

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:	METRON T2M
Project:	Southwest Metro Design Services (SMDS)
Application Title: (e.g. Smith St trenching works)	General site-wide minor works (Bankstown Station)
Application Number:	SMDS-PCMW-005
Application Date:	Rev00:14/02/2020 Rev01:25/02/2020 Rev02:26/02/2020 Rev03:27/02/2020 Rev04:03/03/2020
Planning Approval:	<ul style="list-style-type: none"> Sydney Metro City and Southwest – Sydenham to Bankstown – Environmental Impact Statement (EIS) Sydney Metro City and Southwest – Sydenham to Bankstown – Submissions and Preferred Infrastructure Report (SPIR) Sydney Metro City and Southwest Infrastructure Approval SSI-8256
Minor Works Categories: <ul style="list-style-type: none"> Highlight as applicable. If Items 4, 8 or 11 are applicable, this form must be endorsed by an Environmental Representative. 	<ol style="list-style-type: none"> Survey, survey facilitation and investigation works (including road and building dilapidation survey works, drilling and excavation). Treatment of contaminated sites. Establishment of ancillary facilities (excluding demolition), including construction of ancillary facility access roads and providing facility utilities. Operation of ancillary facilities that have minimal impact on the environment and community. Minor clearing and relocation of vegetation (including native). Installation of mitigation measures, including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments. Property acquisition adjustment works, including installation of property fencing and utility relocation and adjustments to properties. Utility relocation and connections. Maintenance of existing buildings and structures. 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. 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.

<p>Planning Authority Determination: 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>Heritage As detailed in Appendix 5, it is not anticipated that there will be any impacts to heritage items as a result of the proposed works. The proposed works would involve excavation of one test pit within the station platform of Bankstown Station. Additionally, two boreholes and six additional test pits are proposed to be excavated at locations within the heritage curtilages. All of the proposed investigation locations in close proximity to the heritage items shown in Appendix 1 have been assessed to have a neutral impact on these items. As such, these works would not result in adverse impacts to heritage significant fabric. Refer to Section 1.2.3 of the Heritage Impact Assessment (Appendix 5). In addition, Metron T2M will implement the Sydney Metro Unexpected Finds Procedure V2.0 throughout the investigation works.</p> <p>Biodiversity 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>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Part 2: Details

<p>Describe the proposed Minor Works: Including work methodologies, site location(s) and site description(s) (e.g. landscape type, waterways, etc.).</p>	<p>Site Description Overview: This overview is based on information from the Environmental Impact Statement (EIS) and Submissions and Preferred Infrastructure Report (SPIR). Geotechnical investigation works are to occur within and surrounding the T3 Bankstown Station. Bankstown Station is comprised of stations, overbridges, overhead wiring structures, track, services and ballast. Bankstown Station is adjacent to a number of land zoning types, business and community, infrastructure and residential. The majority of vegetation in the proposed investigation area is comprised exotic or planted native species on highly modified landforms. Refer to Appendix 1. Geotechnical Investigation and site inspection works are critical to the design development phase and are required early on to inform the design. Without this information, detailed design cannot proceed effectively. The proposed investigation works are outlined below and shown in Appendix 1. Investigations will be carried out on and adjacent to Bankstown Station, in the rail corridor and at some locations outside of the rail corridor, as shown in Appendix 1. Minor disturbances will be undertaken (e.g. minor excavators) for the Proposed investigations works. Site vehicles will be used to travel to between investigation sites. The specific works are outlined in greater detail below.</p> <p>Ground investigations - test pit (hand dug) + DCP</p> <ul style="list-style-type: none"> • A Safety, Health & Environment and Safe Work Method Statement (SHEWMS) will be issued prior to undertaking works • The track monitoring and track protection officer will be organized prior to the investigation works • A site work over inspection will be carried out prior to commencement of the investigation program • Dial Before You Dig plans and Detailed Site Survey (DSS) plans will be obtained for all test locations • Prior to test pitting commencement, all the test pit locations will be scanned for underground services • The test locations will be marked, and hand dug using handheld equipment such as shovels, crowbars and trowels to a maximum depth of 1.5m or prior refusal • There is a test pit located within the station platform. The asphaltic pavement will be sawcut in 0.5m x 1.0m dimension and will be followed by manual excavation • The test pit will be logged in accordance with AS1726-2017 Geotechnical Site Investigations and details of the stratigraphy will be recorded • Disturbed soil samples will be collected for further observations and laboratory testing (if required)
---------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<ul style="list-style-type: none"> • The test pits will be measured and logged from safe vantage points • Dynamic Cone Penetrometer (DCP) testing will be carried out from the ground surface to a depth of about 3m or prior refusal using portable hand equipment • The excavated test pits will be backfilled in layers using excavated spoil and compacted using portable whacker packer. The platform test pit will also be reinstated with bitumen cold mix • The excess spoil soils will be assessed for contamination by qualified ADE Hygienist and will be disposed off-site appropriately. <p>The following equipment will be used:</p> <ul style="list-style-type: none"> • Hand digging equipment (e.g. shovels, crowbar, trowel) • Concrete Saw • Plate compactor • Surveying equipment • Service locating equipment. <p>Ground investigations - test pit (excavator dug) + DCP</p> <ul style="list-style-type: none"> • A Safety, Health & Environment and Safe Work Method Statement (SHEWMS) will be issued prior to undertaking works • The track monitoring, track protection officer, traffic management, road opening permit will be organized prior to the investigation works • A site work over inspection will be carried out prior to commencement of the investigation program • Dial Before You Dig plans and Detailed Site Survey (DSS) plans will be obtained for all test locations • Prior to test pitting commencement, all test-pit locations will be scanned for underground services and Non-Destructive Digging (NDD) holes be carried out • All traffic control arrangements will be coordinated by ADE, TCP's will be generated and reviewed by Canterbury council representatives • Test pits will be excavated at the nominated locations to assess the subsurface conditions for the proposed structures • Sawcut is planned to be used for 10-15 min for one test pit on the station platform • The test locations will either be excavator using a bucket or auger drilled using a 300 mm pendulum auger attached to an excavator to a depth up to 3m or prior refusal on weathered bedrock. The auger drilling will be completed slowly to ensure that changes in stratigraphy are observed and cross contamination of materials be avoided • The test pit/borehole will be logged in accordance with AS1726-2017 Geotechnical Site Investigations and details of the stratigraphy will be recorded • Disturbed soil samples will be collected for further observations and laboratory testing (if required) • The test pits will be measured and logged from safe vantage points • Dynamic Cone Penetrometer (DCP) testing will be carried out from the ground surface to a depth of about 3m or prior refusal using portable hand equipment • The excavated test pits will be backfilled in layers using excavated spoil and compacted using portable whacker packer; and • The excess spoil soils will be assessed for contamination by qualified ADE Environmental Consultant and will be disposed off-site appropriately. <p>The following equipment will be used:</p> <ul style="list-style-type: none"> • 5T Excavator with auger attachment (track mounted) • 10000L vacuum truck & tipper truck • Surveying equipment • Plate compactor • Service locating equipment • Support vehicles • Sawcut.
--	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Ground investigations - cored boreholes (shallow/deep with standard penetration test (SPT))

- A Safety, Health & Environment and Safe Work Method Statement (SHEWMS) will be issued prior to undertaking works
- The track monitoring, track protection officer, traffic management, road opening permit will be organized prior to the investigation works
- A site walk over inspection will be carried out prior to commencement of the investigation program
- Dial Before You Dig plans and Detailed Site Survey (DSS) plans will be obtained for all test locations
- Prior to drilling commencement, all test-pit locations will be scanned for underground services and Non-Destructive Digging (NDD) holes be carried out
- A drill rig with rubber tracks will be transported by truck to a nearby rail corridor access point access point. The rig will be unloaded and moved to the borehole locations under supervision of ADE field engineer and Rail Protection Officer.
- Establishment of drill rig at approved site investigation location
- Non-core vertical auguring of soil profile including logging, regular SPT in-situ testing at 1.5m intervals, and undisturbed sample collection (U50 or U75) where required
- Core drill in rock (NMLC) by diamond core drilling to nominated depths. The cores will be stored in core boxes, photographed, logged, Point Load Strength tests will be carried out at 1m intervals
- Selected length of cores will be sent for laboratory Rock UCS testing
- The core boxes will be loaded on to the support vehicle and transported to the ADE soil/rock testing laboratory for further observations and testing
- Soil and rock sample will be characterised in accordance with AS1726-2017 "Geotechnical Site Investigations"
- The core recovery from the drilling process will be maintained to 95%, 90%, and 80% for the fresh to moderately weathered, moderate to highly weathered and extremely weathered rock, respectively. However, these recovery percentage does not include wash out of clay seam, extremely weathered zone, sheared zone, weathered dyke material or any other soft material
- Drilling fluid/water will be collected in a portable tank and disposed off-site appropriately
- Borehole locations will be surveyed to MGA (GDA1994 MGA Zone 56) coordinates and Reduced Level (RL) to Australian Height Datum (AHD)
- On completion, all the boreholes will be reinstated using quick set grout and
- The excess spoil soils will be assessed for contamination by qualified ADE Hygienist and will be disposed off-site appropriately.

