Appendix I

Utilities Management Framework



Sydney Metro City and Southwest

Sydenham to Bankstown Upgrade

Utilities Management Framework

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1. Introduction

It is anticipated that the project will require the relocation, adjustment and protection of public utilities such as electricity, communications, gas, water and sewerage. While it is expected that most utility relocation/adjustment would be contained within the rail corridor, there will be occasions where a utility needs to be relocated outside the rail corridor or in some instances outside the project area. The details of each utility relocation are currently being worked through as part of design development and early contractor involvement. To assess potential impacts associated with these works, which would typically be undertaken as part of construction phase of the project, a risk based environmental assessment approach has been adopted and is contained within this Utilities Management Framework (UMF).

This UMF has also been prepared to address the following Secretary's Environmental Assessment Requirements (SEARs) for the Sydney Metro City and Southwest Sydenham to Bankstown upgrade project (the project):

Key issue and Desired Performance Outcome	Requirement (specific assessment requirements in addition to the general requirement above)		
16. Utilities This project is designed, constructed and operated to minimise impacts to utilities and provision of such to the public.	 The Proponent must identify impacts on key identified active or disused public trunk utilities infrastructure (including communications, electricity, gas, and water and sewerage). Where impacts on utilities are expected, the Proponent must prepare a utilities management framework, to identify a management strategy fo options, including relocation or adjustment of the utilities. 	or	
	3. The utilities management framework must identify ways in which opportunities to integrate with and support initiatives adopted by Councils and utilities providers and how access to assets will be maintained during construction.		

This document provides an overview of the principles and practices that would apply to the management of utilities during the construction of the project. It includes a list of active and disused utilities located within and/or crossing the project area (either underground, aboveground or via existing road overbridges) with the potential to be affected by construction of the project, and outlines the approach to management of these utilities at a strategic or high level.

Should the project be approved, it is anticipated that Conditions of Approval (CoAs) for the project will require preparation of a Construction Environmental Management Plan (similar to Chatswood to Sydenham project) that includes detail of the required utilities related activities (such as relocation, adjustment and protection works) during the construction phase (refer below for extract from the Chatswood to Sydenham project CoA):

UTILITIES AND SERVICES

Utilities, services and other infrastructure potentially affected by construction must be identified before works affecting the item, to determine requirements for access to, diversion protection, and/or support. The relevant owner and/or provider of services must be consulted to make suitable arrangements for access to diversion, protection, and/or support of the affected infrastructure as required. The Proponent must ensure that disruption to any service is minimised and be responsible for advising local residents and businesses affected before any planned disruption of service. All



excavations adjacent to RMS road infrastructure must meet the requirements of RMS Technical Direction (GTD 2012/0001) 'Excavation adjacent to RMS infrastructure'.

In addition, the following CoA was applied to Chatswood to Sydenham (extract below) and it is expected that similar would be applied to Sydenham to Bankstown approval. This condition indicates that low impact activities such as utilities relocation and adjustments is outside the definition of construction for the purposes of planning approval unless it could impact heritage items or threatened species etc in which case the activity would be addressed as a construction matter in the project Construction Environmental Management Plan.

Construction includes all physical work required to construct the CSSI, including demolition, other than the following low impact work:

(*j*) relocation and connection of utilities where the relocation or connection has a minor impact to the environment as determined by the ER;

However, where heritage items, or threatened species, populations or ecological communities (within the meaning of the EP&A Act) are affected or potentially affected by any low impact work, that work is construction, unless otherwise determined by the Secretary in consultation with OEH or DPI Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation). The low impact work described in this definition becomes construction with the approval of a <u>Construction Environmental Management Plan</u>.

This UMF provides a mechanism for identifying, assessing and minimising impacts to the public because of required utilities relocation/adjustments.



2. Utilities identification

The location of trunk utilities has been determined by the design team to the current stage of design, based on Dial Before You Dig searches; and a review of utility data, including asbuilt surveys, and agency and council records. Preliminary consultation has also been held with utility owners, including Sydney Water, Ausgrid, Telstra, Axicom, TPG, Qenos, Transgrid, Optus, Jemena and NBN.

