



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:	Laing O'Rourke
Project:	Sydney Metro City and Southwest - Northern Corridor Works Project
Application Title: (e.g. Smith St trenching works)	Weekend Possessions 33 and 35: Portion 7a - Construction of Overhead Wire Structures (OHWS) and Pot Holing. February 10 th – March 2 nd 2018
Application Number:	NCW-007
Application Date:	Revision 1 - 25/01/18 Revision 2 – 05/02/18 Revision 3 – 07/02/18
Planning Approval:	SSI 15_7400
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 investigations 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.
Planning Authority Determination: Will the proposed works affect or have the potential to affect heritage items, threatened species, populations or	No. The proposed works do not have potential to impact on heritage items, threatened species, populations or endangered ecological communities.



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<p>endangered ecological communities?</p>	
<p>Part 2: Details</p>	
<p>Describe the proposed Minor Works: Including work methodologies, site location(s) and site description(s) (e.g. landscape type, waterways, etc.).</p>	<p>The scope of work involves the construction of overhead wire structures in the rail corridor between chainages 10.600km to 11.200km (between Albert Avenue and Nelson Street) to the south of Chatswood Station. Works will commence on 10th February 2018 and conclude 1st March 2018.</p> <p>WE33 and WE35 works are located in the rail corridor and require no trains running and high voltage power to be isolated. If these works were to occur during standard construction hours then personnel would be at risk of being struck by trains and electrocution. Mid-week works remove spoil and deliver materials during standard work hours to enable works to proceed.</p> <p>The work activities are as follows:</p> <p><u>Weekend 33 (10-12/02/18): 0600 Saturday to 0200 Monday (OOHW)</u></p> <ul style="list-style-type: none"> • 4 OHWS footings will be constructed; 11+224DS, 11+281DS, 11+511DS & 11+584DS. • 11+511DS & 11+584DS are located next to the DOWN track shoulder and have been previously supersucked and cleared of any underground services. Excavator will excavate down and box out. 16T Hi-rail excavators will auger 900 & 1200 diameter piles 8 meters from the surface or until bedrock is encountered. 16T excavator will lift prefabricated pile reinforcement and pile cap shutters into place. Hirail concrete agitators will pour concrete directly from the chute. • 11+224DS & 11+281DS are located at the top of the shotcrete embankment outside the danger zone. Scaffold access (from the track) and a working platform will be assembled. Shotcrete will be sawcut to allow access. A Kingvac supersucker located in the UP access road will service search the two locations. Excavator will excavate down and box out. 16T Hi-rail excavators will auger two 1200 diameter piles 6.4 meters from the surface or until bedrock is encountered. 16T excavator will lift prefabricated pile reinforcement and pile cap shutters into place. Concrete will be placed via a line pump located in the UP track access road. • Service searching at 27 footing locations will occur outside the UP track between Hopetoun Ave and Mowbray Rd Bridge. <p>The scope of works will be completed within the hours indicated above, however a contingency factor should be considered in regard to the possession program whereby works may continue into Sunday evening.</p> <p><u>Midweek 33 (12-16/02/18) Monday to Friday 0700 to 1800</u></p> <ul style="list-style-type: none"> • Removal of spoil from site and delivery of materials via Drake Street <p><u>Midweek 34 (19-23/02/18) Monday to Friday 0700 to 1800</u></p> <ul style="list-style-type: none"> • Delivery of materials via Drake Street <p><u>WE35: (24-25/02/2018) 0600 Saturday to 0200 Monday (OOHW)</u></p> <ul style="list-style-type: none"> • 4 OHWS structures will be constructed in the following order; 11+584US, 11+511US, 11+224DS, 11+450US & 11+424US • All footings are located in the UP cess. 16T Hi-rail excavators will auger 1200 & 900 diameter piles 8 meters from the surface or until bedrock is encountered. 16T excavator will lift prefabricated pile reinforcement and pile cap shutters into place. Concrete placed via line pump situated in UP cess access track. • Stand steel on 4 footings; 11+224DS, 11+281DS, 11+511DS & 11+584DS constructed from WE33. <p><u>Midweek 35 (26/02/18 to 02/03/18) Monday to Friday 0700 to 1800</u></p> <ul style="list-style-type: none"> • Removal of spoil from site and delivery of materials via the Drake Street <p>A traffic control plan has also been included in Appendix 1.</p>
<p>Planned Commencement Date:</p>	<p>10 February 2018</p>
<p>Local Sensitivities: Describe the presence (if any) of local sensitive environmental areas and community receptors.</p>	<p><u>Community</u> – Residents off Albert Avenue, Ellis Street, Chapman Avenue, Gordon Avenue and Hopetoun Ave have direct line of site to the works. Site access would be via the site access gate to the rail corridor on Drake Street and Hopetoun Avenue.</p>
<p>Part 3: Environmental Risk Assessment and Management</p>	
<p>Prepare an Environmental Risk Assessment (in accordance with the <i>Sydney Metro Risk Management Standard</i>) and an Environmental Control Map for the proposed Minor Works and attach as Appendix 1.</p>	



(Uncontrolled when printed)

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.).	<ul style="list-style-type: none"> - Sydney Metro Construction Environmental Management Framework - Sydney Metro City and Southwest, Chatswood to Sydenham, Planning approval SSI 15_7400
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?	All workers will undertake NCW Project specific induction. In addition, there will be a pre-start briefing undertaken by the worksite manager at the start of shift for all work groups. This will detail the environmental and community risks and mitigation measures.
Part 5: Community Consultation	
What community consultation has been undertaken already?	None for these specific minor works activities.
What community consultation is planned to be undertaken?	The works will be covered by Sydney Trains possession notification. Other specific notifications and briefings (IB, PC, and SN) will be applied as per Table 6 in the OOHW applications 007 and 008 for NCW.
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:	Tony Deacy	Position:	Project Manager	Phone:	0467 762 987
	Chris Standing		Environmental Manager		0431 338 578
	Helena Johansson		Communications and Stakeholders Manager (Sydney Metro)		0466 545 189
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:	Chris Standing				
Signature:				Date:	25/01/18



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:	HELENA JOHNSON	FIL CORONE	Erran Woodward
Date:	8/2/18	9/2/18	8/02/18
Comments:			An ECM for works to be undertaken for WE 35 will be prepared and endorsed as part of OOHW Application for these works.
Conditions:			
<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 Map.