The following equipment will be used:

- Comacchio 205 Drilling Rig (non hi-rail tracked)
- 10000L Vacuum truck & 2 tonne tipper
- Surveying equipment
- Service locating equipment
- Support Vehicles

Soil Resistivity Testing

- A Safety, Health & Environment and Safe Work Method Statement (SHEWMS) will be issued prior to undertaking works
- The track monitoring, track protection officer, traffic management, road opening permit will be organized prior to the investigation works
- A site walk over inspection will be carried out prior to commencement of the investigation program
- Dial Before You Dig plans and Detailed Site Survey (DSS) plans will be obtained for all test locations
- Testing would be conducted with the use of four 12 mm rods inserted up to a maximum of 100 mm at each test location.

	<p><u>Working Hours</u></p> <p>Geotechnical Investigation works will be undertaken predominately during standard construction hours (7am-6pm weekdays and 8am-6pm Saturday). Some works will occur outside of standard construction hours during rail possessions.</p> <p>Geotechnical Investigation works will be commenced on 2 March 2020. Bore holes and test pits will be undertaken during standard construction hours during this period.</p> <p>Geotechnical Investigation works will also be undertaken during a possession period (Weekend 36- 7-8 March 2020). These works will be undertaken in both Standard hours & Daytime OOH</p> <p>One-night shift (night OOH) will be required between 09-16 March 2020 to undertake two pit tests located outside of the rail corridor.</p> <p>Work outside of standard working hours would be managed under an Out of Hours Works Approval and in accordance with the Sydney Metro City & Southwest Out of Hours Work Protocol.</p> <table border="1" data-bbox="587 629 1374 1285"> <thead> <tr> <th>Date</th> <th>Hours</th> <th>Work Period</th> </tr> </thead> <tbody> <tr> <td colspan="3"><u>Weekend Possession 36</u></td> </tr> <tr> <td>7 March 2020</td> <td>7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays</td> <td>Standard hours & Daytime OOH</td> </tr> <tr> <td>8 March 2020</td> <td>7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays</td> <td>Daytime OOH</td> </tr> <tr> <td colspan="3"><u>Weekday Night</u></td> </tr> <tr> <td>09-16 March 2020</td> <td>7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays</td> <td>Night-time OOH</td> </tr> </tbody> </table>	Date	Hours	Work Period	<u>Weekend Possession 36</u>			7 March 2020	7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays	Standard hours & Daytime OOH	8 March 2020	7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays	Daytime OOH	<u>Weekday Night</u>			09-16 March 2020	7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays	Night-time OOH
Date	Hours	Work Period																	
<u>Weekend Possession 36</u>																			
7 March 2020	7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays	Standard hours & Daytime OOH																	
8 March 2020	7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays	Daytime OOH																	
<u>Weekday Night</u>																			
09-16 March 2020	7am to 6pm weekdays and 8am to 1pm Saturdays and 1pm to 6pm Saturdays and 8am to 6pm Sundays and Public Holidays	Night-time OOH																	
<p>Planned Commencement Date</p>	<p>The proposed works are scheduled for commencement on 2 March 2020.</p>																		
<p>Local Sensitivities: Describe the presence (if any) of local sensitive environmental areas and community receptors</p>	<p>T3 Line between Sydenham Station and Bankstown Station</p> <ul style="list-style-type: none"> Local environmental areas and sensitive receivers are presented in Appendix 1. There are a number of residential properties located within close proximity to the corridor as identified in Appendix 1. Noise and air quality impacts from survey works are expected to be minor. GHD's (2017) station platform assessment report included the results of an intrusive soil investigation. The investigation concluded that Bankstown Station has potential health risk to metro construction workers (via direct contact) from TRH, PAH and asbestos in soil. There is no acid sulphate soil risk at Bankstown Station. The Unexpected Finds procedure (Appendix 2) followed should unexpected contaminated land or asbestos be encountered during the Proposed works. If any accidental spill occurs this will be managed in accordance with the contractor spill response procedure. All site vehicles will be checked for spill kits prior to the commencement of the Proposed works. There are a number of heritage items in close proximity to the location of the proposed investigation works, with some works proposed within the heritage curtilages. Proposed works are to be undertaken with the following heritage curtilages: <ul style="list-style-type: none"> Bankstown Local Environment (LEP) 2011 as "Bankstown Railway Station Group", LEP# I3 Bankstown Local Environment (LEP) 2011 as "Bankstown Parcels Office (former)", LEP# I4 																		

	<ul style="list-style-type: none"> No test pit excavations or borehole works are anticipated to take place in areas which would require the removal or alteration of significant heritage fabric. The proposed works would result in neutral adverse impacts to heritage significant fabric. As such, these works would be considered Low Impact environmental activities, and can be progressed in advance of the preparation of the overall Construction Environmental Management Plan (CEMP) for the project works. As the works are not taking place within the heritage curtilage of any item listed on the State Heritage Register and are not located in any areas of identified archaeological potential, no consultation with Heritage NSW is required to approve the works. 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 or trimming of any vegetation along the corridor. 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. Where, possible, no roadways or footpaths will be closed as part of the works. If roadways or footpaths are required to be closed, the appropriate traffic/pedestrian control plan will be prepared with all required approvals gained (including Road occupancy licenses (ROL) and road occupancy permits (ROP)).
--	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

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.).	<p>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.</p> <p>. Works will also be undertaken in accordance with the:</p> <ul style="list-style-type: none"> - <i>The Unexpected Finds Procedure is provided in Appendix 2.</i> - <i>Community notification is provided in Appendix 3.</i> - <i>Heritage Impact Assessment for the proposed works is provided in Appendix 5.</i>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

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. 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 Sydenham to Bankstown monthly notifications for February and March 2020 includes reference to all of the activities proposed (included in Appendix 3).
What community consultation is planned to be undertaken?	Canterbury Bankstown Council will be notified of any works taking place outside of the rail corridor.
If drafted already, attach applicable Community Notification as Appendix 3.	

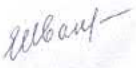
Part 6: Contact Details

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

Name:	Luke Palmer	Position:	Project Manager	Phone:	0401 213 809
	Elena Ivanova		Environmental Manager		0415 556 620
	Sushane Perera		Communications Manager		0403 857 889



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:	Elena Ivanova		
Signature:		Date:	03/03/2020

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)
Signature:			
Name:	May Li Foong	FIL CERONE	
Date:	4/3/20	4/3/20	
Comments:	-		Supporting letter attached as Appendix 4 if necessary.
Conditions:	As per Part 5		Supporting letter attached as Appendix 4 if necessary.
<input checked="" type="checkbox"/> Approved (by TfNSW)			
<input type="checkbox"/> Endorsed (by Environmental Representative)			
<input type="checkbox"/> Rejected			

[REDACTED]

From: [REDACTED] Elena [REDACTED]
Sent: Wednesday, 11 March 2020 1:26 PM
To: Tim [REDACTED]
Cc: Jonathan [REDACTED]; [REDACTED], Sushane S
Subject: RE: Minor works/OOHW Bankstown

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Tim,

As discussed, please find the requested information to extend a period of time approved under SMDS-PCMW-005 Rev.4 and SMDS-OOHW-005 Rev.3.

The approved timeframe for undertaking investigation during evening/night time (one shift) at Bankstown is required to be extended until Friday 27 March 2020 . The approved scope of works has not been changed. A reason for the time extension request is that RMS has delayed the ROL approvals. The ROL is required to change the operational conditions of the road network to carry out the proposed works safely.

