

Appendix B5

Heritage Management Sub Plan Enabling Works (Package 1)

Parramatta Light Rail – Stage 1

October 2020

Rev.05.02

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Document status

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F	3 December 2018	Amendments following TFNSW review	
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5	28 October 2020	Update to include RTR Playing Fields Reconfiguration	

Distribution of controlled copies

This HMP as part of the CEMP is available to all personnel and sub-contractors via the Project document control management system. An electronic copy can be found on the PLR Project website (at <http://www.parramattalightrail.nsw.gov.au/library/environment>).

The document is uncontrolled when printed. One controlled hard copy of the HMP as part of the CEMP and supporting documentation will be maintained by the Quality Manager at the Project office.

Copy number	Issued to	Version
1	Office of Environment and Heritage	Rev B, Rev C, Rev 0
2	City of Parramatta Council	Rev C
3	NSW Heritage; Registered Aboriginal Parties and City of Parramatta Council	Rev 5

Glossary/ Abbreviations

Abbreviations	Expanded text
ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
ARD	Archaeological Research Design
AWMS	Archaeological Work Method Statement
CEMP	Construction Environmental Management Plan
CoA	Minister's Conditions of Approval
DPIE	Department of Planning, Industry and Environment
EIS	Environmental Impact Statement
Environmental heritage	Places, buildings, works, relics, movable objects and precincts, of State or local heritage significance as outline in Section 4 of the Heritage Act
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
ECM	Environmental Control Map
HAMU	Historical Archaeological Management Unit
Heritage Act	<i>Heritage Act 1997</i>
Heritage NSW	NSW Department of Premier and Cabinet (DPC) Heritage
HMP	Heritage Management Sub-Plan
LEP	Local Environmental Plan
NPW Act	<i>National Parks and Wildlife Act 1974</i>
OEH	former Office of Environment and Heritage (now Heritage NSW)
PAD	Potential Archaeological Deposit
Planning approval	The Planning Approval includes the Conditions of Approval, the EIS and the Submissions and Preferred Infrastructure Report (SSI 8285)

Abbreviations	Expanded text
PLR	Parramatta Light Rail
Project, the	Parramatta Light Rail – Stage 1, Enabling Works (Package 1)
RAP	Registered Aboriginal Parties
REMMs	Revised Environmental Mitigation Measures
Secretary	Secretary of the NSW Department of Planning, Industry and Environment (or delegate)
SHR	State Heritage Register

1 Introduction

1.1 Context

This Heritage Management Sub Plan (HMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Parramatta Light Rail (PLR) Stage 1, Package 1 Enabling Works (the Project). This Plan does not apply to the other packages of Parramatta Light Rail – Stage 1 construction which would be subject to a separate HMP and CEMP.

The PLR received planning approval on the 29 May 2018 (SSI 8285). This HMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA) and the revised environmental mitigation and management measures (REMMs) listed in the Parramatta Light Rail Stage 1 Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement (the EIS), as amended by the Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report) (February 2018) (the SPIR) and all applicable legislation.

1.2 Background and Parramatta Light Rail description

Parramatta Light Rail is one of the NSW Government's major infrastructure projects being delivered to serve a growing Sydney.

Parramatta Light Rail Stage 1 (Stage 1) will connect Westmead to Carlingford via Parramatta Central Business District (CBD) and Camellia. Stage 1 is expected to be operational in 2023.

Stage 1 will create new communities, connect great places and help both local residents and visitors move around and explore what the region has to offer. The route will link Parramatta's CBD and train station to a number of key locations, including the Westmead Precinct, the Parramatta North Growth Centre, the new Western Sydney Stadium, the Camellia Town Centre, the new Powerhouse Museum and Riverside Theatre arts and cultural precinct, the private and social housing redevelopment at Telopea, the Rosehill Gardens Racecourse and the three Western Sydney University campuses.

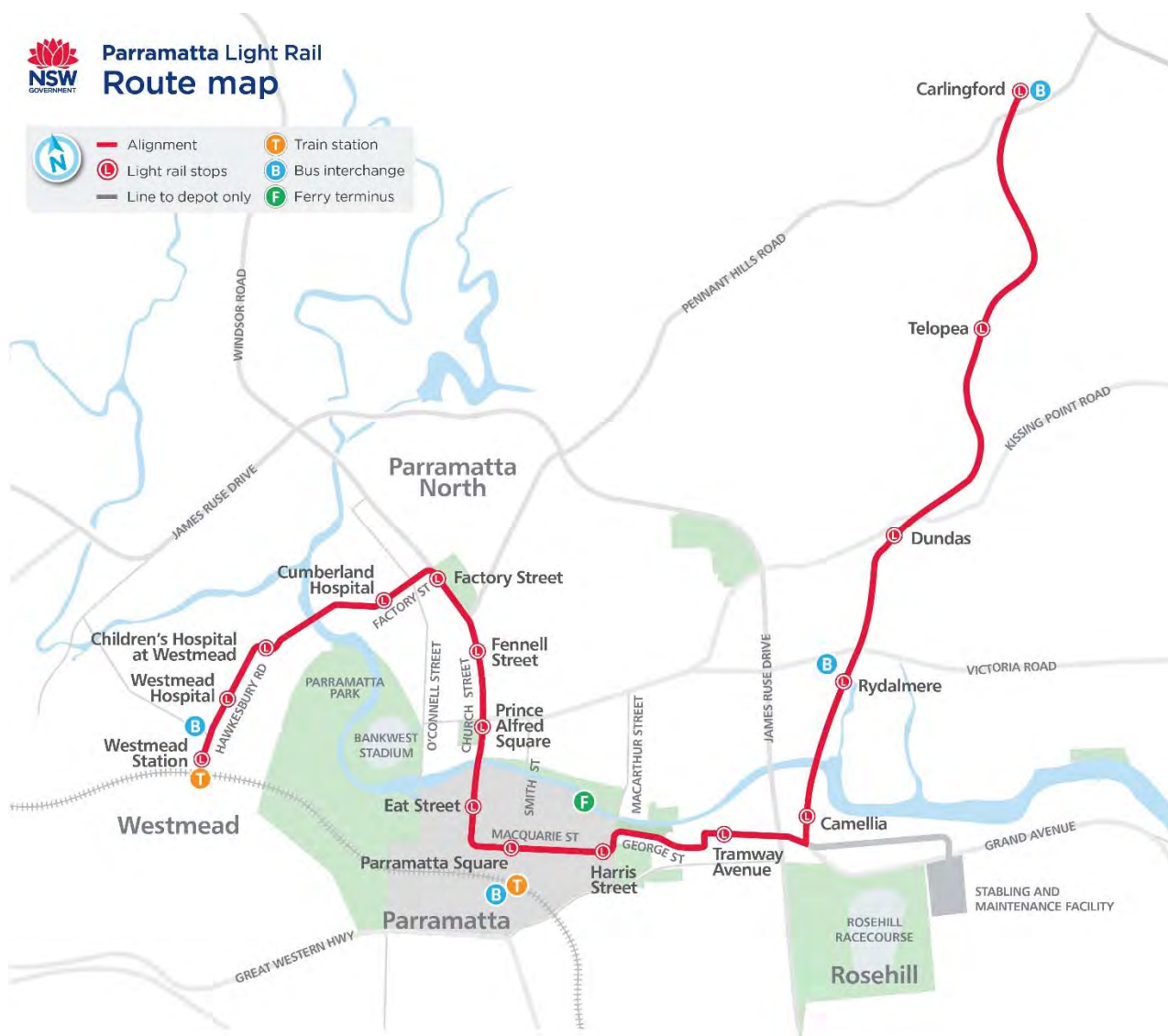
In summary, the key features of the PLR include:

