Integrated Management System

Planning Approval Environmental Review Form

o SM ES-FT-414

Sydney Metro Integrated Management System (IMS)

Project:	Sydney Metro – Western Sydney Airport
Assessment Name:	Luddenham and Mamre Road water main works
Prepared by:	Sydney Metro
Applicable to:	Sydney Metro and SM-WSA contractors
Assessment Number	ER007
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Version:	0.5 (Final)
Planning approval No. (where relevant):	SSI_10051 (NSW) EPBC 2020/8687 (Cth)
Date required:	31 July 2023
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Environmental Review

1. Proposed works and justification

An environmental review is applicable to design changes which are consistent with the conditions of approval and would have no additional impacts on the community and/or the environment. This environmental review is required to demonstrate compliance with the conditions of approval and the Sydney Metro – Western Sydney Airport (SM-WSA) Environmental Impact Statement (EIS), Submissions Report and EPBC Act Final Environmental Impact Assessment of off-airport proposed action (off-airport Final EIA). A description of activities is listed in Table 1 and an assessment provided in Section 2.

Table 1 Description of proposed works

Description	Overview
Location of works	The proposed water main runs along Solander Drive, Mamre Road, Luddenham Road and Patons Lane. The location of the works is shown in Figure 1 below.
Scope of works	In order to provide a construction and permanent water supply to the Stabling and Maintenance Facility (SMF) Sydney Metro must connect to an existing water main on Solander Drive. A portion of the route would be assessed and completed by Sydney Water as part of their package of works for the area and the remaining portion has been completed by Sydney Metro. The assessment and delivery strategy for the works is shown in Figure 2 below. The works will mainly consist of: • Open trenching within the road reserve, • Trenchless methods for road and creek crossings, as necessary, • Temporary vehicle U-turn and heat contained (no open spark) technology welding area • A stabilised crossing for vehicles across a drainage line. The crossing works will involve sandbagging of the existing drainage line to temporarily stop water flow. A conduit or pipe will be installed, and geofabric and ballast rock will be laid to form the stabilised crossing. Transport for NSW are delivering the Mamre Road upgrade works under a separate Review of Environmental Factors (REF). Clearing of remnant vegetation will be undertaken under the Mamre Road upgrade REF. This environmental review does not assess impacts to vegetation required for Mamre Road upgrade works. The water main upgrade will be located in the new road reserve area which has been adjusted as part of the Mamre Road upgrade. The location of the Mamre Road upgrade project is shown in Figure 3. Drainage line crossing, U-turn and pipe welding area within the Mamre Road upgrade project is shown in Figure 4.
Justification for works	To provide construction and permanent water supply to the SMF.
Timeframe for works	Works will be undertaken from Q3 2023 and will take approximately three to six months to complete.
Work hours, workforce and equipment / machinery	Standard construction hours will be used as much as possible, however there is the potential for night works to be required. Up to 10 – 20 workers could be working onsite at any one time. Equipment required will include: • Excavators (8-13t) • Horizontal directional drilling rigs and mud recycling

	• Bed bore machine • Truck and dog • 8-13t tipper / bogie trucks • Utes • Traffic control vehicles • Flat-bed trucks • Non Destructive Digging (NDD) and vacuum trucks • Contained heat technology welding