Please let me know if any further information is required.

Thanks,
Elena

Jonathan S

From: Tim [REDACTED]
Sent: Monday, May 18, 2020 4:18 PM
To: [REDACTED] Jonathan S; [REDACTED] Ben
Cc: [REDACTED] Sushane S; Chris [REDACTED]
Subject: RE: Bankstown BH005 - slight change to scope of works

Hi Jonny,

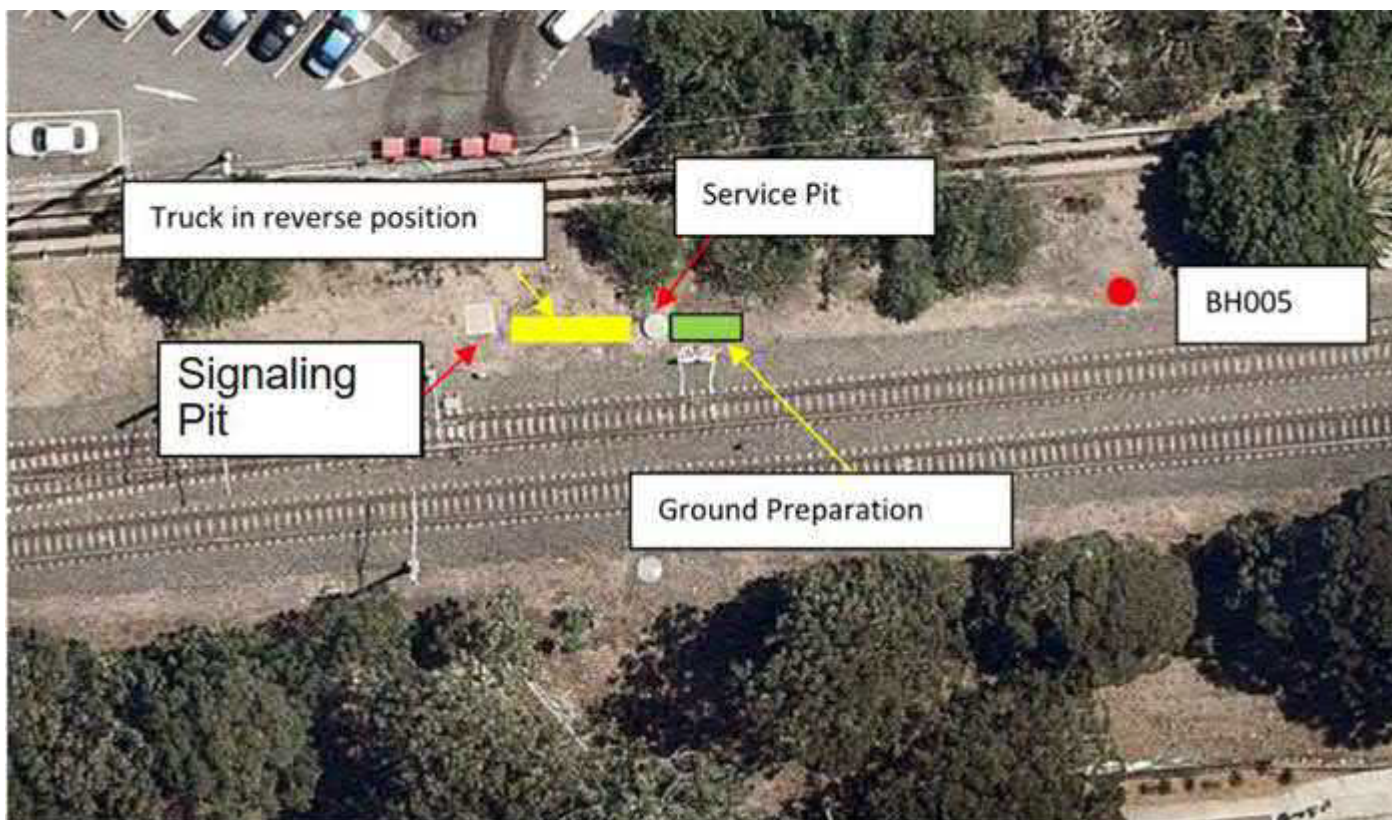
Thanks for the update. Can you please append this information to the approved Minor Works Approval document for these investigations (SMDS-PCMW-005 Rev4), and send back to Metro?

Thanks,
Tim

From: [REDACTED] Jonathan S [mailto:[REDACTED]]
Sent: Monday, 18 May 2020 4:06 PM
To: Tim [REDACTED]; [REDACTED] Ben [REDACTED]
Cc: [REDACTED] Sushane S [REDACTED]
Subject: RE: Bankstown BH005 - slight change to scope of works

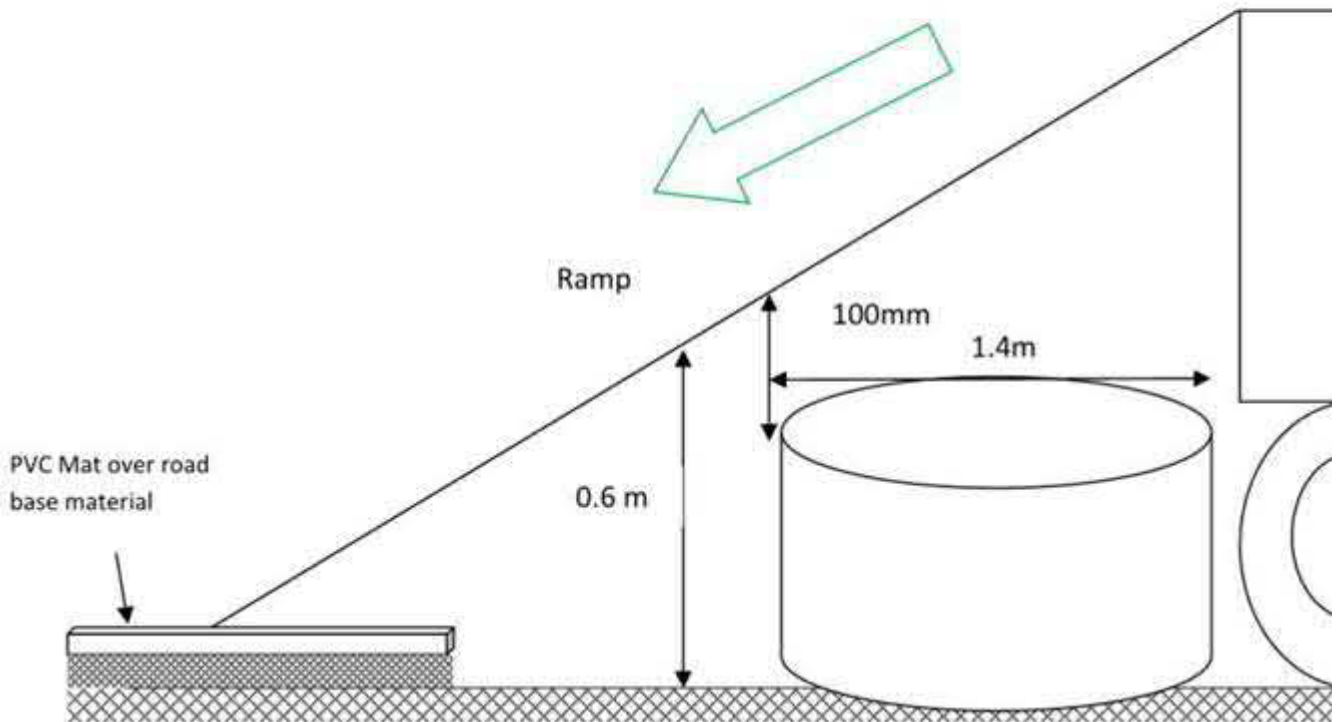
Hi Tim

As discussed, to drill BH005 T2M will need to deliver the rig to the rail corridor drill site on the back of a truck (yellow below). To allow the truck safe passage, it would be preceded by a truck with mounted cane that will install a temporary road plate on top of the signalling pit, location shown below.



To allow the rig to drive off the delivery truck over the service pit, a ramp footing will be constructed, as shown in green above, and in the figure below. The ramp footing will be constructed of a geofabric ground protection sheet, 150mm depth of hand-placed 20mm road base (compacted using a whacker packer), with a mat on top.

