

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)	Condition Assessment of Water Mains at Wiley Park
Application Number:	SMDS-PCMW-012
Application Date:	Rev00: 11.08.2020 Rev02:25.08.2020 Rev01:24.08.2020
Planning Approval:	<ol 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:</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>The EIS (<i>Technical Paper 3 - Non-Aboriginal Heritage Impact Assessment</i>) did not identify any heritage items within the proposed works boundary, as shown in Appendix 1. Wiley Park Station (Locally Listed) is located approximately 50 metres from the proposed works boundary.</p> <p>The proposed works would not impact any Potential Archaeological Deposits (PADs) identified in the <i>City and Southwest Sydenham to Bankstown Aboriginal Cultural Heritage Assessment Report</i> (Artefact 2018).</p> <p>Metron T2M will implement the Sydney Metro Unexpected Finds Procedure V2.0 throughout the proposed works.</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 Sensitivities Map in Appendix 1. No vegetation clearing is required for the works.</p>
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Part 2: Details

<p>Describe the proposed Minor Works:</p> <p>Including work methodologies, site location(s) and site description(s) (e.g. landscape type, waterways, etc.).</p>	<p>Site Description Overview:</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 both within and outside the northern side of the rail corridor, approximately 50 metres west of Wiley Park Station (refer to Appendix 1 for proposed works boundary). The proposed works are adjacent to residential land use areas, with education and commercial land use in the vicinity.</p> <p>The proposed works boundary comprises cleared, grassy landscape with areas of exotic scrub or forest on highly modified landforms (as identified in the EIS Biodiversity Assessment Report). Some planted native dicotyledonous species is present in the proposed works boundary, but will not be impacted by works. Refer to Appendix 1.</p> <p>Description of Works</p> <p>An assessment of the condition of water mains is required to provide an indication of the risk of failure of the main in the next 10 years. Two water mains run perpendicular to the rail corridor (600 SCL IBL and 900 SCL IBL), which are the focus of this assessment. Soil procurement testing will also be undertaken to determine the corrosivity of the soil, which may impact the condition of the water mains.</p> <p>The assessment is being conducted to identify the condition of the water mains within the rail corridor and in immediate vicinity external to the rail corridor perimeter fence. It is highly likely that the water mains beneath the railway embankment were installed using horizontal tunnelling, and likely to be contained within an encasement pipe/s using grout. The areas of the water mains being assessed are outside the tunnelled sections, as it is not practically possible to ascertain the condition of the encased steel pipe lengths.</p> <p>The proposed works will take place over five days, with no works to take place on weekends. The proposed works methodologies are outlined in greater detail below.</p> <p><i>Day 1: PCA - Leak Detection/ Soil Procurement Testing</i></p> <p>On Day 1, excavation will be undertaken using a vacuum truck to dig potholes above the two water mains, along the rail corridor fence, both on the outside and inside of the railway corridor. This will expose the water mains, which are assumed to be at an approximate 1.5m depth. Exposing the water mains will allow leak detection assessments to be made. Leak detection will be conducted using LeakfinderST's accelerometers, lowered to contact pipe surface using magnets (required to attach to pipe surface). The hardware will take sound recordings of vibrations in the pipe and allow the acoustic correlation of leaks.</p> <p>On Day 1 after leak detection assessments, soil procurement testing will be undertaken to determine the corrosivity of the native soil environment. <i>SoilCorr</i> technique involves sampling of soil from pipe depth, as close as practicable (within 1-1.5m) to the pipe under investigation.</p> <p>All excavation works, leak detection and soil sampling will be within the proposed works boundary shown in Appendix 1.</p>
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The proposed works procedure and equipment to be used for the leak detection and soil procurement testing is provided below.

Works procedure – Leak Detection:

