

## 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	
<b>Contractor:</b>	METRON T2M
<b>Project:</b>	Southwest Metro Design Services (SMDS)
<b>Application Title:</b> (e.g. Smith St trenching works)	Pedological investigation (Dulwich Hill/Hurlstone Park/Punchbowl/Wiley Park stations)
<b>Application Number:</b>	SMDS-PCMw-010
<b>Application Date:</b>	Rev00: 03 August 2020
<b>Planning Approval:</b>	<ul style="list-style-type: none"> <li>Sydney Metro City and Southwest – Sydenham to Bankstown – Environmental Impact Statement (EIS)</li> <li>Sydney Metro City and Southwest – Sydenham to Bankstown – Submissions and Preferred Infrastructure Report (SPIR)</li> <li>Sydney Metro City and Southwest Infrastructure Approval SSI-8256</li> </ul>
<b>Minor Works Categories:</b> <ul style="list-style-type: none"> <li>Highlight as applicable.</li> <li>If Items 4, 8 or 11 are applicable, this form must be endorsed by an Environmental Representative.</li> </ul>	<ol style="list-style-type: none"> <li>Survey, survey facilitation and investigation works (including road and building dilapidation survey works, drilling and excavation).</li> <li>Treatment of contaminated sites.</li> <li>Establishment of ancillary facilities (excluding demolition), including construction of ancillary facility access roads and providing facility utilities.</li> <li>Operation of ancillary facilities that have minimal impact on the environment and community.</li> <li>Minor clearing and relocation of vegetation (including native).</li> <li>Installation of mitigation measures, including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments.</li> <li>Property acquisition adjustment works, including installation of property fencing and utility relocation and adjustments to properties.</li> <li>Utility relocation and connections.</li> <li>Maintenance of existing buildings and structures.</li> <li>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.</li> <li>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.</li> </ol>

<p><b>Planning Authority Determination:</b></p> <p>Will the proposed works affect or have the potential to affect heritage items, threatened species, populations or endangered ecological communities?</p>	<p><i>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'.</i></p> <p><u>Heritage</u></p> <p>Dulwich Hill, Hurlstone Park, Punchbowl and Wiley Park are locally listed heritage stations, which are also listed on the Section 170 RailCorp Heritage and Conservation Register. Given the proposed works would not impact significant heritage fabric or views, an impact to heritage is not expected to occur (Artefact, 2020 – provided in Appendix 5).</p> <p>The proposed sample locations would not impact the Potential Archaeological Deposit (S2B PAD02) at Punchbowl Station, identified in the City and Southwest Sydenham to Bankstown Aboriginal Cultural Heritage Assessment Report (Artefact 2018).</p> <p>The City and Southwest Sydenham to Bankstown Archaeological Assessment and Research Design Report (Artefact 2018) did not identify potential for significant archaeological remains at Dulwich Hill, Hurlstone Park Punchbowl and Wiley Park stations. Given the proposed works would not impact significant heritage fabric or views, an impact to heritage would not occur (Artefact 2020 – provided in Appendix 5).</p> <p><u>Biodiversity</u></p> <p>The proposed works are not located in areas of threatened species, populations or endangered ecological communities as shown in the Environmental Sensitive Receivers Map in Appendix 1. No vegetation clearing is required for the works.</p>
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**Part 2: Details**

<p><b>Describe the proposed Minor Works:</b></p> <p>Including work methodologies, site location(s) and site description(s) (e.g. landscape type, waterways, etc.).</p>	<p><b>Site Description Overview:</b></p> <p>This overview is based on information from the Environmental Impact Statement (EIS) and Submissions and Preferred Infrastructure Report (SPIR). The proposed works are to occur within and surrounding the T3 Line Dulwich Hill, Hurlstone Park, Wiley Park and Punchbowl stations. These stations are comprised of station buildings, overbridges, overhead wiring structures, track, services and ballast. The stations are adjacent to a number of land zoning types, including commercial, community infrastructure and residential.</p> <p>The proposed investigation areas are located in existing landscaped areas, which are predominantly grass, but include scattered exotic or planted native dicotyledonous species in some locations.</p> <p><b>Description of Works</b></p> <p>Soil sampling would be undertaken to determine the soil suitability in proposed landscape areas. Sampling will be undertaken by a senior soil scientist. The sampling objective is to gather information on soil type, characteristics, profile, location and depth.</p> <p>The following quantity of samples will be taken at each station. The sample locations are shown in Appendix 1. Each sample location would include one main sample and up to three sub-samples.</p> <p>Dulwich Hill – two locations</p> <p>Hurlstone Park – two locations</p> <p>Punchbowl – two locations</p> <p>Wiley Park – six locations</p> <p>Sampling will involve the following methodology:</p> <ul style="list-style-type: none"> <li>• Walkover to gather observational information on the planting landscape and identify the most suitable location for sampling (within the areas defined in Appendix 1). Existing vegetation will be avoided where possible. Dial before you dig reports and a service locator will be used to avoid existing services.</li> <li>• A hand auger will be used to dig to a depth of up to 500mm for the main sample. The diameter of the hole will be 70mm.</li> <li>• A hand trowel will be used to collect sub-samples. This would involve digging to a depth of 200mm. The dimensions of the hole would be approximately 50mm x 100mm. In grassed areas, the grass would be removed prior to sampling. The grass removal process would retain the root</li> </ul>
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	<p>and soil structure (turf clod) to allow survival of the grass following replacement after the work is complete.</p> <ul style="list-style-type: none"> <li>• A composite sample of maximum 3L will be collected from the main and sub-sample holes at each sample location.</li> <li>• All holes will be backfilled using topsoil from nearby where available. If no topsoil is available, horticultural sand will be used to replace the sampled soil.</li> <li>• Removed turf clod would be replaced upon completion of the works.</li> </ul> <p><b>Working Hours</b> The proposed works will be undertaken during standard construction hours: Monday to Friday between 7am and 6pm and Saturday between 8am and 6pm.</p>
<p><b>Planned Commencement Date</b></p>	<p>The proposed works are scheduled for commencement from 10 August 2020. All of the work would be undertaken in one day.</p>
<p><b>Local Sensitivities:</b> Describe the presence (if any) of local sensitive environmental areas and community receptors</p>	<p><b>T3 Line between Sydenham Station and Bankstown Station</b></p> <ul style="list-style-type: none"> <li>• Local environmental sensitivities are presented in Appendix 1.</li> <li>• There are a number of residential properties located within close proximity to the areas of work. Noise and air quality impacts from survey works are expected to be negligible.</li> <li>• Metron T2M prepared a high-level review summary of previous ground contamination, potential acid, sulphate soils and hazardous material investigative works that have been undertaken and reported on by others and made available to Metron T2M by Sydney Metro (Metron T2M, SMCSWSWM-MTM-WEC-EM-REP000001). The sample locations are considered to have a low to medium risk of contamination. The results of invasive contamination testing are shown in Appendix 1. Testing near to the proposed sample locations suggest the spoil would be considered general solid waste.</li> </ul> <p>There is no potential acid sulphate soil risk in the proposed sample locations.</p> <p>The Unexpected Finds procedure (Appendix 2) will be followed should unexpected contaminated land or asbestos be encountered during the proposed works.</p> <ul style="list-style-type: none"> <li>• The proposed sample locations would not impact the Potential Archaeological Deposit (S2B PAD02) at Punchbowl Station, identified in the City and Southwest Sydenham to Bankstown Aboriginal Cultural Heritage Assessment Report (Artefact 2018).</li> <li>• The City and Southwest Sydenham to Bankstown Archaeological Assessment and Research Design Report (Artefact 2018) did not identify potential for significant archaeological remains at Dulwich Hill, Hurlstone Park Punchbowl and Wiley Park stations. Given the proposed works would not impact significant heritage fabric or views, an impact to heritage would not occur (Artefact, 2020 – provided in Appendix 5).</li> <li>• A number of areas of threatened ecological communities and threatened plant species (<i>Acacia pubescens</i>) have been identified along the rail corridor. No invasive works will occur within these areas and the survey work will not require the removal, trimming or damage of vegetation.</li> <li>• Investigative works may occur in the vicinity of local stormwater systems. There is a low erosion and sedimentation risk associated with the proposed survey work. Stockpiled material will be stored out of drainage channels and covered during inclement weather</li> <li>• No roadways or footpaths will be impacted as part of the works.</li> </ul>

**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, etc.).

A map showing the local sensitivities discussed in Part 2 will be provided to the survey teams to ensure impacts are avoided. The map is provided in Appendix 1. The mitigation measures developed as part of the environmental risk assessment (provided in Appendix 1) will be provided to survey teams as part of the pre-survey induction.