The following utility owners have assets which may require adjustment, protection, and/or relocation as part of the project:

- Sydney Water:
 - potable water mains
 - o stormwater drains and channels
 - wastewater mains/tunnels including potentially disused assets
- Ausgrid:
 - o underground electricity cables (potentially up to 132 kV)
 - 33 kV underground electricity cables
 - high voltage underground electricity cables
 - o low voltage overhead and underground electricity cables
 - abandoned underground cables
- Qenos:
 - o disused high pressure gas main (filled with inert ethylene gas)
- Jemena:
 - high pressure gas main (primary and secondary mains)
 - o medium pressure gas main
 - low pressure gas main
- Telstra:
 - underground cables
 - underground and above ground service connections (i.e. to stations)
 - o optic fibre underground cables
 - o underground copper wire
 - vacant cable conduits
- NBN:
 - o network cables
- Optus:
 - o underground optic fibre cables



- the Inner West and Canterbury-Bankstown councils:
 - o stormwater channels
 - underground stormwater pipes
 - o drainage culverts.

A number of the above assets are positioned within/below the existing road overbridges crossing the rail corridor.



3. Utilities management

A risk-based approach to the management of utilities would be adopted during the construction phase of the project to avoid damage throughout the project lifecycle. To ensure a consistent approach across all project activities the following stages would be undertaken:

- confirm utilities with the potential to be impacted
- design refinement
- detailed assessment
- consultation with asset owners and relevant stakeholders
- integration with other assets
- construction management.

These stages are described below:

3.1. Confirm utilities with the potential to be impacted

Dial Before You Dig searches and targeted site investigations would continue to be undertaken to establish the full extent of services with the potential to be impacted by construction. During this process, it is likely that unfiorseen utilites would be uncovered. Site investigations would be carried out using a range of techniques:

- Dial Before You Dig information
- electronic detection scanners
- pot holing by vacuum methods as well as other non-destructive methods
- slit trenching using vacuum excavation
- detailed survey pickup
- visual inspection within pits
- physical testing of selected assets.

The extent of slit trenching and potholing would be determined by the number of services in each area, as well as the amount of outstanding information required. This would supplement existing investigations already undertaken.

3.2. Design refinement

Where an existing utility conflicts with the proposed design, it may be necessary to:

- 1. Provide physical protection where the utility is not directly affected but may be indirectly affected by vibration or accidental impact. This could include:
 - o constructing a piled wall between the work site and the utility
 - o plating over the utility to minimise the impact of construction traffic
 - marking or fencing the location of the utility to avoid it being accidentally damaged.



- 2. Modify construction methods to avoid impacting a nearby utility. For example, this could involve using hand excavation and compaction tools such as hand digging tools, a vibration plate, or pedestrian rollers where compacting within a specified distance of utilities.
- 3. Wrap and support the utility service to provide mechanical protection.
- 4. Divert the utility around the construction site.
- 5. Relocate the utility.
- 6. Abandon the utility.

3.3. Detailed assessment

Designs would be developed in accordance with each utility owner's specification once the provider requirements are agreed. Design packages would be produced for each geographic area, which would describe the utilities in the area, so that utility owners have confidence that the potential impacts have been adequately assessed. The design packages would be sent to the relevant utility owner for approval.

3.4. Opportunities to integrate with utility owners and other affected stakeholders

To manage integration with utility owners, Sydney Metro has established an internal Utilities Working Group. Ongoing consultation with all relevant utility owners and other stakeholders, including the Inner West and Canterbury Bankstown councils will be undertaken following project approval through the Sydney Metro Utilities Working Group. The following utility providers have dedicated resources / points of contact for Sydney Metro: Ausgrid, Sydney Water, Qenos, Transgrid, Telstra, Optus, TPG and Axicom.

Construction works that may directly or indirection impact utilities would be coordinated with the relevant utility owners, including consideration of any proposed utility upgrades and access requirements, particularly maintaining access during project construction. Access to utilities within the project area would be maintained at all times.

3.5. Environmental assessment and approval

Minor relocations within the existing rail corridor would be undertaken in accordance with a work method statement provided in the project Construction Environmental Management Plan. For relocations outside the rail corridor, the need for additional assessment and approval would be determined in line with the approach to design refinements for the project, described in Section 27.3 of the EIS.

