sydney METRO | Integrated Management System

Planning Approval Consistency Assessment Form

SM ES-FT-414

Sydney Metro Integrated Management System (IMS)

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The Central Station Main (CSM) works are a major element of the Sydney Metro City and Southwest project, which includes the construction of a new metro station underneath Central Station's existing heavy-rail platforms 13, 14 and 15.

SSI Mod 2: Work to the existing Central Station and Central Walk, which includes a new eastern entrance and concourse running below the suburban rail platforms (existing platforms 16 to 23).

Combined Services Route (CSR) for high voltage electrical (HV) and communications (Comms.) services

Condition A1 of the Secretary's Conditions of Approval (CoA) for CSSI 7400 states that "*The CSSI must be constructed generally in accordance with the description of the CSSI in the EIS*". Chapter 7 of the Environmental Impact Statement (EIS) details how the existing services routes at Central Station are contained within the underground services and pedestrian tunnels beneath the existing platforms. In order to provide uninterrupted access for the construction of the metro platforms, it is proposed to relocate these services into a combined service ring located around the perimeter of the station. The services ring is likely to include power cables, communications cables, signalling cables and fire services.

Central Station currently has a number of complex arrangements of services running in various locations through the station, including a dedicated services tunnel and tunnels used by pedestrians. These services would be severed by both the approved project works at Central Station and the approved modification (Central Walk) if no alternative arrangements were implemented. Section 6.6.1 of the Central Walk Modification Report (Mod 2) details how such potential impacts will be nullified via the construction a combined services route (CSR) around Central Station and through Sydney Yard. The CSR will extend fully around Central Station utilising existing service infrastructure where this is available and providing new installations as required to complete the system as show in Figure 7-3 of Mod 2. The first phase of the works (Phase A) is described in this Consistency Assessment. Section 7.6 of Mod 2 discusses the constructability of the modified CSR.

The CSR will provide for communications services (voice, data and IT connectivity, requiring 6 to 8 cables) and high voltage electrical (HV) services that will service the whole site, both existing and the new infrastructure installations that are being introduced as part of the Central Station Main Works. The CSR will extend as a circular route around the site, utilising existing service infrastructure where this is available and providing new installations as required to complete the system. Phase A of the route is broadly illustrated in Figure 1 – Appendix A.

The site wide CSR will be delivered across the following 2 phases:

- Phase A – Western Baggage Tunnel, Northern Baggage Tunnel, and Platform 1 works
- Phase B – Darling Harbour Goods Line, Mortuary Sidings, Mortuary Tunnel, Sydney Yard, Water Main Tunnel, and Sydney Network Base

At present, elements of the works are still undergoing detailed design, this assessment has been developed to allow the first stage of the works to commence (Phase A). An additional assessment will be prepared at a later date to cover the works under Phase B once design has been sufficiently developed. This document only addresses the works under Phase A.

The Planning Approval Consistency Assessment Form should be completed in accordance with the Sydney Metro Planning Approval Consistency Assessment Procedure (SM ES-PW-314) and Sydney Metro Environmental Planning and Approval Manual (SM ES-ST-216)

1.0 Existing Approved Project

Planning approval reference details (Application/Document No. (including modifications)):

Sydney Metro City and Southwest Chatswood to Sydenham Conditions of Approval (SSI 15_7400) as modified.

Modification 1 – Relocation of Victoria Cross northern services building. Additional station entry and relocation of Artarmon Substation (SSI Mod 1).

Modification 2 – Central Walk – Sydney Metro City and Southwest – Chatswood to Sydenham (SSI Mod 2).

Modification 3 – Martin Place Metro Station – Sydney Metro City and Southwest – Chatswood to Sydenham (SSI Mod 3).

Modification 4 – Sydenham Station and Metro Facility South – Chatswood to Sydenham (SSI Mod 4).

Modification 5 - Blues Point Acoustic Shed (SSI Mod 5).

Modification 6 – Administrative Changes- Modification to Sydney Metro City & Southwest - Chatswood to Sydenham (SSI Mod 6)

Date of determination:

SSI 15_7400 – 9 January 2017.

SSI Mod 1 – 18 October 2017.

SSI Mod 2 – 21 December 2017.

SSI Mod 3 – 22 March 2017.

SSI Mod 4 – 13 December 2017.

SSI Mod 5 – 2 November 2018

SSI Mod 6 – 21 February 2019

Type of planning approval:

Division 5.2 (cf Part 5.1) - Critical State Significant Infrastructure

Description of existing approved project you are assessing for consistency:

SSI 15_7400: The Chatswood to Sydenham component of Sydney Metro City and Southwest comprises a new metro rail line, approximately 16 kilometres long, between Chatswood and Sydenham. New metro stations would be provided at Crows Nest, Victoria Cross, Barangaroo, Martin Place, Pitt Street and Waterloo, as well as new underground metro platforms provided at Central Station.