Works will also be undertaken in accordance with the:

- The Unexpected Finds Procedure is provided in Appendix 2.
- Sydney Metro monthly notifications for Sydenham to Campsie and Belmore to Bankstown for August 2020 *are provided in Appendix 3.*
- Heritage Impact Assessment Reports for the proposed works is provided in Appendix 5.

**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 pre-works briefing will be held at least 24 hours prior to mobilising to site, attended by the environmental manager, PC rep and site supervisor for the works. The soil scientist will also attend the meeting. The briefing would include:

- Approved work area boundaries
- Works scope
- Key environmental constraints and mitigation measures
- Roles and responsibilities of all site members

A site induction will be provided to all personnel working under this PCMW. The induction will include relevant environmental aspects and risks associated with works associated with this PCMW. A copy of all induction records will be provided to Sydney Metro upon request.

**Part 5: Community Consultation**

**What community consultation has been undertaken already?**

The Sydney Metro monthly notifications for Sydenham to Campsie and Belmore to Bankstown for August 2020 include reference to the activities proposed (included in Appendix 3)

**What community consultation is planned to be undertaken?**

Canterbury Bankstown Council and Inner West Council will be notified of any works taking place outside of the rail corridor.

If drafted already, attach applicable Community Notification as Appendix 3.

**Part 6: Contact Details**

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

<b>Name:</b>	Luke Palmer	<b>Position:</b>	Project Manager	<b>Phone:</b>	██████████
	Ben Fethers		Environmental Manager		██████████
	Sushane Perera		Communications Manager		██████████

**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.



<b>Name:</b>	Ben Fethers		
<b>Signature:</b>		<b>Date:</b>	03/08/2020

## 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)
<b>Signature:</b>			
<b>Name:</b>	May Li Foong	Fil Cerone	
<b>Date:</b>	4/8/20	6 August 2020	
<b>Comments:</b>			<i>Supporting letter attached as Appendix 4 if necessary.</i>
<b>Conditions:</b>	As per Part 5		<i>Supporting letter attached as Appendix 4 if necessary.</i>
<input checked="" type="checkbox"/>	Approved (by TfNSW)		
<input type="checkbox"/>	Endorsed (by Environmental Representative)		
<input type="checkbox"/>	Rejected		

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## Appendix 1: Environmental Risk Assessment and Environmental Control Maps

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
<b>Air quality and noise emissions</b>	Noise and air quality impacts on nearby sensitive receivers.	6	5	Low	<ul style="list-style-type: none"> <li>Vehicles are to be turned off when not in use</li> <li>Stockpiles are to be covered during windy weather</li> <li>Visual observation of dust emissions will trigger dust suppression mitigation strategies, including wetting of the excavation area</li> <li>Induction and pre-start briefing to include noise mitigation and "good neighbour" approach</li> </ul>	6	6	Low
<b>Mobilisation of contamination</b>	Local contamination and health risk to surveyors	5	5	Low	<ul style="list-style-type: none"> <li>Surveyors will be vigilant for hazardous materials (e.g. asbestos, hydrocarbons, lead, benzo(a)pyrene, acid sulphate soils) that may be uncovered during investigations</li> <li>Unexpected finds procedure (Appendix 2) will be followed. Reference to this procedure will be included within the contractor induction material</li> <li>No refuelling will occur in the work area</li> </ul>	6	5	Low
<b>Work in heritage areas</b>	Potential impacts to heritage may occur as a result of investigation works.	5	4	Low	<ul style="list-style-type: none"> <li>Environmental sensitivities maps will be provided to surveyors as part of the site induction process to ensure heritage areas are avoided.</li> <li>Works would be undertaken in accordance</li> </ul>	5	5	Low



(Uncontrolled when printed)

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
					with the Sydney Metro Unexpected Finds Procedure. <ul style="list-style-type: none"> <li>• Soil sampling locations should avoid moving, impacting or removing any existing brick or stone garden planter boxes or edging wherever possible. Should planter boxes or garden edging require removal for soil sampling, these elements must be reinstated in their original location at the completion of works</li> <li>• Sampling locations would be a minimum of 1m from all structures</li> <li>• In the event potential heritage items are encountered during soil sampling the Sydney Metro Unexpected Heritage Finds Procedure (Appendix 2)</li> </ul>			
<b>Work in biodiversity areas</b>	No impact to biodiversity. Invasive works will not be undertaken in designated biodiversity areas. No vegetation will be impacted by the survey work.	6	5	Low	<ul style="list-style-type: none"> <li>• Environmental sensitivities maps will be provided to surveyors as part of the site induction process to ensure biodiversity areas are avoided</li> <li>• Survey locations will be moved to grassed areas and unvegetated land to preclude the requirement for trimming, removal or</li> </ul>	6	6	Low

(Uncontrolled when printed)

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
					impact to other vegetation by the works			
<b>Erosion and sedimentation control</b>	Runoff of excavated materials into the local stormwater system. Potential for escape of contaminated materials causing local contamination.	6	5	Low	<ul style="list-style-type: none"> <li>Stockpiled material will be stored out of drainage channels and covered during inclement weather</li> <li>Sampled areas will be reinstated to previous levels and removed grass replaced to ensure the works do not create a potential erosion and sedimentation risk.</li> </ul>	6	6	Low
<b>Transport and access</b>	Negative impact to local roads, parking.	6	5	Low	<ul style="list-style-type: none"> <li>Personnel will park within the rail corridor where possible.</li> <li>Personnel will minimise the number of vehicles used to travel to the site</li> <li>Personnel will park legally and observe restrictions at all times</li> <li>Work areas will be demarcated by cones to ensure pedestrians avoid the area.</li> </ul>	6	6	Low
<b>Service strike</b>	Damage to services during excavation which cause an environmental incident	4	4	Moderate	<ul style="list-style-type: none"> <li>Dial before you dig reports have been acquired for all sample locations.</li> <li>Where working close to services, a service locator will be used check each sample site is clear of services</li> <li>Where there is a clash with services the sample location will be moved to a services-free area</li> </ul>	4	6	Low

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
<b>Waste</b>	No waste will be generated	n/a	n/a	n/a	n/a	n/a	n/a	n/a

## 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
<b>Health and Safety (Injury and Disease)</b>	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.
<b>Environment</b>	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 .
<b>Customer Experience/ Operational Reliability</b>	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.
<b>Government/ Stakeholder / Public Trust/ Confidence</b>	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.
<b>Regulatory or Legal Breach</b>	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.
<b>Management Effort/ Organisational Fatigue</b>	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.
<b>Benefit Realisation of Initiative, Program or Project</b>	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.
<b>Budget, Costs or Revenue</b>	< \$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