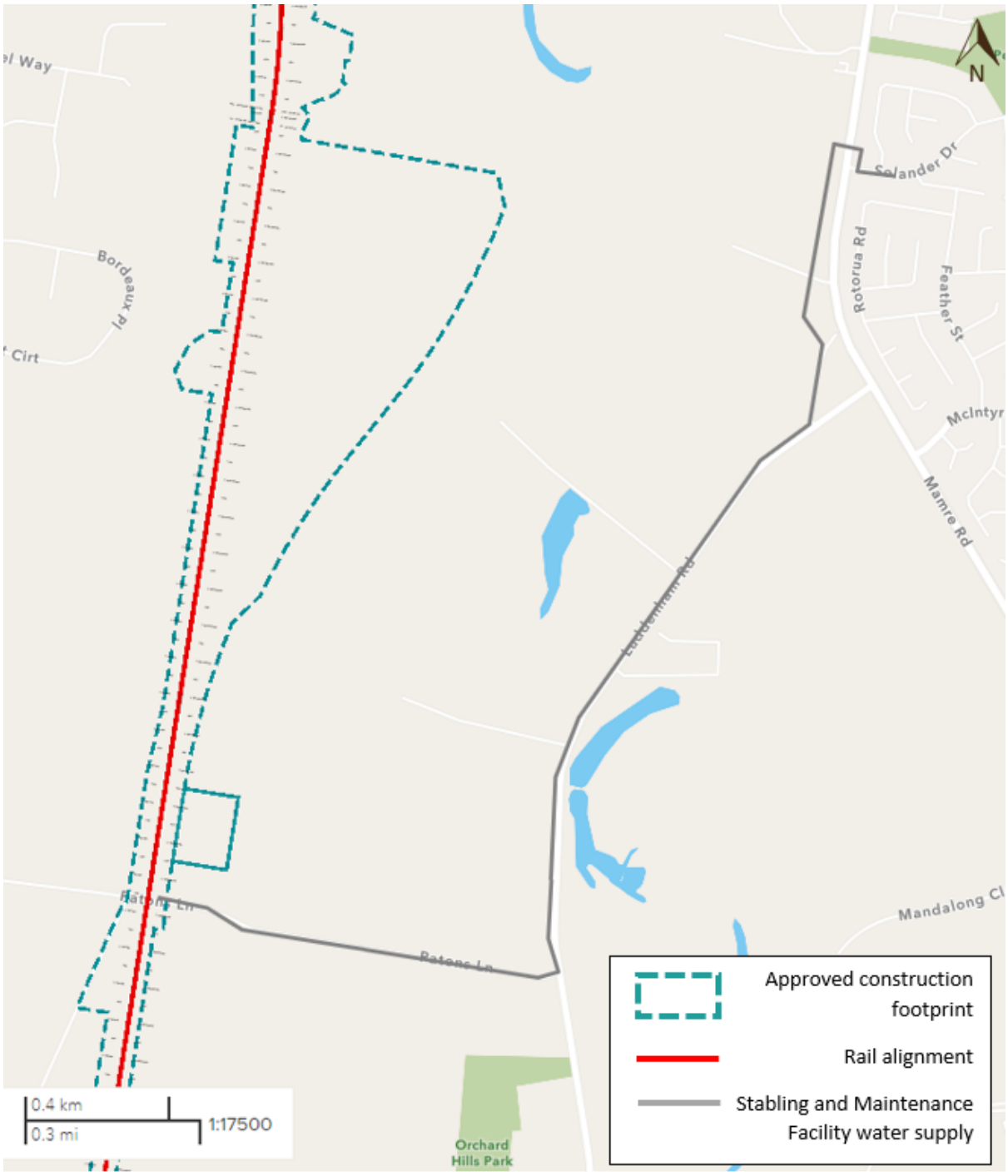

Figure 1 Location of works.