Relevant background information (including EA, REF, Submissions Report, Director General's Report, MCoA):

- The Sydney Metro City and Southwest – Development Consent – Determination, dated 9th January 2017
- The Sydney Metro City and Southwest - Environmental Impact Statement, dated 3rd May 2016
- The Sydney Metro City and Southwest Chatswood to Sydenham Submissions and Preferred Infrastructure Report (PIR), dated October 2016
- Modification 2 – Central Walk – Sydney Metro City and Southwest – Chatswood to Sydenham (SSI Mod) – 21 December 2017
- Chatswood to Sydenham – Central Walk Modification – Submissions Report – 4 April 2017
- Chatswood to Sydenham – Central Walk Modification – Determination, dated 21 December 2017

The proposed works identified in this assessment would be undertaken in accordance with the mitigation measures identified in the EIS, PIR and the Infrastructure Approval, as modified.

2.0 Description of proposed development/activity/works

Describe ancillary activities, duration of work, working hours, machinery, staffing levels, impacts on utilities/authorities, wastes generated or hazardous substances/dangerous goods used.

The Phase A works will comprise of civil construction works cabling and electrical works, which are described in greater detail below, commencing around the northern corner of the site and progressing in an anti-clockwise direction. The scope of Phase A works includes the following:

1. Western Baggage Tunnel (WBT) and Northern Baggage Tunnel (NBT)
   a) Concrete riser/encasement for comms/HV dropping down from Platform 1 through the WBT roof.
   b) Concrete Encasement of HV along the eastern side of the WBT from the riser transitioning into GST when crossing the portal of the NBT before continuing into Service Tunnel Riser 2 (STR2)
   c) Comms in cable tray from the riser along the WBT with connection into existing CENA36 comms riser
   d) Comms in cable tray along the NBT to the back of house area at the eastern end of the tunnel

2. Platform 1
   a) Trenched portion containing buried HV/comms conduits
   b) Conduits tied to cable tray in the southern hollow portion of platform 1

The works will be delivered across to works packages by LOR and a subcontractor, a detailed breakdown of the works package delivery schedule is provided in Table 1.

The works will result in spoil waste being generated as result of the trenching works which will occur. There is for potential for dust and noise to occur as a result of the works. All potential environmental impacts and waste will be managed in accordance with the Project's Construction Environmental Management Plan (CEMP). Regular notifications and updates will be provided to the community as per the CSM Community Communications Strategy

Management Plan This Environmental Consistency Assessment (ECA) has been prepared to address the potential environmental impacts which have not previously been assessed and to propose appropriate mitigation measures.

The following outlines the sequence of the works in each area, some of which have already been completed. A brief description of the works, details the methodology to achieve the works, highlights any approvals/hold points and provides any/all interfacing requirements.

Preliminary Works – Investigation Works

- Service searching and structure locating has been completed along Platform 1 and Platform 0.
- A HAZMAT investigation of the WBT and NBT has been completed.
- Lead paint was found in one location although it will not be disturbed by the CSR works.
- Survey works will be completed as part of the proposed Phase A works and will comprise of survey set out works, drawing updates and monitoring of the Platform 1 wall during excavation onto the roof of the baggage tunnel.

Western and Northern Baggage Tunnel

- Access to the Western & Northern Baggage Tunnels will be via the Pitt St Loading Dock (Addendum 7). This location will allow materials to be brought through *Back of House* which will minimise potential disruption to staff and commuters at Central Station.
- Temporary power will be sourced locally from existing power outlets.
- Tools will be battery powered to remove the requirement for running leads and eliminate fumes created during the works
- A Fire Isolation permit (RERU) will be obtained and any required detectors isolated prior to works commencing
- All works will be conducted in such a manner that the normal utilisation of the tunnels by Station employees is continued
- The existing laydown area in the tunnel to be occupied by Laing O'Rourke will be re-configured as works progress.

Northern Baggage Tunnel

- From the junction of the Northern Baggage Tunnel with the Olympic Tunnel cable trays are to be installed.
- These are to be hung from the roof of the tunnel using either chemical or mechanical anchors (method of install to be proposed by Subcontractor and approved by AGJV prior to install)
- The cable trays will be installed from elevated work platforms (EWPs) or platform ladders, the works will be coordinated so that current utilisation of the tunnel is continued
- Upon completion of the installation of the anchors, the cable tray will be manually lifted into place and secured using the appropriate fastenings.
- Where the CSR passes through existing fire walls, the route will have to cut through the fire rated block work and make good using Roxtec or a similar product.

