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:	John Holland Laing O'Rourke JV (JHLOR)
Project:	Southwest metro early works
Application Title: (e.g. Smith St trenching works)	T3 Line investigations at Belmore and Lakemba Stations
Application Number:	SSJ1A/1B-PCMW-014 SMCSWSSJ-JHL-WEC-EM-REC-000014
Application Date:	Rev00 – 22 April 2018 Rev01 – 6 May 2019
Planning Approval:	Sydney Metro City and Southwest – Sydenham to Bankstown – Environmental Impact Statement Sydney Metro City and Southwest – Sydenham to Bankstown – Submissions and Preferred Infrastructure Report (SPIR) Sydney Metro City and Southwest Infrastructure Approval SSI-8256
Minor Works Categories: • Highlight as applicable. • If Items 4, 8 or 11 are applicable, this form must be endorsed by an Environmental Representative.	1. Survey, survey facilitation and investigations works (including road and building dilapidation survey works, drilling and excavation). 2. Treatment of contaminated sites. 3. Establishment of ancillary facilities (excluding demolition), including construction of ancillary facility access roads and providing facility utilities. 4. Operation of ancillary facilities that have minimal impact on the environment and community. 5. Minor clearing and relocation of vegetation (including native). 6. Installation of mitigation measures, including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments. 7. Property acquisition adjustment works, including installation of property fencing and utility relocation and adjustments to properties. 8. Utility relocation and connections. 9. Maintenance of existing buildings and structures. 10. Archaeological testing under the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010) or archaeological monitoring undertaken in association with other Minor Works to ensure there is no impact on heritage items. 11. Any other activities that have minimal environmental impact, including construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access.
Planning Authority Determination: Will the proposed works affect or have the potential to affect heritage items, threatened species,	*If 'Yes', this completed form must be endorsed by an Environmental Representative, approved by TfNSW and submitted to the applicable planning authority to determine that the works are not defined as 'construction'.* Yes – the proposed works affect or have the potential to affect State Heritage Register listed items and areas of known or expected archaeological potential and require this

populations or endangered ecological communities?	form to be endorsed by the ER, approved by TfNSW and activities determined to be "low impact" by Department of Planning and Environment (DPE), in consultation with Office of Environment and Heritage (OEH).

Part 2: Details

Describe the proposed Minor Works:

Including work methodologies, site location(s) and site description(s) (e.g. landscape type, waterways, etc.).

Site Description Overview

This overview is based on information from the Environmental Impact Statement (EIS), Submissions and Preferred Infrastructure Report (SPIR).

The investigation area is within the rail corridor of the T3 Bankstown Line. The Bankstown line is comprised of stations, overbridges, overhead wiring structures, track, services and ballast, extending from Sydenham Station to Bankstown Station. These works will occur within the Belmore Station and Lakemba Station precincts only.

Belmore Station:

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.

Properties surrounding Lakemba Station (i.e. within 200m) include residential, commercial and recreational.

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).

Vegetation on the site is highly modified and comprises exotic or planted native species.

Lakemba Station:

Lakemba Station is located about 60 metres to the west of the Haldon Street overbridge. The station area is bounded by Railway Parade to the north and The Boulevarde to the south. Access to the station is provided off Railway Parade and The Boulevarde.

Properties surrounding Lakemba Station (i.e. within 200m) include residential, commercial, recreational and educational.

Lakemba Railway Station Group is listed on Canterbury LEP 2012 (I143) and RailCorp S.170 Heritage and Conservation Register (4801916).

Vegetation on the site is highly modified and comprises exotic or planted native species.

Description of Works

Site investigation works and survey are critical to the design development phase and are required early on to inform design. Without this information, detailed design cannot proceed effectively.

In order to inform design, investigative works consisting of boreholes, test pits and slit trenches are proposed to be undertaken within the track and on platforms at Belmore and Lakemba Stations.

The proposed investigation works are outlined below and depicted in Figure 1. The locations of the proposed investigation are shown in Appendix 1. It is noted that the locations are indicative only and are subject to change once confirmed on-site or based on site conditions.

A number of activities will be undertaken as part of the investigative works. The location of each activity is depicted in Appendix 1 and Appendix 6.

Bridge and platform inspection and survey

Non-invasive inspection and general geographical survey of bridge and platform structures will be undertaken at Belmore and Lakemba Stations in accordance with ASA TMC 301 – Structures Examinations and all associated Technical Notes. Bridges at Belmore and Lakemba Stations include;

- Burwood Road overbridge and concourse, Belmore (inspection to occur during possession)
- Haldon Street overbridge, Lakemba (inspection to occur during possession).

Platform Riser Wall Investigations

- Undertake core holes through the platform riser walls to ascertain wall thickness
- Undertake Test Pit (#1 in Figure 1) excavations in front (trackside) of the platform riser wall to investigate the foundation depth and geometry

- Undertake geotechnical investigations of the platform riser wall bearing strata and undertake Standard Penetrometer Testing (SPT) at the base of the test pit to a minimum depth of 3m from top of sleeper level or to refusal.
- Excavate Test Pit (#2 in Figure 1) behind the riser wall to a depth of 700mm below the top of platform level to check for any rear corbel
- Undertake material sampling to a depth of 1m, 1.3m back from platform riser wall and undertake SPT at the base of the test pit to a minimum depth of 1.8m below top of the platform level or to refusal.

Platform Investigations

- Undertake Test Pit (#3 in Figure 1) excavation and material recovery adjacent to existing platform buildings, concourse, stair foundations, to locate existing building foundation or structure foundation depth.
- Test pits will be created by an excavator during possession. Test pits may also be hand dug. Test pits will be hand dug during standard working hours. Bollards and tape will be set-up around the location to demarcate from commuters. A Protection Officer will also be present for rail safety purposes.

Investigative boreholes

Two types of boreholes are proposed to be undertaken during the investigative works:

- Type B – SPT boreholes, excavated to a minimum depth of 1.8m (from the top of platform level), 3m (from the top of sleeper) or to refusal
- Type C – Non-core vertical drilling in overburden soil for a depth of 5m, including logging, SPT's and sample collection. Core drilling in rock for a length of up to 20m including logging, Point Load Strength tests at 1m intervals, core bores and core photography.

Non-destructive potholing / slit trenches for the location of utility services

- Non-destructive digging will be undertaken to confirm and record the location and depth of buried utility services associated with bridge structures and station locations
- All utility services disturbed or potholed during the work will be fully reinstated to the utility service owner's current standards, at the completion of works.

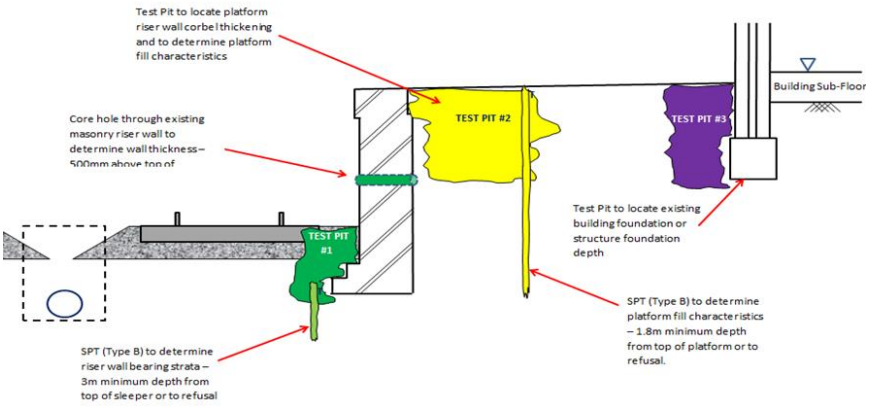

Figure 1 Proposed investigation activities

Plant and equipment anticipated to be used during the investigative works include:

- Hi-rail tilt track truck (for placement of plant and equipment on platforms)
- 1.5-3T Excavators
- 8t Excavator
- 13t Hi-rail excavator
- Hi-rail truck mounted drill rig
- Hi-rail and/or tyred vacuum trucks
- Hydrema
- Site utes

	• 2t Tipper • Road sweeper • Watercart • 13t Bogie trucks • 3T balloon tyred dumptrucks • Portable drill rig • Portable lighting towers • Generators • Elevator work platform or scissor lift • Jackhammer • Concrete saw • Handheld compactor/wacker packer • Hand tools • Geofabric (to place around boreholes and test pits) • Skip bins for spoil • Wet/dry vacuum for platform works • Materials for borehole/test pit reinstatement. **Working Hours** The majority of investigation works would be undertaken during rail possessions under an Out of Hours Work Approval. This would be managed in accordance with the Sydney Metro City & Southwest Out of Hours Work Protocol. Where possible, works would be undertaken during standard working hours. **Heritage Mitigation Measures** Investigation works would be undertaken in accordance with the heritage and archaeological management recommendations in the Non-Aboriginal Heritage Assessment report prepared for Investigative Works at Belmore and Lakemba Stations (Artefact, April 2019): • Works would be undertaken in accordance with the Work Stage Specific Archaeological Method Statement (AMS), prepared for each station • Archaeological monitoring of test pits and slit trenching during excavation works, in accordance with the AMS is required in order to identify any significant archaeological remains, and avoid impacts in accordance with the low impact activity definition in Condition of Approval for the Project. **General Notes** There may be a minor amount of temporary stockpiling within the corridor in the Station precincts, particularly during test pit works. This material will be used to backfill excavations (i.e. material will be excavated, stored for a short period and then used to backfill the original excavation unless signs of contamination are encountered) All plant would access site via existing Sydney Trains access gates. Note that these activities are subject to change based on construction progress. The above list does not include activities approved under any other Pre-construction Minor Works Approval form. Any works undertaken outside of standard construction hours will be accounted for within a single OOHW assessment for all OOHW to occur within the same period, as such, noise modelling will be undertaken holistically. There are no other known cumulative impacts with works under other current or planned PCMW. Vacuum truck waste will be treated as liquid waste in accordance with the NSW EPA Waste Classification Guidelines will be removed from site to a licenced waste facility. Vacuum trucks will remove waste from site once they are full.
Planned Commencement Date:	15th May 2019. All activities to be included within community notifications to be distributed no later than 7 days before commencement.
Local Sensitivities: Describe the presence (if any) of local sensitive environmental areas and community receptors	Belmore Station • There are a number of residential properties located to the north of Belmore Station on Redman Parade, Wortley Avenue and Sudbury Street. Residential receivers are also located to the south on Acacia Street, Bridge Road and Burwood Road. Due to the proximity of these receivers to the station, these properties may be sensitive to excessive noise, particularly during OOHW. As such, additional notification via door knocks for nearby residents will be undertaken for OOHW. An OOHW Application will

be developed for all works to occur outside standard construction hours.

- The investigative works are proposed within the footprint of heritage items including Belmore Railway Station Group (listed on State Heritage Register, S.170 Register and Canterbury LEP). Investigations will be undertaken in line with the Work Stage Specific Archaeological Method Statement (AMS) prepared for Belmore and Lakemba Stations and Sydney Metro's Unexpected Heritage Finds Procedure. Workers will be instructed to stop works where suspected items of Aboriginal or Non-Aboriginal heritage are uncovered. In this instance, workers are to report any finds immediately to the Environmental Manager.
- Preliminary environmental site assessment 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.
- Where there are visual or olfactory signs of contamination, including within any construction water, works will cease and the unexpected finds procedure for contamination will be enacted. Refer to Appendix 10. Any spoil that shows signs of contamination will be separated, covered and signposted prior to testing. Construction water showing signs of contamination (e.g. an oil film) will be separated into a holding tank and removed from site in accordance with the NSW EPA Waste Classification Guidelines. It is noted that JHLOR intend to backfill all excavations with excavated material and imported fill. Excess spoil is not expected, however if any spoil should remain it will be tested in accordance with the NSW EPA Waste Classification Guidelines.
- Residents residing near site access points are more likely to be exposed to noise from construction traffic. As such, additional notification via door knocks for these residents will be undertaken.
- Parking areas to be used at all work sites will be primarily within the rail corridor. Due to limited space some vehicles may park outside the rail corridor on public roads. JHLOR will minimise any impacts by undertaking the mitigation measures as listed within the Environmental Risk Assessment in Appendix 4. All plant will operate from within the project boundary.

<u>Lakemba Station</u>

- There are a number of residential properties located to the north of Lakemba Station on Railway Parade. Due to the proximity of these receivers to the station, these properties may be sensitive to excessive noise, particularly during OOHW. As such, additional notification via door knocks for nearby residents will be undertaken for OOHW. An OOHW Application will be developed for all works to occur outside standard construction hours.
- The investigative works are proposed within the footprint of heritage items including Lakemba Railway Station Group (listed on the S.170 Register and Canterbury LEP). JHLOR will undertake investigations in line with the Work Stage Specific AMS prepared for Lakemba Station, Sydney Metro's Unexpected Heritage Finds Procedure. Workers will be instructed to stop works should suspected items of Aboriginal or Non-Aboriginal heritage are uncovered. In this instance, workers are to report any finds immediately to the Environmental Manager.
- Preliminary environmental site assessment 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
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- Where there are visual or olfactory signs of contamination, including within any construction water, works will cease and the unexpected finds procedure for contamination will be enacted. Refer to Appendix 10. Any spoil that shows signs of contamination will be separated, covered and signposted prior to testing. Construction water showing signs of contamination (e.g. an oil film) will be separated into a holding tank and removed from site in accordance with the NSW EPA Waste Classification Guidelines. It is noted that JHLOR intend to backfill all excavations with excavated material and imported fill. Excess spoil is not expected, however if any spoil should remain it will be tested in accordance with the NSW EPA Waste Classification Guidelines.

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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.).	The Historic Heritage Assessment report prepared for Investigative Works at Belmore and Lakemba Stations is included in Appendix 2. The Archaeological Method Statement for the proposed works is included in Appendix 3. An Environmental Risk Assessment for the proposed works is included in Appendix 4. Sydney Metro's Unexpected finds procedure for contamination and items or deposits within heritage significance is included in Appendix 5. An ECM for the proposed works is included in Appendix 6. The JHLOR Unexpected Finds procedure for contamination is included within Appendix 10.

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?	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. Works will be undertaken in accordance with a SWMS or JSEA (depending on whether work meets the definition of High Risk Construction Works in accordance with Clause 291 WHS Regulation). SWMS will be reviewed by the JHLOR Environmental Manager.

Part 5: Community Consultation

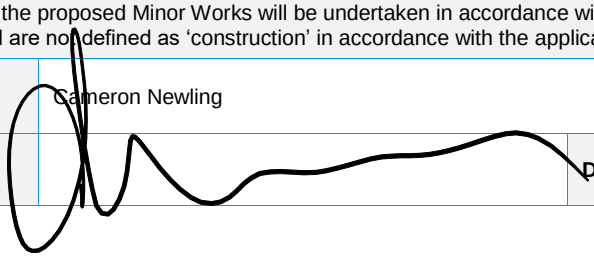
What community consultation has been undertaken already?	No consultation for these works has been undertaken to date. Consultation will be carried out in conjunction with Sydney Metro's Community Communication Strategy, prior to any works being undertaken.
What community consultation is planned to be undertaken?	The community must be notified in writing at least 7 days prior to any works commencing (i.e. a Letterbox drop and email distribution). Where an Out of Hours Works Application indicates that Additional Mitigation Measures are required, other forms of communication may be required (e.g. door knocks, phone calls, specific notifications). A draft community notification for May 2019 Tranche 1C works is included in Appendix 7.

If drafted already, attach applicable Community Notification as Appendix 7.