Drill Rig Access to Bore Hole Methodology



Once the investigation works are complete and the drill rig reloaded, the ramp footing will be removed by hand. The road plate will be removed once the delivery truck has departed.

The entire works will be carried out during Saturday standard construction hours.

Please let me know if you have any further questions.

Kind regards

Jonny

Jonathan [REDACTED]
Principal Environmental Consultant

From: Tim [REDACTED]

Sent: Monday, May 18, 2020 12:02 PM

To: [REDACTED] Ben [REDACTED]; [REDACTED] Jonathan S [REDACTED]

Subject: Bankstown BH005 - slight change to scope of works

Hi Ben and Jonny,

In our weekly SMDS Site meeting, Sushane mentioned that there are a few extra steps required to access the BH005 location – including putting down temporary road plates.

Can you please just give me a high level overview of these works to determine if any tweaks to MWA-005 is required? I suspect the overall change is fairly minor.

Thanks,
Tim

Tim [REDACTED]
Environmental Manager
Southwest Metro
Sydney Metro

sydneymetro.info

Level 42, 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.

This email is intended only for the addressee and may contain confidential information. If you receive this email in error please delete it and any attachments and notify the sender immediately by reply email. Transport for NSW takes all care to ensure that attachments are free from viruses or other defects. Transport for NSW assume no liability for any loss, damage or other consequences which may arise from opening or using an attachment.

 **Consider the environment. Please don't print this e-mail unless really necessary.**

This email is intended only for the addressee and may contain confidential information. If you receive this email in error please delete it and any attachments and notify the sender immediately by reply email. Transport for NSW takes all care to ensure that attachments are free from viruses or other defects. Transport for NSW assume no liability for any loss, damage or other consequences which may arise from opening or using an attachment.

 **Consider the environment. Please don't print this e-mail unless really necessary.**

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
Air quality and noise emissions	Noise and air quality impacts on nearby sensitive receivers.	5	3	Moderate	<ul style="list-style-type: none"> Site equipment is to be turned off when not in use Stockpiles are to be covered during windy weather Visual observation of dust emissions will trigger dust suppression mitigation strategies, including wetting of the excavation area Induction and pre-start briefing to include noise mitigation and "good neighbour" approach Follow the appropriate approval process and submit OOHV applications for Environmental Representative approval. Mitigation measures to be implemented in accordance with the Sydney Metro City & Southwest Construction Noise and Vibration Strategy (CNVS), including appropriate notification. 	5	4	Low
Mobilisation of contamination	Local contamination and health risk to surveyors	4	4	Moderate	<ul style="list-style-type: none"> Surveyors will be vigilant for hazardous materials that may be uncovered during investigations Unexpected finds procedure (Appendix 2) will be followed. Reference to this procedure will be included within the contractor induction material No refueling will occur in the work area Spill kits will be kept near to work areas at all times and 	4	5	Low



Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
					trained staff present in case of a spill			
Work in heritage areas	Potential impacts to heritage may occur as a result of investigation works.	4	3	Moderate	<ul style="list-style-type: none"> • Environmental sensitivities maps will be provided to surveyors as part of the site induction process to ensure heritage areas are avoided. • Works proximal to significant heritage items (such as platform coping, or station platform buildings should be protected from splash from vacuum truck excavation material during the works to ensure outer surfaces are kept clean during works. • Following the completion of works, all areas of investigation should be made good to restore the platform surfaces to their original appearance. This would include: <ul style="list-style-type: none"> ○ Cleaning all asphalt, concrete and brick surfaces that may have been dirtied during works ○ Ensuring that platform asphalt surfaces are reinstated following the completion of backfilling so that they match surrounding asphalt surfaces • Works will be undertaken in accordance with the Sydney Metro City and Southwest 	4	5	Low

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
					Unexpected Finds Procedure V2.0 for heritage. <ul style="list-style-type: none"> Works will be conducted in accordance with the Heritage Impact Assessment (Appendix 5) 			
Work in biodiversity areas	No impact to biodiversity. Invasive works will not be undertaken in designated biodiversity areas. No vegetation will be impacted by the survey work.	6	6	Low	<ul style="list-style-type: none"> Environmental sensitivities maps will be provided to surveyors as part of the site induction process to ensure biodiversity areas are avoided Survey locations will be moved to grassed areas and unvegetated land to preclude the requirement for trimming, removal or impact to other vegetation by the works 	6	6	Low
Erosion and sedimentation control	Runoff of excavated materials into the local stormwater system. Potential for escape of contaminated materials causing local contamination.	4	4	Moderate	<ul style="list-style-type: none"> Stockpiled material will be stored out of drainage channels and covered during inclement weather 	4	5	Low
Transport and access	Negative impact to local roads, parking and footpaths from closures or obstructions during survey work.	5	5	Low	<ul style="list-style-type: none"> Surveyors will park within the rail corridor where possible. Surveyors will minimise the number of vehicles used to travel to the site. Surveyors will not block roadways or pathways Surveyors will park legally and observe restrictions at all times Traffic controllers will be used to survey RMS- controlled roads. The surveys will be carried out under licence from RMS and in accordance with an RMS-approved traffic control plan. 	5	6	Low



Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
					<ul style="list-style-type: none"> If investigation works impacts footpaths works will be carried out under a council approved traffic management control plan, using a traffic control team to manage pedestrian flow. Road occupancy licenses (ROL) and road opening permits (ROP) will be sought from council for the drop-off/collection of site investigation plant. Controls will be implemented in accordance with the ROL/ROP. Surveyors will be inducted on the required control measures that must be implemented Where possible survey work in roadways will be undertaken at times to avoid peak traffic flow. 			
Service strike	Damage to services during excavation which cause an environmental incident	4	4	Moderate	Prior to any ground disturbance works, a service locator will check each excavation site is clear of services and provide a permit to excavate: <ul style="list-style-type: none"> Service locator and surveyor will check all excavation locations with DSS and locating equipment to identify areas clear of services Where there is a clash of services and proposed excavation site the excavation site will be moved to a services-free area Excavation area will be sprayed with spray paint by service 	4	5	Low



Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
					locator once confirmed clear, approx. 1m square section			
Waste	Improper management of waste could result in an environmental incident	4	4	Moderate	The following measures would be implemented: <ul style="list-style-type: none"> • Induction of staff will include waste management practices • Non-liquid excess soil and wastes will be bagged and removed from site. • Liquid wastes will be collected during work in a mud tank prior to disposal at a licenced facility • Excess soil and waste will be tested in accordance with the Waste Classification Guidelines (NSW EPA, 2014) prior to disposal. • Wastes will be lawfully transported and disposed of. 	4	5	Low

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 disemblem 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