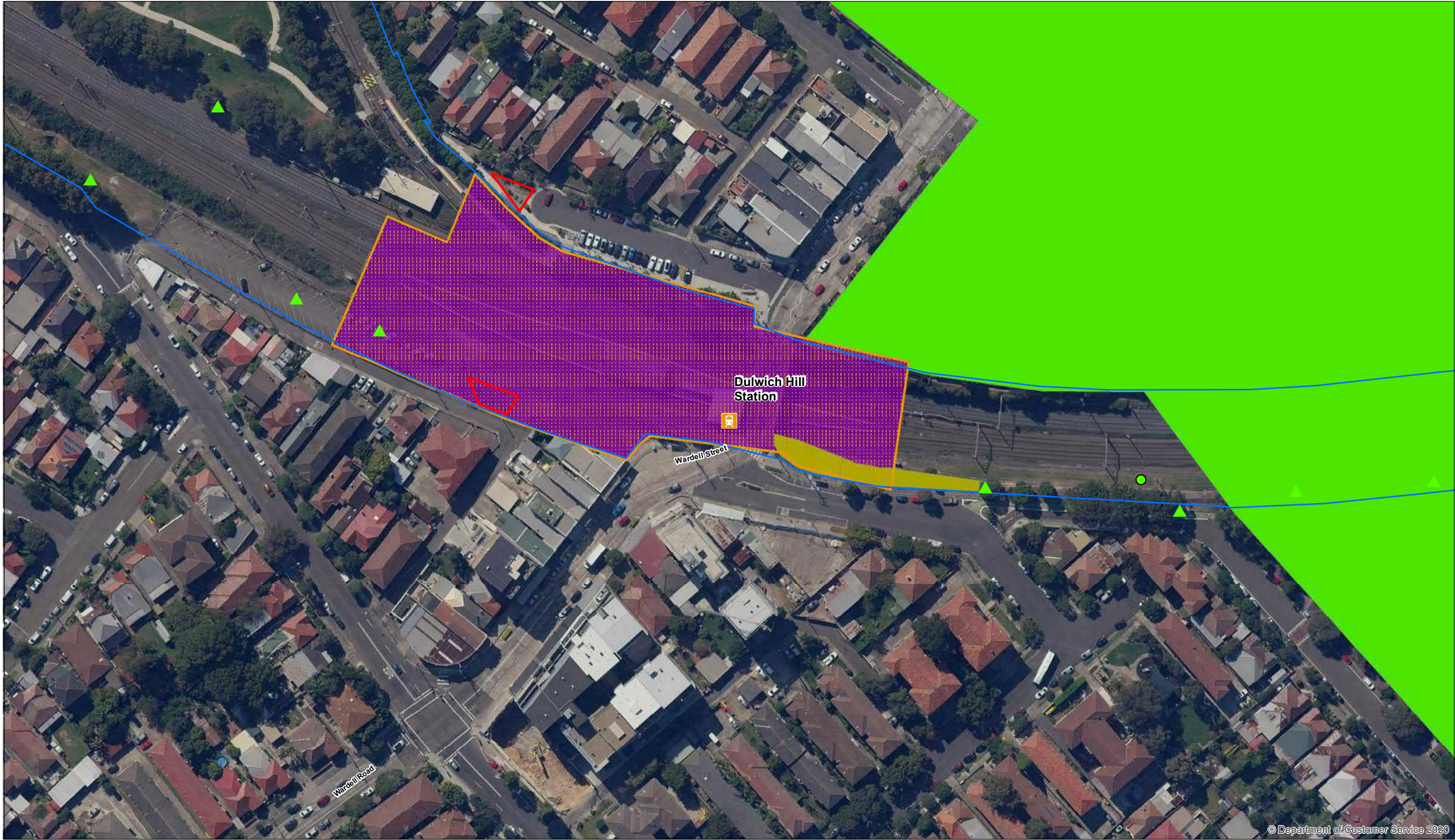
## A3 Risk Matrix

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



# Environmental Sensitivities Maps





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**Southwest Metro Design Services**  
Environmental Sensitivities Map

- Stations
- Corridor Boundary
- Soil Sampling Location (approximate)
- AGJV Contamination (approx. locations)**
- General solid waste
- General solid waste w asbestos
- Restricted solid waste

- GHD 2017 Contamination (approx. locations)**
- General solid waste
- General solid waste w asbestos
- Hazardous waste
- Restricted solid waste
- Not completed

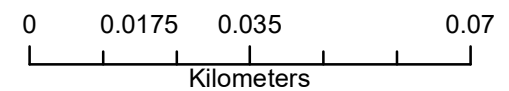
- Threatened Species Sightings**
- Grey-Headed Flying-Fox
- Ibis
- Acacia Pubescens
- Acacia Pubescens Patches
- S170 Heritage
- Archaeological Management Zone

- Potential Archaeological Deposit
- State Heritage
- Local Heritage
- Conservation Areas
- Native Vegetation**
- Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest (ME004, Moderate/good)

- Degraded Turpentine - Grey Ironbark open forest on shale (ME041, Moderate/good-poor)
- Turpentine - Grey Ironbark open forest on shale (ME041, Moderate/good-medium)



1 cm = 12 meters  
GDA 1994 MGA Zone 56  
14/07/2020







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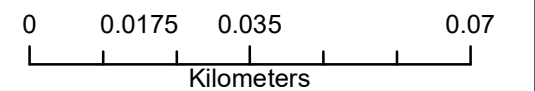
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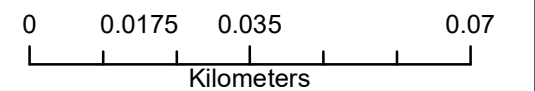
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**Southwest Metro Design Services**

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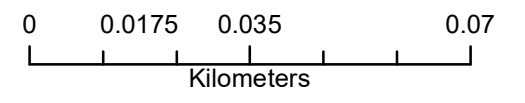
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- Conservation Areas
- Native Vegetation**
  - Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest (ME004, Moderate/good)

- Degraded Turpentine - Grey Ironbark open forest on shale (ME041, Moderate/good-poor)
- Turpentine - Grey Ironbark open forest on shale (ME041, Moderate/good-medium)



1 cm = 12 meters  
GDA 1994 MGA Zone 56  
14/07/2020





## Appendix 2: Environmental Management Documentation

### Unexpected Finds – Contamination

In the case that an environmental consultant is not available for oversight, workers will be vigilant for hazardous materials that may be uncovered during investigations. Unexpected finds include, but are not limited to, odour, visual contamination, acid sulfate soils, deleterious material inclusions, asbestos containing material, underground storage tanks or any other suspect materials. Any unexpected finds will be reported to the Contractor's on-site manager immediately. Additionally, the site owner/occupier should be informed as soon as practical following an unexpected find.

If hazardous materials are uncovered / discovered during excavations the Contractor shall:

- Cease all work in that vicinity (and fence the area if appropriate)
- Remove workers from the vicinity
- An experienced environmental consultant / occupational hygienist would be contacted to assess the potential risks associated with the unexpected finds and provide appropriate management options
- Investigate the nature of the risk of the materials, determine the appropriate response and document the actions in accordance with contractual obligations.
- In the event of a serious unexpected find, which could cause harm to human health and/or the environment, TfNSW and the NSW EPA may need to be informed.

### Unexpected Finds – Heritage

The risks posed by the removal works to Aboriginal or European heritage are expected to be minimal. However, in the event potential heritage items are encountered during soil sampling the Sydney Metro Unexpected Heritage Finds Procedure:

- Stop work, protect item and inform the supervisor
- Contact and engage an archaeologist
- Preliminary assessment and recording of the find

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## Appendix 3: Community Notification

# Notification – Bankstown Line metro upgrade

August 2020

Sydney Metro is Australia's biggest public transport project.

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

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

**Sydney Metro will continue to undertake work across its projects in accordance with current Government advice, and will continue to implement physical distancing and travel and hygiene measures to protect employees and members of the community. Continuing with these works is critical to ensuring project continuity, and the project team will continue to review and assess activities in line with any further updates.**

## Bankstown Line metro upgrade

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

### Detail of day work (along rail corridor from Sydenham to Campsie)





Activities will include:

- Locating underground services using hand held equipment and non-destructive digging close to and in the rail corridor
- Geotechnical/site investigations, tree and soil assessments
- Topographic/ scanning surveys inside the rail corridor and in nearby public areas
- Site establishment work including installation of haul roads and temporary fencing throughout the rail corridor
- Minor devegetation and clearing throughout the rail corridor where required
- Installation of cable service routes and galvanised steel troughing throughout the corridor, including use of a mobile crane in the rail corridor adjacent to Hurlstone Avenue
- Contamination testing at the new substation site south of the rail corridor near the end of Randall Street, Marrickville. Site staff are required to wear personal protective equipment during this activity.
- Piling works and piling removal adjacent to Terrace Road / Ness Avenue rail underbridge, Dulwich Hill
- Transportation of earth works work material via the rail access gates near Ewart Street (Dulwich Hill), Randall Street and Kays Avenue (Marrickville), Charles, Wairoa, Broughton Street (Canterbury) and South Parade (Campsie)
- Storage of materials adjacent to Broughton Street, Canterbury
- Concrete piling, earthworks, retaining wall and rail embankment work between Campsie and Canterbury
- Retaining wall installation in the rail corridor adjacent to Wairoa Street, Canterbury
- Site establishment at 18 Charles Street Canterbury and at the footpath behind Canterbury Olympic Ice Rink
- Installation of fencing between Hurlstone Park and Campsie