- Prior to excavation, a proposed location will be checked with a service locator
- The vacuum truck will setup on the grassy area between the rail corridor fence and Urunga Parade. The location of the truck will be outside the rail corridor, shown in Appendix 2. The vacuum excavation truck will be set up to not impact any overhanging trees. This will be within the proposed works boundary
- The Stanlea Parade footpath will not be closed, however the works area will be located directly next to the footpath. Pedestrian traffic controllers will demarcate the works area (with traffic cones and signage) used for excavation and safely guide any pedestrians around the works area. Pedestrian control will be carried out under a council-approved traffic control plan (TCP). A Council Road Opening Permit (ROP) was acquired from Canterbury-Bankstown Council - no objections from council for this scope of works
- Non-destructive digs (NDD) will be undertaken using the vacuum truck to expose the two water mains for leak detection. These digs will be undertaken along the rail corridor fence, both on the outside and inside of the rail corridor. The excavated material will be stored in the chamber of the vacuum truck and transported offsite
- NDD will be perpendicular to the water mains (parallel to the rail corridor)
- When NDD is needed inside the rail corridor, the operator of the vacuum truck will enter railway corridor from Shadforth Street and use a vacuum hose over the railway fence
- After the pipelines are exposed by the vacuum truck, two leak surveys will be conducted, one on each water main
- The accelerometers will be magnetically attached directly to the exposed pipe (via pothole), or to other fittings in the vicinity of the pipe
- Two connection points, with minimal separation, are required for each survey

Works Procedure – Soil Procurement Testing

- The NDD will be used in initial stages of soil procurement (to prevent acquisition of asbestos) to a depth corresponding to approximately 1.0m
- After the NDD works and leak detection, small potholes will be dug within 2m offset of the water mains, using a hand auger, to pipe depth (approximately 1.5m)
- After the potholes have been hand dug, soil samples will be procured from the potholes (number of samples to be determined onsite). The soil that has been dug out (and is not being procured for sampling) will be temporarily stored on a sheet on the ground within proximity to the pothole being dug. Soil that has been dug out will be reused when filling the potholes. No turf will be removed due to the small size of the potholes
- Some locations will be external to the rail corridor, and other inside the rail corridor at low levels near perimeter fencing
- Once soil samples have been procured, the hand dug potholes will be filled with the remaining soil that was not procured for sampling and stabilised sand to replace the procured soil samples. The vacuum excavation team will reinstate the NDD potholes using stabilised sand. The sand will be brought to site on a separate vehicle (ute). The sand will be transported inside the rail corridor using a wheelbarrow. A manual tamper will be used to compact the sand and ensure the reinstated potholes do not collapse
- After the potholes are filled, the PCA and vacuum excavation team will demobilize.
- The pedestrian traffic controllers will remove the site demarcation
- All works will take place during standard working hours.

Equipment:

- Vacuum truck
- Ute
- Wheelbarrow
- Manual tamper

- Shovel
- Hand auger
- LeakfinderST's accelerometers.

Day 2: Pipe Coating Survey/ Coating Defect Locator

On Day 2, assessment of the condition of pipe coating will be undertaken through a pipe coating survey (PCS) and coating defect locator (CDL), which are non-destructive methods. It is premised upon the assumption that the rate at which an impressed current along an electrically continuous pipeline attenuates will be related to the condition of the external protective coating and surrounding environment. The CDL will be required after PCS for identified defects along the water mains that need to be accurately located – providing electrical continuity is required. As with PCS, it requires access to pipework and electrical continuity to transmit the signal.

The PCS and CDL will take place within the proposed works boundary shown in Appendix 1.

The proposed works procedure and equipment to be used for the PCS are provided below.

Works procedure – Pipe Coating Survey/ Coating Defect Locator:

- PCA team will setup an exclusion zone at the two water mains (DN600 and DN900) outside the railway corridor, on the grassy area between the rail corridor fence and Urunga Parade (within the proposed works boundary)
- The specialised transmitter will be connected to the water mains at a valve and impress a low frequency current, external to the rail corridor – this requires connection to SWC valves (inside pump station for DN900) and to valves on Stanlea Parade for DN600
- Conduct spot measurements using the handheld receiver along the main at approximately 5m intervals (for about 1min) at ground level – either side of rail lines. This is non-invasive and does not require any potholing. Measurements are taken using signals (impressed currents) applied by the transmitter. If pipe lengths are insulated, a signal cannot be transmitted for any distance
- Readings will be taken at ground level near rail corridor fencing – on both sides of the fence
- The resultant signal loss is an indicator of the type and condition of external pipeline coating
- PCS will be followed by CDL
- After PCS, the AC Signal Transmitter/ PCM will be connected to the water mains at a valve and impressing a low frequency current, external to the rail corridor – this requires connection to SWC valves (inside pump station)
- The operator will walk along the water mains with a “Coating Defect Locator” receiver, and the receiver indicates the location of the defect through changes in strength of electromagnetic field emitted from the coating defect. This is non-invasive and does not require any potholing. Measurements are taken using signals (electromagnetic field) applied by the transmitter
- Readings will be taken at ground level near rail corridor fencing – on both sides of the fence
- These works will take place during standard working hours.