Part 6: Contact Details

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

Name:	Neil Ivison	**Position:**	Project Director	**Phone:**	0458 288 625
	Cameron Newling		Environmental Manager		0419 727 445
	Loretta Mihaljek		Stakeholder and Community Relations Manager		0412 129 064

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:	Cameron Newling		
Signature:		**Date:**	6/05/19

Determination Page

(TfNSW/Environmental Representative Use Only)

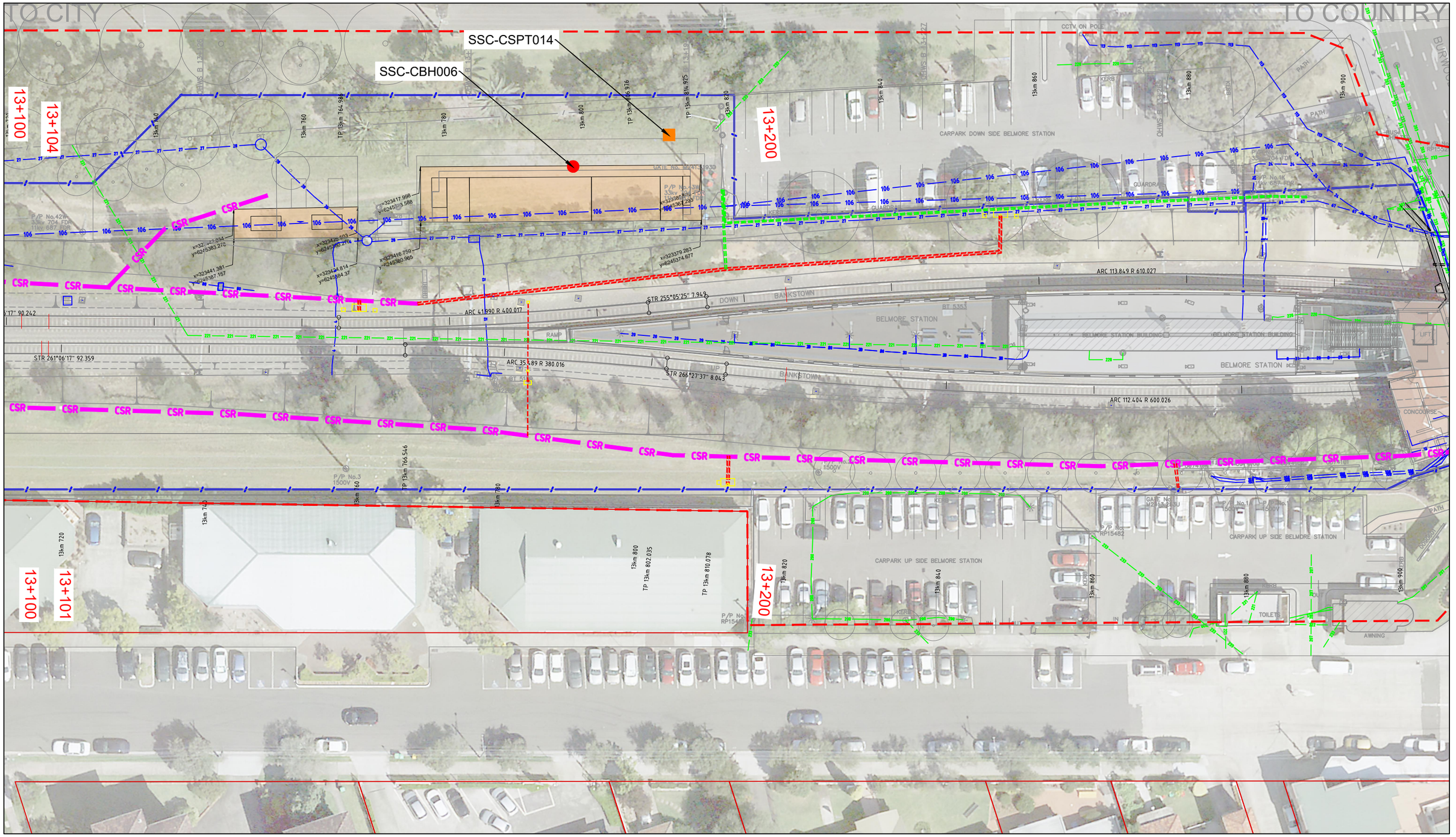
12. Endorsement/Approval

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:	Tim Garrard	FIL CERONE	Jo Robertson
Date:	6/5/19	10/5/19	6/5/19
Comments:			*Supporting letter attached as Appendix 4 if necessary.*
Conditions:			*Supporting letter attached as Appendix 4 if necessary.*

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

Appendix 1: Work Area



- Type B - Standard Penetrometer Test (SPT)
- Type C - Augered Borehole (Up to 10m deeper 100mm into class 1 sandstone)
- Slit trench / Non destructive potholing for utility services
- Type B - Dynamic Cone Penetration Test (DCP)

- 203 — High Pressure Gas Main
- 220 — Water
- 221U — Sewer
- 233 — Power < 33kV - Aerial
- 28 — Signal, Copper Communications & Optical Fibre - Ducted
- 80U — Track Drainage - unlocated (approximate position)
- 83 — Compressed Air - Direct Burried
- 106 — HV - Aerial
- 116 — CCTV, Copper Communications - Ducted
- 125 — Station Data - Ducted
- 4 — Signal Cable - Ducted
- 8 — Copper Communications Cable - Ducted
- 11 — Signal & Copper Communications - GLT
- 20 — LV - Ducted
- 21R — HV - Direct Buried - Redundant
- 24 — HV - Ducted
- 26 — Signal, Copper Communications & Optical Fibre - GST
- 27 — Signal, Copper Communications & Optical Fibre - GLT
- CSR — Proposed Metro CSR - Platform
- CSR — Proposed Metro CSR - Buried
- CSR — Proposed Metro CSR - Wall mounted
- CSR — Proposed Metro CSR - GST

CORRIDOR INVESTIGATION WORKS

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Note: Relocate away from ducted HV

- Type B - Standard Penetrometer Test (SPT)
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- Proposed Metro CSR - Platform
- Proposed Metro CSR - Buried
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CORRIDOR INVESTIGATION WORKS

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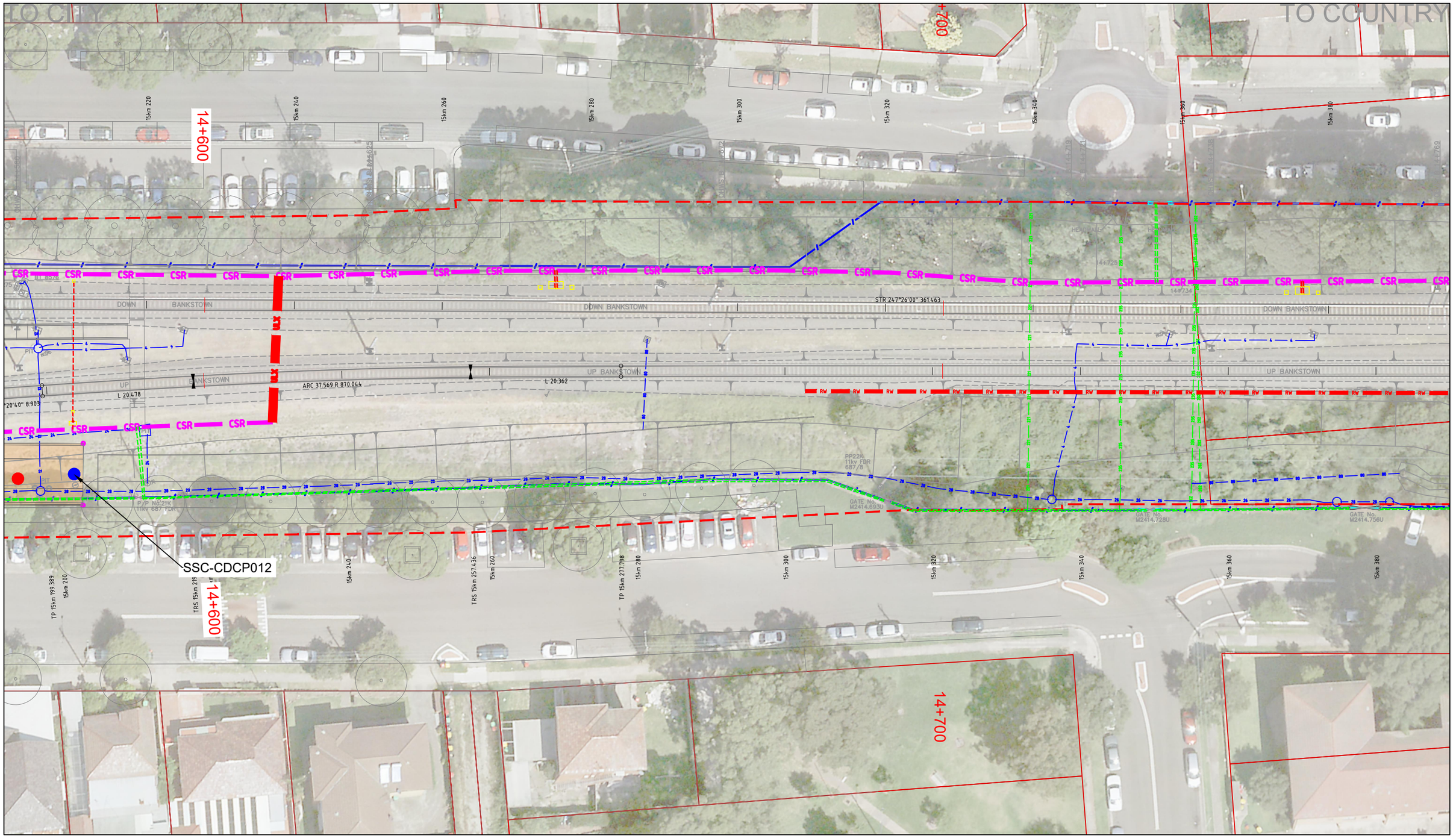

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CORRIDOR INVESTIGATION WORKS

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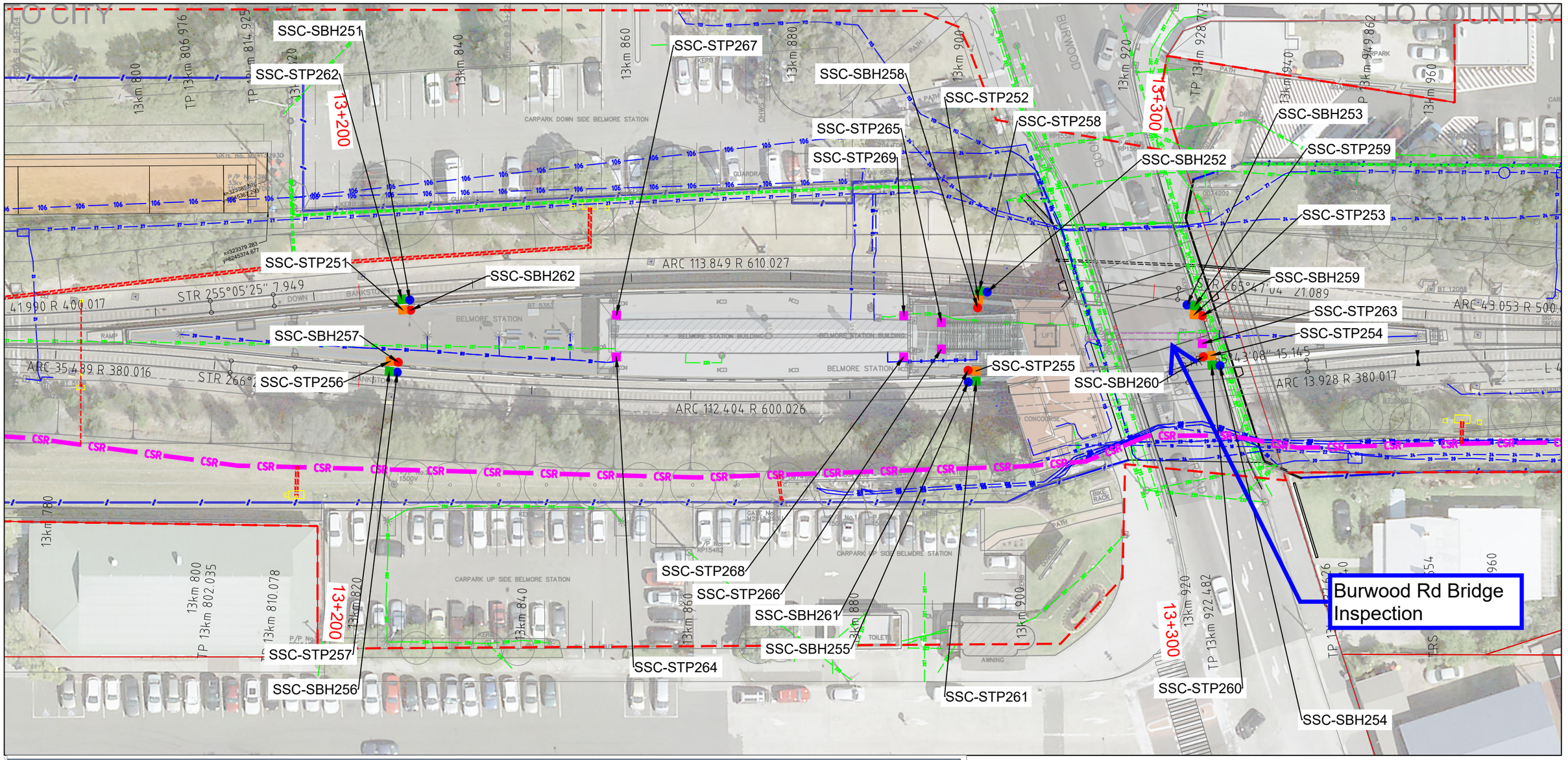

LEGEND

SYMBOL	WORKS	INDICATIVE TEST LOCATIONS	REQUIREMENTS	
	Combination of: TEST PIT #1 BORE HOLE (Type B)	Combined Test Pit / Bore Hole at 1/3 points along platform length, at base of each platform riser wall.	TEST PIT #1 BORE HOLE (Type B)	To support recording of wall profile Refer to Services Brief, Section 4 Perform SPT Type B test to 3m depth or to refusal. Refer to Services Brief, Section 4
	CORE HOLE	Core Hole (in riser wall) within 5m of Test Pit / Bore Hole locations.	CORE HOLE	Refer to Services Brief, Section 4
	MASONRY / MORTAR BOND STRENGTH TEST	Test to be performed within 5m of Test Pit / Bore Hole locations.	BOND STRENGTH TEST	Refer to Services Brief, Section 4
	Combination of: TEST PIT #2 BORE HOLE (Type B)	Test Pit / Bore Hole at each end and at 1/3 points along platform length on platform surface side. Bore Hole to be located 1.3m from wall coping edge (subject to existing buried services)	TEST PIT #2 BORE HOLE (Type B)	Test Pit to be located immediately behind riser wall. To support recording of wall geometry. Refer to Services Brief, Section 4 Perform SPT Type B test to 1.8m depth or to refusal. Refer to Services Brief, Section 4
	TEST PIT #3	Test Pits as identified on plans, (subject to existing buried services locations)	TEST PIT #3	To support recording of structure foundation profile. Refer to Services Brief, Section 4
	SLIT TRENCH	Slit trench to locate and identify services	SLIT TRENCH	Buried services (identification, position & level X,Y,Z) Refer to Services Brief Section 4
	BORE HOLE (Type C)	Location tolerance of 2m from proposed new structure foundation(s)	BORE HOLE (Type C)	Perform SPT Type C test

- 28 — Signal, Copper Communications & Optical Fibre - Ducted
- 80U — Track Drainage - unlocated (approximate position)
- 83 — Compressed Air - Direct Burried
- 106 — HV - Aerial
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Belmore Station

STATIONS INVESTIGATION WORKS

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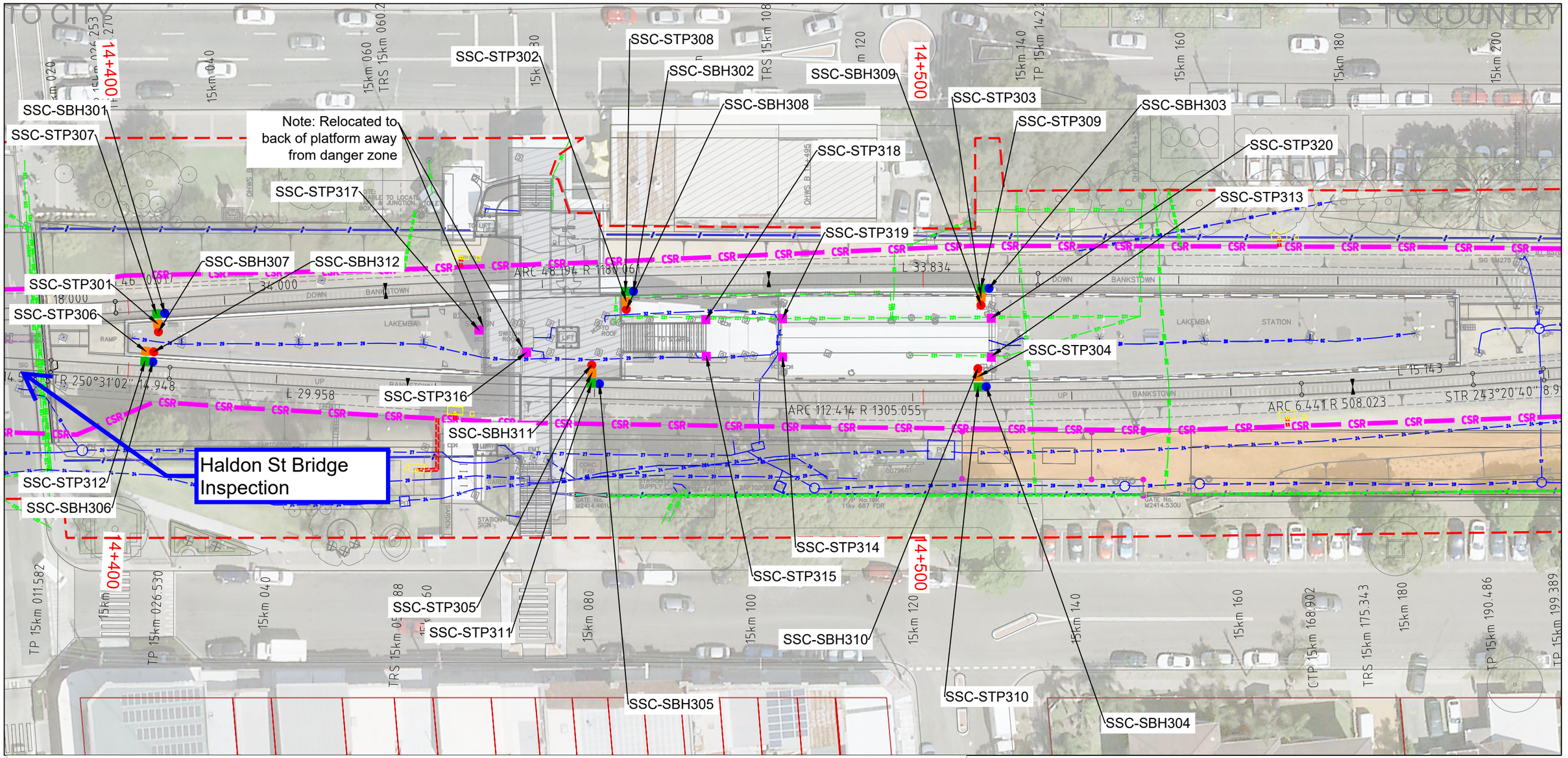