3.5.1. Overview and context

In some cases construction works for the project will require the relocation/adjustment of utilities and in other cases utilities will require protection from potential impacts during construction works associated with other aspects of the project. If utilities are not managed adequately, by adjusting, relocating, or protecting them prior to construction, there would be the potential for rupture or breakage of connections. This could lead to service disruptions and/or pose a hazard in the form of electrocution, release of sewage from a wastewater main, or fire if a gas main is impacted. It may be necessary to establish a construction work zone (ie compound area and hard stand area etc) during the utility relocation/adjustment.

3.5.1.1. Potential impacts to utilities

Construction would have the potential to impact on utilities as a result of works to and around stations, track works, excavation, and works to overbridges. In most cases, utility impacts would be minimised by protecting utilities in place, or, where required, constructing a replacement utility ahead of re-connection thus minimising the duration of outages. Connection activities would be undertaken during planned periods of disruption, which would be notified in advance to affected communities. However, there is also the possibility of accidental damage or incidents if utilities are uncovered in locations not previously identified, leading to unplanned disruptions. Such disruptions can result in impacts to the operation of utility networks.

All works would be undertaken in accordance with the requirements of the relevant asset owners, which would be determined following consultation.

3.5.1.2. Utilities relocation/adjustment

Most utilities to be relocated/adjusted are likely to be located within the rail corridor, as this is where the highest density of utilities typically occurs. However, in some locations, works would be required outside the rail corridor but still within the project area, for example at a construction compound site or a rail overbridge. Also, depending on the utility and the utility owners requirements, it may not always be possible to divert the utility at the point of intersection with the project, requiring consideration of upstream and downstream utility considerations.

3.5.2. Risk based environmental assessment

This framework establishes a risk based approach to the assessment and management of potential impacts associated with utilities management.

Typical environmental impacts associated with a range of anticipated utilities works likely to be required during the construction phase of the project are identified below:

Environmental aspect	Typical impacts to assess		
Traffic and access	Additional construction related traffic		
	Changes/disruption to traffic movements		
	Changes/disruption to property access		
	Changes/disruption to bus services/routes		
	 Changes/disruption to pedestrian and cyclist movements 		
	Temporary reduction in available car parking		
Noise and vibration	 Vibration depending on utility removal/installation technique eg horizontal directional drilling or trenching 		
	 Road traffic noise due to construction vehicle movements/haulage routes and changes in traffic movements associated with detours 		
	 Construction noise associated with physical works and type of plant of equipment proposed 		
Non Aboriginal Heritage	Potential intrusion within heritage curtilage		
	Works within heritage conservation area		
	Potential impact to, or removal of, heritage trees		
	 Potential impacts to views and vistas associated with heritage items 		
	Potential impacts to heritage buildings/fabric from vibration		

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(Uncontrolled when printed)



Environmental aspect	Typical impacts to assess
Biodiversity	Removal of vegetation and/or trees
	Impact to tree protection zone
	 Loss of habitat such as trees and other vegetation types causing habitat fragmentation
	 Impacts to fauna from construction related noise and vibration eg bats
Air quality	Dust from construction works
	 Exhaust emissions from equipment, machinery and construction vehicles
Hazard and risk	• Potential electric and magnetic field impacts during operation (where electricity infrastructure is relocated to a new area)
	Hazards specific to the Qenos pipeline relocation work include:
	 Abrasive blasting - potential contamination of air/soil/water from blasting material.
	 Radiation exposure – use of xray to inspect the new welds.
	Welding – grinding/welding operation has risk of fire or injury to personnel
	 Horizontal directional drilling – potential for frac-out and damage to buried services
	Hydrostatic testing – potential for injury to workers due to failure of high pressure fittings
	 Remaining ethylene product in the pipeline – there could be a minimal amount of product left in the pipeline that we need to be aware of during tie-in.
Property and land use	Potential leasing of property for construction works
	 Potential changes to, or requirements for, easement arrangements for utility
Soils and contamination	 Potential disturbance, handling and disposal of contaminated material including acid sulphate soils during construction
Landscaping/urban design matters	• Erection of fencing, barricades, gates and lighting
	Potential light spill from night-works
	 General construction activities within the construction footprint, trenching, stockpiling of materials and the parking/use of construction plant and vehicles
	 Rehabilitation of land (potential replanting etc) following relocation/adjustment works
Aboriginal heritage	Potential disturbance to registered sites
	 Potential disturbance to areas of potential archaeological deposits
	 Unexpected finds during utility relocation/adjustment works.

Note: this is not intended to limit the range of environmental aspects considered for a specific project, but rather provides a guide for likely matters to consider.