Equipment:

- Specialised transmitter and receiver
- Pipeline current mapper (PCM)/ AC Signal Transmitter
- “Coating Defect Locator” receiver.

Day 3 to Day 5: PCA - Stray Current Monitoring

Between Day 3 and Day 5, monitoring of stray currents will take place to detect areas of potential corrosion in the water mains. All monitoring will be within the proposed works boundary shown in Appendix 1.

The proposed works procedure and equipment to be used for stray current monitoring is provided below.

Works procedure – Stray Current Monitoring:

- On Day 3, an exclusion zone will be setup at the two water mains outside the railway corridor, on the grassy area between the rail corridor fence and Urunga Parade (within the proposed works boundary)

- Pipe-to-soil potential monitoring will be undertaken. This involves connecting the stray current data logger to an available fitting (DN600) water main (external to rail corridor) to determine the likelihood of stray current electrolysis (measuring variability of electrical potential for 24-48hr)
- The data logger will be positioned on the ground at the rail corridor fence (inside the rail corridor), with a cable running to the valve of the water main (situated external to rail corridor) and to a copper-copper sulphate electrode and steel rod, both situated within rail corridor in close proximity to the data logger
- The copper-copper sulphate electrode and steel rod will be inserted next to the data logger into the ground to a depth of approximately 100mm (on the side further from the railway corridor fence)
- The water main valves are located outside the railway corridor, next to the railway corridor fence. A hand auger will be used to dig a small “trench” from the valve to the data logger to run the cable connecting from the data logger to the valve (including under the fence). The trench will also be dug from the data logger to the copper-copper sulphate electrode and steel rod to run those cables. The “trench” will be approximately 25mm to 50mm deep, and will likely be achieved by parting the soil
- Once the cables are run, the ground will be reinstated with stabilized sand. The sand will be brought to site on a separate vehicle (ute). The sand will be transported inside the rail corridor using a wheelbarrow. A manual tamper will be used to compact the sand and ensure the reinstated potholes do not collapse. The valves will be covered with a slip resistant Safety Plate to eliminate all tripping hazards (ensuring that cables are not pinched by valve cover)
- The installation works will occur during standard working hours
- The stray current data logger, electrode and steel rod will be barricaded inside the railway corridor to ensure no unauthorized personnel will interact with the set up. There will be no external access to the data logger from outside the rail corridor. It will be left for 24-48 hours (from Day 3 to Day 5). The stray current data logger will be left unattended with signage around the barricaded area. The stray current data logger will not emit any noises during this time
- On Day 5, after 24-48 hours, the PCA team will setup an exclusion zone at the two water mains outside the railway corridor, on the grassy area between the rail corridor fence and Urunga Parade (within the proposed works boundary). The stabilised sand used to fill the small trench on Day 3 will be dug to remove the data logger, cables and electrodes. The “trench” will be reinstated with the stabilised sand after the setup is removed. The sand will be brought to site on a separate vehicle (ute). The sand will be transported inside the rail corridor using a wheelbarrow. A manual tamper will be used to compact the sand and ensure the reinstated potholes do not collapse. This will be during standard working hours
- NOTE: the electrical cabling will not be connected/disconnected to valve until all other cabling is in position and connected to the data logger. Connecting and disconnecting the data logger to the valve will be performed using an insulated alligator clip (only during periods in between train movements).

Equipment:

- Stray current data logger
- Cables
- Copper-copper sulphate electrode and steel rod
- Slip resistant safe plate
- Hand auger
- Stabilised sand
- Manual tamper
- Ute
- Wheelbarrow
- Shovel.