Risk Assessment Rankings: >17 = Extreme 10 - 16 = High 5 - 9 = Medium 1 - 4 = Low

Issues or activities that represent an Extreme risk after the application of control measures are not to be undertaken

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		P X	C =	Risk		P X	C =	Risk
Approvals and Licensing								
Not identifying appropriate approvals / licenses required or proceeding without them.	Works delayed, infringements, prosecution and reputational loss.	P	3	M	Planning approval has been granted for the Sydney Metro - Chatswood to Sydenham works (SSD 15_7400). This minor works application is being completed to ensure appropriate documentation is completed to manage environmental risk of the project. Only works with minimal impact are being undertaken.	U	1	L
Noise								
Noise from installation of OHW structures	Disturbance to residents or neighbouring businesses. Potential for complaints.	P	3	M	Control measures as per Community Consultation Strategy (CCS) are to be implemented. Consult with the community in relation to upcoming activities that may result in concern (completed by Sydney Metro). Silenced lighting towers and equipment will be used where practical. An existing noise barrier runs along the rail corridor. Additional acoustic blankets will be used to mitigate noisiest activities. In the event of noise monitoring indicating noise levels exceeding predicted levels during evening and night periods, the team will be required to	U	3	M



					change work practices, such as reducing the number of plant/equipment operating concurrently. Refer to OOHW application 007 and 008 for details on additional controls.			
Vibration								
Vibration intensive activities undertaken on the site in proximity to sensitive heritage structures and community.	Damage to listed heritage items. Disruption, annoyance and nuisance to residents. Potential damage to adjacent residential and commercial residences and structures. Disruption to businesses as a result of vibration nuisance	U	4	M	Consult with potentially affected parties prior to commencement of works for any activities that may create vibration impacts caused by the works. No heritage structures within close proximity of proposed minor works. No vibration intensive works to be undertaken.	R	3	M
Water Quality, Erosion & Sedimentation								
Sediment laden runoff from investigation works leaving site.	Degradation of local watercourses. Increased turbidity in local water ways resulting in impact on aquatic life. Fines for sediment escaping site.	U	3	M	Control measures as per Environmental Control Map (ECM). All vehicle wheels to be cleaned prior to exiting site.	R	3	L
Non-compliant water from investigation works discharged from site	Non-compliant water entering stormwater system waterways (i.e. polluting - not compliant with discharge criteria).	P	3	M	No water discharge anticipated for minor works. Erosion and Sediment Controls to be maintained for the duration of works. If water discharge is required, Sydney Metro Water Discharge or Reuse Approval form to be utilised. Form to be approved by LORAC Environmental Manager prior to discharge.	U	2	L
Ground water	Ground water entering excavations Without appropriate safeguards onsite could lead to ground water contamination	U	2	L	Proposed works are not expected to affect groundwater as footings excavation will not exceed 7 meters. Note: Groundwater levels are predicted to be 10-30 meters below ground level. Sydney Metro EIS – Groundwater and geology, Chapter 17.	R	1	L



Waste									
Waste disposal during works.	Incorrect disposal of waste, further costs incurred for classifications and disposal, fines may be issued.	P	2	M	<p>Wastes to licenced waste facility only.</p> <p>Ensure accurate waste records are retained.</p> <p>Removal of wastes from the site would only be undertaken by a licensed contractor as required by the POEO Act and with appropriate approvals, if required, for contaminated materials, etc.</p> <p>All material that requires off-site disposal to be appropriately classified against the Waste Classification Guidelines (DECC, 2008).</p>	R	2	L	
Contamination									
Potential for discovery of unexpected contaminated spoil during investigation works involving excavation and drilling.	<p>Health effects resulting from airborne contamination, e.g. asbestos.</p> <p>Complaints received from odours.</p>	P	3	M	<p>If contaminated soil is encountered, all works are to stop in the vicinity of the find and investigations commence.</p> <p>Occupational hygienist in attendance on site.</p> <p>Induct personnel on location, type, nature and concentration of contaminants on site if found.</p>	U	2	L	
Hazardous Materials									
Storage of hazardous substances, leaking plant and equipment and spillage from refuelling.	Localised ground contamination / pollution of stormwater and requiring clean-up and/or receiving fines. Risk of igniting volatile substances.	U	3	M	<p>No fuels or hazardous materials to be stored on site for minor works.</p> <p>Spill kits to be onsite when using plant/equipment.</p> <p>No major servicing of equipment to be undertaken onsite.</p> <p>Pre-mobilisation checks on all plant/equipment to come to site, including check of fuel and hydraulic leaks.</p>	R	3	L	
Biodiversity									
Vegetation trimming / clearing required outside approved work area.	Unauthorised works / removal of vegetation outside defined work	R	3	L	No vegetation removal/trimming to be undertaken as part of the minor works.	R	1	L	

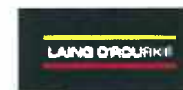


	area, possibility of removing threatened species, fines incurred.							
Clearing and grubbing of vegetation within work site.	Erosion of soils, uncontrolled runoff, sediment deposited into surrounding vegetated areas and watercourses, and invasion of weeds. Wrong vegetation removed. Potential for injury to native fauna.	R	3	L	No vegetation removal/trimming to be undertaken as part of the minor works.	R	1	L

Air Quality								
General works	Dust activity in close proximity to residential and commercial premises, complaints received.	U	3	M	Potholing will use water aided digging – no dry high pressure excavations undertaken. Where required, spoil from augers to be covered to prevent dust being blown offsite Spoil stockpiles to be covered to prevent wind erosion and dust.	R	2	L
Exhaust from plant and equipment.	Emissions resulting in air pollution.	U	3	M	Well maintained plant/ equipment and pre-start checks and servicing. Non-complaint vehicles removed from site / repaired.	R	2	L
Heritage								
Unexpected heritage items encountered.	Work delays, additional studies, approvals required, damage to heritage item.	P	3	M	General inductions on heritage management 'stop-works' protocol. If suspected heritage item encountered. Works to stop immediately and Environmental Manager contacted. Unexpected finds of heritage items must be reported to LOR Environmental Manager and Sydney Metro. The site is to be isolated and investigated by a heritage consultant. Approval to proceed required prior to re-commencing works.	U	2	M



