

## Pre-Construction Minor Works Approval Form

Minor Works are defined as any low impact activities that are undertaken prior to the commencement of 'construction' as defined in the project's applicable planning approval. However if Minor Works affect or potentially affect heritage items, threatened species, populations or endangered ecological communities, these works are defined as 'construction' unless otherwise determined by the applicable planning authority.

Minor Works approvals do not remove any obligation to comply with the project's applicable planning approval conditions (including requirements prior to 'any works' commencing) or obtain any other applicable permits, licenses or approvals as necessary.

This application and all supporting information must be submitted to TfNSW/the Environmental Representative as one (1) PDF file at least 10 business days prior to the commencement of the proposed Minor Works.

Part 1: Application	
<b>Contractor:</b>	A W Edwards
<b>Project:</b>	Sydney City and Southwest Metro – Crows Nest Station
<b>Application Title:</b> (e.g. Smith St trenching works)	Site Establishment and Enabling Works
<b>Application Number:</b>	CN-MW-001
<b>Application Date:</b>	30 March 2020
<b>Planning Approval:</b>	Sydney Metro City & Southwest – Chatswood to Sydenham - Environmental Impact Statement Sydney Metro City & Southwest - Environmental Impact Statement – Sydenham Station and Sydney Metro Trains Facility South Modification Report (MOD 4) Sydney Metro City & Southwest - Environmental Impact Statement – Sydenham Station and Sydney Metro Trains Facility South Modification Submissions Report Sydney Metro City & Southwest Infrastructure Approval SSI 7400 and subsequent modifications
<b>Minor Works Categories:</b> <ul style="list-style-type: none"> <li>Highlight as applicable.</li> <li>If Items 4, 8 or 11 are applicable, this form must be endorsed by an Environmental Representative.</li> </ul>	<ol style="list-style-type: none"> <li>Survey, survey facilitation and investigations works (including road and building dilapidation survey works, drilling and excavation).</li> <li>Treatment of contaminated sites.</li> <li>Establishment of ancillary facilities (excluding demolition), including construction of ancillary facility access roads and providing facility utilities.</li> <li>Operation of ancillary facilities that have minimal impact on the environment and community.</li> <li>Minor clearing and relocation of vegetation (including native).</li> <li>Installation of mitigation measures, including erosion and sediment controls, temporary exclusion fencing for sensitive areas and acoustic treatments.</li> <li>Property acquisition adjustment works, including installation of property fencing and utility relocation and adjustments to properties.</li> <li>Utility relocation and connections.</li> <li>Maintenance of existing buildings and structures.</li> <li>Archaeological testing under the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010) or archaeological monitoring undertaken in association with other Minor Works to ensure there is no impact on heritage items.</li> <li>Any other activities that have minimal environmental impact, including construction of minor access roads, temporary relocation of pedestrian and cycle paths and the provision of property access.</li> </ol>
<b>Planning Authority Determination:</b> Will the proposed works affect or have the potential to affect heritage items, threatened species,	<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>No</p>

populations or endangered ecological communities?

**Part 2: Details**

**Site Description Overview**

Crows Nest Station is located on the western fringe of the Crows Nest village, between the Pacific Highway and Clarke Lane (on the eastern side of the Pacific Highway), and Oxley Street.

The Crows Nest construction package consists of two separate station entrances and the enabling works to support future OSD sites:

- (a) the western station entry located on the Pacific Highway between Hume and Oxley Streets
- (b) the eastern station entry located on Clarke Street at the corner of Hume Street, opposite Hume Street Park

Crows Nest Station is a cut and cover station and the main box is approximately 220m long and 25m below street level.

The area is surrounded by a mixture of industrial/commercial properties and residential properties as outlined by the figure below.

**Describe the proposed Minor Works:**

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



Figure 1 – Crows Nest Station Construction Site and Receiver Areas

**Description of Works**

A number of activities are proposed to be undertaken as part of the works. A brief description of the activities to be undertaken is outlined below and represented by the drawings in Appendix I:

1. Relocation of existing services/utilities adjacent the site on the Pacific Highway to facilitate logistics lane including the following:
  - Ausgrid – undergrounding overheads on Pacific Highway including street lights (approximately 4 week duration);
  - Jemena – cut and cap gas main on Pacific Highway at northern and southern extents of site, removal of 630mm cast iron sleeve from underneath existing footpath on Pacific Highway (approximately 2 days duration);
  - Sydney Water valve adjustment on Pacific Highway (approximately 1 day duration);
  - Telstra – relocation of cables on Pacific Highway (approximately 1 week duration);