LEGEND

SYMBOL	WORKS	INDICATIVE TEST LOCATIONS	REQUIREMENTS	
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	CORE HOLE	Core Hole (in riser wall) within 5m of Test Pit / Bore Hole locations.	CORE HOLE	Refer to Services Brief, Section 4
	MASONRY / MORTAR BOND STRENGTH TEST	Test to be performed within 5m of Test Pit / Bore Hole locations.	BOND STRENGTH TEST	Refer to Services Brief, Section 4
	Combination of: TEST PIT #2 BORE HOLE (Type B)	Test Pit / Bore Hole at each end and at 1/3 points along platform length on platform surface side. Bore Hole to be located 1.3m from wall coping edge (subject to existing buried services)	TEST PIT #2 BORE HOLE (Type B)	Test Pit to be located immediately behind riser wall. To support recording of wall geometry. Refer to Services Brief, Section 4 Perform SPT Type B test to 1.8m depth or to refusal. Refer to Services Brief, Section 4
	TEST PIT #3	Test Pits as identified on plans, (subject to existing buried services locations)	TEST PIT #3	To support recording of structure foundation profile. Refer to Services Brief, Section 4
	SLIT TRENCH	Slit trench to locate and identify services	SLIT TRENCH	Buried services (identification, position & level X,Y,Z) Refer to Services Brief Section 4
	BORE HOLE (Type C)	Location tolerance of 2m from proposed new structure foundation(s)	BORE HOLE (Type C)	Perform SPT Type C test

- 28 — Signal, Copper Communications & Optical Fibre - Ducted
- 80U — Track Drainage - unlocated (approximate position)
- 83 — Compressed Air - Direct Burried
- 106 — HV - Aerial
- 116 — CCTV, Copper Communications - Ducted
- 125 — Station Data - Ducted
- 4 — Signal Cable - Ducted
- 8 — Copper Communications Cable - Ducted
- 11 — Signal & Copper Communications - GLT
- 20 — LV - Ducted
- 21R — HV - Direct Buried - Redundant
- 24 — HV - Ducted
- 26 — Signal, Copper Communications & Optical Fibre - GST
- 27 — Signal, Copper Communications & Optical Fibre - GLT

- 203 — High Pressure Gas Main
- 220 — Water
- 221U — Sewer
- 233 — Power < 33kV - Aerial
- CSR — Proposed Metro CSR - Platform
- CSR — Proposed Metro CSR - Buried
- CSR — Proposed Metro CSR - Wall mounted
- CSR — Proposed Metro CSR - GST

Lakemba Station
STATIONS INVESTIGATION WORKS
CHECK PRINT

STATUS: DRAFT - INTERNAL REVIEW | SHEET 2 OF 4 | 2019 ©
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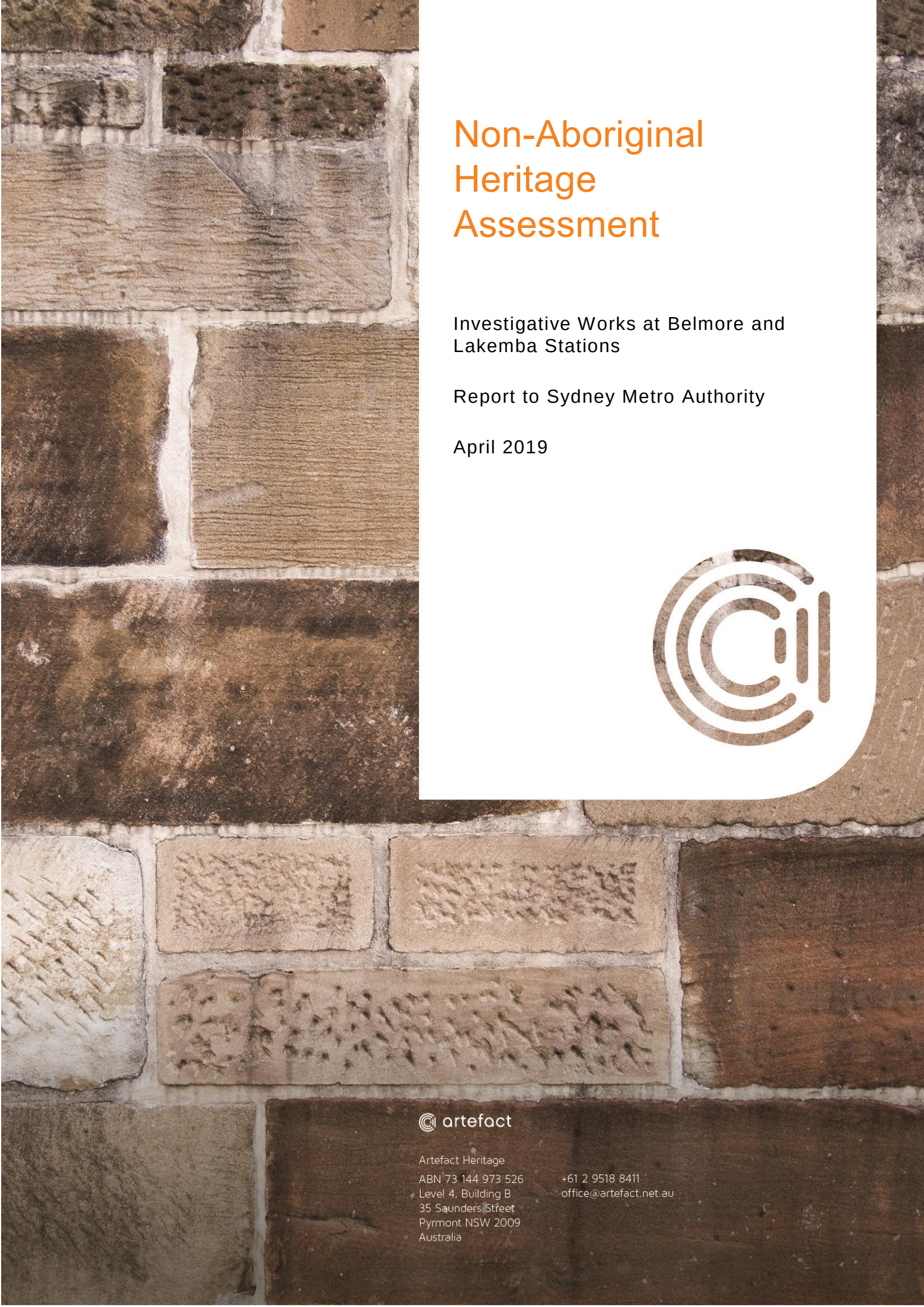
A3 Original | This sheet may be prepared using colour and may be incomplete if copied | NOTE: Do not scale from this drawing.

Appendix 2: Heritage Impact Assessment



Non-Aboriginal Heritage Assessment

Investigative Works at Belmore and Lakemba Stations

Report to Sydney Metro Authority

April 2019

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1.0 INTRODUCTION

1.1 Project background

The Sydney Metro City & Southwest Sydenham to Bankstown upgrade (the project) involves upgrading the 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13 kilometre long section of the Sydney Trains T3 Bankstown Line, between west of Sydenham Station and west of Bankstown Station. The project would improve accessibility for customers and meet the standards required for metro operations. The project would enable Sydney Metro to operate beyond Sydenham, to Bankstown.

Prior to the commencement of construction works for the project, Sydney Metro (the Proponent) are proposing to undertake geotechnical and engineering investigation works at Belmore and Lakemba Stations (the proposed works). Belmore Station is listed on the State Heritage Register as an item of State heritage significance, and Lakemba Station is listed on the RailCorp Section 170 Heritage and Conservation Register as an item of local heritage significance. The two stations have also been assessed as areas with potential for significant archaeological remains. The proposed works would be undertaken as Low Impact Activities as defined by the State Significant Infrastructure approval, prior to approval of a Construction Environmental Management Plan for the project.

The conditions of approval for the project state in relation to Low Impact Activities undertaken prior to construction that:

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

This report provides heritage and archaeological assessments for Belmore and Lakemba Stations and assesses potential heritage impacts to ascertain whether the proposed works meet the definition of Low Impact Activities. This report also outlines heritage and archaeological mitigation recommendations for the proposed works.

1.2 Proposed works

It is understood that the proposed works would be conducted during rail possessions commencing in early 2019.

The proposed works consist of the following general activities:

- assessment of structural conditions at each station, including main buildings, existing stairs, lift shafts, canopies and retaining walls
- conducting a general topographical and feature survey of each station (including the installation of survey markers/pins)
- non-excavation service location (remote sensing)

- excavation of geotechnical and structural test pits and bore holes and service-location slit trenches and/or pot holes throughout each station precinct.

The structural condition assessments, conducting general topographical, installation of survey pins and feature surveys and remote sensing (without excavation) service location would not involve any ground disturbance or modification to any existing structures. As such, these works would not have any heritage impacts and no heritage assessment of these works are required.

However, invasive investigation works including geotechnical and structural test pits and bore holes, (the excavation works) may result in impacts to fabric or archaeological impacts unless appropriately mitigated. These excavation works are assessed in this report.

1.3 Report limitations

This heritage assessment is based on historical and archaeological research provided in the previously prepared heritage reports for the Sydney Metro City and Southwest Sydenham to Bankstown upgrade. The current assessment provides summaries of the historical and archaeological research prepared in these two reports but does not reproduce the historical context for these reports here. As such, this report should be read in conjunction with previously prepared heritage reports. Reports referenced in this assessment include:

- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Non-Aboriginal Heritage Impact Assessment (Artefact 2017)
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design (Artefact 2018a)
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Submissions and Preferred Infrastructure Report, Non-Aboriginal Heritage Assessment (Artefact 2018b)

1.4 Authorship

This report was prepared by Shona Lindsay (Senior Heritage Consultant). Dr Sandra Wallace (Director) provided management input and review.

2.0 HERITAGE ASSESSMENT

2.1 Introduction

Significance assessments and schedules of significant fabric at Belmore and Lakemba Stations have been sourced from their respective State Heritage Inventory (SHI) entries and the *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Non-Aboriginal Heritage Assessment.*[1]

Assessments of archaeological potential and archaeological management strategies have been sourced from the *Sydney Metro City & Southwest – Sydenham to Bankstown Historical Archaeological Assessment & Research Design*. [2]

2.2 Belmore Railway Station

2.2.1 Heritage listings

Belmore Station is listed on the following heritage inventory registers as an item of State significance:

- 'Belmore Railway Station Group', State Heritage Register, SHR# 01081
- 'Belmore Railway Station Group', RailCorp Section 170 Heritage and Conservation Register, SHI# 4801084
- 'Federation railway station buildings', Canterbury LEP 2012, item no. I11

2.2.2 Statement of significance

The following statement of significance for Belmore Station has been sourced from the *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Non-Aboriginal Heritage Impact Assessment*[3].

Belmore Station is of State significance as it was the initial terminus station on the Sydenham to Bankstown Line which had been constructed to relieve congestion on the Main South Line as well as to promote agriculture and suburban growth. The dais building represents the period of transition from the boom time of the 1880s to the standardisation of NSW railway building design of the 1890s onwards and the high level of aesthetic design of pre-1900 standard railway buildings, which included the use of polychromatic brickwork, decorative dentil coursing, ornate awning brackets and carved bargeboards. The building is relatively intact and is representative of a small group of such ornate platform buildings including Canterbury and Marrickville on the Bankstown Line.

2.2.3 Grading of fabric at Belmore Station

Heritage significant elements relevant for the current assessment at Belmore Station have been sourced from the *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Non-Aboriginal Heritage Impact Assessment* [4] are presented in Table 1 below.

[1] Artefact 2017
[2] Artefact 2018
[3] Artefact 2017
[4] Artefact 2017

Table 1: Elements of Belmore Railway Station Group

Elements	Date	Description	Condition	Significance
Platforms 1/2	1895, 1907	One island platform with asphalt surface, original brick platform face and edge. The platform was lengthened in 1907.	Generally good	High
Platform 1/2 building (Type 11)	1895	External: Rectangular polychromatic face brick building with gabled roof and surrounding cantilevered awning clad in corrugated roof sheeting. The face brick is in stretcher bond, which was originally a dark brick up to a dado (the lower brick walls have now been painted) of lighter salmon coloured bricks which frame the upper half of the windows and doors, with a diamond pattern dentil course at the high level. The building is eight bays in length, with the bays defined by engaged brick piers which coincide with the awning brackets. Original chimneys with cement mouldings and terracotta flues remain but have been painted. The cantilever awning is on filigreed steel brackets supported on decorative cement cornices on engaged brick piers and bolt fixings to the station building brick walls. The soffit lining is the underside of the corrugated steel roof fixed to intermediate exposed purlins. There is a decorative timber moulding at the junction with the brick wall. The awning returns around the eastern end of the building but has been removed at the western end. The edge of the awning is finished with a decorative timber boarded valance. The end awning and timber valance are not original but constitute a sympathetic addition to the building. The external walls rise from a projecting brick plinth (now painted) with a decorative two part cement dado moulding which frames the salmon brick dado and is continuous between door and window openings. Decorative cement window and door frames rise above the dado moulding, each with a decorative keystone. The window and door openings have segmental arches and the windows feature a decorative moulded cement sill. The original timber windows were double hung with a double paned lower sash and a multi-paned upper sash featuring coloured glass of which some still remains. This detail continued through in the fanlights above the doors. The doors were timber panelled and most still remain. The end brick gable walls feature a louvre within a round brick window framed in salmon coloured voussoir shaped bricks, with four cement keystones. Internal: The building comprises a booking hall originally entered by a set of double doors at the bottom of the stairs; a booking office; station master's room; general waiting room; ladies waiting room and ladies toilet, a lamp room and men's toilet. The internal usage has now changed, and the toilets have modern fitouts.	Good	Exceptional

Elements	Date	Description	Condition	Significance
Overhead booking office and concourse	1937, 2008	External: The original weatherboard overhead booking office was constructed in 1937, and had a hipped roof clad in Marseille pattern terracotta tiles which have been replaced by new terracotta tiles. It was constructed by placing steel beams across the Up line and supporting them on brick piers on the railway embankment on the north and on steel trestles on the platform. As well as accommodating the station master and ticket selling facilities it contained a parcels office and a booking hall which opened onto Burwood Road, with a bookstall in the north western corner. The building was substantially modified in 2008 by opening up the front wall on Burwood Road to provide larger full height glazing and more open access to the booking hall. The stairs were replaced and covered with a glazed canopy as well as the addition of an access lift. Internal: The booking office which is on the platform side of the building contains the area for ticketing and also contains the station master's office as well as staff facilities in the old parcels office. The interior of the booking office and open booking hall has hardboard lined ceilings with timber battens. The walls in the booking office and old parcels office are also lined with hardboard, while the booking hall is lined with weatherboards. The timber floors have been replaced with concrete with carpet internally and tiles in the open booking hall. The original timber panelled doors and ticket window have been replaced.	Good	High
Overbridge	Modified 1961	The Burwood Road overbridge was originally a wooden structure, supported on brick piers. In 1961 the roadway deck was replaced with prestressed concrete which spans between concrete abutments on each side. The only original element of the bridge is the central brick pier.	Good	Little
Platform canopies	2008	Modern glass canopy covers the stairway access from the booking hall concourse.	Good condition	Intrusive

2.2.4 Potential archaeological remains at Belmore Station

The *Sydney Metro City & Southwest – Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design* has previously predicted archaeological remains of local significance to be present at Belmore Station. A summary of the archaeological potential and significance of predicted remains is provided in Table 2, and the location of these archaeological resources provided in Figure 1.

Table 2: Summary of areas with potential for significant archaeological remains for Belmore Station[5]

Phase	Archaeological Resource	Potential	Significance
1 (1788-1880s)	• Archaeological features associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters.	Nil-low	Unlikely to reach the threshold for local significance
2 (1880 – 1920s)	• Archaeological features associated with continued grazing and farming including fence line and shed postholes, field drains, isolated artefact scatters and drains or culverts • Archaeological remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track • Archaeological remains associated with the railway station goods shed and goods platform occupying land to the near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit, and other rail infrastructure • Archaeological remains located on the 1925 plan such as converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets, and brick culvert. Archaeological remains could include footings, cuts of the pit, drains, ceramic service pipes, and the brick culvert. • Archaeological remains of former platform structures. • Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs. • Archaeological remains of tank located to the north of the station.	Low - moderate	Potentially local

[5] Artefact 2018a: Table 3-4.

Phase	Archaeological Resource	Potential	Significance
3 (1930s – present)	• Archaeological remains associated with upgrades such as utilities and drainage	Moderate	Unlikely to reach the threshold for local significance

2.2.5 Archaeological management strategy for works at Belmore Station

The *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design* has assessed potential impacts to archaeological resources at Belmore Station from the works required as part of the project. The archaeological management policies for these works are outlined in Table 3 and the location of the archaeological management zones are illustrated in Figure 2.