This utilities management framework is underpinned by the Australian Standard for risk management - <u>AS/NZS ISO 31000:2009</u>, <u>Risk management - Principles and guidelines</u>. An analysis of potential impacts associated with utilities relocation/adjustments would be undertaken by considering consequence and likelihood as set out in the Australia Standard.



			Consequence				
			How severe could the outcomes be if the risk event occurred?				
			1 Insignificant	2 Minor	3 Significant	4 Major	5 Severe
	rring?	5 Almost Certain	5 Medium	10 High	15 Very high	20 Extreme	25 Extreme
Likelihood What's the chance the of the risk occurring?	risk occu	4 Likely	4 Medium	8 Medium	12 High	16 Very high	20 Extreme
	the of the	3 Moderate	3 Low	6 Medium	9 Medium	12 High	15 Very high
÷	ie chance	2 Unlikely	2 Very low	4 Low	6 Medium	8 Medium	10 High
	What's th	1 Rare	1 Very low	2 Very low	3 Low	4 Medium	5 Medium

The steps associated with the assessment are outlined in the figure below:



STEP-ONE¶

IDENTIFY·RANGE·OF·ACTIVITIES·PROPOSED·(INCLUDING·LOCATION·OF· ACTIVITIES,·REQUIRED·PLANT·AND·EQUIPMENT,·CONSTRUCTION· COMPOUNDS,·TEMPORARY·ROAD·CLOSURES,·ACCESS· ARRANGEMENTS·AND·DURATION·OF·WORKS·INCLUDING·NEED·FOR· NIGHTTIME·WORKS)¶



STEP·TWO·¶

WITH·REFERENCE·TO·TYPICAL·ENVIRONMENTAL·IMPACTS·LISTED· ABOVE·AND·THE·ACTIVITIES·IDENTIFIED·IN·STEP·ONE,·UNDERTAKE·A· RISK·ASSESSMENT·(refer·Australian·Standard·AS/NZS·ISO· 31000:2009)¶



STEP.THREE

BASED·ON·THE·OVERALL·RISK·RATING·IDENTIFIED·IN·STEP·TWO,· APPLY·MITIGATION·MEASURES·FROM·TABLE·IN·3.6·TO·ADDRESS· REDUCE·RISK·¶

An assessment of these aspects and any other site specific matters would be undertaken prior to construction and mitigation adopted in the project Construction Environmental Management Plan.

3.6. Construction management

Construction would be managed in accordance with the requirements of the Construction Environmental Management Framework and the Construction Environmental Management Plan. This plan would address contingency management for any unplanned utilities interruptions.

Notwithstanding, the table below presents example mitigation measures that could be adapted to specific utilities work associated with the construction phase of the project



Environmental aspect	Typical mitigation measures to be adopted as required
Traffic and access	During detailed design:
	 Road occupancy licence(s) for temporary closure of roads would be obtained prior to construction, where required, from the relevant road authority.
	• A Traffic Control Plan would be developed during detailed design and would identify all traffic control arrangements required to be implemented during construction.
	 To keep the road user delays to a minimum, all works would be planned and staged to avoid road occupancies during peak periods, where possible.
	• An emergency response plan would be developed for construction traffic incidents.
	 A pre and post-construction assessment of road pavement assets would be conducted in areas likely to be used by construction traffic or disturbed by the proposed trenching and HDD activities.
	During construction:
	Heavy vehicles would be restricted to allowable routes.
	 Where schools or child care centres occur in the immediate vicinity of the construction sites, heavy vehicle movement would be minimised (where reasonable and feasible), between 8 am and 9.30 am and 2.30 pm–400 pm Monday to Friday (on school days).
	 Traffic controllers would be located at worksite access point(s) as required to direct vehicle movements, vehicle deliveries, pedestrians and cyclists, where required.
	 Public communications would be conducted to notify the community and local residents of vehicle movements and anticipated effects on the local road network relating to the site works.
	 Access to all private properties adjacent to the works would be maintained during construction, where possible. Where access known to be restricted, all proposed changes to existing access arrangements would be discussed with residents and/or businesses prior to the commencement of works. Upon completion of the construction works, the original property access would be reinstated.
	• Early advanced communication with affected properties would be undertaken to identify alternative arrangements.
	 During Project inductions, all heavy vehicle drivers would be provided with the emergency response plan for construction traffic incidents.
	• Project staging, vehicle movement and scheduling, equipment and resourcing would be coordinated to minimise impacts.
	 Construction vehicle parking would be discouraged on local roads and construction staff encouraged to use public transport, ca share, or in some cases workers can park in a designated off-site area and ferried to site via a shuttle bus.
	 Temporary closure or relocation of any bus stops impacted by the works would be coordinated with bus companies and advertised locally in advance.