	<ul style="list-style-type: none"> <li>• Engage Optus to complete undergrounding of overhead mains and removal of redundant Overhead HFC cable on Pacific Hwy;</li> <li>• Removal of existing street lights.</li> </ul> <p>2. Installation of logistics lane on the Pacific Highway adjacent the site:</p> <ul style="list-style-type: none"> <li>• Removal of existing footpath, kerb and, aboveground footing and gutter;</li> <li>• Reinstatement of kerb and gutter/vehicle crossover;</li> <li>• Installation of delineation hoarding;</li> <li>• Removal of existing bus stop adjacent to Site A on the Pacific Highway, customers will be directed to existing bus stops (230m south of Site B or 150m north of Oxley Street) in accordance with the applicable CTMP; and</li> <li>• Temporary removal of public parking on Pacific Highway adjacent the site.</li> </ul> <p>3. Realignment of existing perimeter site hoardings including vehicle and personnel access gates and pedestrian hoardings on the Pacific Highway, Hume Street and Clarke Street.</p> <p>4. Reconfiguration of lanes (consistent with current TSE configuration):</p> <ul style="list-style-type: none"> <li>• Eastbound lanes closed to Hume Street between Clarke Lane and Pacific Highway;</li> <li>• Traffic flow on Hume Street reduced to one lane in each direction between Clarke Lane and Clarke Street;</li> <li>• Clark Lane South limited to northbound traffic only with no stopping;</li> <li>• Clark Lane North bi-directional with no stopping, construction vehicles only;</li> <li>• Clarke Street bi-directional;</li> <li>• Oxley Street limited to one lane east bound and two lanes westbound with no parking permitted on the westbound lanes; and</li> <li>• Eastbound footpath on Hume Street closed between Pacific Highway and Clarke Street.</li> </ul> <p>5. Delivery and installation of site sheds and offices including steel support structures at Hume Street and Clarke Street and installation of concrete static lines.</p> <p><u>Timing:</u> The total duration of the works is expected to be four weeks.</p> <p>Plant and equipment to be utilised to undertake these activities:</p> <ul style="list-style-type: none"> <li>- Franna crane;</li> <li>- Excavator with attachments</li> <li>- Vacuum truck</li> <li>- Trucks</li> <li>- Powered Hand tools</li> <li>- Generator</li> <li>- Water cart</li> <li>- Lighting towers</li> <li>- Wacker packer</li> <li>- Concrete Pumps</li> <li>- Tower Crane</li> <li>- Handheld Jackhammer</li> </ul> <p><u>General Notes:</u> All work to occur outside of normal construction hours would be subject to the approval of an OOHW Application. It is noted that OOHW approvals are subject to risk determination by the AA. High risk works need to be approved by DPIE.</p>
<p><b>Planned Commencement Date:</b></p>	<p>September 2020.</p>
<p><b>Local Sensitivities:</b> Describe the presence (if any) of local sensitive environmental areas and community receptors</p>	<ul style="list-style-type: none"> <li>• There are a number of residential and commercial properties located adjacent to the project site. These properties may be sensitive to excessive noise. Consultation with potentially impacted properties will be undertaken in accordance with the OCCS and project requirements.</li> </ul>

	<ul style="list-style-type: none"> <li>• Traffic – the Pacific Highway is located adjacent to the site and represents a major arterial road. The works will also require the full closure of local roads Hume Street and Clarke Lane.</li> <li>• Figure 1 above outlines the location of adjacent sensitive receivers which include a childcare facility, recording studios and doctor’s theatres amongst other land uses. Noisier works would be scheduled to be carried out during the day where possible. Any OOHWs and related impacts would be managed through OOHWs applications in accordance with the OOHW Protocol. It would be expected contractors have their own management procedures or plans for these activities, in the event that the contractors do not have these plans they will be subject to the requirements of the Sydney Metro CEMF – see comments in Risk Assessment for Noise.</li> </ul>
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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><b>Documentation:</b>                  List any existing documents (including those referenced above) that the proposed Minor Works will be undertaken in accordance with and attach as Appendix 2 (e.g. plans, procedures, procedures, etc.).</p>	<p>An Environmental Risk Assessment is included within Appendix 1.</p> <p>All works associated with this minor works approval will be subject to the requirements of the following documents:</p> <ul style="list-style-type: none"> <li>- Sydney Metro OCCS;</li> <li>- Sydney Metro Unexpected Heritage Finds Procedure (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure);</li> <li>- Sydney Metro Unexpected Finds Procedures for contamination (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure);</li> <li>- Construction Traffic Management Plan (CTMP) which will be subject to approval by RMS/SCO;</li> <li>- Sydney Metro Construction Environmental Management Framework;</li> <li>- Sydney Metro City &amp; Southwest Out of Hours Work Strategy Protocol (SM ES-PW-317);</li> </ul>
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**Part 4: Workforce Notification**