	<p>Working Hours: The proposed works will be undertaken outside possession time, within standard working hours (Monday to Friday between 7am and 6pm and Saturday between 8am and 6pm).</p>
<p>Planned Commencement Date</p>	<p>The planned commencement date for proposed works is over five consecutive weekdays after the 31th of August.</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, with an educational facility located 100 metres from the proposed works. Noise and air quality impacts from survey works are expected to be minor and contained to standard working hours. • 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 information relevant to the proposed works are provided in greater detail below. <p>Railway stations along the Sydenham to Bankstown line have been used for railway purposes for more than 70 years. There is a potential risk of contamination within the proposed works boundary, with potential contamination sources being historical rail activities in the rail corridor. Potential contaminants include:</p> <ul style="list-style-type: none"> ○ Asbestos ○ Hydrocarbons including TRH SVOCs (including PAH, PCBs, phenols and ethylene glycol) and VOCs (including BTEX and volatile chlorinated compounds) ○ Heavy metals ○ Herbicides. <p>GHD undertook several contamination assessments in 2017. GHD prepared a targeted contamination assessment report dated 20 November 2017 for area of the proposed works around the rail corridor and stations of the T3 Line between Sydenham Station and Bankstown Station. The report included the information from 173 sampled locations along the railway corridor. Chrysotile asbestos was reported between Wiley Park Station and Punchbowl Station.</p> <p>No potential acid sulphate soil risk has been identified for the proposed works boundary or surrounding areas.</p> <p>The Unexpected Finds procedure (Appendix 3) will be followed should unexpected contaminated land or asbestos be encountered during the proposed works.</p> <p>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.</p> <ul style="list-style-type: none"> • The EIS (Technical Paper 3 - Non-Aboriginal heritage impact assessment) did not identify any heritage items in the proposed works boundary. • The proposed works would not impact any Potential Archaeological Deposits identified in the City and Southwest Sydenham to Bankstown Aboriginal Cultural Heritage Assessment Report (Artefact 2018). • 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 Office of Environment and Heritage (now Department of Premier and Cabinet - Heritage) is required to approve the proposed works. • No areas of threatened ecological communities or threatened species have been identified in the proposed works boundary or surrounding areas. The proposed works will not require the removal or trimming of any vegetation along the corridor. • The proposed works will impact several small patches of grass when potholing

	<ul style="list-style-type: none"> Proposed works may occur in the vicinity of local stormwater systems. Excavated materials and sand will be transported in trucks/ vehicles and no stockpiling will take place on site. 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)). No access to roads or footpaths will be restricted during the proposed works.
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Part 3: Environmental Risk Assessment and Management

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

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

<p>Documentation: List any existing documents (including those referenced above) that the proposed Minor Works will be undertaken in accordance with and attach as Appendix 3 (e.g. plans, procedures, procedures, etc.).</p>	<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 3.</i> <i>The Sydney Metro Belmore to Bankstown monthly notifications for August/ September 2020 is provided in Appendix 4.</i>
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Part 4: Workforce Notification

<p>How will the environmental and community risks and associated mitigation measures of the proposed Minor Works be communicated to the contractor's workforce?</p>	<p>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:</p> <ul style="list-style-type: none"> Approved work area boundaries Works scope Key environmental constraints and mitigation measures Roles and responsibilities of all site members <p>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.</p>
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Part 5: Community Consultation

<p>What community consultation has been undertaken already?</p>	<p>The Sydney Metro monthly notifications for Belmore to Bankstown for August/ September 2020 include reference to the activities proposed (included in Appendix 4)</p>
<p>What community consultation is planned to be undertaken?</p>	<p>All further works beyond September 2020 will be included within subsequent monthly notifications and additional targeted notifications, as required by the Sydney Metro OCCS. In accordance with the Sydney Metro OCCS, 7 days notification will be given to the community prior to works starting.</p> <p>Canterbury Bankstown Council will be notified of any works taking place outside of the rail corridor.</p>
<p>If drafted already, attach applicable Community Notification as Appendix 4.</p>	

Part 6: Contact Details

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

Name:	Luke Palmer	Position:	Project Manager	Phone:	██████████
	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.

Name:	Ben Fethers		
Signature:		Date:	25/08/2020

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)
Signature:			
Name:	May Li Foong	Fil Cerone	
Date:	25/8/20	27 August 2020	
Comments:			<i>Supporting letter attached as Appendix 5 if necessary.</i>
Conditions:	As per Part 5		<i>Supporting letter attached as Appendix 5 if necessary.</i>
<input checked="" type="checkbox"/>	Approved (by TfNSW)		
<input type="checkbox"/>	Endorsed (by Environmental Representative)		
<input type="checkbox"/>	Rejected		

Appendix 1: Environmental Risk Assessment and Environmental Control Maps

(Uncontrolled when printed)