- A new dual track light rail network of approximately twelve (12) kilometres in length, including approximately seven (7) kilometres within the existing road corridor and approximately five (5) kilometres within the existing Carlingford Line and Sandown Line, replacing current heavy rail services
- Sixteen (16) stops that are fully accessible and integrated into the urban environment including a terminus stop at each end of Westmead and Carlingford
- High frequency 'turn-up-and-go' services operating seven days a week from 5am to 1am. Weekday services will operate approximately every 7.5 minutes in the peak period between 7am and 7pm
- Modern and comfortable air-conditioned light rail vehicles, nominally 45 metres long and driver-operated, each carrying up to 300 passengers.
- Intermodal interchanges with existing public transport services at Westmead terminus, Parramatta CBD and the Carlingford terminus
- Creation of two light rail and pedestrian zones (no general vehicle access) within the Parramatta CBD along Church Street (generally between Market Street and Macquarie Street) and along Macquarie Street (generally between Horwood Place and Smith Street)

- A Stabling and Maintenance (SaM) Facility located in Camellia for light rail vehicles to be stabled, cleaned and maintained
- New bridge structures along the alignment including over James Ruse Drive and Clay Cliff Creek, Parramatta River (near the Cumberland Hospital), Kissing Point Road and Vineyard Creek, Rydalmere
- Alterations to the existing road network including line marking, additional traffic lanes and turning lanes, new traffic signals, and changes to traffic flows
- Relocation and protection of existing utilities
- Public domain and urban design work along the corridor and at Stop precincts
- Closure of the heavy rail line between Carlingford and Clyde
- Active transport corridors and additional urban design features along sections of the alignment and within Stop precincts
- Integration with the Opal Electronic Ticketing System (ETS)
- Real time information in light rail vehicles and at Stops via visual displays and audio.

An overview of Parramatta Light Rail Stage 1 route is shown in Figure 1.

Figure 1-1: Parramatta Light Rail Stage 1 Route



1.2.1 Statutory Context

The Parramatta Light Rail is subject to environmental impact assessment under the *Environmental Planning and Assessment Act 1979* (EP&A Act). It is classified as Critical State Significant Infrastructure (CSSI). Detailed environmental impact assessments have been carried out and approved by the Minister for Planning. The Planning Approval for the PLR is described below.

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) are the primary legislation regulating land use planning and development assessment in NSW. Clause 79 of State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP) permits development for the purpose of a railway or rail infrastructure facilities to be carried out by or on behalf of a public authority without consent, provided that the Project is not carried out on land reserved under the NSW National Parks and Wildlife Act 1974 (NPW Act).

As the PLR would be for a light rail and would be carried out by or on behalf of Transport for NSW on land that is not reserved under the *NPW Act*, the Project could, subject to identification of significant impacts, be assessed under Part 5 of the EP&A Act. As such, the PLR was assessed under Part 5.1 (now Division 5.2) of the EP&A Act as Critical State significant infrastructure (CSSI).

1.2.2 Parramatta Light Rail Planning Approval

The Environmental Impact Statement (EIS) assessed impacts for the PLR. This covered the light rail and associated works including road enabling work. The EIS was publicly exhibited from Wednesday 23 August to Monday 23 October 2017 (62 days). Following the exhibition period, the Proponent prepared a response to the submissions. A Submissions Report (incorporating Preferred Infrastructure Report) (SPIR) was finalised on the 15 February 2018. The Planning Approval was provided by the Minister for Planning on 29 May 2018 (Infrastructure approval SSI 8285). Further information including copies of the environmental assessment and related approval documents are located at:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=8285

1.3 Enabling works project description

The Enabling Works portion of the PLR, referred to as the Project, involves the design and construction of specific local road network improvements and adjustments to maintain performance of the local road network during the light rail construction period and during light rail operations. The Project also includes the reconfiguration of the Robin Thomas Reserve playing fields which are required as a result of the PLR alignment occupying in the western extents of the reserve, and to address Revised Environmental Mitigation Measure (REMM) LU-4.

The general extent of the work area is shown in Figure 1-2.

Most of the Project works are being undertaken along roads or parkland that do not form part of the Parramatta Light Rail route. There are some small areas of enabling works, such as utility extensions that are outside the approved SPIR project boundary. These works would be undertaken in accordance with provisions in the approval for tie-in works within one kilometre of the approved project boundary.

As part of the Project, George Street in the Parramatta CBD will become two-way and O'Connell Street will be widened to four lanes as part of the works. Greater traffic capacity will also be provided along Barney Street and O'Connell Street as an alternative to Church Street, to minimise disruption and improve traffic flow.

The scope of the Project includes:

Road modifications and associated works

- Establishment of site and installation of safety barriers around the work sites and site compounds associated with the Project
- Property access modifications along the Project alignment, including the relocation of existing facilities
- Demolition of four buildings on Barney Street
- Relocation and protection of major services and utilities
- Establishing ancillary facilities and construction sites
- Carrying out heritage investigations, protection and archival recordings
- Road modification works including kerb realignment, drainage works, line marking and signage
- Tree and vegetation removal and offset planting
- Traffic signal works
- Salvage and reconstruction of sandstone kerbing adjacent to the Parramatta Correctional Centre
- Retention of some mature trees adjacent to the Parramatta Correctional Centre.