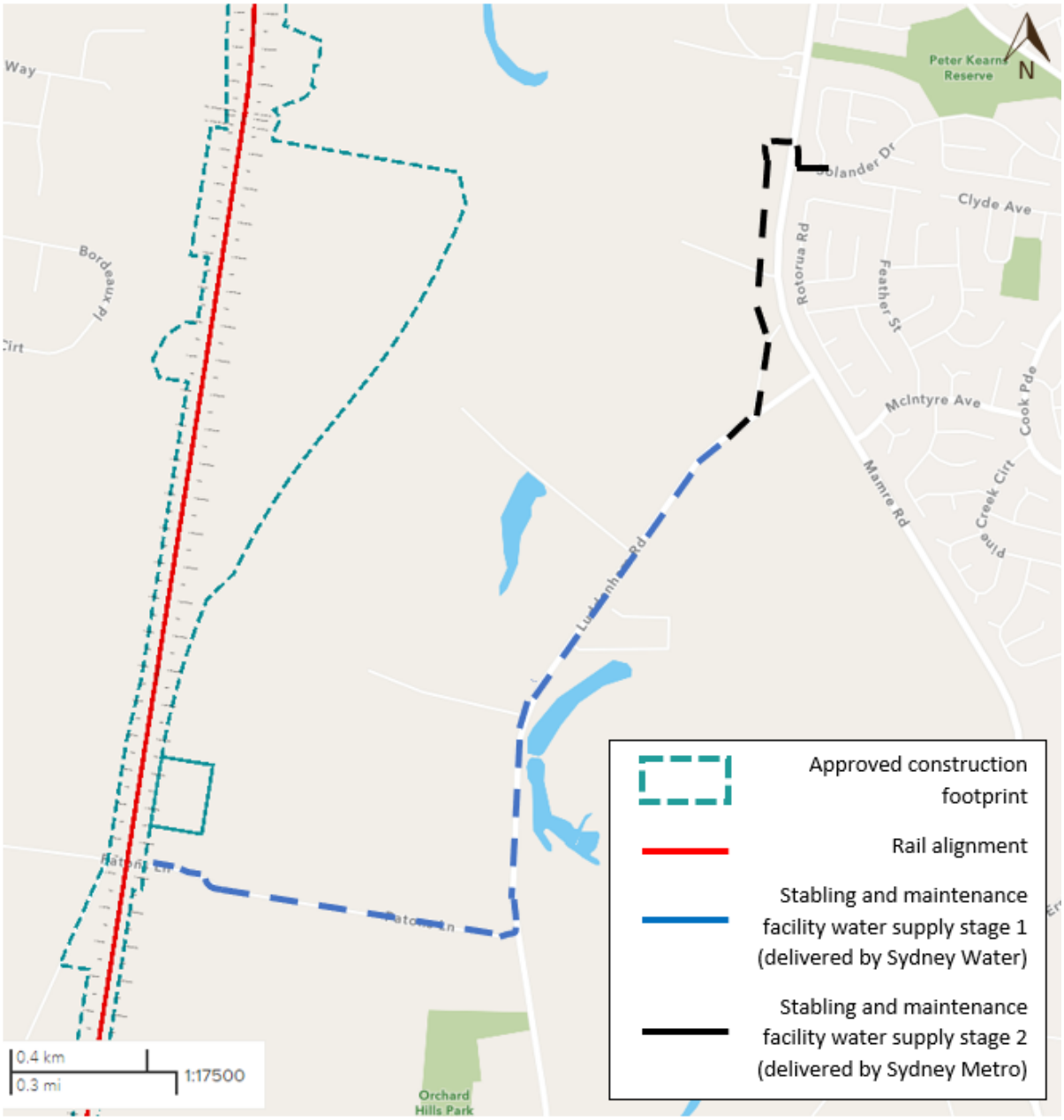

Figure 2 Assessment and delivery strategy for the proposed stabling and maintenance facility water supply.