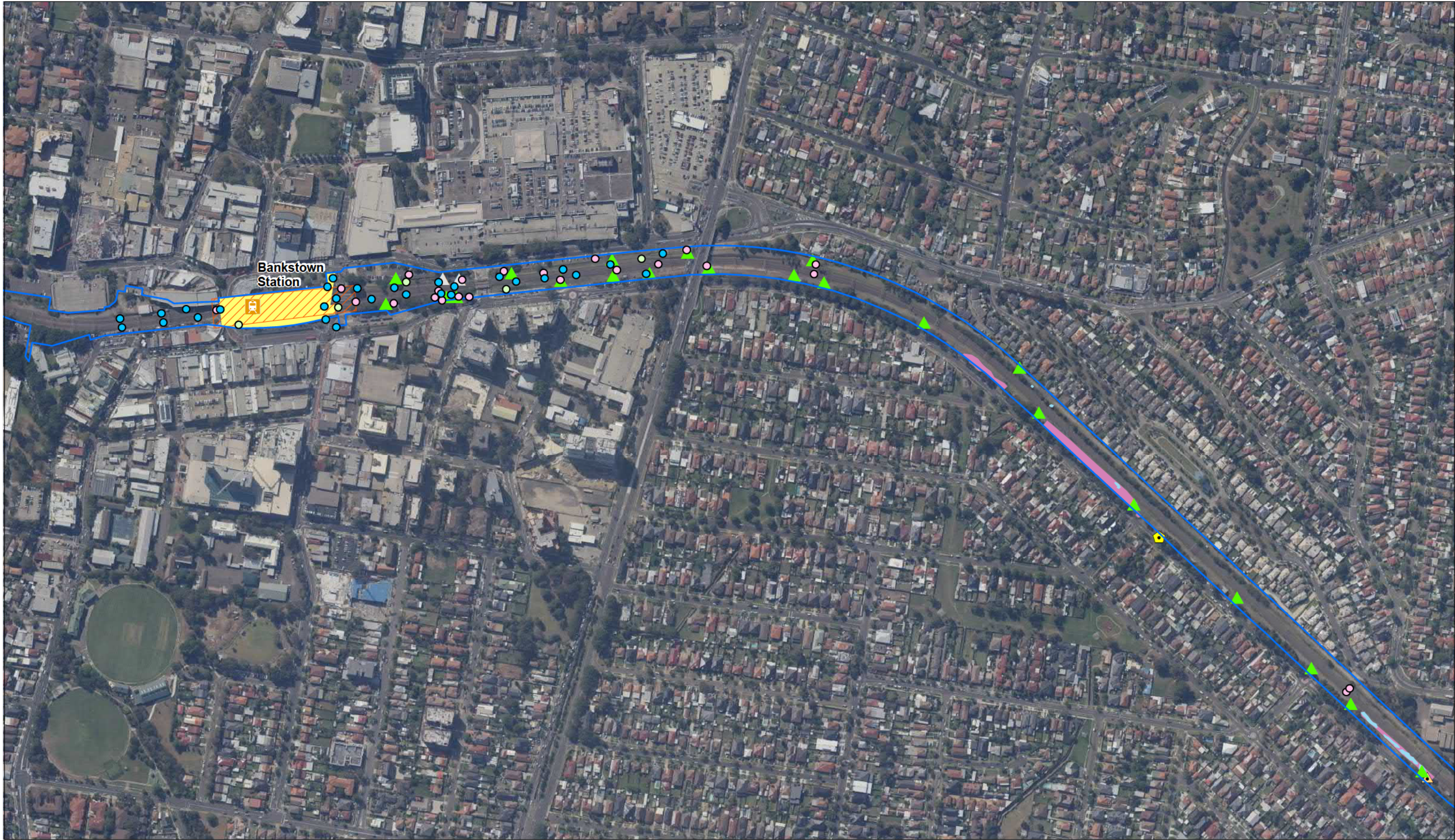
A2 Likelihood Criteria

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

Environmental Sensitivities Maps



Southwest Metro Design Services
 Minor Works Environmental Sensitivities: Bankstown Map

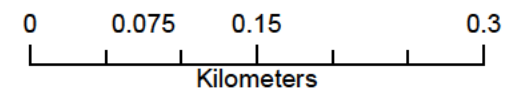
- Stations
- Corridor Boundary
- Borehole
- Soil Resistivity Test
- Test Pit
- AGJV Contamination (approx. locations)**
- General solid waste
- General solid waste w asbestos
- Restricted solid waste
- GHD 2017 Contamination (approx. locations)**
- General solid waste
- General solid waste w asbestos
- Hazardous waste
- Restricted solid waste
- Not completed
- Threatened Species Sightings**
- Grey-Headed Flying-Fox
- bis

- Acacia Pubescens
- Potential Acid Sulphate Soil
- S170 Heritage
- Archaeological Management Zone
- Potential Archaeological Deposit
- Acacia Pubescens Patches
- Threatened Ecological Community**
- 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)
- State Heritage
- Local Heritage
- Conservation Areas



1 cm = 50 meters
 GDA 1994 MGA Zone 56
 2/03/2020



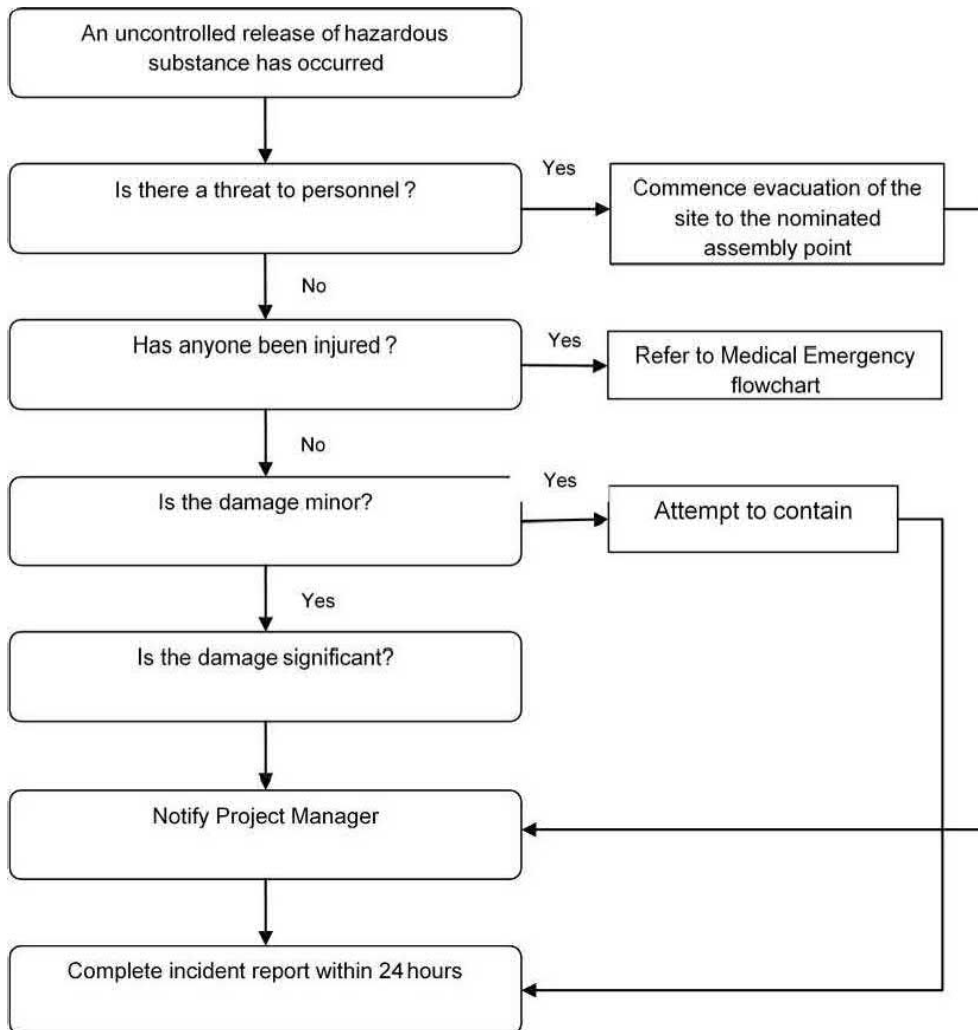
Appendix 2: Environmental Management Documentation

Unexpected Finds

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 (USTs) 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 should 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.
- 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 excavations, works will cease, and the Site Supervisor notified.



Appendix 3: Community Notification

Appendix 4: Environmental Representative Supporting Letter

Bankstown Line metro upgrade

February/March 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 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 between Sydenham and Bankstown received planning approval on 19 December 2018.

Bankstown Line metro upgrade

In February and March, 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.

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"> • Locating and confirming underground services which will involve using hand held equipment and non-destructive digging close to the rail corridor. • Site/ station investigations, tree assessments and topographic/ scanning surveys inside the rail corridor and in nearby public areas • Geotechnical investigations for two new substations at Lakemba and Punchbowl, including using a trailer with drill rig to take core soil samples and using vacuum trucks to remove excavated soil • Geotechnical investigations (boreholes/ test pits) and drainage surveys in and around Bankstown station
Belmore (inside rail corridor, near Cleary Street)	Delivery, connecting and disconnecting of temporary backup generators to facilitate cabling works in the rail corridor

Out-of-hours work

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

Date/ time	Location	Detail
Weeknights	Whole rail corridor (Belmore to Bankstown)	<p>Activities will include:</p> <ul style="list-style-type: none"> Site/geotechnical investigations and surveys inside the rail corridor, on station platforms and in nearby public areas Locating and confirming underground services close to the rail corridor and in nearby public areas <p>Activities outside train operation hours will include:</p> <ul style="list-style-type: none"> Delivery, connecting and disconnecting of temporary backup generators close to the rail line to facilitate cabling works in the rail corridor

