exposed surfaces as soon as practicable.	
Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken.	SS
Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust.	
Heritage • CoA E10-E17 • SPIR REMM: AH1 – AH5, NAH1 – NAH23 • Section 10 of CEMF	
Control/Mitigation	Resp
All personnel working on site are to be aware of all the heritage elements in the work area and "No go" areas to be clearly communicated.	All
Multiple items of heritage significance to consider (refer this ECM, Section 5.2 Built Heritage Mgt and Table 12 in Moveable Heritage Strategy of HMP) includes islands, platform buildings, booking offices, footbridge, overbridges. All these needs to be visibly delineated to minimise the risk of undertaking disturbance.	
Stop all work immediately when items/ areas of potential heritage are suspected and notify Downer Project Manager and Environment Heritage Officer.	
Sydney Metro Unexpected Heritage Finds Procedure [SM-18-00105232] – Appendix D of HMP will be implemented in case of any unexpected aboriginal or non-aboriginal heritage item is found on site; The site to be delineated with signage as 'no' go' zone, and heritage advisor will be immediately informed and consulted for advise.	
Flora & Fauna - Appendix E: Environmental Procedures CEMP CoA – E3-E6, REMM SPIR REMM, CEMF Section 11	
Control/Mitigation	Resp
Unless stated on the ECM or prior approved by Environmental Advisor, no vegetation is to be removed on site as per section 3.13 Hold Points of CEMP	SS / SE
Any vegetation not approved for removal or trimming to follow the Flow Chart on clearing procedure under Appendix E (Procedure 1: Biodiversity) of CEMP.	EA
REMM B2 - Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.	EA
REMM B3 - Areas of biodversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	SS / EA
REMM B4 - Impacts to Native and Non Native Vegetation (Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine – Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box) would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.	
REMM B5 - Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	SS
REMM B6 - A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	EA
REMM B7 - Priority weeds would be managed in accordance with the *Biosecurity Act 2015*. Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide.	
REMM LV12 - Trees to be retained would be protected by establishing Tree Protection Zone prior to the commencement of construction including any tree pruning to be undertaken guided by a tree report prepared by a qualified arborist and upon approval from Sydney Metro.	
Immediately report any damage to 1) threatened species 2) retained trees or trees that have been trimmed or removed without approval, and all work to stop immediately; Call a Project Ecologist/spotter/catcher onsite for advise.	SS
If animals are encountered, leave them alone and contact Site Supervisor and Environmental Advisor.	All
Protection 'no go zone' to be place for any threatened species	All
Modify the route of trenching to avoid any damage to trees and tree roots.	SS
All stockpiles must be located outside of Tree Protection/Drip Zone	SS
Soil with weed material be removed prior to any movement off site. To reduce the spread of weeds no soil in to be transported into the works areas. Ensure that all machinery, vehicles and equipment are free of weed material before entering and exiting the works areas.	SS
Waste and Spoil - Appendix E: Environmental Procedures CEMP CoA – E73 to E76 REMM – WM1 to WM7	
Control/Mitigation	Resp
Waste disposal locations and applicable EPLs are to be identified prior to disposal and are subject to Downer approval prior to removal from site. – HOLD POINT	All
All recyclable waste would be recycled where possible.	
Material or spoil that has the potential to contain asbestos or other contaminants will be tested and will be managed by an appropriately licensed contractor as required.	
All wastes will be removed from site at the completion of the project and will be tracked.	SS
In accordance with CoA E40, the Unexpected Contaminated Land Procedure and Asbestos Finds Procedure (refer Appendix B of CEMP) to be followed in the event of an unexpected find.	All
Any construction waste generated will be stored in bins as appropriate.	SS
Cover stockpiles with geofab or like material and secure the base to avoid erosion and sediment controls.	
CoA E73 - Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub-plan (Condition C3). Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.	
CoA E74 - 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.	EA / SS
CoA E75 - Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	
CoA E76 - All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with appropriate records and disposal dockets retained for audit purposes.	
REMM WM2 - A recycling target of at least 90 per cent would be adopted.	All
REMM WM3 - Spoil would be managed in accordance with the spoil management hierarchy.	
REMM WM4 - Target 100 per cent reuse of reusable spoil.	SS / EA
Traffic • CoA E46 – E53, E54 (Visual amenity, Lighting) • SPIR REMM: • Section 8 of CEMF	
Control/Mitigation	Resp
Manage traffic in accordance with mitigation measures from Traffic Management Plan.	SS / PM
Obtain Road Occupancy License as when required.	PM
Implement Traffic Controls as per conditions of approval of TCP by the relevant council.	SS
All vehicles to enter rail corridor from designated access points on site.	All
Plant and machinery not to be left idling.	
Pedestrian or cyclist access will be maintained in public spaces or redirected as appropriate.	
Chemical, Fuel Storage and Use	
Control/Mitigation	Resp
No chemicals or fuel required to be stored onsite.	All
Any required chemicals on site must be verified and registered in SDS and SDS kept on site.	WHS / SS
Place spill kits in compound and portable spill kits in vehicles	SS
Refuelling to occur in designated/approved area only with spill tray, absorbent pads, socks placed	
All plant and machinery to be daily checked (pre-starts) to ensure n leaking oil, fuel or other liquids.	
Imported Material	
Control/Mitigation	Resp
All imported material will be sourced from a licensed supplier with onsite storage to only occur with controls in place.	All
No Go Zone	
Control/Mitigation	Resp
All construction activities will be restricted to the project boundary. Any activity outside the project boundary must be approved prior by SM /ER	All

Overall Scope of Works as per Preferred Project Works – SPIR Volume 1 June 2018	
Station Works	Location/Feature

SMSU6: ENVIRONMENTAL CONTROL MAP – WILEY PARK STATION

The existing station entrance would be retained and upgraded.	Entry/Exit
Existing retail shop and disused premises at station entrance would be demolished.	Retail shop & disused premises - demolish
Two new lifts would be provided.	Lifts - new
The existing heritage listed platform would be re-levelled.	Heritage - platform
The existing heritage listed overhead booking office, concourse and platform buildings would be retained and re-levelled.	Heritage – overhead booking office, concourse and platform buildings
Station Area	**Location/Feature**
Existing bus stops retained.	Bus stop
Existing pedestrian pathways surrounding the station would be upgraded.	Pedestrian pathway
New bike parking area would be provided on The Boulevarde and at the station entrance.	Bike area - new
New kerbside facilities and accessible parking would be provided on The Boulevarde, east of King George Road.	Kerbside facilities and parking



Spill Kit	
Nearest Commercial Receiver	
Nearest Residential Receiver	
Retain Heritage Prior consultation must with Environment/Heritage Officer on moveable heritage, refer table 11	
Archaeological Management Zone	
Potential Archaeological Deposit physical exclusion zone (waterfilled barriers) to be established prior to any works	
Site laydown / ongoing works areas/ designated parking areas ATF fencing (sediment fencing/coir log to be installed at perimeter)	
ATF Fence	
Tree protection measures to be installed (fencing, No-Go/TPZ signage when works in close proximity)	
Noise Monitoring locations	
Rain/storm water run off direction to nearest existing drainage	
Currently utilised Ancillary Facility as project management office (within AMS)	
Haulage route	
Site Entry through car park	
MSB access (double layer of geofabric and 100mm road base to create stabilised access between ground surface, council road and rail corridor (unexpected heritage finds to be followed at all times)	

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Table 11: Belmore Station moveable heritage

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance/ Condition (2020)	Likely Impacts	Recommended Action	Image
BMO0001	Furniture	White cast iron safe	Overhead Booking Office	Small safe - Pioneer Explosive Proof Safe by M G Dyke and Sons, Melbourne; painted cream. Standard 'off the shelf' safe used throughout entire rail network for select work practices i.e. cash handling, safety and security of assets. Might contribute to the interpretation of historical ticketing practice in the railways; historical railway furnishings; historical methods of security in the railways etc.	Little to Moderate / Good	Little to Moderate / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
BMO0002	Art and prints	Historic photo	Overhead Booking Office	1985 SRA 125 rail centenary historic photo of Belmore Station after it was opened in 1895. "One of a series produced by the State Rail Authority of NSW to commemorate the 125th Anniversary of railways in NSW". Not located at the Australian Railway Historical Society (ARHS).	Little / Good	Little / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room Potential to be scanned for incorporation into the Heritage Interpretation Strategy (Artefact,2020). Potential to be donated to the ARHS.	

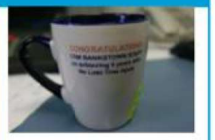
Downer / Sydney Metro	Environmental Control Map	Belmore	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–BE-05032021 v.0	Sheet No	2 A

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance/ Condition (2020)	Likely Impacts	Recommended Action	Image
BMO0003	Operational objects	Orange hand lamp - signalling	Overhead Booking Office	Representative example of a typical railway signalling lamps; signaller's hand lamp emblematic of continued signalling work processes and practices. Illustrative of the developmental change in technologies in signalling and safe working functions in the railways. Also illustrates Sydney Trains previous corporate identity and history of Sydney Trains' and predecessor agencies: Public Transport Commission c. 1970s-80s	Moderate / Good	Moderate / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
BMO0005	Furniture	Timber file /shelving	Overhead Booking Office	20th century timber desk organiser.	Little / Good	Little / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
BMO0006	Signals and communication	Points clip	Overhead Booking Office	standard point clip. used to secure points or joints in track to prevent movement. Primarily used by track workers when fixing track or used by shunters when points	Little / Good	Little / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	

Downer / sydney METRO	Environmental Control Map	Belmore	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–BE-05032021 v.0	Sheet No	2 B

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance/ Condition (2020)	Likely Impacts	Recommended Action	Image
				are old/worn. Often found in signal boxes due to the communication required between track workers and signallers. Still in use today. Potential to be used as a prop in signal box.					
BMO0007	Maps	Network Map with ticket codes	Overhead Booking Office	c.1980s plastic-coated Network map with handwritten ticket codes; modified SRA logo used as North arrow	Moderate / Good	Moderate / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
BMO0008	Operational objects	Emergency Window Kits	Overhead Booking Office	Emergency window repair kit in canvas sleeve. One of two.	Rare / Good	Rare / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
BMO0009	Operational objects	Emergency Window Kits	Overhead Booking Office	Emergency window repair kit in canvas sleeve. Two of two.	Rare / Good	Rare / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
BMO0010	Work processes	Box of booking office objects (Blue and white CityRail staff commendation coffee cup for CSM Bankstown staff)	Overhead Booking Office	Memorabilia. Item related to ongoing broader organisational involvement in safety culture awareness - illustrative of the ongoing 'safety first' movement implemented in 1914 by railways.	More research required/ unknown	Little to Moderate/ Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	

Downer / sydney METRO	Environmental Control Map	Belmore	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–BE-05032021 v.0	Sheet No	2 C

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance/ Condition (2020)	Likely Impacts	Recommended Action	Image
BMO0011	Memorabilia	RailCorp Coffee Mug	Overhead Booking Office	Memorabilia. Item related to ongoing broader organisational involvement in safety culture awareness - illustrative of the ongoing 'safety first' movement implemented in 1914 by railways.	Little to Moderate/ Good	Little to Moderate/ Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
BMO0012	Furniture	Timetable Box	Overhead Booking Office	Early timber box holding several boards displaying various printed train timetables	Little/ Good	Little/ Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
BMO0013	Signage	Noticeboard for Rosehill racecourse	Overhead Booking Office	Timber noticeboard with timber frame for special train notices for Rosehill Racecourse. Includes writing on the back as well. Old and rare. Likely not original to the station as it refers to Rosehill Racecourse near Parramatta, rather than the nearer Canterbury Racecourse - more research on special race day trains is required. Rare sign illustrating historic tradition of special race day train services offered to public.	Moderate / Good	Moderate / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance/ Condition (2020)	Likely Impacts	Recommended Action	Image
BMO0014	Signage	Notice of parcel fees	Overhead Booking Office	Timber-framed notice with printed information on parcel charges. Titled " Scale of Charges for Carriage of Parcels". "SRA Print 1980" at base of notice. The notice of fees is an important element in the history of parcels and, later, luggage processing on the railways. Typically, the item will have been used by railways staff within a parcels office or possibly the Telegraph Office to calculate fees for transfer of goods.	High / Good	High / Good	Booking office to be converted to Sydney Metro use	Temporarily remove during works and restore to original room.	
No item code. Listed on the SHI.[1]	Operational objects	Two cast iron bubblers on platforms	Platform	Reinstated heritage bubblers.	Not assessed by Sydney Trains	Moderate/ Good	Platform to be regraded	Retain in location and protect during works	

Downer / sydney METRO	Environmental Control Map	Belmore	SYDNEY METRO SYDENHAM TO BANKSTOWN (SMSU6)	MWA–WE38-ECM–BE-05032021 v.0	Sheet No	2 E

Registration Number	Category	Description of object	Location within station	Notes/ History	Sydney Trains Significance/ Condition (2019)	Artefact Significance/ Condition (2020)	Likely Impacts	Recommended Action	Image
No item code	Furniture	Timber cabinet	Station platform building, current cabinet room	Timber cabinet located within station platform building. Original door furniture.	Not assessed by Sydney Trains	Moderate / Good	Room not to be modified	Retain in existing location and protect during works	
No item code	Furniture	Ceramic sink	Station platform building, current cabinet room	Original ceramic sink located in station platform building	Not assessed by Sydney Trains	Moderate/ Good	Room not to be modified	Retain in existing location and protect during works	
No item code	Safe	Cast iron safe	Station platform building, current cabinet room	Original safe located in station platform building	Not assessed by Sydney Trains	Moderate/ Good	Room not to be modified	Retain in existing location and protect during works	
No item code	Furniture	Timber joinery	Station platform building, current cabinet room	Original timber joinery located in station platform building	Not assessed by Sydney Trains	Moderate/ Good	Room not to be modified	Retain in existing location and protect during works	

SMSU6: ENVIRONMENTAL CONTROL MAP – BELMORE

GENERAL	
Project	Southwest Metro Station Upgrade Works Package 6
ECM	This ECM is a supplementary document to the SMSU6 CEMP and prepared in accordance with CoA SSI 8256, SM City & Southwest Sydenham to Bankstown Environmental Impact Statement, SPIR and SR.
Activity	Station Upgrade to Metro Standards
Site	Belmore Station
Planning Approval	SSI 8256
Document Version	0
Site Awareness	The team will be trained on this ECM, general environmental issues, location of sensitive areas and ERSD controls; Works will be subject to inspections and approval by TfNSW NER/ER and Downer Environmental Team; This document will be displayed on site notice board at all times.

PROJECT CONTACT DETAILS		
Title	Name	Number
SM/TfNSW Environment Manager (NER)	Tim Solomon	0400034207
Downer Project Director	Kristo Bugarija	0428 161 912
Downer Project Engineer	Peter D'Costa	0478 074 294
Downer Site Supervisor	Nick De Palma	0418 555 130
Downer Environment Sustainability Manager	Gareth O'Brien	0428 194 445
Downer Environment Advisor	Abe Sharman	0420 989 193
Community Manager	Julie Henderson	0415 161 810
Heritage Advisor	Sandra Wallace	02 9518 8411 (Artefact Heritage)
SM Project Info Line	1800 171 386 1800 612 173 (West)	
TfNSW 24-hr Complaint Line	1800 775 465	
EPA/OEH Pollution Hotline	131 555	
Emergency	000	
WIRES	1300 094 73	

ACTIVITY DETAIL
Description
Early works, site establishment, minor ancillary facilities
Duration
Feb20-Mar20; continual update of this ECM will be undertaken to suit any specific requirements for each stages of works, with all mitigation measures approved by SM NER/ER prior to possession.

KEY ENVIRONMENTAL RISKS	
Heritage	Belmore is State Heritage listed and works need to be contained within the approved work boundary. Moderate direct/visual impacts to three items of heritage significance that must be delineated, and all works to proceed in accordance with Moveable Heritage Strategy (Section 5.2.6 of HMP, Table 11) and Heritage Salvage Register (N/A for Construction as per Section 5.2.7 of HMP and Unexpected Finds Procedure. Note* Belmore Station is State Heritage Register #4801084, Canterbury LEP 2012 and RailCorp s170 heritage register #4801084.
Air quality	Monitor access points to public roads; debris on public roads generated by construction is to be removed/cleared.
Contamination	Medium risk of unexpected contamination finds; Low risk of plant/equipment spills; Low risk of sedimentation runoff; Works to cease immediately if suspected contamination is encountered with area of contamination delineated with signage; Occupational hygienist to attend and provide recommendations in accordance with SM/TfNSW/EPA/Downer guidelines.
Traffic and Transport	Works located on active train lines with public transport commuters with impacts to current traffic conditions including a mix of pedestrians, cyclists, local paring and road traffic.
Noise	Work compounds situated near sensitive receivers including commercial, educational, industrial, residential and place of worship, active and passive recreation areas.

INCIDENT RESPONSE AND REPORTING - Appendix F of CEMP
All incidents would be reported in accordance with SM Environmental Incident Classification and Reporting Procedure (SM-17-00000096).

WORKING HOURS - City and Southwest Construction Noise and Vibration Strategy (SM ES-ST-210)	
• Section 3.6 of CEMP and Section 5 of NVMP • CoA E19 – E26	
Mon – Fri:	07h00 to 18h00
Sat:	08h00 to 18h00
No works on Sundays or public holidays	
As per CoAE24 high noise generating works during standard working hours to be completed during the following periods:	
Mon – Fri:	08h00 to 18h00
Sat:	08h00 to 13h00
* High noise generating activities near receivers should be carried out in blocks that do not exceed three hours each, with a one-hour respite period in between.	
Out of Hours Works Assessment Procedure (SM ES-PW-310) to be applied, all works outside standard working hours are considered Out of Hours Works (OOHW) and require approval prior to commencing. The OOHW application form SM-17-00000115 (enclosed in Appendix D of NVMP) to be used in accordance with SM-17-00005396 City & Southwest out of hours work protocol.	

MITIGATION MEASURES	
Mitigation measures are based on CoA, REMM, CEMF and CEMP and sub-plans (awaiting approval).	
General	
Control/Mitigation	Resp
All site personnel (including sub-contractors) to have completed the project induction, including: • Location and proximity of nearest sensitive receivers; • Heritage present on site; • Vegetation to be removed or protected; • Access and egress points; • Unexpected finds procedure for sensitive areas not limiting to contamination, heritage, flora & fauna.	SS / EA / PE
Emergency and Incident response includes incident notification to be undertaken in accordance with the requirements of CoA A36 and A37 and the Sydney Metro Incident and Non-compliance Reporting Procedure SM-17-00000096.	All
Pre-start attendance register, and toolbox attendance register are signed by all site personnel.	SS
No works outside the approved marked boundary.	
Ensure all service identification tasks have been completed and service locations are marked out prior to commencing work.	
Noise and Vibration - CoA E18-34, SPIR REMM: NVC1 – NVC16, Section 9 of CEMF	
Control/Mitigation	Resp
Stationary noise sources such as generators will be enclosed or shielded where practicable.	SS
No swearing or unnecessary shouting or loud stereos/radios on site.	All
No dropping of materials from height, throwing of metal items and slamming of doors.	
Simultaneous operation of noisy plant within discernible range of a sensitive receiver is to be avoided.	
Plan traffic flow, parking and loading/ unloading areas to minimise reversing movements within the site.	SS
Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.	All
Loading and unloading of materials/deliveries to occur as far as possible away from sensitive receivers.	
Plant used intermittently to be throttled down or shut down.	
As required by OOHW approval, attended noise monitoring to be undertaken at the most impacted receiver location.	SS / EA / PE
Ongoing noise and / or vibration monitoring not limiting to OOHW would be undertaking during construction at sensitive receivers during critical periods (ie times when noise emissions are expected to be at their highest) to identify and assist in managing high risk noise events.	
Residential grade mufflers are to be fitted on all mobile plant used on Sydney Metro construction projects.	SS
Regular inspection and maintenance of all plant and machinery	
Identifies defective silencing equipment on the items of plant by regular compliance checks on the noise emissions of all plant and machinery used for the Project would indicate whether noise emissions from plant items were higher than predicted.	
Air brake silencers are correctly installed and fully operational for any heavy vehicle	
Soil and Water ESCP as per section 5.1.4 of SWMP and Mitigation Measures as per: • CoA E8 , E9, E38-E41 • SPIR REMM: SC1 – SC8, FHW1 – FHW10, HRS4, • Section 15 of CEMF	
Control/Mitigation	Resp
All chemicals and hazardous liquids would be stored away from drainage lines in a bunded and impervious enclosure.	PE
Spill kits to be located close to active work areas and near chemical and hazardous liquid storage areas as indicated in the ECM.	SS
All staff would be made aware of the location of the spill kits.	SS EA
Vehicles and machinery would be properly maintained and routinely inspected to minimise the risk of fuel/oil leaks.	SS
In the event of a pollution incident, works would cease in the immediate vicinity and Site Supervisor would immediately notify the Downer Project Manager who would notify NER/ER and SM Project Director.	All
All spoil to be removed from site would be classified according to the NSW Waste Classification Guidelines and disposed at an appropriate landfill. Material to be reused or stockpiled on site permanently is to be tested for contamination per the NEPM (ASC) criteria for commercial/industrial land use.	SS/ PE
Immediately report incidents where water has been discharged and not wholly contained within the project boundary.	All
Application as per Water Discharge and Reuse Procedure (SM ES-PW-309) required followed by approval from Environmental Advisor for any reuse or discharge of water.	SS
Any contaminated material stockpiles (asbestos) will be covered on-site and short-term material stockpiles (>5 days not in use) with potential to generate dust will be wetted down or covered to prevent fugitive dust emissions or run-off during wet weather. Long-term stockpiles (>30 days) will be stabilised and /or covered in accordance with "Blue Book" requirements	SS EA

SMSU6: ENVIRONMENTAL CONTROL MAP – BELMORE

A dewatering permit is to be in place for all dewatering activities, including the dewatering of any groundwater.	EA / PE/ SS
Air Quality - Appendix E: Environmental Procedures CEMP CoA E2, SPIR REMM AQ1	
Control/Mitigation	Resp
Cover stockpiles when not in use to prevent wind erosion and dust.	SS / SE
Cover loads on trucks transporting material to and from the construction site and securely fix tailgates of road transport trucks prior to loading and immediately after unloading.	
Prevent mud and dirt being tracked onto sealed road surfaces. If mud or dirt has been tracked out of site, sweep/remove this material.	
Apply water (with an onsite water cart) on to dampen exposed surfaces (e.g., unpaved roads, stockpiles, hardstand areas and other exposed surfaces).	
Plant and machinery not to be left idling.	
All plant and machinery would be fitted with emission control devices complying with relevant Australian Standards.	
Machinery and plant that will be kept on site will be serviced as per manufactures specifications.	
Vehicle movements would be limited to designed entries and exits, work areas, haulage routes and parking areas.	
Dust generation would be monitored visually, and where required, dust control measures such as water spraying would be implemented to control the generation of dust.	
Access points would be inspected to determine whether sediment is being transferred to the surrounding road network. If required, sediment would be promptly removed from roads to minimise dust generation.	
Stabilisation of any exposed surfaces as soon as practicable.	
Daily inspections and regular surveillance would be undertaken to identify any vehicles, plant or equipment that is causing visible emissions. If any defective vehicles, plants or equipment are identified, operation of this machinery would cease and service/maintenance would be undertaken.	SS
Stockpiles will be maintained and contained appropriately, which could include covering or regular watering to minimise dust.	
Heritage • CoA E10-E17 • SPIR REMM: AH1 – AH5, NAH1 – NAH23 • Section 10 of CEMF	
Control/Mitigation	Resp
All personnel working on site are to be aware of all the heritage elements in the work area and "No go" areas to be clearly communicated.	All
Multiple items of heritage significance to consider (refer this ECM, Section 5.2 Built Heritage Mgt and Table 11 in Moveable Heritage Strategy of HMP) includes islands, platform buildings, booking offices, footbridge, overbridges. All these needs to be visibly delineated to minimise the risk of undertaking disturbance.	