					<p>The site is to be isolated and investigated by a heritage consultant.</p> <p>Approval to proceed required prior to re-commencing works.</p> <p>Label any known heritage items on Environmental Control Maps.</p>			
Flora & Fauna								
Removal of flora without approval.	Failure to identify flora prior to removal.	R	3	L	No vegetation removal/trimming to be undertaken as part of these minor works.	R	1	L
Traffic								
Loss of on-street car parking in adjacent residential streets and commercial areas during investigation works.	Loss of parking availability to adjacent residential and commercial properties could result in community complaints.	P	3	M	<p>Community notifications will include information on potential temporary closures for delivery purposes.</p> <p>Site vehicles shall be parked within the rail corridor and not affect public parking area</p> <p>Temporary closure of Drake Street and Hopetoun Ave required for deliveries.</p>	U	3	L
Management of heavy vehicles / access routes.	Complaints from sensitive receivers due to increased level and frequency of noise.	P	4	M	<p>Deliveries of plant and materials shall be undertaken outside of peak periods where possible</p> <p>Site vehicles shall be parked within the rail corridor and not affect public parking areas</p> <p>Scheduled road movements shall be minimised where possible</p> <p>Oversized deliveries would be undertaken in accordance with the requirements of NSW Police or Roads and Maritime Services.</p> <p>Heavy vehicle access routes given to contractors/suppliers/deliveries.</p> <p>Community notifications will include information on potential temporary closures for delivery purposes.</p> <p>Pedestrian management with traffic controller in place where required.</p>	U	3	L



Truck deliveries out of normal working hours (un-approved).	Noise impact to community / potential complaints.	P	3	M	Induction on approved working hours for deliveries. Communication of delivery times to suppliers. Community Notifications on project activities occurring locally. Approved traffic/access routes as identified in the EIS will be communicated to drivers and enforced. Planning and staging of works in approved hours as much as practical.	U	3	M
Resources and Energy Use								
Energy consumption by plant and equipment.	Inappropriate energy use, waste of energy resources, energy wastage costs, increased greenhouse gas emissions.	U	2	L	No idling of plant equipment where possible onsite. Equipment / plant equipment inspections must be undertaken prior to use on site.	R	2	L
Resource usage (e.g. building materials, water, fuels, packaging), waste generation and disposal	Depletion of resources due to wastage (e.g. wastage of water / no recycling, poor management of procurement, ineffective removal of off-cuts, waste, i.e. no recycling).	U	2	L	Only sufficient materials to complete the works will be procured.	U	2	L

For each identified issue, consider the 'maximum credible' (not absolute worst case) risk that could result with **minimal or no controls** other than existing and using normal work practices.

Note: Any one of the listed consequences must result in the use of the applicable consequence grading.



Probability:		Consequence:	
5 = Certain 4 = Likely 3 = Possible 2 = Unlikely 1 = Rare		5 = Severe 4 = Major 3 = Moderate 2 = Minor 1 = Incidental	
1-4 Acceptable 5-9 Acceptable with control measures 10-16 Requires the implementation of best practice 17 and Above = UNACCEPTABLE			

5	Certain	<ul style="list-style-type: none"> Common or repeating occurrence Consequence can reasonably be expected to occur in life of Project. 	5	Severe	<ul style="list-style-type: none"> Major pollution incident causing significant and widespread damage or potential to health or the environment Persistent reduction in ecosystem function and value. Ongoing disruption and loss of protected species. Major prosecution likely, outcome in excess of \$500,000
4	Likely	<ul style="list-style-type: none"> Known to have occurred / "has happened" Conditions may allow the consequence to occur on the Project during its lifetime The event has occurred within the Business Unit within the previous 5 years. 	4	Major	<ul style="list-style-type: none"> Significant widespread and persistent changes to habitat, species or environmental media Significant pollution incident causing damage or potential damage to health or the environment external to the site. Potential for prosecution. Potential outcome between \$50,000 - \$500,000 Numerous substantial complaints Actual material environmental harm
3	Possible	<ul style="list-style-type: none"> Could occur / "heard of it happening" Exceptional conditions may allow consequences to occur on the Project, or has occurred nationally within the Australian Business. 	3	Moderate	<ul style="list-style-type: none"> Localised irreversible habitat loss or effects on habitat, species or environmental media Reportable incident to the relevant environmental regulator or other authority. Demonstrated breach of legislative, licence or guideline requirements. Likely infringement notice or fine, potential for prosecution up to \$50,000. Will cause complaints.
2	Unlikely	<ul style="list-style-type: none"> Not likely to occur Reasonable to expect that the consequence will not occur on the Project. Has occurred in industry but not in Business Unit. 	2	Minor	<ul style="list-style-type: none"> Localised degradation of habitat or short term impacts to habitat, species or environmental media. Pollution incident that marginally exceeds licence conditions or guidelines for acceptable pollution. Fine unlikely. Potential for complaints.