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
Air quality and noise emissions	<p>Noise and air quality impacts on nearby sensitive receivers.</p> <p>Air quality impacts are expected to be minimal, as material excavated using the vacuum truck will be stored in the chamber of the vacuum truck and transported offsite.</p> <p>The soil samples will be taken from potholes using a hand auger. Soil taken from the potholes (that are not being procured for sampling) will be temporarily stored on a sheet next to the pothole until the pothole can be backfilled.</p>	5	3	Moderate	<ul style="list-style-type: none"> Site equipment is to be turned off when not in use 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 if required. 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 workforce	4	4	Moderate	<ul style="list-style-type: none"> Surveyors will be vigilant for hazardous materials (e.g. asbestos, hydrocarbons, lead, benzo(a)pyrene, acid sulphate soils) that may be uncovered during investigations Unexpected finds procedure (Appendix 3) will be followed. Reference to this procedure will be included within the contractor induction material No refueling will occur in the work area 	4	5	Low

(Uncontrolled when printed)

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
					<ul style="list-style-type: none"> Spill kits will be kept near to work areas at all times and trained staff present in case of a spill. 			
Work in heritage areas	No impact to heritage. No invasive works will take place within a heritage curtilage.	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 heritage areas are avoided. Works will be undertaken in accordance with the Sydney Metro City and Southwest Unexpected Finds Procedure V2.0 for heritage 	6	6	Low
Work in biodiversity areas	Invasive works will not be undertaken in designated threatened ecological communities or native community types. There is some planted native vegetation in the proposed works boundary, but no dicotyledonous vegetation clearing or trimming is proposed. The vacuum excavation truck will be set up without impacting overhanging trees. Potholes for soil sampling will impact a small area of grass	5	5	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 limited 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	5	Low	<ul style="list-style-type: none"> Any stockpiled material will be stored out of drainage channels and covered during inclement weather 	5	5	Low
Transport and access	Negative impact to local roads, parking and footpaths from closures or obstructions during survey work. No roads or footpaths will be	5	5	Low	<ul style="list-style-type: none"> Personnel will minimise the number of vehicles used to travel to the site Personnel will park legally and observe restrictions at all times 	5	6	Low

(Uncontrolled when printed)

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
	<p>closed during the proposed works.</p> <p>There may be impact to traffic flow when vehicles and the vacuum excavation truck are travelling to and from the site.</p>				<ul style="list-style-type: none"> If investigation works impact footpaths and roads, works will be carried out under a council-approved traffic control plan (TCP), using traffic controllers to manage pedestrian and vehicle flow Road occupancy licenses (ROL) will be acquired from RMS for all investigations on RMS roads within 100m of a traffic light where road or lane closures are required Road opening permits (ROP) will be acquired from council for all intrusive investigation in council land Controls will be implemented in accordance with the ROL/ROP/Traffic Control Plan (TCP) Personnel will be inducted on the required control measures that must be implemented Where possible survey work in roadways will be undertaken in off peak times to minimise congestion 			
Service strike	Damage to services during excavation which cause an environmental incident	4	4	Moderate	<p>Prior to any ground disturbance works, a service locator will check each excavation site is clear of services and provide a permit to excavate:</p> <ul style="list-style-type: none"> Service locator and surveyor will check all excavation locations with DSS and locating 	4	5	Low

(Uncontrolled when printed)

Aspect	Potential environmental impact	Initial risk rating			Control measures	Residual risk rating		
		Consequence	Likelihood	Risk		Consequence	Likelihood	Risk
					equipment to identify areas clear of services <ul style="list-style-type: none"> 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 locator once confirmed clear, approx. 1m square section 			
Waste	Improper management of waste could result in an environmental incident	5	5	Moderate	The following measures will 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 discernible reaction/apprehension. Goodwill, confidence and trust retained.	Unease – Series of negative articles in local/state media. Confidence remains with some minor loss of goodwill or trust. Recoverable with little effort or cost. Some continuing scrutiny/attention.	Disappointment – Extended negative local/state media coverage. Confidence and trust dented but are quickly recoverable at modest cost within existing budget and resources.	Concern – Short-term negative state/national media coverage. Confidence and trust are diminished but are recoverable with time, staff effort and additional funding.	Displeasure – Extended negative state/national media coverage. Confidence and trust are damaged but recoverable at considerable cost, time and staff effort.	Outrage – Material change in the public perception of the organisation. Confidence and trust are severely damaged, possibly irreparably, and full recovery both questionable and costly.
Regulatory or Legal Breach	Low-level non-compliance with legal and/or regulatory requirement or duty by individuals or TNSW.	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 TNSW 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 TNSW; 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