Stop all work immediately when items/ areas of potential heritage are suspected and notify Downer Project Manager and Environment Heritage Officer.	
Sydney Metro Unexpected Heritage Finds Procedure (SM-18-00105232) – Appendix D of HMP will be implemented in case of any unexpected aboriginal or non-aboriginal heritage item is found on site; The site to be delineated with signage as 'no' go' zone, and heritage advisor will be immediately informed and consulted for advise.	
Flora & Fauna - Appendix E: Environmental Procedures CEMP CoA – E3-E6, REMM SPIR REMM, CEMF Section 11	
Control/Mitigation	Resp
Unless stated on the ECM or prior approved by Environmental Advisor, no vegetation is to be removed on site as per section 3.13 Hold Points of CEMP	SS / SE
Any vegetation not approved for removal or trimming to follow the Flow Chart on clearing procedure under Appendix E (Procedure 1: Biodiversity) of CEMP.	EA
REMM B2 - Pre-clearing surveys and inspections for endangered and threatened flora and fauna species would be undertaken by qualified ecologists prior to any clearing occurring. The surveys and inspections, and any subsequent relocation of species, would be undertaken in accordance with the measures provided in the biodiversity assessment report.	EA
REMM B3 - Areas of biodiversity value outside the project area would be marked on plans, and fenced or signposted where practicable, to prevent unnecessary disturbance.	SS / EA
REMM B4 - Impacts to Native and Non Native Vegetation (Downy Wattle Turpentine - Grey Ironbark open forest on shale, Degraded Turpentine – Grey Ironbark open forest on shale and Broad-leaved Ironbark – Grey Box) would be avoided. The locations of these species and communities would be marked on plans, fenced on site, and avoided.	
REMM B5 - Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	SS
REMM B6 - A trained ecologist would be present during the clearing of native vegetation or removal of potential fauna habitat to avoid impacts on resident fauna and to salvage habitat resources as far as is practicable.	EA
REMM B7 - Priority weeds would be managed in accordance with the *Biosecurity Act 2015*. Weeds of national environmental significance would be managed in accordance with the Weeds of National Significance Weed Management Guide.	
REMM LV12 - Trees to be retained would be protected by establishing Tree Protection Zone prior to the commencement of construction including any tree pruning to be undertaken guided by a tree report prepared by a qualified arborist and upon approval from Sydney Metro.	
Immediately report any damage to 1) threatened species 2) retained trees or trees that have been trimmed or removed without approval, and all work to stop immediately;	SS

Call a Project Ecologist/spotter/catcher onsite for advise.	
If animals are encountered, leave them alone and contact Site Supervisor and Environmental Advisor.	All
Protection 'no go zone' to be place for any threatened species	All
Modify the route of trenching to avoid any damage to trees and tree roots.	SS
All stockpiles must be located outside of Tree Protection/Drip Zone	SS
Soil with weed material be removed prior to any movement off site. To reduce the spread of weeds no soil in to be transported into the works areas. Ensure that all machinery, vehicles and equipment are free of weed material before entering and exiting the works areas.	SS
Waste and Spoil - Appendix E: Environmental Procedures CEMP CoA – E73 to E76 REMM – WM1 to WM7	
Control/Mitigation	Resp
Waste disposal locations and applicable EPLs are to be identified prior to disposal and are subject to Downer approval prior to removal from site. – HOLD POINT	All
All recyclable waste would be recycled where possible.	
Material or spoil that has the potential to contain asbestos or other contaminants will be tested and will be managed by an appropriately licensed contractor as required.	
All wastes will be removed from site at the completion of the project and will be tracked.	SS
In accordance with CoA E40, the Unexpected Contaminated Land Procedure and Asbestos Finds Procedure (refer Appendix B of CEMP) to be followed in the event of an unexpected find.	All
Any construction waste generated will be stored in bins as appropriate.	SS
Cover stockpiles with geofab or like material and secure the base to avoid erosion and sediment controls.	
CoA E73 - Any items or infrastructure that are salvageable must be identified in the relevant CEMP Sub-plan (Condition C3). Note: reuse of items may include signal boxes, indicators, ballast or other rail infrastructure. These items should be offered to Sydney Trains or reuse.	
CoA E74 - 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.	EA / SS
CoA E75 - Waste must only be exported to a site licensed by the EPA for the storage, treatment, processing, reprocessing or disposal of the subject waste, or in accordance with a Resource Recovery Exemption or Order issued under the Protection of the Environment Operations (Waste) Regulation 2014, or to any other place that can lawfully accept such waste.	
CoA E76 - All waste must be classified in accordance with the EPA's Waste Classification Guidelines, with	

appropriate records and disposal dockets retained for audit purposes.	
REMM WM2 - A recycling target of at least 90 per cent would be adopted.	All
REMM WM3 - Spoil would be managed in accordance with the spoil management hierarchy.	
REMM WM4 - Target 100 per cent reuse of reusable spoil.	SS / EA
Traffic • CoA E46 – E53, E54 (Visual amenity, Lighting) • SPIR REMM • Section 8 of CEMF	
Control/Mitigation	Resp
Manage traffic in accordance with mitigation measures from Traffic Management Plan.	SS / PM
Obtain Road Occupancy License as when required.	PM
Implement Traffic Controls as per conditions of approval of TCP by the relevant council.	SS
All vehicles to enter rail corridor from designated access points on site.	All
Plant and machinery not to be left idling.	
Pedestrian or cyclist access will be maintained in public spaces or redirected as appropriate.	
Chemical, Fuel Storage and Use	
Control/Mitigation	Resp
No chemicals or fuel required to be stored onsite.	All
Any required chemicals on site must be verified and registered in SDS and SDS kept on site.	WHS / SS
Place spill kits in compound and portable spill kits in vehicles	SS
Refueling to occur in designated/approved area only with spill tray, absorbent pads, socks placed	
All plant and machinery to be daily checked (pre-starts) to ensure n leaking oil, fuel or other liquids.	
Imported Material	
Control/Mitigation	Resp
All imported material will be sourced from a licensed supplier with onsite storage to only occur with controls in place.	All
No Go Zone	
Control/Mitigation	Resp
All construction activities will be restricted to the project boundary. Any activity outside the project boundary must be approved prior by SM /ER	All

Overall Scope of Works as per Preferred Project Works – SPIR Volume 1 June 2018	
Station Works	**Location/Feature**
The existing entrance would be retained and upgraded.	Entry/Exit
Existing heritage listed platforms re-levelled.	Heritage - Platforms
Retain the existing heritage building within car park to the north of the station.	Heritage – Car Park building
The existing heritage listed platform building retained and repurposed.	Heritage - Booking Office & Platforms

SMSU6: ENVIRONMENTAL CONTROL MAP – BELMORE

Station Area	Location/Feature
Existing bus stops in vicinity retained.	Bus stop
New taxis and kiss and ride facilities would be provided on Toburk Avenue	New facilities – taxis, kiss ride
New accessible parking spaces would be provided in the Toburk Avenue car park.	Parking - New
Retain existing parking along Redman Parade.	Parking – existing
New bike area provided within Toburk Avenue car park	Bike area - new
Retain existing bike parking on Burwood road to the north of the station entrance.	Bike area - existing

Appendix 1.1: Station staging diagrams

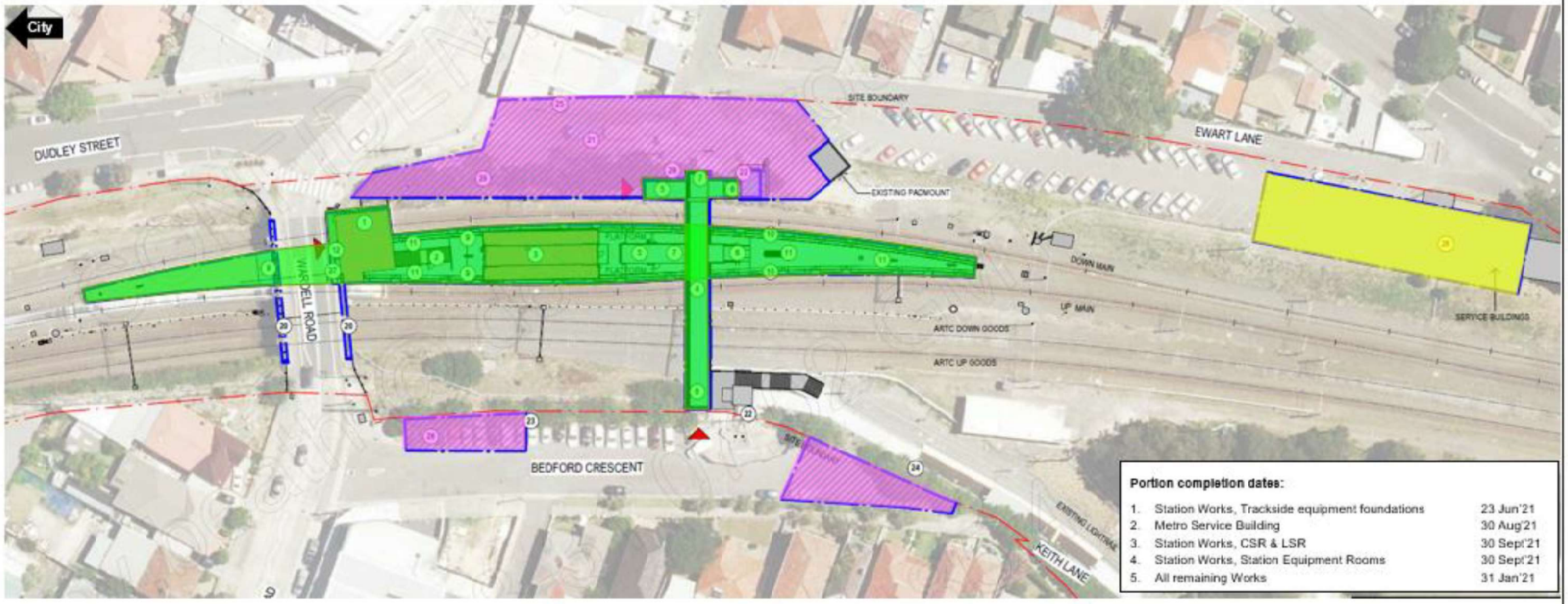
Site Name: Belmore		SWMSUW- P6	STAGING PLAN
Possession #	38	Possession Date:	WE38 and post possession (no MSB works until after WE38)

Station & precincts Area	Main Service Building Area	Corridor and Platforms Area
1- Site Investigations and survey works, Service Identification, Dilapidation [redacted] 2- site compounds set up 3- Muster Point & compound Access 4- ATF Fencing with access gate	10- MSB area: . ATF fencing with access gate in the corridor interface . Site Investigations and survey works . Environmental assessment and soil classification . Service Identification . Dilapidation, NDD and report 11- Set-Up Laydown Area & Access point	20- .Site Investigations and survey works .Service Identification and protection .Heritage inspection and report .Dilapidation, [redacted]

Southwest Metro Package 5 Campsie Station Staging Diagrams	Stage No: 02 Dates Period: 20 – 21 March 2021 WE38 Possession until 16th April	**Key Requirements:** - Pre-construction minor works exemption granted by 19 March 2021. - Sydney Trains T-16 Possession Planning - Planning Approval Conditions - Contract requirements

Station Works		Precinct Works	Metro Service Building Works (MSB)
General - Site Investigation - Dilapidation - Site Investigation - Soil classification - Site Investigation - Heritage / Enviro investigation - Site Investigation - Survey works - Site Investigation - NDD works - Service Identification (all areas) **Concourse Building Works:** - Erect temporary hoarding to commence Demolition	**Station Platform Building Works:** - Install hoarding - Identify & Protect Services **Trackside Equipment's** - Install temporary works for protection		**General Weekend Possession Scope:** - MSB building site hoarding on rail side - Install environmental controls (rail side) - Demo of existing buildings under MSB footprint (post WE38)

Southwest Metro Package 5 Dulwich Hill Station Staging Diagrams	Stage No: 02 Dates Period: 20 – 21 March 2021 WE38 Possession until 16th April	**Key Requirements:** - Pre-construction minor works exemption granted by 19 March 2021. - Removal of OHW Portal B7+910, Installation of OHW footing B7+916 - Installation of hoardings on platform



Portion completion dates:

1.	Station Works, Trackside equipment foundations	23 Jun'21
2.	Metro Service Building	30 Aug'21
3.	Station Works, CSR & LSR	30 Sept'21
4.	Station Works, Station Equipment Rooms	30 Sept'21
5.	All remaining Works	31 Jan'21

Station Works

General enabling works scope:
- Site Investigation: NDD, Existing Service Mark-up, Enviro Investigation, Soil Classification, Dilapidation
- Install temporary ULX for concrete delivery lines

Track side:
- Install OHW footing B7+916
- Install OHW footing B7+910
- Remove OHW Portal B7+908

Platform Building
- Site investigation of station platform including survey
- Identify services (all rooms)
- Protect services (all rooms)

Station
- Install hoarding for new stairs/lift pit/central pier/ Platform 1and 2
- Place within new hoardings a small excavator and other plant/equipment for works outside of possession
- Install hoarding for new stairs/lift at Abutment A
- Install temporary fencing around Abutment B worksite area at track level

Precinct Works

- Install temporary fencing around worksite area
- Service search and positive identification
- Access to rail corridor through this area
- set up site sheds
- Remove and stockpile overburden in precinct area in preparation for Lift shaft excavation (at Abutment A).

Metro Service Building Works

- General. Dilapidation surveys.
- Environmental controls.
- De-vegetation and tree removal (Planned for outside of possession)
- Set up temporary fencing to delineate worksite
- Service search and positive identification

Downer
Relationships creating success

Hurlstone Park Station Dates Period: 20 – 21 March 2021 WE38 Possession until 16th April

#	Scope
1	Services Search, Investigation, Surveying & Mark-Up
2	Potholing to identify location of existing services & utilities
3	Vegetation & Tree Removal
4	Installation of Timber hoardings and/or ATF
5	Dilapidation & Condition Surveys
6	New drainage relocation (post WE38)
7	Temporary piling pad (post WE38)

Notes:
- No hi-rail plant movements planned for WE38

Symbol Key	
	Tracks under possession & power isolation (Bankstown Lines & ARTC)
	Plant Movements
	Work Area
P1	Platform Number
	Emergency Assembly Point
A1	Access Gates

Downer
Relationships creating success

Wiley Park Station Dates Period: 20 – 21 March 2021 WE38 Possession until 16th April

#	Scope
1	Services Search, Investigation, Surveying & Mark-Up
2	Potholing to identify location of existing services & utilities
3	Vegetation & Tree Removal (WE38), grubbing (post WE38)
4	Installation of Timber hoardings and/or ATF
5	Dilapidation & Condition Surveys (Track/Platforms & Bridge)
6	Piling pad post grubbing (post WE38)
7	Temporary access road (post WE38)

Symbol Key	
	Tracks under possession and power isolation (Bankstown Lines)
	Plant Movements (#2 & #3)
	Work Area
P1	Platform Number
	Emergency Assembly Point
A1	Access Gates

Southwest Metro Package 5 Punchbowl Station Staging Diagrams	Stage No: 02 Dates Period: Dates Period: 20 – 21 March 2021 WE38 Possession until 16th April	Key Requirements: - Pre-construction minor works approval

Station Works		Precinct Works	Metro Service Building Works (MSB)
• Site Investigation - Dilapidation • Site Investigation - Soil classification • Site Investigation - Heritage / Enviro investigation • Site Investigation - Survey works • Site Investigation - NDD works • Site Establishment	• Lift shaft 1- Hoarding • Lift shaft 2- Hoarding • Lift shat 3- Hoarding • Platform – Site investigation and NDD works	• Station approaches- Site investigation and NDD works	• Service buildings- Site investigation and NDD works • existing building under MSB footprint to be demolished post WE38

Appendix 1.2: 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.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
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. Identify and implement approval requirements within the CEMP, sub-plans and ERAPs Check contract documentation. Identify and implement requirements from the Contract. Establish a register of approvals, licenses and permits.	L5	C3	13	Maintain Compliance Risk Matrix Undertake environmental audits as per Section 3.9 of the CEMP
Noise									
Noise from general construction activities resulting in impact to residents	Disturbance to residents or neighbouring businesses. Potential for complaints.	L2	C5	18	Mitigation measures as per the CNVIS and NVMP are to be implemented 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. Monitor noise for compliance as the works progress at receiver locations. Provide periods of respite for high noise generating activities. Apply noise mitigation measures during entire project. Noise efficient equipment to be used on site.	L3	C5	12	Noise performance will be continually monitored as per the requirements of the NVMP. The Sydney Metro Construction Noise and Vibration Strategy is to be implemented
Noise during works required to be undertaken out of	Disturbance to residents or neighbouring	L2	C5	18	Implement noise mitigation strategies for OOHW.	L3	C4	11	Noise performance will be continually monitored as per the requirements of the NVMP.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
standard construction hours	businesses with potential for complaints.				Monitor noise for compliance to project goals. Control Measures as per the NVMP are to be implemented.				The Sydney Metro Construction Noise and Vibration Strategy (CNVS) is to be implemented
Vibration									
Vibration intensive activities undertaken on the site such as hammering, vibratory rolling, etc (noted not occurring but monitoring to be conducted)	Disruption, annoyance and nuisance to residents. Potential damage to adjacent residential and commercial residences and structures. Disruption to businesses as a result of vibration nuisance	L3	C5	12	Mitigation measures as per the NVMP are to be implemented. Determine vibration limits and structure/receiver offset distances. 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.	L4	C5	7	Standard and additional mitigation measures for sensitive receptors around the Project works will be applied as per the CNVS, NVMP and the CNVIS.
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.	L4	C4	11	Mitigation Measures as per SWMP and any ESCP to be implemented (appendix 1) Install erosion and sediment controls within the project area. Ensure measures are inspected and maintained as the works progress 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.
Stockpiling of vegetation and topsoil	Wind and water erosion causing	L4	C3	17	Develop Environmental Control Maps to show stockpile areas.	L5	C4	8	Implement stockpile controls prior to the work commencing. Undertake regular inspections

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	weed/seed dispersion offsite. Location of stockpiling next to waterways causing weeds/seeds to disperse from construction site.				Utilise appropriate locations for stockpiling (away from waterways, watercourses, drains where feasible and reasonable). Designated vegetation stockpiling areas. Minimise stockpiling / Use temporary stockpiling Cover stockpiles if left for extended periods				of work areas pre, during and after works to ensure controls are in good condition.
Non-compliant water from construction works discharged from site	Non-compliant water entering stormwater system waterways (i.e. polluting - not compliant with discharge criteria).	L4	C4	11	Environmental Manager to approve all water discharges from site. Induction and toolbox talks Toolbox training on site procedures for water discharge Educate site staff on requirements and consequences of prosecution	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 establishment / early works	Incorrect disposal of waste, further costs incurred for classifications and disposal, fines may be issued.	L3	C5	12	Implement the controls within Appendix E - Procedure 4: Waste and Spoil of the CEMP (noted as in draft for package 5) 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.	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		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					All material that requires off-site disposal to be appropriately tested and classified against the Waste Classification Guidelines (NSW EPA, 2014)				
Earthworks spoil disposal	Incorrect classification of waste (spoil) resulting in incorrect / illegal disposal/reuse.	L3	C5	12	Inductions, toolbox talks and training on recycling facilities and waste segregation practices. Separation of waste on site. Tracking of disposal processes. All contamination hotspots would be clearly marked in the field (where possible). Hotspots will be shown within contamination mapping and will be included in the Permit to Disturb process.	L4	C5	7	Regular inspections of work areas Monitor and ensure reporting of all movements of waste from the worksite
Washout of concrete in undesignated areas.	Sediment laden/alkaline water polluting surrounding stormwater system /watercourses.	L3	C4	16	Concrete washout areas clearly marked on Environmental Control Maps and delineated. Inductions on designated concrete washout areas. Subcontractor's agreements to include project compliant waste management principles.	L5	C4	8	Regular inspections of concrete washout areas and controls
Contamination									
Management of contaminated or untreated materials	Non-compliant material and contaminated water entering surrounding waterways. Decrease in health of nearby ecosystems.	L3	C4	16	Implement contamination management procedures from within SWMP (noted as in draft). Identify any contamination hotspots and incorporate procedures for these locations into construction documentation. Apply the unexpected finds procedure within the SWMP.	L4	C4	11	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 from the worksite.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					Induct personnel on unexpected finds procedure.				
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.	L4	C4	11	If contaminated soil is encountered, all works are to stop in the vicinity of the find and investigations commence. Unexpected finds procedure within the SWMP 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.
Encountering asbestos / contaminated material on site	Transfer of material into previously uncontaminated area (outside work site) causing new contamination.	L3	C4	16	Inspections of excavated and filled surfaces would be made during Construction to determine the presence of visible asbestos. Conduct further site investigations to determine the presence and extent of contamination prior to Construction works commencing. Contaminated soils would not be stockpiled on the structural fill layer or formation layers to avoid cross contamination.	L4	C4	11	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	L3	C4	16	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.	L5	C4	8	Regular inspections of storage areas

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	fines. Risk of igniting volatile substances. Unauthorised access to site / potential vandalism/damage leading to pollution.				Storage areas to be away from sensitive areas and appropriately bunded. SDS approved prior to bringing hazardous substances on site including risk assessment. Environmental Control Maps show storage locations and associated controls e.g. spill kits, etc. Training in use of spill kits. Contingency plans would be developed to deal with any spills which might occur during Construction. Clearly label containers. Regular auditing and inspection of storage areas and materials. Make storage areas restricted access areas. Reduce/eliminate need for hazardous substances. Ensure all work sites are secure before leaving the site. All liquids i.e. paint etc. are to be securely locked away at the end of each day				
Fuel contaminated runoff from construction works leaving site	Fuel contaminated runoff entering stormwater or waterways (i.e. polluting – not compliant with discharge criteria).	L3	C4	16	All storm water drains should be identified prior to works and controls implemented. Appropriate bunding/storage of substances. Toolbox on site procedures for sediment controls and chemical storage. Educate site staff on requirements and consequences of prosecution.	L4	C4	11	Regular inspections of works site to ensure all controls are in good condition and working.
Heritage									

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Unexpected heritage items encountered.	Work delays, additional studies, approvals required, damage to heritage item.	L3	C4	16	Implement the mitigation measures within the HMP. General inductions toolbox training on heritage management protocols. Label any known heritage items on Environmental Control Maps. If suspected heritage item encountered. Works to stop immediately and implement the Sydney Metro Unexpected Heritage Finds Procedure (refer to HMP) and appendix 2 of this document. Clearly highlight no-go zones on the ECM and communicate requirements to construction personnel during pre-start briefs, inductions and tool-box talks.	L4	C4	11	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
Impact to Heritage Items	Damage to heritage fabric of heritage items by Project works	L3	C3	24	Implement the mitigation measures within the HMP. 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 (Belmore). Work within the safe working distances nominated in the NVMP. Undertake vibration compliance monitoring as per the NVMP. Clearly highlight no-go zones on the ECM and communicate requirements to construction personnel during pre-start briefs, inductions and tool-box talks. Demarcation of worksites and communicate it clearly with all construction personnel.	L4	C3	17	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.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					The method for the demolition of existing elements at the Project sites would be developed to minimise direct and indirect impacts to adjacent and / or adjoining heritage items. Note: demolition extends as far removal of minor volumes of asphalt for hoarding posts. No impacts to any movable heritage considered as part of the scope of this application				
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	L4	C3	17	Implement the controls within Appendix E – Procedure 1: Biodiversity of the CEMP (noted as in draft) 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 vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken in accordance with the CEMF and CoA. If trees require trimming or removal, the requirements of CoA E5 would be implemented. 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	L5	C3	13	Implement Vegetation Removal Permit System. Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition. All works at Hurlstone Park and Wiley Park must be conducted in accordance with Ecologist and Arborist advice as obtained for CoA E5 and REMM B2 and B6

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
					accordance with ecologist advice and mitigation measures.				
Clearing and grubbing of vegetation within work site.	Erosion of soils, uncontrolled runoff, sediment deposited into surrounding vegetated areas and water courses, and invasion of weeds. Wrong vegetation removed. Potential for injury to native fauna.	L3	C4	16	Implement the controls within Appendix E – Procedure 1: Biodiversity Implement the mitigation measures within the SWMP. Inductions and toolbox training on erosion and sediment controls. Where possible works to be staged so environmental controls can be implemented after clearance works. If vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken in accordance with the CEMF and CoA. If trees require trimming or removal, the requirements of CoA E5 would be implemented. A Tree Report is to be prepared for trees to be removed or pruned. Approved Erosion and Sediment Control Plans in place prior to starting works. Where applicable, mature trees and other native vegetation to be retained would be clearly delineated, with all Construction activities excluded from these areas. Pre clearing checklist to be completed before any clearing of vegetation.	L4	C4	11	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	L4	C3	17	Implement the controls within Appendix E – Procedure 1: Biodiversity	L5	C3	13	Implement Vegetation Removal Permit System.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	threatened species by plant and equipment				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 vegetation, other than grass and weeds, needs to be trimmed or removed, further assessment would be undertaken in accordance with the CEMF and CoA. If trees require trimming or removal, the requirements of CoA E5 would be implemented. 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				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.	L3	C5	12	Implement the controls within Appendix E – Procedure 3: Air Quality from the CEMP (noted as in draft) Toolbox training on dust and air quality Management. Provide dust mitigation measures through water sprays/misting as required. Cover stockpiles when not in use. Erosion and Sediment Control Plans approved before works commence.	L4	C5	7	Undertake regular inspections of work areas pre, during and after works to ensure controls are in good condition.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
Exhaust from plant and equipment.	Emissions resulting in air pollution.	L3	C5	12	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 carparks during construction.	Loss of parking availability to adjacent residential and commercial properties could result in community complaints.	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. Additional consultation required with CCBC for the use of the Floss Street Carpark to satisfy REMM TC4, TC5 and CoA C51 – NO USE UNTIL CONSULTATION COMPLETE Site vehicles shall be parked within the rail corridor and not affect public parking area where possible. Develop and implement CTMP (draft) / Traffic control procedures TCP's	L4	C5	7	Complete relevant consultation with respect to Hurlstone Park. Complete regular toolbox talks on how to minimise impacts in relation to traffic. Undertake regular inspections of worksite and adjacent streets. 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	Deliveries of plant and materials shall be undertaken outside of peak periods where possible. Site vehicles shall be parked within the rail corridor and not affect public parking areas. Scheduled road movements shall be minimised where possible. Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services.	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		
					Approved Traffic Management Plans / TCP's in consultation with relevant authorities. Detour routes to be advertised/ notified. Approved access routes, detailed Traffic Control Plans to be implemented as required. Clear notifications / detour and directional signage				
Management of heavy vehicles / access routes.	Complaints from sensitive receivers due to increased level and frequency of noise.	L3	C5	12	Deliveries of plant and materials shall be undertaken outside of peak periods where possible. Site vehicles shall be parked within the rail corridor and not affect public parking areas. Scheduled road movements shall be minimised where possible. Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services. Designated access routes. Approved CTMP. Community Notifications. Pedestrian management with traffic controller in place where required.	L4	C5	7	Complete regular toolbox talks on how to minimise impacts in relation to traffic. Permits from local council and/or RMS
Truck deliveries out of normal working hours	Un-approved deliveries resulting in non-conformance with project requirements.	L3	C5	12	Personnel training of noise awareness to community included in induction and toolboxes. Induction on Construction Hours for deliveries. Communication of delivery times to suppliers.	L4	C5	7	Delivery drivers provided with haulage routes prior to travelling to site and delivery times. Complete regular toolbox talks on how to minimise impacts in relation to traffic.