1	Rare	<ul style="list-style-type: none"> – Practically impossible – Not known to have occurred in industry or unheard of. 	1	Incidental	<ul style="list-style-type: none"> – Localised or short term effects on habitat, species or environmental media. – Fully contained on site and can be fully remediated. Little potential for fine or complaints. – Insignificant or trivial incident 	
Probability ►		CERTAIN	LIKELY	POSSIBLE	UNLIKELY	RARE
▼ Consequence		5	4	3	2	1
5 – Severe		25	20	15	10	5
4 – Major		20	16	12	8	4
3 – Moderate		15	12	9	6	3
2 – Minor		10	8	6	4	2
1 – Incidental		5	4	3	2	1

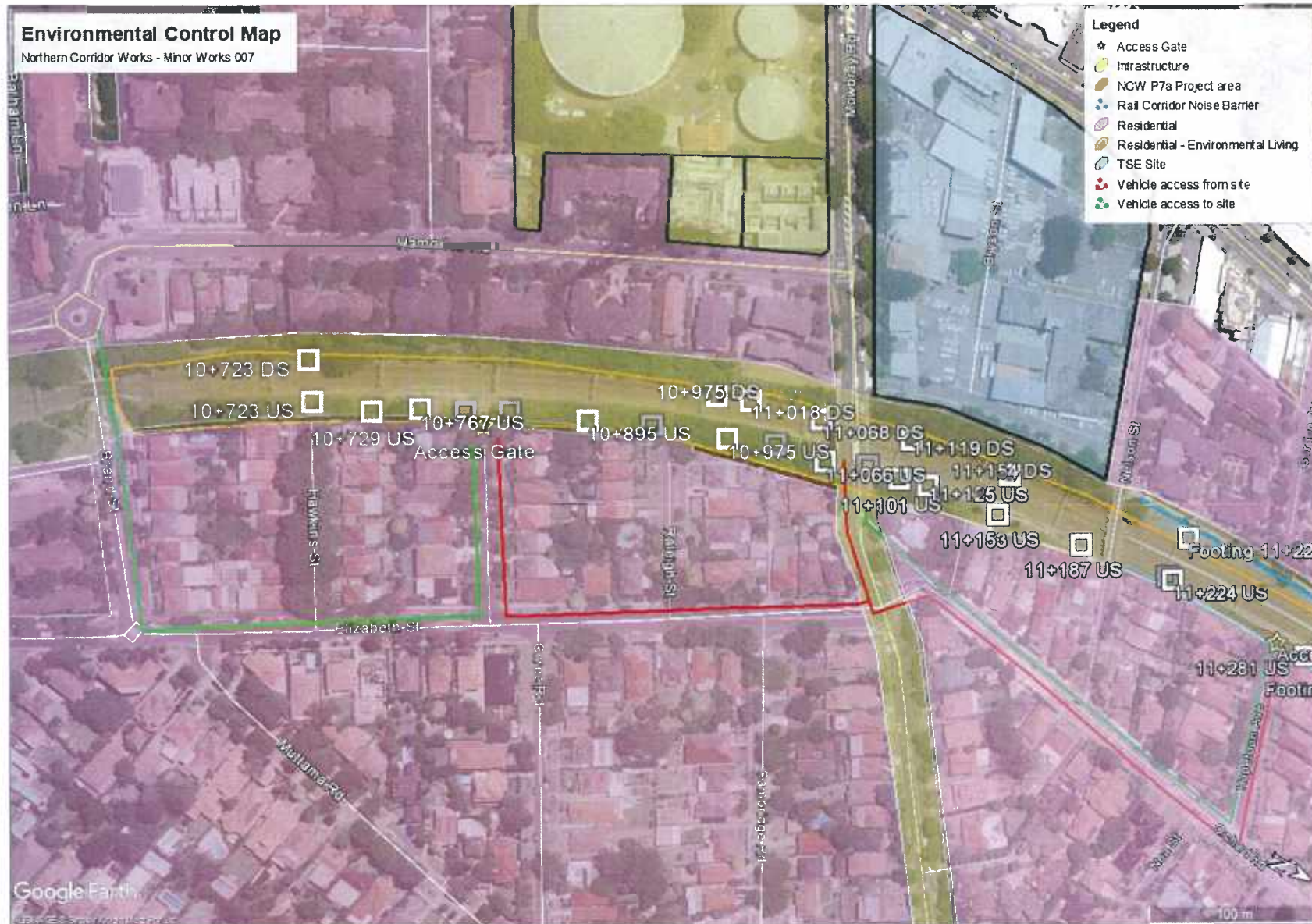
Works Locations





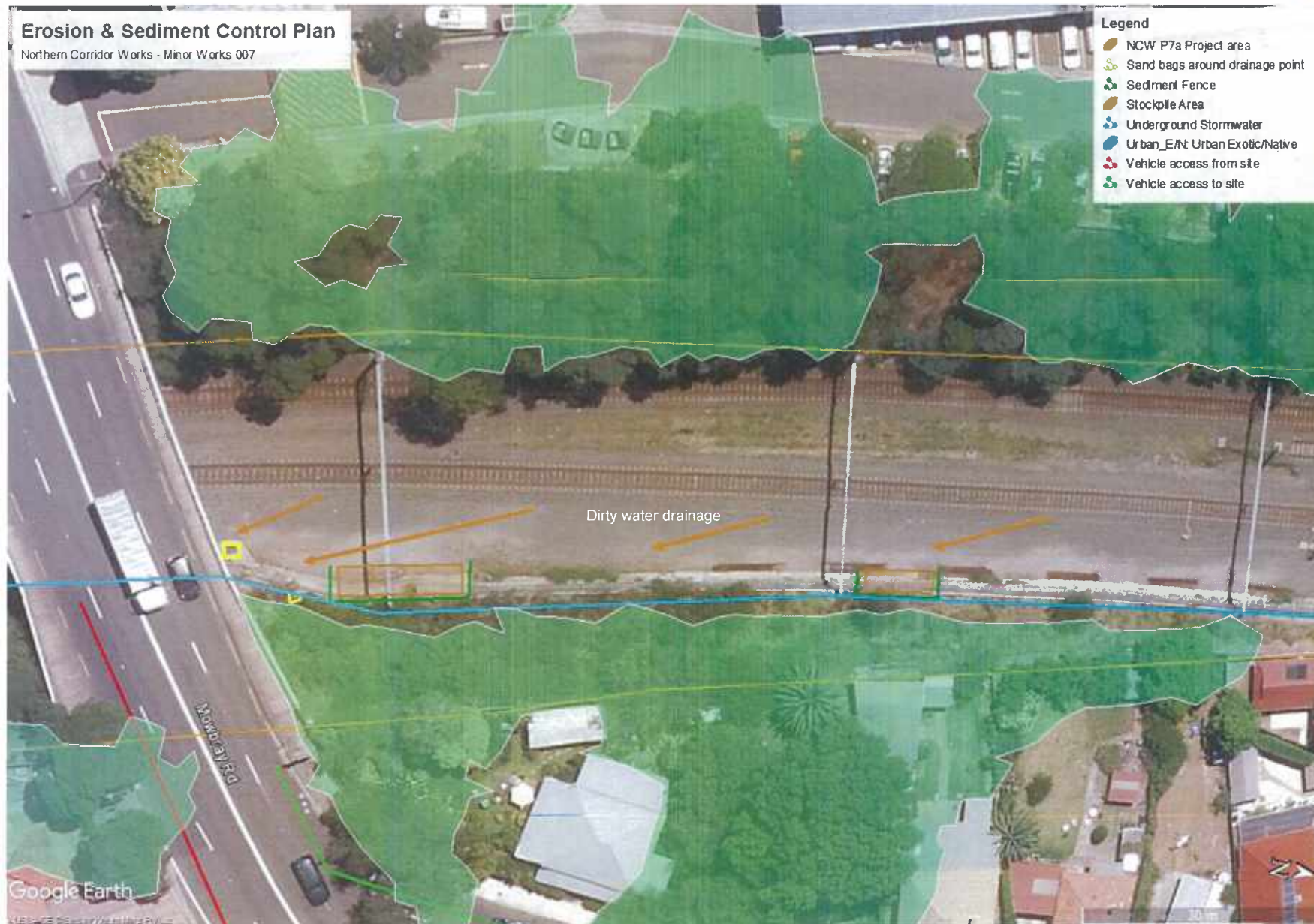


Environmental Control Maps





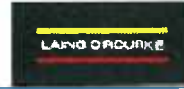








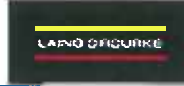
Environmental Control Map		
ID	Environmental Aspect	Description
1	Project	<ul style="list-style-type: none"> This ECM applies to Pre-Construction Minor Works 007 for Portion 7a delivered under Northern Corridor Works (Enabling works for Sydney Metro City and Southwest, Chatswood to Sydenham). Additional controls specified in the endorsed Drake Street Ancillary Facility ECM should also be applied
2	Site Access	<ul style="list-style-type: none"> Site access will be from existing Hopetoun Ave and Drake St rail corridor access gate.
3	Program of works	<ul style="list-style-type: none"> Refer to Out of Hours Works Application 007 and 008 Possession programs
4	General	<ul style="list-style-type: none"> The team will be trained on this ECM, OOHW requirements, general environmental issues, and location of sensitive areas. Works will be subject to inspections by the ER, Sydney Metro Environment and Planning Manager and LOR Environmental Manager. This ECM will be displayed on site sheds.
5	Contamination	<ul style="list-style-type: none"> Unexpected contamination finds will be managed onsite by occupational hygienist in attendance. All waste to be classified prior to disposal.
6	Air Quality	<ul style="list-style-type: none"> No air quality related issues are expected to be encountered. Stockpiles would be maintained and contained appropriately, which could include covering, or regular watering to minimise dust Haul roads will be maintained using dust suppression regularly, particularly in hot and windy conditions
7	Waste	<ul style="list-style-type: none"> All waste will be transferred to bins located at Drake Street Minor Ancillary Facility and transported to a licenced waste facility. Material excavated during footings excavations to be stockpiled at a designated stockpile area as identified in the ESCP applying controls from this ECM
8	Soils and water	<ul style="list-style-type: none"> No soil and water related issues are expected to be encountered. Existing erosion and sediment controls are in place at Drake St and are to be maintained for the duration of the works as per the Drake Street Ancillary facility ECM Stormwater drains within the rail corridor to be covered with permeable material to filter sediment and be surrounded by sand bags Stockpiles to be banded and covered with builders plastic when not in use