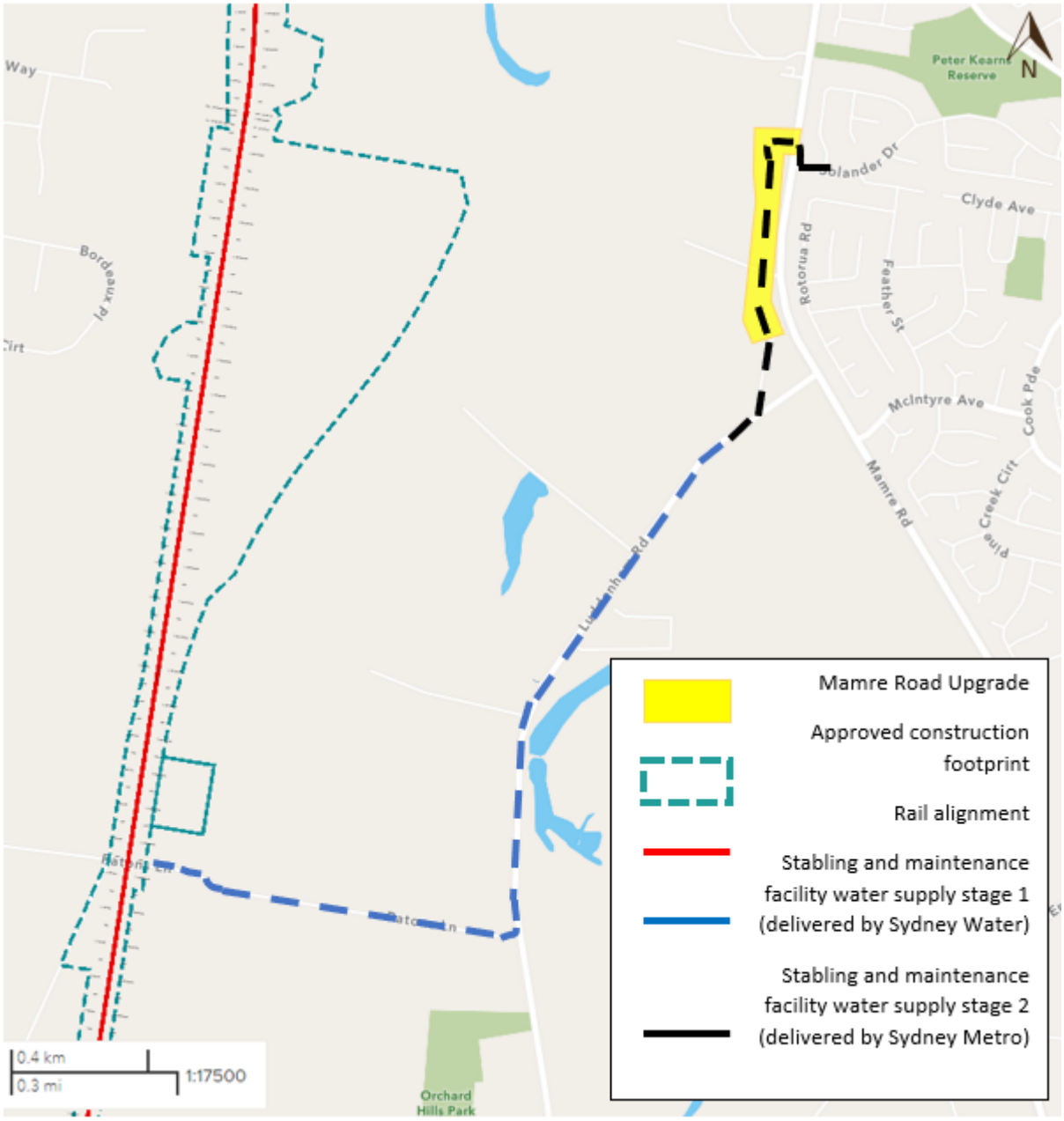

Figure 3 Location of Mamre Road Upgrade works in relation to the proposed stabling and maintenance facility water supply.