Robin Thomas Reserve playing fields reconfiguration

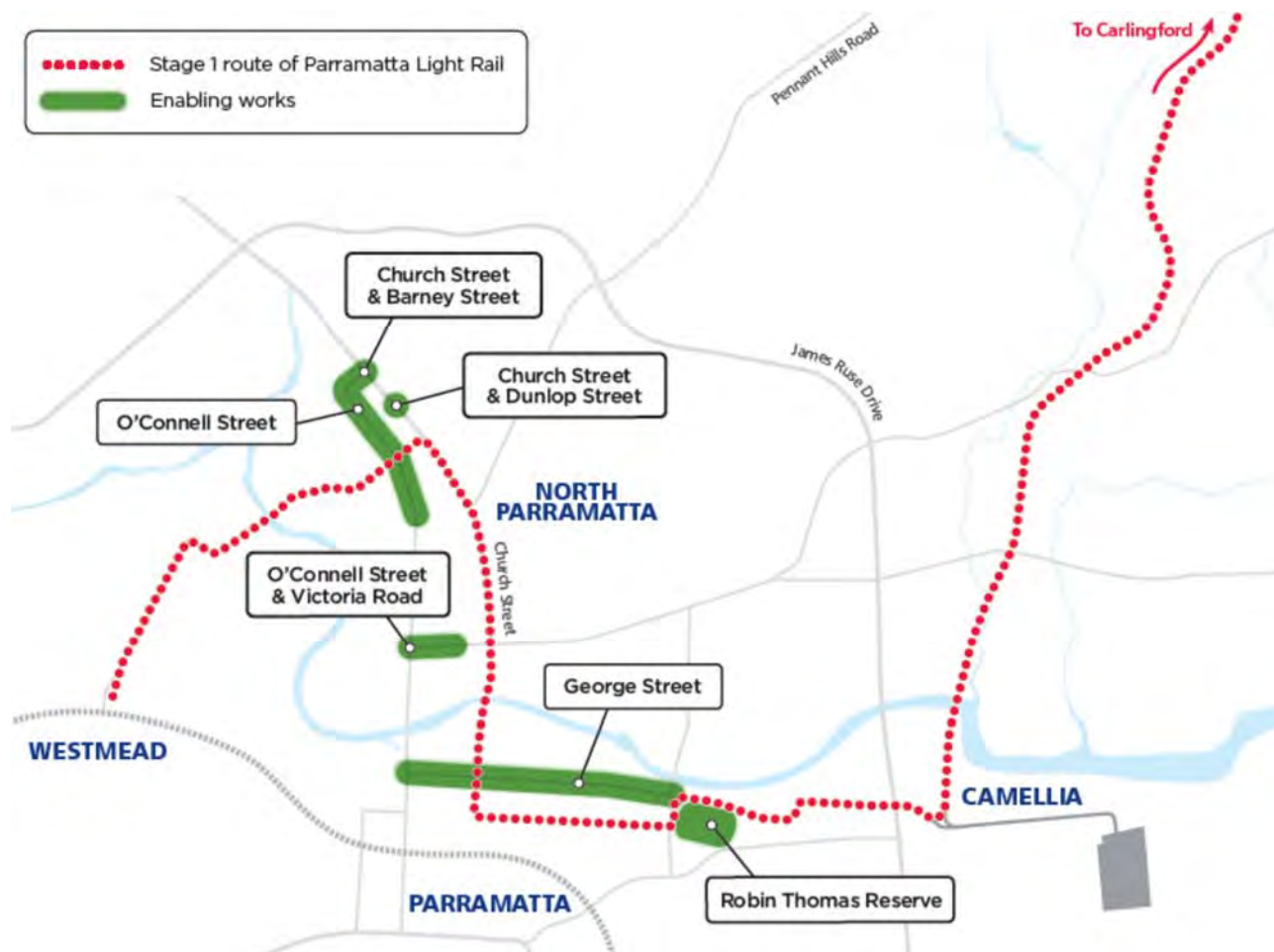
- Removal and replacement of the existing cricket pitch, goal posts and new line marking
- Installation of two new and relocation of two existing sporting field flood light poles
- Installation of electrical services (using existing trenches where possible)
- New fencing along the northern, western and southern boundary of the playing fields.
- Removal of two trees and landscaping (mass planting along western boundary)
- Installation of new asphalt footpath including three light posts.

Overall impacts to heritage and archaeology as a result of enabling works are minor in comparison to those approved for the PLR – Stage 1 project as a whole. The key areas of impact to heritage significance would be:

- Queens Wharf Reserve and stone wall and potential archaeological site - **Parramatta LEP 2011 1489** - landscaping and road widening
- Parramatta Correctional Centre - **SHR 00812, Parramatta LEP 2011 100812** – road widening and tree removal
- Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) – **SHR 1863, Parramatta LEP 2011 A2** - minor footpath works at the Harris and George Street intersection. Works to reconfigure the playing fields in the southern portion of Robin Thomas Reserve have been specially designed, in consultation with Heritage NSW, to minimise ground disturbance. Where available, existing utility trenches are to be used and, where appropriate, shallow designs will be adopted to minimise impacts to the archaeological sites of the Parramatta Sand Body; and former site of c.1790 Military Barracks and Soldiers Garden. The reconfiguration works will have a minimal impact to the built and visual aspects of the reserve.

- Kings School/Marsden Park Rehabilitation Centre - **SHR 0071, SHR 0086, Parramatta LEP 084** - minor impacts within curtilage as a result of enabling works including vegetation removal and trenching to enabling widening of the turning circle. No fabric to be impacted.
- Brislington property, Moreton Bay fig tree – **Parramatta LEP I0059** - visual impacts associated with use of construction site. No subsurface impacts or impacts to fabric.
- Various subsurface impacts in areas of archaeological potential as a result of stormwater relocation and other utility works.

Figure 1-2: Parramatta Light Rail Stage 1 enabling works across project



1.4 Environmental management systems overview

The environmental management system overview is described in section 1.4 of the CEMP.

1.5 Consultation for preparation

This Plan was prepared in consultation with the Heritage NSW as a delegate of the NSW Heritage Council and City of Parramatta Council (CoPC). This consultation is outlined in Section 4.

1.6 Approval

This Heritage Management Plan is required to be submitted to the Secretary for Approval, at least one month before construction works commence in accordance with CoA C6.

2 Purpose and objectives

2.1 Purpose

The purpose of this Plan is to describe how Aboriginal and non-Aboriginal heritage is protected and managed during construction of the Project in accordance with the CoA and REMMs.