Aspect	Potential Environmental Impact	Initial Rating		Risk	Control Measures	Residual Rating		Risk	Management of Residual Risk
		L x	C			L x	C		
	Noise impact to community / potential complaints.				Community Notifications on project activities occurring locally. Code of conduct / selection criteria in place for subcontractors. Out of hours works approval where required. Approved traffic/access routes. Planning and staging of works in approved hours as much as practical.				
Visual Amenity									
Building Materials Stockpiles Temporary construction sheds and storage containers Plant and equipment movement Lighting	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.
Ancillary facilities									
Appropriate selection and management of the ancillary facilities	Inadequate assessment of impacts to surrounding business and residential receivers and environmental receptors. Potential for complaints.	L4	C4	11	Any ancillary facility not identified in the project Planning Approval, must comply with the relevant CoA (A16-A18). Use of site compounds would comply with the requirements of the CEMP (noted as in draft) and Sub-plans, CoA, REMM and CEMF to ensure environmental impacts are adequately managed.	L5	C4	8	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	L3	C4	16	Develop and implement the Utilities Management Strategy in accordance	L5	C4	8	Permit to Disturb Service searching

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

Sydney Metro Consequence Criteria

	ENTERPRISE 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

Appendix 2: Unexpected finds procedure (contamination/ asbestos)

UNEXPECTED CONTAMINATED LAND AND ASBESTOS FINDS PROCEDURE

Induction/Toolbox talks
All personnel are to receive site inductions and ongoing training via Toolbox talks .

Observation of soil during excavation works
Observe soil during excavations to check for evidence of contamination.

Has evidence of contamination been observed?

YES

STOP WORKS
- Notify the Site Supervisor and Environmental Team and cordon off area
- Do not touch or disturb the item / material
  Delineate the site of the find
- Cover the contaminated material (may be stockpiled or in-situ)

The following detail should be provided to the Environment Team
- The location of the potential contamination
- Visual appearance
- Odour
- Depth
- Surrounding material and mode of discovering the material

Additional assessment
If required, the Construction Manager is to obtain assistance from a suitably qualified Environmental Consultant in identifying the potential hazard to human health or the environment in accordance with the legislative requirements.
This may include sampling and laboratory analysis.

NO

Management Strategy
- Develop a plan for managing and/or remediating the suspect material. This may be a waste classification or remediation action plan
- Obtain any necessary further approvals

Strategy Implementation
- Implement the approved management and/or remediation. If the material is to be removed, refer to Waste Management Procedure for classification and disposal.
- If required, the Environmental Consultant having input into the Management Strategy, will perform or oversee any monitoring required for the works (eg air quality monitoring). Validation of the remediated area will also be undertaken as appropriate. The Environmental Consultant will also ensure that any contaminated material that has been removed or left in-situ is managed appropriately.
- Document compliance with the approved management and remediation and provide documentation to the owner or the owner's nominated representative, and the regulator (if required).

Continue Earthworks
Once the contamination find has been addressed the Construction Manager is to approve the recommencement of works.

RESPONSIBILITY

- ENVIRONMENT TEAM
  CONSTRUCTION TEAM
- CONSTRUCTION TEAM
- ENVIRONMENT TEAM
  CONSTRUCTION TEAM
  SITE SUPERVISOR
- CONSTRUCTION MANAGER
  ENVIRONMENTAL CONSULTANT
- ENVIRONMENT TEAM
  ENVIRONMENTAL CONSULTANT
- ENVIRONMENT TEAM
  CONSTRUCTION TEAM
  ENVIRONMENTAL CONSULTANT
- CONSTRUCTION MANAGER

Indicators of Contamination:
Examples of materials that could include the presence of contamination include (but are not limited to):
- Asbestos cement fragments or other potentially asbestos containing materials
- Odorous or stained soil
- Buried chemical drums or containers
- High proportion of waste materials or building debris
- Tarry or ashy material
- Brightly or unusually coloured material
- A yellow and/or red mottling in the soil profile indicates there may be Acid Sulphate Soils (ASS).

Asbestos
Asbestos finds are to be managed in accordance with the SWMP and Project Health and Safety Management Plan.

Acid Sulfate Soils (ASS)
ASS are naturally occurring soils, sediments or organic substrates that are formed under waterlogged conditions in coastal areas. When exposed to air after being disturbed, soils containing iron sulfides produce sulfuric acid and often release toxic quantities of iron, aluminium and heavy metals.
If ASS is encountered, possible management strategies include:
- Modifying the works to avoid the area of ASS where possible
- Delineation and removal to a suitably licenced facility
- Onsite treatment to neutralise the ASS, which could include the application of lime in accordance with recommendations of the Environmental Consultant.

Note: The management of any ASS needs to include appropriate erosion and sedimentation controls to minimise the potential for pollution to waters. Refer to the SWMP.

Management and Disposal of Contaminated Material
- Specific approval may be required to implement management strategies and a Safe Work Methods Statement (SWMS) must be prepared prior to undertaking any remediation work, except in emergency situations.
- Contaminated material will be disposed of in accordance with the Waste and Spoil Management Procedure (Refer Appendix E of the CEMP).

Appendix 2.1: Unexpected finds procedure (heritage / archaeological)

Sydney Metro Unexpected Heritage Finds Procedure

[SM-18-00105232]

Sydney Metro Integrated Management System (IMS)

Applicable to:	Sydney Metro
Document Owner:	Author/Document owner
System Owner:	IMS element owner (generally a member of the Executive)
Status:	Draft/Final
Version:	2.0
Date of issue:	19 March 2019
Review date:	22 March 2020

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1. Purpose

This procedure is applicable to the Sydney Metro program of works including major projects delivered under Critical State Significant Infrastructure Planning Approvals (CSSI), early CSSI minor and enabling works and works that are subject to the NSW Heritage Act (1977) including s57/139 and s60/140 exemptions and permit approvals.

This procedure has been prepared for Sydney Metro programs to provide a method for managing unexpected heritage items (both Aboriginal and non-Aboriginal) that are discovered during preconstruction (pre-Construction Heritage Manage Plan approval), construction phases (post Construction Heritage Manage Plan approval) and for works subject to the NSW Heritage Act (1977).

An 'unexpected heritage find' can be defined as any unanticipated archaeological discovery, that has not been previously assessed or is not covered by an existing approval under the Heritage Act 1977 (Heritage Act) or National Parks and Wildlife Act 1974 (NPW Act).

In NSW, there are strict laws to protect and manage heritage objects and relics. As a result, appropriate heritage management measures need to be implemented to minimise impacts on heritage values; ensure compliance with relevant heritage notification and other obligations; and to minimise the risk of penalties to individuals, Sydney Metro and its contractors. This procedure includes Sydney Metro's heritage notification obligations under the Heritage Act, NPW Act and the Coroner's Act 2009 and the requirements of the conditions of approval(CoA) issued by NSW Department of Planning and Environment.
Note that a Contractor must not amend the Sydney Metro Unexpected Finds Procedure without the prior approval of Sydney Metro.

It should be noted that this procedure must be read in conjunction with the relevant CCSI conditionals of approval (if applicable), the contract documents and other plans including the Sydney Metro Exhumation Management Plan and procedures developed by the contractor during the delivery of the Sydney Metro works.

1.1. Legislation that does not apply

The following authorisations are not required for Sydney Metro approved Critical State Significant Infrastructure (and accordingly the provisions of any Act that prohibits an activity without such an authority do not apply):

- Division 8 of Part 6 of the Heritage Act 1977 does not apply to prevent or interfere with the carrying out of approved State significant infrastructure.
- An approval under Part 4, or an excavation permit under section 139, of the Heritage Act 1977,
- An Aboriginal heritage impact permit under section 90 of the National Parks and Wildlife Act 1974,

This document provides relevant background information in Section 4, followed by the technical procedure in Sections 6 and 7. Associated guidance referred to in the procedure can be found in Appendices 1-6.

2. Scope

Despite earlier investigation, unexpected heritage items may still be discovered during works on a Sydney Metro site. When this happens, this procedure must be followed. This procedure provides direction on when to stop work, where to seek technical advice and how to notify the regulator, if required.
This procedure **applies to**:

- the discovery of any unexpected heritage item, relic or object, where the find is not anticipated in an approved Archaeological Assessment Design Report (AARD) or Archaeological Method Statements (AMS) that are prepared as part of the planning approval for that project.

This procedure must be followed by all Sydney Metro staff, contractors, subcontractors or any person undertaking works for Sydney Metro. It includes references to some of the relevant legislative and regulatory requirements, but is not intended to replace them.
This procedure **does not apply** to:

- The discovery and disturbance of heritage items as a result of investigations being undertaken in accordance with the Office of Environment and Heritage's (OEH) *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW 2010*[1]; an Aboriginal Heritage Impact Permit (AHIP) issued under the NPW Act; or a permit approval issued under the Heritage Act.
- the discovery and disturbance of heritage items as a result of construction related activities, where the disturbance is permissible in accordance with an AHIP; or an approval issued under the Heritage Act or CSSI /CSSD planning approval;

3. Definitions

All terminology in this procedure is taken to mean the generally accepted or dictionary definition with the exception of the following terms which have a specifically defined meaning:

	Definitions
AHIP	Aboriginal Heritage Impact Permit
Aboriginal object	An Aboriginal object is any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains. An Aboriginal object may include a shell midden, stone tools, bones, rock art, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps.
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CSSD	Critical State Significant Development
CSSI	Critical State Significant Infrastructure
EP&A Act	**NSW *Environmental Planning and Assessment Act 1979***
Excavation	A person that complies with the Heritage Council of NSW's Criteria for Assessment of

[1] An act carried out in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* as published by the Department in the Gazette on 24 September 2010 is excluded from the definition of ***harm*** an object or place in section 5 (1) of the NPW Act.

Director	Excavation Directors (July 2011) to oversee and advise on matters associated with historic archaeology. Note this applies to a specific project/program and requires consultation and/or approval by OEH.
Heritage Act	NSW *Heritage Act 1977*
NPW Act	NSW *National Parks and Wildlife Act 1974*
OEH	Office of Environment and Heritage
SM	Sydney Metro
Relic (non-Aboriginal heritage)	A relic means any deposit, artefact, object or material evidence that: a) relates to the settlement of the area that comprises NSW, not being Aboriginal settlement, and b) is of State or local significance. A relic may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse.
TfNSW	Transport for New South Wales
Work (non-Aboriginal heritage)	Archaeological features such as historic utilities or buried infrastructure that provide evidence of prior occupations such as former rail or tram tracks, timber sleepers, kerbing, historic road pavement, fences, culverts, historic pavement, buried retaining walls, cisterns, conduits, sheds or building foundations, but are also subject to assessment by the Excavation Director to determine its classification

4. Types of unexpected heritage items and corresponding statutory protections

The roles of project, field and environmental personnel (including construction contractors) are critical to the early identification and protection of unexpected heritage items.

Appendix 1 illustrates the wide range of heritage discoveries found on Sydney Metro projects and provides a useful photographic guide. Subsequent to confirmation of a heritage discovery it must then be identified and assessed by Excavation Director. An 'unexpected heritage item' means any unanticipated discovery of an actual or potential heritage item, for which Sydney Metro does not have approval to disturb[2] and/or have an existing management process in place.

These discoveries are categorised as either:

(a) Aboriginal objects

(b) Historic (non-Aboriginal) heritage items

(c) Human skeletal remains.

The relevant legislation that applies to each of these categories is described below and is also addressed in the Sydney Metro Exhumation Management Plan).

4.1. Aboriginal objects

The NPW Act protects Aboriginal objects which are defined as:

[2] Disturbance is considered to be any physical interference with the item that results in it being destroyed, defaced, damaged, harmed, impacted or altered in any way (this includes archaeological investigation activities).

> *"any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains"*[3].

Examples of Aboriginal objects include stone tool artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burials and scarred trees.

IMPORTANT!

All Aboriginal objects, regardless of significance, are protected under law.

If any impact is expected to an Aboriginal object, an AHIP is usually required from OEH Also, when a person becomes aware of an Aboriginal object they must notify the Director-General of OEH about its location[4]. Assistance on how to do this is provided in Section 7 (Step 5).

4.2. Historic heritage items

Historic (non-Aboriginal) heritage items may include:

- Archaeological 'relics'
- Other historic items (i.e. works, structures, buildings or movable objects).

4.2.1. Archaeological relics

The Heritage Act protects *relics* which are defined as:

> "*any deposit, artefact, object or material evidence that relates to the settlement of the area that comprises NSW, not being Aboriginal settlement; and is of State or local heritage significance*"[5].

Relics are archaeological items of local or state significance which may relate to past domestic, industrial or agricultural activities in NSW, and can include bottles, remnants of clothing, pottery, building materials and general refuse.

IMPORTANT!

All relics are subject to statutory controls and protections.

If a relic is likely to be disturbed, a heritage approval is usually required from the NSW Heritage Council[6]. Also, when a person discovers a relic they must notify the NSW Heritage Council of its location[7].

4.2.2. Other historic items

Some historic heritage items are not considered to be 'relics', but are instead referred to as works, *buildings, structures or movable objects. Examples of these items that may be encountered include culverts, historic pavements, retaining walls, tramlines, rail tracks, timber sleepers, cisterns*, fences, sheds, buildings and conduits. Although an approval under the Heritage Act may not be required to disturb these items, their discovery must be managed in accordance with this procedure.

[3] Section 5(1) NPW Act.
[4] This is required under section 89(A) of the NPW Act and applies to all Sydney Metro projects.
[5] Section 4(1) Heritage Act.

[7] This is required under section 146 of the Heritage Act and applies to all Sydney Metro projects.

As a general rule, an archaeological relic requires discovery or examination through the act of excavation. For an unexpected find an archaeological excavation permit under section 140 of the Heritage Act may be required to do this. In contrast, 'other historic items' either exist above the ground surface (e.g. a shed), or they are designed to operate and exist beneath the ground surface (e.g. a culvert).

4.3. Human skeletal remains

Also refer to Sydney Metro Exhumation Management Plan for a more detailed explanation of the approval processes.

Human skeletal remains can be identified as either an Aboriginal object or non-Aboriginal relic depending on ancestry of the individual (Aboriginal or non-Aboriginal) and burial context (archaeological or non-archaeological). Remains are considered to be archaeological when the time elapsed since death is suspected of being 100 years or more. Depending on ancestry and context, different legislation applies.

As a simple example, a pre-European settlement archaeological Aboriginal burial would be protected under the NPW Act, while a historic (non-Aboriginal) archaeological burial within a cemetery would be protected under the Heritage Act. For a non-Aboriginal archaeological burial, the relevant heritage approval and notification requirement described in Section 3.1 would apply. In addition to the NPW Act, finding Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under section 20(1) of the Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth).

IMPORTANT!

<u>All</u> human skeletal remains are subject to statutory controls and protections.

All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently.

However, where it is suspected that less than 100 years has elapsed since death, the human skeletal remains come under the jurisdiction of the State Coroner and the Coroners Act 2009 (NSW). Such a case would be considered a 'reportable death' and under legal notification obligations set out in section 35(2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old8 regardless of ancestry (i.e. both Aboriginal and non-Aboriginal remains). Public health controls may also apply.

Guidance on what to do when suspected human remains are found is provided in Appendix 5.

5. Legislative Requirements

Table 1 identifies some of the relevant legislation/regulations for the protection of heritage and the management of unexpected heritage finds in NSW. It should be noted that significant

[8] Under section 19 of the *Coroners Act 2009*, the coroner has no jurisdiction to conduct an inquest into reportable death unless it appears to the coroner that (or that there is reasonable cause to suspect that) the death or suspected death occurred within the last 100 years.

penalties exist for breaches of the listed legislation as a result of actions that relate to unauthorised impacts on heritage items. Further, it is noted that heritage that has been assessed and is being managed in accordance with relevant statutory approvals(s) is exempt from these offences.

To avoid breaches of legislation, it is important that Sydney Metro and its contractors are aware of their statutory obligations under relevant legislation and that appropriate control measures are in place to ensure that unexpected heritage items are appropriately managed during construction. Contractors/Alliances will need to ensure that they undertake their own due diligence to identify any other legislative requirements that may apply for a given project.

Table 1 Legislation and guidelines for management of unexpected heritage finds

Relevant Requirement	Objectives and offences
Environmental Planning and Assessment Act 1979 (EP&A Act)	Section 115ZB Giving of approval by Minister to carry out a project.
Environmental Planning and Assessment Act 1979 (EP&A Act)	Requires heritage to be considered within the environmental impact assessment of projects. This guideline is based on the premise that an appropriate level of Aboriginal and non-Aboriginal cultural heritage assessment and investigations and mitigation have already been undertaken under the relevant legislation, including the EP&A Act, during the assessment and determination process. It also assumes that appropriate mitigation measures have been included in the conditions of any approval.
***Heritage Act 1977* (Heritage Act)**	The Heritage Act provides for the care, protection and management of heritage items in NSW. Under section 139, it is an offence to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by the Heritage Division of the OEH. Under the Act, a relic is defined as: *'any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.'* A person must notify the Heritage Division of OEH, if a person is aware or believes that they have discovered or located a relic (section 146). Penalties for offences under the Heritage Act can include six months imprisonment and/or a fine of up to $1.1million.

Relevant Requirement	Objectives and offences
***National Parks and Wildlife Act 1974* (NPW Act)**	The NPW Act provides the basis for the care, protection and management of Aboriginal objects and places in NSW. An Aboriginal object is defined as: *'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'*. An 'Aboriginal place' is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture. An Aboriginal place does not have to contain physical evidence of occupation (such as Aboriginal objects). Under section 87 of the Act, it is an offence to harm or desecrate an Aboriginal object or place. There are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an AHIP and the permit's conditions were not contravened. Defences and exemptions to the offence of harming an Aboriginal object or Aboriginal place are provided in section 87, 87A and 87B of the Act. A person must notify OEH if a person is aware of the location of an Aboriginal object. Penalties for some of the offences can include two years imprisonment and/or up to $550,000 (for individuals), and a maximum penalty of $1.1 million (for corporations).

6. Unexpected heritage finds protocol

6.1. What is an unexpected heritage find?

An 'unexpected heritage find' can be defined as any unanticipated archaeological discovery that has not been identified during a previous assessment or is not covered by an existing permit under the Heritage Act. The find may have potential cultural heritage value, which may require some type of statutory cultural heritage permit or notification if any interference of the heritage item is proposed or anticipated.

The range of potential archaeological discoveries can include but are not limited to:

- remains of rail infrastructure including buildings, footings, stations, signal boxes, rail lines, bridges and culverts
- remains of other infrastructure including sandstone or brick buildings, wells, cisterns, drainage services, conduits, old kerbing and pavement, former road surfaces, timber and stone culverts, bridge footings and retaining walls
- artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes
- Archaeological human skeletal remains.

6.2. Managing unexpected heritage finds

In the event that an unexpected heritage find (the find) is encountered on a Sydney Metro site, the flowchart in Figure 1 must be followed. There are eight steps in the procedure. These steps are summarised in Figure 1 and explained in detail in Table 2.

Figure 1 Overview of steps to be undertaken on the discovery of an unexpected heritage item

IMPORTANT!

Sydney Metro may have approval to impact on certain heritage items during construction. If you think that you may have discovered a heritage item and you are unsure whether an approval is in place or not, **STOP** works and follow this procedure.

Table 2 Specific tasks to be implemented following the discovery of an unexpected heritage item

Step	Task	Responsibility	Guidance and tools
1	**Stop work, protect item and inform the Excavation Director**		
1.1	Stop all work in the immediate area of the item and notify the Project Manager	Contractor/ Supervisor	**Appendix 1** (Identifying Unexpected Heritage items)
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical. No work is to be undertaken within this zone until further investigations are completed and, if required, appropriate approvals are obtained. Inform all site personnel about the no-go zone.	Project Manager/ Contractor/ Supervisor	
1.3	Inspect, document and photograph the item.	Archaeologist and or Excavation Director	**Appendix 2** (Unexpected Heritage Item Recording Form) **Appendix 3** (Photographing Unexpected Heritage items)
1.4	Is the item likely to be bone? If **yes**, follow the steps in Appendix 4 – 'Uncovering bones'. Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site. Also refer to the Sydney Metro Exhumation Management Plan If **no**, proceed to next step.	Excavation Director	**Appendix 4** (Uncovering Bones)

Step	Task	Responsibility	Guidance and tools
1.5	Inform the Excavation Director of the item and provide as much information as possible, including photos and completed form (**Appendix 2**). Where the project has a Sydney Metro Environmental Manager, the Environmental Manager should be involved in the tasks/process.	Contractors Project Manager	
1.6	Can the works avoid further disturbance to the item? Project Manager to confirm with Sydney Metros Environment Manager. Complete the remaining tasks in Step 1.	Contractors Project Manager	
1.7	Excavation Director and Sydney Metro Environmental Manager to advise the Project Manager whether Sydney Metro has approval to impact on the 'item'. Does Sydney Metro have an approval or permit to impact on the item? If **yes**, work may recommence in accordance with that approval or permit. There is no further requirement to follow this procedure. If **no**, continue to next step.	Contractors Project Manager	
1.8	Has the 'find' been damaged or harmed? If **yes**, record the incident in the Incident Management System Implement any additional reporting requirements related to the planning approval and CEMP, where relevant.	Contractors Project Manager, Excavation Director	
2	**Contact and engage an archaeologist and/or an Aboriginal heritage consultant**		
2.1	If an archaeologist and/or Aboriginal heritage consultant has been previously appointed for the project, contact them to discuss the location and extent of the item and arrange a site inspection, if required. The project CEMP may contain contact details of the archaeologist/Aboriginal heritage consultant. Where there is no project archaeologist engaged for the works engage a suitably qualified consultant to assess the find: if the find is a non-Aboriginal deposit, engage a suitably qualified and experienced archaeological consultant if the find is likely to be an Aboriginal object, engage an Aboriginal heritage consultant to assess the find.	Contractors Project Manager, Excavation Director	
2.2	If requested, provide photographs of the item taken during Step 1.3 to the archaeologist or Aboriginal heritage consultant.	Contractors Project Manager, Excavation Director	**Appendix 3** (Photographing Unexpected Heritage items)

Step	Task	Responsibility	Guidance and tools
3	**Preliminary assessment and recording of the find**		
3.1	In a minority of cases, the archaeologist/Aboriginal heritage consultant may determine from the photographs that no site inspection is required because no heritage constraint exists for the project (*e.g. the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'*). Any such advice should be provided in writing (e.g. via email or letter with the consultant's name and company details clearly identifiable) to the Sydney Metro Project Manager.	Archaeologist/ Aboriginal heritage consultant/ , Excavation Director	Proceed to Step 8
3.2	Arrange site access for the archaeologist/Aboriginal heritage consultant to inspect the item as soon as practicable. In the majority of cases a site inspection is required to conduct a preliminary assessment.	Contractors Project Manager, Excavation Director	
3.3	Subject to the archaeologist/Aboriginal heritage consultant's assessment, work may recommence at a set distance from the item. This is to protect any other archaeological material that may exist in the vicinity, which may have not yet been uncovered. Existing protective fencing established in Step 1.2 may need to be adjusted to reflect the extent of the newly assessed protective area. No works are to take place within this area once established.	Archaeologist/ Aboriginal heritage consultant Contractors Project Manager, Excavation Director	
3.4	The archaeologist/Aboriginal heritage consultant may provide advice after the site inspection and preliminary assessment that no heritage constraint exists for the project (e.g. the item is not a '*relic*' or a '*heritage item*' or an '*aboriginal item*'. Any such advice should be provided in writing (e.g. via email or letter with the consultant's name and company details clearly identifiable) to the Metro Project Manager. Note that : a relic is evidence of past human activity which has local or State heritage significance. It may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse an Aboriginal object may include a shell midden, stone tools, bones, rock art or a scarred tree a "work", building or standing structure may include tram or train tracks, kerbing, historic road pavement, fences, sheds or building foundations.	Archaeologist/ Aboriginal heritage consultant/ Contractors Project Manager, Excavation Director	Proceed to Step 8 Refer to **Appendix 1** (Identifying heritage items)

Step	Task	Responsibility	Guidance and tools
3.5	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). The archaeologist/Aboriginal heritage consultant can provide contacts for such specialist consultants.	Excavation Director Archaeologist	
3.6	Where the item has been identified as a 'relic' or 'heritage item' or an 'Aboriginal object' the archaeologist should formally record the item.	Archaeologist/ Aboriginal heritage consultant	
3.7	OEH (Heritage Division for non-Aboriginal relics and Planning and Aboriginal Heritage Section for Aboriginal objects) can be notified informally by telephone at this stage by the Sydney Metro Environmental Manager Any verbal conversations with regulators must be noted on the project file for future reference.	Contractors Project Manager, Excavation Director	
4	**Section 4 not used**		
5	**Notify the regulator, if required.**		
5.1	Based on the findings of the archaeological or heritage management plan and corresponding legislative requirements, is the find required to be notified to OEH and the Secretary? If **no**, proceed directly to Step 6 If **yes**, proceed to next step.	Sydney Metro Environmental Manager Excavation Director	
5.2	If notification is required, complete the template notification letter, including the archaeological/heritage management plan and other relevant supporting information and forward to the Sydney Metro Principal Manager Sustainability Environment and Planning (Program) for signature.	Sydney Metro Environmental Manager Excavation Director	**Appendix 6** (Template Notification Letter)
5.3	Forward the signed notification letter to OEH and the Secretary. Informal notification (via a phone call or email) to OEH prior to sending the letter is appropriate. The archaeological or heritage management plan and the completed site recording form (Appendix 2) must be submitted with the notification letter (for both Aboriginal objects and non-Aboriginal relics). For Part 5.1 projects, the Department of Planning and Environment must also be notified.		