Western Baggage Tunnel

- Cable trays from the Northern Baggage Tunnel will continue into the Western Baggage Tunnel, suspended from the ceiling then transitioning to the eastern wall. The installation methodology will be similar to that used in the Northern Baggage Tunnel.
- A 60m run of 2 HV conduits are to be installed within the Western Baggage tunnel in a concrete encasement.

- The surface will be scabbled (mechanical process of removing a thin layer of concrete) with localised dust extraction measures in place
- N16 Reinforcing I-bars will be drilled and chemically fixed at 500mm centres along the route
- HV conduits will be hung from the reinforcing bars at the required offsets
- SL81 mesh will be installed and tied to the N16 bars
- Formwork will be set up and braced off the floor of the tunnel
- 12m^3 of concrete will be delivered by line pump
- Line pump set up and concrete delivery will be via the Pitt St Loading Dock, concreting will be conducted on a weekend to minimise impact to normal operation of this location.
- After concrete has been allowed to cure, the formwork will be stripped to expose the finished face and any finishing required carried out to remedy any imperfections arising during the pour.
- The route will transition out the concrete encasement and into GST on approach to the junction with the Northern Baggage Tunnel
- GST will be supported on unistrut brackets fixed to the tunnel wall with chemical/mechanical anchors, with the troughing sections lifted manually into place by personnel working from platform ladders or EWPs, similar to the installation of the cable tray

Western Baggage Tunnel Riser

- A riser is to be constructed to encase the cables where they transition upwards through the roof of the baggage tunnel. Cores will be made through the roof of the tunnel once the material above it has been excavated using a coring rig mounted to the tunnel lining using mechanical anchors that will prevent any movement during coring.
- The 639 Feeder cable (covered by a conduit prior) will be boxed out using plywood to ensure that coring, formwork and reinforcing do not impact the conduit and concrete is not placed directly against it.
- Conduits will then be fed through from above and sealed using a waterproofing detail/product.
- Cable ladders will be fixed to the eastern wall of the tunnel which will allow the cables to be secured in the final arrangement .
- N20 bars will be drilled and epoxied into the eastern wall to provide a connection between the riser and the tunnel structure.
- The riser will then be formed up once reinforcement has been installed with materials being brought through the Pitt St entrance.
- A concrete line pump will be set up in the Pitt St loading dock with the line being reticulated through the back-of-house areas for pouring the riser.
- Once concrete has cured sufficiently, the formwork will be stripped, then fire rated cabinet doors and cable tray transitions will be installed.

Platform 1

- Services identified on DSS, service searching and Dial Before you Dig will be marked up on site and positively identified prior to mechanical excavation, as per LORA Primary Standards and in line with the approved excavation permit.

Section A and A.2

- Trenching from the excavation onto the Western Baggage Tunnel will be carried out on a 6-day platform occupation centred around Weekend 01 (6th and 7th of July 2019) with works commencing on the 3rd.

- ATF fencing with noise blankets will be set up to delineate the worksite, and traffic controllers will control access to the platform and into the worksite from the VIP access will be in place.
- A 1.2m wide access will be maintained alongside the worksite to enable station staff to access offices alongside the platform and at its southern end.