2.2 Objectives

The key objective of the HMP is to ensure all CoA, REMMs and licence/permit requirements relevant to Aboriginal and non-Aboriginal heritage are described, scheduled and assigned responsibility as outlined in:

- Parramatta Light Rail (Stage 1), Westmead to Carlingford via Parramatta CBD and Camellia Environmental Impact Statement, Volume 1A and 1B, Main document (WSP Australia Pty Limited for TfNSW, August 2017) Parramatta Light Rail (Stage 1) Westmead to Carlingford via Parramatta CBD and Camellia Submissions Report (incorporating Preferred Infrastructure Report - SPIR) (February 2018)
- Statement of Heritage Impact for Robin Thomas Reserve Stage 1 Masterplan: Playing Field (Extent Heritage, May 2020)
- Aboriginal Due Diligence Assessment for Robin Thomas Reserve Stage 1 Masterplan: Playing Field (Extent Heritage, May 2020)
- Archaeological Work Method Statement (AWMS) for Robin Thomas Reserve Stage 1 Masterplan: Playing Field (Extent Heritage, 2020)
- The Conditions of Approval granted to the project on 29th May 2018 and subsequent administrative modifications (December 2018 - MOD 1 - and January 2019 - MOD 2)
- Transport for NSW's Unexpected Heritage Finds Guideline 3TP-SD-115/3.0

Compliance with the CSSI approval is also an objective of the Plan.

2.3 Targets

This HMP provides the basis for the management of heritage issues and to minimise risk of impact. Its key objective is to ensure that impacts to Aboriginal and non-Aboriginal heritage and archaeology are minimised and within the scope permitted by the planning approvals. The supporting objectives and targets of heritage management and mitigation in regard to heritage are outlined below:

- Minimise the adverse impacts on the listed heritage items and Aboriginal and non-Aboriginal archaeological resources across the project area
- Maximise awareness of Aboriginal and non-Aboriginal heritage values for all involved in the project
- Consult with relevant stakeholders throughout the project in accordance with approval requirements
- Identify, investigate, record and assess the significance of any Aboriginal and non- Aboriginal archaeological resources before any further action, including harm, can take place
- Respond to the requirement not to destroy, modify or otherwise physically affect heritage items (including Aboriginal objects), outside the CSSI footprint.

3 Environmental Requirements

3.1 Relevant legislation and guidelines

3.1.1 Legislation

All legislation relevant to this HMP is included in Appendix A1 of the CEMP.

3.1.2 Additional approvals, licences, permits and requirements

No additional approvals or permits are required to manage heritage impacts.

3.1.3 Guidelines

The main guidelines, specifications and policy documents relevant to this Plan include:

- Aboriginal cultural heritage consultation requirements for proponents 2010 (OEH 2010)
- Altering Heritage Assets (Heritage Office and DUAP 1996).
- Assessing Heritage Significance (NSW Heritage Office 2001)
- Assessing Significance for Historical Archaeological Sites and Relics (NSW Heritage Branch, Department of Planning 2009)
- Code of Practice for the archaeological investigation of Aboriginal objects in NSW (OEH 2010)
- Due Diligence Code of practice for protection of Aboriginal objects in NSW (OEH 2010)
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2010)
- Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977
- How to Prepare Archival Recording of Heritage Items (Heritage Branch 1998).
- Investigating Heritage Significance (NSW Heritage Office 2001)
- Levels of Heritage Significance (NSW Heritage Office 2008)
- NSW Government's Aboriginal Participation in Construction Guidelines (2007).
- Photographic Recording of Heritage Items Using Film or Digital Capture (Heritage Branch 2006).
- Transport for NSW Unexpected Heritage Finds Guideline 3TP-SD-115/3.0.

3.1.4 Avoidance of heritage impacts

The enabling works program would result in relatively minor heritage impacts in the context of the Parramatta Light Rail as a whole as the majority of works are within road corridors or comprise of low impact activities such as road grading or Non-Destructive Digging (NDD).

In order to address Condition E65 the enabling works project would require test excavation in areas of high archaeological sensitivity as described in the Archaeological Research Design (ARD). If State significant archaeological remains were identified, they would be avoided where practicable. Results of the archaeological program would be available for later stages of PLR in order to inform design decisions and facilitate avoidance of impacts where practicable.

Works associated with the Robin Thomas Reserve playing fields reconfiguration are to be carried out in accordance with the following key heritage documents:

- Statement of Heritage Impacts

- Aboriginal Due Diligence Assessment
- Archaeological Work Method Statement (AWMS).

Where works are required adjacent to significant fabric or heritage items exclusion zones or physical barriers are to be placed to ensure avoidance of impacts. This is detailed in Table 5-1 and Table 5-2.

Aboriginal objects would be avoided where possible, and salvage excavation in accordance with the Aboriginal Cultural Heritage Assessment Report (ACHAR) would be undertaken to mitigate approved impacts (Section 5.3).

3.2 Minister's Conditions of Approval

The CoA relevant to this Plan are listed in Table 3-1 below. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 3-1: Conditions of Approval relevant to the HMP

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
A2	The CSSI must be carried out in accordance with all procedures, commitments, preventative actions, performance criteria and mitigation measures set out in the EIS as amended by the Submissions Report (incorporating Preferred Infrastructure Report) unless otherwise specified in, or required under, this approval.	This plan Table 5-1, Table 5-2 Section 5.3	Preparation of this plan in relation to Aboriginal and non-Aboriginal heritage	All
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken in consultation with identified parties, evidence of the consultation undertaken must be submitted to the Secretary with the document or monitoring program or review. The evidence must include: (a) documentation of the engagement with the party(ies) identified in the relevant condition of approval before submitting the document for approval; (b) log of the points of engagement or attempted engagement with the identified party(ies) and a summary of the issues raised by the identified party(ies); (c) documentation of any follow-up with the identified party(ies), where feedback has not been provided, to	This plan	This plan was reviewed by Heritage NSW and CoPC prior to the commencement of construction and following updates to incorporate the Robin Thomas Reserve playing fields reconfiguration.	H26

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p>confirm that the identified party(ies) has none or has failed to provide feedback after repeated requests;</p> <p>(d) outline of the issues raised by the identified party(ies) and how they have been addressed, including evidence that the party(ies) is satisfied the issues have been addressed; and</p> <p>(e) where there are outstanding issues raised by the identified party(ies) that have not been adopted, the reasons why they have not been/could not be adopted must be provided, including evidence of consultation with the relevant party(ies).</p>			
A23	<p>For the duration of the works until after the commencement of operation, or as agreed with the Secretary, the approved ER must:</p> <p>(a) receive and respond to communication from the Secretary in relation to the environmental performance of the CSSI;</p> <p>(b) consider and inform the Secretary on matters specified in the terms of this approval;</p> <p>(c) consider and recommend to the Proponent any improvements that may be made to work practices to avoid or minimise adverse impact to the environment and to the community;</p> <p>(d) review documents identified in Table 2 and any other documents that are identified by the Secretary, for consistency, in the opinion of the ER, with requirements in or under this approval and if so:</p>	This plan	The contractor would facilitate the ER review of the implementation of the HMP throughout construction and as needed.	H27