[sydnymetro.info](http://sydnymetro.info)



### Contact us

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

### Out-of-hours work

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

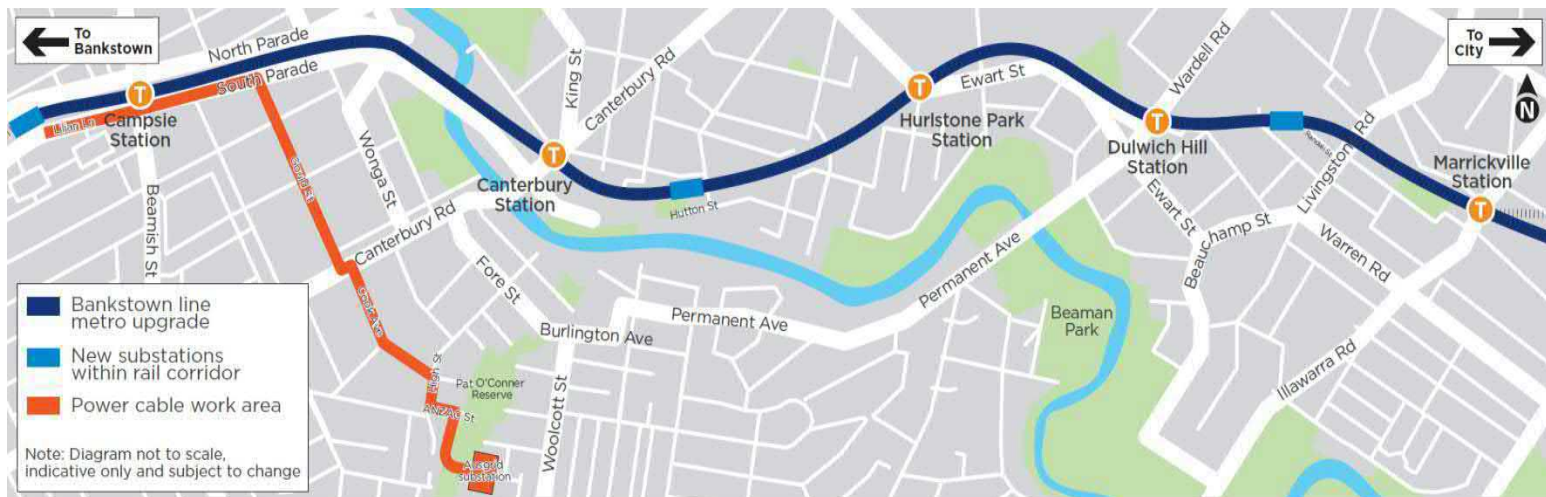
Date / time	Detail of work (along the rail corridor from Sydenham to Campsie)
Weeknights	<ul style="list-style-type: none"> <li>• Site/geotechnical investigations and surveys inside the rail corridor, on station platforms and in nearby public areas</li> <li>• Locating and confirming underground services close to the rail corridor and in nearby public areas</li> <li>• Rail embankment work between Campsie and Canterbury for no more than three nights in a row between the hours of 6pm and 9pm</li> </ul>
During the scheduled rail maintenance shutdown weekend from <b>10pm Friday 7 August to 2am Monday 10 August 2020</b>	<ul style="list-style-type: none"> <li>• Cabling, galvanised steel trough (GST) installation works will take place on <b>rail bridges at</b>:               <ul style="list-style-type: none"> <li>○ Terrace Road / Ness Avenue, Dulwich Hill (including GST support structure installation)</li> <li>○ Wairoa Street, Canterbury</li> <li>○ Foord Avenue, Hurlstone Park</li> </ul>               This will include <b>full road closures at the above locations</b> for the duration of the works. Separate notifications will be issued for the road closures             </li> <li>• Piling, retaining wall activities and installation of GST at Cooks River Bridge and Broughton Street, Canterbury. This will include <b>a full road closure on Broughton Street</b> for the duration of the works (a separate notification will be issued)</li> <li>• Pipeline condition assessment at Canterbury Road rail bridge (works to be undertaken from track level)</li> </ul>

Equipment used for all the above work will include hand held equipment, light vehicles, vacuum suction trucks, mulcher, piling rig, dump trucks, excavators, crane trucks, drilling rig, lifting machinery, elevated work platform, concrete trucks, concrete pumps, rollers, forklift, water cart and power tools. Some of this work may be noisy, however we will take every possible step to minimise noise.

Where footpath or lane closures are required for works, pedestrian detours and signage will be in place to assist the community. Access to buildings and driveways will be maintained at all times.

### Keeping you informed

Properties close to the rail corridor will receive notifications when construction work is scheduled to occur. If you have any questions about the **bulk power supply route/ substations** please contact us and ask for **Grace**. For all other works please ask for **Melanie**. You can contact us on **1800 171 386** (24 hour community information line) or e-mail [SouthwestMetro@transport.nsw.gov.au](mailto:SouthwestMetro@transport.nsw.gov.au). **Thank you for your cooperation while we complete this essential work.**



# Bankstown Line metro upgrade

August/ September 2020

Sydney Metro is Australia’s biggest public transport project.

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

In 2024, Sydney will have 31 metro railway stations and a 66 km standalone metro railway system – the biggest urban rail project in Australian history. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre.

The upgrade of the T3 Bankstown Line to metro standards between Sydenham and Bankstown received planning approval on 19 December 2018.

**Sydney Metro will continue to undertake work across its projects in accordance with current Government advice, and will continue to implement physical distancing and travel and hygiene measures to protect employees and members of the community. Continuing with these works is critical to ensuring project continuity, and the project team will continue to review and assess activities in line with any further updates.**

## Bankstown Line metro upgrade

In June and July, early work will continue along the T3 Bankstown Line between Belmore and Bankstown stations (weather and site conditions permitting). Access to the rail corridor will be via existing rail corridor and pedestrian access gates.

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.

### Day work

- Work will be carried out during **project standard construction hours Monday to Friday 7am - 6pm and Saturday 8am - 6pm.**

Location	Detail
Whole rail corridor (Belmore to Bankstown)	<p>Activities will include:</p> <ul style="list-style-type: none"> <li>• Locating and confirming underground services which will involve using hand held equipment and non-destructive digging close to and inside the rail corridor</li> <li>• Site/ geotechnical investigations and soil assessments</li> <li>• Tree assessments and topographic/ scanning surveys in the rail corridor, at stations and in nearby public areas</li> <li>• Non intrusive pipe inspections on station platforms between Belmore to Bankstown</li> </ul>



## Out-of-hours work

Due to the nature of some activities and for the safety of workers, some work will occur outside standard construction hours when trains are not running.

Date/ time	Detail
Weeknights	Activities along the rail corridor from Belmore to Bankstown will include: <ul style="list-style-type: none"> <li>• Site/geotechnical investigations and topographic surveys inside the rail corridor, on station platforms and in nearby public areas</li> <li>• Locating and confirming underground services close to and inside the rail corridor</li> </ul>

Equipment used for all the above work will include vacuum trucks, medium rigid trucks and hand tools. Access to buildings and driveways will be maintained at all times. Where temporary footpath or lane closures are required, signage and traffic control will be in place for the safety of pedestrians and motorists.