Pits and Riser to Western Baggage Tunnel

- A 3.2m deep excavation will be required in the platform above the WBT riser to achieve the required depth for transitioning into the core holes (due to maximum free-hanging length of cables)
- The platform surface will first be saw cut using a road saw. Dust suppression measures will be in place alongside this activity. Water barriers will be placed along the platform edge to provide edge protection for personnel on the platform
- Saw cutting will be carried out only at times mutually agreed with the Sydney Railway Square YHA (hostel). The YHA have been advised that noisy works will not commence until after 8am..
- As the core holes can be made from within the tunnel below, the excavation will be carried out without shoring, where a number of conduits and bends joined together previously can be placed into the holes made from the platform surface removing the requirement for any personnel to access the excavation.
- If, in the course of the excavation, the platform fill material is found to be incompatible with this methodology then shoring equipment will be available on site to support the excavation in line with the approved Temporary Works Design.
- The HV conduits will transition downwards in this location whereas the communications will be contained in a pit, away from the excavation so that the comms conduits can ramp down and not be unsupported for greater than 1m.
- 6t and 3t excavators will be employed for the works and will be positioned at platform level to excavate downwards to expose the outer surface of the baggage tunnel. A bobcat will load the spoil into bogey-tippers stationed outside the VIP entrance, which will subsequently load out the spoil from the work location to Sydney Yard for testing.
- Once the tunnel surface has been exposed, coring from within the tunnel will be carried out.
- Pre-joined conduit and bends will then be inserted into the cored holes from platform level, waterproofing around the conduits inserted into the holes will be carried out from within the baggage tunnel.
- Subgrade to be inspected and excavation depth to be confirmed by a geotechnical engineer prior to pit install – This is a hold point.
- A stabilised sand bedding will be laid and compacted to sit underneath the pit to ensure pit is level.
- A porta-gantry will be used to lift prefab pit into excavation, after which the required number of risers will be lifted into position on top of the pit up to platform level.
- The excavations will be backfilled with stabilised sand, compacted and tested in layers.
- The lid will then be lifted on top of the risers to match the platform level. The lid will have recesses left within it to allow for pavers/tiles to be placed within it to match the surrounding platform surface.
- The pits will be rendered internally, have all required step irons fitted, sumps and/or drainage connections made, and all sharp edges removed.
- The platform surface will first be saw cut using a road saw. Dust suppression measures and noise blankets will be in place alongside this activity to delineate the worksite and reduce impact to the offices alongside this section of Platform 1.

- Water barriers will be placed along the platform edge to provide edge protection for personnel on the platform.
- The sections of platform will be removed using the bucket of the excavator to expose the fill underneath the surface.
- The trench will then be excavated to depth using a 3-6t excavator and fill will be loaded out using the excavator, bobcat and tippers via the VIP entrance.
- Conduits and spacers will be placed and surveyed prior to backfill.
- The conduits are to be installed at reduced depth and therefore HV conduits are to be surrounded with concrete which will be placed using a line pump situated outside the VIP entrance.
- The remainder of the trench including comms conduits will be backfilled with clean fill to 50mm below platform level.
- Concrete will be placed to as temporary reinstatement for the platform surface, debonded from the trench fill below to enable it to be broken out at a later date when the platform is reinstated with permanent tiling.

Trenching Section B2 to B5

- Trenching will be carried out in a similar manner to that described for section A and A.2, however additional controls will be in place as the works will be carried out while Road 1 remains live. These will be detailed in the Level 5 permit but include slew restrictors and electrical spotters to be in place
- Works will be carried out on dayshifts from Thursday to Tuesday, handing back each Wednesday to allow the Indian Pacific to use the platform.
- A barrier arrangement will be moved down the Platform as works progress from North to South.
- The works will be conducted to allow personnel access to the Platform Zero and Lee St Offices to remain.
- Saw cutting in this section will be carried out at a time mutually agreed with the YHA located alongside Platform 1 to reduce potential impacts on their customers.
- The fill beneath the platform surface will be excavated using a 3t excavator, with material removed from the platform using a bobcat escorted by a spotter up to the southern end of the Platform to the temporary lay-down area set up at Lee St Substation.
- Due to findings that the original trench configuration would clash with the concrete foundations of the canopy columns, a deeper trench configuration is to be employed to a maximum depth of ~1.6m.
- Excavation support will be installed in 2.4m long sections, with stabilised sand and HV conduits placed in the base of one bay before removal of the excavation support to enable the next bay to commence. Excavation support will be Shorehire MAPS equipment
- Over the HV conduits/stabilised sand, clean fill will be placed in layers, with communication conduits put in place.
- Clean fill will be placed up to 50mm below platform surface similar to Section A, then concrete will be placed as temporary reinstatement to the platform surface in the same manner as for Section A.
- The Platform will be cleaned, delineation and barriers removed and handed back each Tuesday. The handover procedure and timings will be agreed with Sydney Trains station management.

Below Platform (hollow section)

- Backpropping

- At the southern end of Platform 1, the platform is hollow from approximately 50m from its southern end. Backpropping is to be installed over a circa 35m length underneath the platform to strengthen it sufficiently for construction plant to travel over it.
- Backpropping will consist of LVL header beams, posts and sole boards.
- Existing openings in the side of the platform are to be used to gain access inside the platform, for which a confined space entry plan will be required:
- A risk assessment will be undertaken for these works.
- A permit system used to control entry underneath the platform
- All workers appropriately qualified.
- Air monitoring in place adjacent to works area
- Emergency rescue plan and required rescue equipment will be in place and briefed to the workforce.