<p><b>How will the environmental and community risks and associated mitigation measures of the proposed Minor Works be communicated to the contractor's workforce?</b></p>	<p>The contract to undertake these works has not been awarded at the time of developing this Minor Works Approval. The future contractor will be required to implement the delivery of a site induction to all personnel working on the project site. The induction will include relevant environmental aspects and risks associated with works on the project site.</p> <p>Works will be undertaken in accordance with a SWMS or JSEA (depending on whether the works meets the definition of High Risk Construction Works in accordance with Clause 291 WHS Regulation). SWMS will be reviewed by the Contractor Environmental Manager.</p>
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**Part 5: Community Consultation**

<p><b>What community consultation has been undertaken already?</b></p>	<p>No consultation has occurred for these works.</p>
<p><b>What community consultation is planned to be undertaken?</b></p>	<p>New notifications will be distributed in accordance with the contract, OCCS requirements prior to any works. The Council and other stakeholders will be consulted in accordance with the requirements of the project planning approval.</p>
<p>If drafted already, attach applicable Community Notification as Appendix 3.</p>	

**Part 6: Contact Details**

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

<b>Name:</b>	Colin Danby	<b>Position:</b>	Project Director	<b>Phone:</b>	0448 810 628
	Darren Green		Environmental Manager		0418 969 624
	Elle Mursell		Stakeholder, Engagement and Public Affairs Manager		0419 525 484

**Part 7: Signature**

This signature acknowledges that the proposed Minor Works will be undertaken in accordance with this application, have minimal environmental impact and are not defined as 'construction' in accordance with the applicable planning approval.

<b>Name:</b>	Simon Fisher		
<b>Signature:</b>	<i>Simon Fisher</i>	<b>Date:</b>	24/12/2020

## Determination Page

### (TfNSW/Environmental Representative Use Only)

#### 12. Endorsement/Approval

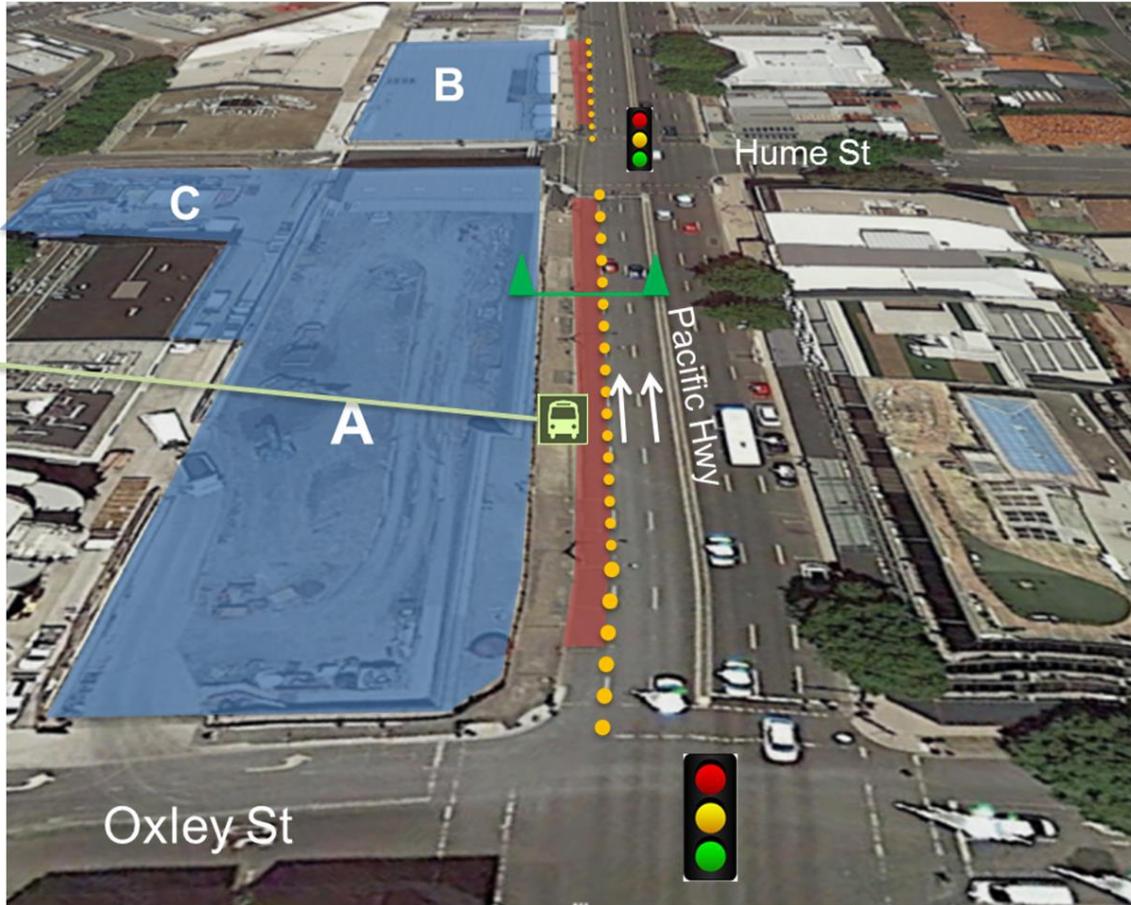
These signatures represent formal endorsement/approval for the proposed Minor Works to commence in accordance with this application and the applicable planning approval requirements (subject to any determination from the applicable planning authority as may be required by the planning approval conditions).