9	Heritage	<ul style="list-style-type: none"> Unexpected finds of heritage items must be reported to LOR Environmental Manager and Sydney Metro. The site is to be isolated and investigated by a heritage consultant. Approval to proceed required prior to re-commencing works. If suspected heritage item encountered. Works to stop immediately and Environmental Manager contacted.
10	Noise and Vibration	<ul style="list-style-type: none"> Noise monitoring will be carried out to validate noise predictions and also in response to any complaints. All works will be completed in compliance with Sydney Metro CEMF, SSD 15_7400 Planning Approval, Construction Noise Strategy and EPL 12208 requirements. All plant will have non-tonal alarms. Community notifications will be drafted and sent to Sydney Metro Community Liaison team separately.
11	Traffic and Transport	<ul style="list-style-type: none"> Access to the site will be from existing access gates at Hopetoun Ave and Drake St All delivery drivers will be given an induction showing the designated haulage routes. All Site vehicles shall be parked within the rail corridor and not affect public parking area. Additional traffic controls will be implemented in accordance with TCP(s) as approved by Willoughby City Council. Temporary lane closures on Drake Street and Hopetoun Ave may be required to allow trucks to exit the site. All closures are expected to be for minor durations (less than 5 minutes). Any closure will be managed in accordance with the TCP. All vehicles to enter rail corridor immediately on arrival to gate Plant and vehicles engines to be switched off when not in use, with engine idling minimised as much as possible.
12	Utilities	<ul style="list-style-type: none"> Any impacts to utilities will be reported to site HSE Manager, supervisors, Sydney Trains and Sydney Metro.
13	Biodiversity	<ul style="list-style-type: none"> If vegetation other than grass and weeds needs to be trimmed or removed, further assessment would be undertaken and approval sought from Sydney Metro prior to trimming or removal. If threatened flora or fauna species are identified on site, work in the vicinity of these species would stop immediately. A spotter/catcher would be engaged to survey the site and advise on species management. Trenches/excavations would be covered at the end of each day and inspected before they are backfilled to ensure no fauna species are harmed. Stockpiles, plant, equipment and materials will be located on existing cleared areas, away from the drip zone of trees and native vegetation. Soil and vegetation that could contain weed material should be removed from machinery prior to any movements off site.
14	Chemical, fuel storage and use	<ul style="list-style-type: none"> No fuels and chemicals are expected to be brought to site as part of these works. All plant and equipment will be checked daily to ensure there is no leaking oil, fuel or other liquids.
15	Imported materials	<ul style="list-style-type: none"> Materials to be delivered during standard construction hours.