Installation of cable tray

- Pre-fabricated brackets will be affixed to the underside of the platform using chemical fixings with the conduits then being fed through and strapped onto the cable trays.
- A transition by cable tray will reticulate the conduits to the western edge of Platform 1 which forms the boundary with Phase B (a GST to buried transition). Holes will be cored through the western wall of the platform to allow the conduits to be fed through

Commissioning

- A rubber cleaner will first be pulled through to remove any debris from the conduit.
- A mandrel 90% the diameter of the conduit will then be pulled through to demonstrate the route is free from obstacles.
- Rope will be attached to the mandrel as it is pulled through and left within the conduit to allow cables to be pulled through at a later stage.
- Pits will be checked to ensure they are free of defects (rendered, free from shar, edges, conduit entries rounded).

3.0 Timeframe

When will the proposed change take place? For how long?

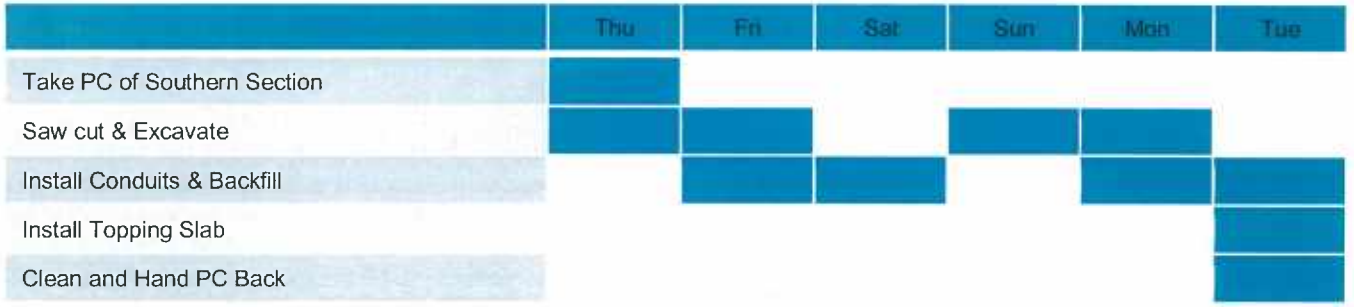
Construction of the Phase A works is proposed to commence on 3 July 2019. All of the works assessed in this assessment would form part of the construction of the CSM Works. The timing of the various components of work is as follows:

Table 1 – Proposed Works Program for Each Location

Location	Date	Work Hours	Access Location	Description of work
A	3-9 July	24 hour	VIP Entrance	See Section A above.

A.2	5-7 July	24 hour	VIP Entrance	See Section A.2 above.
B	11 July – 6 August	07:00 – 17:00 Thursday, Friday, Monday, Tuesday 08:00 – 18:00 Saturday, Sunday	Lee St. Substation Carpark	See Section B above.

- For works within Sections B2 to B5, the Platform has to be available for use every Wednesday for the Indian Pacific, the works in Section B2-B5 will be conducted in a staged approach with circa 16m (4 conduit lengths) being opened up at any one time (as per Table 2)



Works in Section A will be carried out during a 6 day platform occupation centred around Weekend 01 (6th and 7th of July 2019), working 24 hours per day. Section A.2 will need to be carried out on the Saturday and Sunday of the occupation as there will be reduced requirement for access to the offices in the southern half of the platform. This section will be serviced via the VIP entrance roller door on platform 1, as shown on Figure 1 – Appendix A.

Works in section B2 to B5 will be serviced via a lay down area to be set up in Lee St substation compound as shown on Figure 1 – Appendix A. Access will be maintained to the OHW switches and generators to the north of the substation via a walkway.

Where out of hours work is required, these would be undertaken in accordance with the Sydney Metro out of hours work protocol and LORAC CSM EPL 21148.

4.0 Site description

Provide a description of the site on which the proposed works are to be carried out, including, Lot and Deposited Plan details, where available. Map to be included here or as an appendix. Detail of land owner.

Central Station is located to the south of the Sydney Central Business District (CBD) and is the busiest station in the Sydney transport network. The station is located within the City of Sydney Local Government Area (LGA). Central Station provides key interchange for suburban and intercity rail services, light rail, bus, taxi and intercity coach services. Central Station has a large catchment comprising education, commercial and residential land uses.

Phase A of the proposed works is shown on Figure 1 – Appendix A.

5.0 Site Environmental Characteristics

Describe the environment (i.e., vegetation, nearby waterways, land use, surrounding land use), identify likely presence of protected flora/fauna and sensitive area.