Step	Task	Responsibility	Guidance and tools
5.4	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form is to be kept on file and a copy sent to the Sydney Metro Project Manager.	Contractors Project Manager, Excavation Director	
6	**Implement archaeological or heritage management plan**		
6.1	Modify the archaeological or heritage management plan to take into account any additional advice resulting from notification and discussions with OEH.	Contractors Project Manager, Excavation Director	
6.2	Implement the archaeological or heritage management plan. Where impact is expected, this may include a formal assessment of significance and heritage impact assessment, preparation of excavation or recording methodologies, consultation with Registered Aboriginal Parties, obtaining heritage approvals etc., if required.	Contractors Project Manager, Excavation Director	
6.3	Where heritage approval is required contact the Sydney Metro Environment Manager for further advice and support material. Please note there are time constraints associated with heritage approval preparation and processing.	Contractors Project Manager, Excavation Director	
6.4	Assess whether heritage impact is consistent with the project approval or if project approval modification is required from the Department of Planning and Environment.	, Excavation Director/Sydney Metro Environmental Manager	
6.5	Where statutory approvals (or project approval modification) are required, impact upon relics and/or Aboriginal objects must not occur until heritage approvals are issued by the appropriate regulator.	Contractors Project Manager, Excavation Director	
6.6	Where statutory approval is not required but where recording is recommended by the archaeologist/Aboriginal heritage consultant, sufficient time must be allowed for this to occur.	Contractors Project Manager, Excavation Director	
6.7	Ensure short term and permanent storage locations are identified for archaeological material or other heritage material removed from site, where required. Interested third parties (e.g. museums, local Aboriginal land councils, or local councils) should be consulted on this issue. Contact the archaeologist or Aboriginal heritage consultant for advice on this matter, if required.	Contractors Project Manager, Excavation Director	
7	**Section 7 Not Used**		

Step	Task	Responsibility	Guidance and tools
8	**Resume work**		
8.1	Seek written clearance to resume project work from the project Excavation Director/Archaeologist/Aboriginal heritage consultant. Clearance would only be given once all archaeological excavation and/or heritage recommendations and approvals (where required) are complete. Resumption of project work must be in accordance with the all relevant project/heritage approvals/determinations.	Contractors Project Manager, Excavation Director	
8.2	If required, ensure archaeological excavation/heritage reporting and other heritage approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies.	Contractors Project Manager, Excavation Director	
8.3	Deleted		
8.4	If additional unexpected items are discovered this procedure must begin again from Step 1.	All	

7. Responsibilities

Table 3 Roles and Responsibilities

Role	Responsibility or role under this guideline
Contractor / Supervisor	Stop work immediately when an unexpected heritage find is encountered. Cordon off area until Environmental Manager /Excavation Director advises that work can recommence.
Contractor or Environment Manager	Manage the process of identifying, protecting and mitigating impacts on the 'find'. Liaise with Sydney Metro Project Manager and Environment Manager and assist the archaeologist/Aboriginal heritage consultant with mitigation and regulatory requirements. Complete Incident Report and review CEMP for any changes required. Propose amendments to the CEMP if any changes are required.
Contractor's or Project Heritage Advisor or Consultant	Provide expert advice to the Sydney Metro Environment Manager on 'find' identification, significance, mitigation, legislative procedures and regulatory requirements.
Environmental Representative	Independent environmental advisor engaged by Sydney Metro Ensures compliance with relevant approvals (new and existing).
Heritage Division of OEH	Regulate the care, protection and management of relics (non-Aboriginal heritage). Delegated authority for Heritage Council Issue excavation permits.

Role	Responsibility or role under this guideline
Registered Aboriginal Parties (RAPs)	Aboriginal people who have registered with Sydney Metro to be consulted about a proposed project or activity in accordance with the OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.
Sydney Metro Environment Manager	Notify the Sydney Metro Principal Manager, Environmental Management of 'find' and manage Incident Reporting once completed by Environmental Manager.
Contractors Project Manager	Ensures all aspects of this procedure are implemented. Advise Contractor / Supervisor to recommence work if all applicable requirements have been satisfied and the Excavation Director /Project Archaeologist has approved recommend of work.

8. Seeking Advice

Advice on this procedure should be sought from the Sydney Metro Environment a Manager in the first instance. Contractors and alliance partners should ensure their own project environment managers are aware of and understand this procedure.
Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from a suitably qualified and experienced archaeologist/Aboriginal heritage consultant.

9. Related documents and references

- Environmental Incident Classification and Reporting – 9TP-PR-105
- Guide to Environmental Control Map – 3TP-SD-015
- NSW Heritage Office (1998), *Skeletal remains: guidelines for the management of human skeletal remains.*
- Roads and Maritime Services (2015), *Standard Management Procedure Unexpected Heritage Items.*
- Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal remains.*
- Sydney Metro Exhumation Management Plan

10. List of appendices

The following appendices are included to support this procedure:

Appendix 1: Examples of finds encountered during construction works
Appendix 2: Unexpected Heritage Item Recording Form
Appendix 3: Photographing Unexpected Heritage Items
Appendix 4: Uncovering Bones
Appendix 5: Archaeological Advice Checklist
Appendix 6: Template Notification Letter

11. Document history

Version	Date of approval	Notes
1.1		Incorporates ER comments 21/06/17
1.2		Amends p13 step 8 reference to s146 added
1.3		Incorporates Planning Mods 1-4 including amended CoA E20
1.4		Incorporates ER comments 21/03/18
2.0		Removes SSI 15-7400 COA reference

Appendix 1: Examples of finds encountered during construction works

Photo 1 - Aboriginal artefacts found at the Wickham Transport Interchange, 2015

Photo 2 – Aboriginal artefacts (shell material) found at the Wickham Transport Interchange, 2015

Photo 3 1840s seawall and 1880s retaining wall uncovered at Balmain East, 2016

Photo 4 Sandstone pavers uncovered at Balmain East, 2016

Photo 5 - Platform structure at Hamilton Railway Station classified as a 'work' by the project archaeologist - Wickham Transport Interchange project, 2015

Photo 6 - Platform structure at Hamilton Railway Station classified as a 'work' by the project archaeologist - Wickham Transport Interchange project, 2015

Photo 7 - Sandstone flagging and cesspit - Wynyard Walk project, 2014

Photo 8 - Chinese Ming Dynasty pottery and English porcelain/pottery dating back to early 19th century - Wynyard Walk project, 2014

Photo 9 - Pottery made by convict potter Thomas Ball during the early settlement - Wynyard Walk project, 2014

The following images, obtained from the Roads and Maritime Services' *Standard Management Procedure for Unexpected Heritage items 2015,* can be used to assist in the preliminary identification of potential unexpected items during construction and maintenance works.

Photo 10 - Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at Tarcutta); Linear archaeological feature with post holes (Hume Highway Duplication), Animal bones (Hume Highway Bypass at Woomargama); Cut wooden stake; Glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area) (RMS, 2015).

Photo 11 - Top left hand picture continuing clockwise: Stock camp remnants (Hume Highway Bypass at Tarcutta); Linear archaeological feature with post holes (Hume Highway Duplication), Animal bones (Hume Highway Bypass at Woomargama); Cut wooden stake; Glass jars, bottles, spoon and fork recovered from refuse pit associated with a Newcastle Hotel (Pacific Highway, Adamstown Heights, Newcastle area) (RMS, 2015).

Appendix 2 - Unexpected heritage item recording form

Example of unexpected heritage item recording form:

This form is to be completed Excavation Director on the discovery of an archaeological heritage item during construction or maintenance works			
Date:		**Recorded by:** (include name and position)	
Project name:			
Description of works being undertaken:			
Description of exact location of item			
Description of item found *(What type of item is it likely to be? Tick the relevant boxes).*			
A. A relic	☐	A 'relic' is evidence of a past human activity relating to the settlement of NSW with local or state heritage significance. A relic might include bottle, utensils, plates, cups, household items, tools, implements, and similar items	
B. A 'work', building or structure'	☐	A 'work' can generally be defined as a form infrastructure such as track or rail tracks, timber sleepers, a culvert, road base, a bridge pier, kerbing, and similar items	
C. An Aboriginal object	☐	An 'Aboriginal object' may include stone tools, stone flakes, shell middens, rock art, scarred trees and human bones	
D. Bone	☐	Bones can either be human or animal remains. **Remember that you must contact the local police immediately by telephone if you are certain that the bone(s) are human remains.**	
E. Other	☐		
Provide a short description of the item *(E.g. metal rail tracks running parallel to the rail corridor. Good condition. Tracks set in concrete, approximately 10 cm below the current ground surface).*			

Sketch *(Provide a sketch of the item's general location in relation to other road features so its approximate location can be mapped without having to re-excavate it. In addition, please include details of the location and direction of any photographs of the item taken)*			
Action taken (Tick either A *or* B)			
A. Unexpected item **would not** be further impacts on by the works	☐	**Describe how works would avoid impact on the item.** *(E.g. the rail tracks would be left in situ and recovered with paving).*	
B. Unexpected item would be further impacted by the works	☐	**Describe how works would impact on the item**. *(E.g. milling is required to be continued to a depth of 200 mm depth to ensure the pavement requirements are met. Rail tracks would need to be removed.)*	
Excavation Director		Signature	
		Signature	

Important

It is a statutory offence to disturb Aboriginal objects and historic relics (including human remains) without an approval. All works affecting objects and relics must cease until an approval is sought.

Approvals may also be required to impact on certain works.

Appendix 3 - Photographing unexpected heritage items

Photographs of unexpected items in their current context (*in situ*) may assist archaeologists/Aboriginal heritage consultants to better identify the heritage values of the item. Emailing good quality photographs to specialists can allow for better quality and faster heritage advice. The key elements that must be captured in photographs of the item include its position, the item itself and any distinguishing features. All photographs must have a scale (ruler, scale bar, mobile phone, coin etc.) and a note describing the direction of the photograph.

Context and detailed photographs

It is important to take a general photograph (Figure 1) to convey the location and setting of the item. This will add value to the subsequent detailed photographs also required (Figure 2).

Removal of the item from its context (e.g. excavating from the ground) for photographic purposes is not permitted.

Figure 2: Close up detail of the sandstone surface showing material type, formation and construction detail. This is essential for establishing date of the feature.

Figure 1: Telford road uncovered on the Great Western Highway (Leura) in 2008 (RMS, 2015).

Photographing distinguishing features

Where unexpected items have a distinguishing feature, close up detailed photographs must be taken of these features, where practicable. In the case of a building or bridge, this may include diagnostic details architectural or technical features. See Figures 3 and 4 for examples.

Figure 3: Ceramic bottle artefact with stamp.

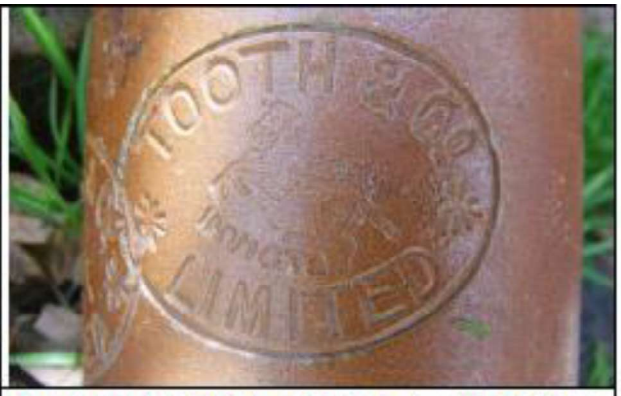

Figure 4: Detail of the stamp allows '*Tooth & Co Limited*' to be made out. This is helpful to a specialist in gauging the artefact's origin, manufacturing date and likely significance.

Photographing bones

The majority of bones found on site will those of be recently deceased animal bones often requiring no further assessment (unless they are in archaeological context). However, if bones are human, the police must be contacted immediately (see Appendix 6 for detailed guidance). Taking quality photographs of the bones can often resolve this issue quickly. The project archaeologist can confirm if bones are human or non-human if provided with appropriate photographs.

Ensure that photographs of bones are not concealed by foliage (Figure 5) as this makes it difficult to identify. Minor hand removal of foliage can be undertaken as long as disturbance of the bone does not occur. Excavation of the ground to remove bone(s) should not occur, nor should they be pulled out of the ground if partially exposed.

Where sediment (adhering to a bone found on the ground surface) conceals portions of a bone (Figure 6) ensure the photograph is taken of the bone (if any) that is not concealed by sediment.

Figure 5: Bone concealed by foliage.

Figure 6: Bone covered in sediment

Ensure that all close up photographs include the whole bone and then specific details of the bone (especially the ends of long bones, the *epiphysis*, which is critical for species identification). Figures 7 and 8 are examples of good photographs of bones that can easily

be identified from the photograph alone. They show sufficient detail of the complete bone and the epiphysis.

Figure 7: Photograph showing complete bone.

Figure 8: Close up of a long bone's epiphysis.

Appendix 4 - Uncovering bones

This appendix provides advice regarding:

- what to do on first discovering bones
- the range of human skeletal notification pathways
- additional considerations and requirements when managing the discovery of human remains.

1. First uncovering bones

Refer to the Sydney Metro Exhumation Management Plan

Stop all work in the vicinity of the find. All bones uncovered during project works should be **treated with care and urgency** as they have the potential to be human remains. The bones must be identified as either human or non-human as soon as possible by a qualified forensic or physical anthropologist.

On the very rare occasion where it is immediately obvious from the remains that they are human, the Project Manager (or a delegate) should **inform the police by telephone** prior to seeking specialist advice. It will be obvious that it is human skeletal remains where there is no doubt, as demonstrated by the example in Figure 1[9]. Often skeletal elements in isolation (such as a skull) can also clearly be identified as human. Note it may also be obvious that human remains have been uncovered when soft tissue and/or clothing are present.

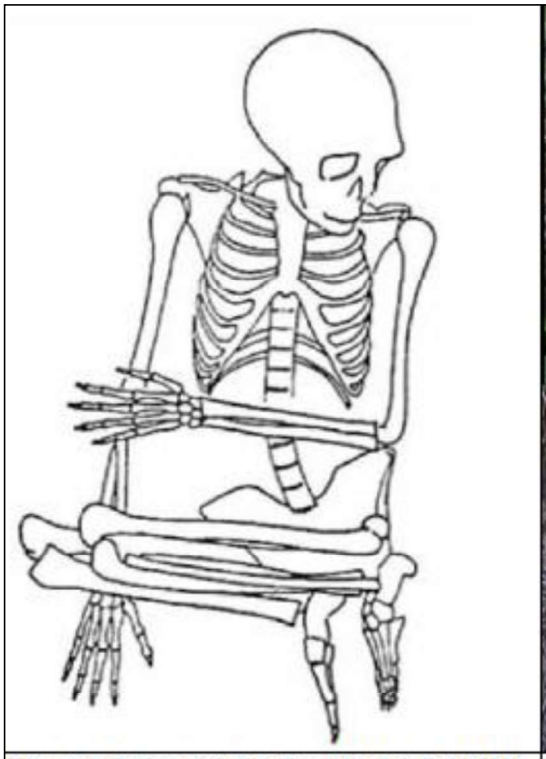

Figure 1: Schematic of a complete skeleton that is 'obviously' human[12].

Figure 2: Disarticulated bones that require assessment to determine species.

[9] After Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal Remains: 17*

This preliminary phone call is to let the police know that a specialist skeletal assessment to determine the approximate date of death which will inform legal jurisdiction. The police may wish to take control of the site at this stage. If not, a forensic or physical anthropologist must be requested to make an on-site assessment of the skeletal remains.

Where it is not immediately obvious that the bones are human (in the majority of cases, illustrated by Figure 2), specialist assessment is required to establish the species of the bones. Photographs of the bones can assist this assessment if they are clear and taken in accordance with guidance provided in Appendix 3. Good photographs often result in the bones being identified by a specialist without requiring a site visit; noting they are nearly always non-human. In these cases, non-human skeletal remains must be treated like any other unexpected archaeological find.

If the bones are identified as human (either by photographs or an on-site inspection) a technical specialist must determine the likely ancestry (Aboriginal or non-Aboriginal) and burial context (archaeological or forensic). This assessment is required to identify the legal regulator of the human remains so **urgent notification** (as below) can occur.

Preliminary telephone or verbal notification by the archaeologist to the Sydney Metro Principal Manager Sustainability Environment and Planning (Program) is appropriate. This must be followed up later by a formal letter notification to the relevant regulator when a management plan has been developed and agreed to by the relevant parties.

2. Range of human skeletal notification pathways

The following is a summary of the different notification pathways required for human skeletal remains depending on the preliminary skeletal assessment of ancestry and burial context.

A. Human bones are from a recently deceased person (less than 100 years old).

Action
A police officer must be notified immediately as per the obligations to report a death or suspected death under s35 of the *Coroners Act 2009* (NSW). It should be assumed the police will then take command of the site until otherwise directed.

B. Human bones are archaeological in nature (more than 100 years old) and are likely to be *Aboriginal* remains.

Action
The OEH (Planning and Aboriginal Heritage Section) must be notified immediately. The Aboriginal Cultural Heritage Advisor must contact and inform the relevant Aboriginal community stakeholders who may request to be present on site.

C. Human bones are archaeological in nature (more than 100 years old) and likely to be non-Aboriginal remains.

Action
The OEH (Heritage Division) must be notified immediately

Figure 3 summarises the notification pathways on finding bones.

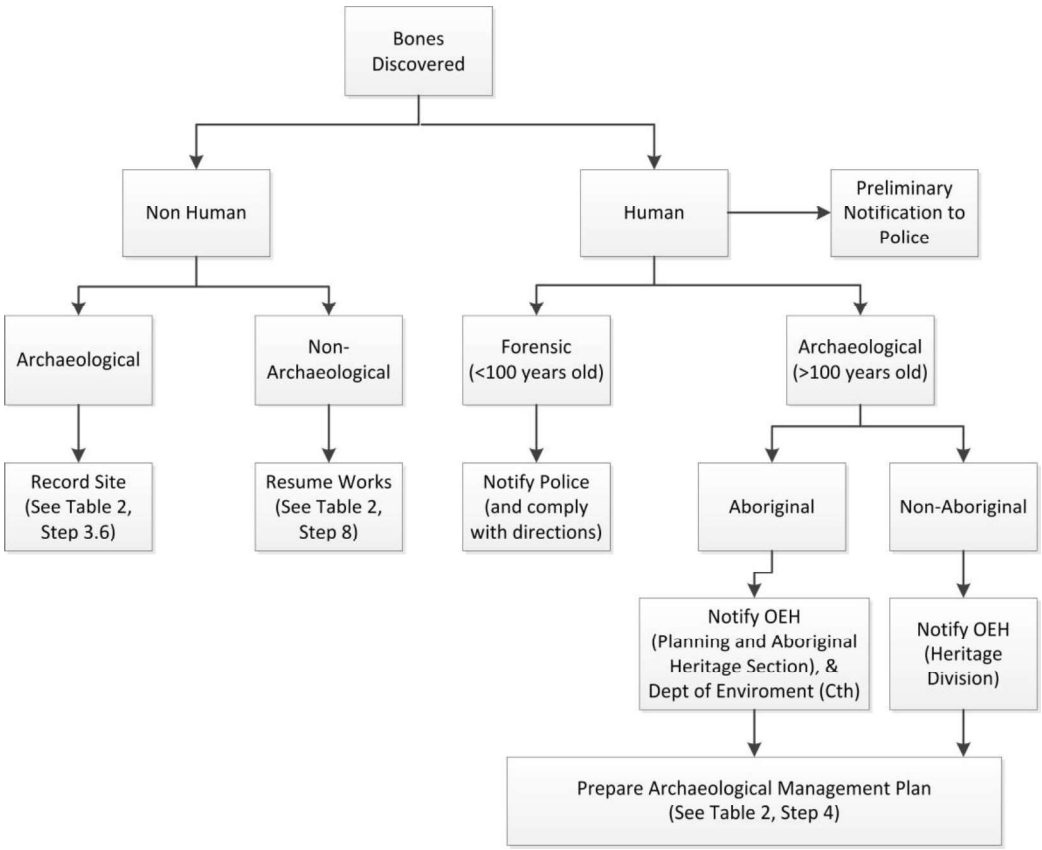

Figure 3 Overview of steps to be undertaken on the discovery of bones

After the appropriate verbal notifications (as described in 2B and 2C above), the Project Manager must proceed through the *Unexpected Heritage Items Exhumation Management Plan* (Step 4). It is noted that no *Exhumation Management Plan* is required for forensic cases (2A), as all future management is a police matter. Non-human skeletal remains must be treated like any other unexpected archaeological find and so must proceed to record the find as per Step 3.6.

3. Additional considerations and requirements

Uncovering archaeological human remains must be managed intensively and needs to consider a number of additional specific issues. These issues might include facilitating culturally appropriate processes when dealing with Aboriginal remains (such as repatriation and cultural ceremonies). Project Managers may need to consider overnight site security of any exposed remains and may need to manage the onsite attendance of a number of different external stakeholders during assessment and/or investigation of remains.

Project Managers may also be advised to liaise with local church/religious groups and the media to manage community issues arising from the find. Additional investigations may be required to identify living descendants, particularly if the remains are to be removed and relocated.

If exhumation of the remains (from a formal burial or a vault) is required, Project Managers should also be aware of additional approval requirements under the *Public Health Act 1991* (NSW). Specifically, Sydney Metro may be required to apply to the Director General of NSW

Department of Health for approval to exhume human remains as per Clause 26 of the *Public Health (Disposal of Bodies) Regulation 2002* (NSW)[10].

Further, the exhumation of such remains needs to consider health risks such as infectious disease control, exhumation procedures and reburial approval and registration. Further guidance on this matter can be found at the NSW Department of Health website.

In addition, due to the potential significant statutory and common law controls and prohibitions associated with interfering with a public cemetery, project teams are advised, when works uncover human remains adjacent to cemeteries, to confirm the cemetery's exact boundaries.

[10] This requirement is in addition to heritage approvals under the *Heritage Act 1977.*

Appendix 5 - Archaeological/heritage advice checklist

The archaeologist/Aboriginal heritage consultant must advise the Sydney Metro Principal Manager Sustainability Environment and Planning (Program) of an appropriate archaeological or heritage management plan as soon as possible after an inspection of the site has been completed (see Step 4). An archaeological or heritage management plan can include a range of activities and processes, which differ depending on the find and its significance.