16	No-go zones	<ul style="list-style-type: none"> Materials to be stockpiled in a bunded area and covered (Drake Street) when not in use. All materials imported will have a classification certificate and be 'clean' material. Activities will be restricted to the rail corridor. Any activities outside the NCW site boundary will undergo a review for potential environmental impacts and require approval from Sydney Metro.
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Contact Information		
Position	Name	Phone
LOR Project Leader	Tony Deacy	0467 762 987
LOR Construction Manager	Martin O'Brien	0457 560 728
LOR/Sydney Metro Communications Manager	Helena Johansson	0466 545 189
LOR Environment and Sustainability Manager	Chris Standing	0431 338 578
LOR WHS Manager	Clive Hunter	0428 412 130
ER	Erran Woodward	0437 343 178
Sydney Metro Environmental Manager	Andrew Hendy	0475 983 494
Sydney Metro City and Southwest Info Line		1800 019 989
Sydney Trains Info Line		131 500
Environmental Line / Pollution Incident Response Line		131 555
Office of Environment & Heritage Pollution Line		131 555
Emergency		000 or 112 (mobiles)
WIRES		1300 094 737

Standard Working Hours
<p>Audible construction works unless otherwise approved by the Environmental Manager will be restricted to:</p> <ul style="list-style-type: none"> 7:00AM to 6:00PM - Monday to Friday 8:00AM to 1:00PM - Saturdays No work on Sundays or public holidays <p>Any works outside of the hours above require OOHW and Sydney Metro and LOR Environmental Manager's Approval</p>
Out-of-Hour Works
<p>An OOHW approval will be submitted for works to be conducted in the following possessions.</p> <p>WE33: 10 – 11 February 2018 0600 Saturday to 0200 Monday</p> <p>WE35: 24 – 25 February 2018 0600 Saturday to 0200 Monday</p>



Drake Street Ancillary facility - Environmental Control Map



Environmental Control Map – Supplementary Information for Drake Street Minor Ancillary Facility		
ID	Environmental Aspect	Description
1	Project	<ul style="list-style-type: none"> This ECM applies to Pre-Construction Minor Works for Portion 7a delivered under Northern Corridor Works (Enabling works for Sydney Metro City and Southwest, Chatswood to Sydenham).
2	Site Access	<ul style="list-style-type: none"> Site access will be from existing Hopetoun Ave and Drake St rail corridor access gate.
3	Program of works	<ul style="list-style-type: none"> Refer Pre-Construction Minor Works Application Section 2 "Occasions" for possession program.
4	General	<ul style="list-style-type: none"> The team will be trained on this ECM, OOHW requirements, general environmental issues, and location of sensitive areas. Works will be subject to inspections by the ER, Sydney Metro Environment and Planning Manager and LOR Environmental Manager. This ECM will be displayed on site sheds a Drake St.
5	Contamination	<ul style="list-style-type: none"> Unexpected contamination finds will be managed onsite by occupational hygienist in attendance. All waste to be classified prior to disposal.
6	Air Quality	<ul style="list-style-type: none"> No air quality related issues are expected to be encountered. Dust suppression to be utilised for plant movements as required.
7	Waste	<ul style="list-style-type: none"> All waste will be captured in bins located at Drake St Minor Ancillary Facility and transported to a licenced waste facility.
8	Soils and water	<ul style="list-style-type: none"> Existing erosion and sediment controls are in place at Drake St. To be maintained as per ECM
9	Heritage	<ul style="list-style-type: none"> Unexpected finds of heritage items must be reported to LOR Environmental Manager and Sydney Metro. The site is to be isolated and investigated by a heritage consultant. Approval to proceed required prior to re-commencing works.
10	Noise and Vibration	<ul style="list-style-type: none"> Noise monitoring will be carried out to validate noise predictions and also during any complaints. All works will be completed in compliance with Sydney Metro CEMF, SSD 15_7400 Planning Approval, Construction Noise Strategy and EPL 12208 requirements. All plant will have non-tonal alarms. No congregating of workers or plant near residents, no shouting, swearing or loud radios. Community notifications will be drafted and sent to Sydney Metro Community Liaison team separately.
11	Traffic and Transport	<ul style="list-style-type: none"> Access to the site will be from existing access gate at Hopetoun Ave, Drake St, Nelson St and Ellis St. All delivery drivers will be given an induction covering relevant environmental controls to their activities. Designated access routes to be provided to drivers prior to accessing site. All Site vehicles shall be parked within the rail corridor and not affect public parking area. Additional traffic controls will be implemented in accordance with TCP(s) as approved by Willoughby City Council. Temporary lane closures on Drake Street may be required to allow trucks to exit the site. All closures are expected to be for minor durations (less than 5 minutes). Any closure will be managed in accordance with the TCP. Pedestrian management with traffic controller in place where required for Frank Channon Walk and Brand St lane way. Signage will direct pedestrians during Frank Channon Walk closure – signs to be installed as part of works under this MWA. Closure works will occur as part of WE33 possession works. All vehicles to enter rail corridor immediately on arrival to gate Plant and vehicles engines to be switched off when not in use, with engine idling minimised as much as possible.
12	Utilities	<ul style="list-style-type: none"> Any impacts to utilities will be reported to site HS Manager, supervisors, Sydney Trains and Sydney Metro.
13	Biodiversity	<ul style="list-style-type: none"> If vegetation other than grass and weeds needs to be trimmed or removed, further assessment would be undertaken and approval sought from Sydney Metro prior to trimming or removal. If threatened flora or fauna species are identified on site, work in the vicinity of these species would stop immediately. A spotter/catcher/botanist would be engaged to survey the site and advise on species management. Where trenching or excavation is required, the location or route would be modified to avoid any damage to trees or tree roots, where possible. Trenches/excavations would be covered at the end of each day and inspected before they are backfilled to ensure no fauna species are harmed. Stockpiles, plant, equipment and materials will be located on existing cleared areas, away from the drip zone of trees and native vegetation. Soil and vegetation that could contain weed material should be removed from machinery prior to any movements off site.
14	Chemical, fuel storage and use	<ul style="list-style-type: none"> No fuels and chemicals are expected to be brought to site as part of these works. All plant and equipment will be checked daily to ensure there is no leaking oil, fuel or other liquids.
15	Imported materials	<ul style="list-style-type: none"> Imported materials to include clean sand and road base for backfilling of excavation and pot holing for weekend 33 and 35 possession works in February.
16	No-go zones	<ul style="list-style-type: none"> Activities will be restricted to the rail corridor. All activities outside the NCW site boundary will undergo a review for potential environmental impacts and require approval from Sydney Metro.