Central Station is located to the south of Sydney Central Business District (CBD) and is the busiest railway station in the NSW Rail Network with approximately 270,000 people entering or exiting the station every week day. Central Station is a large interchange hub and is serviced by a large network of rail services, light rail, coaches, taxis and bus networks. The site has been heavily modified across more than a Century of development and redevelopment and is now representative of an inner city urban environment with almost none of the original natural landscape remaining. There are no waterways and no remaining natural vegetation located within the vicinity of the site.

The Sydney Local Environment Plan (LEP) 2012 defines the land use zoning within Central Station and it's surrounds as a mix of the following zones:

- SP2 Infrastructure
- B8 Metropolitan Centre
- RE1 Public Recreation
- B4 Mixed Use
- R1 General Residential.

The majority of the Central Station footprint is contained within land zoned SP2 Infrastructure. The aims of this zone are to provide for infrastructure and related uses and to prevent development that is not compatible with, or that may detract from, the provision of infrastructure. The surrounding localities include Haymarket, Chinatown, Central Park and Surry Hills. Central Station is also located in close proximity to educational facilities including the University of Technology Sydney, the University of Notre Dame, Australia and Sydney Institute of Technology.

Specific phased works located outdoors within Central Station along Platform 1 as part of the Phase A civil construction works are located in close proximity to the Sydney Railway S uare YHA (hostel) which abuts Platform 1. All of the Phase A works will be carried out within De osited Plan (DP) 1078271.

6.0 Justification for the proposed works

Address the need for the proposed works, whether there are alternatives to the proposed works (and why these are not appropriate), and the consequences with not proceeding with the proposed work.

The existing services routes at Central Station are contained within the underground services and pedestrian tunnels beneath the existing platforms. In order to avoid damage to the existing services and to provide uninterrupted access for the construction of the metro platforms, the services must be relocated into a combined service route around Central Station. Although the CSR was identified as a concept in the EIS and Mod 2, the detailed design process has identified an optimised route from an operational and maintenance perspective. The constructability is consistent with what was identified in Mod 2.

There are no alternatives to relocating the services into a combined services ring if potential damage to the existing services is to be avoided and if uninterrupted access for the construction of the Metro Box is to be achieved.

The duration of impacts associated with the Phase A works would be limited to short term non-continuous intervals throughout July and August 2019 as defined in Table 1. As a result of the staged approach, it is anticipated that impacts on the local community or the environment resulting from the works can be managed effectively relative to the potential impacts which may occur. Consultation has been undertaken with the Sydney Railway Square YHA (hostel) on 14 May and 26 June 2019 who are aware of the works and have not objected to the works proceeding. Consultation has also been undertaken with the building managers at 18, 20 & 26 Lee Street on 24 May and 26 June 2019 and all parties are supportive of the works proceeding.

The construction of the CSR around the perimeter of Central Station and specifically at the Phase A works location must occur in order for the Metro Box to be constructed without interruption and to prevent potential impacts to existing services at the site. If a CSR cannot be constructed, then the works cannot be completed in a timely manner.

7.0 Environmental Benefit

Identify whether there are environmental benefits associated with the proposed works. If so, provide details:

There is no net environmental benefit associated with the construction of the CSR.

8.0 Control Measures

Will a project and site specific EMP be prepared? Are appropriate control measures already identified in an existing EMP?

A Construction Method Statement has been prepared incorporating control measures identified in the CSM works CEMP.

9.0 Climate Change Impacts

Is the site likely to be adversely affected by the impacts of climate change? If yes, what adaptation/mitigation measures will be incorporated into the design?

No. The proposed works are unlikely to be adversely affected by the impacts of climate change due to the location and proposed management measures.

10.0 Impact Assessment – Construction

Attach supporting evidence in the Appendices if required. Make reference to the relevant Appendix if used.