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p>i) make a written statement to this effect before submission of such documents to the Secretary (if those documents are required to be approved by the Secretary); or</p> <p>ii) make a written statement to this effect before the implementation of such documents (if those documents are required to be submitted to the Secretary for information or are not required to be submitted to the Secretary);</p> <p>(e) regularly monitor the implementation of the documents listed in Table 2 to ensure implementation is being carried out in accordance with the document and the terms of this approval;</p> <p>(f) as may be requested by the Secretary, help plan, attend or undertake audits of the</p> <p>CSSI commissioned by the Department including scoping audits, programming audits, briefings and site visits, but not independent environmental audits required under Condition A41 of this approval;</p> <p>(g) as may be requested by the Secretary, assist the Department in the resolution of community complaints;</p> <p>(h) assess and, if acceptable, approve the impacts of minor ancillary facilities comprising lunch sheds, office sheds and portable toilet facilities or other ancillary facilities determined by the ER to have minor environmental impact; and</p> <p>(i) prepare and submit to the Secretary and other relevant regulatory agencies, for information, an Environmental Representative Monthly Report providing the information</p>			

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p>set out in the Environmental Representative Protocol under the heading</p> <p>“Environmental Representative Monthly Reports.” The Environmental Representative Monthly Report must be submitted within seven days following the end of each month for the duration of the ER’s engagement for the CSSI.</p>			
C3	<p>The following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan and be consistent with the CEMP referred to in Condition C1: Required CEMP Sub-plan Relevant government agencies to be consulted for each CEMP Sub-plan Secretary Approval/ Information</p> <p>(a) Traffic, transport and access Relevant Council(s), Roads and Maritime Services, Emergency Services Information (b) Noise and vibration Relevant Council(s), EPA, NSW Health Approval (c) Flood Management Relevant Council(s), OEH, Sydney Water Information (d) Heritage Relevant Council(s), OEH Approval (e) Flora and Fauna Biodiversity Relevant Council(s), OEH Information</p>	This plan	Preparation of this plan in relation to Aboriginal and non-Aboriginal heritage	H2, H3, H13

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
C4	<p>The CEMP Sub-plans must state how:</p> <p>(a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;</p> <p>(b) the mitigation measures identified in the documents listed in Condition A1 will be implemented;</p> <p>(c) the relevant terms of this approval will be complied with; and</p> <p>(d) issues requiring management during construction, as identified through ongoing environmental risk analysis, will be managed.</p>	This plan, Section 3 Table 3-1, Table 3-2, Table 3-3	This plan includes the requirements of C4 in Table 3-1, Table 3-2 and Table 3-3 which would be implemented by the contractor	All
C5	The CEMP Sub-plans must be developed in consultation with relevant government agencies (including Relevant Council(s)). Details of all information requested by an agency to be included in a CEMP Sub-plan as a result of consultation, including all copies of correspondence from those agencies, must be provided to the Secretary with the relevant CEMP Sub-plan.	This plan, Section 4, Appendix B	Consultation with NSW Heritage and CoPC has been completed for the road network changes and comments considered in this plan. Further consultation on playing fields reconfiguration to be carried out prior to commencement.	H26
E42	Construction Noise and Vibration Impact Statements must be prepared and implemented for each construction site before construction noise and vibration impacts commence and include specific mitigation measures identified through consultation with affected sensitive receivers. Each Construction Noise and Vibration Impact Statement will supplement the Noise and Vibration Management Sub-Plan and must specifically address	Additional details on the procedure for developing the CNVIS is provided in Section 8.2 of the CNVMP.	<p>The construction noise and vibration impact statement will be prepared for each work area in accordance with the CoA E42.</p> <p>CNVIS for the Enabling works are prepared in accordance with the</p>	H18

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p>each of the major construction sites and must include but not be limited to:</p> <p>(a) a description of the proposed activities;</p> <p>(b) predicted noise and vibration levels based on background noise levels;</p> <p>(c) examination of alternative methods of construction that would potentially reduce noise and vibration if the potential noise and vibration exceeds the relevant criteria;</p> <p>(d) description and commitment to work practices which limit noise and vibration;</p> <p>(e) description of specific noise and vibration mitigation treatments and time restrictions, including respite periods, duration, and frequency;</p> <p>(f) justification for any activities to be undertaken outside the specified construction hours defined in Conditions E21 and E22;</p> <p>(g) internal noise audit systems including recording of daily hours of construction, progressive impact assessments as work proceeds, conducting informal checks by the AA, providing active and communication links to Council and surrounding residents and sensitive receivers;</p> <p>(h) assessment of potential noise from the proposed construction methods including noise from construction vehicles and noise impacts from required traffic diversions;</p>		<p>provisions of the NSW Interim Construction Noise Guideline – (ICNG), the TfNSW Construction Noise & Vibration Strategy (Ver 4, 2018) – (CNVS) and relevant Conditions of Approval and including the mitigation management measures.</p> <p>Vibration testing is to be undertaken before and during vibration generating activities. Monitoring to be developed in accordance with Appendix C of the NVMP and in consideration of the requirements of a heritage specialist.</p>	

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p>(i) community consultation and notification;</p> <p>(j) all reasonable and feasible measures including adopting the least noisy available construction methods, systems and equipment;</p> <p>(k) additional noise and vibration mitigation measures as negotiated with affected residents and other sensitive receivers.</p> <p><i>Note: Existing noise levels, pre construction noise levels, or the like for the purposes of identifying rating background noise levels, noise management levels and construction noise impacts are noise levels that do not include any other construction related noise.</i></p>			
E43	<p>The Proponent must conduct vibration testing before and during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In the event that the vibration testing and monitoring shows that the preferred dose values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures.</p>	Noise and Vibration Management Plan	<p>Vibration testing to be undertaken in accordance with the CNVMP. Vibration testing to be undertaken before and during vibration generating activities.</p> <p>Monitoring to be developed in accordance with Appendix C of the NVMP and in consideration of the requirements of a heritage specialist.</p>	H18

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
E44	The Proponent must seek the advice of a heritage specialist on methods and locations for installing equipment used for vibration, movement and noise monitoring of heritage-listed structures.	Noise and Vibration Management Plan	It is understood that the only heritage-listed structures that may be affected by vibration as a result of enabling works are the Convict Drain (George Street) and Parramatta Correctional Centre. If monitoring equipment is required on significant fabric the project heritage consultant would advise in the form of a written memo or email advice.	H18
E60	The Proponent must not destroy, modify or otherwise physically affect heritage items (including Aboriginal objects), outside of the CSSI footprint.	This Plan ECM in CEMP Appendix A6	No works would occur outside areas approved for impacts. If unexpected Aboriginal objects are located the TfNSW Unexpected Heritage Finds Guideline would be followed.	H1, H8
E61	Nothing in this approval permits the Proponent to harm, modify, or otherwise impact human remains uncovered during the construction and operation of the CSSI.	This Plan ECM in CEMP Appendix A6 Section 7.6	Section 7.6 outlines the procedure for responding to finds of potential human remains and states that remains cannot be impacted under the Project.	H1, H23