Contact Information		
Position	Name	Phone
LOR Project Leader	Tony Deacy	0467 762 987
LOR Construction Manager	Martin O'Brien	0457 560 728
LOR/Sydney Metro Communications Manager	Helena Johansson	0466 545 189
LOR Environment and Sustainability Manager	Chris Standing	0431 338 578
LOR WHS Manager	Clive Hunter	0428 412 130
ER	Erran Woodward	0437 343 178
Sydney Metro Environmental Manager	Andrew Hendy	0475 983 494
Sydney Metro City and Southwest Info Line		1800 019 989
Sydney Trains Info Line		131 500
Environmental Line / Pollution Incident Response Line		131 555
Office of Environment & Heritage Pollution Line		131 555
Emergency		000 or 112 (mobiles)
WIRES		1300 094 737
Standard Working Hours		
<p>Audible construction works unless otherwise approved by the Environmental Manager will be restricted to:</p> <ul style="list-style-type: none"> • 7:00AM to 6:00PM - Monday to Friday • 8:00AM to 1:00PM - Saturdays • No work on Sundays or public holidays <p>Any works outside of the hours above require OOHW and Sydney Metro and LOR Environmental Manager's Approval</p> <p>As per Sydney Trains EPL, "High noise impact works and activities must only be undertaken:</p> <ol style="list-style-type: none"> a) between the hours of 8:00am to 6:00pm Monday to Friday; b) between the hours of 8:00am to 1:00pm Saturday; and c) in continuous blocks not exceeding 3 hours each with a minimum respite from those activities and works of not less than 1 hour between each block" 		
Out-of-Hour Works		
Nil		

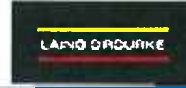
Appendix 2: Maps (and/or ECM) and Work Diagrams











Road Occupancy Permit

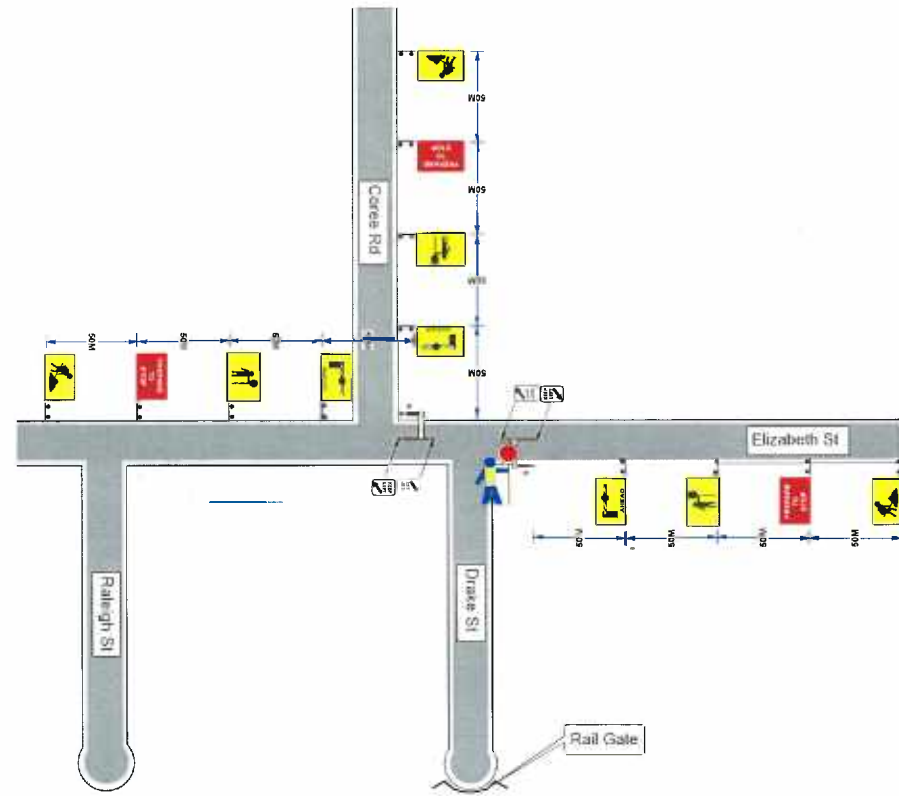
Application with WCC for approval.