Table 3: Summary of archaeological management requirements at Belmore Station Catchment[6]

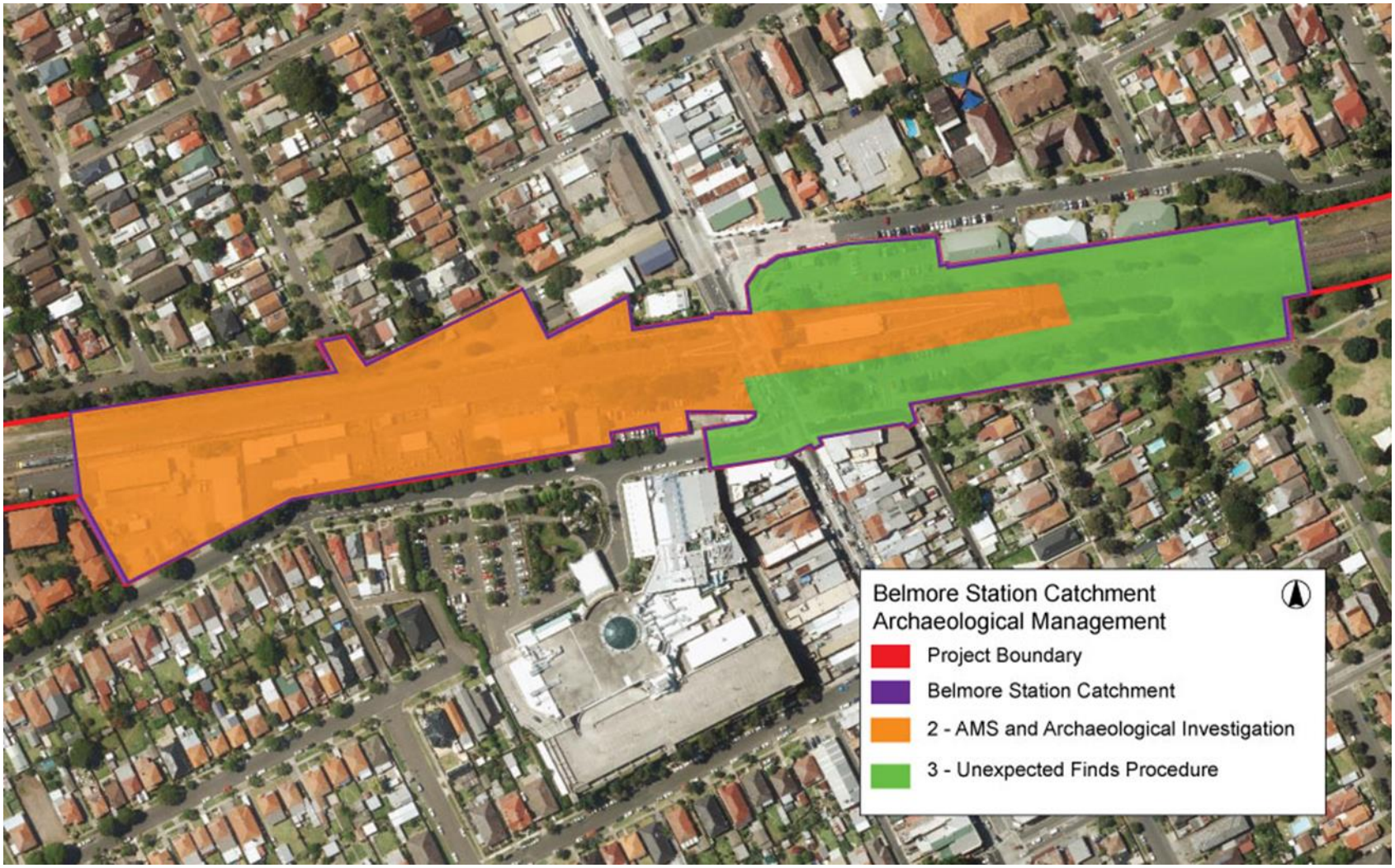
Phase	Potential Archaeology	Management Zone	Mitigation
1 (1788-1880s)	Nil to low potential for archaeological features associated with low intensity land use such as grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure
2 (1880 – 1920s)	Low to moderate potential for archaeological features associated with continued grazing and farming including fence line and shed postholes, field drains, isolated artefact scatters and drains or culverts. Archaeological remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Archaeological remains associated with the railway station goods shed and goods platform occupying land to the near today's Wortley Avenue and a goods platform to the south near Bridge Road, such as rail tracks, timber sleepers, footings of the platform, engine pit, and other rail infrastructure. Archaeological remains located on the 1925 plan such as converter room, coal bin, ash pit, lamp shed, auto box, land agent, boot maker, toilets, and brick culvert. Archaeological remains could include footings, cuts of the pit, drains, ceramic service pipes, and the brick culvert. Archaeological remains of former platform structures. Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs. Archaeological remains of tank located to the north of the station. Archaeological remains of the early goods shed and siding have the potential to reach local significance.	2	• AMS • Monitoring or Test/Salvage Excavations
3 (1930s – present)	Moderate potential for archaeological remains associated with upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure

[6] *Ibid* Table 8-2.

Figure 1: Archaeological potential for Belmore Station Catchment[7]

[7] *Ibid* Figure 3-22.

Figure 2: Belmore Station Catchment archaeological management zones[8]



[8] Artefact 2018a: Figure 8-1.

2.3 Lakemba Station

2.3.1 Heritage listings

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

- 'Lakemba Railway Station Group', RailCorp Section 170 Heritage and Conservation Register, SHI# 4801916
- 'Federation railway station buildings', Canterbury LEP 2012, item no. I143

2.3.2 Statement of significance

The following statement of significance for Lakemba Station has been sourced from the *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Non-Aboriginal Heritage Impact Assessment*[9].

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

2.3.3 Grading of fabric at Lakemba Railway Station

Heritage significant elements which are relevant for the current assessment at Lakemba Railway Station have been sourced from the *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Non-Aboriginal Heritage Impact Assessment* [10]and are presented in Table 4 below.

Table 4: Elements of Lakemba Station Group

Elements	Date	Description	Condition	Significance
Platform 1/2	1919	One island platform, with thin asphalt surface and battered-profile original brick platform face and edge. Minor portion of brick coping removed and replaced with concrete coping at the western end. Concrete platform extension at west end of original platform. High level of integrity and in good condition overall.	Good	High
Platform building, platform 1/2 (Type 11)	1919	External: Rectangular face brick building with gabled roof and integral shallower sloped cantilevered awnings. The face brick in stretcher bond has been painted. The building is six bays in length, with the bays defined by engaged brick piers which coincide with the awning supports. Original chimneys with cement mouldings and terracotta flues have been removed. The cantilever awnings have standard double bowed steel brackets supported on decorative cement haunches and	Generally good	High

[9] Artefact 2017
[10] Artefact 2017

Elements	Date	Description	Condition	Significance
		bolt fixings to the station building brick walls. Soffit lining of timber boards fixed to intermediate exposed purlins follows the roof slope. There is a decorative timber moulding at the junction with the brick wall. Vertical timber boards form a valance at each end of the awnings. The awning roof as for the main roof is corrugated steel. The external walls rise from a projecting brick plinth three/four courses high with a decorative dado moulding run in cement which is continuous between door and window openings. Decorative cement window and door frames rise above the dado moulding. The original window openings feature a moulded cement sill with a scalloped fringe. The original timber windows were double hung with a single paned lower sash and a six paned upper sash featuring coloured glass. The original window glass as well as the upper glazing bars has been removed. Original door openings featured fanlights matching the upper window sashes. All the original doors have been removed and most of the door openings bricked up, the original thresholds have also been removed. Internal: The building comprises a booking office; general waiting room; ladies room and ladies toilets and men's toilets. The original timber framed signal box which is shown on the original drawings at the stair access end of the platform building has either been removed, or was never constructed. The internal usage has now changed and the toilets have modern fitouts and finishes.		
Footbridge and stairs	1926	Haunched steel beam girder design; consists of tapered cantilevers bearing on platform trestles and supporting shallow beams over the railway tracks. The structure was augmented with the construction of the new overhead booking office, concourse, overhead canopies and lift shafts. However, the original form of the footbridge has remained legible and all original access stairs including star pattern cast iron newel posts remain.	Good	Moderate
War Memorial	1953	Outside the station entrance is a War Memorial. It is a sandstone block broken column (symbolising sacrifice) on a plain plinth. It bears the inscription: 'In memory of our fallen comrades'. This memorial was unveiled by His Excellency the Governor of NSW Lieutenant General Sir John Northcott KCMG CB MVO Sunday 19th April 1953'. Located on a small square lawn area, with plantings along the fence line.	Good	High
Overhead booking office /concourse	2002	The original timber framed overhead booking office dating from 1926 has been demolished and replaced by a new structure erected on the original footbridge consisting of a booking office, a central concourse, and a concessionaire.	Good	Little
Canopies	2002	New steel framed metal roofed canopy constructed over original station access stairs and extending to eastern end of station building.	Good	Intrusive

2.3.4 Potential archaeological remains at Lakemba Railway Station

The *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design* has previously predicted archaeological remains of local

significance to be present at Lakemba Railway Station. A summary of the archaeological potential and significance of predicted remains is provided in Table 5, and the location of these archaeological resources for significant phases provided in Figure 3 and Figure 4.

Table 5: Summary of areas with potential for significant archaeological remains for Lakemba Station[11]

Phase	Archaeological Resource	Potential	Significance
1 (1788-1880s)	• Initial land owners associated with moderately sized grants used for agricultural and pastoral purposes • Archaeological features associated with low intensity land use such as timber getting, grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters.	Nil-low	Unlikely to reach the threshold for local significance
2 (1880s – 1909)	• Establishment of the Taylor House (Lakemba), stables and potential outbuildings • Archaeological features associated with farming activities, domestic and agricultural structures, refuse pits and drains or culverts	Low	Potentially local
3 (1909 – 1919)	• Archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track.	Low to moderate	Potentially local
4 (1919 – present)	• Archaeological remains associated with station and rail corridor upgrades such as utilities and drainage	Moderate	Unlikely to reach the threshold for local significance

2.3.5 Archaeological management strategy for works at Lakemba Station

The *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design* has assessed potential impacts to archaeological resources at Lakemba Station from the works required as part of the project. The archaeological management policies for these works are outlined in Table 6 and the location of the archaeological management zones are illustrated in Figure 4.

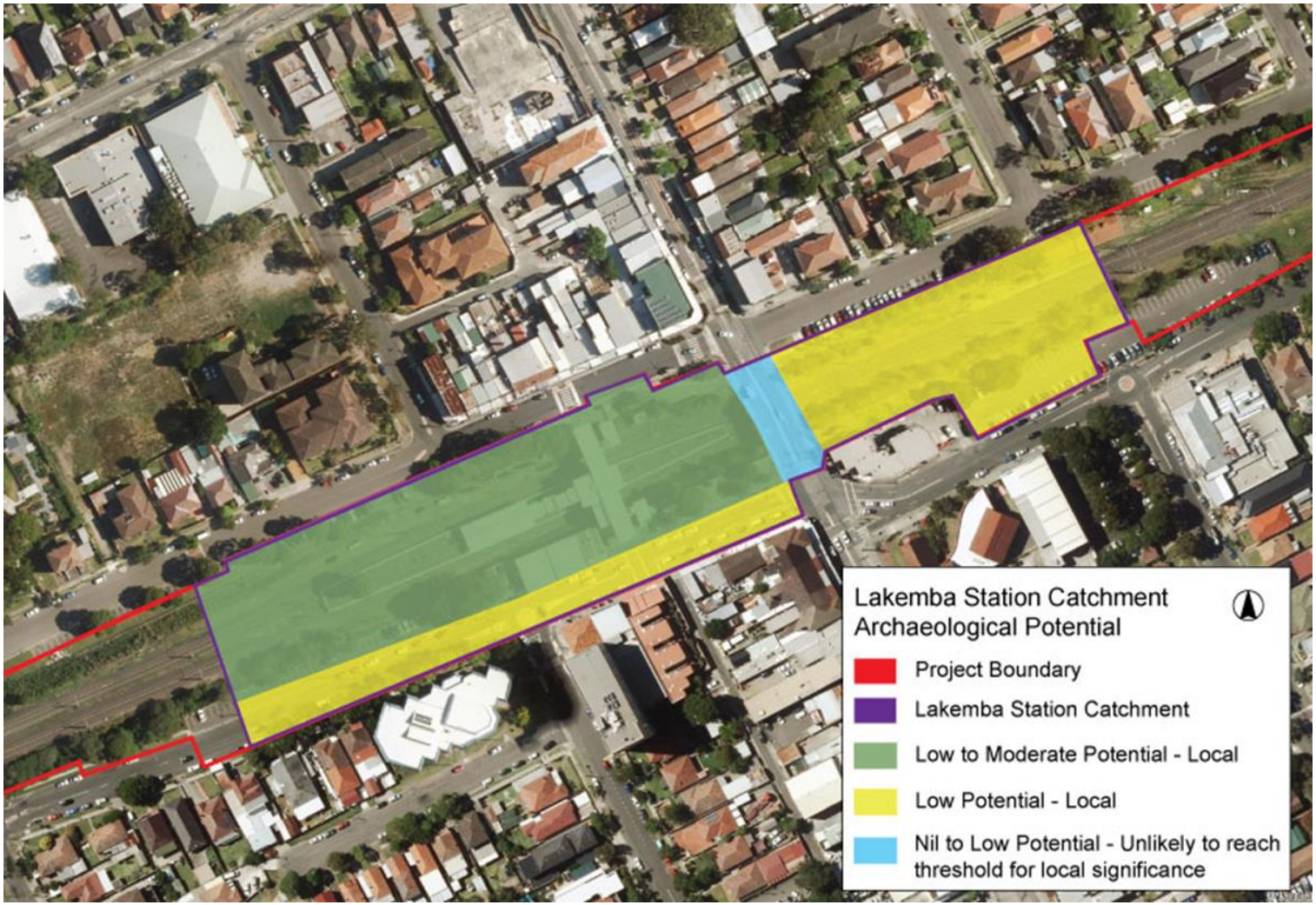
[11] Artefact 2018a: Table 4-3.

Table 6: Summary of archaeological management requirements at Lakemba Station Catchment[12]

Phase	Potential Archaeology	Management Zone	Mitigation
1 (1788-1880s)	Nil to low potential for archaeological remains associated with the initial land owners associated with moderately sized grants used for agricultural and pastoral purposes. Archaeological features associated with low intensity land use such as timber getting, grazing and farming include tree boles, fence line postholes, field drains and isolated artefact scatters. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure
2 (1880s – 1909)	Low potential for locally significant archaeological remains associated with the establishment of the Taylor House (Lakemba), stables and potential outbuildings. Archaeological features associated with farming activities, domestic and agricultural structures, refuse pits and drains or culverts.	3	• Unexpected Finds Procedure
3 (1909 – 1919)	Low to moderate potential for locally significant archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track.	2	• AMS • Monitoring or Test/Salvage
4 (1919 – present)	Moderate potential for archaeological remains associated with station and rail corridor upgrades such as utilities and drainage. Unlikely to reach the threshold for local significance.	3	• Unexpected Finds Procedure

[12] *Ibid* Table 8-2.

Figure 3: Archaeological potential for Lakemba Station Catchment [13]



[13] *Ibid* Figure 4-20.

Figure 4: Lakemba Station Catchment archaeological management zones[14]

[14] Artefact 2018a: Figure 8-2.

3.0 PROPOSED EXCAVATION WORKS

3.1 Overview of works

Sydney Metro are proposing to undertake investigation enabling works at Belmore and Lakemba Stations, as part of the Sydney Metro City & Southwest – Sydenham to Bankstown project. It is understood that these investigation enabling works would be conducted during rail possessions in mid-2019.

The investigation enabling works consist of the following general activities:

- Assessment of structural conditions at each station, including main buildings, existing stairs, lift shafts, canopies and retaining walls;
- Conducting a general topographical and feature survey of each station
- Non-excavation service location (remote sensing)
- Excavation of geotechnical and structural test pits and bore holes and service-location slit trenches and/or pot holes throughout each station precinct.

Excavation works that have the potential to impact significant fabric or significant archaeological remains are outlined below.

3.2 Belmore Station excavation works

3.2.1 Investigative borehole excavation

Up to sixteen bore holes would be excavated within the station precinct using a mechanical augur for geotechnical assessment of subsurface conditions. Each bore would be 100 mm in diameter and would extend up to 20 m in depth (or to a depth of refusal).

3.2.2 Test pit excavation

3.2.2.1 Test pitting within rail corridor

Up to eight test pits would be excavated adjacent to the platform coping at Belmore Station inside the rail corridor to provide information on the existing geometry of the platform retaining walls below the level of the track formation.

Up to four areas would be excavated in the Platform 1 coping, and up to four areas excavated in the Platform 2 coping. These excavations would be conducted with a non-destructive digging (NDD) method such as high-pressure water and vacuum suction excavation (vacuum truck), excavator or hand tools depending on the strata encountered. The excavation area would not exceed one square metre in horizontal extent and would not exceed one metre in depth.

In addition, adjacent to each excavation location, a single horizontal core would be extracted at the middle height of the platform retaining wall. The width of this core would not exceed 100 mm in diameter. The core would extend no deeper than the existing masonry at the platform retaining wall.

3.2.2.2 Test pitting along platform edge

Up to eight test pits would be excavated adjacent to the platform edge, in close proximity to test pitting locations outlined in Section 3.2.2.1 above. These test pits would be excavated to provide information on the platform wall geometry directly behind the retaining wall. These test pits would be

excavated with a vacuum truck, excavator or with hand tools following the saw cut removal of the rigid wearing surface in each location. These test pit locations would not exceed one square metre in horizontal extent and would be excavated to approximately one metre in depth.

3.2.2.3 Test pitting near station structures

Up to nine test pits would be excavated near the exterior walls of the four existing platform structures to determine the depth of these brick walls and footings. These test pits would be excavated using a vacuum truck, excavator or hand tools following the saw cut removal of the rigid wearing surface in each location. These test pit locations would not exceed one square metre in horizontal extent and would be excavated to approximately one metre in depth.