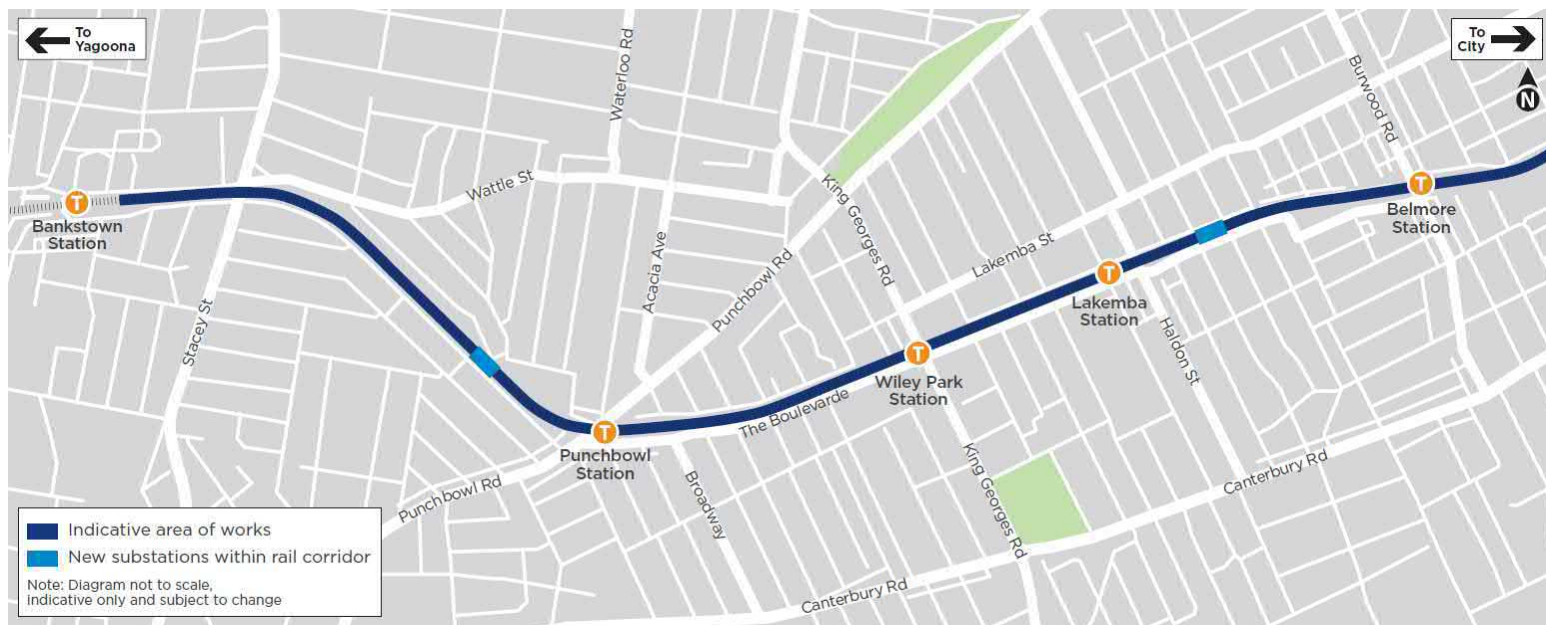
## Keeping you informed

Properties close to the rail corridor will receive notifications when construction 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 e-mail, please contact us using the details below. If you have any questions about the **substations** please contact us and ask for **Grace**. For **all other works please ask for Melanie**. You can contact us on **1800 171 386 (24 hour community information line)** or e-mail

[SouthwestMetro@transport.nsw.gov.au](mailto:SouthwestMetro@transport.nsw.gov.au).

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



## Contact us

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-  [Southwestmetro@transport.nsw.gov.au](mailto:Southwestmetro@transport.nsw.gov.au)
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-  If you need an interpreter, contact TIS National on 131 450 and ask them to call 1800 171 386

[sydneymetro.info](http://sydneymetro.info)





## **Appendix 4: Environmental Representative Supporting Letter**

## Appendix 5: Heritage Impact Assessment



artefact

24 July 2020

Jonathan Steele  
Principal Environmental Consultant  
Mott MacDonald

Dear Mr Steele,

**Re: Sydney Metro City and Southwest Design – Heritage Impact Assessment (HIA) for soil sampling investigation**

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

As part of the preparation of the Environmental Impact Statement (EIS) and Submissions and Preferred Infrastructure Report (SPIR), Artefact Heritage (Artefact) prepared non-Aboriginal archaeological assessments which outlined areas of potential significant non-Aboriginal archaeological remains at several of the stations on the T3 Bankstown Line.

The Critical State Significant Infrastructure (CSSI) project was approved by the Minister for Planning on 12 December 2018 (SSI 8256). As part of the Revised Environmental Mitigation Measures (REMM) for the project, NAH12 indicates that mitigation measures outlined in the Non-Aboriginal archaeological assessments<sup>1</sup> for the project must be adhered to during design, investigation and construction works for the project.

Prior to the preparation of a Construction Environmental Management Plan the project determination designated investigation work as Low Impact Activities which are defined as activities which are not construction, but which include:

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*(b) investigations including investigative drilling and excavation.*

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Where Low Impact Activities would occur within areas included within the curtilage of items listed on the State Heritage Register (SHR) or within areas of known or expected archaeological potential, consultation with Heritage NSW must be conducted prior to the Low Impact Activities being approved.

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<sup>1</sup> Artefact 2018a. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade – Submissions and Preferred Infrastructure Report Non-Aboriginal Heritage Assessment*. Report to Transport for NSW; Artefact 2018b. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade – Historical Archaeological Assessment & Research Design*. Report to Transport for NSW.

As part of investigative works for the project, Metron T2M are proposing to conduct soil sampling assessments at several locations throughout the proposed project area. This would involve manual excavation with hand tools or hand auger to a depth of 500 mm to provide soil information to develop landscaping and vegetation planting regimes for the project.

Soil sampling has been proposed at eight stations on the Bankstown Line. The following HIA memo assesses potential adverse impacts against significant fabric and significant heritage values for all heritage items that soil sampling would be conducted within. Soil sampling which would be conducted within areas of predicted non-Aboriginal archaeological potential are also assessed in this HIA memo. An Archaeological Work Methods Statement (AMS) is also provided for those works which would be conducted in areas where impacts to predicted archaeological resources may occur.

### Proposed works

Metron T2M are proposing to undertake soil sampling investigations at Marrickville, Dulwich Hill, Hurlstone Park, Canterbury, Belmore, Lakemba, Wiley Park, and Punchbowl Stations. Soil sampling areas have been proposed, within which single soil sampling units no greater than 500 mm in horizontal would be excavated. Final locations for soil sampling units would be determined by ground conditions during excavation, within the overall proposed soil sampling area.

Excavation would be conducted with hand tools and hand auger and would be no more than 500 mm in depth. Soil samples would be taken off site for analysis and the excavation areas made restored to their original condition following excavation. No machine excavation equipment would be used.

### Previous assessments

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 Project. 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 Non-Aboriginal Heritage Impact Assessment* (Artefact 2017)
- *Sydney Metro City & Southwest – Sydenham to Bankstown Historical Archaeological Assessment & Research Design* (ARD) (Artefact 2018)

### Authorship

This report was prepared by Sarah Hawkins (Heritage Consultant) with management input and review from Duncan Jones (Principal).

## Built heritage impact assessment

### Heritage listings

The proposed works would be undertaken within the curtilages of the following items listed on statutory heritage registers, as provided in Table 1.

**Table 1. Heritage listings within the project area**

Item	Significance	Listing
<b>Marrickville Railway Station Group</b>	State	<ul style="list-style-type: none"> <li>● State Heritage Register (SHR 01186)</li> <li>● RailCorp s170 Heritage and Conservation Register (SHI 4801091)</li> <li>● Marrickville LEP 2011 (I89)</li> </ul>
<b>Dulwich Hill Railway Station Group</b>	Local	<ul style="list-style-type: none"> <li>● RailCorp s170 Heritage and Conservation Register (SHI 4801909)</li> </ul>
<b>Hurlstone Park Railway Station Group</b>	Local	<ul style="list-style-type: none"> <li>● RailCorp s170 Heritage and Conservation Register (SHI 4802051)</li> <li>● Canterbury LEP 2012 (I124)</li> </ul>
<b>Canterbury Railway Station Group</b>	State	<ul style="list-style-type: none"> <li>● State Heritage Register (SHR 01109)</li> <li>● RailCorp s170 heritage inventory register (SHR 4801100)</li> </ul>
<b>Belmore Railway Station Group</b>	Local	<ul style="list-style-type: none"> <li>● State Heritage Register (SHR 01081)</li> <li>● RailCorp s170 Heritage and Conservation Register (SHI 4801084)</li> <li>● Canterbury LEP 2012 (I11)</li> </ul>
<b>Post-war bus shelter and public lavatories (Belmore project area)</b>	Local	<ul style="list-style-type: none"> <li>● Canterbury LEP 2012 (I29)</li> </ul>
<b>Lakemba Railway Station Group</b>	Local	<ul style="list-style-type: none"> <li>● RailCorp s170 heritage inventory register (SHI 4801916)</li> <li>● Canterbury LEP 2012 (I143)</li> </ul>
<b>Wiley Park Railway Station Group</b>	Local	<ul style="list-style-type: none"> <li>● RailCorp s170 Heritage and Conservation Register (SHI 4801946)</li> <li>● Canterbury LEP 2012 (I159)</li> </ul>
<b>Punchbowl Railway Station Group</b>	Local	<ul style="list-style-type: none"> <li>● RailCorp s170 Heritage and Conservation Register (SHI 4802009)</li> <li>● Canterbury LEP 2012 (I155)</li> </ul>

### Physical impacts to heritage significant fabric

Soil sampling areas at all stations are located in landscaped or grassed area locations. No soil sampling areas are located within, or immediately abutting, any heritage significant structure. As such, no significant fabric would be modified, altered or impacted by the excavation works.