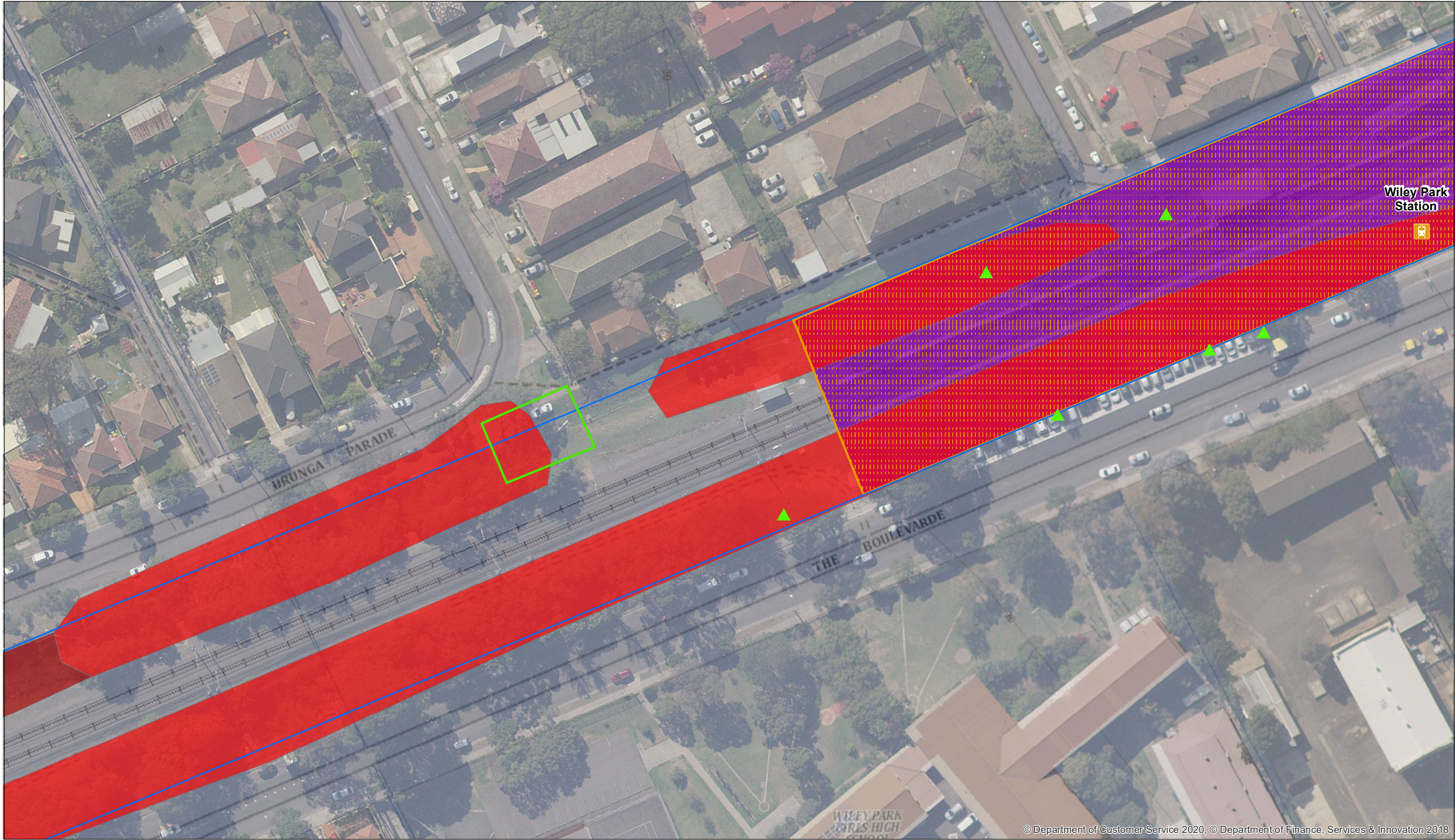
A2 Likelihood Criteria

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 – 3-10			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 event	L6	1	2	5	10	15	21

Environmental Sensitivities Maps



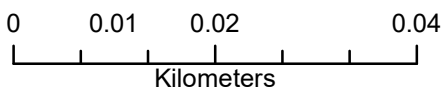
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Southwest Metro Design Services
Wiley Park Water Mains: Environmental Sensitivities