3.2.3 Non-destructive service location

The location and depth of services would be confirmed via a number of slit trenches or pot holes, excavated using a vacuum truck, excavator or hand tools following the saw cut removal of the rigid wearing surface in each location. Excavation would cease once the utility service was positively identified and recorded.

3.3 Lakemba Station excavation works

3.3.1 Investigative borehole excavation

Up to sixteen bore holes would be excavated within the station precinct using a mechanical augur for geotechnical assessment of subsurface conditions. Each bore would be 100 mm in diameter and would extend up to 20 m in depth (or to a depth of refusal).

3.3.2 Test pit excavation

3.3.2.1 Test pitting within rail corridor

Up to eight test pits would be excavated adjacent to the platform coping at Lakemba Station inside the rail corridor to provide information on the existing geometry of the platform retaining walls below the level of the track formation.

Up to four areas would be excavated in the Platform 1 coping and up to four areas excavated in the Platform 2 coping. These excavations would be conducted with vacuum truck, excavator or hand tools. These excavation areas would not exceed one square metre in horizontal extent and would not exceed one metre in depth.

In addition, adjacent to each excavation location, a single horizontal core would be extracted at the middle height of the platform retaining wall. The width of this core would not exceed 100 mm in diameter. The core would extend no deeper than the existing masonry at the platform retaining wall.

3.3.2.2 Test pitting along platform edge

Up to eight test pits would be excavated adjacent to the platform edge, in close proximity to test pitting locations outlined in Section 3.3.2.1 above. These test pits would be excavated to provide information on the platform wall geometry directly behind the retaining wall. These test pits would be excavated with a vacuum truck, excavator or hand tools following the saw cut removal of the rigid wearing surface in each location. These test pits would not exceed one square metre in horizontal extent and would be excavated to approximately one metre in depth.

3.3.2.3 Test pitting near station structures

Up to eleven test pits would be excavated near the exterior walls of the two existing platform structures to determine the depth of these brick walls and footings. These test pits would be

excavated using a vacuum truck, excavator or hand tools following the saw cut removal of the rigid wearing surface in each location. These test pits would not exceed one square metre in horizontal extent and would be excavated to approximately one metre in depth.

3.3.3 Non-destructive service location

The location and depth of services would be confirmed via a number of slit trenches or pot holes, excavated using a vacuum truck, excavator or hand tools following the saw cut removal of the rigid wearing surface in each location. Excavation would cease once the utility service was positively identified and recorded.

4.0 HERITAGE IMPACT ASSESSMENT

4.1 Belmore Station

4.1.1 Direct (physical) impacts

As described in Section 3.0, the proposed geotechnical borehole excavation works are located solely within open areas of the Belmore Station platform or in the rail corridor. They are situated a sufficient distance from structural items (platform retaining wall, station platform structures) to ensure that the 100 mm machine augur excavator would not impact heritage significant fabric at Belmore Railway Station.

The proposed test pitting excavation works and slit trenching (NDD for service location) are entirely located in open areas of either the platform surfaces or within the rail corridor. Saw cutting prior to excavation would remove rigid wearing surfaces, however these existing surfaces (asphalt or concrete) have been assessed in the Non-Aboriginal Heritage Impact Assessment for the project as non- significant fabric. Excavation would occur in the vicinity of existing platform structures (platform brick retaining walls, masonry footings for station buildings), however the excavation would not cause significant damage to intact masonry coursework during the investigations.

The excavation of a core sample from the retaining wall remove small portions of brick fabric which has been assessed in the Non-Aboriginal Heritage Impact Assessment for the project as significant fabric of high heritage value at Belmore Station. The size of these geotechnical boring holes are very small compared to the length of the brick platform retaining wall however (eight bore holes of 100 mm diameter each across a station approximately 150 metres in length). The removal of this brick coping would result in a negligible impact to the heritage significance of Belmore Station.

4.1.2 Indirect (visual) impacts

The excavation works predominantly consist of small excavations of existing platform wearing surfaces and rail formation, which would be backfilled and resealed following the completion of excavation. While cores extracted from the platform retaining wall would not likely be infilled following excavation, each of these core holes is relatively small (100 mm diameter).

Due to the size of these works, they would not be readily noticeable in the wider context of Belmore Station and would not alter the heritage views and setting of the item. The excavation works would result in a negligible indirect (visual) impact to the heritage significance of Belmore Station.

4.1.3 Impacts to significant archaeological resources

Archaeological assessment at Belmore Station has identified that there is low to moderate potential for archaeological features to remain dating to the second phase of development (1880-1920s) that have the potential to be of local significance. Within the area of the proposed works, potential archaeological remains could include remains of early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track. Archaeological remains of former platform structures could be present. Archaeological remains located within the platform structure such as footings of former footbridge, fences, and footings of the building that was originally located under the stairs. Artefactual deposits, such as historical glass, ceramic or bone, is not predicted to be likely located in coherent contexts below the platform surface at Belmore Station.

As the excavation works would be a low impact activity, impacts to significant archaeological remains are not permitted. As such archaeological monitoring would be undertaken for test pitting and NDD for service location, and any identified significant archaeological remains would be avoided when identified during monitoring. The test pit, trench or slit trench/pot hole would be discontinued and moved after the remains had been recorded. A brief Archaeological Method Statement would be prepared to guide the archaeological monitoring.

This approach would also align with the recommended management measure as outlined in the *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design.* The excavation areas are located within an area designated as an Archaeological Management Zone 2 for future works at Belmore Station (see Table 3 and Figure 2 above). Ground excavation in this area must be archaeologically managed according to the provisions set out in the *Sydney Metro City & Southwest – Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design*.

4.1.4 Summary of heritage impacts to Belmore Railway Station

Table 7 below provides a summary of the assessment of heritage impacts for the excavation works at Belmore Station.

Table 7: Summary of heritage impacts for the excavation works for Belmore Station

Works	Direct (physical) impacts	Indirect (visual) impacts	Impacts to significant archaeological resources
Geotechnical bore holes auguring	Negligible	Negligible	Negligible
Test pitting within rail corridor	Negligible	Negligible	Negligible
Test pitting on platform edges	Negligible	Negligible	Negligible (with mitigation)
Test pitting near station structures	Negligible	Negligible	Negligible (with mitigation)
Slit trenching/potholes for NDD service location	Negligible	Negligible	Negligible (with mitigation)

4.2 Lakemba Station

4.2.1 Direct (physical) impacts

As described in Section 3, the proposed geotechnical borehole excavation works are located solely within open areas of the Lakemba Station platform or in the rail corridor. They are situated a sufficient distance from structural items (platform retaining wall, station platform structures) to ensure that the 100 mm machine augur excavator would not impact heritage significant fabric at Lakemba Railway Station.

The proposed test pitting excavation and slit trenching (NDD for service location) works are entirely located in open areas of either the platform surfaces or within the rail corridor. Saw cutting prior to

excavation would remove rigid wearing surfaces, however these existing surfaces (asphalt or concrete) have been assessed in the Non-Aboriginal Heritage Assessment for the project as not significant heritage fabric. Excavation would occur in the vicinity of existing platform structures (platform brick retaining walls, masonry footings for station buildings), however the excavation would not damage intact masonry coursework during the investigations.

The excavation of a core sample from the retaining wall would remove small portions of original brick fabric assessed in the Non-Aboriginal Heritage Assessment for the project as high heritage value at Lakemba Station. The geotechnical boring holes are very small compared to the length of the brick platform retaining wall however (eight bore holes of 100 mm diameter each across a station approximately 150 metres in length). The removal of this brick coping would result in a negligible impact to the heritage significance of Lakemba Station.

4.2.2 Indirect (visual) impacts

The proposed excavation works predominantly consist of small excavations of existing platform wearing surfaces and rail formation, which would be backfilled and resealed following the completion of excavation. While cores extracted from the platform retaining wall would not likely be infilled following excavation, each of these core holes is relatively small (100 mm diameter).

Due to the size of these works, they would not be readily noticeable in the wider context of Lakemba Station and would not alter the heritage views and setting of the item. The proposed excavation works would result in a negligible indirect (visual) impact to the heritage significance of Lakemba Station.

4.2.3 Impacts to significant archaeological resources

Archaeological assessment at Lakemba Station has identified that there is low to moderate potential for locally significant archaeological remains associated with the first timber island platform and initial railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes, sleepers and rail track. These potential archaeological remains date to the third phase of development (1909-1919). Artefactual deposits, such as historical glass, ceramic or bone, is not predicted to be likely located in coherent contexts below the platform surface at Lakemba Station.

As the proposed excavation works would be a low impact activity, impacts to significant archaeological remains are not permitted. As such archaeological monitoring would be undertaken for test pitting and slit trenching, and any identified significant archaeological remains would be avoided. A brief Archaeological Method Statement would be prepared to guide the archaeological monitoring.

This approach would also align with the recommended management measure as outlined in the Sydney Metro City & Southwest – Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design. The proposed excavation areas are mostly located within an area designated as an Archaeological Management Zone 2 for future works at Lakemba Station (see Table 6 and Figure 4 above). Ground excavation in this area must be archaeologically managed according to the provisions set out in the *Sydney Metro City & Southwest – Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design*. Archaeological management recommendations for the proposed works are provided in Section 5.2 below.

4.2.4 Summary of heritage impacts to Lakemba Railway Station

Table 8 below provides a summary of the assessment of heritage impacts for the proposed investigation works at Lakemba Railway Station.

Table 8: Summary of heritage impacts for the proposed works for Lakemba Station

Works	Direct (physical) impacts	Indirect (visual) impacts	Impacts to significant archaeological resources
Geotechnical bore holes auguring	Negligible	Negligible	Negligible (with mitigation)
Test pitting within rail corridor	Negligible	Negligible	Negligible
Test pitting on platform edges	Negligible	Negligible	Negligible (with mitigation)
Test pitting near station structures	Negligible	Negligible	Negligible (with mitigation)
Slit trenching/potholes for NDD service location	Negligible	Negligible	Negligible (with mitigation)

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The proposed excavation works would result in the following impacts to the heritage significance of Belmore and Lakemba Stations:

- The proposed works at Belmore and Lakemba Stations would result in negligible direct (physical) and indirect (visual) impacts to the heritage significance of each item;
- Test pitting and slit trenching on station platforms and within the rail corridor at both Belmore and Lakemba Stations would avoid impact to archaeological remains given recommended management measures were adhered to. As impacts are not permitted under the definition of low impact works, archaeological monitoring would be required in order to identify any potential significant remains and avoid impacts. Where management is undertaken in accordance with the below recommendations archaeological impacts would be negligible.
- It is noted that ground disturbing works at Belmore Station would occur within an area designated as Archaeological Management Zone 2 in previous archaeological assessments and must be managed in accordance with these provisions as described in the Historical Archaeological Research Design for the project and the Archaeological Method Statement appended to this report.
- It is noted that ground disturbing works at Lakemba Station would occur within an area designated as Archaeological Management Zone 2 in previous archaeological assessments and must be managed in accordance with these provisions as described in the Historical Archaeological Research Design for the project and the Archaeological Method Statement appended to this report.

5.2 Heritage and archaeological management recommendations

- A short Work Stage Specific Archaeological Method Statement (AMS) would be prepared for each station. Each AMS must be prepared according to the methodology outlined in Section 7.3 of the Historical ARD for the project.[15]
- Archaeological monitoring of test pits during excavation works, in accordance with the AMS is required in order to identify any significant archaeological remains, and avoid impacts in accordance with the low impact activity definition in the conditions of approval for the project.

[15] Artefact 2018, p128

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Appendix 3: Archaeological Method Statement

Project: Sydney Metro – City & Southwest Sydenham to Bankstown-Enabling Works	**Date:** 22 February 2018
Project site: Belmore and Lakemba Stations	**Author:** Dr Sandra Wallace
Client: Sydney Metro Authority	**Contact:** Yvette Buchli

Background

Prior to the commencement of construction works for the above project, Sydney Metro (the Proponent) propose to undertake geotechnical and engineering investigation works at Belmore and Lakemba Stations (the proposed works). Belmore Station is listed on the State Heritage Register as an item of State heritage significance, and Lakemba Station is listed on the RailCorp Section 170 Heritage and Conservation Register as an item of local heritage significance. The two stations have also been assessed as areas with potential for significant archaeological remains. The proposed works would be undertaken as Low Impact Activities as defined by the State Significant Infrastructure approval (refer to signed Conditions of Approval, dated 12.12.2018), prior to approval of a Construction Environmental Management Plan for the project. An assessment was prepared by Artefact Heritage (Artefact Heritage 2019) which has found that the works would not impact heritage significance of either heritage item and that if appropriate archaeological management was undertaken, significant archaeological remains would not be impacted.

This Archaeological Method Statement (AMS), prepared in accordance with Revised Environmental Mitigation Measure (REMM) NAH12 outlines the archaeological methodology to manage investigative works to avoid impacts to significant archaeological remains for Belmore and Lakemba Stations. Heritage items, including archaeological sites, relics and Aboriginal objects, cannot be impacted prior to approval of the Construction Environmental Management Plan (CEMP) and heritage sub-plan in accordance with the Minister's Conditions of Approval for the Sydney Metro City & Southwest – Sydenham to Bankstown project.

The AMS is consistent with the methodologies outlined in the Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design (Artefact 2018).

The Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design requires the nomination of an Excavation Director who complies with the Heritage Council of NSW's Criteria for Assessment of Excavation Directors (July 2011). Details on the nominated Excavation Director who meets this requirement, and archaeological team have been provided.

This AMS should be read in conjunction with the assessment to which it is appended (Artefact Heritage 2019). All project information, assessment of archaeological potential and significance and impact assessment are included in assessment document. The AMS only outlines the archaeological methodology required to avoid impacts to significant archaeological remains.

Archaeological Methodology

The heritage assessment for the investigative works recommended that archaeological monitoring is undertaken for all excavation works to manage the risk of impacting significant archaeological

remains. Excavation works include test pitting. Works may proceed under on call provisions if approved to do so by the Excavation Director. Works would cease if archaeology may be affected or impacted.

Contractor

The contractor would set up site and then operate under the direction of the archaeologists during archaeological monitoring of the early works, as appropriate. This would involve:

- Set out and secure the work area for the construction and archaeological team
- Provide a site induction to contractors in consultation with the Excavation Director.

Historical archaeological monitoring of early works

Due to the potential for archaeological resources to be located within the study area, early works involving excavation would be archaeologically monitored. **It should be noted that significant archaeological remains cannot be impacted under early works.**

Archaeological monitoring is where an archaeologist is in attendance and supervising construction excavation work with potential to expose or impact archaeological remains. Monitoring is generally undertaken where there is lower potential for significant archaeological remains and/or where minor excavation work is in an area of archaeological sensitivity.

If archaeological remains are identified during archaeological monitoring, they would be recorded, protected, and assessed to determine their heritage significance and if further investigation is required at a later date under the CMEP/CHMP and AMS. Localised stoppages in the construction work would be required to facilitate this process. Works would not recommence until the monitoring archaeologist has completed the recording and is satisfied that further investigation is not required. If needed, potholing would be relocated around any archaeological remains, as appropriate for the design bearing in mind that it is a requirement that impacts to any archaeological remains would not occur during the early works program.

A record of archaeological monitoring would be made in accordance with the methodology outlined in the ARD. This would include digital photography, in RAW format, using photographic scales and photo boards where appropriate. A photographic record of all phases of the work on site would be undertaken. Archaeological recording including the locations, dimensions and characteristics of all archaeological features and deposits will be recorded on a sequentially numbered context register.

Should hazardous materials or contaminants be identified during archaeological monitoring, ground excavation would cease until appropriate controls or remediation is conducted by the contractor.

Reporting

A preliminary findings report would be prepared following completion of the works outlined in this AMS in accordance with the ARD (Artefact 2018). This report would outline the results of the monitoring program and if archaeological remains are not located, the report may by in the form of email advice.

Team and timing

Archaeological team

The archaeological team would comprise:

- Excavation Director – Dr Iain Stuart (Artefact Heritage)
- Archaeologists – Adele Zubrzycka (Senior Heritage Consultant, Artefact Heritage), HollyMae Steane Price (Heritage Consultant, Artefact Heritage), Jessica Horton (Heritage Consultant, Artefact Heritage) and other subconsultants as needed.
- Archaeological Surveyor - Guy Hazell and Gala Hazell (ArcSurv)

Excavation timing

The excavation works would be monitored by an archaeologist as required under the direction of the Excavation Director.

The Excavation Director would be on call during the excavation works to oversee responses to unexpected finds as required.

References

Artefact 2018 Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design.

Artefact 2019 Non-Aboriginal Heritage Assessment: Investigative Works at Belmore and Lakemba Stations.

Appendix 4: Environmental Risk Assessment

Risk Assessment

The Risk Assessment has been undertaken in accordance with the requirements of the *Sydney Metro Risk Management Standard*.