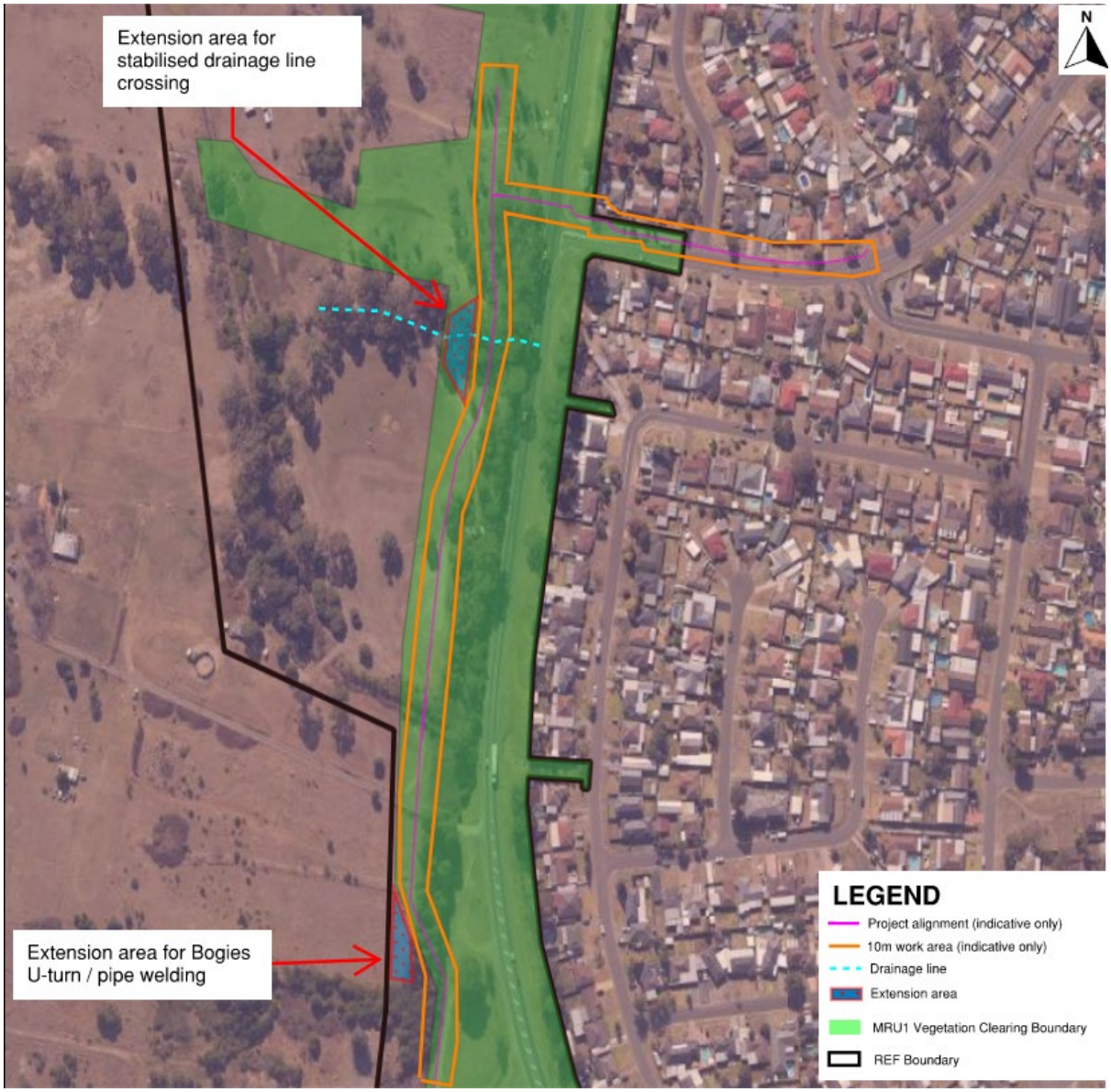

Figure 4 Location of drainage line crossing and pipe welding area in relation to the clearing boundary approved under the TfNSW Mamre Road Review of Environmental Factors shown in green.

2. Consistency with Conditions of Approval

The following table outlines whether the proposed changes would be consistent with the relevant Conditions of Approval.

Table 2 Comparison of the proposal with relevant elements of the Approved Project

Relevant elements of the Approved Project	Proposed Change
Section 8.11.5 of the EIS and Section 2.11.5 of Appendix B of the Submissions Report (Utilities) allows for additional utility works that are required outside of the construction footprint for the Project. Such utility works would be delivered for the Project provided the works are consistent with the following performance criteria: • the works connect to the construction footprint or to a point adjacent to the construction footprint • the works have no direct impact on heritage items (including areas of archaeological sensitivity), threatened species, populations or ecological communities beyond the impacts assessed in the Environmental Impact Statement • the works can be carried out and managed consistent with the performance outcomes identified in Chapter 7 (Revised performance outcomes and mitigation measures).	**Connection to the construction footprint** The proposed water main runs along Solander Drive, Mamre Road, Luddenham Road and connects to the construction footprint via Patons Lane (refer Figure 1). A portion of the route has been completed by Sydney Water as part of their package of works for the area and the remaining portion will be completed by Sydney Metro (refer Figure 2). As the Sydney Water works have been assessed under a separate approval the below assessment only covers the Sydney Metro portion of works. **Historic heritage** A search of the State Heritage Register (SHR), Section 170 Heritage and Conservation Registers and applicable Penrith Local Environmental Plan on 11 January 2022 and on 21 July 2023 identified three historic heritage items in the vicinity of the works: • Leeholme Horse Stud Rotunda – local significance (item number 232 under the Penrith Local Environment Plan 2010) • Luddenham Road alignment – local significance (item number 843 under the Penrith local Environment Plan 2010) • Memorial Cairn also known as the Gregory Blaxland memorial – local significance (item number 230 under the Penrith Local Environment Plan 2010) Leeholme Horse Stud Rotunda is an item of local heritage significance and is located adjacent to the works. No permanent impacts are expected as works would not occur within the heritage curtilage of this item and the water main would be located underground. The works would be located within the curtilage of the Luddenham Road alignment. The item is considered to have local historical significance as an early road alignment. Impacts are consistent with what was assessed in the EIS. While the proposed utility works are located within the heritage curtilage, original fabric associated with the early road no longer exists due to modifications and renewal of the road surface over time. Additionally, archaeological potential of the item is assessed in the EIS as low. The works would not affect the alignment of the road or its setting which is consistent with the assessment provided for the approved project in the EIS. Memorial Cairn is an item of local heritage significance and is located within the (northern side) road reserve of Luddenham Road approximately 120 metres south of the bridge that crosses Wianamatta South Creek. No permanent impacts are expected as the water main at this location runs on the opposite side of the road to the memorial and no works would occur within the heritage curtilage of this item.