Environmental aspect	Typical mitigation measures to be adopted as required
Noise and vibration	During construction:
	Carry out work mainly during standard construction hours when in the vicinity of residential receivers.
	 Use a portable barrier (or similar protection) to shield the drilling equipment where works occur in proximity to residential receivers where reasonable and feasible. The height and nature of the barrier would be determined when the equipment selection is finalised. The barrier would be constructed of a material of minimum mass 12 kilograms per metre squared such as 20 millimetre plywood or a proprietary barrier such as Echobarrier.
	Provide periods of respite from use of the road saw.
	 Schedule the use of the road saw to times when the community are less sensitive by avoiding early morning and late evening/night periods, where feasible with respect to the proposed construction methodology.
	 Inform surrounding residents by mail of planned works prior to the works commencing.
	Organise the site to avoid unnecessary use of reversing alarms on vehicles.
	Truck drivers to use approved access routes to the site.
	Orientate and place water pumps and vacuum trucks away from receivers.
	• Turn equipment off when not in use and avoid idling machinery or trucks near sensitive receivers.
	• Utilise vehicles, obstacles and stockpiles on site to provide shielding to receivers, where possible.
	 Avoid dropping tools or materials from height, striking materials or making metal-metal contact
	• Operate the excavator in a manner that avoids maximum noise levels associated with striking or shaking the bucket.
	• Educate workers on the importance of minimising noise and avoid creating short duration high noise level events.
	Carry out a survey of sensitive receivers to ensure adequate acoustic performance of façade.
	During reinstatement/rehabilitation works:
	• Schedule deliveries to be carried out to avoid sensitive periods in the early morning and late evening/night.
	• Turn equipment off when not in use and avoid idling machinery or trucks near sensitive receivers.
	Provide respite periods from tipper and compactor usage.
	 Select equipment such as a compactor and tipper trucks, based on lower noise emissions and use equipment that has lower noise levels
	 Inform surrounding residents by mail of planned works prior to the works commencing.
Non Aboriginal heritage	 Construction works associated with utilities relocation/adjustment with the potential to impact non Aboriginal heritage would be managed through a Heritage Management Plan that would be prepared for the Sydney Metro Sydenham to Bankstown upgrad project.
	 The presence or potential presence of a heritage item or archaeological deposit would inform the construction method adopted for instance underboring using HDD may be preferable to trenching in some sensitive locations.



Environmental aspect	Typical mitigation measures to be adopted as required
Biodiversity	During construction
	 Where vegetation clearing is required, pre-clearing surveys would be completed to mitigate potential impacts and identify risks to flora, fauna and habitat prior to construction activities occurring and to identify the presence of any unidentified threatened or endangered species.
	 Where impacts to existing street trees are unavoidable, both the relevant Council and an ecologist or arborist would be consulted prior to removal or pruning of any trees
	 If the removal of any tree with hollows/dead trees/tree stump is unavoidable (subject to detailed design and advice from contractor) further assessment by a qualified ecologist would be undertaken.
	 Any sensitive areas along alignment would be identified during detailed design and/or pre-construction planning activities and would be indicated on a site environmental plan for the proposed works. Protective fencing and environmental signage would be installed as required.
	• Vegetation removal would only be carried out under a permit system.
	• Flora and/or fauna located during works would be subject to a Vegetation Clearing Procedure and/or Fauna Rescue Procedure.
	 Site office, stockpiles, machinery wash down areas, and plant storage areas would be located outside of any ecologically sensitive areas.
	• Fuel (or other chemical) storage would be located outside all identified riparian zones, and at least 10 metres from any retained ecologically sensitive areas onsite.