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	The impacts of these works will be similar to those described Approved Project. It is anticipated that no vegetation is required to be removed part of the Phase A works.	• No additional mitigation is required	Y	Y	
Water	The impacts of these works will be similar to those described in the Approved Project.	• No additional mitigation is required	Y	Y	
Air quality	The impacts of these works will be similar to those described in the Approved Project.	• No additional mitigation is required	Y	Y	
Noise and vibration	The nature of the noise and vibration impacts associated with the CSR works will be similar to those described in SSI Mod 2 which notes that the "airborne noise during construction is expected the exceed noise management levels at all sites – and at some sites by possibly more than 20dB(A). During the night-time, airborne noise levels are expected to generally comply with the criteria though there would some moderate exceedances at some locations." The duration of noise and vibration impacts would be limited to short term non-continuous intervals throughout July and August 2019 as defined in Table 1. ERM conducted an Internal to External Noise Assessment in January 2019. The results of the assessment identified a 30dB	• No additional mitigation is required.	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
	internal/external noise reduction. The construction methodology has allowed for a reduction in vibration impacts by increasing saw cutting to reduce the amount of rock breaking required.				
Indigenous heritage	The impacts of these works will be similar to those described in the Approved Project.	• No additional mitigation is required	Y	Y	
Non-indigenous heritage	The impacts of these works will be similar to those described in the Approved Project. The recommendations of the draft Heritage Impact Assessment by OCP have been incorporated into the methodology for the Northern and Western Baggage Tunnel. *While the new work will not affect the overall form and layout of the tunnels, the installation of new services will result in minor heritage impacts associated with penetrations for new support fixings.* The recommendations of the draft Heritage Impact Assessment by OCP have been incorporated into the methodology for the western baggage tunnel vertical transition to Platform 1, and Platform 1 trenching. *There will be moderate localised heritage impact to the fabric of the west baggage tunnel in transitioning vertically from to*	To minimise this impact to the Northern and Western Baggage Tunnel: • new fixings must be installed in a neat and consistent manner i.e. in a straight line offset from walls a consistent length, at regular height and intervals, and comprise non-ferrous fixings. To minimise the impact to the Western Baggage Tunnel Transition and Platform 1: • the penetration should be of the minimum size required to facilitate the new installation. • Measures to limit vibration must be implemented to avoid impacts to surrounding fabric, by increasing saw cutting for	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
	Platform 1, which will require penetration of the original concrete. In the overall context of Central Station, however, the work is relatively minor and allows for installation of required services for the ongoing use of the site. The assessed archaeological potential at Platform 1 is considered low. Unexpected finds procedure will be implemented in accordance with the Central Walk AMS and CSM Construction Heritage Management Plan.	the new opening, and reducing jackhammering • - The penetration should be coordinated at platform level to minimise the extent of trenching i.e. vertical transition point should be coordinated with line of trenching required. • - Protective sheeting should be laid down to protect platform surfaces to be retained. For the in platform service trenching, the heritage impacts to the fabric are minor given its little significance. The making good of this work, however, will be critical to minimise long term visual impacts. Visual and physical impacts should be minimised by: • The line of excavation must be sited to avoid impact on the existing canopy structure. • The excavation zone should be set out based on the geometry of the existing platform tiles i.e. the joints, to avoid breaking the edges of the surfaces and tiles that will			

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
		be retained. The initial saw cut should be set in from the final edges to ensure that the repair of the joint aligned edges on completion is neat. • A suitable replacement tile that closely matches the existing must be sourced, unless sufficient reserves of the existing tiles are available in Sydney Trains heritage store (which is preferable). If matching tiles are not available samples must be submitted of any proposed replacement tile.			
Community and stakeholder	The impacts of these works will be similar to those described in Approved Project. The duration of impacts, including noise and vibration would be limited to short term non-continuous intervals throughout July and August 2019 as defined in Table 1.	• No additional mitigation is required	Y	Y	
Traffic	The impacts of these works will be similar to those described in the Approved Project.	• No additional mitigation is required	Y	Y	
Waste	The impacts of these works will be similar to those described in Approved Project.	• No additional mitigation is required	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during construction (if control measures implemented) of the proposed/activity, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Social	The impacts of these works will be similar to those described in Approved Project.	• No additional mitigation is required	Y	Y	
Economic	The impacts of these works will be similar to those described in Approved Project.	• No additional mitigation is required	Y	Y	
Visual	The impacts of these works will be similar to those described in Approved Project.	• No additional mitigation is required	Y	Y	
Urban design	The impacts of these works will be similar to those described in Approved Project.	• No additional mitigation is required	Y	Y	
Geotechnical	No geotechnical investigations are proposed.	• N/A	Y	Y	
Land use	The impacts of these works will be similar to those described in Approved Project.	• No additional mitigation is required	Y	Y	
Climate Change	There would be no climate change related impacts.	• No additional mitigation is required	Y	Y	
Risk	Environmental risks would be minimal as assessed in this table.	• No additional mitigation is required	Y	Y	
Other	The impacts of these works will be similar to those described in Approved Project.	• No additional mitigation is required	Y	Y	
Management and mitigation measures	No additional management and mitigation required for construction of this change.	• No additional mitigation is required	Y	Y	

11.0 Impact Assessment – Operation

Attach supporting evidence in the Appendix if required. Make reference to the relevant Appendix if used.