	TfNSW Principal Manager, Communication & Engagement – Endorsement (required for all applications)	TfNSW Principal Manager, Sustainability, Environment & Planning – Approval (required for all applications)	Environmental Representative – Endorsement (required as necessary in accordance with the applicable planning approval, optional for all other circumstances)
<b>Signature:</b>			
<b>Name:</b>	Harsatnam Hundal	Fil Cerone	George Kollias
<b>Date:</b>	23/12/20	24 Dec 2020	24/12/2020
<b>Comments:</b>			<i>Supporting letter attached as Appendix 4 if necessary.</i>
<b>Conditions:</b>			<i>Supporting letter attached as Appendix 4 if necessary.</i>
<input checked="" type="checkbox"/>	Approved (by TfNSW)		
<input type="checkbox"/>	Endorsed (by Environmental Representative)		
<input type="checkbox"/>	Rejected		

## Appendix 1: Cover Page

Work area and Environmental Risk Assessment

Work Area – Crows Nest Logistics Lane



Bus stop would be removed. Nearest stops are:

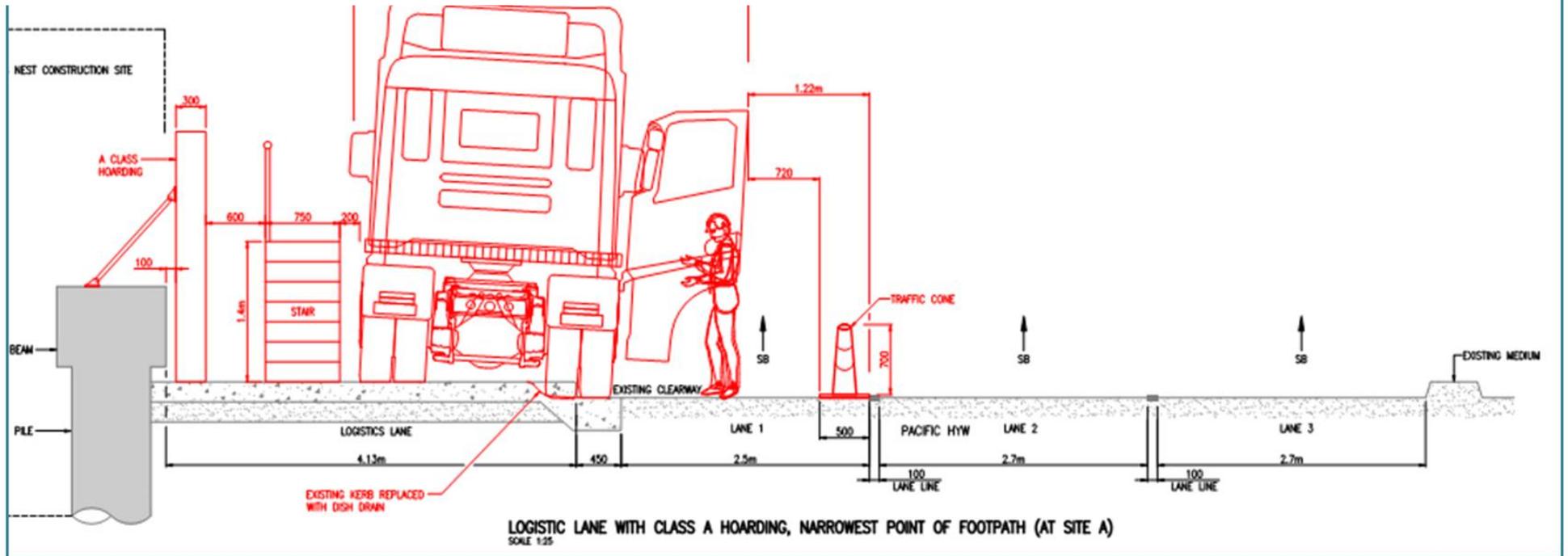
150m to the north  
230m to the south

 - Logistics Lane

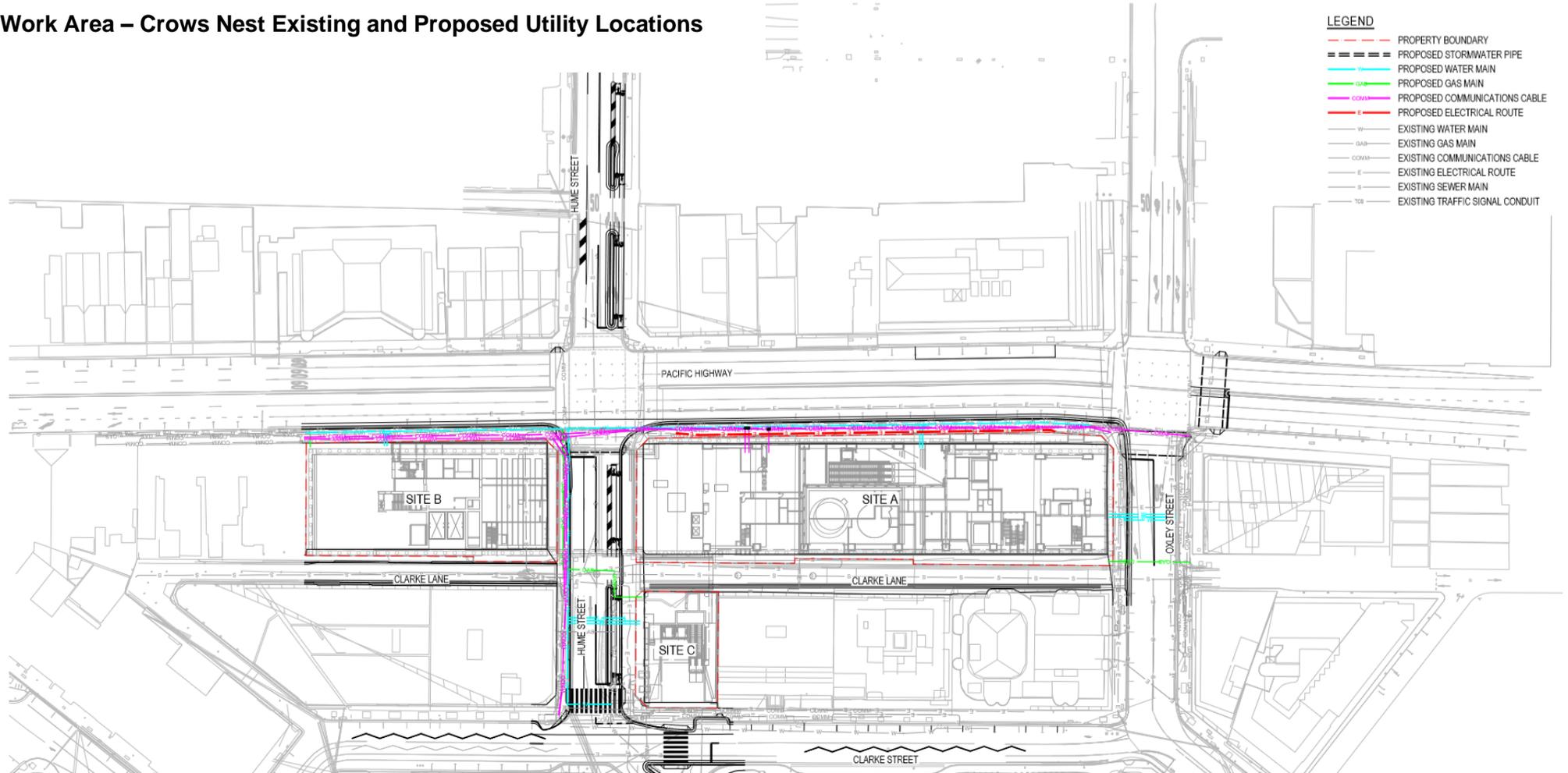
  
SB. To City

NB. To Chatswood  


### Work Area – Crows Nest Logistics Lane Cross Section



### Work Area – Crows Nest Existing and Proposed Utility Locations



## Risk Assessment

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

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

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
