Integrated Management System

Planning Approval Consistency Assessment Form

SM ES-FT-414

Sydney Metro Integrated Management System (IMS)

Assessment Name:	Final track configuration works to complete the connection between Marrickville Station and Sydenham Station.
Prepared by:	Hussain Nilar (SM)
Prepared for:	Sydney Metro and the Relevant Contractor
Assessment number:	TfNSW56
Status:	Final
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Form information – do not alter:

Applicable to:	Sydney Metro
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Date of issue:	27 November 2020

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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 & Southwest - Sydenham to Bankstown (SSI 8256)

Sydney Metro City & Southwest - Sydenham to Bankstown Modification 1

Date of determination:

Sydney Metro City & Southwest - Sydenham to Bankstown (SSI 8256) (Planning Approval Date – 12 December 2018)

Sydney Metro City & Southwest - Sydenham to Bankstown Modification 1 (Determined 22 October 2020)

Type of planning approval:

Critical State Significant Infrastructure

Approved project:

The project involves upgrading ten existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13 kilometre long section of the Sydney Trains T3 Bankstown Line, between west of Sydenham Station and west of Bankstown Station, to improve accessibility for customers and meet the standards required for metro operations. This includes works to convert the rail line to a standard suitable for Sydney Metro operations and connecting to the metro tracks being provided west of Sydenham Station, being delivered as part of the Chatswood to Sydenham component of Sydney Metro City & Southwest.

Works may comprise (amongst many other activities):

- Upgrades to or replacement of existing track including replacement of rail, sleepers, fasteners, and ballast
- Installation of equipment for radio communications, customer telecommunications, closed-circuit televisions, and emergency warning systems
- Install of advanced signalling technology to support safe operations
- Install of turnback facilities
- Other track and rail system works: adjustments to overhead wiring (OHW), existing ST rail, and removal of redundant ST systems.

Works for the Sydenham to Bankstown (S2B) element of Sydney Metro City and Southwest (C&SW) –is occurring in stages as per the Staging Report Rev6. These include:

- Southwest Metro Early Works (SMEW);
- Line-Wide works (LW);
- Southwest Metro Corridor (SMC) (including Bankstown Station early works) and Bankstown Station and Additional Corridor Works (BAC), collectively referred to as SMC & BAC;

- Southwest Metro Station Upgrades.
- Trains, Systems, Operations and Maintenance (TSOM).

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

- The Sydney Metro City & Southwest – Sydenham to Bankstown – State Significant Infrastructure Assessment (SSI 8256), 12th December 2018
- The Sydney Metro City & Southwest – Sydenham to Bankstown – Environmental Impact Statement, 7th September 2017;
- The Sydney Metro City & Southwest – Sydenham to Bankstown – Submissions and Preferred Infrastructure Report, June 2018;
- The Sydney Metro City & Southwest – Sydenham to Bankstown – Submissions Report, September 2018;
- The Sydney Metro City & Southwest – Sydenham to Bankstown – Instrument of Approval, 12th December 2018
- The Sydney Metro City & Southwest – Sydenham to Bankstown – Modification 1 – Bankstown Station, determined 22nd October 2020
- The Sydney Metro City & Southwest - Chatswood to Sydenham – State Significant Infrastructure Assessment (SSI 15_7400), 9th January 2017
- The Sydney Metro City & Southwest - Chatswood to Sydenham – Environmental Impact Statement, 3rd May 2016
- Mod 4 - Sydenham Station and Metro Facility South - Sydney Metro City & Southwest - Chatswood to Sydenham, determined 13th December 2017

All proposed works identified in this assessment would be undertaken in accordance with the mitigation measures identified in the Environmental Impact Statement (EIS), SPIR, the Submission Report (SR), modification report, and the conditions of approval (CoA).

2.0 Description of proposed development/activity/works

Sydney Metro C&SW extends from the Chatswood dive site in Northern Sydney, through to Bankstown Station in the Canterbury Bankstown Local Government Area. Two planning approvals govern this extent of Sydney Metro and include CSSI_7400 and CSSI_8256. The construction site boundary as defined by the CSSI 8256 planning approval can be seen in Figure 1. The Sydenham Station and Sydney Metro Trains Facility South modification to the Chatswood to Sydenham project noted that there was an ability to open Sydney Metro City & Southwest in two phases, with the first commencing services between Chatswood and Sydenham stations and the second phase extending the services to Bankstown. The Sydenham to Bankstown project includes track works to connect to the metro tracks being provided west of Sydenham as part of the Chatswood to Sydenham project. The final track configuration/corridor works (the proposal) subject to this consistency assessment are an essential component of Sydney Metro C&SW to enable the independent functioning of each phase and seamless operation of Sydney Metro across the entire C&SW alignment.

The corridor works connecting all stations within the Southwest Metro alignment as part of CSSI_8256 are being completed by a Joint Venture Contractor who is also completing the Sydenham Station Metro upgrade as part of the CSSI_7400 Approval. Both the Chatswood to Sydenham and Sydenham to Bankstown projects include corridor works to connect the two projects at a location near Meeks Road (Figure 2). Given that the final track configuration/corridor works must be completed in a consistent manner across the C&SW alignment and do not clearly start and stop at the construction boundaries identified in the planning approvals, Sydney Metro is proposing for the same Contractor to deliver the Corridor works under one planning approval (CSSI_8256) – delivering all the necessary corridor works between Marrickville and Sydenham stations to connect the projects, including works in project areas across both the CSSI_7400 and CSSI_8256.

The purpose of this Planning and Consistency Assessment (PACA) is to present a more detailed understanding of the final track configuration/corridor works (referred to as the proposal) between Marrickville Station and Sydenham Station and demonstrate how this scope of works is consistent with the works undertaken under CSSI_8256 Planning Approval.

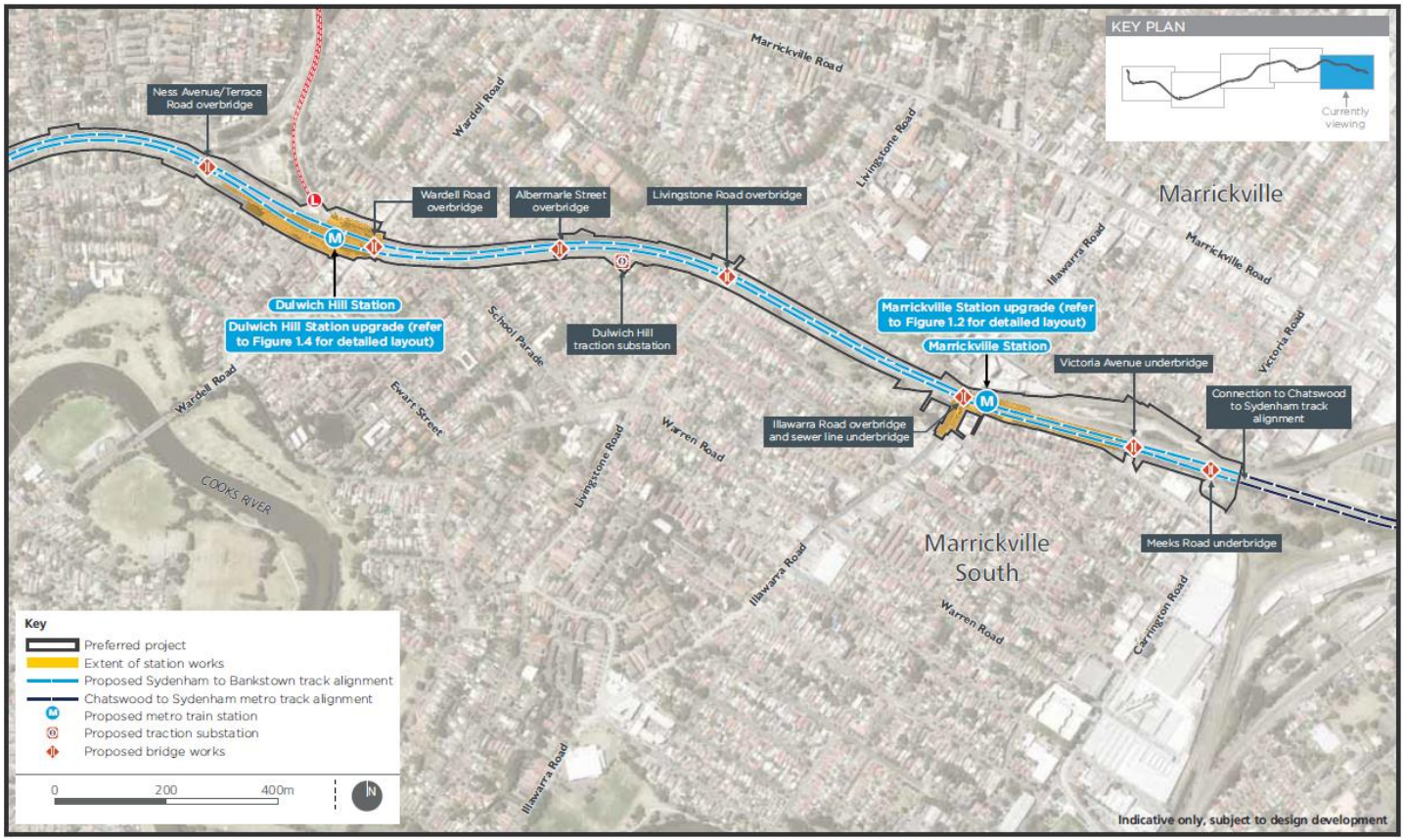

Figure 1 - CSSI_8256 project boundary up to and including Marrickville Station (Figure 1.1 Appendix B SPIR).