	Aboriginal Heritage A search of the Aboriginal Heritage Information Management System (AHIMS) on 11 January 2022 and on 21 July 2023 identified one site in the vicinity of the works. The Aboriginal heritage site is located opposite Solander Drive within the Aboriginal heritage study area for the Mamre Road upgrade REF (refer Figure 3). These sites were assessed to have either low or moderate archaeological significance. TfNSW applied for an Aboriginal heritage impact permit (AHIP) as part of their works prior to any impact or harm to sites located within the study area. Sydney Metro will comply with the conditions of the Mamre Road upgrade AHIP whilst working within the AHIP boundary in accordance with Revised Environmental Mitigation Measures (REMM) AH9 of the SM-WSA planning approval. Sydney Metro would also comply with any management measures within the TfNSW Aboriginal Cultural Heritage Assessment Report (ACHAR). Link to TfNSW ACHAR: https://roads-waterways.transport.nsw.gov.au/projects/01documents/mamre-road-upgrade/mamre-road-ref1-app-e.pdf **Biodiversity** A search of the SEED Portal undertaken on 11 January 2023 and on 21 July 2023 identified areas of PCT849 (Greg box Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin) and PCT835 (Forest Red Gum – Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion) along the alignment. Biodiversity impacted by the Mamre Road upgrade has been assessed under a separate TfNSW REF which includes a Biodiversity Development Assessment Report (BDAR). The Mamre Road upgrade project requires biodiversity offsets for impacts to threatened ecological communities (TECs) and listed threatened species. Sydney Metro will ensure the area along Mamre Road is cleared and offsets are secured by TfNSW prior to commencement of works for the Mamre Road section of the water main alignment. Any adjacent vegetation that has not yet been cleared as part of the Mamre Road upgrade would be clearly delineated as a “no-go” zone. Works around South Creek would either install the water main within the bridge structure or use trenchless methods to avoid impacts to riparian vegetation. Other parts of the alignment are located in the road reserve an area that is largely cleared and impacts on vegetation would be minimal with trenchless methods employed as needed to avoid vegetation removal. **Performance Outcomes** The works can be managed consistent with the performance outcomes (POs) as revised in the SM-WSA Submissions Report.

SSI CoA A1 – The Proponent must carry out the CSSI in accordance with the terms of this approval and generally in accordance with the: (a) Sydney Metro – Western Sydney Airport Environmental Impact Statement dated 21 October 2020; and (b) Sydney Metro – Western Sydney Airport Submissions Report submitted April 2021.	The proposed works will be carried out generally in accordance with the SM-WSA EIS and Submissions Report.
SSI CoA E36 – The Unexpected Heritage Finds and Human Remains Procedure must be implemented	The proposed works will be subject to the Sydney Metro Unexpected Heritage Finds and Human Remains Procedure.
SSI CoA E42 – Out-of-Hours Work (OOHW) Protocol	An OOHW Protocol for the project has been approved by DPE. Where out of hours works are required additional assessment and approval processes would be followed, in accordance with the approved OOHW Protocol.
SSI CoA E2 – Minimising clearing of native vegetation	Impacts on vegetation beyond the Mamre Road alignment would be minimal and the proposal's construction methodology including trenchless methods would be used to ensure that no vegetation removal is required. Vegetation removal associated with the Mamre Road upgrade would be completed prior to the Sydney Metro utility works. Any adjacent vegetation that has not yet been cleared as part of the Mamre Road upgrade would be clearly delineated as a "no-go" zone.
SSI CoA E120 – Minimising impacts to utilities infrastructure and disruptions of services.	The proposed works will connect to an existing water main and connection to this main may cause a disruption to services. Sydney Metro are responsible for advising local residents and businesses that may be affected before any planned disruption of services. The design has been reviewed and approved for construction by Sydney Water and would be completed by an accredited services provider contracted to Sydney Metro.
SSI CoA E128 – Erosion and sediment controls must be implemented and maintained consistent with the Blue Book	Erosion and Sediment Control Plans (ESCPs) will be developed for all active worksites in accordance with the Managing Urban Stormwater: Soils and Construction Volume 1 (Landcom 2004) (known as the 'Blue Book'). These will be progressively updated to reflect current site conditions.
EPBC 2020/8687	Not considered further as the works would not impact protected Matters of National Environmental Significance (MNES) or extend into or affect Commonwealth Land.
REMM AH9 – Works within the bounds of an existing Aboriginal Heritage Impact Permit (AHIP)	Works within the Mamre Road upgrade AHIP would be undertaken in accordance with the conditions of those permits and with permission from TfNSW as the Aboriginal Heritage Impact Permit holder. The Mamre Road upgrade AHIP is provided in Appendix B.

3. Environmental review

The following table provides a risk review of the potential environmental impacts of the proposed works. As the Sydney Water works have been assessed under a separate approval the below assessment only covers the Sydney Metro portion of works.