Note; **C** = Consequence & **L** = Likelihood as per *Sydney Metro Risk Management System – Appendix A Sydney Metro Risk Matrix*

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C x	L =	Risk		C x	L =	Risk
Pot holing and test pits investigations								
Investigation works being undertaken within the curtilage of listed heritage items	Damage to listed heritage items.	**C4**	**L4**	**Med**	• Induction and pre-start brief to include heritage management requirements • Intrusive works only to be completed as per this approval • Implementation of the mitigation measures outlined in the *Investigative Works at Belmore and Lakemba Stations – Non Aboriginal Heritage Assessment* report: ○ A short Work Stage Specific Archaeological Method Statement (AMS) would be prepared for each station. Each AMS must be prepared according to the methodology outlined in Section 7.3 of the Historical ARD for the project. ○ Archaeological monitoring of test pits during excavation works, in accordance with the AMS is required in order to identify any significant archaeological remains, and avoid impacts in accordance with the low impact activity definition in the draft conditions of approval for the project.	**C3**	**L6**	**Low**
Items of heritage significance uncovered during works	Damage to heritage items or archaeological deposits.	**C3**	**L5**	**Med**	• Induction and pre-start brief to include heritage management requirements. • Implement Sydney Metro Unexpected Finds Procedure V1.4 during invasive investigation works.	**C3**	**L6**	**Low**
Noise from plant and people	Noise from plant impacting on sensitive receivers. Noise impacts outside standard construction hours.	**C5**	**L3**	**Med**	• Induction and pre-start brief to include noise mitigation and “good neighbour” approach. • An OOHW Application is required for all work outside standard construction hours. • Distance between noisy plant items and nearby noise sensitive receivers would be maximised and equipment orientated where possible to reduce noise. • Where possible, night works should be programmed to	**C5**	**L5**	**Low**

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C x	L =	Risk		C x	L =	Risk
					undertake noisy activities prior to 10pm. • All power driven work equipment used would have efficient muffler design and be well maintained. • Follow the appropriate approvals process and submit OOHW applications for Environmental Representative approval. Mitigation measures to be implemented in accordance with the Sydney Metro City & Southwest Construction Noise and Vibration Strategy, including appropriate notification (CNVS).			
Chemical handling and storage	Poor storage and handling of chemicals causes spills	**C5**	**L4**	**Low**	• Any chemicals and fuels are to be stored within a bunded area with 110% of the capacity of the largest stored container. • Refuelling to occur more than 20m away from drainage lines • A portable spill kit is to be carried within all plant and site vehicles. • Site induction includes spill response awareness.	**C5**	**L5**	**Low**
Erosion and sediment controls	Sediment laden runoff from drilling fluids or stockpiled material	**C4**	**L4**	**Med**	• Induction and pre-start brief to include ERSED protection measures. • Produce an ESCP for stockpiling or other works as required.	**C4**	**L5**	**Low**
Waste	Incorrect disposal of spoil waste Acid sulphate soils Contamination	**C3**	**L5**	**Med**	• Induction and pre-start brief to include waste management practices. • Waste to be tested in accordance with the Waste Classification Guidelines (NSW EPA, 2014) prior to disposal. • Any drilling mud captured will be lawfully disposed of to a licenced facility. Drilling mud is pre-classified as a liquid waste under the Waste Classification Guidelines (NSW EPA, 2014) • Implement unexpected finds procedure. • The waste must be lawfully transported and disposed of to a licenced facility. • Exposed Potential Acid Sulphate Soil within the excavations will be kept wet during the works. The excavations will be backfilled immediately to prevent any	**C3**	**L6**	**Low**

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C x	L =	Risk		C x	L =	Risk
					Potential Acid Sulphate Soils from oxidising. • An occupational hygienist is to be on call to provide advice on management of any contaminated material (advice based on contamination type).			
Air quality	Dust generation during excavation and stockpiling Access to site	**C4**	**L4**	**Med**	• Induction and pre-start brief to include air quality management practices. • Water cart or water trailer to be present to wet down material. • Monitor conditions and modify works where dusty conditions are observed.	**C4**	**L5**	**Low**
Services	Service strike leading to environmental discharges	**C4**	**L4**	**Med**	• Engineers and workers to establish locations of any services by Dial Before You Dig, Survey and Non-Destructive Digging (where possible). • An Excavation Permit detailing service locations is to be reviewed and signed by all workers undertaking excavation works.	**C4**	**L5**	**Low**
Traffic, parking and Pedestrian	Traffic flow impacts Parking impacts Impact to pedestrians	**C6**	**L4**	**Low**	• A minimal amount of site utes are to be used • TCPs and ROLs are to be put in place (as required) • Consultation will occur with local residents • Workers are to park within the rail corridor where possible • Workers are to park legally and are to observe any time restrictions • Workers are to park in uncrowded areas where possible • Workers are to prioritise parking to community members where possible • Pedestrian access will be maintained external to the station.	**C6**	**L2**	**Low**
Visual Amenity	Impacts to local receivers from light spill	**C5**	**L4**	**Low**	• Lighting towers are to be positioned to minimise any light impacts to nearby properties • Lighting towers to be turned off when not in use	**C5**	**L2**	**Low**
Commuters	Access to station platforms and trains	**C5**	**L4**	**Low**	• Access will be maintained to the full length of the platform • Localised temporary barriers will be in place around the	**C5**	**L2**	**Low**

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C x	L =	Risk		C x	L =	Risk
					test location to prevent commuter access • A Protection Officer will be located at the test location to ensure safe access is maintained.			

Sydney Metro Risk Matrix

A1 Consequence Table

Consequence Table						
Rating	C6	C5	C4	C3	C2	C1
Descriptor/ Impact Area	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
Health and Safety (Injury and Disease)	Illness, first aid or injury not requiring medical treatment.	Illness or minor injuries requiring medical treatment.	Single recoverable lost time injury or illness, alternate/restricted duties injury, or short-term occupational illness.	1-10 major injuries requiring hospitalisation and numerous days lost, or medium-term occupational illness.	Single fatality and/or 10-20 major injuries/permanent disabilities/chronic diseases.	Multiple fatalities and/or >20 major injuries/permanent disabilities/chronic diseases.
Environment	No appreciable changes to environment and/or highly localised event.	Change from normal conditions within environmental regulatory limits and environmental effects are within site boundaries.	Short-term and/or well-contained environmental effects. Minor remedial actions probably required.	Impacts external ecosystem and considerable remediation is required.	Long-term environmental impairment in neighbouring or valued eco . Extensive remediation required.	Irreversible large-scale environmental impact with loss of valued eco .
Customer Experience/ Operational Reliability	Short duration disruptions affecting part of one transport mode.	Minor disruptions affecting several parts of one transport mode.	Serious disruptions affecting operation of one complete transport mode.	Major disruptions affecting operations of one transport mode with network-wide effects on one or more other modes of transport.	Short duration shutdowns or substantial disruptions affecting multiple transport modes with sector-wide cascading effects.	Extensive shutdowns or extended disruptions with economy-wide effects.
Government/ Stakeholder / Public Trust/ Confidence	Negative article in local media. No discernible reaction/apprehension. Goodwill, confidence and trust retained.	Unease – Series of negative articles in local/state media. Confidence remains with some minor loss of goodwill or trust. Recoverable with little effort or cost. Some continuing scrutiny/attention.	Disappointment – Extended negative local/state media coverage. Confidence and trust dented but are quickly recoverable at modest cost within existing budget and resources.	Concern – Short-term negative state/national media coverage. Confidence and trust are diminished but are recoverable with time, staff effort and additional funding.	Displeasure – Extended negative state/national media coverage. Confidence and trust are damaged but recoverable at considerable cost, time and staff effort.	Outrage – Material change in the public perception of the organisation. Confidence and trust are severely damaged, possibly irreparably, and full recovery both questionable and costly.
Regulatory or Legal Breach	Low-level non-compliance with legal and/or regulatory requirement or duty by individuals or TfNSW.	Minor non-compliance with legal and/or regulatory requirement or duty. Investigation and/or report to authority.	Moderate non-compliance. Subject to comment and monitoring from applicable regulator. Small fine and no disruption to services.	Major breach resulting in enforcement action and/or prohibition notices. Substantial fine and no disruption to services.	Substantial breach resulting in prosecution, fines and/or litigation. Licence or accreditation restricted or conditional affecting ability to operate.	Prosecution leading to imprisonment of TfNSW executive. Loss of operating licence.
Management Effort/ Organisational Fatigue	An event, the impact of which can be absorbed as part of normal activity.	An event, the impact of which can be absorbed but some additional management effort is required.	An event, the impact of which can be absorbed but much broader management effort is required.	Major event which can be absorbed, but substantial management effort is required.	Severe event which requires extensive management effort but can be survived.	Catastrophic event with the clear potential to lead to the collapse of the organisation.
Benefit Realisation of Initiative, Program or Project	No time delay with initiative or project but it will incur a slight decrease in the benefits realised.	Minor delay with the initiative and/or a minor decrease in the benefits realised; or minor delay on the project or another project, with no public implications.	Several delays with the initiative and/or moderate decrease in benefits realised; or completion date missed for non-critical path project.	Major delays with the initiative and/or major decrease in benefits realised; or publicly announced portion/milestone missed or final completion date missed with demonstrable mitigating external circumstances.	Severe delays with initiative, which impacts across divisions and/or significant decrease in benefits realised; or publicly announced portion/milestone missed or final completion date missed on critical path project.	Failure to realise benefits of the initiative which adversely affects the enterprise-wide operations of TfNSW; or publicly announced portion/ milestone significantly missed or final completion date significantly missed on critical path project.
Budget, Costs or Revenue	< $100k	$100k – $1m	$1m – $10m	$10m – $50m	$50m – $100m	> $100m

A2 Likelihood Criteria

Likelihood						
Rating	**L6**	**L5**	**L4**	**L3**	**L2**	**L1**
Descriptor/ Definition	**Almost Unprecedented**	**Very Unlikely**	**Unlikely**	**Likely**	**Very Likely**	**Almost Certain**
Qualitative Expectation	Not expected to ever occur during time of activity or project	Not expected to occur during the time of activity or project	More likely not to occur than occur during time of activity or project	More likely to occur than not occur during time of activity or project	Expected to occur occasionally during time of activity or project	Expected to occur frequently during time of activity or project
Sydney Metro Probability Analysis	<10%	10-25%	25-50%	50-75%	75-90%	>90%
Quantitative Frequency	Less than once every 100 years	Once every 10 to 100 years	Once every 1 to 10 years	Once each year	1-10 times every year	10 times or more every year

A3 Risk Matrix

Risk Rating: Very High – A – 31-36 High – B – 22-30 Medium – C – 11-21 Low – D – 1-10			CONSEQUENCE					
			Insignificant	Minor	Moderate	Major	Severe	Catastrophic
			C6	C5	C4	C3	C2	C1
LIKELIHOOD	Almost certain	L1	20	22	29	32	34	36
	Very Likely	L2	14	18	23	28	31	35
	Likely	L3	9	12	16	24	27	33
	Unlikely	L4	6	7	11	17	25	30
	Very Unlikely	L5	3	4	8	13	19	26
	Almost Unprecedented	L6	1	2	5	10	15	21

Appendix 5: Sydney Metro Unexpected Heritage Finds Procedure

Sydney Metro Unexpected Heritage Finds Procedure

Supporting Document – Applicable to:

Status:	
Division:	
Version: 1.4	
Date of issue:	19/04/2018
Effective date:	
Review date:	22/03/2019
Document owner:	
Security classification:	

Document History

Version	Date of approval	Doc. Control no.	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

Table of Contents

1. Purpose

This procedure is applicable only to the Sydney Metro Critical State Significant Infrastructure Planning Approval (CSSI 15_7400) including the following planning approval modifications:

Modification 1- Victoria Cross Substation and Artarmon Substation which involves relocation of the Victoria Cross northern services building from 194-196A Miller Street to 50 McLaren Street together with inclusion of a new station entrance at this location referred to as Victoria Cross North. 52 McLaren Street would also be used to support construction of these works. The modification also involves the relocation of the substation at Artarmon from Butchers Lane to 98 – 104 Reserve Road. This modification application was approved on 18 October 2017;

• Modification 2- Central Walk which involves additional works at Central Railway Station including construction of a new eastern concourse, a new eastern entry, and upgrades to suburban platforms. This modification application was approved on 21 December 2017;

• Modification 3- Martin Place Metro Station which involves changes to the Sydney Metro Martin Place Station to align with the Unsolicited Proposal by Macquarie Group Limited (Macquarie) for the development of the station precinct. The proposed modification involves a larger reconfigured station layout, provision of a new unpaid concourse link and retention of the existing MLC pedestrian link and works to connect into the Sydney Metro Martin Place Station. It is noted that if the Macquarie proposal does not proceed, the modification (if approved) would be surrendered. This modification application was approved on 22 March 2018; and
• Modification 4- Sydenham Station and Metro Train Facility which incorporated Sydenham Station and precinct works, the Sydney Metro Trains Facility South, works to Sydney Water's Sydenham Pit and Drainage Pumping Station and ancillary infrastructure and track and signalling works into the approved project. This modification application was approved on 13 December 2017

This procedure has been developed in response to Condition of Approval (CoA) E19, that requires Sydney Metro City & Southwest Program to provide a method for managing unexpected heritage items (both Aboriginal and non-Aboriginal) that are discovered during construction.

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, TfNSW and its contractors. This procedure includes TfNSW's heritage notification obligations under the Heritage Act, NPW

Act and the Coroner's Act 2009 and the specific requirements of the conditions of approval(CoA) issued by NSW Department of Planning and Environment for CSSI 15-7400.

Note that a Contractor may create their own Unexpected Finds Procedure or modify this document, however its use will be subject to compliance with the following:-

- CSSI CoA E17 requires consultation with the Heritage Council of NSW (or its delegate)
- CSSI CoA E19
- Prior approval from the nominated Excavation Director, as required under CSSI CoA E18
- Prior approval from the Environmental Representative, CSSI CoA A24
- Prior approval from Sydney Metro.

It should be noted that this procedure must be read in conjunction with the relevant CCSI conditionals of approval, the contract documents and other plans and procedures developed by the contractor during the delivery of the works.

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 prohibit 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 3, followed by the technical procedure in Sections 6 and 7. Associated guidance referred to in the procedure can be found in Appendices A-H.

2. Scope

Despite appropriate and adequate investigation, unexpected heritage items may still be discovered during maintenance and construction 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 construction activities for the Sydney Metro Program as approved under Section 115ZB of the Environmental Planning and Assessment Act 1979 for Critical State Significant Infrastructure, Application No. SSI 15-7400.

This procedure **applies to**:

- the discovery of any unexpected heritage item, relic or object, where the find is not anticipated in the Archaeological Assessment Design Report (AARD) or Archaeological Method Statements (AMS) that are prepared prior to commencement of excavation.

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 with the exception S139 of the NSW Heritage Act 1977

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 an 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; All new Construction Environment Management Plans (CEMPs) must make reference to and/or include this procedure (included as a heritage sub-plan, refer to CSSI CoA C6(g)).

Note that this procedure does not supersede the requirements of CSSI CoA CSSI CoA E10 and E26:

- E10 The Proponent must not destroy, modify or otherwise physically affect any Heritage item not identified in documents referred to in CoA A 1.
- E26 This approval does not allow the Proponent to harm, modify, or otherwise impact human remains uncovered during the construction and operation of the CSSI, except in accordance with the Exhumation Management Plan (CoA E27).

[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.

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:

Term	Meaning
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
CSSI	Critical State Significant Infrastructure
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
Heritage Act	NSW *Heritage Act 1977*
NPW Act	NSW *National Parks and Wildlife Act 1974*
OEH	Office of Environment and Heritage
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 significance. A relic may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse. Note that Modification 2 amends the previous definition of a relic, being the same as described in the NSW *Heritage Act 1977,* by deleting all reference to local heritage significance. For the purpose managing relics under the CSSI 15_7400 Planning Approval CoA E20 applies to relics of State significance only.
TfNSW	Transport for New South Wales

Term	Meaning
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 subject to specific assessment by the Excavation Director

4. Accountabilities

5. 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 A** illustrates the wide range of heritage discoveries found on transport infrastructure projects and provides a useful photographic guide. Subsequent to confirmation of a heritage discovery it must then be identified and assessed by Excavation Director as required under CSSI CoA E20. An 'unexpected heritage item' means any unanticipated discovery of an actual or potential heritage item, for which Sydney Metro (refer to CSSI CoA E10 and E26) 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 (refer to CSSI CoA E26 and E27).

5.1. Aboriginal objects

The NPW Act protects Aboriginal objects which are 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,*

[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).

> *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!

<u>All</u> 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[4]. Also, when a person becomes aware of an Aboriginal object they must notify the Director-General of OEH about its location[5]. Assistance on how to do this is provided in Section 7 (Step 5).

CSSI CoA E23, E24 and E25 for management of Aboriginal Heritage Applies to the Sydney Metro Chatswood to Sydenham Project

5.2. Historic heritage items

Historic (non-Aboriginal) heritage items may include:

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

5.2.1. 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*"[6].

Changes to CoA E20 included within Planning Modification 1 (Oct 2017) deleted reference *local heritage significance*, so that E20 applies to relics of State significance only.

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.

[3] Section 5(1) NPW Act.

[4] Refer to CSSI CoA E23 & E25.

[5] This is required under section 89(A) of the NPW Act and applies to all TfNSW projects.

[6] Section 4(1) Heritage Act.

Construction in the vicinity of a relic, of State significance, must not recommence until the requirements of the ARMP have been implemented, in consultation with the Excavation Director**.** The Sydney Metro must notify the Secretary of the Department of Environment & Planning in writing of the outcome of consultation with the Heritage Council of NSW, refer to CSSI CoA E20.

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[7]. Also, when a person discovers a relic they must notify the NSW Heritage Council of its location[8]. Advice on how to do this for works under CSSI 15_7400 is provided in Section 7 (Step 5).

5.2.2. 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.

As a general rule, an archaeological relic requires discovery or examination through the act of excavation. An archaeological excavation permit under section 140 of the Heritage Act is 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).

Despite this difference, it should be remembered that relics can often be associated with 'other heritage items', such as archaeological deposits within cisterns and underfloor deposits beneath buildings.

5.3. Human skeletal remains

Refer to Sydney Metro Project Exhumation Management Plan

[7] Refer to CSSI CoA E20,

.