A summary of the location of proposed soil sampling areas in relation to significant fabric at all stations is provided in Table 2. The locations of proposed soil sampling areas at Marrickville, Canterbury and Belmore Stations are provided in Figure 1 to Figure 3.

**Table 2. Physical impacts to heritage significant fabric**

Heritage item and significance	Significant fabric within 10 m of soil sampling areas	Discussion of sampling locations in relation to heritage significant fabric	Impact to heritage significant fabric
<b>Marrickville Railway Station Group</b> State	Platform 2 (Exceptional) Platform 2 building (High) Platform 2 Booking Office (Exceptional)	Four soil sampling areas are proposed to the south of platform 2, in a landscaped area between the public access pedestrian path and platform 2.  All soil sample areas are situated a minimum of 2 m from any structure of significant fabric. No significant built fabric would be modified, altered or impacted by the proposed works.	<b>Nil</b>
<b>Dulwich Hill Railway Station Group</b> Local	No significant fabric within 10 m of soil sampling areas	Two soil sampling areas are proposed outside of the rail corridor. One soil sampling area is proposed in existing landscaping to the north of the station at the western end of Bedford Crescent. A second soil sampling area is proposed to the south of the station in landscaped areas to the east of the Ewart Lane commuter carpark.  Soil sampling areas are located more than 30 m from heritage significant structures. No significant built fabric would be modified, altered or impacted by the proposed works.	<b>Nil</b>
<b>Hurlstone Park Railway Station Group</b> Local	Platform 2 (High) Platform 2 building (High) Landscape/ Natural features (High)	Two soil sampling areas are proposed to the south-east of platform 2 within a grassed verge area on the outer edge of the rail corridor.  All soil sample areas are situated a minimum of 2 m from any structure of significant fabric. No significant built fabric would be modified, altered or impacted by the proposed works.	<b>Nil</b>
<b>Canterbury Railway Station Group</b> State	Platform 2 (High)	Four soil sampling areas are proposed at Canterbury Station. Two areas would be located within open area near the Charles Street railway corridor entrance. One soil sampling area would be located to the west of Broughton Street adjacent to public toilets. One soil sampling area would be located to the south of the Canterbury station platform 2 footbridge and access ramp, within a grassed area inside the railway corridor.  All soil sample areas are situated a minimum of 2 m from any structure of significant fabric. No significant built fabric would be modified, altered or impacted by the proposed works.	<b>Nil</b>

Heritage item and significance	Significant fabric within 10 m of soil sampling areas	Discussion of sampling locations in relation to heritage significant fabric	Impact to heritage significant fabric
<p><b>Belmore Railway Station Group</b></p> <p>State</p>	<p>No significant fabric within 10 m of soil sampling areas</p>	<p>Three soil sampling areas are proposed to be excavated at Belmore Station. Two soil sample areas would be located within grassed areas at the Tobruk Avenue commuter carpark. One soil sample would be located on the corner of Redman Parade and Burwood Road.</p> <p>All soil sample areas are situated a minimum of 5 m from any structure of significant fabric at Belmore Station. No significant built fabric would be modified, altered or impacted by the proposed works.</p>	<p><b>Nil</b></p>
<p><b>Post-war bus shelter and public lavatories</b></p> <p>Local</p>	<p>Bus Shelter building</p>	<p>One proposed soil sampling area near Belmore Station would be located in a public garden on the corner of Redman Parade and Burwood Road. This soil sampling area would be directly adjacent to the heritage item.</p> <p>The soil sampling area directly abuts the bus shelter as well as containing manicured garden beds. The soil sampling location within this area should be selected a minimum of 1 m from these items. This would result in no modifications, alterations or impacts to significant heritage fabric.</p>	<p><b>Nil</b></p>
<p><b>Lakemba</b></p> <p>Local</p>	<p>No significant fabric within 10 m of soil sampling areas</p>	<p>Two soil sampling areas are proposed located to the north of the railway corridor in gardens located to the south of Railway Parade.</p> <p>All soil sample areas are situated a minimum of 10 m from any structure of significant fabric at Belmore Station. No significant built fabric would be modified, altered or impacted by the proposed works.</p>	<p><b>Nil</b></p>
<p><b>Wiley Park</b></p> <p>Local</p>	<p>Platform 1 (High)</p> <p>Platform 1 Building (High)</p> <p>Platform 2 (High)</p> <p>Landscape/Natural features (Moderate)</p>	<p>Six soil sampling areas are proposed at Wiley Park Station. Four soil sampling areas would be located to the north of platform 1 in grassed areas to the south of Stanlea Parade. One soil sampling would be located in grassed areas to the south of the platform 1 access ramp. One soil sampling location would be located in grassed areas to the north of the platform 2 access ramp.</p> <p>Five of the soil sampling areas would be located a minimum of 2 m of all heritage significant structures. No significant built fabric would be modified, altered or impacted by the excavation of these soil samples.</p> <p>One soil sampling area would be located directly abutting the platform 1 station building. The soil sampling location within this area should be selected</p>	<p><b>Nil</b></p>

Heritage item and significance	Significant fabric within 10 m of soil sampling areas	Discussion of sampling locations in relation to heritage significant fabric	Impact to heritage significant fabric
		a minimum of 1 m from this item, in accordance with recommendations in this HIA.	
<b>Punchbowl</b>  Local	Overhead booking office (high)	<p>Two soil sampling areas are proposed at Punchbowl Station. One soil sampling area would be located to the south of the rail corridor in a narrow grass covered area to the north of the Boulevard commuter car park. One soil sampling area would be located in a small landscaped area to the north of the Punchbowl overhead booking office, directly to the east of Punchbowl Road.</p> <p>All soil sample areas are situated a minimum of 2 m from any structure of significant fabric. No significant built fabric would be modified, altered or impacted by the proposed works.</p>	<b>Nil</b>

### Visual impacts to heritage significance

The proposed works would involve soil sampling with hand tools and hand augers. It is expected that the proposed works would backfill auger holes and would replace all vegetation, including grassed surfaces, to their pre-existing condition following the completion of works. So long as reinstated surfaces are made good to match existing surfaces, the proposed works would not result in any adverse visual heritage impacts at any station, or at the Belmore Post-War Bus Shelter and Public Lavatory heritage item.

Therefore, the proposed works would have **nil** visual impacts to any heritage items within the project area.



Figure 1. Soil sampling locations and heritage curtilages at Marrickville Station



Source: C:\Users\Shawkins\Documents\19074 Soil Sampling Memo\Artefact GIS Template (with Heritage layers).gpx



**Soil Sample Locations**  
19074 Sydney Metro City & Southwest Design Advice  
LGA: Inner West

Scale: 1:1500  
Size: A4  
Date: 20-07-2020





Figure 2: Soil sampling locations and heritage curtilages at Canterbury Station



Source: C:\Users\SHawkins\Documents\19074\_Soil\_Sampling\_Memo\Artifact\_QGIS\_Template (with Heritage Layers).qgt

 **Soil Sampling Locations - Canterbury Station**  
19074 Sydney Metro City & Southwest Design Advice  
LGA: Canterbury-Bankstown

Scale: 1:1500  
Size: A4  
Date: 20-07-2020





Figure 3. Soil Sampling locations and heritage curtilages at Belmore Station



Source: C:\Users\SHawkins\Documents\19074 Soil Sampling Memo\Artefact QGIS Template (with Heritage layers).qgz

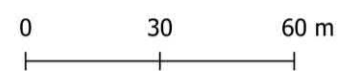


### Soil Sampling Locations - Belmore Station

19074 Sydney Metro City and Southwest Design Advice

LGA: Canterbury-Bankstown

Scale: 1:1500  
Size: A4  
Date: 20-07-2020



## Archaeological impact assessment

### Scope of assessment

The ARD prepared for the SPIR for the project provided a detailed archaeological assessment for all stations on the T3 Bankstown Line. Significant archaeological remains were only identified at Marrickville, Canterbury, Belmore and Lakemba Stations in the ARD. As such this archaeological impact assessment does not include assessments of soil sampling areas at Dulwich Hill, Hurlstone Park, Wiley Park and Punchbowl Stations as there are no significant non-Aboriginal archaeological remains at these stations to be impacted.