In discussions with the archaeologist/Aboriginal heritage consultant the following checklist can be used as a prompt to ensure all relevant heritage issues are considered when developing this plan. This will allow the project team to receive clear and full advice to move forward quickly. Archaeological and/or heritage advice on how to proceed can be received in a letter or email outlining all relevant archaeological and/or heritage issues.

	Required	Outcome/notes
Assessment and investigation		
• Assessment of significance	Yes/No	
• Assessment of heritage impact	Yes/No	
• Archaeological excavation	Yes/No	
• Archival photographic recording	Yes/No	
Heritage approvals and notifications		
• AHIP, section 140, section 139 exceptions etc.	Yes/No	
• Regulator relics/objects notification	Yes/No	
• Notification to Sydney Trains for s170 heritage conservation register	Yes/No	
• Compliance with CEMP or other project heritage approvals	Yes/No	
Stakeholder consultation		
• Aboriginal stakeholder consultation	Yes/No	
Artefact/heritage item management		
• Retention or conservation strategy (e.g. items may be subject to long conservation and interpretation)	Yes/No	
• Disposal strategy	Yes/No	
• Short term and permanent storage locations (interested third parties should be consulted on this issue).	Yes/No	
• Control Agreement for Aboriginal objects	Yes/No	

Appendix 6 - Template notification letter

Insert on TfNSW letterhead
Select and type date]
[Select and type reference number]

XXX
Manager, Conservation
Heritage Division, Office of Environment and Heritage
Locked Bag 5020
Parramatta NSW 2124

[Select and type salutation and name],

Re: Unexpected heritage item discovered during Sydney Metro activities.

I write to inform you of an unexpected [select: relic, heritage item or Aboriginal object] found during Sydney Infrastructure and Services construction works at [insert location] on [insert date] in accordance with the notification requirement under select: section 146 of the *Heritage Act 1977* (NSW). [Where the regulator has been informally notified at an earlier date by telephone, this should be referred to here].

NB: On finding Aboriginal human skeletal remains this letter must also be sent to the Commonwealth Minister for the Environment in accordance with notification requirements under section 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Commonwealth).

[Provide a brief overview of the project background and project area. Provide a summary of the description and location of the item, including a map and image where possible. Also include how the project was assessed under the *Environmental Planning and Assessment Act 1979* (NSW) (e.g. Part 5). Also include any project approval number, if available].

Sydney Metro [*or contractor*] has sought professional archaeological advice regarding the item. A preliminary assessment indicates [provide a summary description and likely significance of the item]. Please find additional information on the site recording form attached.

Based on the preliminary findings, Sydney Metro *[or contractor]* is proposing [provide a summary of the proposed archaeological/heritage approach (e.g. develop archaeological research design (where relevant), seek heritage approvals, undertake archaeological investigation or conservation/interpretation strategy). Also include preliminary justification of such heritage impact with regard to project design constraints and delivery program].

The proposed approach will be further developed in consultation with a nominated Office of Environment and Heritage staff member.

Should you have any feedback on the proposed approach, or if you require any further information, please do not hesitate to contact [Environment and Planning Project Manager] on (02) XXXX XXXX.

Yours sincerely

[Sender name]

Sydney Metro Principal Manager Sustainability Environment and Planning (Program) [Attach the archaeological/heritage management plan and site recording form]

Appendix 2.2: DG-ZH-FM071.3 Land or Vegetation Disturbance Permit

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Land or Vegetation Disturbance Permit

INSTRUCTIONS
▪ Use this permit for activities which lead to the disturbance of land or any tree, shrub, grass or other plant, including but not limited to, broad scale clearing, access track construction, isolated tree removal, grubbing, root cutting, and stockpiling or placement of objects over vegetated areas.
▪ This requirement excludes routine maintenance of parks and reserves (e.g. mowing) or pruning / trimming activities with customer approval.
▪ For further information on vegetation disturbance, refer to *DG-ZH-ST071.2 Flora and Fauna Management Standard*.
▪ If you have any queries seek advice from your local Environment/ Zero Harm Advisor.
▪ Delete all instances of the blue instructional text after completing this form.

SECTION 1 – WORK DETAILS & PERMIT VALIDITY – WORK SUPERVISOR OR SITE ENGINEER					
Date Requested:		Name:			
Project Name:			Map Attached?	Yes	No
Company:					
Permission is requested to disturb the following area:					
Purpose of disturbance?					

SECTION 2 – PERMISSIBILITY – ENVIRONMENT ADVISOR OR APPROVED PERSON			
Consideration	Yes	No	Comment/ Requirement
Has the area to be disturbed been inspected?			
Is the disturbance compliant with the regulatory authorisation (e.g. permit) or consent conditions?			

SECTION 3 – ENVIRONMENTAL ASSESSMENT & CONTROLS – ENVIRONMENT ADVISOR OR APPROVED PERSON			
Consideration	Yes	No	Comment/ Requirement
Is an ecological pre-clearance survey required as per planning approvals and/ or permits?			
Are there any specific community/ stakeholder notification procedures that need to be followed?			
Are there any additional requirements from private or crown land owners?			
Is there a requirement for biosecurity/ weed control within the disturbance area? Refer to *DG-ZH-ST071 Biosecurity Management Standard*.			
Has an erosion and sediment control plan (site advisory sheet) been prepared for the activity? Refer to *DG-ZH-ST064 Water Discharge Management Standard*.			
Are there any avoidance areas that require demarcating? (e.g. habitat trees, cultural heritage sites, or threatened species)? Refer to *DG-ZH-ST076 Heritage Management Standard*.			

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Land or Vegetation Disturbance Permit

SECTION 3 – ENVIRONMENTAL ASSESSMENT & CONTROLS – ENVIRONMENT OR APPROVED PERSON, continued			
Have topsoil/ vegetation/ mulch stockpile locations been identified where necessary? Refer to *DG-ZH-ST064 Water Discharge Management Standard*.			
Are any other environmental controls required to mitigate or guard against associated environmental risks?			

SECTION 4 – PERMIT AUTHORISATION – ENVIRONMENT ADVISOR OR APPROVED PERSON & WORK SUPERVISOR OR SITE ENGINEER			
Work Supervisor or Site Engineer		Environment Advisor/ Approved Person	
I declare that I have reviewed and understand the: ▪ permit validity (Section *1 Work Details & Permit Validity*) ▪ environmental controls (Section *3 Environmental Assessment & Controls*); and ▪ requirements of *DG-ZH-ST071.2 Flora and Fauna Management Standard*.		I declare that I have: ▪ reviewed the scope of work with the Work Supervisor/ Site Engineer ▪ completed an assessment of permissibility (Section *2 Permissibility*) ▪ am satisfied that appropriate environmental controls are documented (Section *3 Environmental Assessment & Controls*); and ▪ reviewed and understand the requirements of *DG-ZH-ST071.2 Flora and Fauna Management Standard*.	
Name:		Name:	
Signature:		Signature:	
Date:		Date:	

SECTION 5 – PRE-START CHECKLIST – WORK SUPERVISOR OR SITE ENGINEER		
	Yes	N/A
Where required in Section *3 Environmental Assessment & Controls*, boundary pegging and flagging has been inspected, is in accordance with *DG-ZH-ST071.2 Flora and Fauna Management Standard*, and is clearly visible.		
Where required in Section *3 Environmental Assessment & Controls*, all avoidance areas (if any) are demarcated.		
A physical walk around of the disturbance area has been conducted with each operator/ worker (and spotter, if required).		
A pre-start meeting has been completed with all personnel involved in the activity, and all personnel have signed the relevant SWMS that adequately addresses environmental risks.		
All personnel supervising the works have a copy of this permit, and the relevant site map(s) indicating environmentally sensitive areas, at all times.		
Where required in Section *3 Environmental Assessment & Controls*, an ecological pre-clearance survey has been carried out.		

SECTION 6 – AUTHORISATION TO COMMENCE WORK – WORK SUPERVISOR OR SITE ENGINEER			
Name:			
Signature:		Date:	

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Appendix 3: Community Notification.

City & Southwest

Notification – Southwest Metro

Punchbowl to Bankstown – March 2021

Sydney Metro is Australia's biggest public transport project.

Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail will be extended into the CBD and beyond to Bankstown in 2024. There will be new CBD metro railway stations underground at Martin Place, Pitt Street and Barangaroo and new metro platforms at Central.

In 2024, Sydney will have 31 metro railway stations and a 66 km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre. The upgrade of the T3 Bankstown Line to metro standards between Sydenham and Bankstown received planning approval on 19 December 2018.

In March, early work will continue along the T3 Bankstown Line between Punchbowl and Bankstown stations (weather and site conditions permitting). Access to the rail corridor will be via existing corridor/pedestrian access gates. Day work will be undertaken during **project standard construction hours Monday to Friday 7am-6pm and Saturday 8am-6pm.**

Location	Detail of day work
Punchbowl to Bankstown (along the rail corridor)	Activities will include: • Geotechnical, utilities and site investigations, tree assessments and surveys inside the rail corridor and in nearby public areas • Devegetation, tree trimming and removal throughout the rail corridor where required • Installation of fencing, cabling and galvanised steel troughing (GST) • Site compound establishment including installation of site sheds, subject to approval • Locating underground services, potholing and non destructive digging close to and inside the rail corridor • Visual inspections and survey of Punchbowl station buildings and roads adjacent to the rail alignment • Topographic scanning and drainage surveys in the rail corridor, at stations and in nearby public areas • Non intrusive survey of fencing along the railway corridor
Punchbowl Station	• Excavation and cabling works adjacent to the northern entrance at Punchbowl Station and the underpass: ○ The pedestrian underpass will be closed for two to three weeks during these works. Pedestrians will be diverted to use the existing footpath on Punchbowl Road and access the station via The Boulevarde. Detour signage will be in place to assist the public.
Punchbowl substation site	Activities at the substation site (north of South Terrace, east of Scott Street) will include: • Non destructive excavation and soil classification sampling • Installing a pole for temporary power connection

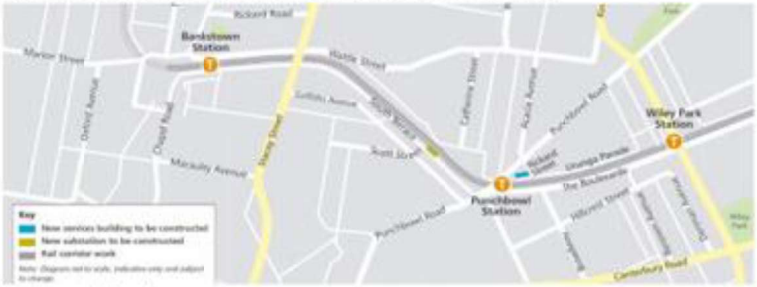
Out-of-hours work

Due to the nature of some activities and for the safety of workers, some work will occur outside standard construction hours when trains are not running. Some equipment will also be delivered outside standard construction hours in line with Transport for NSW requirements for the movement of oversized vehicles.

Date / time	Detail of work
During the scheduled rail shutdown weekend: Between **10:30pm Friday 19 March to 2am Monday 22 March 2021**	• Non intrusive survey of fencing along the railway corridor • Surveys at Bankstown Station consisting of test pits and boreholes at the platform and track level, and non intrusive drainage surveys • Installation of new cable routes • Non intrusive inspections and surveys at Punchbowl station and surrounds • Installation of hoarding at Punchbowl station (subject to approval) • Potholing and geotechnical investigations including non destructive digging, soil testing and surveys inside the rail corridor

Equipment used for all the above work will include excavators, jack hammers, vacuum trucks, tipper, motorised saws, concrete trucks, delivery vehicles, borehole driller, rollers, generators, whacker packer, dump trucks, plate compactor, mulcher, grass cutters, telehandler, piling rig, crane trucks, drilling rig, lifting machinery, elevated work platform, bobcats, concrete pumps, cable pulling equipment, lighting towers, forklift, water cart, hand and power tools.

Access to buildings and driveways will be maintained at all times. Some of this work may be noisy, however we will take every possible step to minimise noise such as switching off equipment when not in use and using non tonal reversing beepers. **Where temporary footpath changes, car parking removal or lane closures are required for works, traffic control, pedestrian detours and signage will be in place to assist the community.**



Keeping you informed

Properties close to the rail corridor will receive notifications when construction work is scheduled to occur. You can contact us on **1800 171 386** (24 hour community information line). If you have questions about the **substations** please ask for **Grace** or email LinewideMetro@transport.nsw.gov.au. For all other works please ask for **Andie** or email SouthwestMetro@transport.nsw.gov.au. **Thank you for your cooperation while we complete this essential work.**

1800 171 386 Community information line open 24 hours
southwestmetro@transport.nsw.gov.au
Sydney Metro City & Southwest, PO Box K659, Haymarket NSW 1240
If you need an interpreter, contact TIS National on **131 450** and ask them to call **1800 171 386**

sydneymetro.info

City & Southwest

Notification – Southwest Metro

Dulwich Hill - March 2021

Sydney Metro is Australia's biggest public transport project.

Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail will be extended into the CBD and beyond to Bankstown in 2024. There will be new CBD metro railway stations underground at Martin Place, Pitt Street and Barangaroo and new metro platforms at Central.

In 2024, Sydney will have 31 metro railway stations and a 66 km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre. The upgrade of the T3 Bankstown Line to metro standards between Sydenham and Bankstown received planning approval on 19 December 2018.

In March, work will continue along the T3 Bankstown Line at Dulwich Hill, weather and site conditions permitting. Access to the rail corridor will be via existing corridor/pedestrian access gates. Day work will be during **project standard construction hours Monday to Friday 7am-6pm and Saturday 8am-6pm.**

Location	Detail of day work
Dulwich Hill (at the station and along the rail corridor)	Activities will include: • Topographic scanning and drainage surveys in the rail corridor, at stations and in nearby public areas • Non-intrusive survey of fencing along the railway corridor • Geotechnical investigations, utilities surveys, tree and soil assessments inside the rail corridor and in nearby public areas • Installation and removal of haul roads and temporary fencing throughout the rail corridor • Devegetation and clearing throughout the rail corridor where required • Site compound establishment including installation of site sheds, subject to approval • Installation of temporary fencing, new cable routes, cabling and galvanised street troughing (GST) • Transportation of earthworks material via the rail access gate near Ewart Street, Dulwich Hill • Visual inspections of station buildings and roads adjacent to the rail alignment • Locating underground services including non-destructive digging close to and inside the rail corridor • Installation of signal equipment and cabling
Substation site (off Randall Street behind Albermarle Street, Marrickville	Activities at the substation site will include: • Installation of pole for temporary power connection • Installation of tree protection on Randall Street • Temporary water and sewer connection for the work site • Installation of water filled barriers, site sheds and temporary fencing • Increasing the height of cables on Randall Street • Excavation works including installation of electrical conduits

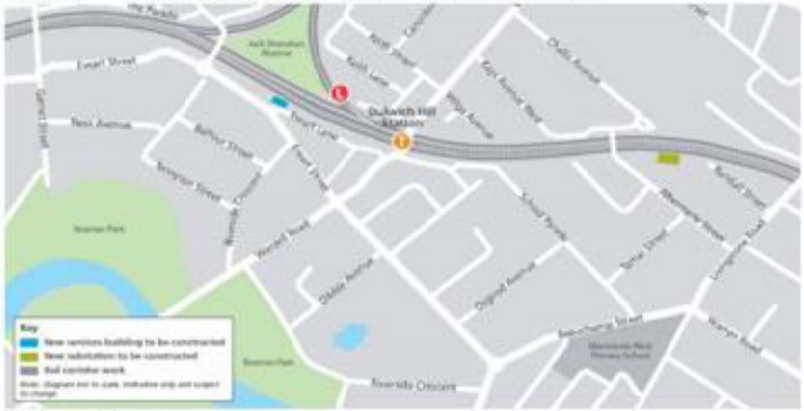
Out-of-hours work

Due to the nature of some activities and for the safety of workers, some work will occur outside standard construction hours when trains are not running. Some equipment will also be delivered outside standard construction hours in line with Transport for NSW requirements for the movement of oversized vehicles.

Date / time	Detail of work
During the scheduled rail shutdown weekend: Between **10:30pm Friday 19 March to 2am Monday 22 March 2021**	• Potholing and geotechnical investigations including non-destructive digging, soil testing and survey inside the rail corridor • Installing temporary fencing around work sites • Non-intrusive inspections and surveys at Dulwich Hill station and surrounds, including rail corridor fencing surveys and radio pole surveys • Potholing on the tracks near Dulwich Hill substation • Installing signal equipment and cabling inside the rail corridor Subject to approval, work over the weekend to support the station upgrade will include: • Piling works between the tracks at Dulwich Hill Station • Installation of hoarding

Equipment used for all the above work will include excavators, jack hammers, vacuum trucks, slasher, motorised saws, concrete trucks, delivery vehicles, borehole driller, rollers, generators, whacker packer, dump trucks, wood chipper, mulcher, grass cutters, telehandler, piling rig, crane trucks, drilling rig, lifting machinery, elevated work platform, bobcats, concrete pumps, cable pulling equipment, compactors, lighting towers, forklift, water cart, hand and power tools.

Access to buildings and driveways will be maintained at all times. Some of this work may be noisy, however we will take every possible step to minimise noise such as switching off equipment when not in use and using non-tonal reversing beepers. **Where temporary footpath changes, car parking removal or lane closures are required for works, traffic control, pedestrian detours and signage will be in place to assist the community.**



Keeping you informed

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Sydney Metro City & Southwest, PO Box K659, Haymarket NSW 1240
If you need an interpreter, contact TIS National on **131 450** and ask them to call **1800 171 386**

sydneymetro.info

City & Southwest

Notification – Southwest Metro

Wiley Park – March 2021

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In 2024, Sydney will have 31 metro railway stations and a 66 km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre. The upgrade of the T3 Bankstown Line to metro standards between Sydenham and Bankstown received planning approval on 19 December 2018.

In February 2021, a contract was awarded to Downer EDI Works to upgrade Hurlstone Park, Belmore and Wiley Park stations to metro rail standards. You will notice work taking place around the station in the coming months.

In March, early work will continue along the T3 Bankstown Line at Wiley Park (weather and site conditions permitting). Access to the rail corridor will be via existing corridor/pedestrian access gates. Day work will be undertaken during **project standard construction hours Monday to Friday 7am-6pm and Saturday 8am-6pm.**

Location	Detail of day work
Wiley Park (at the station and along the rail corridor)	Activities will include: • Geotechnical, utilities and site investigations, tree assessments and surveys inside the rail corridor and in nearby public areas • Devegetation, tree trimming and removal throughout the rail corridor where required • Site compound establishment including installation of site sheds, subject to approval • Installation of fencing, cabling and galvanised street troughing (GST) • Locating underground services, potholing and non destructive digging close to and inside the rail corridor • Visual inspections and surveys of Wiley Park station buildings and surrounding locations, including roads adjacent to the rail alignment • Topographic scanning and drainage surveys in the rail corridor, at stations and in nearby public areas • Non intrusive survey of fencing along the railway corridor

Out-of-hours work

Due to the nature of some activities and for the safety of workers, some work will occur outside standard construction hours when trains are not running. Some equipment will also be delivered outside standard construction hours in line with Transport for NSW requirements for the movement of oversized vehicles.

Date / time	Detail of work
During the scheduled rail shutdown weekend: Between **10:30pm Friday 19 March to 2am Monday 22 March 2021**	• Non intrusive survey of fencing along the railway corridor • Installing support structures for new electrical conduits • Potholing and geotechnical investigations including non destructive digging, soil testing and surveys inside the rail corridor Subject to approval, work over the weekend to support the station upgrade will include: • Non intrusive inspections and surveys at the station and surrounds • Minor tree trimming and vegetation clearing where required • Installation of hoarding

Equipment used for all the above work will include excavators, jack hammers, vacuum trucks, tipper, motorised saws, concrete trucks, delivery vehicles, borehole driller, rollers, generators, whacker packer, dump trucks, plate compactor, mulcher, grass cutters, telehandler, piling rig, crane trucks, drilling rig, lifting machinery, elevated work platform, bobcats, concrete pumps, cable pulling equipment, lighting towers, forklift, water cart, hand and power tools.

Access to buildings and driveways will be maintained at all times. Some of this work may be noisy, however we will take every possible step to minimise noise such as switching off equipment when not in use and using non tonal reversing beepers. **Where temporary footpath changes, car parking removal or lane closures are required for works, traffic control, pedestrian detours and signage will be in place to assist the community.**

Keeping you informed

Properties close to the rail corridor will receive notifications when construction work is scheduled to occur. You can contact us on **1800 171 386** (24 hour community information line). If you have questions about the **substations** please ask for **Grace** or email LinewideMetro@transport.nsw.gov.au. For all other works please ask for **Andie** or email SouthwestMetro@transport.nsw.gov.au. **Thank you for your cooperation while we complete this essential work.**

1800 171 386 Community information line open 24 hours
southwestmetro@transport.nsw.gov.au
Sydney Metro City & Southwest, PO Box K659, Haymarket NSW 1240
If you need an interpreter, contact TIS National on **131 450** and ask them to call **1800 171 386**

sydneymetro.info

City & Southwest

Notification – Southwest Metro

Hurlstone Park - March 2021

Sydney Metro is Australia's biggest public transport project.

Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail will be extended into the CBD and beyond to Bankstown in 2024. There will be new CBD metro railway stations underground at Martin Place, Pitt Street and Barangaroo and new metro platforms at Central.

In 2024, Sydney will have 31 metro railway stations and a 66 km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre. The upgrade of the T3 Bankstown Line to metro standards between Sydenham and Bankstown received planning approval on 19 December 2018.

In February 2021, a contract was awarded to Downer EDI Works to upgrade Hurlstone Park, Belmore and Wiley Park stations to metro rail standards. You will notice work taking place around the station in the coming months.

In March, work will continue along the rail corridor and at Hurlstone Park Station (weather and site conditions permitting). Access to the rail corridor will be via existing rail corridor/pedestrian access gates. **Day work will be undertaken during project standard construction hours Monday to Friday 7am-6pm and Saturday 8am-6pm.** The map on page 2 shows location details.

Location	Detail of day work
Hurlstone Park (at the station and along the rail corridor)	Activities will include: • Topographic scanning and drainage surveys in the rail corridor, at stations and in nearby public areas • Investigations and non-intrusive pipe inspections on station platforms • Geotechnical investigations, utilities surveys, tree and soil assessments inside the rail corridor and in nearby public areas • Installation and removal of haul roads and temporary fencing throughout the rail corridor • Devegetation and clearing throughout the rail corridor where required • Installation of fencing, cable service routes and galvanised steel troughing (GST) • Transportation of earthworks material via the rail access gate near Hutton Street, Hurlstone Park • Site compound establishment including installation of site sheds, subject to approval • Maintenance of permanent security fencing including GST install near the Church Street footbridge, Canterbury (south side) • Removal of redundant services adjacent to Hutton Street • Non intrusive survey of fencing along the railway corridor • Locating underground services including non-destructive digging close to and inside the rail corridor • Surveys and visual inspections of station buildings and roads in proximity to the rail alignment • Installation of signal equipment and cabling
Canterbury substation (Hutton Street)	• Installing a private pole for temporary power connection • Tree trimming and removal where required • Installing site sheds, water filled barriers and temporary fencing • Temporary water connection for the work site, this includes some road work on Hutton Street • Excavation and installing in-ground electrical conduits

Out-of-hours work

Due to the nature of some activities and for the safety of workers, some work will occur outside standard construction hours when trains are not running. Some equipment will also be delivered outside standard construction hours in line with Transport for NSW requirements for the movement of oversized vehicles.

Date / time	Detail of work
During the scheduled rail shutdown weekend: **Between 10:30pm Friday 19 March to 2am Monday 22 March 2021**	• Geotechnical investigations, including non-destructive digging, soil testing and surveying inside the rail corridor • Non intrusive survey of fencing along the railway corridor • Installing conduits, pits and signal equipment inside the rail corridor Subject to approval, work over the weekend to support the station upgrade will include: • Non-intrusive inspections and surveys at the station and surrounds • Minor tree trimming and vegetation clearing where required • Installation of hoarding

Equipment used for all the above work will include excavators, jack hammers, vacuum trucks, slashers, motorised saws, concrete trucks, sucker trucks, delivery vehicles, borehole drillers, rollers, generators, whacker packers, dump trucks, wood chippers, mulchers, grass cutters, telehandlers, crane trucks, drilling rigs, lifting machinery, elevated work platforms, bobcats, concrete pumps, cable pulling equipment, compactors, lighting towers, forklifts, water carts, vibrating plates, and hand and power tools.