Stations	GHD 2017 Contamination (approx. locations) General solid waste	Ibis	State Heritage	Turpentine - Grey Ironbark open forest on shale (ME041, Moderate/good-medium)
Corridor Boundary	General solid waste w asbestos	Acacia Pubescens	Local Heritage	Non-Native Vegetation
Proposed Works Boundary	Hazardous waste	Acacia Pubescens Patches	Conservation Areas	Exotic grassland
AGJV Contamination (approx. locations)	Restricted solid waste	Potential Acid Sulphate Soil	Native Vegetation	Exotic scrub or forest
General solid waste	Not completed	S170 Heritage	Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest (ME004, Moderate/good)	Planted native vegetation
General solid waste w asbestos	Threatened Species Sightings	Archaeological Management Zone	Degraded Turpentine - Grey Ironbark open forest on shale (ME041, Moderate/good-poor)	
Restricted solid waste	Grey-Headed Flying-Fox	Potential Archaeological Deposit		











1 cm = 8 meters
GDA 1994 MGA Zone 56
31/07/2020



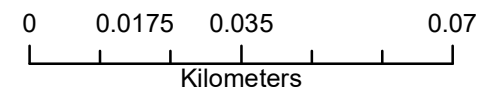


Southwest Metro Design Services
Wiley Park Water Mains: Environmental Sensitivities Map

- | | | |
|--|--|--|
|  Stations | Land Uses |  Place of worship |
|  Corridor Boundary |  Commercial |  Residential |
|  Proposed Works Boundary |  Education |  Outdoor active |



1 cm = 13 meters
 GDA 1994 MGA Zone 56
 31/07/2020

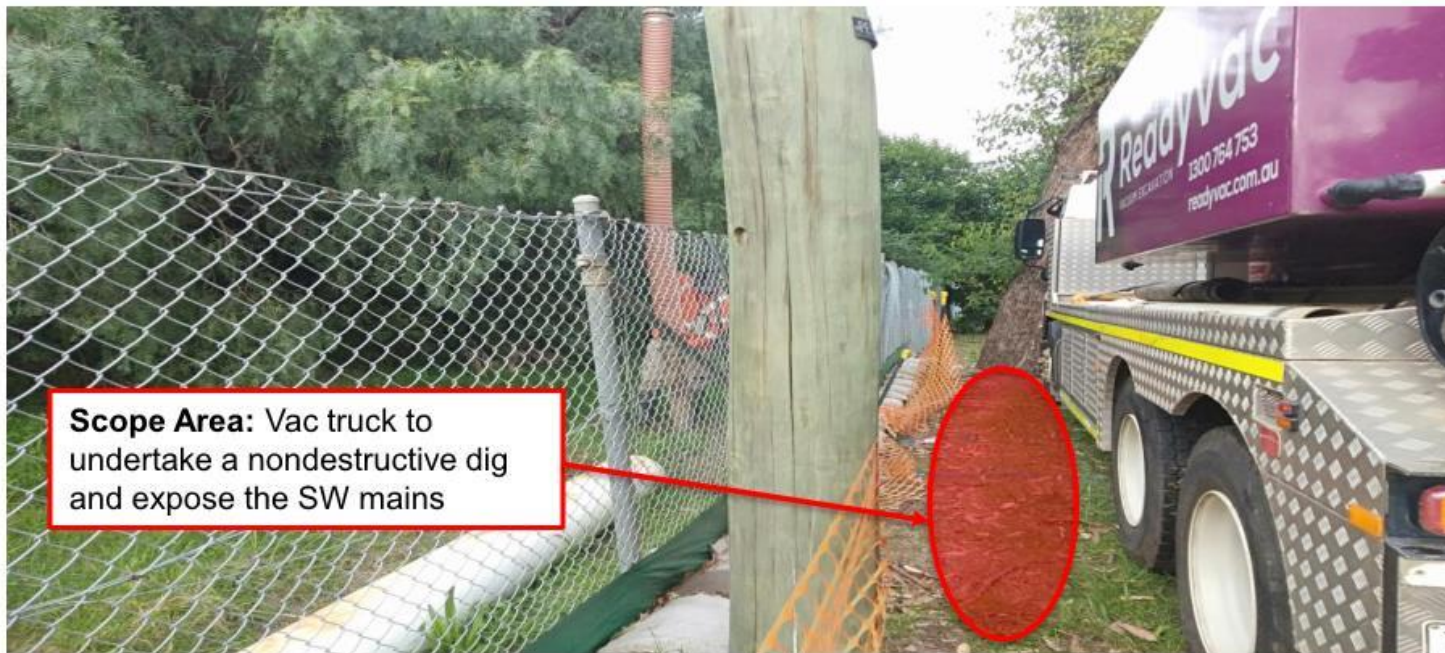


Appendix 2: Vacuum Excavation Truck Set Up

Vacuum Truck position



Proposed Trench Outside Corridor



Proposed Trench Inside Corridor



Appendix 3: 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 sulphate 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.