<b>1. Utility Works</b>								
Contamination uncovered during works	Mixing of contaminated materials with non-contaminated materials	<b>C4</b>	<b>L4</b>	<b>Med</b>	Induction to include contamination management requirements.  Implement Sydney Metro Unexpected Finds Procedures for contamination (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure)	<b>C4</b>	<b>L5</b>	<b>Low</b>
Uncontrolled runoff from works	Uncontrolled water entering local stormwater and impacting on water quality	<b>C5</b>	<b>L5</b>	<b>Low</b>	Develop and implement an Erosion and Sediment Control Plan (ESCP). Set up erosion and sediment controls as per the ESCP (e.g. sandbags, coir logs, etc).	<b>C5</b>	<b>L6</b>	<b>Low</b>
Spoil Management	Incorrect handling or disposal of spoil leading to environmental degradation	<b>C4</b>	<b>L4</b>	<b>Med</b>	The waste must be lawfully transported and disposed of to a licenced facility.	<b>C4</b>	<b>L5</b>	<b>Low</b>
Items of heritage significance uncovered during excavation works	Damage to heritage items or archaeological deposits	<b>C3</b>	<b>L5</b>	<b>Med</b>	Induction to include heritage management requirements.  Previous intrusive investigations have not identified any items of heritage significance, as such the implementation of the Sydney Metro Unexpected Heritage Finds Procedure (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure.	<b>C3</b>	<b>L6</b>	<b>Low</b>