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
E62	<p>An Unexpected Heritage Finds Procedure must be:</p> <p>(a) prepared to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or OEH; and (b) certified by a suitably qualified and experienced archaeologist or heritage specialist.</p> <p>The Procedure must be included in the Heritage Management Sub-plan required by Condition C3.</p> <p><i>Note: Human remains that are found unexpectedly during works are under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.</i></p>	<p>Transport for NSW Unexpected Heritage Finds Guideline (Appendix A)</p> <p>Section 7.6</p>	<p>Transport for NSW Unexpected Heritage Finds Guideline has been appended to this plan (Appendix A) and is considered appropriate by the nominated heritage specialists for the enabling works.</p>	H23
E63	<p>The Unexpected Heritage Finds Procedure, as submitted to the Secretary, must be implemented for the duration of construction and during operational maintenance works</p>	<p>Transport for NSW Unexpected Heritage Finds Guideline (Appendix A)</p> <p>Section 7.6</p>	<p>The Transport for NSW Unexpected Heritage Finds Guideline has been appended to this plan (Appendix A) and will be referred to in the CEMP and induction documents</p>	H23
E64	<p>The Proponent must prepare a Heritage Interpretation Strategy before work (excluding archaeological excavation required under Condition E70 and E71) which impacts on the items identified below commence which identifies and interprets the heritage values and stories of Aboriginal and non-Aboriginal heritage items, archaeology and heritage conservation areas associated with the CSSI. The Heritage Interpretation Strategy must be prepared and implemented in consultation with OEH and the Heritage Council of NSW (or its delegate). The</p>	<p>Heritage Interpretation Strategy required for:</p> <p>vi) Queen's Wharf Reserve and stone wall and potential archaeological site; all other items out of impact area for the enabling works project</p>	<p>A Heritage Interpretation Strategy has been prepared for landscaping works at Queens Wharf Reserve</p> <p>Heritage interpretation at Robin Thomas Reserve would be delivered as part of the wider PLR project, in</p>	H6

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p>Heritage Interpretation Strategy must be submitted to the Secretary for information and include, but not be limited to a discussion of the key interpretive themes, stories, archaeological results, and messages proposed to interpret the history and significance of affected heritage items and heritage conservation areas including:</p> <ul style="list-style-type: none"> (a) Parramatta Female Factory and Institutions Precinct within the Cumberland District Hospital Group (b) Lennox Bridge; (c) St Patrick's Roman Catholic Cemetery; (d) The Convict Lumberyard (Arthur Phillip High School site) (e) Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve); (f) Queen's Wharf Reserve and stone wall and potential archaeological site; (g) Dundas Railway Station Group; (h) Prince Alfred Square (and potential archaeological site); (i) Royal Oak Hotel and stables (and potential archaeological site); (j) Clyde Carlingford Rail Bridge abutments (Northern); and (k) Clyde Carlingford Rail Bridge abutments (Southern) <p>E64A Within six months of the completion of any archaeological excavation and archival recording, the Heritage Interpretation Strategy in Condition E64 must</p>	<p>Note that impacts within Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) are limited to footpath installation around 10 x 1 m at the intersection of George and Harris Street. This impact would be too minor to trigger E64 as it would have minor and localised impacts to heritage significance and would not offer meaningful opportunity for interpretation. It would not impact within the current fence line of the reserve and would not impact fabric. The impacts would be managed archaeologically. A Heritage Interpretation Strategy including the reserve would be prepared for later project stages.</p>	<p>accordance with the PLR Heritage Interpretation Strategy (GML, 2020) and RTR Masterplan works (delivered by CoPC). No specific heritage interpretation is to be provided as part of the playing field reconfiguration works.</p>	

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p>be updated to include any additional heritage items identified and their interpretation.</p> <p><i>Note: Archaeological excavation and archival recording includes but is not limited to that required by Condition E70 to E79 inclusive.</i></p>			
E65	Identified impacts to heritage items and heritage conservation areas must be minimised through both detailed design and construction in consultation with the Heritage Council (or its delegate). The measures to manage this must be detailed in the Heritage Management SubPlan required by Condition C3.	This plan Section 3.1.4	Detailed design for enabling works has accounted for minimising heritage impacts.	H21
E66	The Proponent must not destroy, modify or otherwise physically affect any structures within the Cumberland District Hospital Group or the curtilage of the Parramatta Female Factory and Institutions Precinct, except as identified in the documents listed in Condition A1.	Not applicable to enabling works as outside impact area for the enabling works project	Not applicable to enabling works as outside impact area for the enabling works project.	n/a
E67	The proponent must prepare an analysis of alternatives to demolition of CHIP Hostel No. 1 before the commencement of construction in Cumberland Hospital (East Campus) or any work in the Fleet/Factory street intersection which would preclude consequential rail realignment if the CHIP Hostel No. 1 were retained. The analysis must be submitted to the Secretary stating a preferred option for approval. If demolition of the CHIP Hostel No. 1 is proposed, justification must be provided which considers the following guidelines included in the <i>Parramatta North Urban Transformation Consolidated</i>	Not applicable to enabling works as outside impact area for the enabling works project	Not applicable to enabling works as outside impact area for the enabling works project.	n/a

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p><i>Conservation Management Plan</i> (UrbanGrowth NSW, 2017):</p> <p>(a) that there is no prudent or feasible alternative;</p> <p>(b) demolition would result in no or minimal impacts on the heritage significance of the place or the wider Parramatta North Historic Sites; and</p> <p>(c) demolition would be of an overall benefit to the heritage significance of the place and the wider Parramatta North Historic Sites.</p> <p>Nothing in this approval permits the demolition of the CHIP Hostel No. 1 without the written approval of the Secretary.</p>			
E68	<p>The detailed design of the CSSI must have regard to the following heritage items to ensure that the design respects and responds to the heritage value of the items:</p> <p>(a) Lennox Bridge;</p> <p>(b) Cumberland District Hospital Group;</p> <p>(c) St Patrick's Roman Catholic Cemetery;</p> <p>(d) Prince Alfred Square (and potential archaeological site);</p> <p>(e) Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve);</p> <p>(f) Queen's Wharf Reserve and stone wall and potential archaeological site and</p> <p>(g) Dundas Railway Station Group.</p>	<p>Required for</p> <p>vi) Queen's Wharf Reserve and stone wall and potential archaeological site;</p> <p>All other items outside the impact area for the enabling works project</p> <p>Note that impacts within Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) are limited to footpath installation around 10 x 1 m at the intersection</p>	<p>Landscape designs have accounted for heritage values. The values of the reserve are likely to be increased with improved public access and amenity.</p> <p>The design of the playing fields reconfiguration within Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) has sought to avoid ground disturbance. Excavation would be minimised to the greatest extent possible while also achieving the project objectives of</p>	H21