The following impact assessment has been developed based on historical research and detailed land use phasing provided in the ARD. This archaeological impact assessment should be read in conjunction with relevant sections of the ARD.

### Marrickville Station

Four soil sampling areas are proposed at Marrickville Station, referred to as SS1, SS2, SS3, and SS4.

The project ARD has previously predicted archaeological remains of local significance to be present at Marrickville Station.<sup>2</sup> These soil sampling areas are also located within Archaeological Management Zones (AMZs) outlined in the ARD. Archaeological impact assessments for these soil sampling areas are discussed in Table 3. The location of these soil sampling areas with respect to archaeological management zones for Marrickville Station is provided in Figure 4.

**Table 3: Archaeological impact assessment for soil sampling areas at Marrickville Station**

Soil sampling area	Potential archaeological remains	Archaeological impact assessment	AMZ and proposed management
<b>SS1</b> – located to the south of platform 2, to the west of the platform 2 building	Moderate to high potential for locally significant remains related to phase 2 (1890 – 1920) of Marrickville Station railway infrastructure such as culverts, ceramic service pits, utilities such as woodstave sewer or ceramic pipes, brick drainage pits and isolated artefact deposits..	<p>This soil sampling area is located within landscaped garden beds which have been present in this location since the construction of the station in the 1890s. No known significant structural remains are predicted to be in this location.</p> <p>While this is located within an area of moderate to high archaeological potential, it is not considered likely that isolated artefact deposits would be present within this garden area.</p> <p>As there are no identified former structures in this location, the impact to archaeological resources from SS1 is considered negligible.</p>	AMZ 1 – Archaeological monitoring with salvage as required.

<sup>2</sup> Artefact Heritage 2018. pp. 40 - 50

Soil sampling area	Potential archaeological remains	Archaeological impact assessment	AMZ and proposed management
<p><b>SS2</b> – located to the south of platform 2 to the east of the platform 2 building</p>	<p>Moderate to high potential for locally significant remains related to phase 2 (1890 – 1920) of Marrickville Station railway infrastructure such as culverts, ceramic service pits, utilities such as woodstave sewer or ceramic pipes, brick drainage pits and isolated artefact deposits..</p>	<p>This soil sampling area is located within landscaped garden beds which have been present in this location since the construction of the station in the 1890s. No known significant structural remains are predicted to be in this location.</p> <p>While this is located within an area of moderate to high archaeological potential, it is not considered likely that isolated artefact deposits would be present within this garden area.</p> <p>As there are no identified former structures in this location, the impact to archaeological resources from SS2 is considered negligible.</p>	<p>AMZ 1 – Archaeological monitoring with salvage as required.</p>
<p><b>SS3</b> – located to the south of the rail corridor, to the west of Riverdale Avenue</p>	<p>Moderate to high potential for locally significant remains related to phase 2 (1890 – 1920) of Marrickville Station railway infrastructure such as culverts, ceramic service pits, utilities such as woodstave sewer or ceramic pipes, brick drainage pits and isolated artefact deposits..</p>	<p>This soil sampling area is located near to former brick culverts identified as locally significant may be present. However, manual excavation with hand tools would not damage the brick structure.</p> <p>The impact to significant archaeological resources from excavation of SS3 is negligible.</p>	<p>AMZ 2 – Archaeological Work Methods Statement (AMS).</p>
<p><b>SS4</b> – located to the south of the rail corridor, between Riverdale Avenue and Victoria Road</p>	<p>Moderate to high potential for locally significant remains related to phase 2 (1890 – 1920) of Marrickville Station railway infrastructure such as culverts, ceramic service pits, utilities such as woodstave sewer or ceramic pipes, brick drainage pits and isolated artefact deposits..</p>	<p>This soil sampling area is located near to former brick culverts identified as locally significant may be present. However, manual excavation with hand tools would not damage the brick structure.</p> <p>The impact to significant archaeological resources from excavation of SS4s is negligible.</p>	<p>AMZ 2 – Archaeological Work Methods Statement (AMS).</p>



Figure 4. Location of soil sampling within Archaeological Management Zones at Marrickville Station



## Canterbury Station

Four soil sampling areas are proposed at Canterbury Station, referred to as SS1, SS2, SS3, and SS4.

The project ARD has previously predicted archaeological remains of local significance to be present at Canterbury Station.<sup>3</sup> These soil sampling areas are also located within Archaeological Management Zones (AMZs) outlined in the ARD. Archaeological impact assessments for these soil sampling areas are discussed in Table 4. The location of these soil sampling areas with respect to archaeological management zones for Canterbury Station is provided in Figure 5.

**Table 4: Archaeological impact assessment for soil sampling areas at Canterbury Station**

Soil sampling area	Potential archaeological remains	Archaeological impact assessment	AMZ and proposed management
<b>SS1</b> – located in the rail corridor access carpark entered from Charles Street	Moderate potential for locally significant archaeological remains associated with the first phase of use of Canterbury Station (1895 – 1943).  Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track.	While this portion of the rail corridor was previously part of the wider yard of the Canterbury rail siding, there are no known or identified former structures within this area. Archaeological deposits are more likely to be related to isolated artefactual or former infrastructural finds. Manual hand excavation is not considered likely to impact these items when conducted under approved archaeological management protocols. Impacts to archaeological resources would be negligible.	AMZ 2 – Archaeological Work Methods Statement (AMS).
<b>SS2</b> – located in the rail corridor access carpark entered from Charles Street	Moderate potential for locally significant archaeological remains associated with the first phase of use of Canterbury Station (1895 – 1943).  Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track.	This soil sampling area is located in a part of the former Canterbury yard, where historical aerial imagery indicates former out-buildings or sheds may have been located. Archaeological remains would be structural in nature (brick or concrete footings) and would not be impacted by manual excavation techniques which are intending to collect loose soil only. Under approved archaeological management protocols, these works would result in negligible impacts to significant archaeological resources.	AMZ 2 – Archaeological Work Methods Statement (AMS).

<sup>3</sup> Artefact Heritage 2018. pp. 70 - 80

Soil sampling area	Potential archaeological remains	Archaeological impact assessment	AMZ and proposed management
<p><b>SS3</b> – located to the north of the rail corridor between existing bike storage lockers and public toilets</p>	<p>No predicted significant archaeological remains were identified in this location in the project ARD.</p>	<p>No archaeological remains are predicted in this location and ground excavation would result in no impacts to significant remains. Nil impact.</p>	<p>AMZ 3 – Unexpected finds procedure.</p>
<p><b>SS4</b> – located to the south of the rail corridor, between Riverdale Avenue and Victoria Road</p>	<p>Moderate potential for locally significant archaeological remains associated with the first phase of use of Canterbury Station (1895 – 1943).  Archaeological remains associated with the early phase of minor railway buildings (such as toilets) prior to track realignment such as postholes, brick footings, former floor surfaces, and early infrastructure such as ceramic service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track.</p>	<p>This soil sampling area is situated in an area which was open yard space for the former Canterbury siding. While unexpected former structures may be present at this location, it is considered unlikely that archaeological remains related to undocumented structures would be present in this location. Manual excavation in this location under approved archaeological management protocols would result in negligible impacts.</p>	<p>AMZ 2 – Archaeological Work Methods Statement (AMS).</p>



Figure 5. Soil sampling locations and Archaeological Management Zones at Canterbury Station



## Belmore Station

Three soil sampling areas are proposed at Belmore Station, referred to as SS1, SS2, and SS3.

The project ARD has previously predicted archaeological remains of local significance to be present at Belmore Station.<sup>4</sup> These soil sampling areas are also located within Archaeological Management Zones (AMZs) outlined in the ARD. Archaeological impact assessments for these soil sampling areas are discussed in Table 5Table 4. The location of these soil sampling areas with respect to archaeological management zones for Belmore Station is provided in Figure 6.