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Flora and fauna	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Water	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Air quality	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Noise vibration	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Indigenous heritage	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Non-indigenous heritage	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Community and stakeholder	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Traffic	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Waste	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Social	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Economic	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	

Aspect	Nature and extent of impacts (negative and positive) during operation (if control measures implemented) of the proposed activity/works, relative to the Approved Project	Proposed Control Measures in addition to project COA and REMMs	Minimal Impact Y/N	Endorsed	
				Y/N	Comments
Visual	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Urban design	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Geotechnical	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Land use	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Climate Change	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Risk	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Other	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	
Management and mitigation measures	No change to the operational impacts described in the Approved Project.	• Not applicable	Y	Y	

12.0 Consistency with the Approved Project

Based on a review and understanding of the existing Approved Project and the proposed modifications, is there is a transformation of the Project?	No. The proposed works would not transform the project. The Approved Project would continue to provide a new metro line between Chatswood and Sydenham. The proposed works anticipated the need for a CSR to be constructed at Central Station as is documented in the Central Walk Modification Report (Mod 2).
Is the project as modified consistent with the objectives and functions of the Approved Project as a whole?	Yes. The proposed works will assist the Approved Project to achieve its objectives and functions.
Is the project as modified consistent with the objectives and functions of elements of the Approved Project?	Yes. The proposed works are consistent with the objectives and functions of the construction element of the Approved Project.
Are there any new environmental impacts as a result of the proposed works/modifications?	No. The heritage, noise and vibration impacts associated with the construction of the CSR are considered to be consistent with those of the Approved Project.
Is the project as modified consistent with the conditions of approval?	Yes. The proposed CSR at Central Station is consistent with the conditions of approval for the Approved Project and no changes are required.
Are the impacts of the proposed activity/works known and understood?	Yes. The impacts the construction of a CSR at Central Station are known and understood.
Are the impacts of the proposed activity/works able to be managed so as not to have an adverse impact?	Yes. The impacts would be managed to avoid adverse impacts. The relevant conditions of approval, the revised environmental management measures, those identified in the CSMW CEMP and the control measures identified in this assessment would be implemented during the construction of the CSR to ensure there are no adverse impacts on the surrounding environment.

13.0 Other Environmental Approvals

Identify all other approvals required for the project:	N/A

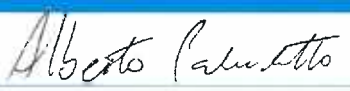
Author certification

To be completed by person preparing checklist.

I certify that to the best of my knowledge this Consistency Checklist: • Examines and takes into account the fullest extent possible all matters affecting or likely to affect the environment as a result of activities associated with the Proposed Revision; and • Examines the consistency of the Proposed Revision with the Approved Project; is accurate in all material respects and does not omit any material information.			
Name:	Lucas Dobrolot	Signature:	
Title:	Environment Advisor		
Company:	Laing O'Rourke	Date:	1 July 2019

Environmental Representative Review

(Additional step for City & Southwest projects only – if this is a CA against a Northwest Project or REF delete this table)

As an approved ER for the Sydney Metro City & Southwest project, I have reviewed the information provided in this assessment. I am satisfied that mitigation measures are adequate to minimise the impact of the proposed work.			
Name:	Alberto Paludetto	Signature:	
Title:	ER	Date:	3/7/19

This section is for Sydney Metro only.

Application supported and submitted by			
Name:	Yvette Buchli	Date:	3 July 2019
Title:	Planning Approvals Manager	Comments:	N/A
Signature:			

Based on the above assessment, are the impacts and scope of the proposed activity/modification consistent with the existing Approved Project?

Yes ☒ The proposed activity/works are consistent and no further assessment is required.

No ☐ The proposed works/activity is not consistent with the Approved Project. A modification or a new activity approval/ consent is required. Advise Project Manager of appropriate alternative planning approvals pathway to be undertaken.

Endorsed by			
Name:	FIL CERONE	Date:	3 JULY 2019
Title:	Director City & Southwest, Sustainability, Environment & Planning	Comments:	—
Signature:			

Appendix A

Figure 1 CSR Phase A Works

LAING O'ROURKE

Legend

- Potentially Sensitive Receivers
- Section A Works
- Section A.2 Works
- Section B Works
- Baggage Tunnels
- VIP Entrance
- Laydown Areas
- Goods Lift
- Railway Lines

Sources: EcoQuest Environmental, ESRI ArcGis Pro, Nearmap, NSW Office of Environment and Heritage, data.nsw.gov.au

Date	Revision	Author:
26/06/19	1	David Parkinson

EcoQuest Environmental

1,2400

0 15 30 60 Meters

Spatial Reference
Name: WGS 1984 Web Mercator Auxiliary Sphere

Central Station Main Works - Combined Services Route - Phase A Works

Figure 1: CSM CSR Phase A Works