Table 3 Environmental review

Environmental review	Yes / No	Description of impacts (including consideration of safeguards required by the Approved Project)
Is the proposal to take place outside of the construction footprint of the project	Y	The majority of proposed works would take place outside the construction footprint of the project, however the EIS and Submissions Report considers such works as discussed above. Impacts would be consistent with those assessed in the EIS and Submissions Report, are anticipated to be localised, and can be managed appropriately by the existing conditions of approval, REMMs and performance outcomes.
Is the location of works within the existing EPL premise boundary	N	An EPL is not required for the utility scope for the SM-WSA project.
Will the works take longer than 2 weeks to complete.	Y	The proposed works are expected to take approximately three to six months for installation.
Does the work require OOHW approval	Y	The proposed works would take place during standard construction hours and as OOHW. Where OOHW are required additional assessment and approval processes would be followed, in accordance with the approved OOHW Protocol for the project.
Will the works impact an EEC or threatened species	N	No impacts are expected to EEC or threatened species due to the distance between the proposed works and mapped biodiversity values. Clearing and offsetting of EECs and threatened species habitat along Mamre Road will be undertaken under the Mamre Road upgrade REF prior to the Sydney Metro utility works. This environmental review does not seek approval for impacts to EECs and threatened species for the Mamre Road upgrade works. Any adjacent vegetation that has not yet been cleared as part of the Mamre Road upgrade would be clearly delineated as a “no-go” zone.
Will works impact on native vegetation	N	No impacts are expected to native vegetation due to the distance between the proposed works and native mapped vegetation. Clearing and offsetting of native vegetation will be undertaken under the Mamre Road upgrade REF prior to the Sydney Metro utility works. This environmental review does not seek approval for impacts to native vegetation for the Mamre Road upgrade works. Any adjacent vegetation that has not yet been cleared as part of the Mamre Road upgrade would be clearly delineated as a “no-go” zone.

Will the works impact on habitat trees	N	No impacts are expected to habitat trees due to the distance between the proposed works and mapped habitat trees.
Will clearing of non EECs or ground disturbance be of High / moderate condition vegetation. What is the area of impact	N	No clearing is required as the majority of the trenching works will be constructed in previously cleared areas or with trenchless methods as necessary. Clearing and offsetting of non-native vegetation will be undertaken under the Mamre Road upgrade REF prior to the Sydney Metro utility works. This environmental review does not seek approval for impacts to non-native vegetation for the Mamre Road upgrade works.
Will the works result in medium / high noise or vibration impacts Will noise and vibration impacts on sensitive receivers be greater than that predicted in the EIA	Y	Given the close proximity to receivers (approximately 13 metres) and the plant and equipment required, the works may result in medium noise or vibration impacts. The proposed works would take place during standard construction hours and as OOHW. The EIS has considered both scenarios at St Clair (NCA 09) but only standard hours at Orchard Hills (NCA 07). Noise and vibration generating activities will occur during trenching works but are not expected to be greater than that predicted in the SM-WSA EIS. Additionally the works will occur progressively limiting a particular receiver's exposure to noise and vibration at any one time. Impacts would be managed in accordance with the Sydney Metro Construction Noise and Vibration Standard and OOHW approval will be required for works outside of standard construction hours.
Will the works result in medium/ high air quality impacts	N	The works would involve open trenches within the road reserve and non-destructive digging across roads and creeks, as required. Open trenching but would occur progressively so the area of impact would be limited at any one time.
Will the activity be located adjacent to or in close proximity to sensitive receivers	Y	The works would be located adjacent to residential and rural residential properties and commercial receivers (e.g. Dogs NSW). The nearest receiver is a residential property located approximately 13 metres from the works. Works would occur progressively so the area of impact would be limited at any one time. Sensitive receivers would be notified of the upcoming works. Further community notification requirements would also be completed for OOHW
Will works impact on an Aboriginal / European heritage site different to that predicted in the EIA	N	Outside of the Mamre Road Upgrade boundary, works would be contained within the road reserve, a previously disturbed environment and no works are proposed within nearby AHIMS site extents. One AHIMS site is located within the Aboriginal heritage study area for the Mamre Road upgrade REF. This environmental review does not seek approval for impacts to the AHIMS site. An AHIP would be in place prior to the Sydney Metro utility works and Sydney Metro would comply with the relevant Mamre Road upgrade AHIP conditions and any management measures within the TfNSW ACHAR.