Appendix 4: Community Notification

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"> • Locating and confirming underground services which will involve using hand held equipment and non-destructive digging close to and inside the rail corridor • Site/ geotechnical investigations and soil assessments • Tree assessments and topographic/ scanning surveys in the rail corridor, at stations and in nearby public areas • Non intrusive pipe inspections on station platforms between Belmore to Bankstown

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"> • Site/geotechnical investigations and topographic surveys inside the rail corridor, on station platforms and in nearby public areas • Locating and confirming underground services close to and inside the rail corridor

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.

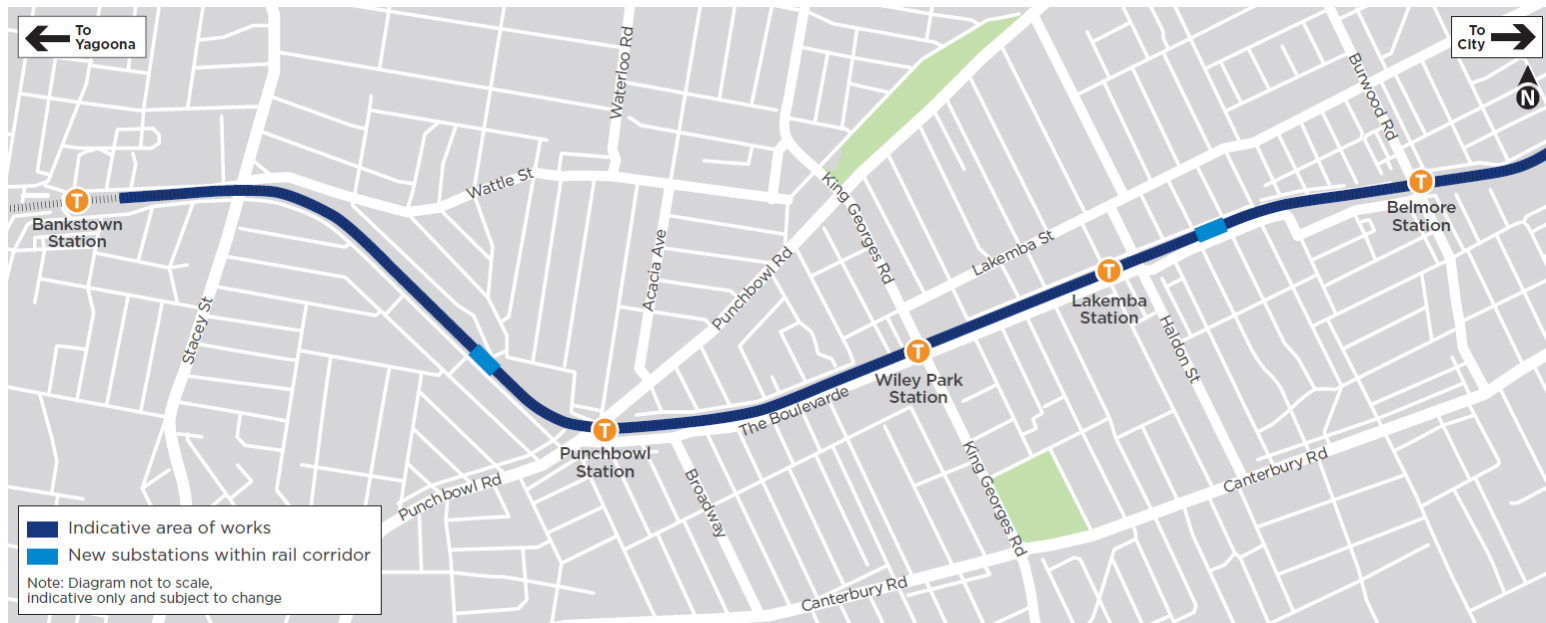
Keeping you informed

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.

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



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



Appendix 5: Environmental Representative Supporting Letter