Environmental aspect	Typical mitigation measures to be adopted as required
Air quality	During construction:
	Trucks carrying spoil onto or off site are to be covered.
	• Any stockpiling of materials would be located away from sensitive receivers, where feasible and reasonable, and protected from the elements through barriers or appropriate coverings.
	 On-going monitoring for dust (e.g. site inspections) would be undertaken during trenching works to assess the effectiveness of mitigation measures.
	• Water sprays and/or water carts would be used as required for dampening exposed surfaces to control dust generation.
	• Silt accumulated in sediment control devices (e.g. silt fences and spoon drains) would be removed on a regular basis to prevent dust generation.
	 Cutting, grinding or sawing equipment (such as for concrete/bitumen surfaces) must only be used in conjunction with suitable dust suppression techniques, such as water sprays or local extraction.
	• Dust generating activities would be assessed during periods of strong winds and rescheduled, where required.
	 Exhaust systems of construction plant, vehicles and machinery would be maintained to minimise exhaust emissions to the atmosphere. All equipment and vehicles are to be regularly maintained and records kept of maintenance.
	 Engines would be switched off when vehicles and plant are not in use, to minimise idling, and refuelling areas would be away from areas of public access and sensitive receivers.
	• Plant would be well maintained and serviced in accordance with manufacturers' recommendations.
	• Low emission vehicles and plant fitted with catalysts, diesel particulate filters or similar devices would be used, where feasible and reasonable.
	• Plant and other machinery (including generators) would be sited away from sensitive receivers, such as dwellings and schools, where feasible and reasonable.
	• The amount of excavated material stored on site would be minimised, and replaced within the open trench as soon as possible.
	• Dust generating activities would be assessed during periods of strong winds and rescheduled where required.
	Dust complaints would be handled accordance with the complaints handling process in the Community Communication Strategy to be developed by each Sydney Metro Principal Contractor.



Environmental aspect	Typical mitigation measures to be adopted as required
Hazard and risk	With regard to EMF:
	• Where practical, site the electrical infrastructure in the carriageway of roads, away from residential property boundaries, so that the magnetic field contribution at and beyond them would be lower.
	Adopt an underground cable concept rather than overhead lines.
	 Use 3-core cables, which greatly increase the rate at which the magnetic field levels drop off with increasing distance from the source when compared to the single core alternative.
	 Include consideration of public awareness/education as part of community information material to identify the minimal impacts with respect to EMF.
	General:
	Hazardous substances would only be used onsite as required, in accordance with the manufacturer/ supplier instructions.
	 The use of any hazardous substance that could result in a spill would be undertaken away from drainage or stormwater lines and, wherever possible, within defined bunds
	Contractors to operate under appropriate Work Health and Safety Plan
Property and land use	During pre-construction:
	 In consultation with utility providers, the ongoing maintenance and access requirements would be identified and the potential impact to an existing easement or need for a new easement considered.
	• The proposal would not permanently restrict any future access to residential, commercial, industrial or recreational land uses.
Soils and contamination	During construction:
	 All fuels, chemicals and hazardous liquids would be stored in accordance with Australian standards and EPA guidelines. Any refuelling undertaken on site would be undertaken in designated areas only.
	 Spill kits would be available as part of any worksite for use in case of fuels, chemical or other spill(s) which may occur during construction.
	All spills or leakages would be immediately contained and absorbed.
	 Should any signs of contamination be identified during work within the site, the material would be tested against the National Environment Protection Council's National Environment Protection (Assessment of Site Contamination) Measure 1999, and managed accordingly.
	 Soil excavated in areas with identified surrounding industrial land uses (including former uses) would be assessed for either its potential re-use on-site or classified for waste disposal purposes.
	 If groundwater is encountered during the works, groundwater quality would be investigated and appropriate management measures implemented to avoid further impacts.
	 In the event of unexpected finds of contamination a Contamination Unexpected Finds and Contingency (refer to the CSWMP) procedure would be implemented.