Access to buildings and driveways will be maintained at all times. Some of this work may be noisy, however we will take every possible step to minimise noise such as switching off equipment when not in use and using non-tonal reversing beepers. **Where temporary footpath changes, car parking removal or lane closures are required for works, traffic control, pedestrian detours and signage will be in place to assist the community.**

Keeping you informed

Properties close to the rail corridor will receive notifications when construction work is scheduled to occur. You can contact us on **1800 171 386** (24 hour community information line). If you have questions about the **substations** please ask for **Grace** or email LinewideMetro@transport.nsw.gov.au. For all other works please ask for **Klia** or email SouthwestMetro@transport.nsw.gov.au. **Thank you for your cooperation while we complete this essential work.**

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southwestmetro@transport.nsw.gov.au
Sydney Metro City & Southwest, PO Box K659, Haymarket NSW 1240
If you need an interpreter, contact TIS National on **131 450** and ask them to call **1800 171 386**

sydneymetro.info

City & Southwest

Notification – Southwest Metro

Belmore - March 2021

Sydney Metro is Australia's biggest public transport project.

Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail will be extended into the CBD and beyond to Bankstown in 2024. There will be new CBD metro railway stations underground at Martin Place, Pitt Street and Barangaroo and new metro platforms at Central.

In 2024, Sydney will have 31 metro railway stations and a 66 km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre. The upgrade of the T3 Bankstown Line to metro standards between Sydenham and Bankstown received planning approval on 19 December 2018.

In February 2021, a contract was awarded to Downer EDI Works to upgrade Hurlstone Park, Belmore and Wiley Park stations to metro rail standards. You will notice work taking place around the station in the coming months.

In March, work will continue along the rail corridor and at Belmore Station (weather and site conditions permitting). Access to the rail corridor will be via existing rail corridor/pedestrian access gates. **Day work will be undertaken during project standard construction hours Monday to Friday 7am-6pm and Saturday 8am-6pm.** The map on page 2 shows location details.

Location	Detail of day work
Belmore (at the station and along the rail corridor)	Activities will include: • Investigations and non-intrusive pipe and fencing surveys on station platforms and along the rail corridor • Geotechnical/site investigations, tree assessments and surveys inside the rail corridor and surrounding areas • Devegetation, tree trimming and clearing throughout the rail corridor where required • Installation of fencing, cabling and galvanised streel troughing (GST) • Site compound establishment including installation of site sheds, subject to approval • Locating underground services and non-destructive digging close to and inside the rail corridor • Visual inspections and surveys of station buildings and roads adjacent to the rail corridor • Topographic/ scanning and drainage surveys in the rail corridor, at stations and in nearby public areas • Non intrusive survey of fencing along the railway corridor
Bridge Road, Belmore	• Activities at the site compound on Bridge Road near intersection with Peel Street will continue • Sites and offices will be set up inside the existing Sydney Trains facility (near the intersection with Marie Lane) to support Southwest Metro station upgrades
Lakemba substation	Activities at the substation site (north of The Boulevarde, west of Taylor Street) will include: • Non-destructive excavation and soil classification sampling • Installing a pole for temporary power connection

Out-of-hours work

Due to the nature of some activities and for the safety of workers, some work will occur outside standard construction hours when trains are not running. Some equipment will also be delivered outside standard construction hours in line with Transport for NSW requirements for the movement of oversized vehicles.

Date / time	Detail of work
During the scheduled rail shutdown weekend: **Between 10:30pm Friday 19 March to 2am Monday 22 March 2021**	• Geotechnical investigations, including non-destructive digging, soil testing and surveying inside and along the rail corridor • Installing conduits, pits and signal equipment inside the rail corridor Subject to approval, work over the weekend to support the station upgrade will include: • Non-intrusive inspections and surveys at the station and surrounds • Installation of hoarding

Equipment used for all the above work will include excavators, jack hammers, vacuum trucks, slashers, motorised saws, concrete trucks, sucker trucks, delivery vehicles, borehole drillers, rollers, generators, whacker packers, dump trucks, wood chippers, grass cutters, telehandlers, crane trucks, drilling rigs, lifting machinery, elevated work platforms, bobcats, concrete pumps, cable pulling equipment, compactors, lighting towers, forklifts, water carts, and hand and power tools.

Access to buildings and driveways will be maintained at all times. Some of this work may be noisy, however we will take every possible step to minimise noise such as switching off equipment when not in use and using non-tonal reversing beepers. **Where temporary footpath changes, car parking removal or lane closures are required for works, traffic control, pedestrian detours and signage will be in place to assist the community.**

Keeping you informed

Properties close to the rail corridor will receive notifications when construction work is scheduled to occur. You can contact us on **1800 171 386** (24 hour community information line). If you have questions about the **substations** please ask for **Grace** or email LinewideMetro@transport.nsw.gov.au. For all other works please ask for **Klia** or email SouthwestMetro@transport.nsw.gov.au. **Thank you for your cooperation while we complete this essential work.**

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

City & Southwest

Notification – Southwest Metro

Campsie - March 2021

Sydney Metro is Australia's biggest public transport project.

Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail will be extended into the CBD and beyond to Bankstown in 2024. There will be new CBD metro railway stations underground at Martin Place, Pitt Street and Barangaroo and new metro platforms at Central.

In 2024, Sydney will have 31 metro railway stations and a 66 km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre. The upgrade of the T3 Bankstown Line to metro standards between Sydenham and Bankstown received planning approval on 19 December 2018.

In March, work along the T3 Bankstown Line in the rail corridor will continue at Campsie (weather and site conditions permitting). Access to the rail corridor will be via existing rail corridor/pedestrian access gates. **Day work will be undertaken during project standard construction hours Monday to Friday 7am-6pm and Saturday 8am-6pm.**

Location	Detail of day work
Campsie (along the rail corridor)	Activities will include: • Geotechnical and site investigations inside the rail corridor and in nearby public areas, including locating underground services, non-destructive digging, soil assessments, utilities surveys, tree assessments, topographic/ scanning and surveys • Devegetation and clearing throughout the rail corridor where required • Transportation of material • Installing fencing, cabling and galvanised street troughing (GST) • Retaining wall installation works, landscaping, concrete piling and earthworks • Site compound establishment including installation of site sheds, subject to approval • Visual inspections of roads adjacent to the rail alignment • Installing high voltage cabling near the western end of Campsie Station • Non intrusive survey of fencing along the railway corridor
South Parade between Duke Street and Beamish Lane	• Installation of GST and fence reinstatement works in the rail corridor adjacent to this location. To enable works to proceed safely, **several car spaces on South Parade will be temporarily out of use** throughout the duration of work. Signage will be in place to advise the community.
Substation site (north of The Boulevarde, west of Taylor Street)	• Excavation and installing in-ground electrical conduits • Installing a pole for temporary power connection • Installing site sheds, temporary fencing and water filled barriers • Tree trimming and tree removal, where required • Temporary water connection, including some road work on Lillian Street

Out-of-hours work

Due to the nature of some activities and for the safety of workers, some work will occur outside standard construction hours when trains are not running. Some equipment will also be delivered outside standard construction hours in line with Transport for NSW requirements for the movement of oversized vehicles.

Date / time	Detail of work
During the scheduled rail shutdown weekend: Between **10:30pm Friday 19 March to 2am Monday 22 March 2021**	• Installation and removal of water barriers and temporary fencing adjacent to South Parade between Wonga Street and Gould Street • Non-intrusive inspections and surveys at Campsie Station and surrounds • Installation of hoarding at the station (subject to approval) • Geotechnical investigations, including potholing, non-destructive digging, soil testing and surveying inside the rail corridor • Installation of signal equipment and cabling • Non intrusive survey of fencing along the railway corridor • Installing high voltage cabling near the western end of Campsie Station

Equipment used for all the above work will include excavators, jack hammers, vacuum trucks, slasher, motorised saws, concrete trucks, delivery vehicles, borehole driller, rollers, generators, whacker packer, dump trucks, wood chipper, mulcher, grass cutters, telehandler, piling rig, crane trucks, drilling rig, lifting machinery, elevated work platform, bobcats, concrete pumps, cable pulling equipment, compactors, lighting towers, forklift, water cart, hand and power tools.

Access to buildings and driveways will be maintained at all times. Some of this work may be noisy, however we will take every possible step to minimise noise such as switching off equipment when not in use and using non-tonal reversing beepers. **Where temporary footpath changes, car parking removal or lane closures are required for works, traffic control, pedestrian detours and signage will be in place to assist the community.**

Keeping you informed

Properties close to the rail corridor will receive notifications when construction work is scheduled to occur. You can contact us on **1800 171 386** (24 hour community information line). If you have questions about the **substations** please ask for **Grace** or email LinewideMetro@transport.nsw.gov.au. For all other works please ask for **Kila** or email SouthwestMetro@transport.nsw.gov.au. **Thank you for your cooperation while we complete this essential work.**

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southwestmetro@transport.nsw.gov.au
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sydneymetro.info

Appendix 4: Environmental Representative Supporting Letter.

Appendix 5: Artefact Evidence Response for Belmore

Jayden van Beek <Jayden.vanbeek@artefact.net.au>
To Gareth O'Brien
Cc Sandra Wallace

Reply | Reply All | Forward | ...

Fri 12/03/2021 5:55 PM

You replied to this message on 14/03/2021 9:18 AM.

[External Email] This email was sent from outside the organisation – be cautious, particularly with links and attachments.

Hi Gareth,

Following review of the proposed activities please see the revised advice below.

Regarding the activities listed below, the conditions state that consultation with OEH (now Heritage NSW, DPC) will be required where low impact activities would 'affect' heritage items listed on the State Heritage Register, which includes Belmore Railway Station Group (SHR no. 01081). This is interpretated as meaning works which would result in direct or indirect impacts to the heritage item, or to potential archaeological remains.

Based on this the following low impact activities should be **ok to proceed without consultation** with Heritage NSW, DPC as they would not result in any impacts to fabric, setting or potential archaeological remains:

- Survey (non-invasive)
- Building condition reports
- Dilapidation reports
- Road condition reports
- Ecological and arborist reports
- Bridge inspections (non-invasive) using hi-rail EWP from track
- *Tree trimming – but not the removal of trees or stumps

These works would be limited to non-invasive surveys and inspections which would not require the modification of any significant fabric, installation or removal of elements which would result in visual impacts to the station, or subsurface impacts that could impact potential archaeological remains. Note that tree trimming would need to be limited to minor trimmings only. The trees are not considered to be significant fabric but they do contribute to the setting of the station. Minor trimming of branches would not detract from the setting and therefore would result in a neutral visual impact, however, removing trees would result in a visual impact and therefore would require further consultation.

In addition, the following activities should also be **ok to proceed without consultation** with Heritage NSW, DPC:

- Installing ATF and undertaking ground investigations near the proposed Metro Service Building (MSB) footprint – The MSB footprint is located outside of the SHR curtilage of Belmore Station and therefore no significant fabric would be impacted. Considering the fencing would be located 40-50m outside of the station curtilage any visual impact on the station would be negligible. The ground investigations would be located within the Belmore Station Catchment that has been assessed for archaeological potential, however, it is identified in the Archaeological Research Design (ARD) that this area is unlikely to contain significant archaeology and it is identified as being part of Archaeological Management Zone 3 (Unexpected Finds). Therefore, the proposed ground activities would not be impacting an area of expected archaeological potential
- Accessing the MSB and delineating the location of S2B PAD01 – The use of water filled barriers to delineate the boundaries of S2B PAD01 would not result in subsurface impacts and therefore would not impact the Aboriginal site. Furthermore, a layer of protective geofabric and road base would prevent impacts resulting from vehicle movement through the access gate. As a result, no impacts to S2B PAD01 would occur. However, care would need to be taken if the layer of road base is planned to be removed in the future to ensure that the ground is not scrapped in the process. If the road base is planned to be removed then it is recommended that a double layer of protective geofabric is placed. This would prevent any impacts resulting from the removal of the road base in the future
- New compound at Belmore Station – If the new compound is established outside of the SHR curtilage then no significant fabric would be impacted and no new elements would be installed within the SHR curtilage. Any visual impact to Belmore Station would be negligible because the compound would be largely screened from view by the vegetation along the railway corridor and by the terrain
- Delineating the location of S2B PAD02 at Punchbowl Station – The use of flagging tape or other protective barriers to delineate the boundary of S2B PAD02 would not result in any subsurface impacts and therefore would not cause impacts to the expected area of archaeological potential.

If you have any questions regarding the above advice please let us know.

Thanks,

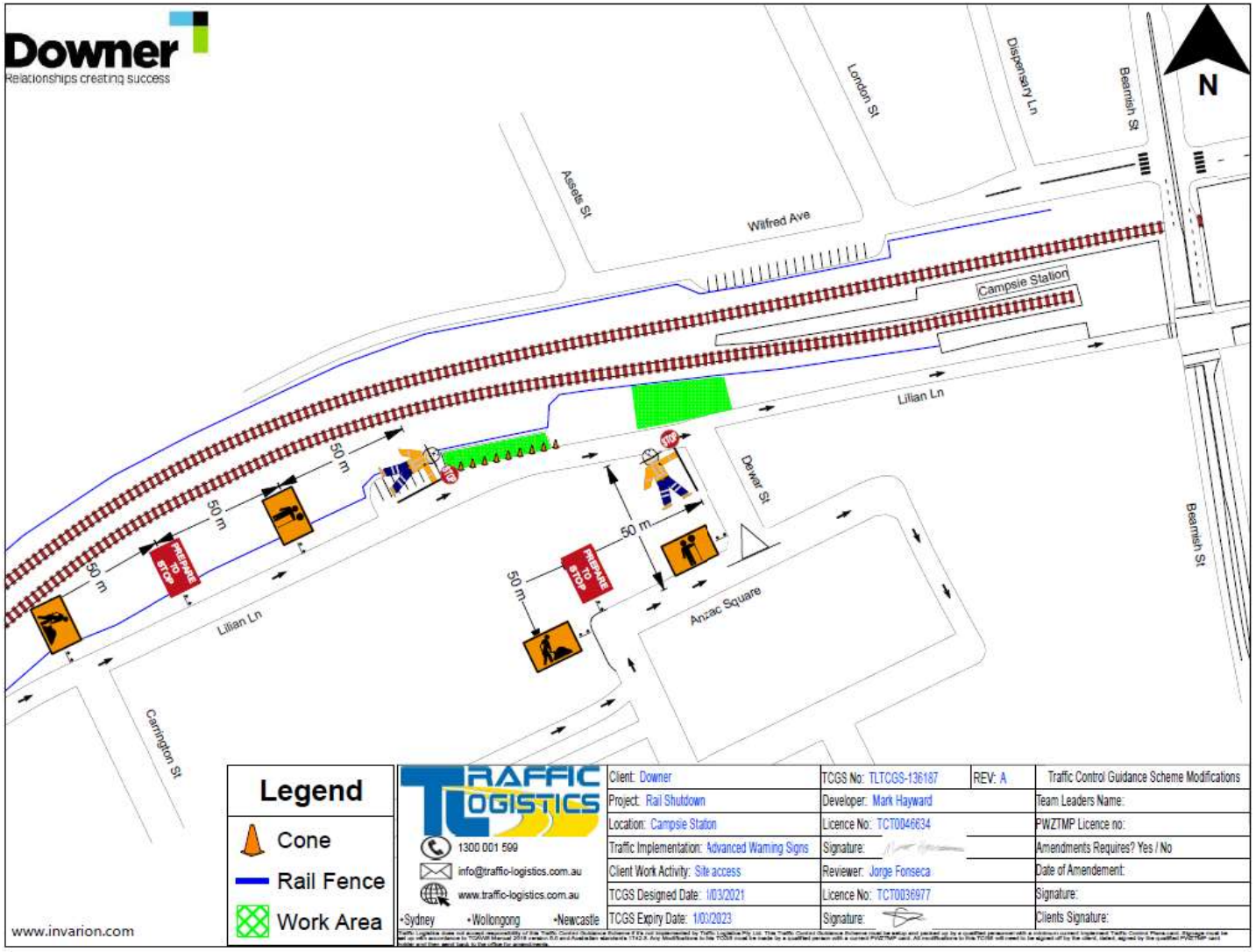
Jayden van Beek
Senior Heritage Consultant

ARTEFACT
Cultural Heritage Management | Archaeology | Heritage Interpretation

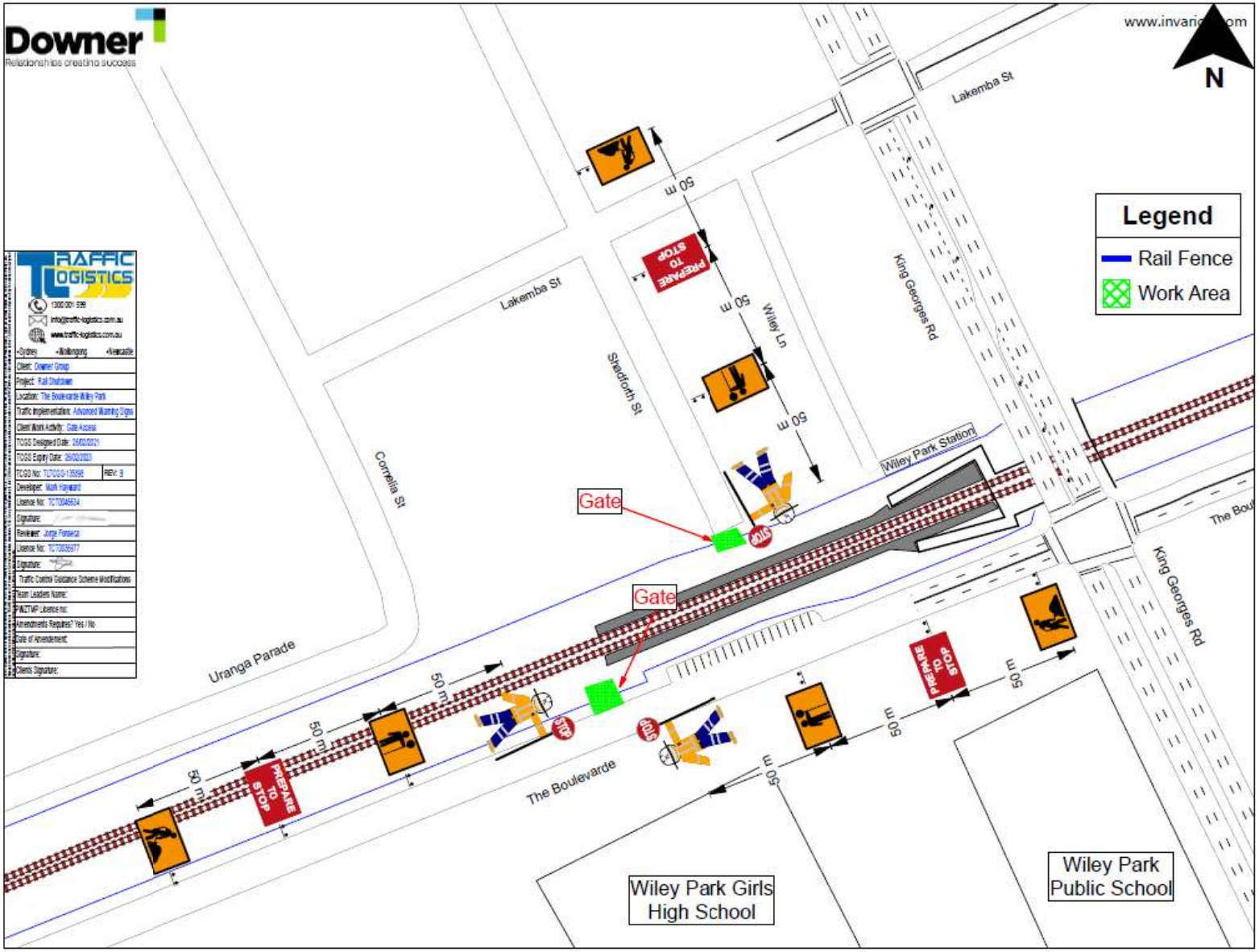
Telephone: 61 2 9518 8411 **Mobile:** 0488 041 326
Address: Suite 56, Jones Bay Wharf, 26-34 Pirrama Rd, Pyrmont NSW 2009
Web: www.artefact.net.au