[8] This is required under section 146 of the Heritage Act and applies to all TfNSW projects however also refer to foot note 8.

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 old[9] 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 E**.

6. 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 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

[9] 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.

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.

CSSI CoA E10 applies to unexpected finds, so that all relevant legislation will apply to heritage items not identified in documents referred to CoA A1.

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).

7. Unexpected heritage finds protocol

7.1. 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.

7.2. 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 A** (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.	Excavation Director	**Appendix B** (Unexpected Heritage Item Recording Form) **Appendix C** (Photographing Unexpected Heritage items)
1.4	Is the item likely to be bone? If **yes**, follow the steps in Appendix D – '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. If **no**, proceed to next step.	Excavation Director	**Appendix D** (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 B**). Where the project has an Environmental Representative (ER), the ER should be involved in the tasks/process as appropriate.	Contractors Project Manager	
1.6	Can the works avoid further disturbance to the item? Project Manager to confirm with TfNSW Environment and Planning Manager. Complete the remaining tasks in Step 1.	Contractors Project Manager	
1.7	Excavation Director to advise the Project Manager whether TfNSW has approval to impact on the 'item'. Does 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. Contract Sydney Metro Manager, Environment Safety, Environment and Business Systems	Contractors Project Manager, Excavation Director	
2	**Contact and engage an archaeologist and/or an Aboriginal heritage consultant**		

Step	Task	Responsibility	Guidance and tools
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 C** (Photographing Unexpected Heritage items)
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 TfNSW Project Manager.	Archaeologist/ Aboriginal heritage consultant/ Contractors Project Manager, Excavation Director	Proceed to Step 8

Step	Task	Responsibility	Guidance and tools
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 A** (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.	Contractors Project Manager, Excavation Director	
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 Principal Manager Sustainability Environment and Planning (Program). 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**		

Step	Task	Responsibility	Guidance and tools
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.	Contractors Project 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.	Contractors Project Manager, Excavation Director	**Appendix F** (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 B) 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.	Contractors Project Manager, Excavation Director	
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**		

Step	Task	Responsibility	Guidance and tools
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 Environment and Planning 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.	Contractors Project Manager, Excavation Director	
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	

Step	Task	Responsibility	Guidance and tools
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**		
8	**Resume work**		
8.1	Seek written clearance to resume project work from the Environment and Planning Manager and the 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	

8. Responsibilities

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 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 and Planning 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 and Planning Manager on 'find' identification, significance, mitigation, legislative procedures and regulatory requirements.
Environmental Representative	Independent environmental advisor engaged by Sydney Metro Review and provides advice on heritage management plan and changes to the CEMP. 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.
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 and Planning Manager	Notify the TfNSW 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 when all applicable requirements have been satisfied.

9. Seeking advice

Advice on this procedure should be sought from the Sydney Metro Environment and Planning 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.

10. Related documents and references

Related Documents
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.*

11. List of appendices

The following appendices are included to support this procedure:

Appendix A: Examples of finds encountered during construction works
Appendix B: Unexpected Heritage Item Recording Form
Appendix C: Photographing Unexpected Heritage Items
Appendix D: Uncovering Bones
Appendix E: Archaeological Advice Checklist
Appendix F: Template Notification Letter

Appendix A - Examples of finds encountered during construction works

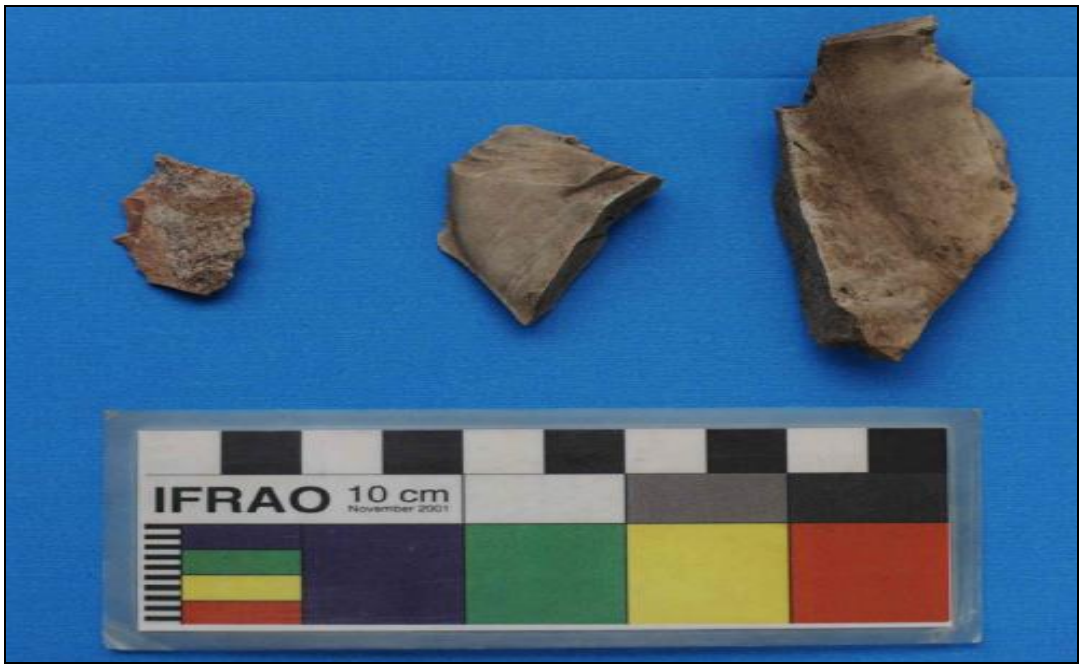


Photo 1 - Aboriginal artefacts found at the Wickham Transport Interchange, 2015

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 B- 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 *(eg 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.** *(eg 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**. *(eg 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 C- 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 F 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 D - 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[10]. 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.

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

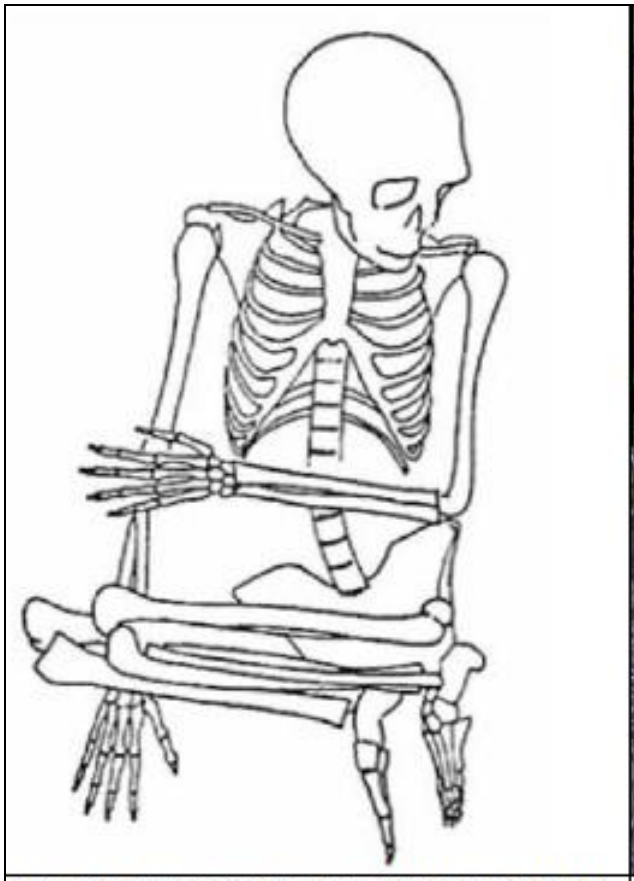


Figure 1: Schematic of a complete skeleton that is 'obviously' human[12].

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

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 C. 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) appropriate. This

must be followed up later by a formal letter notification to the relevant regulator (as per Appendix G) 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.

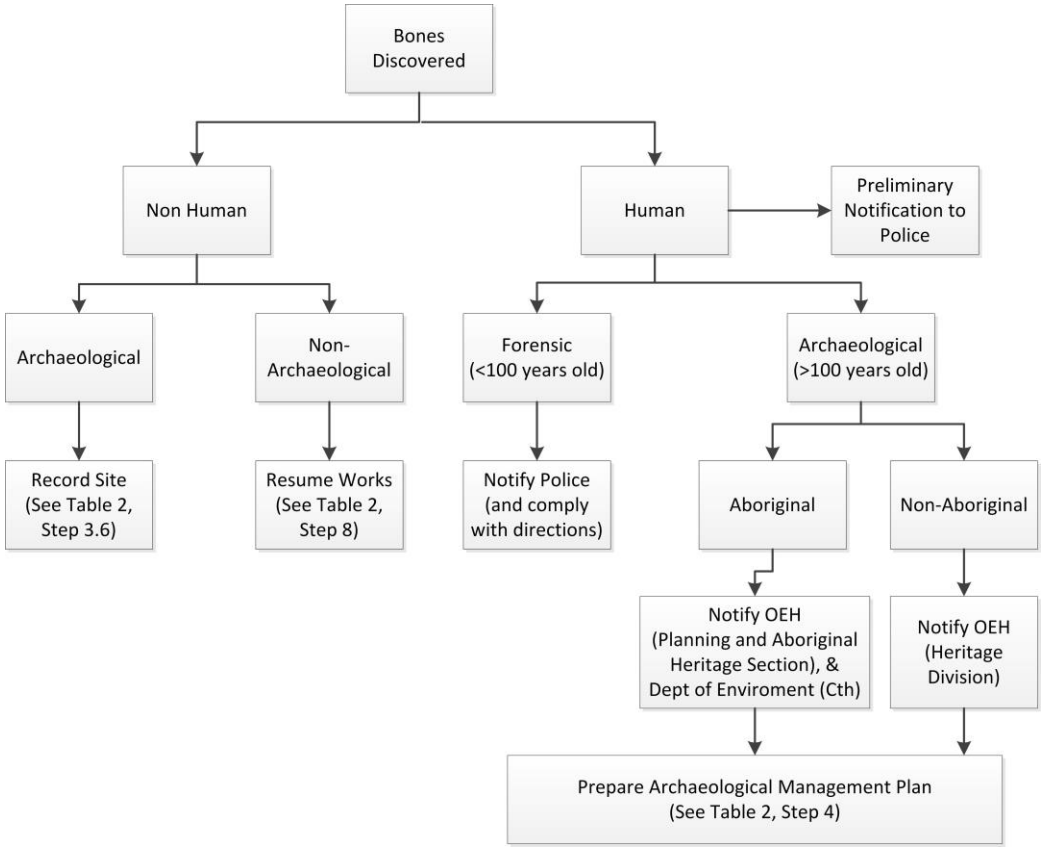


Figure 3 Overview of steps to be undertaken on the discovery of bones

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, TfNSW is 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)[11].

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.

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

Appendix E - 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 F- 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 Transport for NSW –Sydney Metro activities.

I write to inform you of an unexpected [select: relic, heritage item or Aboriginal object] found during TfNSW 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.

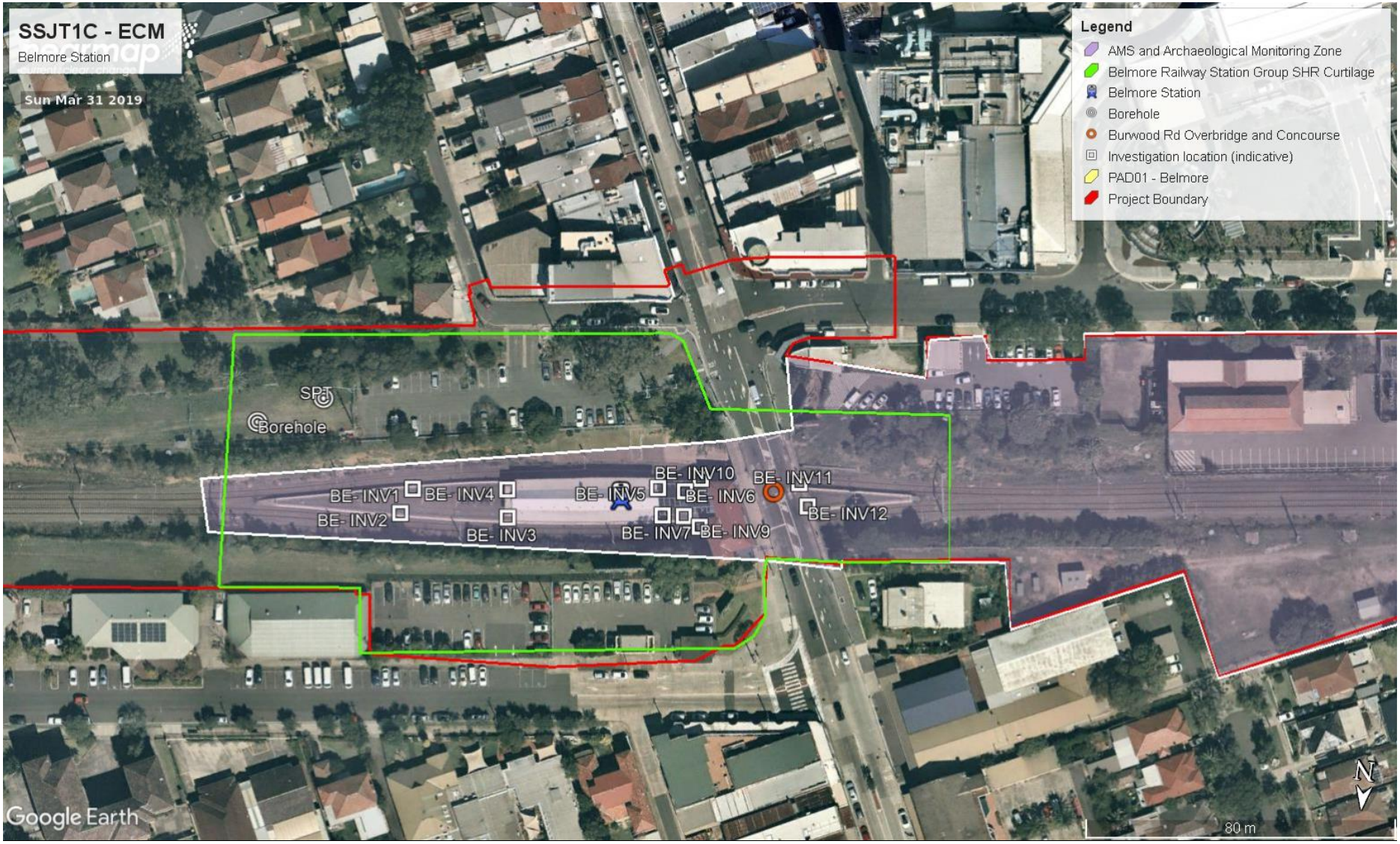
Should you have any feedback on the proposed approach, or if you require any further information, please do not hesitate to contact [Environment and Planning Project Manager] on (02) XXXX XXXX.

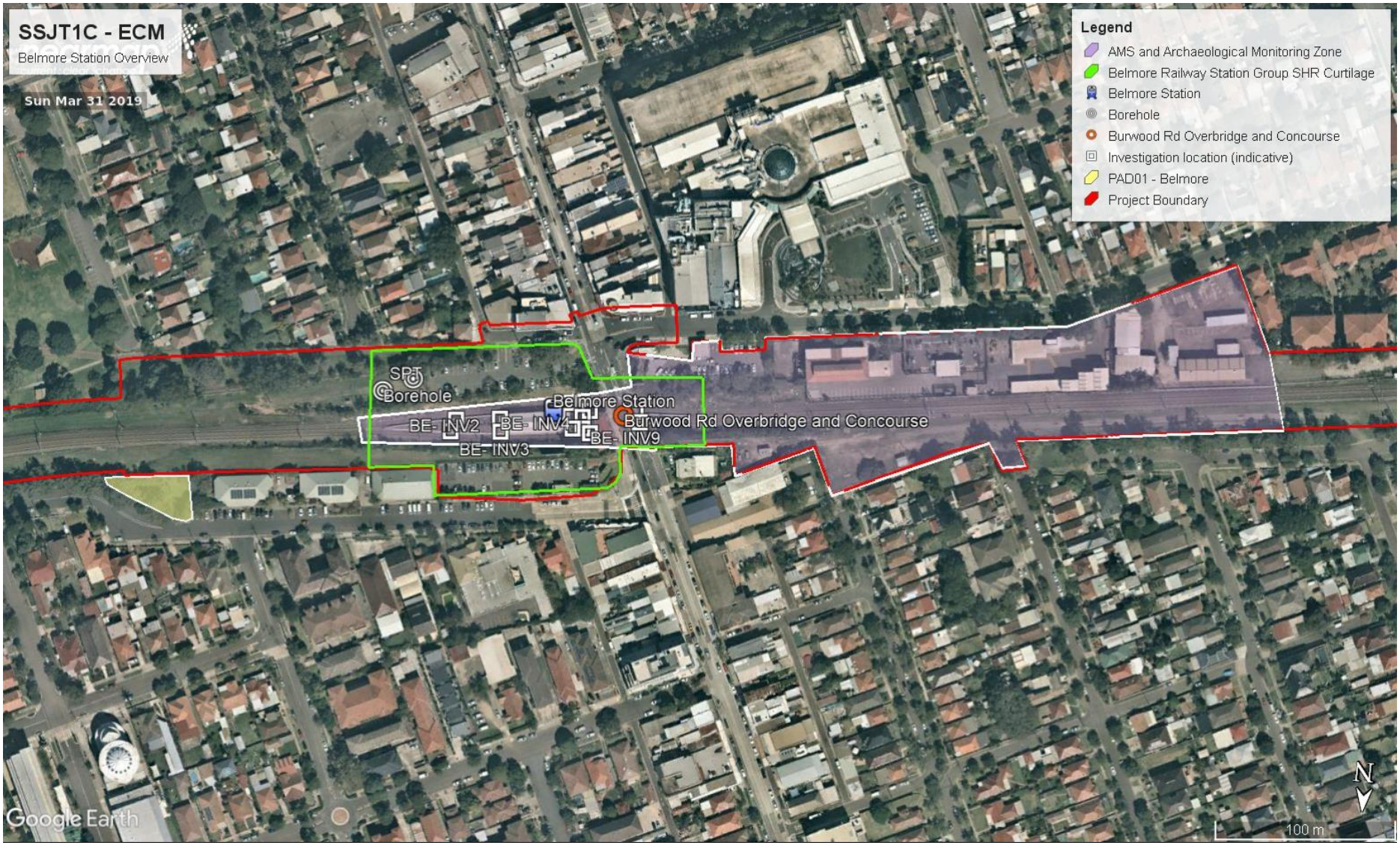
Yours sincerely

[Sender name]