Environmental aspect	Typical mitigation measures to be adopted as required
Landscaping/urban design matters	During construction:
	• Visual mitigation measures would be implemented as soon a feasible and practical and remain in place during the construction period.
	All effort would be made for vegetation to be retained where practical and feasible.
	• Site sheds, where required, would be located to minimise visual impact where it is feasible and reasonable to do so.
	 Hoarding banners for the external faces of hoardings and fences at each construction site would be a non-obtrusive colour, which would comply with the Sydney Metro style guidelines (co-branding).
	Hoarding would be maintained in an excellent condition with prompt removal of graffiti.
	• No signage, advertising or branding (other than safety signage or other required signage) would be placed on the external face of any hoarding or fence without the prior written approval of TfNSW.
	• Temporary works to be designed and constructed as per the requirements of crime prevention through environmental design.
	• Temporary fencing, walls, and hoarding would be designed and implemented to increase natural surveillance with straight runs.
	• Way finding signage to direct pedestrians, commuters and vehicles around the construction site would be installed as required.
	• The storage of materials and construction machinery would be minimised as far as possible.
	• The site would be maintained in an orderly and tidy fashion through good housekeeping.
	• Cut-off and directed lighting would be used to ensure glare and light spill are minimised lit during night work periods (where this is required).
Aboriginal heritage	During construction
	 If suspected Aboriginal objects are located during construction, an archaeologist would be notified to assess the nature and significance of the find. If the find is an Aboriginal object, further investigation and permits may be required before works commence. If the find is an Aboriginal object, then OEH and the relevant Local Aboriginal Land Council (LALC) would be notified.
	• If suspected human skeletal remains were uncovered at any time within the area of the utility works, the following actions would need to be followed:
	 immediately cease all excavation activity in the vicinity of the remains
	 notify NSW Police
	 notify OEH via the Environment Line on 131 555 to provide details of the remains and their location
	 no recommencement of activity in the vicinity of the remains unless authorised in writing by OEH



3.6.1. Rehabilitation and re-instatement

Mitigation measures required for reinstatement or work sites will be incorporated into the CEMP and will include as a minimum:

- Principal Contractors will clear and clean all working areas and accesses at project completion
- At the completion of construction all plant, temporary buildings or vehicles not required for the subsequent stage of construction will be removed from the site
- All land, including roadways, footpaths, loading facilities or other land having been occupied temporarily will be returned to their pre-existing condition or better
- Reinstatement of community spaces, infrastructure and services will occur as soon as possible after completion of construction.

3.6.2. Communications and notifications

Throughout construction, Sydney Metro and the Principal Contractors will work closely with stakeholders and the community to ensure they are well informed regarding the construction works.

Stakeholders and the community will be informed of significant events or changes that affect or may affect individual properties, residences and businesses. These will include:

- Significant milestones
- Design changes
- Changes to traffic conditions and access arrangements for road users and the affected
- public
- Construction operations which will have a direct impact on stakeholders and the community including noisy works, interruptions to utility services or construction work outside of normal work hours.

A Community Communication Strategy will be developed by the Principal Contractor. Key elements of the Community Communication Strategy, which will be implemented at appropriate times in the construction process, will include:

- Notification (including targeted letterbox drops and email) of any works that may disturb local residents and businesses (such as noisy activities and night works) at least seven days prior to those works commencing
- Notification (including targeted letterbox drops and email) of works that may affect transport (such as road closures, changes to pedestrian routes and changes to bus stops)
- Traffic alerts (via email) to all key traffic and transport stakeholders advising of any changes to access and local traffic arrangements (at least seven days prior to significant events)
- Print and radio advertisements regarding major traffic changes
- 24-hour toll-free community project information phone line
- Complaints management process



- Community information sessions, as required
- Regular updates to the Sydney Metro website (sydneymetro.info), including uploading of all relevant documents, and contact details for the stakeholder and community relations team
- Provision of information to the Sydney Metro Community Information Centre including community newsletters, information brochures and fact sheets and interactive web based activities
- Clear signage at the construction sites
- Regular newspaper advertisements in local and metropolitan papers
- Regular inter-agency group meetings
- Community, business and stakeholder satisfaction surveys and feedback forms
- Translator and interpreter services
- The Principal Contractor's Community Relations Team will liaise with the Sydney Metro Project Communications team as the point of contact for the community.

Community liaison and complaints handling will be undertaken in accordance with the Construction Complaints Management System and will include:

- Principal Contractors will deal with complaints in a responsive manner so that stakeholders' concerns are managed effectively and promptly
- A verbal response will be provided to the complainant as soon as possible and within a maximum of two hours from the time of the complaint (unless the complainant requests otherwise). A detailed written response will then be provided, if required, to the complainant within one week.



4. Conclusion

This framework acts as an input and a reference for the development of the Construction Environmental Management Plan. This framework will guide the project team's approach to the management of utilities and integration with utility providers and relevant stakeholders, during the construction phase of the project.

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