Description of Activities: See Figure 2 for proposed work boundary.

Sydenham Junction Final Track Configuration:

i. Update the Sydney Trains signalling configuration to enable the Sydenham junction final track configuration for both Sydney Metro and Sydney Trains.
ii. Final conversion works at Sydenham (all disciplines, incl. Over Head Wiring (OHW) change for Sydney Metro and Sydney Trains).
iii. Sydenham end - Remove temp OHW/High Voltage (HV) i.e. Line-speed pass through arrangement.
iv. Sydenham end - Negative disconnect & OHW testing & decommission.
v. Sydenham end - Signalling/ATRICS testing & decommission - minor modification.
vi. Sydenham end - Ops tech / Communications disconnect & decommission.
vii. Sydenham end - Turnout removal and track certification.
viii. Track slewing to final alignment.
ix. Any additional works that are required in addition to the final track configuration design due to the Sydenham junction interim track configuration works.
x. Secure and control access to the site, including restricting public access to the site, surveillance of the site and provision of key/key changes.
xi. Removal of Sydney Trains equipment installed as part of Sydenham Early Opening.

Configuration Works:

i. Install remaining fencing to the final state configuration
ii. Finalise and install of all wayfinding & signage to the final state configuration

Fencing:

i. Procure and install fencing to achieve the final state configuration for the rail corridor and Sydenham station
ii. Remove and dispose of all demolished fencing removed as part of the final conversion works

Wayfinding and signage:

i. Finalise and install the end-to-end wayfinding and signage for the Bankstown Line to Sydney Metro operations configuration.
    a. Install all wayfinding & branding to the final state configuration
    b. Remove and dispose of any redundant wayfinding and signage materials from the Sydney Trains operational (interim state) configuration.
ii. Work with the Operator (MTS) to finalise the operational signage for each station, including room labelling, customer directions, instructional signage and notices, consistent with the Northwest Metro Design Standards Manual for signage; and
    a. Confirm any updates required with the Operator (MTS) to finalise the Contractor's final state wayfinding and signage packages for the rail corridor.
    b. Update and finalise the final state rail corridor signage to include security signage (exterior); and operational signage, consistent with the Northwest Metro Design Standards Manual for signage.
iii. Change the Sydney Trains chainage labels on chainage markers, OHWS and bridges to Sydney Metro chainage labels.

Final rail grind:

- Undertake rail head grinding of all tracks from Sydenham junction to Bankstown Station to suit the wheel to rail profile of Sydney Metro rolling stock

Final rail tamping:

i. Undertake tamping of all tracks from Sydenham junction to Bankstown Station to ensure the track alignment is within the required tolerances of the Final State Bankstown Line Track Alignment

Note: Ancillary Facilities to enable final track configuration works may be required. However, the extent and nature is yet to be confirmed and will be assessed under the relevant Ancillary Facilities planning conditions (A16 – A19). Impacts associated with these ancillary facilities would also be determined as part of these assessments and will not be covered in this PACA. Similarly for access to site through the use of road closures, land access agreements and so on – further approvals will be necessary and are not the subject of this assessment. These additional approvals will be obtained prior to the works occurring and undergo necessary reviews.

Working hours:

Works would occur during standard working hours, as well as Out of Hours (OOH). Several elements of these works would need to be completed during a rail possession('s). As such OOH work may occur under the Contractors Environmental Protection License (License No. 21147) or under Sydney Metro OOHW Protocol as per Condition E25.

Machinery:

No change from the EIS with regards to the type and quantity of equipment being used. As per other track works undertaken as part of the SMC scope of works, equipment may include (but not be limited to) the following plant and equipment: Excavators, tampers, mobile cranes, light towers, EWPs, compaction equipment, hand tools, grinders, welding equipment, hi-rail plant, telehandlers, generators

Staffing levels:

No change from the EIS with regards to staffing levels.

Impacts on utilities/authorities:

Where impacts to utilities is warranted, relevant approvals would be obtained.

Figure 2: Depicts the proposed work area; including the boundary between CSSI_8256 and CSSI_7400 planning approvals and the proposed access points. Note: *Track slab involves installation of platforms and key elements of the Metro, at the platform level for the operation of the Metro line. Whereas Track Re-conditioning involves the restoration of existing track*.

3.0 Timeframe

There is no change to the timing of the proposed works, which would continue to occur between 2022 and 2024.

4.0 Site description

The proposed work area is confined to the Rail corridor between Marrickville Station and Sydenham Station (refer Figure 2).

5.0 Site Environmental Characteristics

The proposed works resides within the rail corridor. The area is zoned as SP2 for infrastructure developments. The corridor itself is bordered by land zoned for the use of medium density residential (R3), as well as General industrial (IN1) and Light Industrial (IN2) activities. Vegetation in this area consists predominantly of noxious species of plants, including some grasses, shrubs, and trees. There are no threatened flora or fauna species recorded on site, and there are no threatened ecological communities, or protected community types located in this area. The Cooks River is a freshwater river located over 200 meters away from the site.

There are State and local Heritage listed items located within station precincts or outside and adjacent to the rail corridor (Inner West LEP 2022, State Heritage Register, Sydney Water s170 Heritage Conservation Register, Transport Asset Holding Entity). These items include the Sydenham Underbridge, Sewage Pumping Station and Brick Retaining wall (Heritage Impact Assessment – Appendix A). The proposed works have been assessed to have negligible direct and indirect impacts to heritage, with a potential negligible direct impact (vibration) to the Sydenham Underbridge and Sewage Pumping Station.

The Sydenham Station Rail precinct area is located on land identified to have low to nil non-Aboriginal archaeological potential. A small area of the rail corridor south of Marrickville station but nearing Sydenham Station however, is assessed as having a high potential for uncovering items of aboriginal archaeological significance, as seen in figure 3 (Sydenham Station Junction Aboriginal Cultural Heritage Assessment Report (ACHAR) and Construction Heritage Management Plan(CHMP)). Given that the scope of excavation would involve scraping rail ballast or excavating to a maximum depth of approximately 1.5m within soil profiles already disturbed during works under CSSI_7400 or other rail infrastructure works, the likelihood of uncovering potential aboriginal archaeological artefacts has been assessed as nil to low (HIA – Appendix A).

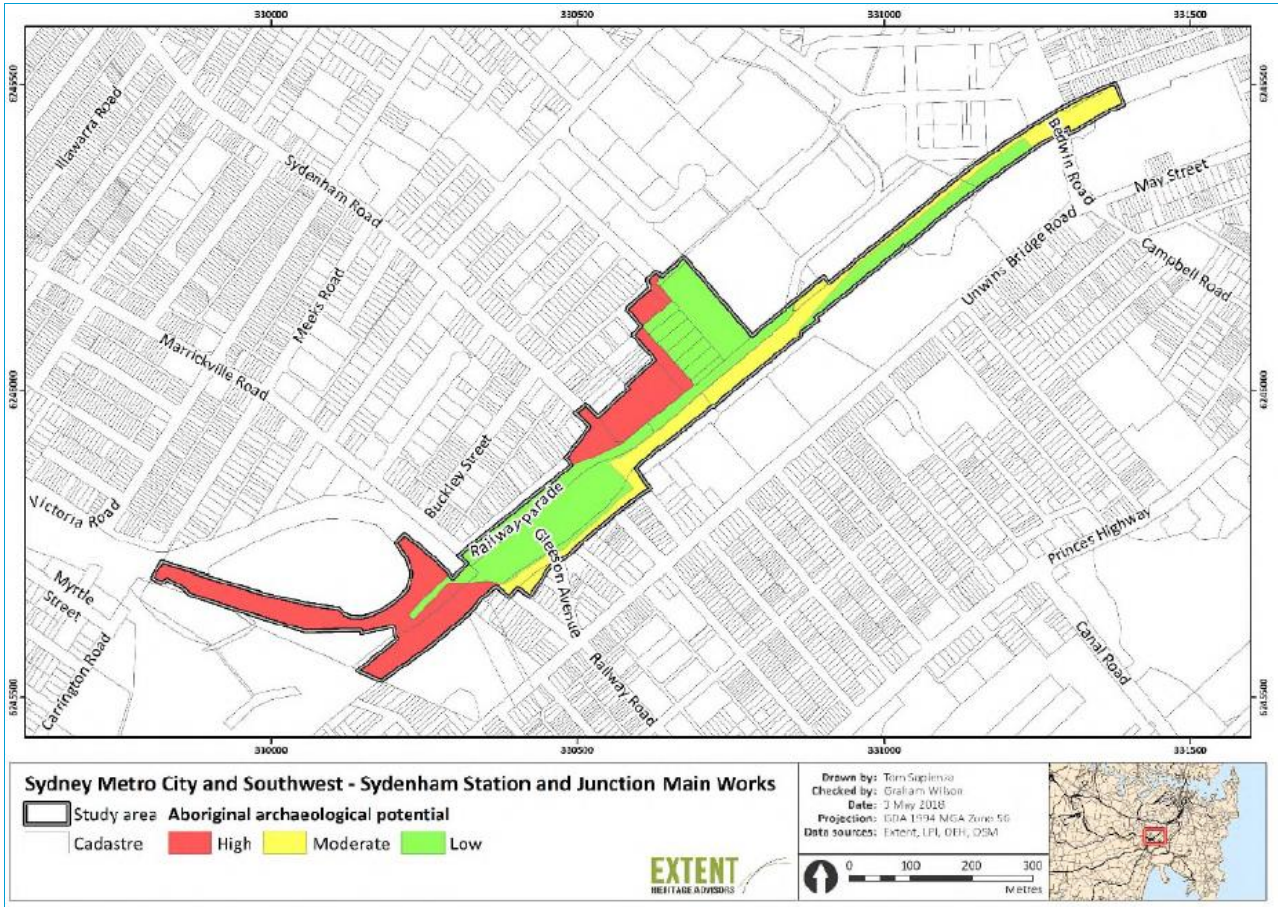

Figure 3 – Image from the SSJ CHMP– depicting the areas of high potential to uncover Aboriginal Archaeological items.