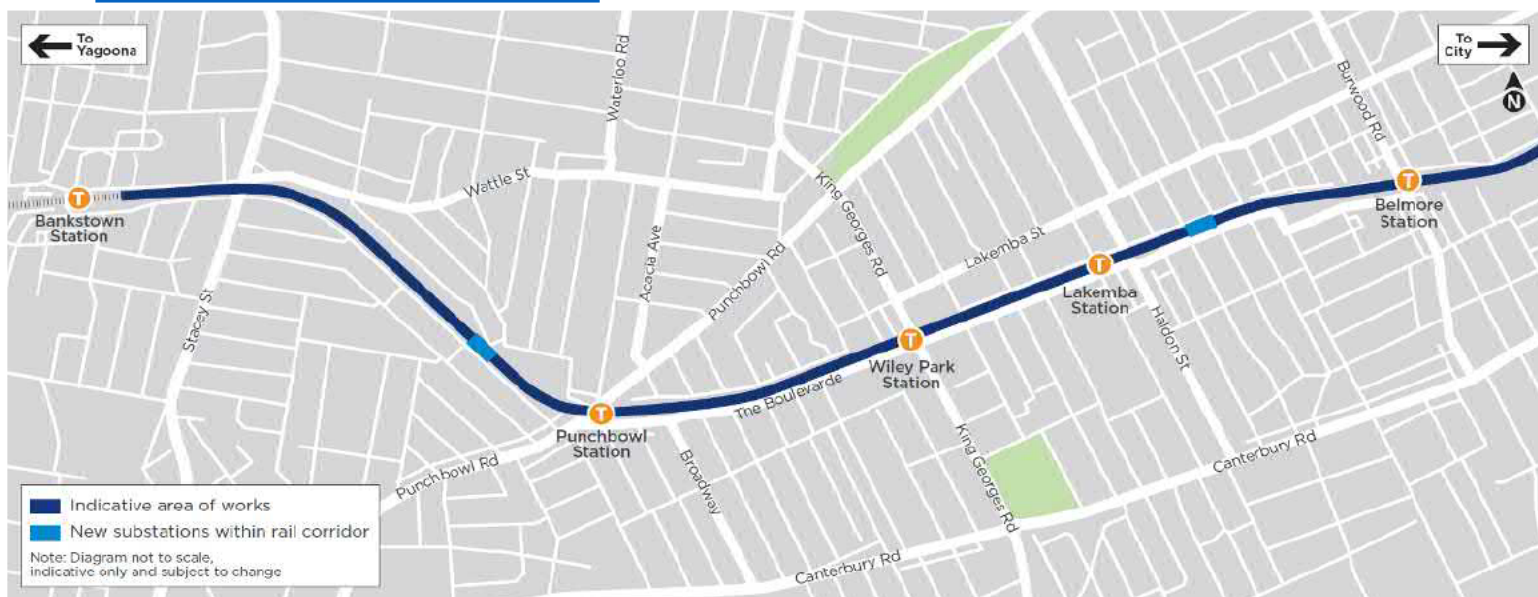
Equipment used for the above work will include vacuum trucks, medium rigid trucks and hand tools. Some of this work may be noisy, however we will take every possible step to minimise noise such as switching off equipment when not in use.

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 to assist 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.

Thank you for your cooperation while we complete this essential work. If you have any questions about the rail corridor work, please contact **Melanie on 1800 171 386 (24 hour community information line)** or email SouthwestMetro@transport.nsw.gov.au



Contact us

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

sydneymetro.info



Sydney Trains

Central to Sefton track maintenance

From Saturday 7 March to Monday 9 March

What we're doing

Sydney Trains is undertaking maintenance between Central and Sefton via Bankstown from Saturday 7 March to Monday 9 March.

At Central Station, Sydney Metro is:

- working on the Suburban Platforms 16 to 23 for the new underground pedestrian walkway, Central Walk
- installing new and removing redundant services along track 23
- removing roof canopy sections on the upper Northern Concourse
- excavating for the Metro platforms (underground former platforms 13, 14-15).

At Sydenham Station, Sydney Metro will be carrying out retaining wall, bridge and culvert works including installing drainage pits, cable routes, signal equipment and undertaking testing and commissioning.

Between Sydenham and Bankstown, Sydney Metro will be undertaking corridor works and surveys throughout, geotechnical investigations in and around Bankstown station, potholing on station platforms, piling works for the retaining wall next to Charles St, Canterbury and bridge works for combined service route adjacent to Ness Ave, Dulwich Hill. For the safety of the public and rail workers, there will be a road closure on Ness Avenue, Dulwich Hill for the duration of works.

Sydney Trains is working on:

- bridge refurbishment works at Illawarra Road Overbridge, Marrickville
- plain track and turnout resurfacing
- rail and turnout grinding
- routine civil, signal and electrical maintenance
- vegetation maintenance, litter and graffiti removal.

How this affects you

Noise

- These works may create additional noise at night and over the weekend.
- **Work will take place around the clock from 2am Saturday 7 March until 2am Monday 9 March.**
- Equipment may be delivered to the worksite outside the above. Some deliveries may occur at night due to travel restrictions on large vehicles.
- Diesel work trains will be kept on site and may be idling for extended periods.
- Finishing works may take place following this period, including the removal of equipment.

Traffic and Parking

- Heavy vehicles will be using local streets to access the rail corridor.
- While we will park our vehicles inside the rail corridor where possible, please be aware that on-street parking may be limited near worksites
- **We apologise for any inconvenience and thank you for your cooperation during these essential works.**

Contact us

For upcoming work

transport.nsw.gov.au/sydtraincommunity

To report environmental concerns (24hours) **1300 656 999**



Visit transportnsw.info

Appendix 5: Heritage Impact Assessment



artefact

14 February 2020

Jonathan Steele
Senior Environmental Consultant
Mott MacDonald

Dear Mr Steele,

Re: Sydney Metro City and Southwest Design – Heritage impact assessment for Geotechnical Investigation works, Bankstown Station

1.1 Project background

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. As part of the Revised Environmental Mitigation Measures (REMM) for the project, NAH12 indicates that mitigation measures outlined in the Non-Aboriginal archaeological assessments¹² for the project must be adhered to during design, investigation and construction works for the project.

As part of investigative works for the project, Mott MacDonald are proposing to conduct geotechnical investigation works at a number of locations in an near Bankstown Station. This memo provides an assessment of built heritage impacts for the proposed six test pits and two geotechnical borehole excavations and outlines management guidelines for conducting the works to minimise harm to heritage significant items. As the proposed works have been identified to not be located within any Archaeological Management Zone (AMZ) for the project as defined in the non-Aboriginal archaeological assessment for the SPIR phase of the project, no non-Aboriginal archaeological impacts would occur from the works.

¹ Artefact 2018a *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade – Submissions and Preferred Infrastructure Report Non-Aboriginal Heritage Assessment*. Report to Transport for NSW.

² Artefact 2018b. *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade – Historical Archaeological Assessment & Research Design*. Report to Transport for NSW.

1.1.1 Overview of works

Mott MacDonald are proposing to undertake geotechnical investigation works through excavator and hand dug Test Pits (TP), Dynamic Cone Penetrometer (DCP) and cored boreholes (shallow/deep with Standard Penetration Test (SPT)) investigation works at Bankstown Station.

1.1.2 Methodology of Works

The proposed works would consist of three ground investigations comprising of the following procedures:

Test Pit (excavator dug) and Dynamic Cone Penetrometer (DCP)

There will be one team undertaking these works. The team will consist of one Protection Officer (PO), a number of labourers, track certifier, machine operator(s), geotechnical engineer and T2M supervisor.

1. Prior to drilling commencement, all test-pit locations will be scanned for underground services;
2. Following preliminary non-destructive digging (NDD), the test locations will either be excavated using a bucket or auger drilled using a 300 mm pendulum auger attached to an excavator to a depth up to 3m or prior refusal on weathered bedrock. The auger drilling will be completed slowly to ensure that changes in stratigraphy are observed and cross contamination of materials be avoided;
3. The test pit will be logged in accordance with AS1726-2017 Geotechnical Site Investigations and details of the stratigraphy will be recorded;
4. Disturbed soil samples will be collected for further observations and laboratory testing (if required);
5. The test pits will be measured and logged from safe vantage points;
6. Dynamic cone penetrometer (DCP) testing will be carried out from the ground surface to a depth of about 3m or prior refusal using portable hand equipment;
7. The excavated test pits will be backfilled in layers using excavated spoil and compacted using portable plate compactor; and
8. The excess spoil soils will be assessed for contamination by qualified ADE Environmental Consultant and will be disposed offsite appropriately.