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
		of George and Harris Street and limited to within areas impacted by the main project.	providing the required sports facilities and infrastructure.	
E69	Before installing acoustic treatment at any heritage item identified in the documents listed in Condition A1 the advice of a suitably qualified heritage architect or heritage engineer with specific experience in built heritage must be obtained and implemented to ensure any such work does not have an adverse impact on the heritage significance of the item.	No items would require acoustic treatment as exceedances would not occur as outlined in the Noise and Vibration Management Plan.	No items would require acoustic treatment as exceedances would not occur as outlined in the Noise and Vibration Management Plan.	n/a
E70	<p>The Proponent must prepare a Heritage Archival Recording and Salvage Report, including photographic recording of heritage items which have been identified for demolition or modification in the documents referred to in Condition A1 and outline the salvage to be undertaken from these items.</p> <p>Archival recording must be undertaken by a suitably qualified heritage specialist and prepared in accordance with NSW Heritage Office's <i>How to Prepare Archival Records of Heritage Items</i> (1998) and <i>Photographic Recording of Heritage Items Using Film or Digital Capture</i> (2006).</p> <p>Within 12 months of completing the archival recording, or as otherwise agreed with the Secretary, the Proponent must submit the Heritage Archival Recording and Salvage Report to the Department, the OEH, Heritage Council of NSW, Relevant Council(s), relevant local</p>	<p>The following heritage items would have works within their boundaries that would result in modifications to the item:</p> <p>Queen's Wharf Reserve and stone wall and potential archaeological site</p> <p>Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve)</p>	<p>Archival recording would be undertaken within the following heritage listed curtilages where items would be modified (that is have works within their curtilage)</p> <p>Queen's Wharf Reserve and stone wall and potential archaeological site</p> <p>Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve)</p> <p>Kings School (former) / Marsden Rehabilitation Centre</p>	H7

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	libraries and local historical societies in the local government area.	Kings School (former) / Marsden Rehabilitation Centre Parramatta Correctional centre	Parramatta Correctional centre	
E71	<p>The Proponent must salvage material from heritage items identified in Condition E70. Following archival recording, the Proponent must identify options for sympathetic reuse of salvaged material (including integrated heritage displays) on the project or for other options for repository, reuse and display. Suitable repository location(s) must be established in consultation with Relevant Council(s) (or Registered Aboriginal Parties, where relevant). For any State Heritage-listed items or elements suitable for salvage, suitable repository location(s) must be determined in consultation with the Heritage Division of the OEH.</p> <p>Any residual items and materials (where appropriate) are to be made available, through a process to be developed by the Proponent in consultation with the relevant council(s), to landowners within the locality from where the material originated.</p>	Not applicable to enabling works as no items with heritage value would be demolished by the enabling works project. Note that stone kerbing to be reused adjacent to Parramatta Correctional Centre is not within the heritage items curtilage so would not trigger this condition	Not applicable to enabling works as no items with heritage value would be demolished by the enabling works project.	n/a

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
E72	<p>Before works within Zones 1 and 2 Historical Archaeological Management Units (HAMU), the Proponent must engage a suitably qualified archaeologist whose experience complies with the NSW Heritage Council's <i>Criteria for Assessment of Excavation Directors</i> (July, 2011) (referred to as the Excavation Director) to oversee and advise on matters associated with historical archaeology (i.e. non-Aboriginal) and to prepare a Historical Archaeological Research Design and Excavation Methodology.</p> <p>Where the unexpected heritage finds procedure required by Condition E62 is triggered in a zone 3 location, the Excavation Director must oversee its implementation.</p>	An Archaeological Research Design for the enabling works project has been prepared as a separate document.	<p>For the road modifications and associated works, the Archaeological Research Design nominated Dr Iain Stuart as Primary Excavation Director.</p> <p>For the Robin Thomas Reserve playing fields reconfiguration works, the Archaeological Work Method Statement nominates Anita Yousif and/or Graham Wilson as Primary Excavation Director.</p>	H4, H9, H19
E73	<p>The Historical Archaeological Research Design and Excavation Methodology must be submitted to the Heritage Council of NSW (or its delegate) for review and comment before finalisation. The Historical Archaeological Research Design and Excavation Methodology must:</p> <p>(a) be consistent with NSW Heritage Council Guidelines including:</p> <ul style="list-style-type: none"> i) Archaeological Assessments (1996); ii) Assessing Significance for Historical Archaeological Sites and Relics (2009), iii) Skeletal Remains (1998), and iv) Historical Archaeological Code of Practice (2009); 	An Archaeological Research Design for the enabling works project has been prepared as a separate document.	<p>The Archaeological Research Design has been provided to NSW Heritage as a delegate of the NSW Heritage Council for review.</p> <p>Works to reconfigure the playing fields at Robin Thomas Reserve are to be carried out in accordance with the Archaeological Work Method Statement (Extent Heritage, 2020) which has been provided to Heritage NSW for review and comment.</p>	H4, H19

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
	<p>(b) include provision for early physical investigation of areas of impact identified as likely to contain State significant archaeology in the research design to inform detailed design in these areas to avoid State significant archaeology. This must include, but not be limited to:</p> <ul style="list-style-type: none"> i) St Patrick's Roman Catholic Cemetery; ii) Ancient Aboriginal and Early Colonial Landscape / Robin Thomas Reserve; and iii) The Parramatta Town Drains (where these alignments are unclear); <p>(c) provide for the detailed analysis of any archaeological relics discovered during the investigations;</p> <p>(d) include management options for discovered archaeological relics (including options for avoidance, salvage, and display or interpretation);</p> <p>(e) include procedures for notifying the Heritage Council of NSW (or its delegate) and Secretary of any relic as required under s146 of the Heritage Act 1977; and</p> <p>(f) if the findings of the investigations are significant, provide for the preparation and implementation of a heritage interpretation strategy.</p>		<p>The requirements of E73 are addressed in detail in the Archaeological Research Design and Archaeological Work Method Statement.</p>	