6.0 Justification for the proposed works

To permit the operation of Sydney Metro along the C&SW alignment, it is crucial that final track configurations connect the Sydney Metro rail alignment between Sydenham Station and Marrickville Station. The Contractor completing SSJ are also the same contractor delivering the SMC scope of works. To ensure consistency in the delivery of these corridor works and to prevent delays with handover should these corridor works be separated, it is preferred that the same contractor delivers all corridor connecting works up

to and including Sydenham Station under the SMC & BAC works. It should be noted that the final track configuration works have been assessed separately under both planning approvals, within the overall Sydney Metro project footprint, and that they would be conducted under a single EPL (no. 21147). This PACA allows for the integration of work packages under a single approval, thereby allowing for more effective and seamless delivery of the works and an appropriate means of managing residual risks and providing for better environmental management practice.

7.0 Environmental Benefit

No environmental benefits compared to the Approved Project. However, allowing these track configuration works to be completed under a single approval, ensures any environmental issues and complaints as a result of the proposed works are more seamlessly mitigated, controlled and addressed.

8.0 Control Measures

Construction of the corridor elements would be undertaken in accordance with the Contractors approved CEMP and sub-plans . No additional controls would be necessitated as the same Contractor are also delivering the remainder of the Southwest corridor works and so would adopt identical control measures and protocols.

9.0 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	Vegetation clearing and trimming would be required and this has been assessed (and continues to be assessed) under the revised SMC and BAC Tree Report. All clearing and some trimming assessed in the Tree report would be overseen by an arborist where required, to prevent unassessed clearing and or trimming. All controls as per the Tree report would be implemented including demarcation zones, tool boxing etc. Works are consistent with the approved project.	Controls as per the SMC and BAC Tree Report, include the presence of an ecologist during vegetation clearing and or trimming, toolboxing, demarcation of clear work zones and no-go zones and so on.	Y	Y	
Water	No changes from the approved project.	No additional measures required.	Y	Y	
Air quality	No changes from the approved project.	No additional measures required.	Y	Y	
Noise and vibration	The assessment provided for CSSI_8256 included consideration of cumulative impacts including the delivery of corridor works as part of the CSSI_7400 and therefore there are no changes to the potential noise and vibration impacts as a result of the works being undertaken under one planning approval.	No additional measures 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
Indigenous heritage	The proposed excavation elements of the proposal would either involve; removal of ballast, or excavation to a maximum depth of 1.5m of predominantly engineering fill and rail infrastructure components. As such, it is highly unlikely that archaeological items would be uncovered. This is largely due to the proposed excavation areas having experienced substantial historical infrastructure works under CCSI_7400 or other rail works, as well as the maximum depth of excavation proposed. An AMS was drafted by Artefact for the proposal and concluded that there is nil to low potential to uncover items of Aboriginal archaeological significance in the proposed work areas (HIA - Appendix A). The Contractor would also continue to manage residual risks through their CEMP, CHMP and the SM Unexpected Heritage Finds Procedure. Works are consistent with the approved project.	The HIA suggests that the risk to indigenous archaeological heritage are nil to low, and that works should proceed in accordance with the Sydney Metro Unexpected Heritage Finds Procedure as well as the CHMP and CEMP.	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
Non-indigenous heritage	The proposed works are anticipated to have neutral direct and indirect impacts to heritage structures identified in the proposal area, with the exception of the Sydenham Underbridge and Sewage Pumping station which could have negligible potential direct (vibration) impacts (HIA – Appendix A). Works are consistent with the approved project.	The Contractor would continue to manage residual risks through their CEMP, CHMP, and the HIA. The AMS also advises that the SM Unexpected Heritage Finds Procedure be followed. • Key controls advised by the AMS: Physical exclusion zones – where works occur ≤ 5m from the Sydenham Underbridge • Location mapping and toolboxing of other heritage fabric. • Vibration monitoring is encouraged during vibration intensive activities in close proximity to the Sydenham Underbridge and Sewage Pumping Station	Y	Y	
Community and stakeholder	All sensitive receivers adjacent to the proposal who are identified as being impacted, would be collectively consulted under the SMC Community Consultation Strategy. Works are consistent with the approved project.	No additional measures 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
Traffic	Access points into the site are being dispersed along multiple points along the proposed work area, thereby diffusing any potential bottle necking of construction traffic flows. Where access requires further approvals (such as through lease agreements, or Road Occupancy Licenses etc), these approvals would be obtained separately and be reviewed and approved accordingly. The SMC Traffic Management Plan is being updated to account for the BAC scope of works. Works are consistent with the approved project.	No additional measures 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
Waste	Waste streams and overall quantities would not be substantially different to that already assessed as per the approved project. The spoil excavated during the proposal would likely be stored at one of the many stockpile locations already approved and in use by the Contractor. These are typically located at Belmore Triangle, Way Street and Carrington Street. Preference for storage locations would depend on the distance to these locations relative to the excavation points. Where new storage locations are required, then the relevant approvals would be obtained. All wastes would be managed as per the approved Construction Environmental Management Plan (CEMP), Construction Spoil Management Plan (CSpMP) and the Waste and Recycling Management Plan (CWRMP).	No additional measures required.	Y	Y	
Social	No changes from the approved project.	No additional measures required.	Y	Y	
Economic	No changes from the approved project.	No additional measures required.	Y	Y	
Visual	The proposal would occur within the rail corridor and would be a negligible change from the existing proposed corridor works under CSSI_8256.	No additional measures required.	Y	Y	
Urban design	No changes from the approved project.	No additional measures 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
Geotechnical	No changes from the approved project.	No additional measures required.	Y	Y	
Land use	No changes from the approved project.	No additional measures required.	Y	Y	
Climate Change	No changes from the approved project.	No additional measures required.	Y	Y	
Risk	Works are consistent with the approved project.	No additional measures required.	Y	Y	
Other	No changes from the approved project.	No additional measures required.	Y	Y	
Management and mitigation measures	The relevant mitigation measures identified in the approval documentation would continue to apply to the proposal.	No additional measures required.	Y	Y	

10.0 Impact Assessment – Operation

The proposed works are during construction only.

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 changes from the approved project.	N/A	Y	Y	
Water	No changes from the approved project.	N/A	Y	Y	
Air quality	No changes from the approved project.	N/A	Y	Y	
Noise vibration	No changes from the approved project.	N/A	Y	Y	
Indigenous heritage	No changes from the approved project.	N/A	Y	Y	
Non-indigenous heritage	No changes from the approved project.	N/A	Y	Y	
Community and stakeholder	No changes from the approved project.	N/A	Y	Y	
Traffic	No changes from the approved project.	N/A	Y	Y	
Waste	No changes from the approved project.	N/A	Y	Y	
Social	No changes from the approved project.	N/A	Y	Y	
Economic	No changes from the approved project.	N/A	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 changes from the approved project.	N/A	Y	Y	
Urban design	No changes from the approved project.	N/A	Y	Y	
Land use	No changes from the approved project.	N/A	Y	Y	
Climate Change	No changes from the approved project.	N/A	Y	Y	
Risk	No changes from the approved project.	N/A	Y	Y	

11.0 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 Project would continue to provide a metro line between Sydenham and Bankstown, including appropriate connections to the Chatswood to Sydenham component of Sydney Metro City & Southwest.
Is the project as modified consistent with the objectives and functions of the Approved Project as a whole?	Yes. The proposed works would be consistent with the objectives and functions of the Approved Project.
Is the project as modified consistent with the objectives and functions of elements of the Approved Project?	Yes. The changes identified in this assessment are consistent with the objectives and functions of elements of the Approved Project.
Are there any new environmental impacts as a result of the proposed works/modifications?	No. The proposed works do not result in any new environmental impacts beyond those considered in the Approved Project.
Is the project as modified consistent with the conditions of approval?	Yes, the Project would be consistent with the Conditions of Approval.
Are the impacts of the proposed activity/works known and understood?	Yes. The impacts of the proposed works 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 of the proposed works can be managed so as to avoid an adverse impact.

12.0 Other Environmental Approvals

Identify all other approvals required for the project:	• NA

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:	Hussain Nilar	Signature:	
Title:	Environment Coordinator		
Company:	Sydney Metro	Date:	7/10/2022

This section is for Sydney Metro only.