**Table 5: Archaeological impact assessment for soil sampling areas at Belmore Station**

Soil sampling area	Potential archaeological remains	Archaeological impact assessment	AMZ and proposed management
<b>SS1</b> – located in a landscaped garden area on the corner of Redman Parade and Burwood Road	No predicted significant archaeological remains were identified in this location in the project ARD.	No archaeological remains are predicted in this location and ground excavation would result in no impacts to significant remains. Nil impact.	AMZ 3 – Unexpected finds procedure.
<b>SS2</b> – located in a landscaped area to the west of the Tobruk Avenue carpark	No predicted significant archaeological remains were identified in this location in the project ARD.	No archaeological remains are predicted in this location and ground excavation would result in no impacts to significant remains. Nil impact.	AMZ 3 – Unexpected finds procedure.
<b>SS3</b> – located in a landscaped area to the west of the Tobruk Avenue carpark	No predicted significant archaeological remains were identified in this location in the project ARD.	No archaeological remains are predicted in this location and ground excavation would result in no impacts to significant remains. Nil impact.	AMZ 3 – Unexpected finds procedure.

<sup>4</sup> Artefact Heritage 2018. pp. 94 - 100



Figure 6. Archaeological Management Zones and soil sampling locations at Belmore



## Lakemba Station

Two soil sampling areas are proposed at Lakemba Station, referred to as SS1 and SS2.

The project ARD has previously predicted archaeological remains of local significance to be present at Lakemba Station.<sup>5</sup> These soil sampling areas are also located within Archaeological Management Zones (AMZs) outlined in the ARD. Archaeological impact assessments for these soil sampling areas are discussed in Table 6. The location of these soil sampling areas with respect to archaeological management zones for Lakemba Station is provided in Figure 7.

**Table 6: Archaeological impact assessment for soil sampling areas at Lakemba Station**

Soil sampling area	Potential archaeological remains	Archaeological impact assessment	AMZ and proposed management
<b>SS1</b> – located in an open grassed area to the north of the rail corridor on level ground.	Low to moderate potential to contain archaeological remains associated with the first timber island platform at Lakemba Station, which may be of local significance. Additional potential remains include railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes. These remains may reach the threshold of local significance	While this area was formerly within the wider precinct of the first Lakemba Station, this portion of the site was consistently used as open landscaped garden throughout the history of the station. Impacts to significant archaeological resources in this area are considered to be nil.	AMZ 2 – Archaeological Work Methods Statement (AMS).
<b>SS2</b> – located in enclosed bin / storage area with garden landscaping, directly to the west of the Railway Parade station entrance.	Low to moderate potential to contain archaeological remains associated with the first timber island platform at Lakemba Station, which may be of local significance. Additional potential remains include railway infrastructure such as brick drainage pits, electrical conduits and pits, stanchion bases, timber footings and postholes. These remains may reach the threshold of local significance	While this area was formerly within the wider precinct of the first Lakemba Station, this portion of the site was consistently used as open landscaped garden throughout the history of the station. Impacts to significant archaeological resources in this area are considered to be nil.	AMZ 2 – Archaeological Work Methods Statement (AMS).

<sup>5</sup> Artefact Heritage 2018. pp. 119 - 120



Figure 7. Lakemba Archaeological Management Zones with soil sampling locations



## Archaeological management and mitigation measures

The proposed soil sampling works at Marrickville, Canterbury and Lakemba Stations would be conducted in areas which require the preparation of an AMS. The predicted impacts to significant archaeological remains from the soil sampling works at these stations has been assessed as negligible.

In accordance with the archaeological management methodology outlined in the Archaeological Research Design (ARD) for the project:

*“An AMS would be prepared prior to construction works with the potential to impact archaeological resources.”<sup>6</sup>*

The proposed soil sampling investigations at Marrickville, Canterbury, and Lakemba Stations will occur in areas assessed as having archaeological sensitivity. While the degree of impact to significant archaeological remains would be considered negligible at most, the archaeological sensitivity should be managed in accordance with the potential significance and with the environmental approvals for the project. Therefore, an AMS has been prepared for these works.

### Archaeological Method Statement

#### Archaeological monitoring

Proposed works at Marrickville, Lakemba, and Canterbury Stations have low risk and possibility to impact archaeological remains in archaeologically sensitive areas. As such, ground disturbance works at these locations should be archaeologically monitored.

Archaeological monitoring involves the nominated archaeologist/s being present during ground disturbance works which may impact on locally significant archaeological remains. If archaeological remains are encountered, works in the immediate area would cease until the archaeologist/s has adequately investigated and recorded the remains. Truncated and disturbed remains, which are not significant or do not have research potential, such as former rail infrastructure would be recorded.

As all soil sampling works involve manual excavation with hand tools and hand augers, it is not expected for impacts to potential structural archaeological remains to be likely to occur. As the aim of the soil sampling program is to collect loose soil, in the event that structural remains were identified in a soil sampling location, the location would be moved within the wider soil sampling area, under the direction of the monitoring archaeologist, to ensure that the structural remains are not impacted.

All subsurface remains which are identified would be archaeologically recorded. Archaeological recording would involve photographing the proposed works and writing a monitoring diary detailing the occurring works and any archaeological finds. Any archaeological remains would be photographed *in situ* and significant remains would be illustrated in plan form by the archaeologist. Should no archaeological relics, deposits or structures be identified during archaeological monitoring, the monitoring archaeologist would record soil conditions and stratigraphy.

In the event that significant and intact remains not identified in the ARD are encountered during works, all excavation works would cease, the remains protected and further assessment undertaken. Additional consultation with Heritage NSW may be required and additional archaeological management undertaken prior to works being able to proceed.

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<sup>6</sup> Artefact 2017b, p. 128.

On site archaeologists would not be required to monitor backfilling and reinstatement of ground surfaces.

## Conclusions and recommendations

### Conclusions

The proposed works would involve manual excavation with hand tools and augers to a maximum depth of 500 mm, located within the heritage curtilages of eight listed railway stations on the Bankstown line. These works would not result in adverse impacts to heritage significant fabric.

The proposed works would involve soil sampling using hand tools and augers within four areas where the potential for locally significant archaeological remains have been identified. However, the soil sampling excavation works have been assessed as unlikely to impact archaeological remains. Stations where soil sampling works would occur within areas of predicted archaeological remains are:

- Marrickville Station
- Canterbury Station
- Lakemba Station

These works would be classified as low impact environmental activities under the instrument of approval for the project. As works at Marrickville, Canterbury and Belmore Stations are taking place within the curtilage of heritage items listed on the State Heritage Register, and works at Lakemba Station would take place in an area mapped in the ARD as archaeologically sensitive, Heritage NSW should be consulted to confirm that these works would be considered low impact environmental activities.

### Recommendations

Following confirmation that the works are approved as low impact activities; the following recommendations must be followed during the soil sampling works to help minimise the risk of inadvertent heritage impacts or impacts to significant archaeological remains:

- A program of archaeological monitoring must be conducted during soil sampling excavation works at:
  - Marrickville Station
  - Canterbury Station
  - Lakemba Station
- Archaeological monitoring would adhere to the AMS methodology provided in this document as well as relevant guidelines outlined the ARD for the project
- Soil sampling excavation works at all other stations would be undertaken in accordance with the Sydney Metro Unexpected Finds Procedure.
- Soil sampling locations should avoid moving, impacting or removing any existing brick or stone garden planter boxes or edging wherever possible. Should planter boxes or garden edging require removal for soil sampling, these elements must be reinstated in their original location at the completion of works

- Soil sampling locations should ensure a minimum of 1 m separation from all structures of significant fabric within soil sampling areas
- Soil sampling locations should not involve the removal of any existing planted or mature vegetation within soil sampling areas
- All soil sampling excavations must ensure that the excavation area is 'made good' following sampling. This would involve the following activities wherever possible:
  - Grass or turf should be removed from the topsoil of proposed soil sampling locations wherever possible so that this cover can be reinstated following excavation
  - All soil sampling units must be backfilled with excavated spoil or clean material following excavation.

Regards,

A handwritten signature in black ink that reads "Duncan Jones". The signature is written in a cursive style with a large, stylized 'D'.

Duncan Jones  
Principal  
Artefact Heritage