Are works within 10m of a watercourse	Y	The works cross Wianamatta South Creek. Trenchless construction methods (i.e. underbore) or installation of the main within the bridge structure would be used for this creek crossing. The works cross a drainage line. An under-bore trenchless construction method will be used for this crossing to ensure water flow is not impeded. The works also involve a temporary stabilised crossing of the drainage line. The crossing works will involve sandbagging of the existing drainage line to temporarily stop water flow. A conduit or pipe will be installed, and geofabric and ballast rock will be laid to form the stabilised crossing. This will involve temporary minimal disruption to water flow.
Are works in an area of known contamination	N	The works are not within an area of known contamination.
Will the works result in temporary or long term traffic impacts	Y	Construction activities would result in delays or reduced level of service caused by: • A small increase in construction traffic on the local road network • Traffic control measures including reduced speed limits, single lane closures and contraflow arrangements. There are no anticipated long-term traffic impacts and access to properties would be maintained at all times. Temporary impacts would be localised and can be managed appropriately by the existing conditions of approval, REMMs and performance outcomes.
Will the works result in visual impacts to sensitive receivers	Y	Similar to the Approved Project, there would be minor visual impacts associated with construction works, disturbed areas, plant and equipment and temporary safety measures such as road covers, if required. The works will occur progressively so the area of impact would be limited at any one time, and the area of disturbance would be stabilised before moving to the next section. Construction lighting would be designed and located to minimise light spill outside the construction site should night works be required. It is expected that visual impacts can be managed appropriately by the existing conditions of approval, REMMs and performance outcomes.
Will the works involve significant earthworks	N	The works would involve open trenches and non-destructive digging across roads and creeks. Open trenching would occur progressively so the area of impact would be limited at any one time.

4. Recommendation

Based on the above assessment, and with reference to the SM-WSA EIS and Submissions Report, including the conditions of approval and associated CEMP and plans, it is recommended that:

✓	The proposed design/construction change is consistent with the Approved Project SM-WSA EIS and Submissions Report, including the conditions of approval, has negligible impacts on the community and environment and no further assessment is required.
	~~The proposed design/construction change is likely to be consistent with the Approved Project SM-WSA EIS and Submissions Report, however more than a negligible impact on the community and environment may result and further assessment in the form of a Planning Approval Consistency Assessment form is required to be completed and submitted to the Planning team for the proposed design/ construction change.~~
	~~The proposed design/ construction change is not substantially the same as the Approved Project and is considered a radical transformation. A new planning pathway should be considered.~~

5. Certification

The above information provides a true and fair review of the proposed works.

Prepared by (signed):

Date: **28 July 2023**

Name: **Sarah Anderson**

Position: **Planning Approvals Officer**

6. Endorsement

I have reviewed the above review and provide the following endorsement:

✓	The proposed design/construction change is consistent with the SM-WSA EIS and Submissions Report, has negligible impacts on the community and environment and no further assessment or modification of the planning approval is required.
	The proposed design/construction change is likely to be consistent with the SM-WSA EIS and Submissions Report, however more than negligible impacts are expected on the community and environment and further assessment is required.
	The proposed design/construction change constitutes a project modification and requires further assessment and approval.

This endorsement is conditional on the following:

1. All works will be carried out in accordance with the SM-WSA EIS and Submissions Report and the Project Conditions of Approval.
2. All works will be carried out in accordance with the approved Construction Environmental Management Plan and any relevant sub plans.
3. All works will be carried out in accordance with any additional management measures identified in the Environmental Review, unless otherwise noted by this endorsement.

Comments (if any):	Nil
Signed:	
Endorsed by:	Hugh Chapman – Director, Project Environment, Sustainability and Planning (WSA)
Date:	28/7/2023

Appendix A – Revised desktop searches

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : [redacted]

Client Service ID : [redacted]

[redacted]

Note: AHIMS sites are not presented in the public version of this report.

[redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]

- [redacted]
- [redacted]
- [redacted]

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : [redacted]

Client Service ID : [redacted]

[redacted]

Note: AHIMS sites are not presented in the public version of this report.

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[redacted]

- [redacted]
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- [redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]

- [redacted]
- [redacted]
- [redacted]

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

Layer Intersect Tool (LIT) Summary Report

0.6 0 0.28 0.6 Miles

1: 18,056

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

Layer legend

Plant Community Type

- 724
- 725
- 774
- 781
- 830
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- 941
- 958
- 1067
- 1081
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- 1395
- 1642

Appendix B – TfNSW AHIP

This content has deliberately been omitted from this version due to cultural sensitivity