Application supported and submitted by			
Name:	Yvette Buchli	Date:	12/10/2022
Title:	Associate Director, Planning Approvals	Comments:	
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:	17 October 2022
Title:	Director, City & Southwest, Sustainability Environment and Planning	Comments:	
Signature:			

Appendix A – Heritage Impact Assessment

Aboriginal and Non-Aboriginal Heritage Impact Assessment

Sydney Metro City and Southwest - Southwest Metro & Bankstown and Additional Corridor

Report to JHLOR

October 2022

artefact

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FIGURES

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1.0 INTRODUCTION

1.1 Project background

The South West Metro project (SWM) involves upgrading the 10 existing stations west of Sydenham (Marrickville to Bankstown inclusive), and a 13-kilometre-long section of the Sydney Trains T3 Bankstown Line, between west of Sydenham Station and west of Bankstown Station. The project would improve accessibility for customers and meet the standards required for metro operations. The project would enable Sydney Metro to operate beyond Sydenham, to Bankstown.

The Minister's Conditions of Approval (CoA) for the project (CSSI-8256) were granted on 12 December 2018. On 22 October 2020 modifications to the Bankstown Station section of SWM (Mod 1) was approved and revised CoA were granted (CSSI 8256-Mod 1).

The John Holland Laing O'Rourke joint venture (JHLOR) (the Proponent) are proposing to undertake packages of works known as Southwest Metro Corridor (SMC) & Bankstown and Additional Corridor (BAC) works, which consists of construction works within the railway corridor and at several stations along the SWM alignment. The works would be undertaken within the curtilage of the state significant Marrickville Railway Station Group, Canterbury Railway Station Group and Belmore Railway Station Group, as well as within and adjacent to 20 other items listed on State Heritage Register (SHR), Section 170 (s170) Heritage and Conservation Register and relevant Local Environmental Plans (LEP). The works would also be undertaken within the areas of archaeological potential identified at Marrickville Station, Canterbury Station, Belmore Station and Lakemba Station. The impacts of these works have been assessed in a separate Heritage Impact Assessment (HIA) prepared by Artefact Heritage for JHLOR, and therefore are not discussed in this report.[1]

In addition to the works above, Sydney Metro are proposing to incorporate activities within the junction area to the southwest of Sydenham Station as part of the SMC works. The junction area is located outside of the SWM project boundaries and is instead part of the approved boundaries of the Sydney Metro City and Southwest – Chatswood to Sydenham project (CSSI-7400). The Sydney Metro City – Chatswood to Sydenham Project was approved on 9 January 2017, and Modification 4, which assessed Sydenham Station and the rail junction to the southwest, was approved on 13 December 2017 (CSSI-7400-Mod-4) and revised CoA were granted.

This HIA has been prepared to assess the impacts that the proposed SMC works would have on heritage items and potential Aboriginal and non-Aboriginal archaeological resources within the junction area, and to provide archaeological and heritage mitigation measures for the works where necessary. This HIA will inform a Consistency Assessment being prepared by Sydney Metro as part of the project modification. The HIA would also inform a Construction Heritage Management Plan (CHMP) that would be prepared as a sub-plan for the SMC Construction Environmental Management Plan (CEMP).

1.2 Report limitations

This HIA is based on historical and archaeological research provided in the previously prepared heritage reports for the Sydney Metro – Chatswood to Sydenham Project and SWM Project. The current assessment provides summaries of the historical and archaeological research prepared in these reports but does not reproduce the historical context for these reports. Reports referenced in this assessment include:

[1] Artefact Heritage, 2022a. 'Sydney Metro City & Southwest - Southwest Metro: Corridor Works: Non-Aboriginal Heritage Impact Assessment and Archaeological Method Statement'. Report version 9 to JHLOR.

- Sydney Metro City and Southwest – Chatswood to Sydenham: Aboriginal Heritage Archaeological Assessment (Artefact 2016a)
- Sydney Metro City and Southwest – Chatswood to Sydenham: Non-Aboriginal Heritage Impact Assessment (Artefact 2016b)
- Sydney Metro City and Southwest – Chatswood to Sydenham: Historical Archaeological Assessment and Research Design (Artefact 2016c)
- Sydney Metro City and Southwest – Chatswood to Sydenham: Aboriginal Cultural Heritage Assessment Report (Artefact 2016d)
- Chatswood to Sydenham – Sydenham Station and Sydney Metro Trains Facility South Modification Report (TfNSW 2017a)
- Chatswood to Sydenham – Sydenham Station and Sydney Metro Trains Facility South Modification Submissions Report (TfNSW 2017b)
- Chatswood to Sydenham – Sydenham Station and Sydney Metro Trains Facility South Modification Report: Appendix E: Non-Aboriginal Heritage and Technical Information (TfNSW 2017c)
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Non-Aboriginal Heritage Impact Assessment (Artefact 2017a)
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Aboriginal Heritage Impact Assessment (Artefact 2017b)
- Sydenham Station and Sydney Metro Trains Facility South, Second Addendum to the Sydney Metro City and Southwest – Chatswood to Sydenham: Historical Archaeological Assessment and Research Design Report (Artefact 2018a)
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Aboriginal Cultural Heritage Assessment Report (Artefact 2018b)
- Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design (Artefact 2018c)
- Sydney Metro Upgrade Construction Heritage Management Plan (Extent Heritage 2022)
- Sydney Metro City & Southwest - Southwest Metro: Corridor Works: Non-Aboriginal Heritage Impact Assessment and Archaeological Method Statement (Artefact 2022a)
- Southwest Metro Corridor – Construction Heritage Management Plan (Artefact 2022b).

1.3 Authorship

This report was prepared by Jayden van Beek (Senior Associate). Katrina Stankowski (Team Leader - Major Projects) provided management input and review.

2.0 PROPOSED WORKS

2.1 Project location and works

Sydney Metro City and Southwest is a new 30km metro line extending metro rail from the end of Sydney Metro Northwest at Chatswood under Sydney Harbour, through new CBD stations and southwest to Bankstown. It is due to open in 2024 with the capacity to run a metro train every two minutes each way through the centre of Sydney. The Sydney Metro City and Southwest comprises of two components:

- Chatswood to Sydenham project
- Sydenham to Bankstown upgrade, now known as Southwest Metro (SWM).

It is proposed that works within the junction to the southwest of Sydenham Station within the original Chatswood to Sydenham project boundaries be incorporated instead into the SWM project as part of the SMC works.

The SMC works will include critical enabling activities for SWM. The SMC works discussed in this HIA will be limited to the rail corridor (T3 Bankstown line) to the southwest of Sydenham Station between Marrickville Road and Meeks Road. No works would be undertaken within Sydenham Station itself. The proposed works would be separated into two areas: Area 1 and Area 2 (Figure 1).

The works will be undertaken by the John Holland Pty Limited (John Holland) and Laing O'Rourke Construction Pty Limited (Laing O'Rourke) joint venture, referred to as JHLOR. Laing O'Rourke has been nominated as Principal Contractor and as such the works will occur under Laing O'Rourke's Management Systems.

2.1.1 Area 1

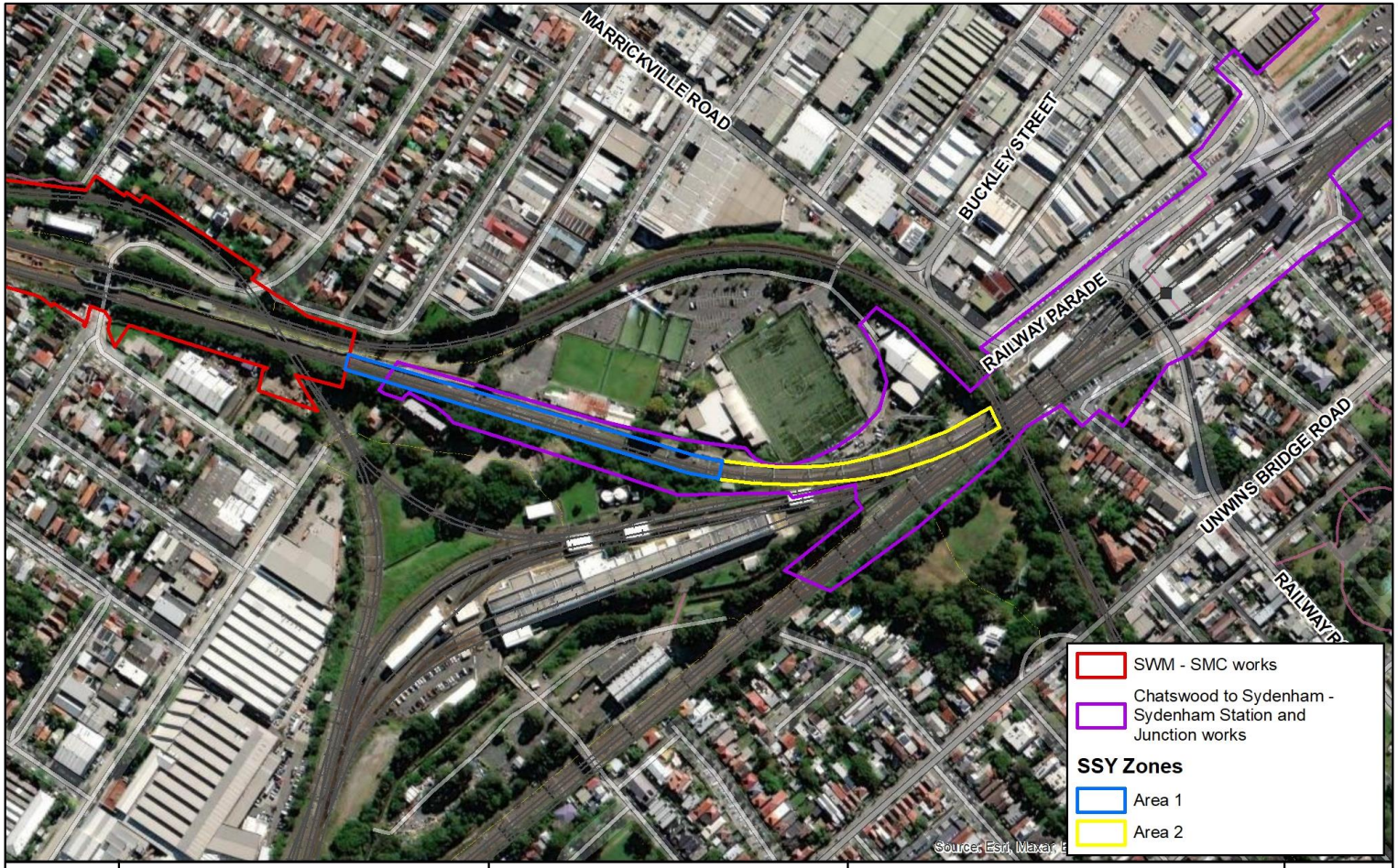
Area 1 consists of the rail corridor to the south of Fraser Park, starting from Meeks Road at the west end where it connects into the wider part of the SWM project. Works within Area 1 would be limited to tamping of ballast only and would not involve any ground disturbing works (i.e., excavations).