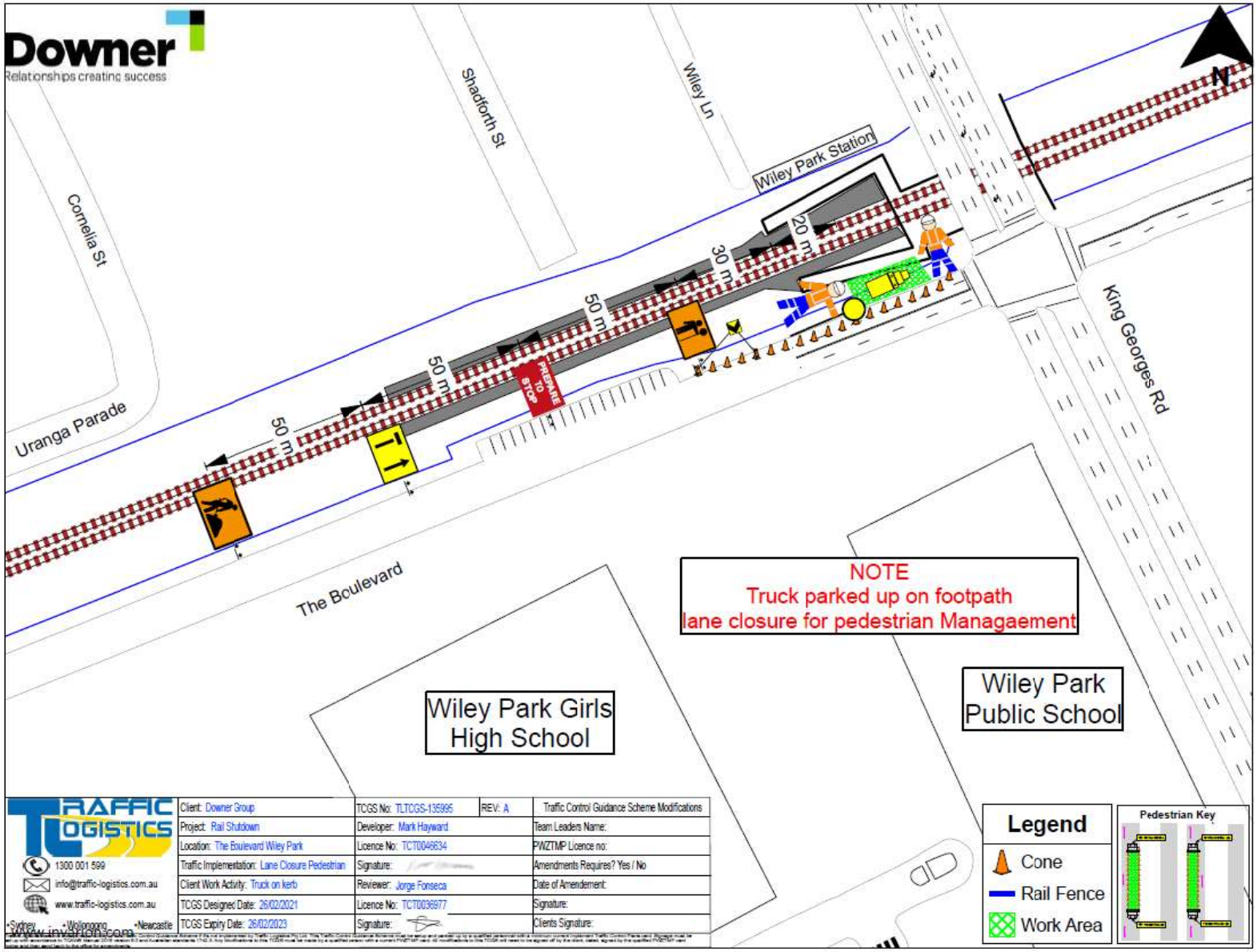
Appendix 6: Traffic Control Plans

Campsie Station

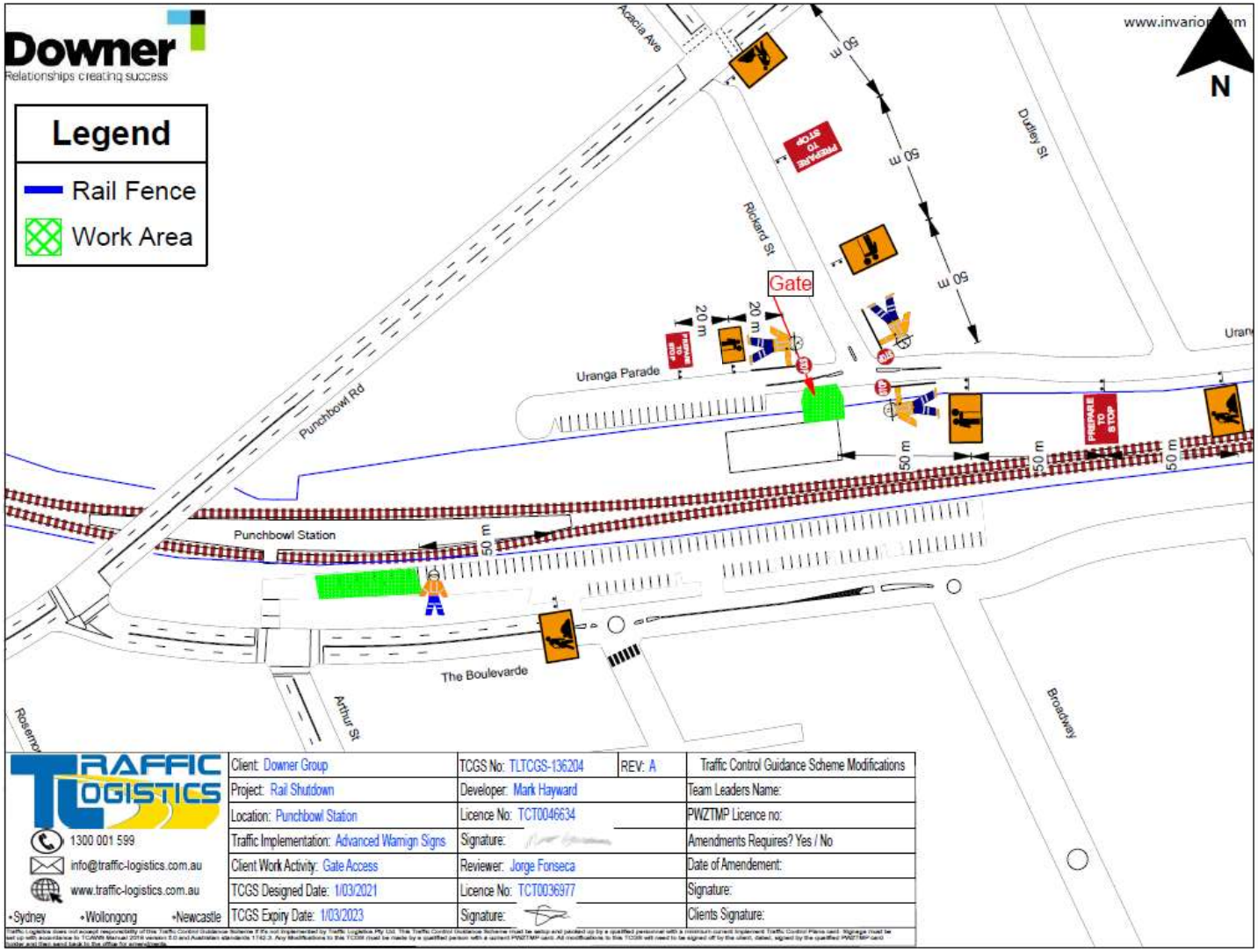


Wiley Park Station

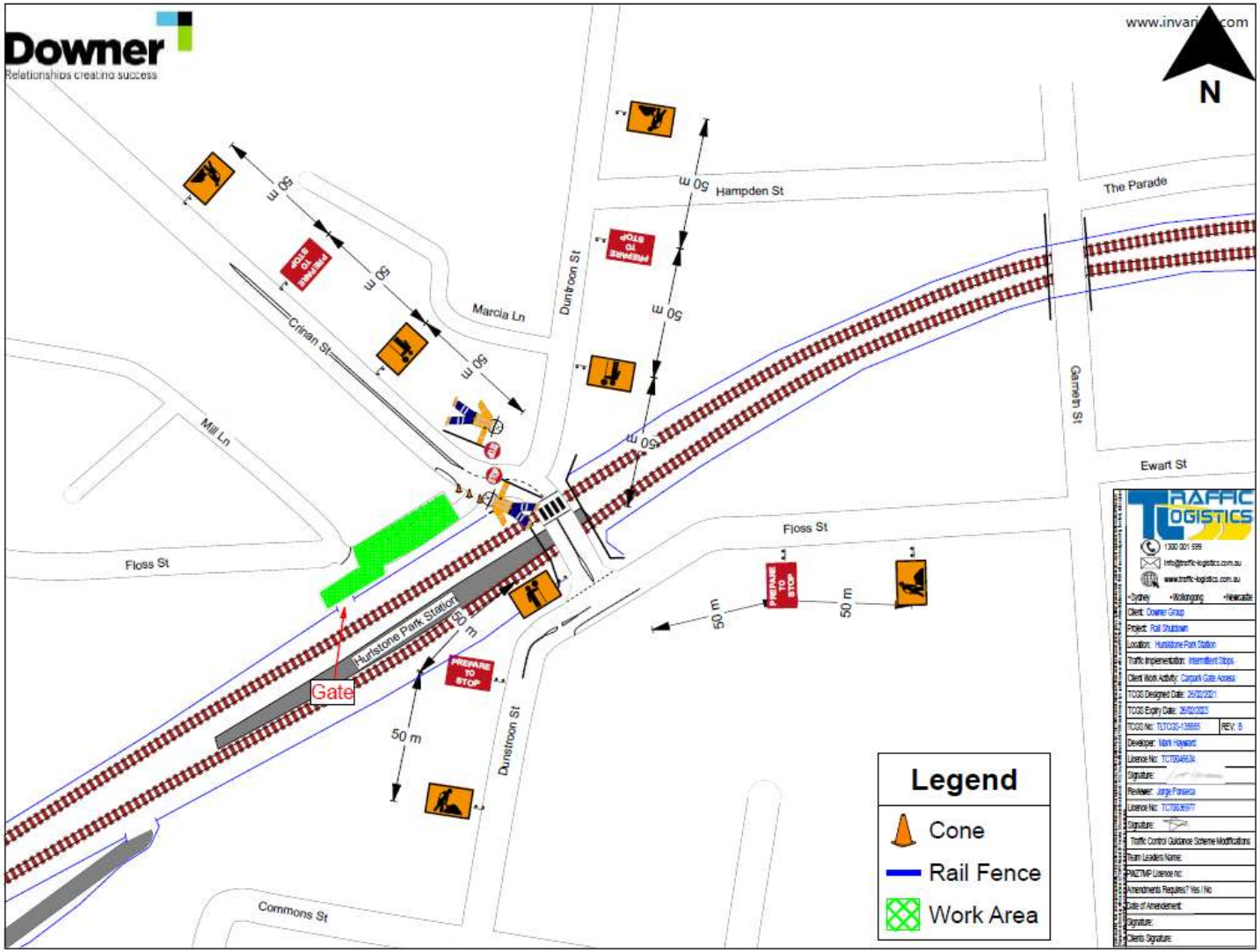


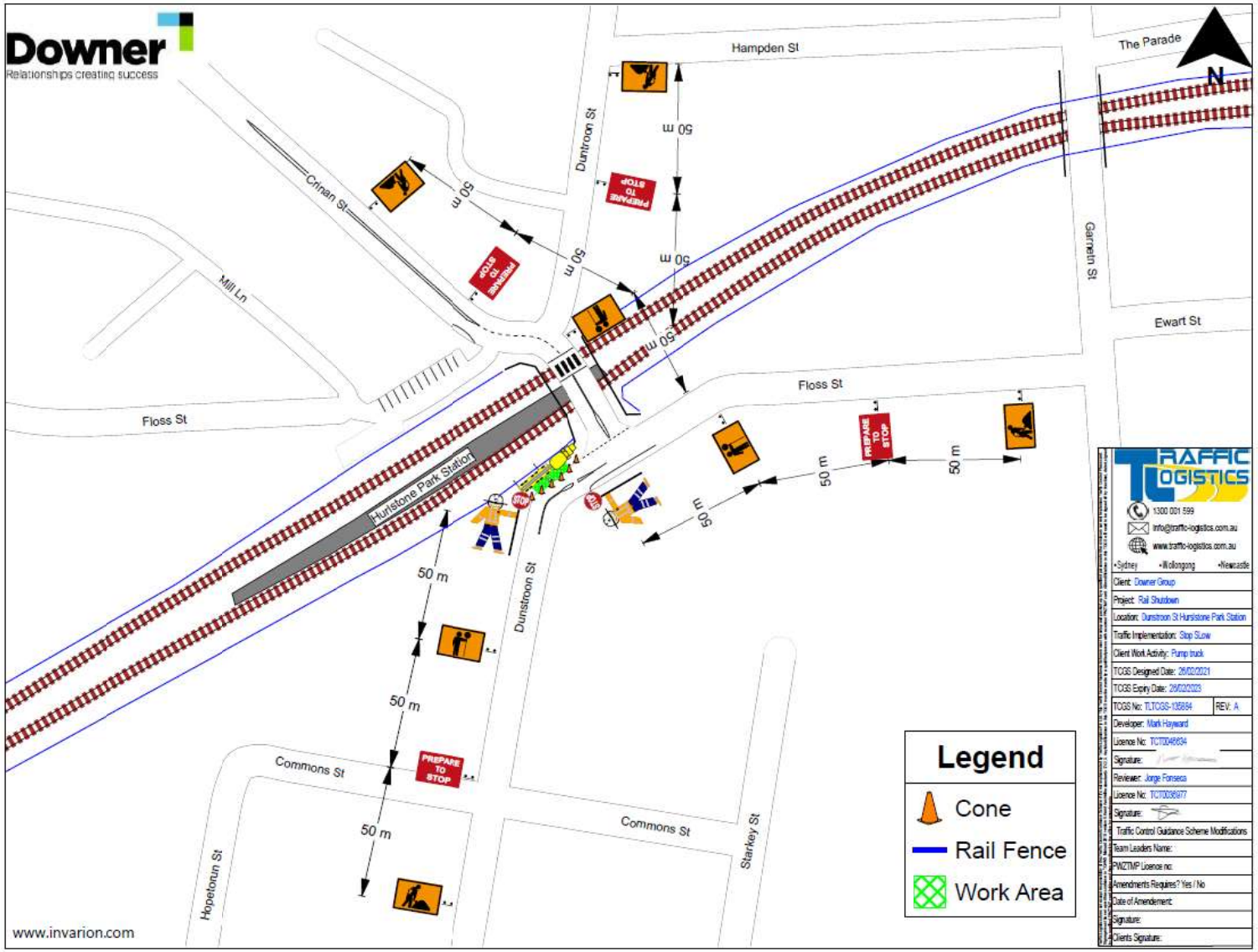

Downer
Relationships creating success
Shadforth St
Wiley Ln
Wiley Park Station
Cornelia St
Uranga Parade
The Boulevard
King Georges Rd
N
50 m
50 m
50 m
30 m
20 m
PREPARE TO STOP
NOTE
Truck parked up on footpath
lane closure for pedestrian Managaement
Wiley Park Girls High School
Wiley Park Public School
TRAFFIC LOGISTICS
1300 001 599
info@traffic-logistics.com.au
www.traffic-logistics.com.au
•Sydney •Wollongong •Newcastle
Client: Downer Group
Project: Rail Shutdown
Location: The Boulevard Wiley Park
Traffic Implementation: Lane Closure Pedestrian
Client Work Activity: Truck on kerb
TCGS Designed Date: 26/02/2021
TCGS Expiry Date: 26/02/2023
TCGS No: TLTCGS-135995
REV: A
Developer: Mark Hayward
Licence No: TCT0048634
Signature:
Reviewer: Jorge Fonseca
Licence No: TCT0036977
Signature:
Traffic Control Guidance Scheme Modifications
Team Leaders Name:
PWZTMP Licence no:
Amendments Requires? Yes / No
Date of Amendement:
Signature:
Clients Signature:
Legend
Cone
Rail Fence
Work Area
Pedestrian Key

Punchbowl Station



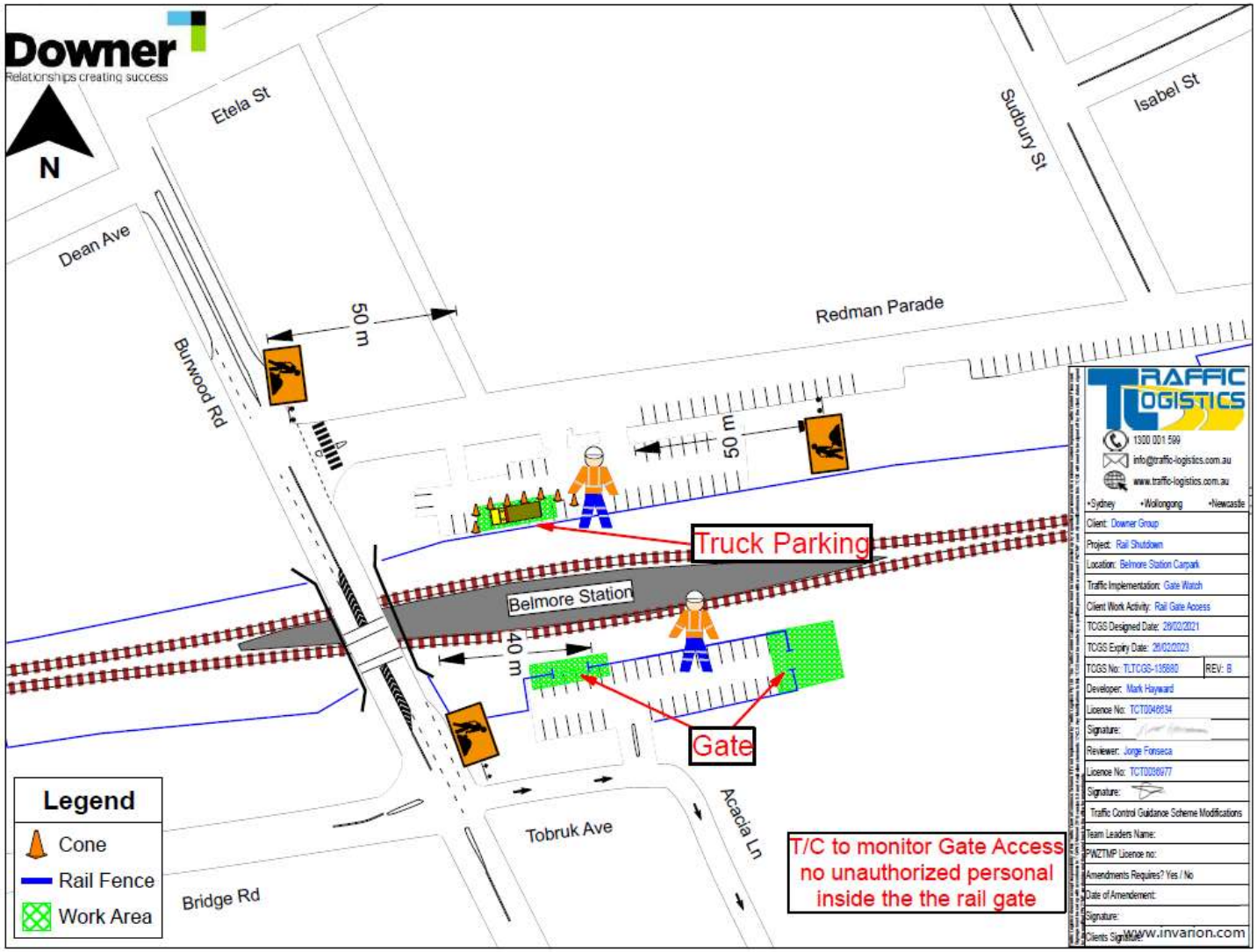
Hurlstone Park Station




Downer
Relationships creating success
Hampden St
The Parade
N
Duntroon St
Crinan St
Mill Ln
Garnetn St
Ewart St
Floss St
Floss St
Hurlstone Park Station
Dunstroon St
Commons St
Commons St
Starkey St
Hopetoun St
50 m
PREPARE TO STOP
Legend
Cone
Rail Fence
Work Area
www.invarion.com
TRAFFIC LOGISTICS
1300 001 599
info@traffic-logistics.com.au
www.traffic-logistics.com.au
•Sydney •Wollongong •Newcastle
Client: Downer Group
Project: Rail Shutdown
Location: Dunstroon St Hurlstone Park Station
Traffic Implementation: Stop Slow
Client Work Activity: Pump truck
TCGS Designed Date: 26/02/2021
TCGS Expiry Date: 26/02/2023
TCGS No: TLTCGS-135884
REV: A
Developer: Mark Hayward
Licence No: TCT0048634
Signature:
Reviewer: Jorge Fonseca
Licence No: TCT0038977
Signature:
Traffic Control Guidance Scheme Modifications
Team Leaders Name:
PMCTMP Licence no:
Amendments Requires? Yes / No
Date of Amendement:
Signature:
Clients Signature:

Dulwich Hill Station

Belmore Station



Appendix 7: Wiley Park ecologist Pre-clearance survey

17 March 2021

Jesse Novley
Downer Group Pty Ltd
T3 Triniti Business Campus
39 Delhi Road
North Ryde NSW 2113

Cumberland Ecology
PO Box 2474
Carlingford Court 2118
NSW Australia
Telephone (02) 9868 1933
ABN 14 106 144 647
Web: www.cumberlandecology.com.au

Pre-clearance Assessment: Southwest Metro Stations Upgrade – Wiley Park Station

Dear Jesse,

Cumberland Ecology was commissioned by Downer Group Pty Ltd to undertake a pre-clearance assessment of vegetation that is proposed to be removed (the 'proposed works') at Wiley Park Station for the Southwest Metro Stations Upgrade (the 'project'). The location of the proposed works is referred to as the 'subject site'. The pre-clearance assessment was conducted by an ecologist on 4 March 2021.

The purpose of this pre-clearance report is to assess the impacts of the proposed works on the biodiversity values of the subject site. Specifically, potential impacts on threatened species, populations and/or ecological communities listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Our key findings are that the proposed works will require the removal of 80 trees (~ 564 m^2 of vegetation), including 11 native and 69 exotic trees, as well as the removal of weeds and exotic-dominated groundcover. One of the trees, *Eucalyptus scoparia* (Wallangarra White Gum) is listed as Endangered under the BC Act and Vulnerable under the EPBC Act. However, this individual has been planted and occurs outside of its naturally occurring range.

The subject site provides suitable foraging habitat primarily for commonly occurring urban adapted native fauna in the form of flowering plants. Roosting habitat in the form of hollows, and Australian White Ibis (*Threskiornis moluccus*) nests have also been found within the subject site.

The results of the pre-clearance assessment are provided in **Appendix A**. Site photographs are included in **Appendix B** and a supporting figure is provided at the end of this letter. Should you have any queries, please do not hesitate to contact me on (02) 9868 1933.

Yours sincerely,

Sally Dupont
Project Manager / Ecologist
sally.dupont@cumberlandecology.com.au

APPENDIX A :

Pre-clearance Assessment: Wiley Park Station

A.1. Introduction

Cumberland Ecology was commissioned by Downer Group Pty Ltd (Downer) to undertake a pre-clearance assessment of vegetation that is proposed to be removed (the 'proposed works') at Wiley Park Station for the Southwest Metro Stations Upgrade (the 'project'). The proposed works occur within the rail corridor around Wiley Park Station, and are required in order install infrastructure required to facilitate the project. The location of the proposed works is identified in **Figure 1** and referred to hereafter as the 'subject site'.

A.2. Purpose

The purpose of the pre-clearance assessment was to survey the subject site in search for the occurrences of:

- Habitat features suitable for native fauna that will require supervision during clearance/removal works;
- Weeds of National Significance (WoNS) listed under the Australian Weeds Strategy and/or Priority Weeds listed under the NSW *Biosecurity Act 2015* (Biosecurity Act); and
- Presence of Threatened Ecological Communities (TECs) and threatened flora and fauna listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

None of the vegetation to be impacted was previously mapped by the Office of Environment and Heritage (OEH) as part of the Native Vegetation of the Sydney Metropolitan Area project (OEH 2013). The site inspection undertaken by Cumberland Ecology determined that the subject site is comprised entirely of planted Urban Native/Exotic vegetation.

A.3. Methodology

A site inspection was undertaken by an ecologist on 4 March 2021 in the company of Downer staff. The inspection involved traversing the subject site on foot and visually inspecting the areas where vegetation disturbance is proposed.

Field notes regarding the general condition and composition of the vegetation within the subject site were made. This included documenting the species and location of all vegetation to be disturbed with particular attention to native shrubs and trees, threatened species, and any habitat features such as hollows, nests and decorticating bark that could be utilised by native fauna. Photographs were taken at various locations of proposed disturbance to document the general condition and composition of the vegetation within the subject site.

A discussion on-site was carried out as required to ascertain the level of clearing (overstorey, understorey, groundcover), the nature of clearing (trimming, removal etc) and the extent of clearing within the subject site where disturbance works are to be located.

A.4. Key Findings

A.4.1. Planted Native/Exotic Vegetation

The subject site consists entirely of planted Urban Native/Exotic Vegetation comprised of a canopy of planted native species including *Eucalyptus scoparia* (Wallangarra White Gum) and the exotic species *Schinus molle* (Peppercorn) (**Photograph 1**). The midstorey includes planted native and locally indigenous small trees including *Pittosporum undulatum* (Sweet Pittosporum) as well as the exotic *Ligustrum lucidum* (Broad-leaved Privet), *Cestrum parqui* (Green Cestrum), *Phoenix canariensis* (Canary Island Date Palm) and the climbing *Anredera cordifolia* (Madeira Vine) (**Photograph 2-3**). The ground layer has previously been cleared and is dominated by weeds such as *Bidens pilosa* (Cobbler's Legs), *Cirsium vulgare* (Spear Thistle), *Onopordum acanthium* (Scotch Thistle), *Asparagus aethiopicus* (Asparagus Fern) and *Tradescantia fluminensis* (Wandering Jew) (**Photograph 4**).

One individual *Eucalyptus scoparia* (Wallangarra White Gum) has been planted at Wiley park Station, which is listed as Endangered under the BC Act and Vulnerable under the EPBC Act. This individual has been planted and occurs outside of its naturally occurring range, which is restricted to three known locations near Tenterfield (DPIE 2019)

The total area of planted Urban Native/Exotic Vegetation to be impacted within the subject site is approximately 564 m^2 and the removal of 11 native and 69 exotic trees/shrubs, as well as the removal of weeds and exotic-dominated groundcover.

Phoenix canariensis (Canary Island Date Palm), *Ligustrum lucidum* (Broad-leaved Privet), *Onopordum acanthium* (Scotch Thistle), *Asparagus aethiopicus* (Asparagus Fern), *Anredera cordifolia* (Madeira Vine), *Cestrum parqui* (Green Cestrum) and *Tradescantia fluminensis* (Wandering Jew) are listed under the *Greater Sydney Regional Strategic Weed Management Plan 2017-2022* (2017).

The details of the vegetation proposed to be impacted are provided in **Table 1** below and shown in **Figure 1**.

Table 1 Details of vegetation proposed to be impacted

Tree ID	Scientific Name	Common Name	Proposed Works	No. of Individuals	DBH (cm)	Height (m)	Canopy/Area to be impacted (m^2)	Native/Exotic	Habitat
1	*Ligustrum lucidum*	Broad-leaved Privet	Removal	3	10	6	25	Exotic	-
2	*Schinus molle*	Peppercorn	Removal	1	35	8	15	Exotic	-
3	*Schinus molle*	Peppercorn	Removal	1	35	10	20	Exotic	-
4	*Phoenix canariensis*	Canary Island Date Palm	Removal	2	40	2.5	9	Exotic	-
5	*Schinus molle*	Peppercorn	Removal	1	50	10	12	Exotic	3 medium hollows, 1 ibis nest (1 egg)
6	*Ligustrum lucidum*	Broad-leaved Privet	Removal	3	10	8	15	Exotic	1 ibis nest (empty)
7	*Ligustrum lucidum*	Broad-leaved Privet	Removal	8	5	6	30	Exotic	-
8	*Pittosporum undulatum*	Sweet Pittosporum	Removal	1	<5	2.5	2	Native	-
9	*Schinus molle*	Peppercorn	Removal	1	30	10	16	Exotic	-
10	*Schinus molle*	Peppercorn	Removal	1	30	10	6	Exotic	1 ibis nest (chicks)
11	*Ligustrum lucidum*	Broad-leaved Privet	Removal	8	5	8	35	Exotic	-
12	*Ligustrum lucidum*	Broad-leaved Privet	Removal	4	5	8	12	Exotic	1 ibis nest (empty)
13	*Camellia sp.*	Camellia	Removal	3	<5	3	6	Exotic	-
14	*Eucalyptus scoparia*	Wallangarra White Gum	Removal	1	35	20	20	Native	
15	*Pittosporum undulatum*	Sweet Pittosporum	Removal	2	<5	2.5	2	Native	
16	*Ligustrum lucidum*	Broad-leaved Privet	Removal	3	10	5	20	Exotic	1 ibis nest (empty)

Tree ID	Scientific Name	Common Name	Proposed Works	No. of Individuals	DBH (cm)	Height (m)	Canopy/Area to be impacted (m^2)	Native/Exotic	Habitat
17	*Ligustrum lucidum*	Broad-leaved Privet	Removal	10	10	6	40	Exotic	-
18	*Schinus molle*	Peppercorn	Removal	4	40	7	5	Exotic	-
19	*Ligustrum lucidum*	Broad-leaved Privet	Removal	2	5	8	9	Exotic	-
20	*Schinus molle*	Peppercorn	Removal	2	35	12	25	Exotic	-
21	*Schinus molle*	Peppercorn	Removal	1	35	12	10	Exotic	2 ibis nests (6 eggs)
22	*Ligustrum lucidum*	Broad-leaved Privet	Removal	4	5	6	45	Exotic	2 ibis nests (3 eggs)
23	*Schinus molle*	Peppercorn	Removal	1	40	11	25	Exotic	-
24	*Phoenix canariensis*	Canary Island Date Palm	Removal	2	15	4	10	Exotic	-
25	*Pittosporum undulatum*	Sweet Pittosporum	Removal	2	5	5	5	Native	3 ibis nests (empty)
26	*Pittosporum undulatum*	Sweet Pittosporum	Removal	2	10	8	15	Native	1 ibis nest (empty)
27	*Schinus molle*	Peppercorn	Removal	2	50	12	25	Exotic	2 medium and 2 small hollows, 1 ibis nest (3 eggs)
28	*Schinus molle*	Peppercorn	Removal	1	100	15	40	Exotic	-
29	*Pittosporum undulatum*	Sweet Pittosporum	Removal	1	15	6	20	Native	-
30	*Pittosporum undulatum*	Sweet Pittosporum	Removal	2	10	4	15	Native	-
31	*Schinus molle*	Peppercorn	Removal	1	45	12	30	Exotic	1 ibis nest (chicks)
TOTAL				**80**			**564**		

A.4.2. Habitat Assessment

Five medium and two small hollows were observed in two *Schinus molle* (Peppercorn) individuals which may provide suitable roosting habitat for native species such as Ringtail Possums, Brushtail Possums and microchiropteran bats (**Photograph 5**). Furthermore, a dozen Australian White Ibis (*Threskiornis moluccus*) nests, nesting adults, chicks and eggs were present within the vegetation proposed to be removed in the subject site (**Photograph 6**). The remaining vegetation proposed to be removed would likely only be utilised on occasion for foraging purposes by commonly occurring urban-adapted species.