Equipment used for the excavation works would include a track-mounted 5-tonne excavator and high-pressure water and vacuum excavation truck (vacuum truck) for NDD works. Backfilling of test pits would use a plate compactor following infilling of excavation cavities.

Test Pit (hand dug) and DCP

There will be two teams undertaking these works. The team will consist of one PO, a number of labourers, track certifier, geotechnical engineer and T2M supervisor.

1. Prior to excavation, the test pit locations will be scanned for underground services;
2. The test locations will be marked, and hand dug using handheld equipment such as shovels, crowbars and trowels to a maximum depth of 1.5m or prior refusal;

3. The test pit will be logged in accordance with AS1726-2017 Geotechnical Site Investigations and details of the stratigraphy will be recorded;
4. Disturbed soil samples will be collected for further observations and laboratory testing (if required);
5. The test pits will be measured and logged from safe vantage points;
6. Dynamic Cone Penetrometer (DCP) testing will be carried out from the ground surface using portable hand equipment;
7. The excavated test pits will be backfilled in layers using excavated spoil and compacted using portable plate compactor; and
8. The excess spoil soils will be assessed for contamination by qualified ADE Environmental Consultant and will be disposed offsite appropriately.

All test pits would be manually excavated with hand tools. Backfilling of test pits would use a plate compactor following infilling of excavation cavities.

Cored Boreholes (shallow/deep with standard penetration test (SPT))

The two cored borehole crews shall consist of a PO, track certifier, driller, drillers offsider and geotechnical engineer, T2M supervisor and surveyor.

1. Prior to drilling commencement, all the borehole locations will be scanned for underground services and Non-Destructive Digging (NDD) holes will be carried out;
2. The drill rig with rubber track will be transported by truck to the corridor access point nearest to the investigation site. The rig will be unloaded and will be tracked to the borehole location under supervision of ADE field engineer and PO. No high-rail movement is envisaged, where required, tracking mats will be used to avoid ground disturbance and track formation;
3. Establishment of drill rig at approved site investigation location;
4. Non-core vertical auguring of soil profile including logging, regular SPT in-situ testing at 1.5m intervals, and undisturbed sample collection (U50 or U75) where required;
5. Core drill in rock (HQ) by diamond core drilling to at least 3m into Class III bedrock, the cores will be stored in core boxes, photographed, logged, Point Load Strength tests will be carried out at 1m intervals;
6. Selected length of cores will be sent for laboratory Rock UCS testing;
7. The core boxes will be loaded on to the support vehicle and transported to the ADE soil/rock testing laboratory for further observations and testing;
8. Drilling fluid/water will be collected into portable tank and disposed off-site appropriately;
9. On completion, all the boreholes will be reinstated using quick set grout; and
10. The excess spoil soils will be assessed for contamination by qualified ADE Environmental Consultant and will be disposed offsite appropriately.

Boreholes would be excavated with a non-track mounted drill rig (Comacchio 205 Drilling Rig), with a vacuum truck used to conduct NDD service location prior to boreholing.

Soil resistivity testing

Soil resistivity testing is also proposed to be conducted at Bankstown Station. Testing would be conducted at several locations. Testing which is proposed to be conducted in the rail corridor is located outside of the heritage curtilage of any heritage listed item and is also not located in any potential area of predicted significant archaeological remains.

Soil resistivity test number 2 is located within the heritage curtilage of Bankstown Station, located directly to the south of the rail corridor in the public park between the rail corridor and South Terrace.

Testing would be conducted with the use of four 12 mm rods inserted up to a maximum of 100 mm.

1.1.3 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* (Artefact 2018a)

This memo only assesses service location and assessment works that have been proposed to be conducted in and near Bankstown railway station for the Sydney Metro City and Southwest project.

The locations of heritage listed items and their curtilages at Bankstown Station are illustrated in Figure 1.

1.1.4 Authorship

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



File Path: C:\Users\GIS\Desktop\GIS\GIS_Mapping\151213_Sydney_Metro_Bankstown_Sydenham\MXD\Heritage_Detail_BT

Figure 1: Listed heritage items and heritage curtilages at Bankstown Station

1.2 Built heritage impact assessment

1.2.1 Introduction

The proposed works would involve vacuum truck, machine excavator and manual excavation as well as borehole penetrations at limited areas within the station surroundings platforms. Test pits and boreholes are located within and around the heritage curtilages for the following heritage items:

- Bankstown Local Environment (LEP) 2011 as “Bankstown Railway Station Group”, LEP# I3
- Bankstown Local Environment (LEP) 2011 as “Bankstown Parcels Office (former)”, LEP# I4
- RailCorp s170 Heritage Inventory Register as “Bankstown Railway Station Group”, SHI# 4802067.

No test pit excavations or borehole works are anticipated to take place in areas which would require the removal or alteration of significant heritage fabric.

1.2.2 Borehole areas of no heritage impact

The majority of geotechnical investigation locations are not situated within the heritage curtilage of any heritage item or near any heritage significant fabric. As such, these geotechnical investigation locations have not been included in this assessment as they would result in neutral impacts to the heritage significance of any heritage item.

Geotechnical investigations which have been excluded from this assessment are summarised in Table 1. All geotechnical investigations outlined in Table 1 would result in neutral impacts to the heritage significance of any heritage item.

Table 1: Proposed works located outside the heritage curtilages of Bankstown Station

Hole ID	Type
BN-BH001	Cored borehole 3m into Class III (or better) rock
BN-BH002	Cored borehole 3m into Class III (or better) rock
BN-BH003	Cored borehole 3m into Class III (or better) rock
BN-BH004	Cored borehole 3m into Class III (or better) rock
BN-BH005	Cored borehole 3m into Class III (or better) rock
BN-BH006	Cored borehole 3m into Class III (or better) rock
BN-BH008	Cored borehole 3m into Class III (or better) rock
BN-BH009	Cored borehole 3m into Class III (or better) rock
BN-BH011	Cored borehole 3m into Class III (or better) rock
BN-BH012	Cored borehole 3m into Class III (or better) rock
BN-BH013	Cored borehole 3m into Class III (or better) rock
BN-BH014	Cored borehole 3m into Class III (or better) rock

Bankstown Station - Sydney Metro City and Southwest
Geotechnical Investigation Works – Heritage Impact Assessment

BN-BH015	Cored borehole 3m into Class III (or better) rock
BN-BH016	Cored borehole 3m into Class III (or better) rock
BN-BH017	Cored borehole 3m into Class III (or better) rock
BN-BH018	Cored borehole 3m into Class III (or better) rock
BN-TP001	Test pit to confirm subgrade composition (3m depth)
BN-TP002	Test pit to confirm subgrade composition (3m depth)
BN-TP003	Test pit to confirm subgrade composition (3m depth)
BN-TP004	Test pit to confirm subgrade composition (3m depth)
BN-TP005	Test pit to confirm subgrade composition (3m depth)
BN-TP006	Test pit to confirm subgrade composition (3m depth)
BN-TP007	Test pit to confirm subgrade composition (3m depth)
BN-TP008	Test pit to confirm subgrade composition (3m depth)
BN-TP009	Test pit to confirm subgrade composition (3m depth)
BN-TP010	Test pit to confirm subgrade composition (3m depth)
BN-TP011	Test pit to confirm subgrade composition (3m depth)
BN-TP012	Test pit to confirm subgrade composition (3m depth)
BN-TP013	Test pit to confirm subgrade composition (3m depth)
BN-TP015	Test pit to confirm subgrade composition (3m depth)
BN-TP016	Test pit to confirm subgrade composition (3m depth)
BN-TP017	Test pit to confirm subgrade composition (3m depth)
BN-TP018	Test pit to confirm subgrade composition (3m depth)
BN-TP023	Test pit to confirm subgrade composition (3m depth)
BN-TP025	Test pit to confirm subgrade composition (3m depth)
BN-TP026	Test pit to confirm subgrade composition (3m depth)
BN-TP027	Test pit to confirm subgrade composition (3m depth)
BN-TP028	Test pit to confirm subgrade composition (3m depth)
BN-TP029	Test pit to confirm subgrade composition (3m depth)
BN-TP030	Test pit to confirm subgrade composition (3m depth)
BN-TP031	Test pit to confirm subgrade composition (3m depth)
BN-TP032	Test pit to confirm subgrade composition (3m depth)

BN-TP033

Test pit to confirm subgrade composition (3m depth)

1.2.3 Direct (physical) impacts to heritage significant fabric

Table 2 below summarises heritage significant fabric located in or near the area of works at Bankstown station and outlines any direct (physical) impacts to heritage significant fabric.