2.1.2 Area 2

Area 2 consists of the rail corridor from the east end of Area 1 to the rail overbridge near Marrickville Road to the southwest of Sydenham Station. Works within Area 2 would consist of the reconstruction of the rail track, its underlying ballast layer, capping layer, and potentially the structural layer depending on Geotech testing. It is expected that the track reconstruction would require excavations to a depth of 1400mm (from the top of the rail) through the capping and 500mm into the structural layer (the Rail is 170mm, the Sleepers are 180mm, the Ballast is up to 400mm, the capping is 150mm and the structural layer is 500mm). Accordingly, the total excavation depth into non-disturbed areas will be 650mm into the capping and structural layer.[2]

[2] L. Dobrolot, Laing O'Rourke - Environmental Manager, email dated 26/09/2022.

Figure 1: Location of the proposed SMC works in relation to the SWM and Chatswood to Sydenham: Sydenham Station Junction project boundaries



3.0 ARCHAEOLOGICAL ASSESSMENT

3.1 Introduction

Assessments of archaeological potential and archaeological management strategies have primarily been sourced from the *Chatswood to Sydenham – Sydenham Station and Sydney Metro Trains Facility South Modification Report*[3] and *Addendum to the Sydney Metro City and Southwest – Chatswood to Sydenham: Historical Archaeological Assessment and Research Design Report*[4] that were prepared as part of the modification of the project, and from the 2022 CHMP prepared by Extent Heritage for the Sydenham Station junction which included updated assessments.[5]

Summaries of the Aboriginal and non-Aboriginal archaeological potential for the Sydenham Station junction area are provided below.

3.2 Aboriginal archaeology

3.2.1 Aboriginal archaeological potential

The 2017 *Chatswood to Sydenham – Sydenham Station and Sydney Metro Trains Facility South Modification Report* provided the following assessment of Aboriginal archaeological potential and significance for the Sydney Metro Trains Facility South, which included the area of the Sydenham Station junction:

> *Consistent with the assessment of the approved project, the area of the proposed Sydney Metro Trains Facility South was identified as an area of moderate to high archaeological potential This is based on the likelihood of deep soils remaining intact beneath large areas of surface disturbance in that area.*
>
> *The preliminary assessment of archaeological potential indicates the possible survival of Aboriginal objects in sub-surface contexts. Intact Aboriginal archaeological deposits in this area would be extremely rare and would be of high research significance.*
>
> *No other sites of Aboriginal archaeological potential were identified in relation to the proposed modification.*[6]

The 2016 *Sydney Metro City and Southwest – Chatswood to Sydenham: Aboriginal Cultural Heritage Assessment Report* (ACHAR) divided all Metro station, construction sites and power supply routes into three Method Areas (Mas) for the purposes of managing Aboriginal archaeological resources. The area of the Sydenham Station junction was assessed as being within MA3, which has been defined as:

[3] TfNSW, 2017a. *Chatswood to Sydenham – Sydenham Station and Sydney Metro Trains Facility South Modification Report*.
[4] Artefact, 2018a. *Sydenham Station and Sydney Metro Trains Facility South, Second Addendum to the Sydney Metro City and Southwest – Chatswood to Sydenham: Historical Archaeological Assessment and Research Design Report*.
[5] Extent Heritage, 2022. *Sydney Metro Upgrade Construction Heritage Management Plan*.
[6] TfNSW 2017a: 188.

- *Method Area 3 (MA3): Project sites where there is high potential for the survivability of natural soils and deep sands, and where there will be less intensive historical archaeological excavation than at MA2 sites.*[7]

Further archaeological assessment undertaken by Extent Heritage for the 2022 CHMP for the Sydenham Station and junction works refined the model of Aboriginal archaeological potential for the area. The Aboriginal archaeological management zone mapping is based on a 'traffic light' coding as described below, and is shown in Figure 2:

- ***Red (Zone 1):*** *Areas of high Aboriginal archaeological potential, where historical disturbance has been minimal, or material has been imported to fill the area, thus protecting the underlying deposits. Construction to proceed in accordance with unexpected finds procedure, but archaeological investigation is likely to be required in event that intact natural soils or Aboriginal objects are identified.*

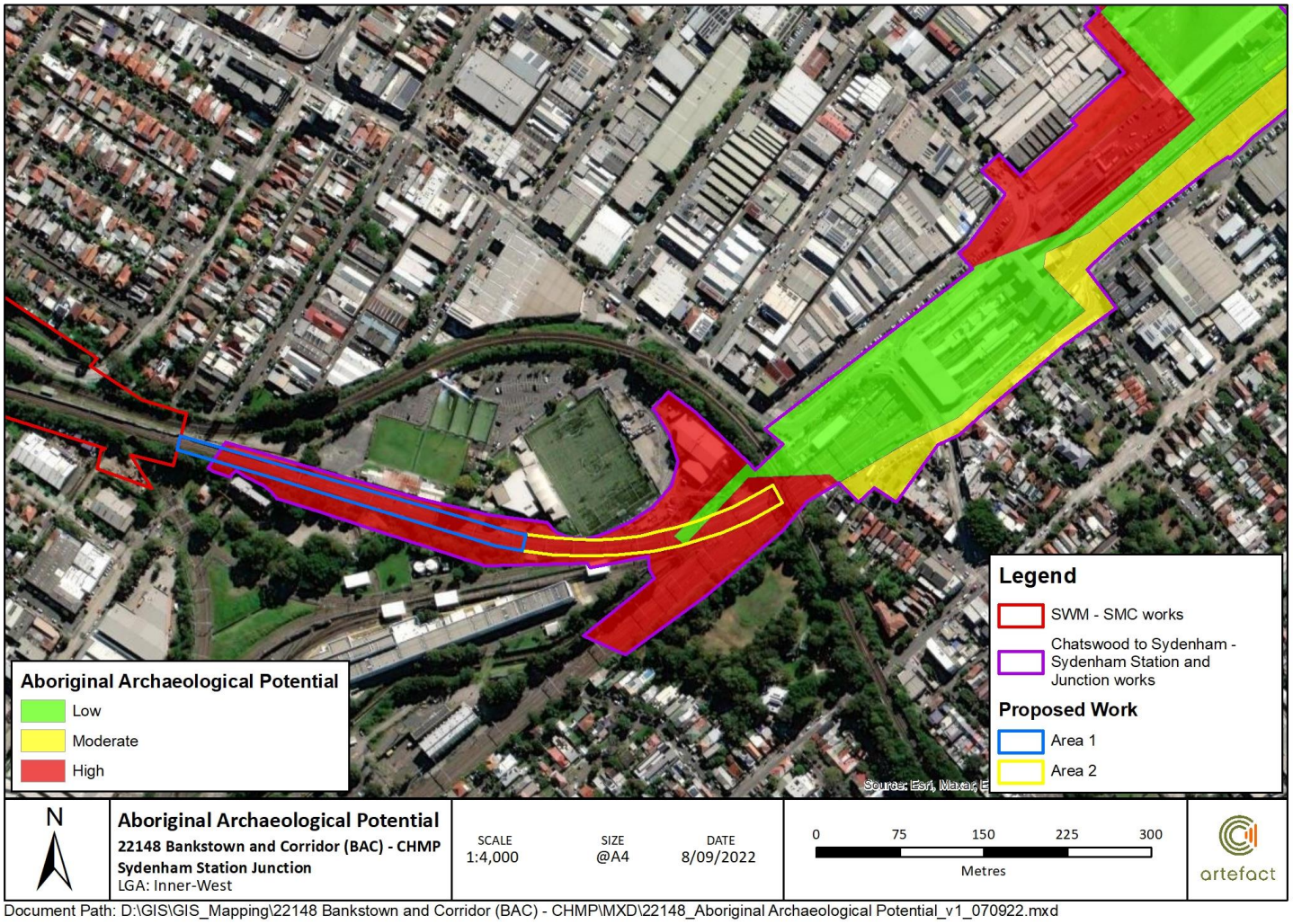
- ***Amber (Zone 2):*** *Areas of moderate Aboriginal archaeological potential, where localised historical disturbance has occurred and may have truncated Aboriginal archaeological deposits. Construction to proceed in accordance with unexpected finds procedure, but archaeological investigation may be required, in event that intact natural soils or Aboriginal objects are identified.*

- ***Green (Zone 3):*** *Areas of low Aboriginal archaeological potential, where historical development activities have significantly truncated underlying soils and removed evidence for Aboriginal occupation. Construction to proceed in accordance with unexpected finds procedure, but archaeological investigation is highly unlikely to be required.*[8]

The proposed SMC works would primarily be undertaken within an area of high Aboriginal archaeological potential (Zone 1), with a small section of works within Area 2 being within an area of low Aboriginal archaeological potential (Zone 3).