Traffic Control Plans

LAING O'ROURKE

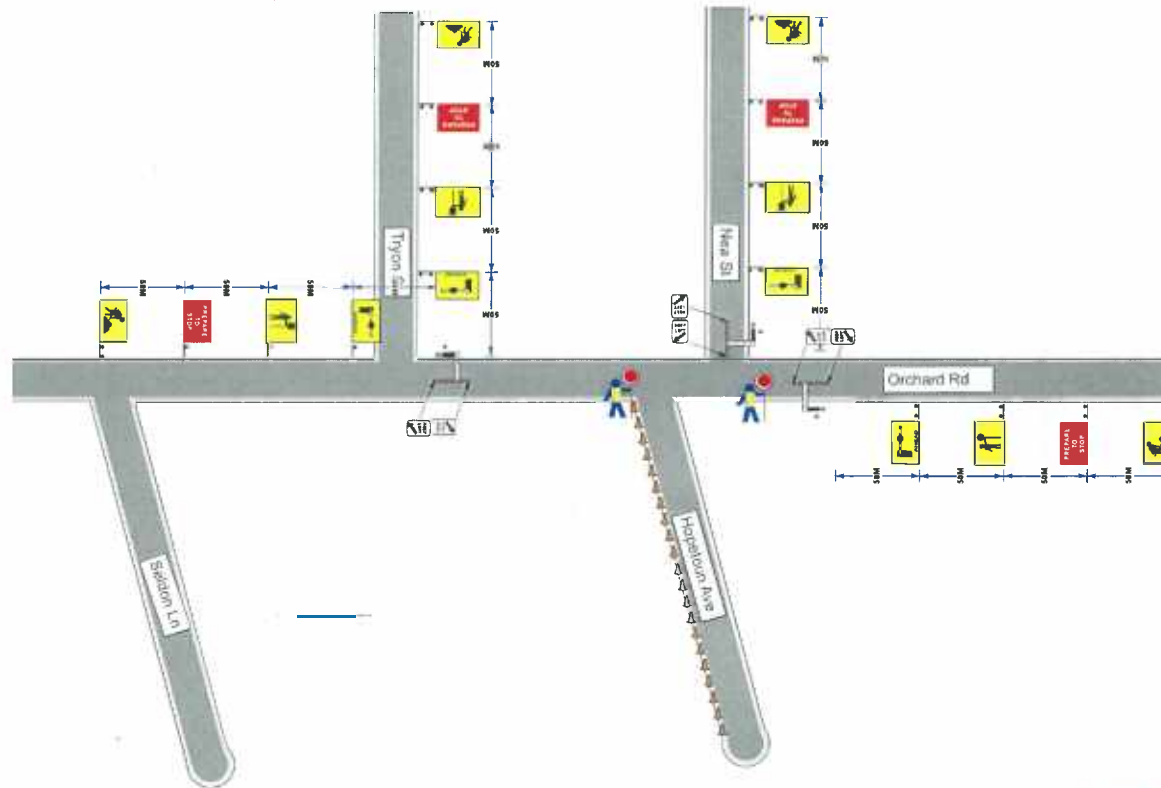
Location - Drake Rd, Artarmon













Client: Laing O'Rourke Scope of Works: Gate Control Job location: Drake Rd, Artarmon	Revisions	Description	Date	WORKERS ON FOOT NO GO ZONE = RESTRICTED ZONE = SHARED ZONE = SITE EXIT = SITE ENTRY = EVACUATION POINT =	Implemented By Name - _____ Cert No - _____ Date - _____ Signed - _____				Approximate speed of traffic 45 or less 15 0 15 46 - 55 15 15 30 56 - 65 30 30 60 66 - 75 N/A 70 115 76 - 85 N/A 80 130 86 - 95 N/A 90 145 96 - 105 N/A 100 160 Greater than 105 N/A 110 180	D = THE SPEED OF TRAFFIC MEASURED IN KMH 80KM = 80M EG: 70KM = 70M 60KM = 60M 50KM = 50M SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL WORK AREA =	 Web: www.ddtraffic.com.au Email: sydney@dd-group.com.au Phone: 1300 597 622 D&D Traffic Management does not accept liability for implementation of this top if not directly involved in its implementation	
	Plan No:XXXXXXXXX PLAN NOT TO SCALE		TCP - 101 USED AS A GUIDE									

Laing O'Rourke

Location - Hopetoun Avenue, Chatswood



Client: Laing O'Rourke		WORKERS ON FOOT NO GO ZONE =  RESTRICTED ZONE =  SHARED ZONE =  SITE EXIT =  SITE ENTRY =  EVACUATION POINT = 	Implemented By Name - Cert No - Date - Signed -	<table border="1"> <thead> <tr> <th>Approximate speed of traffic</th> <th>Traffic control at beginning of taper</th> <th>Lateral shift taper</th> <th>Merge taper</th> </tr> </thead> <tbody> <tr> <td>45 or less</td> <td>15</td> <td>0</td> <td>15</td> </tr> <tr> <td>46 - 55</td> <td>15</td> <td>15</td> <td>30</td> </tr> <tr> <td>56 - 65</td> <td>30</td> <td>30</td> <td>60</td> </tr> <tr> <td>66 - 75</td> <td>N/A</td> <td>70</td> <td>115</td> </tr> <tr> <td>76 - 85</td> <td>N/A</td> <td>80</td> <td>130</td> </tr> <tr> <td>86 - 95</td> <td>N/A</td> <td>90</td> <td>145</td> </tr> <tr> <td>96 - 105</td> <td>N/A</td> <td>100</td> <td>160</td> </tr> <tr> <td>Greater than 105</td> <td>N/A</td> <td>110</td> <td>180</td> </tr> </tbody> </table>	Approximate speed of traffic	Traffic control at beginning of taper	Lateral shift taper	Merge taper	45 or less	15	0	15	46 - 55	15	15	30	56 - 65	30	30	60	66 - 75	N/A	70	115	76 - 85	N/A	80	130	86 - 95	N/A	90	145	96 - 105	N/A	100	160	Greater than 105	N/A	110	180	D = THE SPEED OF TRAFFIC MEASURED IN KMH 80KM = 80M EG: 70KM = 70M 60KM = 60M 50KM = 50M SEE SECTION 4.2 TRAFFIC CONTROL AT WORK SITES MANUAL WORK AREA = 	 Web: www.ddtraffic.com.au Email: sydney@dd-group.com.au Phone: 1300 597 622 D&D Traffic Management does not accept liability for implementation of this IOP if not directly involved in its implementation	
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Scope of Works: Construction works Job location: Hopetoun Avenue, Chatswood	Plan No: xxxxxxxxxxxxxxxx PLAN NOT TO SCALE	TCP - 83 USED AS A GUIDE																																									



Appendix 2: Cover Page

Environmental Management Documentation - Not Used



Appendix 3: Cover Page

Community Notification - Undertaken by Sydney Metro in conjunction with LOR. Combined letter to be issued which will cover MNNSCW Portion 6 and NCW Portion 7a works.



Appendix 4: Cover Page

Environmental Representative Supporting Letter - Refer to Section 12 Determination Page above