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Noise	<p>Noise from plant impacting on sensitive receivers</p> <p>Noise impacts outside standard construction hours</p> <p>Noise from deliveries</p> <p>Worker activities and behaviour</p>	<b>C5</b>	<b>L4</b>	<b>Low</b>	<p>Plant to be positioned so that the noisier part of the rig points away from sensitive receivers, where possible. Non-tonal reverse beepers to be fitted to all plant.</p> <p>Noisier activities such as concrete cutting or hammering are only expected to occur for short durations and all efforts will be made to schedule within standard construction hours. Respite and other additional mitigation measures will be provided in accordance with the CNVS. It should also be considered that earlier Sydney Metro project works installed noise mitigation treatments at a number of sensitive receptors adjacent to the project site.</p> <p>Works to occur in during standard construction hours where possible, in the event that OOHW are required to be undertaken contractors must follow the appropriate approvals process and submit Out of Hours Work applications for Acoustic Advisor endorsement and Environmental Representative approval. Mitigation measures to be implemented in accordance with the Sydney Metro Construction Noise and Vibration Strategy and Sydney Metro Out of Hours Works Strategy Protocol.</p> <p>Workers to be inducted and tool boxed prior to commencing works.</p> <p>Consultation with potentially affected stakeholders to be undertaken prior to the commencement of works.</p>	<b>C5</b>	<b>L6</b>	<b>Low</b>

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Chemical handling and storage	Poor storage and handling of chemicals causes spills	C5	L4	Low	Any chemicals and fuels are to be stored within a bunded area with 110% of the capacity of the largest stored container Refuelling to occur more than 20m away from drainage lines Site induction includes spill response awareness.	C4	L5	Low
Waste	Incorrect disposal of waste	C3	L5	Med	Induction to include waste management practices Waste to be tested in accordance with the Waste Classification Guidelines (NSW EPA, 2014) prior to disposal The waste must be lawfully transported and disposed of to a licenced facility.	C3	L6	Low
Air Quality	Dust generation during works	C4	L4	Med	Induction to include air quality management practices Water cart or water trailer to be present to wet down material Monitor conditions and cease work where dusty conditions are observed	C4	L5	Low

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Traffic	Impacts on traffic Increased noise from changed traffic conditions	C4	L3	Med	Develop and implement a Construction Traffic Management Plan (CTMP) in accordance with the project planning approvals and the Sydney Metro CTMF. This CTMP would need to be approved by RMS/SCO and implemented prior to the works commencing.  Undertake work outside of peak hours, where possible	C3	L6	Low
Pedestrians	Impacts on pedestrians Impacts on bus users	C4	L4	Med	Implement a CTMP and provide alternative pedestrian routes  Undertake work outside of peak hours, where possible  Bus users will be directed towards existing bus stops located to the north and south of the site, signage will be installed to inform pedestrians and bus users of the location of these bus stops.	C3	L6	Low
<b>2. Installation of Logistics Lane</b>								
Contamination uncovered during works	Mixing of contaminated materials with non-contaminated materials	C4	L4	Med	Induction to include contamination management requirements.  Implement Sydney Metro Unexpected Finds Procedures for contamination (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure)	C4	L5	Low
Uncontrolled runoff from works	Uncontrolled water entering local stormwater and impacting on water quality	C5	L5	Low	Set up erosion and sediment controls as per the ESCP developed for the area of work (e.g. sandbags, coir logs, etc).	C5	L6	Low

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Spoil Management	Incorrect handling or disposal of spoil leading to environmental degradation	C4	L4	Med	The waste must be lawfully transported and disposed of to a licenced facility, in accordance with the requirements of the POEO Waste Regulation and Contractor management system.	C4	L5	Low
Items of heritage significance uncovered during excavation works	Damage to heritage items or archaeological deposits	C3	L5	Med	<p>Induction to include heritage management requirements.</p> <p>Previous intrusive investigations have not identified any items of heritage significance, as such the implementation of the Sydney Metro Unexpected Heritage Finds Procedure (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure.</p>	C3	L6	Low
Noise	<p>Noise from plant impacting on sensitive receivers</p> <p>Noise impacts outside standard construction hours</p> <p>Noise from deliveries</p> <p>Worker activities and behaviour</p>	C5	L4	Low	<p>Plant to be positioned so that the noisier part of the rig points away from sensitive receivers, where possible.</p> <p>Non-tonal reverse beepers to be fitted to all plant.</p> <p>Noisier activities such as concrete cutting or hammering are only expected to occur for short durations and all efforts will be made to schedule within standard construction hours. Respite and other additional mitigation measures will be provided in accordance with the CNVS. It should also be considered that earlier Sydney Metro project works installed noise mitigation treatments at a number of sensitive receptors adjacent to the project site.</p> <p>Works to occur in during standard construction hours where possible, in the event that OOHW are required to be undertaken contractors must follow the appropriate approvals process and submit Out of</p>	C5	L6	Low