Table 2: Summary of direct heritage impacts to Bankstown Station

Hole ID	Significant fabric located near area of proposed works	Description of proposed works	Summary of impacts
BN-BH007	<ul style="list-style-type: none"> Located within the s170 Register heritage curtilage Located within the rail corridor on the existing trackwork of Platform 2 Located in the vicinity of the Former Bankstown Parcels Office 	<p>The proposed location of the borehole lies between the station platform and the southern boundary of the rail corridor, and east of the Former Bankstown Parcels Office.</p> <p>The proposed borehole works would involve SPTs at 1.5 m centres to bedrock level, alternating with undisturbed samples in cohesive strata. The location of the proposed borehole is within the heritage curtilage of Bankstown Station; however, the proposed borehole would not directly impact upon any elements of heritage significance.</p>	Neutral
BN-BH010	<ul style="list-style-type: none"> Located within the s170 Register heritage curtilage Located within the rail corridor, on the existing trackwork of Platform 1 	<p>The proposed location of the borehole lies between the station platform and the southern boundary of the rail corridor, and east of the Former Bankstown Parcels Office.</p> <p>The proposed borehole works would involve SPTs at 1.5m centres to bedrock level, alternating with undisturbed samples in cohesive strata. The location of the proposed borehole is within the heritage curtilage of Bankstown Station; however, the proposed borehole would not directly impact upon any elements of heritage significance.</p>	Neutral
BN-TP014	<ul style="list-style-type: none"> Located within the s170 heritage curtilage Located within the rail corridor, on the existing trackwork of Platform 1 	<p>The proposed location of the test pit lies between the station platform and the northern boundary of the rail corridor. The proposed test pit works would involve small and bulk disturbed samples for laboratory testing while DCP testing would be undertaken at the test pit to a depth of 3m or refusal. The location of the proposed test pit is within the heritage curtilage of Bankstown Station; however, the proposed works would not directly impact upon any elements of heritage significance.</p>	Neutral

BN-TP019	<ul style="list-style-type: none"> • Located within the s170 Register heritage curtilage • Located within the Bankstown LEP heritage curtilage • Located adjacent to the former Bankstown parcels office (northern elevation) 	<p>The proposed location of the test pit lies to the north of the heritage listed former Bankstown parcels office. The proposed test pit works would involve small and bulk disturbed samples for laboratory testing while DCP testing would be undertaken at the test pit to a depth of 3m or refusal. While the parcels office is considered an element of local heritage significance, the location of the proposed test pit would not directly impact upon the building or any of its associated fabric. The proposed works would not impact any significant fabric associated with the station or the former parcels office.</p>	Neutral
----------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------

BN-TP020	<ul style="list-style-type: none"> • Located within the s170 Register heritage curtilage • Located on Platform 1/2 (high significance) 	<p>The proposed test pit works would involve removal of the asphalt on the platform surface for the assessment. Small and bulk disturbed samples for laboratory testing would be taken while DCP testing would be undertaken at the test pit to a depth of 3m or refusal. While the platform coping is considered high significance fabric, asphalt surfaces and subsurface platform fill materials are not heritage significant fabric and the works would not physically impact the heritage significance of this element. Proposed works would not impact any significant fabric associated with the platform building (exceptional significance).</p>	Neutral
----------	----------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------

BN-TP021	<ul style="list-style-type: none"> • Located within the s170 Register heritage curtilage • Located within the Bankstown LEP heritage curtilage 	<p>The proposed location of the test pit lies at the northern boundary of the s170 heritage curtilage. The proposed test pit works would involve small and bulk disturbed samples for laboratory testing. DCP testing would be undertaken at the test pit to a depth of 3m or refusal. The location of the proposed test pit is within the heritage curtilage of Bankstown Station; however, the proposed works would not directly impact upon an element of heritage significance.</p>	Neutral
----------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------

BN-TP022	<ul style="list-style-type: none"> • Located within the s170 Register heritage curtilage 	<p>The proposed location of the test pit lies between the station platform and the northern boundary of the s170 heritage curtilage. The proposed test pit works would involve small and bulk disturbed samples for laboratory testing. DCP testing would be undertaken at the test pit to a depth of 3m or refusal. The location of the proposed test pit is within the heritage curtilage of Bankstown Station; however, the proposed works would not directly impact upon an element of heritage significance.</p>	Neutral
BN-TP024	<ul style="list-style-type: none"> • Located within the Bankstown LEP heritage curtilage • Located under the existing overbridge, to the centre of the railway track of platform 1/2 (high significance) 	<p>The proposed location of the borehole lies underneath the existing overbridge, which has been assessed as an element of high significance. The proposed borehole works would involve SPTs at 1.5m centres to bedrock level, alternating with undisturbed samples in cohesive strata. The location of the proposed borehole is within the heritage curtilage of Bankstown Station; however, the proposed borehole would not directly impact upon an element of heritage significance.</p>	Neutral
Soil resistivity test no. 2	<ul style="list-style-type: none"> • Located within the Bankstown LEP heritage curtilage • Located in the public park between the rail corridor and South Terrace • “Landscaping and natural features” are considered an element of moderate value to the significance of Bankstown Station 	<p>The small size of the testing apparatus would not involve any noticeable ground excavation, nor would it alter the appearance of the garden once the works were completed. While landscaping is considered moderately significant fabric, the proposed works would not physically impact significant trees, landscaping, or any built structure. Following the completion of works, the testing would not alter the appearance of the garden in any way.</p>	Neutral

1.2.4 Indirect (visual) impacts to heritage significance of

It is expected that the proposed works would replace the removed asphalt surfaces at Bankstown Station to its pre-existing condition following the completion of works. So long as reinstated ground and platform surfaces are made good to match existing asphalt surfaces, the proposed works would not result in any adverse indirect (visual) heritage impacts at any station.

1.3 Approval pathway

1.3.1 Low impact activities

The instrument of approval for the project was approved on 12 December 2018, and provides the following description of low impact activities in that document:³

(b) investigations including investigative drilling and excavation;

The instrument of approval also states that:

However, where heritage items on the State heritage register, areas of known or expected archaeological potential, ... 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 (Office of Environment and Heritage – now Department of Premier and Cabinet [DPC] Heritage)....

The proposed borehole, test pit and soil resistivity works are being conducted for geotechnical investigation works to inform design. The proposed works would result in neutral adverse impacts to heritage significant fabric. As such, these works would be considered Low Impact environmental activities, and can be progressed in advance of the preparation of the overall Construction Environmental Management Plan (CEMP) for the project works.

As the works are not taking place within the heritage curtilage of any item listed on the SHR and is not located in any areas of identified archaeological potential, no consultation with Heritage NSW is required to approve the works as Minor Works.

Following confirmation that the works are approved as low impact activities; the works should be conducted in accordance management recommendations outlined in the section below.

1.4 Conclusions and Recommendations

The proposed works would involve excavation of one test pit within the station platform of Bankstown Station. Additionally, two boreholes and six additional test pits are proposed to be excavated at locations within the heritage curtilages. These works would not result in adverse impacts to heritage significant fabric.

During the proposed works, the following recommendations are provided to ensure that inadvertent impacts to significant fabric and archaeological remains occurs:

- Significant fabric (such as platform coping or station platform buildings) near to areas of excavation should be protected from splash from vacuum truck excavation material during the works. This would ensure that outer surfaces are kept clean during works.
- Following the completion of works, all areas of investigation should be made good to restore the platform surfaces to their original appearance. This would include:

³ NSW Planning and Environment, 12 December 2018. *Infrastructure Approval for SSI 8256*. Accessed online at http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8256.

- Cleaning all asphalt, concrete and brick surfaces that may have been dirtied during works
- Ensuring that platform asphalt surfaces are reinstated following the completion of backfilling so that they match surrounding asphalt surfaces
- Borehole and test pit locations should not be moved from proposed locations outlined in this document. Should these locations be changed, this assessment would need to be revised and consultation may need to be repeated prior to works proceeding.

Kind Regards,

Sophie Barbera



Heritage Consultant
Artefact Heritage
Sophie.Barbera@artefact.net.au