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

Appendix 6: Environmental Control Map


SSJT1C - ECM
Belmore Station
Sun Mar 31 2019
Legend
AMS and Archaeological Monitoring Zone
Belmore Railway Station Group SHR Curtilage
Belmore Station
Borehole
Burwood Rd Overbridge and Concourse
Investigation location (indicative)
PAD01 - Belmore
Project Boundary
SPT
Borehole
BE- INV1
BE- INV2
BE- INV3
BE- INV4
BE- INV5
BE- INV6
BE- INV7
BE- INV9
BE- INV10
BE- INV11
BE- INV12
Google Earth
80 m
N


SSJT1C - ECM
Belmore Station Overview
Sun Mar 31 2019
Legend
AMS and Archaeological Monitoring Zone
Belmore Railway Station Group SHR Curtilage
Belmore Station
Borehole
Burwood Rd Overbridge and Concourse
Investigation location (indicative)
PAD01 - Belmore
Project Boundary
SPT
Borehole
Belmore Station
BE- INV2
BE- INV4
BE- INV9
BE- INV3
Burwood Rd Overbridge and Concourse
Google Earth
100 m
N


SSJT1C - ECM
Lakemba Station
Sun Mar 31 2019
Legend
AMS and Archaeological Monitoring Zone 7
Borehole
Investigative Location (indicative)
Lakemba Station
Project Boundary
Slit trench
Lakemba Station
LA- INV1
LA- INV2
LA- INV3
LA- INV4
LA- INV5
LA- INV6
LA- INV7
LA- INV8
LA- INV9
LA- INV10
LA- INV11
LA- INV12
Borehole
DCP
Slit trench
Google Earth
50 m


SSJT1C - ECM
Lakemba Station Overview
Sun Mar 31 2019
Legend
AMS and Archaeological Monitoring Zone 7
Australian White Ibis roost colony
Borehole
Haldon St Overbridge
Investigative Location (indicative)
Lakemba Station
Project Boundary
Slit trench
Turpentine - Grey Ironbark open forest on shale (ME041, Moderate/good-medium)
Lakemba Station
Haldon St Overbridge
LA- INV3
LA- INV8
LA- INV11
LA- INV4
LA- INV12
Slit trench
DCP
Borehole
Australian W
Google Earth
200 m

Appendix 7: Community Notification

Sydney Metro is Australia's biggest public transport project.

Services start in 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 under 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 received planning approval on 19 December 2018.

Southwest metro early work is being delivered by John Holland Pty Ltd and Laing O'Rourke Australia Construction Pty Ltd, including station and bridge investigations and installation of electrical cabling within the rail corridor.

Southwest metro early work

Over the next month early investigation work will be along the Bankstown line between Belmore and Punchbowl stations (weather and site conditions permitting).

Day work
Project standard working hours are Monday to Friday 7am - 6pm and Saturday 8am - 6pm.

Location	Activities

Whole corridor (Belmore – Punchbowl)	• Site establishment work within the rail corridor, including site preparation, installation of haul roads and temporary fencing
	• Site deliveries to the corridor area South East of Lakemba Station include toilet facilities and portable cabins
	• Survey work in stations, the rail corridor and nearby public areas
	• Survey and structural bridge inspection of Belmore oval underbridge, access via Redman Parade
	• Locating and confirming underground services which will involve service locating using hand held equipment, cameras and non-destructive digging throughout the rail corridor
	• Geotechnical investigations throughout the rail corridor which will include minor drilling sampling and testing the ground
	• Clearing and grubbing throughout the rail corridor
	• Equipment used for the above work will include vacuum suction trucks, dump trucks, excavators, drill rigs, crane trucks and lifting machinery, power and hand tools.
	• Activities in the corridor will be carried out up to Stacey Street Bankstown, just before Bankstown Station.
	• Rail access gates along the corridor from Belmore to Bankstown will be used for delivery and removal of plant, equipment and materials:
	  ○ Belmore: Tobruk Avenue, Hall Street, Loftus Street, Redman Parade, Acacia Lane and Railway Parade
	  ○ Lakemba: Railway Parade and The Boulevarde
	  ○ Wiley Park: Shadforth Street, Cornelia Street, Urunga Parade and The Boulevarde

Sydneymetro.info
1800 171 386
sydneymetro@transport.nsw.gov.au

	○ Punchbowl: Urunga Parade, The Boulevarde, South Terrace and Wattle Street

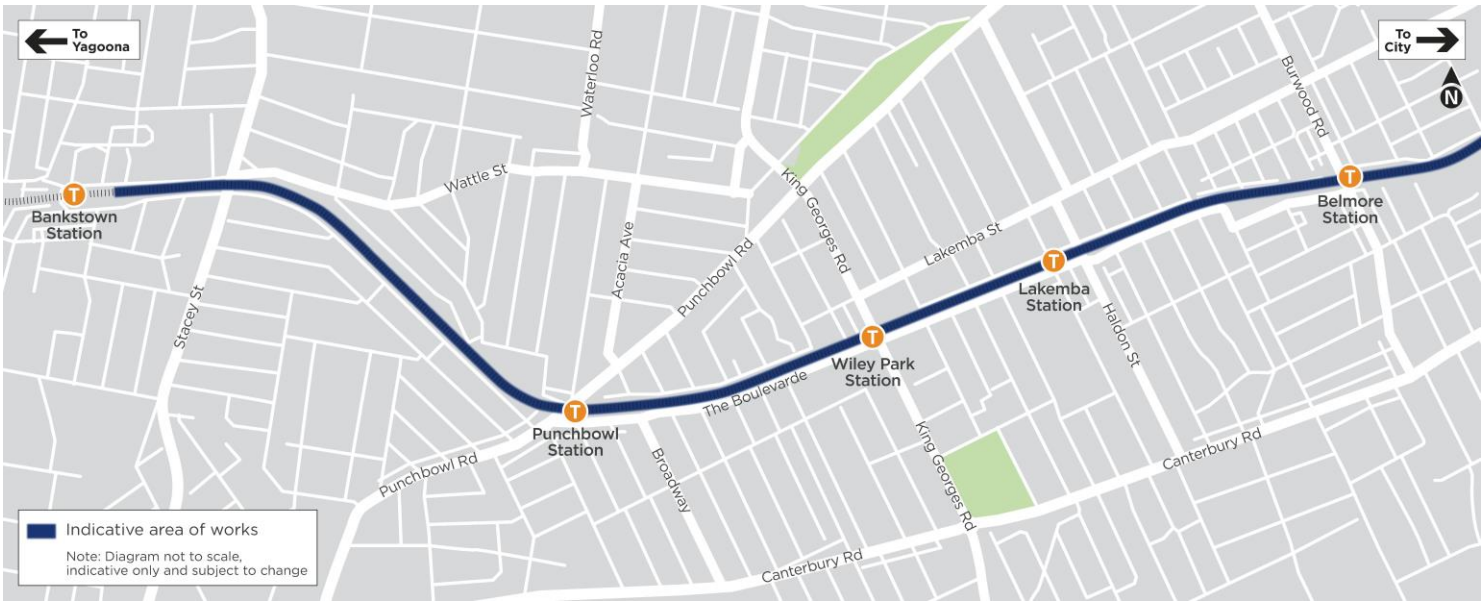
Access to buildings and driveways will be maintained at all times. Some of this work may be noisy, however we will take every possible step to minimise noise such as switching off equipment when not in use and installing non-tonal reversing beepers on vehicles.

Keeping you informed

Properties close to the rail corridor will receive notifications when work is scheduled to occur. Sydney Trains will deliver notifications for work done during scheduled rail maintenance periods and Sydney Metro will keep you informed of all other work. If you'd prefer to receive updates by email, please contact us using the details below.

Thank you for your cooperation while we complete this essential work.

If you have any questions please contact **Melanie** on **1800 171 386** (24 hour community information line) or SouthwestMetro@transport.nsw.gov.au



Appendix 8: OEH Correspondence

From: Siobhan Lavelle [mailto:Siobhan.Lavelle@environment.nsw.gov.au]
Sent: Thursday, 18 April 2019 1:57 PM
To: Ron Turner
Subject: RE: Heritage memo and AMS for Belmore/Lakemba

Dear Mr Turner,

Thank you for your emails regarding this matter. The following two documents have been reviewed:

1. Non-Aboriginal Heritage Assessment, Investigative Works at Belmore and Lakemba Stations, Report to Sydney Metro Authority, Artefact Heritage, February 2019
2. Archaeological Method Statement, Belmore & Lakemba Stations, Memo Format, Artefact (Dr S Wallace) February 2018 [sic.]

The Heritage Division notes that the HA document (document 1 above) has assessed the archaeological potential at Belmore and Lakemba Stations

Both stations are predicted to have Low to Moderate potential for archaeology of Local significance.
The Station 'catchments' have been divided into two management zones for AMS and Archaeological Investigation and for an Unexpected Finds Procedure to operate.
Anticipated excavation works include investigative boreholes, test pits with the rail corridor, test pits along platforms, test pits near station structures, ndd service location.
It is proposed that certain works would be subject to archaeological monitoring in accordance with an AMS.
The Heritage Division does not object to this strategy.

The AMS Memo notes that there are a number of requirements under the CoA for the Metro Project, and commitment NAH12, and arising from various other documents such as the prior Historical Archaeological Assessment & Research Design. The AMS nominates a number of personnel, with Dr Iain Stuart as Excavation Director.
This is considered adequate.

Regards,

Siobhan

NSW GOVERNMENT Office of Environment & Heritage

Dr Siobhán Lavelle OAM
Senior Team Leader
Specialist Services
HERITAGE DIVISION

Level 6, 10 Valentine Ave, Parramatta
Locked Bag 5020 Parramatta 2124
T 02 9873 8546 **M** 0455 093962

ALL APPLICATIONS ARE TO BE SUBMITTED TO heritagemailbox@environment.nsw.gov.au OTHERWISE THEY WILL NOT BE PROCESSED

From: Turner, Ron <Ron.Turner2@transport.nsw.gov.au>
Sent: Thursday, 11 April 2019 10:01 AM
To: Siobhan Lavelle <Siobhan.Lavelle@environment.nsw.gov.au>
Subject: FW: Heritage memo and AMS for Belmore/Lakemba

Good morning Siobhan,

A response to our request for consultation and your concurrence regarding these minor works is becoming most urgent. Can you assist with a response asap please?

A brief email would allow us to finalise ER and DPE approval and move on with preparatory works and mobilisation.

Please let me know if I can assist you in any way.

Thanks Ron

From: Turner, Ron
Sent: Thursday, 7 March 2019 9:57 AM
To: 'heritagemailbox@environment.nsw.gov.au'; 'Siobhan Lavelle'
Cc: 'Sarah Jane Brazil'
Subject: FW: Heritage memo and AMS for Belmore/Lakemba

Good morning Siobhan, Sara Jane

Metro would like to undertake consultation with OEH to seek your concurrence that the investigation activities assessed in the attached HIA and AMS. These are 'low-impact'; as defined by Sydenham to Bankstown Planning approval (SSI 8256).

The S2B planning definition of construction works differs slightly from the earlier Chatswood to Sydney SSI 15-7400 SSI approval, however both approvals now share the same definition, following the recent approval of modification 6 to SSI 15_7400.

An extract of construction definition is provided for your convenience below

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

The Low Impact Activities described in this definition become Construction with the approval of a Construction Environmental Management Plan. Where Low Impact Activities have already commenced, these are considered to remain as Low Impact Activities and are managed in accordance with the framework under which they commenced.

The proposed works are minor, consisting of test pits and core hole sampling for structural analysis, geotechnical testing and services identification and have no effect on the heritage values of these sites. The AMS provides a guide for archaeological management, so that the respective roles are clearly understood by the contractor and archaeological team alike.

The works are scheduled for early June however it will require some considerable mobilisation time and following receipt of your concurrence it will require DPE and ER endorsement. Your earliest response would be appreciated, however a reply by 29 March would suffice.

Please feel free to give me a call if you have any questions.

Kind regards Ron

Ron Turner
Heritage Program Manager
Sustainability, Environment & Planning – City & Southwest
Sydney Metro

M 0410 455 178

sydneymetro.info
Level 43, 680 George Street, Sydney NSW 2000
PO Box K659, Haymarket NSW 1240

I acknowledge the traditional owners of the land on which I work and pay my respects to their Elders, past and present.

Appendix 9: DPE Correspondence

NSW GOVERNMENT | Planning & Environment

Planning Services
Infrastructure Management
Contact: Anna Timbrell
Email: anna.timbrell@planning.nsw.gov.au

Our ref: 19/369704

Mr Fil Cerone
Director, Sustainability Environment & Planning
City & Southwest Metro
Sydney Metro
PO Box K659
HAYMARKET NSW 1240

BY EMAIL ONLY File.Cerone2@transport.nsw.gov.au

Dear Fil,

Determination that investigative works inside the heritage curtilages of Belmore and Lakemba Stations are Low Impact Activities Sydney Metro City and Southwest (CSSI 8256)

I refer to your submission dated 23 April 2019 requesting the Planning Secretary's determination that the proposed site investigation works within Belmore and Lakemba Stations are not classed as 'construction' under the Definitions in Table 1 of the Infrastructure approval and can proceed as low impact activities, subject to implementation of the mitigation measures detailed in the Heritage Impact Assessment provided with your submission.

As outlined in your submission and the *Non-Aboriginal Heritage Assessment: Investigative works at Belmore and Lakemba Stations (April 2019)* and the *Archaeological Method Statement* (dated 22 February 2019) (heritage assessment documents), I understand that the proposed survey and investigation works include:

- assessment of structural conditions at each station, including main buildings, existing stairs, lift shafts, canopies and retaining walls
- conducting a general topographical and feature survey of each station (including the installation of survey markers/pins)
- non-excavation service location (remote sensing)
- excavation of geotechnical and structural test pits and bore holes and service-location slit trenches and/or pot holes throughout each station precinct.

I also understand that the proposed works are predicted to result in negligible direct (physical) and indirect (visual) impacts to the heritage significance of each identified item and that potential impacts to significant archaeological resources are predicted to be either 'negligible' or 'negligible (with mitigation)'.

I note that the heritage assessment documents have been reviewed by the Office of Environment and Heritage (OEH) and that no objections have been raised during its review of these documents. Additionally, OEH has advised that the appointment of Dr Ian Stuart as the Excavation Director is considered adequate.

As nominee of the Planning Secretary, I am satisfied that the proposed low impact survey and investigative activities can be classed as non-construction works in accordance with the planning approval.

I note that your submission advises that the Environmental Representative will review and endorse the environmental risk assessment as part of Sydney Metro's Pre-Construction Minor Works Approval process. Please ensure that the management and mitigation measures outlined in the heritage assessment documents and the environmental risk assessment are implemented.

If you have any queries, please contact Anna Timbrell on the details listed above.

Yours sincerely

3/5/2019

Erica van den Honert
Director – Infrastructure Management
As delegate of the Planning Secretary
cc ben.armstrong2@transport.nsw.gov.au

Appendix 10: Environmental Procedures

Unexpected Contaminated Land Procedure and Asbestos Finds Procedure

INDUCTION/ TOOLBOX TALKS

All personnel are to receive Site Inductions and on-going training via Toolbox Talks

OBSERVATION OF SOIL DURING EXCAVATION WORKS

Observe soil during excavations to check for evidence of contamination.
Refer to second page of this procedure for examples of materials that could indicate presence of contamination.

Has evidence of contamination been observed?

YES

STOP WORKS

Notify the Site Supervisor and Environment 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 (if any)
– Depth
– Surround material and mode of discovering the material

NO

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 legislative requirements. This may include sampling and laboratory analysis.

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 futher approval(s)

STRATEGY IMPLEMENTATION

- Implement the approved management and/ or remediation. If the material is to be removed, refer to Waste Management Procedure (SMEW-EP-Waste Management Procedure) for classification and disposal.
- If required, The Environmental Consultant having input to the Management Strategy, will perform or oversee any monitoring required for the works (e.g. air quality monitoring, odours). 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 recommencement of works.

RESPONSIBILITY

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

EVIDENCE OF CONTAMINATION

Example of materials that could indicate the presence of contamination include (but are not necessarily 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 Sulfate Soils (ASS)

Asbestos
Asbestos finds are to be managed in accordance with the Project WHS 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
- Delineation and removal to a suitably licenced facility
- Onsite treatment to neutralise the ASS, which could include the application of lime.

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 Consturction Spil and Wster Management Plan.

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 Management Procedure.