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
					<p>Hours Work applications for Acoustic Advisor endorsement and Environmental Representative approval. Mitigation measures to be implemented in accordance with the Sydney Metro Construction Noise and Vibration Strategy and Sydney Metro Out of Hours Works Strategy Protocol.</p> <p>Workers to be inducted and tool boxed prior to commencing works.</p> <p>Consultation with potentially affected stakeholders to be undertaken prior to the commencement of works.</p>			
Chemical handling and storage	Poor storage and handling of chemicals causes spills	<b>C5</b>	<b>L4</b>	<b>Low</b>	<p>Any chemicals and fuels are to be stored within a bunded area with 110% of the capacity of the largest stored container</p> <p>Refuelling to occur more than 20m away from drainage lines</p> <p>Site induction includes spill response awareness.</p>	<b>C4</b>	<b>L5</b>	<b>Low</b>
Waste	Incorrect disposal of waste	<b>C3</b>	<b>L5</b>	<b>Med</b>	<p>Induction to include waste management practices</p> <p>Waste to be tested in accordance with the Waste Classification Guidelines (NSW EPA, 2014) prior to disposal</p> <p>The waste must be lawfully transported and disposed of to a licenced facility.</p>	<b>C3</b>	<b>L6</b>	<b>Low</b>

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Air Quality	Dust generation during works	<b>C4</b>	<b>L4</b>	<b>Med</b>	Induction to include air quality management practices Water cart or water trailer to be present to wet down material Monitor conditions and cease work where dusty conditions are observed	<b>C4</b>	<b>L5</b>	<b>Low</b>
Traffic	Impacts on traffic Increased noise from changed traffic conditions	<b>C4</b>	<b>L3</b>	<b>Med</b>	Develop and implement a Construction Traffic Management Plan (CTMP) in accordance with the project planning approvals and the Sydney Metro CTMF. This CTMP would need to be approved by RMS/SCO and implemented prior to the works commencing. Undertake work outside of peak hours, where possible	<b>C3</b>	<b>L6</b>	<b>Low</b>
Pedestrians	Impacts on pedestrians	<b>C4</b>	<b>L4</b>	<b>Med</b>	Implement a CTMP and provide alternative pedestrian routes Undertake work outside of peak hours, where possible	<b>C3</b>	<b>L6</b>	<b>Low</b>
<b>3. Realignment of existing perimeter hoarding</b>								
Contamination uncovered during works	Mixing of contaminated materials with non-contaminated materials	<b>C4</b>	<b>L5</b>	<b>Low</b>	Induction to include contamination management requirements. Implement Sydney Metro Unexpected Finds Procedures for contamination (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure)	<b>C4</b>	<b>L5</b>	<b>Low</b>

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Uncontrolled runoff from works	Uncontrolled water entering local stormwater and impacting on water quality	C5	L5	Low	Set up erosion and sediment controls as per the ESCP developed for the area of work (e.g. sandbags, coir logs, etc).	C5	L6	Low
Noise	Noise impacts outside standard construction hours Noise from deliveries Worker activities and behaviour	C5	L4	Low	Works to occur in during standard construction hours where possible, in the event that OOHW are required to be undertaken contractors must follow the appropriate approvals process and submit Out of Hours Work applications for Acoustic Advisor endorsement and Environmental Representative approval. Mitigation measures to be implemented in accordance with the Sydney Metro Construction Noise and Vibration Strategy and Sydney Metro Out of Hours Works Strategy Protocol.  Workers to be inducted and tool boxed prior to commencing works.  Consultation with potentially affected stakeholders to be undertaken prior to the commencement of works.	C5	L6	Low
Chemical handling and storage	Poor storage and handling of chemicals causes spills	C5	L4	Low	Any chemicals and fuels are to be stored within a bunded area with 110% of the capacity of the largest stored container  Refuelling to occur more than 20m away from drainage lines  Site induction includes spill response awareness.	C4	L5	Low

(Uncontrolled when printed)

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Waste	Incorrect disposal of waste	C3	L5	Med	Induction to include waste management practices Waste to be tested in accordance with the Waste Classification Guidelines (NSW EPA, 2014) prior to disposal The waste must be lawfully transported and disposed of to a licenced facility.	C3	L6	Low
Pedestrians	Impacts on pedestrians	C4	L4	Med	Implement a CTMP and provide alternative pedestrian routes Undertake work outside of peak hours, where possible	C3	L6	Low
<b>4. Traffic Changes</b>								
Traffic	Impacts on traffic Increased noise from changed traffic conditions	C4	L3	Med	Develop and implement a Construction Traffic Management Plan (CTMP) in accordance with the project planning approvals and the Sydney Metro CTMF. This CTMP would need to be approved by RMS/SCO and implemented prior to the works commencing. Undertake work outside of peak hours, where possible	C3	L6	Low
Pedestrians	Impacts on pedestrians	C4	L4	Med	Implement a CTMP and provide alternative pedestrian routes Undertake work outside of peak hours, where possible	C3	L6	Low
<b>5. Installation of site sheds and concrete lines</b>								