[7] Extent Heritage, 2022: 53.
[8] Extent Heritage, 2022: 53-54.

Figure 2: Archaeological potential for the Sydenham Station junction[9]



[9] Extent Heritage 2022: Figure 6.

3.3 Non-Aboriginal archaeology

3.3.1 Non-Aboriginal archaeological potential

The 2018 *Addendum to the Sydney Metro City and Southwest – Chatswood to Sydenham: Historical Archaeological Assessment and Research Design Report* assessed that the area of the rail corridor containing Area 1 and Area 2 generally had low potential to contain non-Aboriginal archaeological remains of state or local significance. A summary of the archaeological potential and significance of predicted remains is provided in Table 1, and the location of these archaeological resources, as mapped in the 2022 CHMP prepared by Extent Heritage for the Sydenham Station junction, is provided in Figure 3.

Table 1: Summary of areas with potential for significant archaeological remains for the Sydenham Station junction[10]

Phase	Archaeological Resource	Potential	Significance
1 (1788-1850s)	• No documentary evidence of specific activities or development with the site • Archaeological remains associated with low intensity land use associated with early agricultural use may include tree boles, field drains, fence line postholes, imported garden soils and isolated artefact scatters.	Nil-Low	Unlikely to reach the threshold of local significance
2 (1850s – 1890s)	• No documentary evidence of specific industrial activities within the site • Archaeological remains associated with low intensity land use associated with early agricultural use may include tree boles, field drains, fence line postholes, imported garden soils and isolated artefact scatters.	Nil-Low	Unlikely to reach the threshold of local significance
3 (1890s – 1909)	• Archaeological remains associated with the early phase of railway infrastructure and the development of Sydenham Station, such as ceramic and wooden service pipes, brick drainage pits, electrical conduits and pits, stanchion bases, sleepers and rail track • Archaeological remains associated with the late 1890s drainage program including drainage associated with the SWOSS and Marrickville Sewerage Pumping Station may include subsurface brick, concrete and terracotta drains and former land-drains. Low potential for artefactual remains.	Low-Moderate	Local (Development of the railway and swamp drainage)
4 (1909 – present)	• Archaeological remains associated with rail line upgrades such as utilities and drainage and structural remains associated with former warehouses • Low potential for remains associated with the Sydney Steel Company, such as building and/or crane footings, steam crane and line, offcuts, refuse from manufacturing processes. These would most likely be present on the northern section of the former Sydney Steel Company site. • Remains associated with the Smidmore Estate residential subdivision may include footings. Low potential for artefactual remains. These remains are unlikely to reach the threshold of local significance.	Low-Moderate	Local (Sydney Steel Company)

[10] Artefact 2018a: Table 3-1 and Table 4-1.

3.3.2 Non-Archaeological management

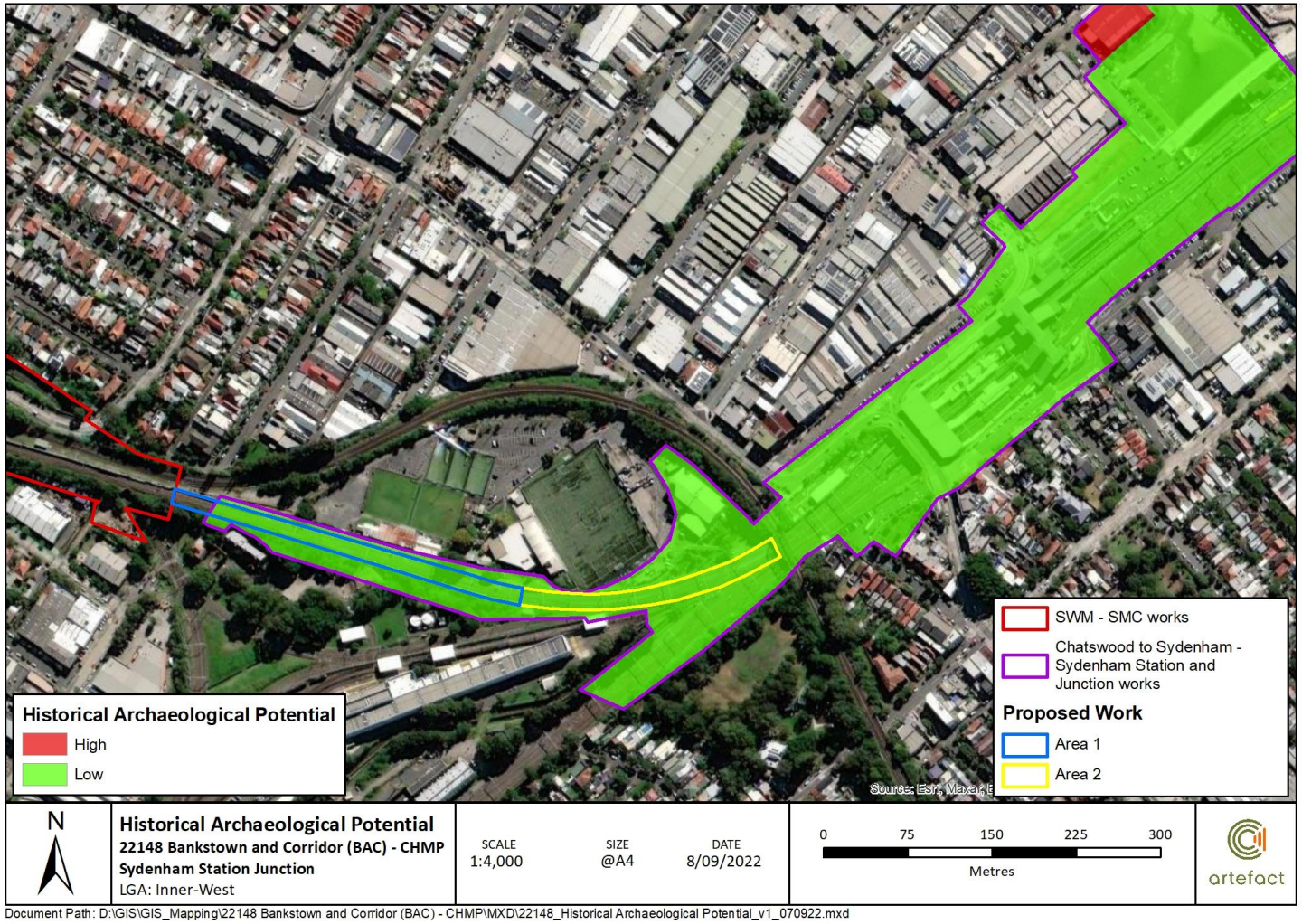
The 2018 *Addendum to the Sydney Metro City and Southwest – Chatswood to Sydenham: Historical Archaeological Assessment and Research Design Report* assessed potential impacts to archaeological resources within the rail corridor area of the Sydenham Station junction as part of the Chatswood to Sydenham project and outlined the archaeological management policies for works in this area. Management policies were also outlined as part of the 2022 CHMP for the Sydenham Station junction. The management policies are outlined in Table 2 and the location of the archaeological management zones (AMZs) are illustrated in Figure 4.

Table 2: Summary of archaeological management requirements for Sydenham Station junction[11]

Phase	Significance	Potential	Archaeological Management	AMZ
1 (1788-1850s)	Unlikely to reach the threshold of local significance	Nil-Low	Unexpected Finds Procedure	3
2 (1850s – 1890s)	Unlikely to reach the threshold of local significance	Nil-Low	Unexpected Finds Procedure	3
3 (1890s – 1909)	Local (Development of the railway and swamp drainage)	Low-Moderate	Unexpected Finds Procedure	3
4 (1909 – present)	Local (Sydney Steel Company)	Low-Moderate	Unexpected Finds Procedure	3