A.4.3. Impacts on Vegetation

All vegetation within the subject site exists as isolated narrow linear patches of vegetation that are exposed to a high degree of edge effects being bound by the rail corridor and/or developed areas. Most of the subject site has been previously cleared and contains areas with native regrowth, planted native and exotic vegetation.

A.4.4. Impacts to Threatened Ecological Communities

The vegetation observed during the survey consists entirely of planted Urban Native/Exotic which does not conform to any TEC under either BC Act or EPBC Act.

A.4.5. Impacts to Threatened Species

A.4.5.1. Threatened Flora

One threatened flora species, *Eucalyptus scoparia* (Wallangarra White Gum) will be removed by the project. This species has been planted and is not located within its naturally occurring range. Therefore, the conservation significance of this tree is not considered to be significant. No other threatened flora species were recorded during the survey.

The majority of the groundcover that is proposed to be disturbed has been previously cleared and is comprised of exotic species. Due to the condition of the understorey, the subject site is considered unlikely to provide suitable habitat for any threatened flora species known to occur in the locality (5 km radius of the subject site).

A.4.5.2. Threatened Fauna

Due to the disturbed nature of the subject site and its exposure to edge effects being located adjacent to the rail corridor, the habitat present is not considered to be important to the long-term survival of any threatened fauna known to occur in the locality.

A.4.6. Offsetting Requirements

Provision E4 of the Sydney Metro Planning Approval stipulates the following:

"The CSSI must be designed to retain as many trees as possible. Where trees are to be removed, the proponent must provide a 2:1 ratio replacement of trees. Replacement trees must be planted within the project boundary or on public land up to 500 m from the project boundary. Replacement tree plantings can be undertaken beyond 500 m on public land within the local government areas to which the CSSI approval applies if requested by the relevant council(s) or where no more practicable land for planting can be found within and up to 500 m from the

CSSI boundary. The location of replacement trees must be determined on consultation with the relevant council(s)."

In accordance with Provision E4 of the Sydney Metro Planning Approval for the project, all trees proposed for removal must for offset at a ratio of 2:1. Consequently, 160 trees must be planted in order to offset the 80 trees proposed to be removed.

A.5. Recommendations

Recommendations based on the findings of the pre-clearance assessment conducted by Cumberland Ecology are outlined below. It is expected that any clearance works undertaken within the subject site are done in accordance with any relevant approvals and protocols.

A.5.1. Threatened Flora

There are no recommendations for threatened flora as the only threatened flora species recorded has been planted well outside of its naturally occurring range. No other threatened flora species are considered likely to occur.

A.5.2. Vegetation Clearance

The limits of clearing should be clearly demarcated to ensure areas of vegetation outside of the subject site are not impacted. All clearing staff should be informed of the clearing boundary prior to undertaking works.

As per Provision B6 of the Sydney Metro Planning Approval for the project, an ecologist is required to be present during the clearing of native vegetation or removal of potential fauna habitat and habitat resources should be salvaged where practicable. Consequently and due to the presence of hollows and active nests, an ecologist should be present for the removal of the vegetation within the subject site. Prior to any vegetation disturbance, all nests are to be inspected by the attending ecologist using an Elevated Work Platform (EWP). The ecologist will carefully remove the entire nest, if possible, or any eggs and chicks immediately prior to the removal of the habitat tree. If no EWP is available, a climbing arborist can remove the nest and any resident chicks/eggs under the guidance of the attending ecologist. Chicks/eggs will then be relinquished to a qualified wildlife carer (WIRES) or taken to the nearest veterinary clinic for treatment if injured. Since native fauna is likely to be encountered, in addition to an ecologist, it is highly recommended that a qualified wildlife carer also be present on the day of clearing to offer prompt assistance and ensure the wellbeing of the rescued fauna.

Once all nests have been inspected and any resident fauna rescued, trees should be vigorously agitated immediately prior to felling in order to encourage any remaining potential resident fauna, such as roosting adult ibis and possums, to self-relocate. Habitat trees containing hollows will be thoroughly inspected by an ecologist immediately following felling. Should fauna be inadvertently injured, it will be taken to the nearest veterinary clinic for treatment, or, if the injuries are deemed too severe, humanely euthanised on site by the attending ecologist. All work should cease until the ecologist has returned and is satisfied that no fauna is likely to be impacted.

A.5.3. Priority Weeds and WoNS

Due to the presence of Priority weeds and WoNS, it is recommended that all cleared vegetation not be reused within or adjacent to the subject site as mulch. All cleared vegetation and topsoil are to be disposed of at an approved green waste facility and in accordance with guidelines identified in the *Greater Sydney Regional Strategic Weed Management Plan 2017-2022* (2017).

A.5.4. Offsetting

As described in ***Section A.4.5***, a total number of 160 trees are required to be planted in order to offset the 80 trees being proposed to be removed as part of the project in order to satisfy the offsetting requirements specified in the Sydney Metro Planning Approval for the project. Species recommended for plantings include a selection from the Canterbury-Bankstown approved list, such as *Acacia falcata* (Sickle Wattle), *Acacia myrtifolia* (Myrtle Wattle), *Callistemon linearis* (Narrow-leaved Bottlebrush), *Banksia spinulosa* (Hairpin Banksia), *Grevillea sericea* (Pink Spider Flower), *Eucalyptus tereticornis* (Forest Red Gum), *Pittosporum undulatum* (Sweet Pittosporum) and *Glochidion ferdinandi* (Cheese Tree).

A.5.5. Installation of Nest Boxes

Since two habitat trees containing five medium hollows and two small hollows are proposed to be removed, it is recommended that seven nest boxes be installed in the surrounding vegetation being retained. Five possum boxes and two microchiropteran bats are recommended as these are the most likely species to utilise the current hollows. The nest boxes should be made of wooden material and installed at a height of approximately 4 m. Furthermore, the nest boxes should face either a north-eastern or south-western direction in order to minimise exposure to the harsh, direct sunlight from the afternoon sun.

A.6. Conclusion

The proposed works require the removal of vegetation within the rail corridor around Wiley Park Station in order to install infrastructure to allow for the Southwest Metro Stations Upgrade. The proposed works will impact on approximately 564 m^2 of planted Urban Native/Exotic Vegetation through the removal of 80 trees, including 11 natives and 69 exotics, as well as the removal of weeds and exotic-dominated groundcover.

Aside from seven hollows and a dozen ibis nests, the vegetation to be impacted offers little ecological value other than potential foraging habitat for urban tolerant, native fauna species.

Other than one non-endemic *Eucalyptus scoparia*, no threatened plant species were observed during the site inspection and none are likely to occur due to the degraded nature of the subject site.

No threatened fauna are likely to be dependent on the habitat within the subject site to be impacted. Therefore, the proposed works are unlikely to impact on any threatened fauna species that may utilise the subject site periodically as part of a much broader foraging range.

If all mitigation measures recommended in ***Section A.5*** are implemented, the proposed works are unlikely to have a significant impact on any of the biodiversity values of the subject site or surrounding areas.

A.7. References

DPIE. 2019. Wallangarra White Gum (*Eucalyptus scoparia*) - Profile. Department of Planning, Industry and Environment - Environment, Energy and Science Group, Sydney.

LLS: Greater Sydney, editor. 2017. Greater Sydney Regional Strategic Weed Management Plan 2017 - 2022. Local Land Services NSW.

OEH. 2013. The Native Vegetation of the Sydney Metropolitan Area. Office of Environment and Heritage, Sydney.

APPENDIX B :
Photographs

Photograph 1 Canopy vegetation of the subject site dominated by *Schinus molle* (Peppercorn)

Photograph 2 Midstorey dominated by *Ligustrum lucidum* (Broad-leaved Privet)

Photograph 3 *Anredera cordifolia* (Madeira Vine) infestation within the subject site

Photograph 4 Exotic dominated groundcover within the subject site

Photograph 5 Small and medium hollows present within the subject site providing potential native fauna habitat

Photograph 6 Australian White Ibis nest present within the subject site

FIGURES

Legend

- Subject Site
- Habitat Tree - Native
- Habitat Tree - Exotic
- Tree - Native
- Tree - Exotic

Image Source:
Image © Nearmap (2021)
Dated: 26/01/2021

Coordinate System: MGA Zone 56 (GDA 94)

cumberland ecology

0 5 10 15 20 m

I:\...\20127\Figures\Letter 4\20210309\Figure 1. Locoation_Vegetation_Impacted

Figure 1. Location of vegetation proposed to be impacted within the subject site

Appendix 8: Hurlstone Park ecologist Pre-clearance survey

17 March 2021

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Pre-clearance Assessment: Southwest Metro Stations Upgrade – Hurlstone Park Station

Dear Jesse,

Cumberland Ecology was commissioned by Downer Group Pty Ltd to undertake a pre-clearance assessment of vegetation that is proposed to be removed (the 'proposed works') at Wiley Park Station for the Southwest Metro Stations Upgrade (the 'project'). The location of the proposed works is referred to as the 'subject site'. The pre-clearance assessment was conducted by an ecologist on 04 March 2021.

The purpose of this pre-clearance report is to assess the impacts of the proposed works on the biodiversity values of the subject site. Specifically, potential impacts on native threatened species, populations and/or ecological communities listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Our key findings are that the proposed works will require the removal of 56 trees (~ 305 m^2 of vegetation), including ten native, 46 exotic trees and one stag, as well as the removal weeds and exotic-dominated groundcover. None of this vegetation is listed under the BC Act or EPBC Act.

The subject site provides suitable foraging habitat primarily for commonly occurring urban adapted native fauna in the form of flowering plants. No important roosting habitat such as hollows or nests were recorded within the subject site.

The results of the pre-clearance assessment are provided in **Appendix A**. Site photographs are included in **Appendix B** and a supporting figure is provided at the end of this letter. Should you have any queries, please do not hesitate to contact me on (02) 9868 1933.

Yours sincerely,

Sally Dupont
Project Manager / Ecologist
sally.dupont@cumberlandecology.com.au

APPENDIX A :

Pre-clearance Assessment: Hurlstone Park Station

A.1. Introduction

Cumberland Ecology was commissioned by Downer Group Pty Ltd (Downer) to undertake a pre-clearance assessment of vegetation that is proposed to be removed (the 'proposed works') at Hurlstone Park Station for the Southwest Metro Stations Upgrade (the 'project'). The proposed works occur within the rail corridor around Hurlstone Park Station, and are required in order install infrastructure required to facilitate the project. The location of the proposed works is identified in **Figure 1** and referred to hereafter as the 'subject site'.

A.2. Purpose

The purpose of the pre-clearance assessment was to survey the subject site in search for the occurrences of:

- Habitat features suitable for native fauna that will require supervision during clearance/removal works;
- Weeds of National Significance (WoNS) listed under the Australian Weeds Strategy and/or Priority Weeds listed under the NSW *Biosecurity Act 2015* (Biosecurity Act); and
- Presence of Threatened Ecological Communities (TECs) and threatened flora and fauna.

None of the vegetation to be impacted was previously mapped by the Office of Environment and Heritage (OEH) as part of the Native Vegetation of the Sydney Metropolitan Area project (OEH 2013). The site inspection undertaken by Cumberland Ecology determined that the subject site is comprised entirely of planted Urban Native/Exotic vegetation.

A.3. Methodology

A site inspection was undertaken by an ecologist on 04 March 2021 in the company of Downer staff. The inspection involved traversing the subject site on foot and visually inspecting the areas where vegetation disturbance is proposed.

Field notes regarding the general condition and composition of the vegetation within the subject site were made. This included documenting the species and location of all vegetation to be disturbed with particular attention to native shrubs and trees, threatened species, and any habitat features such as hollows, nests and decorticating bark that could be utilised by native fauna. Photographs were taken at various locations of proposed disturbance to document the general condition and composition of the vegetation within the subject site.

A discussion on-site was carried out as required to ascertain the level of clearing (overstorey, understorey, groundcover), the nature of clearing (trimming, removal etc) and the extent of clearing within the subject site where disturbance works are to be located.

A.4. Key Findings

A.4.1. Impacts on Vegetation

All vegetation within the subject site exists as isolated narrow linear patches of vegetation that are exposed to a high degree of edge effects being bound by the rail corridor and/or developed areas. Most of the subject site has been previously cleared and contains areas with native regrowth, planted native and exotic vegetation.

A.4.1.1. Planted Native/Exotic Vegetation

The subject site consists entirely of planted Urban Native/Exotic Vegetation comprised of a canopy of planted native species including *Eucalyptus botryoides* (Southern Mahogany) and the exotic species *Cinnamomum camphora* (Camphor Laurel) and *Morus alba* (White Mulberry) (**Photographs 1** and **2**). The midstorey includes planted native and locally indigenous small trees including *Pittosporum undulatum* (Sweet Pittosporum), Acacia saligna (Golden Wreath Wattle) as well as the exotic species *Ligustrum lucidum* (Broad-leaved Privet), *Cestrum parqui* (Green Cestrum), *Ailanthus altissima* (Tree of Heaven), *Robinia pseudoacacia* (Black Locust) and *Phoenix canariensis* (Canary Island Date Palm) and the climbing *Anredera cordifolia* (Madeira Vine), *Hedera helix* (English Ivy) and *Lantana camara* (Lantana) (**Photograph 3**). The ground layer has previously been cleared and is dominated by weeds such as *Bidens pilosa* (Cobbler's Legs), *Asparagus aethiopicus* (Asparagus Fern) and *Trifolium repens* (White clover) (**Photograph 4**).

The total area of planted Urban Native/Exotic Vegetation to be impacted within the subject site is approximately 305 m^2 and the removal of ten native and 46 exotic trees/shrubs and one stag, as well as the removal of weeds and exotic-dominated groundcover.

Phoenix canariensis (Canary Island Date Palm), *Cinnamomum camphora* (Camphor Laurel), *Ligustrum lucidum* (Broad-leaved Privet), *Ailanthus altissima* (Tree of Heaven), *Robinia pseudoacacia* (Black Locust), *Senna pendula* (Easter Cassia), *Gleditsia triacanthos* (Honey Locust), *Lantana camara* (Lantana), *Asparagus aethiopicus* (Asparagus Fern), *Cestrum parqui* (Green Cestrum) and *Anredera cordifolia* (Madeira Vine) are listed under the *Greater Sydney Regional Strategic Weed Management Plan 2017-2022* (LLS 2019).

The details of the vegetation proposed to be impacted are provided in **Table 1** below and shown in **Figure 1**.

Table 1 Details of vegetation proposed to be impacted

Tree ID	Scientific Name	Common Name	Proposed Works	No. of Individuals	DBH (cm)	Height (m)	Canopy/Area to be impacted (m^2)	Native/Exotic
1	*Cinnamomum camphora*	Camphor Laurel	Removal	4	10	7	25	Exotic
2	*Ligustrum lucidum*	Broad-leaved Privet	Removal	2	10	5	10	Exotic
3	*Ligustrum lucidum*	Broad-leaved Privet	Removal	3	5	4	5	Exotic
4	*Ailanthus altissima*	Tree of Heaven	Removal	1	10	6	8	Exotic
5	*Robinia pseudoacacia*	Black Locust	Removal	3	10	7	15	Exotic
6	*Cinnamomum camphora*	Camphor Laurel	Removal	1	15	12	12	Exotic
7	*Senna pendula*	Easter Cassia	Removal	8	<5	5	20	Exotic
8	*Gleditsia triacanthos*	Honey Locust	Removal	1	<5	1.5	1	Exotic
9	*Eucalyptus botryoides*	Southern Mahogany	Removal	1	60	18	35	Native
10	*Phoenix canariensis*	Canary Island Date Palm	Removal	1	10	1.5	4	Exotic
11	*Cinnamomum camphora*	Camphor Laurel	Removal	1	100	16	30	Exotic
12	*Phoenix canariensis*	Canary Island Date Palm	Removal	1	10	1	1	Exotic
13	*Ligustrum lucidum*	Broad-leaved Privet	Removal	5	5	5	15	Exotic
14	*Ailanthus altissima*	Tree of Heaven	Removal	8	10	8	40	Exotic
15	*Cinnamomum camphora*	Camphor Laurel	Removal	2	5	10	15	Exotic
16	*Morus alba*	White Mulberry	Removal	2	20	8	20	Exotic
17	*Pittosporum undulatum*	Sweet Pittosporum	Removal	1	10	4	5	Native

Tree ID	Scientific Name	Common Name	Proposed Works	No. of Individuals	DBH (cm)	Height (m)	Canopy/Area to be impacted (m^2)	Native/Exotic
18	*Acacia saligna*	Golden Wreath Wattle	Removal	3	15	7	25	Native
19	-	Stag	Removal	1	15	4	-	-
20	*Acacia saligna*	Golden Wreath Wattle	Removal	2	5	6	9	Native
21	*Grevillea sp.*	Grevillea	Removal	1	5	6	2	Native
22	*Acacia saligna*	Golden Wreath Wattle	Removal	2	10	5	8	Native
23	*Yucca sp.*	Yucca	Removal	2	-	0.4	-	Exotic
TOTAL				**56**			**305**	

A.4.2. Impacts to Threatened Ecological Communities

The vegetation observed during the survey consists entirely of Planted Native/Exotic Vegetation which does not conform to any Threatened Ecological Community under either the BC Act or EPBC Act.

A.4.3. Impacts to Threatened Species

A.4.3.1. Threatened Flora

No threatened flora species were recorded during the survey.

The majority of the groundcover that is proposed to be disturbed has been previously cleared and is comprised of exotic species. Due to the condition of the understorey, the subject site is considered unlikely to provide suitable habitat for any threatened flora species known to occur in the locality (5 km radius of the subject site).

A.4.3.2. Threatened Fauna

Due to the disturbed nature of the subject site and its exposure to edge effects being located adjacent to the rail corridor, the habitat present is not considered to be important to the long-term survival of any threatened fauna known to occur in the locality.

A.4.4. Habitat Assessment

No native fauna species were recorded during the survey. Furthermore, no nests, hollows, fissures or decorticating bark were recorded amongst the vegetation assessed. The vegetation proposed to be removed or trimmed would likely only be utilised on occasion for foraging purposes by commonly occurring urban-adapted species.

A.4.5. Offsetting Requirements

Provision E4 of the Sydney Metro Planning Approval stipulates the following:

"The CSSI must be designed to retain as many trees as possible. Where trees are to be removed, the proponent must provide a 2:1 ratio replacement of trees. Replacement trees must be planted within the project boundary or on public land up to 500 m from the project boundary. Replacement tree plantings can be undertaken beyond 500 m on public land within the local government areas to which the CSSI approval applies if requested by the relevant council(s) or where no more practicable land for planting can be found within and up to 500 m from the CSSI boundary. The location of replacement trees must be determined on consultation with the relevant council(s)."

In accordance with Provision E4 of the Sydney Metro Planning Approval for the project, all trees proposed for removal must for offset at a ratio of 2:1. Consequently, 112 trees must be planted in order to offset the 56 trees proposed to be removed.

A.5. Recommendations

Recommendations based on the findings of the pre-clearance assessment conducted by Cumberland Ecology are outlined below. It is expected that any clearance works undertaken within the subject site are done in accordance with any relevant approvals and protocols.

A.5.1. Threatened Flora

There are no recommendations for threatened flora as the only threatened flora species recorded has been planted well outside of its naturally occurring range. No other threatened flora species are considered likely to occur.

A.5.2. Vegetation Clearance

The limits of clearing should be clearly demarcated to ensure areas of vegetation outside of the subject site are not impacted. All clearing staff should be informed of the clearing boundary prior to undertaking works.

As per Provision B6 of the Sydney Metro Planning Approval for the project, an ecologist is required to be present during the clearing of native vegetation or removal of potential fauna habitat and habitat resources should be salvaged where practicable. However, since no fauna habitat was found to be present and due to the limited number of natives proposed to be removed, the presence of an ecologist is not deemed necessary. If during clearing an nests and/or possum dreys are observed then all works should cease until an ecologist has inspected the area confirmed that the vegetation is okay to clear. This scenario is considered to be unlikely and therefore the supervision of vegetation removal by an ecologist is not recommended, but an ecologist should be available on an 'on-call' basis during the works.

A.5.3. Priority Weeds and WoNS

Due to the presence of Priority weeds and WoNS, it is recommended that cleared vegetation not be reused within or adjacent to the subject site as mulch. All cleared vegetation and topsoil are to be disposed of at an approved green waste facility and in accordance with guidelines identified in the *Greater Sydney Regional Strategic Weed Management Plan 2017-2022* (LLS 2019).

A.5.4. Offsetting

As described in ***Section A.4.5***, a total number of 112 trees are required to be planted in order to offset the 56 native trees being proposed to be removed as part of the project in order to satisfy the offsetting requirements specified in the Sydney Metro Planning Approval for the project. Species recommended for plantings include a selection from the Canterbury-Bankstown approved list, such as *Acacia falcata* (Sickle Wattle), *Acacia myrtifolia* (Myrtle Wattle), *Callistemon linearis* (Narrow-leaved Bottlebrush), *Banksia spinulosa* (Hairpin Banksia), *Grevillea sericea* (Pink Spider Flower), *Eucalyptus tereticornis* (Forest Red Gum), *Pittosporum undulatum* (Sweet Pittosporum) and *Glochidion ferdinandi* (Cheese Tree).

A.6. Conclusion

The proposed works require the removal of vegetation within and surrounding the rail corridor around Wiley Park Station in order to install infrastructure to allow for the Southwest Metro Stations Upgrade. The proposed works will impact on approximately 305 m^2 of planted Urban Native/Exotic Vegetation through the removal of 56 trees, including ten native, 46 exotic trees and one stag, as well as the removal of weeds exotic-dominated groundcover.

The vegetation to be impacted offers little ecological value other than potential foraging habitat for urban tolerant, native fauna species.

No threatened plant species were observed during the site inspection and none are likely to occur due to the degraded nature of the subject site.

No threatened fauna are likely to be dependent on the habitat within the subject site to be impacted. Therefore, the proposed works are unlikely to impact on any threatened fauna species that may utilise the subject site periodically as part of a much broader foraging range.

If all mitigation measures recommended in ***Section A.5*** are implemented, the proposed works are unlikely to have a significant impact on any of the biodiversity values of the subject site or surrounding areas.

A.7. References

LLS: Greater Sydney, Ed. (2019). Greater Sydney Regional Strategic Weed Management Plan 2017 - 2022, Local Land Services NSW.

APPENDIX B :

Photographs

Photograph 1 *Eucalyptus botryoides* (Southern Mahogany) proposed to be removed

Photograph 2 *Cinnamomum camphora* (Camphor Laurel) proposed to be removed

Photograph 3 Exotic-dominated midstorey vegetation proposed to be removed within the subject site

Photograph 4 Acacia saligna (Golden Wreath Wattle) and exotic-dominated groundcover proposed to be removed

FIGURES

Legend

- Subject Site
- Tree - Native
- Tree - Exotic
- Stag

Image Source:
Image © Nearmap (2021)
Dated: 26/01/2021

Coordinate System: MGA Zone 56 (GDA 94)

cumberland ecology

0 10 20 30 40 m

I:\...\20127\Figures\Letter 5\20210309\Figure 1. Locoation_Vegetation_Removed

Figure 1. Location of vegetation proposed to be removed within the subject site