(Uncontrolled when printed)

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Contamination uncovered during works	Mixing of contaminated materials with non-contaminated materials	C4	L5	Low	Induction to include contamination management requirements.  Implement Sydney Metro Unexpected Finds Procedures for contamination (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure)	C4	L5	Low
Uncontrolled runoff from works	Uncontrolled water entering local stormwater and impacting on water quality	C5	L5	Low	Set up erosion and sediment controls as per the ESCP (e.g. sandbags, coir logs, etc) .	C5	L6	Low
Spoil Management	Incorrect handling or disposal of spoil leading to environmental degradation	C4	L4	Med	The waste must be lawfully transported and disposed of to a licenced facility.	C4	L5	Low
Items of heritage significance uncovered during excavation works	Damage to heritage items or archaeological deposits	C3	L5	Med	Induction to include heritage management requirements.  Previous intrusive investigations have not identified any items of heritage significance, as such the implementation of the Sydney Metro Unexpected Heritage Finds Procedure (the Contractor may choose to develop their own Procedure which will need to meet the minimum requirements of the Sydney Metro Procedure.	C3	L6	Low
Noise	Noise from plant impacting on sensitive receivers  Noise impacts outside standard construction hours  Noise from deliveries  Worker activities and behaviour	C3	L5	Med	Plant to be positioned so that the noisier part of the rig points away from sensitive receivers, where possible. Non-tonal reverse beepers to be fitted to all plant.  Noisier activities are only expected to occur for short durations and will occur during standard construction hours. Respite and other additional mitigation measures will be provided in accordance with the	C5	L6	Low



Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
					<p>CNVS. It should also be considered that earlier Sydney Metro project works installed noise mitigation treatments at a number of sensitive receptors adjacent to the project site.</p> <p>Works to occur in during standard construction hours, in the event that OOHW are required to be undertaken contractors must follow the appropriate approvals process and submit Out of Hours Work applications for Acoustic Advisor endorsement and Environmental Representative approval. Mitigation measures to be implemented in accordance with the Sydney Metro Construction Noise and Vibration Strategy and Sydney Metro Out of Hours Works Strategy Protocol.</p> <p>Workers to be inducted and tool boxed prior to commencing works.</p> <p>Consultation with potentially affected stakeholders to be undertaken prior to the commencement of works.</p>			
Chemical handling and storage	Poor storage and handling of chemicals causes spills	C5	L4	Low	<p>Any chemicals and fuels are to be stored within a bunded area with 110% of the capacity of the largest stored container</p> <p>Refuelling to occur more than 20m away from drainage lines</p> <p>Site induction includes spill response awareness.</p>	C4	L5	Low

Aspect	Potential Environmental Impact	Initial Risk Rating			Control Measures	Residual Risk Rating		
		C X	L =	Risk		C X	L =	Risk
Air Quality	Dust generation during works	C4	L4	Med	Induction to include air quality management practices Water cart or water trailer to be present to wet down material Monitor conditions and cease work where dusty conditions are observed	C4	L5	Low
Traffic	Impacts on traffic Increased noise from changed traffic conditions	C4	L3	Med	Develop and implement a Construction Traffic Management Plan (CTMP) in accordance with the project planning approvals and the Sydney Metro CTMF. This CTMP would need to be approved by RMS/SCO and implemented prior to the works commencing. Undertake work outside of peak hours, where possible	C3	L6	Low
Pedestrians	Impacts on pedestrians	C4	L4	Med	Implement a CTMP and provide alternative pedestrian routes Undertake work outside of peak hours, where possible	C3	L6	Low

A1 Consequence Table

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

A2 Likelihood Criteria

Likelihood						
Rating	L6	L5	L4	L3	L2	L1
Descriptor/ Definition	Almost Unprecedented	Very Unlikely	Unlikely	Likely	Very Likely	Almost Certain
<b>Qualitative Expectation</b>	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.
<b>Sydney Metro Probability Analysis</b>	<10%	10-25%	25-50%	50-75%	75-90%	>90%
<b>Quantitative Frequency</b>	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		Consequence					
		Insignificant	Minor	Moderate	Major	Severe	Catastrophic
		C6	C5	C4	C3	C2	C1
Likelihood	Almost certain	L1	C	B	B	A	A
	Likely	L2	C	C	B	A	A
	Possible	L3	D	C	C	B	A
	Unlikely	L4	D	D	C	B	B
	Rare	L5	D	D	D	C	B
	Almost unprecedented	L6	D	D	D	D	C



## **Appendix 2: Cover Page**

Environmental Representative Supporting Letter.