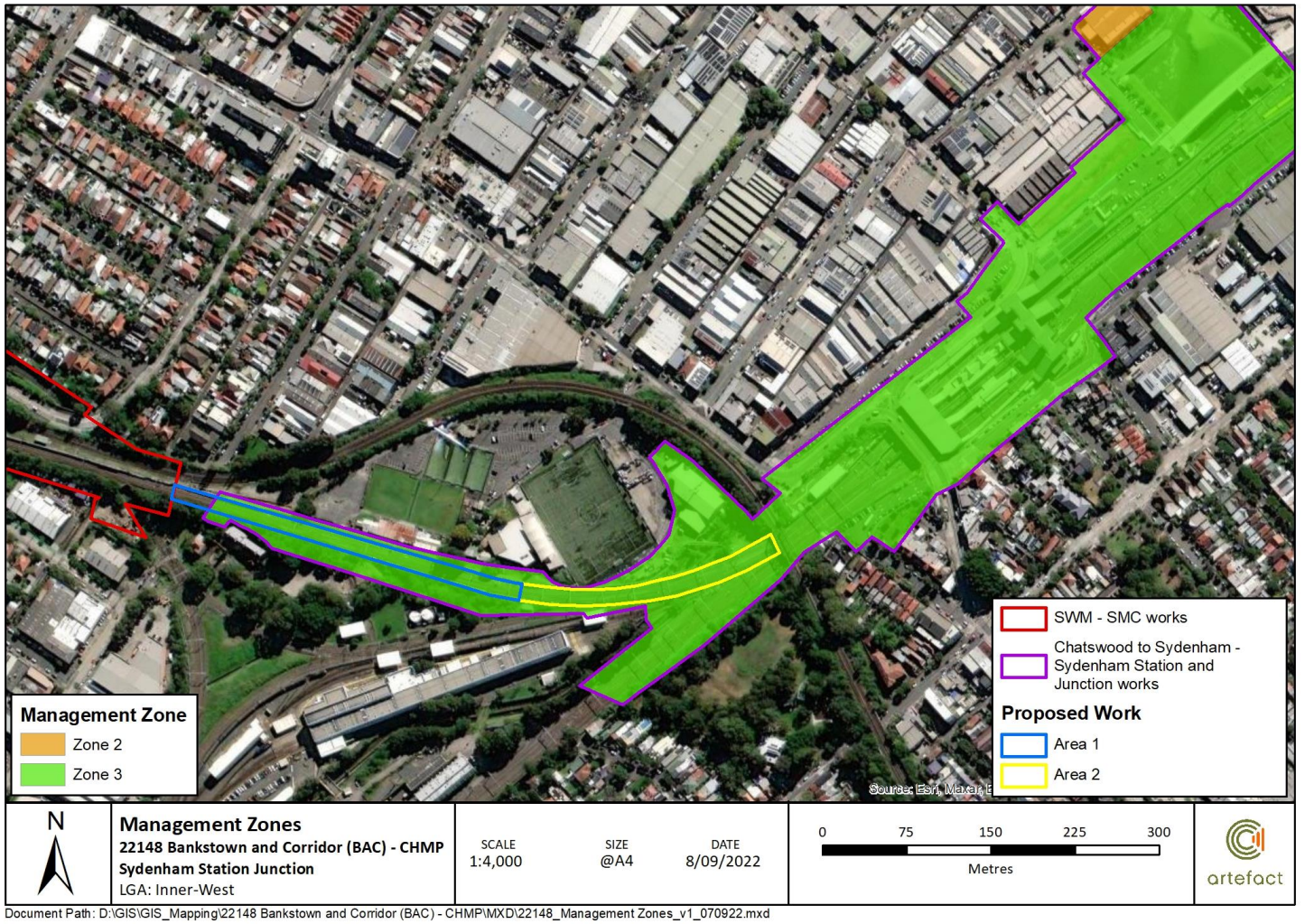
[11] Artefact 2018a: Table 4-1.

Figure 3: Non-Aboriginal archaeological potential for the Sydenham Station junction[12]



[12] Extent Heritage 2022: Figure 15.

Figure 4: Sydenham Station junction AMZs[13]



[13] Extent Heritage 2022: Figure 16.

4.0 HERITAGE IMPACT ASSESSMENT

4.1 Heritage items

The SMC works will be limited to the rail corridor through the Sydenham Station junction. Heritage items within the Sydenham Station junction were identified in the *Chatswood to Sydenham – Sydenham Station and Sydney Metro Trains Facility South Modification Submissions Report*.[14] A list of the heritage items located within or immediately adjacent to the proposed SMC works is provided in Table 3 and the location of the heritage curtilages are illustrated in Figure 5.

Table 3: Heritage listed Items within and immediately adjacent to the SMC project area. Items marked in grey would be within the SMC project area

Item	Listings	Significance
Sydenham (Illawarra Line) Underbridge	• Transport Asset Holding Entity (formerly RailCorp) s170 Heritage and Conservation Register (4805746)	Local
Sewage Pumping Station 271	• State Heritage Register (01342) • Sydney Water s170 Heritage and Conservation Register (4571727) • Inner West (formerly Marrickville) LEP 2022 (I1212)	State
Brick retaining walls	• Inner West LEP 2022 (I1261)	Local

4.2 Heritage item impact assessment

A discussion and assessment of the direct, potential direct and indirect (visual) impacts that the proposed SMC works would have on the listed heritage items identified above is provided in Table 4.

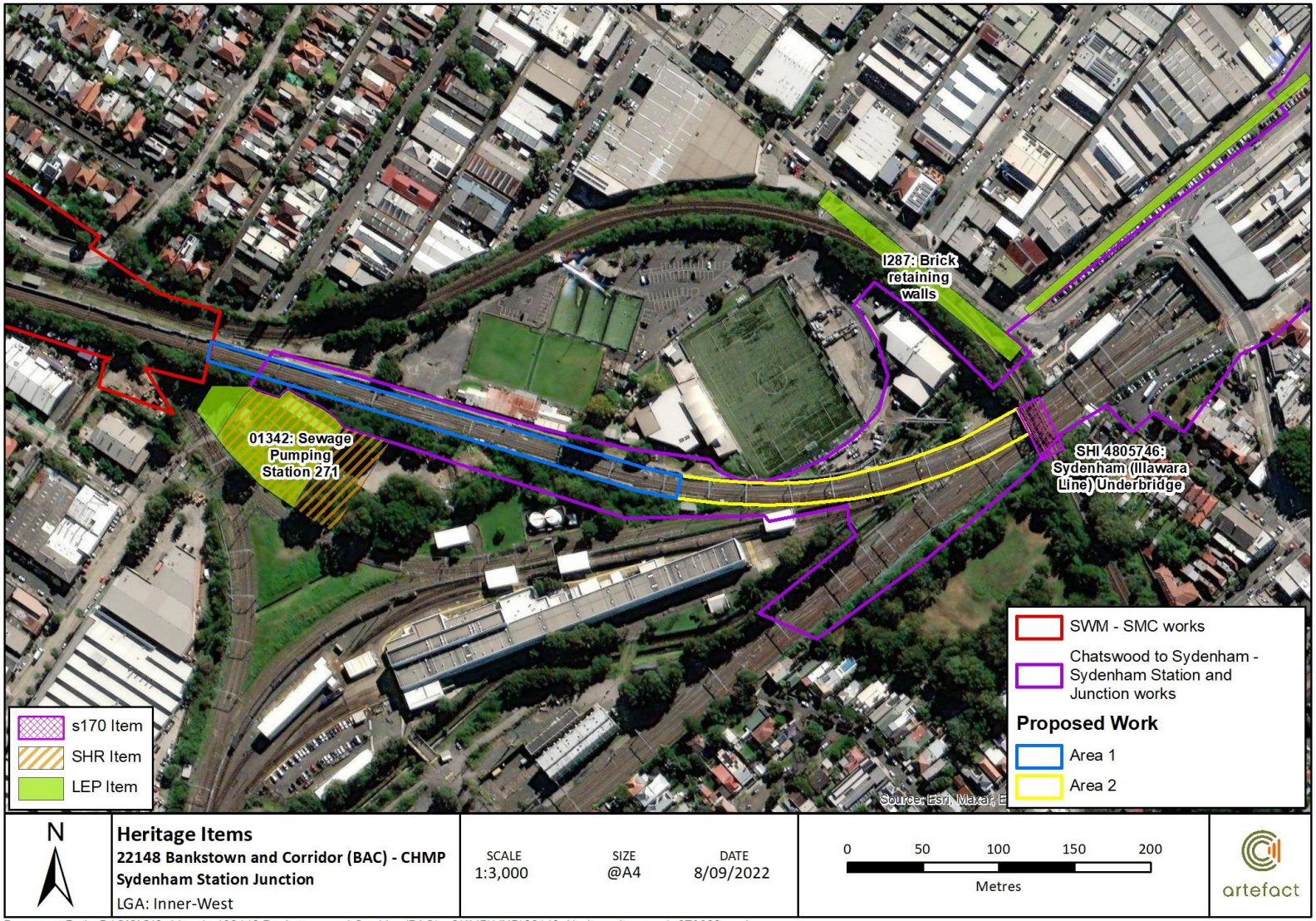
Table 4: Heritage impact assessment for listed heritage items

Item	Discussion of impacts	Impact
Sydenham (Illawarra Line) Underbridge	**Direct:** The proposed works in the vicinity of the heritage item would be limited to track reconstruction. No modification of the underbridge is proposed, and the tracks and ballast within the rail corridor are not considered to be part of the significant fabric of the heritage item. As a result, there would be no direct impacts to significant fabric	**Direct: Neutral**
	Potential direct: The proposed track reconstruction works would involve plant movement and the use of vibration intensive plant and equipment near the heritage item. This could cause vibration impacts to significant fabric. However, the presence of vibration intensive plant would be relatively comparable to regular rail traffic within the corridor, and the risk of vibration impacts would be reduced through the implementation of mitigation measures. As a result, it is expected that any impact to significant fabric caused by vibrations would be minimal	**Potential direct: Negligible**

[14] TfNSW, 2017c. *Chatswood to Sydenham – Sydenham Station and Sydney Metro Trains Facility South Modification Report: Appendix E: Non-Aboriginal Heritage and Technical Information*.

	Indirect: The presence of plant and equipment in the immediate vicinity of the heritage item would cause negligible temporary visual impacts. However, the works are consistent with standard works within the rail corridor and no new infrastructure would be installed as part of the activities. The reconstructed track would match the appearance of the current track. As a result, there would be no permanent impacts to the views and setting of the heritage item	**Indirect: Neutral (permanent)**
Sewage Pumping Station 271	**Direct:** The proposed works would be limited to the rail corridor about 5m north of the heritage item. As a result, there would be no direct impacts to the heritage item	**Direct: Neutral**
	Potential direct: The proposed works would be limited to tamping only. This would still involve the use of vibration intensive plant though which would be active within the rail corridor 5m to the north of the heritage item. This could cause vibration impacts to significant fabric. However, it is expected that the presence of vibration intensive plant would be relatively comparable to regular rail traffic within the corridor, and the risk of vibration impacts would be reduced through the implementation of mitigation measures. As a result, it is expected that any impact to significant fabric caused by vibrations would be minimal	**Potential direct: Negligible**
	Indirect: The proposed works would be located within the rail corridor about 5m north of the heritage item. However, views between the heritage item and the works would be obscured by the existing rail embankment and vegetation, and works would be limited to tamping only and therefore would involve less plant activity in the area. As a result, there would be no impacts to the views and setting of the heritage item	**Indirect: Neutral**
Brick retaining walls	**Direct:** The proposed works would be limited to the rail corridor about 30m southeast of the heritage item. As a result, there would be no direct impacts to the heritage item	**Direct: Neutral**
	Potential direct: The proposed track reconstruction works would involve the use of vibration intensive plant. However, the proposed work would be located at least 30m from the heritage item. As a result, it is not expected that the proposed activities would cause vibration impacts to the heritage item	**Potential direct: Neutral**
	Indirect: The proposed works would be located within the rail corridor about 30m southeast of the heritage item. Views between the heritage item and the works would be obscured by the existing rail embankment and vegetation. As a result, there would be no impacts to the views and setting of the heritage item	**Indirect: Neutral**

Figure 5: Heritage curtilages overview



4.3 Archaeological impact assessment

4.3.1 Aboriginal archaeology

The proposed works would be undertaken within areas identified as having low and high potential to contain Aboriginal archaeological remains. However, that any artefact bearing natural soils that remain intact are likely to be deep and only present underneath areas of ground disturbance. In addition, it has been identified in images supplied by Laing O'Rourke that the track area which is the subject of these works has been built up by approximately 2-3m.[15]

Figure 6: Image of rail line showing introduced fill to build up area of track.

While the proposed works would involve excavations, in the case of Area 1, the excavations would be limited to the rail corridor and would not extend into the introduced capping or structural layers below the ballast layer. As a result, the proposed works are limited to existing areas of ground disturbance and would not be at a sufficient depth to impact any potential deep intact natural soils that survive beneath the rail corridor. Therefore, no impacts to Aboriginal archaeological remains in Area 1 are expected.

The works in Area 2 will require excavation 650mm into the introduced capping and structural layer below. Area 2 is located primarily in an area identified as Zone1 (high Aboriginal archaeological potential) in the Extent Heritage for the 2022 CHMP and the works will excavate 500mm into the structural layers below the rail corridor. However as outlined in the report, the site has been built up by approximately 2-3m and the structural layer was likely imported along with the rest of the material used to fill and elevate the rail line above the surrounding ground level. Based on this information and the depth of the proposed excavations into the structural layer, no impacts to Aboriginal archaeological remains in Area 2 are expected.

[15] L. Dobrolot, Laing O'Rourke - Environmental Manager, email dated 26/09/2022.

Aboriginal archaeological impacts: Nil in Area 1 and Area 2

4.3.2 Non-Aboriginal archaeology

The proposed works would be undertaken within an area that has been assessed as generally having low potential to contain significant historical archaeological remains. The proposed track reconstruction works would involve excavations to a depth of about 650mm below the current ground surface. However, the excavated material would generally be limited to material that is periodically excavated and replaced as part of ongoing maintenance of the rail corridor.

As a result, the proposed works would be limited to areas that are already subject to ongoing ground disturbance, thereby reducing the risk that substantial and significant archaeological remains would be encountered. If any unexpected finds are encountered, it is expected that they would be localised and minor in nature, and therefore any impacts to significant archaeological remains would likely be negligible.

Non-Aboriginal archaeological impacts: Negligible

4.4 Consistency assessment

It has been assessed that the proposed SMC works within the Sydenham Station junction area would result in:

- Generally neutral permanent direct and indirect impacts to listed heritage items, with the potential for negligible potential direct (vibration) impacts caused by vibration intensive activities
- Nil impacts to Aboriginal archaeological remains
- Negligible impacts to non-Aboriginal archaeological remains.

In the case of the non-Aboriginal archaeological remains and the listed heritage items, these impacts are consistent with the overall approved level of impacts identified for the SWM project (CSSI-8256). The proposed works and impacts are also consistent with the planned SMC works within the SWM project boundary.[16] However, in the case of Aboriginal archaeology

4.5 Archaeological management

It has been identified that the proposed SMC works would be undertaken within an area assessed as being part of Aboriginal MA3 (Zone 1 and Zone 3). As the proposed excavations would be limited to the introduced material of the rail corridor, no impacts to Aboriginal archaeological remains expected. The proposed SMC works would be undertaken within an area identified as being part of non-Aboriginal AMZ 3. Due to the low archaeological potential, it is expected that any impacts to potential non-Aboriginal archaeological remains would be negligible.

Based on the identified Aboriginal and non-Aboriginal archaeological potential and the assessed level of archaeological impacts, the proposed SMC works within the Sydenham Station junction area should be managed under the *Sydney Metro Unexpected Heritage Finds Procedure*. This approach would align with the recommended mitigation measures as outlined in the *Addendum to the Sydney Metro City and Southwest – Chatswood to Sydenham: Historical Archaeological Assessment and Research Design Report* and *Sydney Metro City and Southwest – Chatswood to Sydenham: Aboriginal Cultural Heritage Assessment Report*. This approach would also align with the

[16] Artefact 2022a; Artefact 2022b.

recommended mitigation measures for the remainder of the SMC works within the SMW project boundary as identified in the *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Aboriginal Cultural Heritage Assessment Report* and *Sydney Metro City & Southwest Sydenham to Bankstown Upgrade Historical Archaeological Assessment & Research Design*.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The conclusions of this HIA are that:

- The proposed works would be undertaken within the heritage curtilage of Sydenham (Illawarra Line) Underbridge (TAHE s170 no. 4805746)
- The proposed works would be undertaken near:
  - Sewage Pumping Station 271 (SHR 01342; Sydney Water s170 no. 4571727; LEP no. I1212)
  - Brick retaining walls (LEP no. I1261)
- The proposed works would generally result in neutral permanent direct and indirect impacts to these heritage items, with the potential for negligible potential direct (vibration) impacts to Sydenham (Illawarra Line) Underbridge and Sewage Pumping Station 271
- The proposed works are within areas assessed as having low and high Aboriginal archaeological potential, and are within an area identified as MA3
- Nil impacts to Aboriginal archaeological remains are expected because of the proposed works
- The proposed works are within an area assessed as having generally low non-Aboriginal archaeological potential, and are within an area identified as AMZ 3
- It is expected that any impacts to significant non-Aboriginal archaeological remains because of the proposed works would be negligible
- Overall, the proposed works are consistent with the approved level of heritage and archaeological impacts identified for the SWM project (CSSI-8256).

5.2 Heritage and archaeological management recommendations

- To mitigate the risk of impacts to heritage items and significant fabric it is recommended that physical exclusion zones in the form of protective barriers/blankets are set up during works which are undertaken within 5m of less of a heritage item/significant fabric of a heritage item. This includes the following heritage item:
  - Sydenham (Illawarra Line) Underbridge
- Exclusion zones for the remaining heritage items would be limited to identifying the location of the heritage items on the environmental control maps. The requirements for exclusion zones when working in the vicinity of the heritage items would be included in site inductions and toolbox meetings
- Where there is a risk that the proposed works could result in vibration impacts to heritage significant fabric due to the use of vibration intensive plant in close proximity, such as ballast tamping, it is recommended that vibration monitoring is undertaken in accordance with the Construction Noise and Vibration Management Sub-plan. This would include works in the vicinity of the following heritage items:
  - Sydenham (Illawarra Line) Underbridge

  - Sewage Pumping Station 271
- As the proposed works would not cause any permanent indirect (visual) impacts to the views or settings of the nearby heritage items, Photographic Archival Recordings as required by the CoA for the projects (E10 for CSSI-8256 and E13 for CSSI-7400) would not be necessary for this portion of SMC
- If the proposed works near Sydenham (Illawarra Line) Underbridge or Sewage Pumping Station 271 result in potential direct (vibration) impacts to the heritage items, a Heritage Engineer and a Conservation Architect would need to be consulted with in accordance with Revised Environmental Management Measure (REMM) NAH20
- In accordance with the Aboriginal and non-Aboriginal archaeological management measures for MA3 and AMZ 3, the proposed works would be conducted under the Sydney Metro Unexpected Heritage Finds Procedure
- All relevant personnel and contractors involved in the SMC works will be advised of the mitigation measures and recommendations in this HIA.

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