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
E74	Where excavation works are required in the vicinity of potential archaeological sites, the Excavation Director must be present to advise on archaeological issues and oversee excavation works. The Excavation Director must be given the authority to advise on the duration and extent of oversight required during excavation.	An Archaeological Research Design for the enabling works project has been prepared as a separate document.	The Archaeological Research Design and Archaeological Work Method Statement outlines the methodologies for archaeological management including Excavation Director participation.	H5
E75	In the event that non-Aboriginal or post-contact archaeological relics are discovered, the Proponent must prepare an Archaeological Excavation Report containing the findings of any excavations, including artefact analysis and the identification of a final repository of any relics. The report must be submitted to the Secretary, for information, within 12 months of completing all archaeological investigations, unless otherwise agreed with the Secretary. The Archaeological Excavation Report must also be submitted to the NSW Heritage Council, the local library and the local Historical Society in the local government area. A copy of the Archaeological Excavation Report must be provided with the relics.	An Archaeological Research Design for the enabling works project has been prepared as a separate document.	The Archaeological Research Design outlines requirements for reporting. In the event that non-Aboriginal or post-contact archaeological relics are discovered, an Archaeological Excavation Report containing the findings of any excavations, including artefact analysis and the identification of a final repository of any relics will be prepared.	H14, H16

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
E76	The Proponent must not harm, modify or otherwise impact Aboriginal objects associated with the CSSI except as authorised by this approval.	ECM – CEMP Appendix A6 This plan section 3.1.4	No works would occur outside areas approved for impacts. If unexpected Aboriginal objects are located the TfNSW Unexpected Heritage Finds Guideline would be followed.	H1
E77	Where previously unidentified Aboriginal objects are discovered during construction of the CSSI, all work should stop in the affected area and a suitably qualified and experienced Aboriginal heritage expert should be contacted to provide specialist heritage advice. The measures to consider and manage this process must be specified in the Heritage Management Sub-Plan required by Condition C3 and, where relevant, include registration in the OEH's Aboriginal Heritage Information Management System (AHIMS) register.	TfNSW Unexpected Heritage Finds Guideline	The TfNSW Unexpected Heritage Finds Guideline would be followed during enabling works.	H23, H20

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
E78	<p>The Excavation Director must oversee and advise on work in the following locations:</p> <p>(a) Cumberland Hospital (East Campus);</p> <p>(b) Harris Street Footpath / Robin Thomas Reserve;</p> <p>(c) PLR AFT 2; and</p> <p>(d) Sydney Turf Club Carpark.</p> <p>Note: Work in the locations referenced in Condition E78 (a)-(d) that impacts Aboriginal archaeological sites is construction as defined in this approval. Any mitigation and salvage measures required to manage or mitigate impacts must be specified in the Heritage Management Sub-plan required by Condition C3.</p>	<p>(a) and (c) and (d) not applicable to enabling works as they are outside the impact area for the enabling works project. See Figure 8-8</p> <p>Salvage excavation methodology to be prepared prior to impacts in accordance with the CHAR for the Harris Street footpath and PLR PAD2.</p>	<p>Salvage excavation methodology to be prepared prior to impacts in accordance with the CHAR for the Harris Street footpath and PLR PAD2.</p> <p>The Excavation Director must oversee and advise on work in Robin Thomas Reserve as described in the Archaeological Work Method Statement.</p>	H15
E79	Any Aboriginal objects discovered must be identified in the Heritage Interpretation Strategy required by Condition E64 and, where relevant, include registration in the OEH's Aboriginal Heritage Information Management System (AHIMS) register.	This Plan - H20.	Any information on Aboriginal objects discovered would be input into the Heritage Interpretation Strategy and where relevant, include registration in the Aboriginal Heritage Information Management System (AHIMS) register.	H5

CoA No.	Condition Requirements	Document Reference	How addressed?	Control Measure
E80	The Proponent must design and construct the CSSI in a manner that reduces visual and heritage setting impacts and ensures consolidation and rationalisation of kerbside infrastructure to avoid visual clutter.	This plan Section 3.1.4	<p>Based on the scope of the works (which are service relocations, road widening and playing field reconfiguration), there are minimal impacts to the heritage setting. Landscape designs have accounted for heritage values.</p> <p>Outside the Parramatta Correctional Centre curtilage kerbing will be preserved and reused and two mature trees at the Barney Street intersection would be retained and managed through compliance with CoAs E105 and E106 in conjunction with the Independent Arborist.</p>	H21, H28

3.3 Mitigation Measures and Revised Environmental Mitigation and Management Measures

Relevant mitigation measures as set out in the EIS and REMMs are listed in Table 3-2 below. This includes references to required outcomes, the timing of when the commitment applies relevant documents or sections of the environmental assessment influencing the outcome and implementation.

Table 3-2: Environmental mitigation and management measures relevant to this HMP

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
Potential impacts to significant archaeology	HE-1	<p>Three archaeological management zones have been developed for the project to manage archaeology with varying levels of significance throughout the project corridor. The general mitigation and management measures to be applied to each management zone are outlined below. The precinct-specific measures identify which management zone(s) measures apply to each archaeological management unit (HAMU) within a precinct.</p> <p>» The following mitigation and management measures would be implemented for Zone 1 – State significant historical archaeology:</p> <ul style="list-style-type: none"> • A heritage induction would be carried out for all contractors, to be developed as part of the heritage management plan. • An Archaeological Research Design (ARD) would be prepared by a qualified archaeologist in accordance with Heritage Division requirements, 	Prior to, during and after enabling works	Table 6-1 Archaeological Research Design provided as a separate document	The Archaeological Research Design and Archaeological Work Method Statement outlines the methodologies for archaeological management including Excavation Director supervision.	H4, H5, H12, H19, H23

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>prior to the commencement of works. The ARD would outline a methodology for the investigation, monitoring and/or salvage of archaeological resources.</p> <ul style="list-style-type: none"> • An excavation director who meets the NSW Heritage Branch requirements for directing State significant archaeological investigations must manage the works. • Impact or removal is generally unacceptable for State significant archaeology identified as being highly intact and if proposed should be justified appropriately by the excavation director. • In situ retention of archaeological remains would be considered in accordance with the ARD as required. • The NSW Heritage Division would be notified should intact State significant relics be unexpectedly identified. • Public engagement, such as open days or media releases, would be considered where feasible to inform the public of the archaeological findings and proposed management measures. • Post-excavation reporting, artefact analysis and relics conservation 				

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>would be carried out if relics are identified.</p> <p>» The following mitigation and management measures would be implemented for Zone 2 – Locally significant historical archaeology:</p> <ul style="list-style-type: none"> • A heritage induction would be carried out for all contractors, to be developed as part of the heritage management plan. • An ARD would be prepared by a qualified archaeologist in accordance with Heritage Division requirements, prior to the commencement of works. The ARD would outline a methodology for the investigation, monitoring and/or salvage of archaeological resources. • Archaeological monitoring would be carried out by a suitably qualified excavation director, followed by open area salvage (if required). • Impact or removal is likely to be considered acceptable if appropriate mitigation and management measures are followed as outlined in the ARD. • Public engagement, such as open days, would be considered where feasible to inform the public of the 				

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>archaeological findings and proposed management measures.</p> <ul style="list-style-type: none"> • Post-excavation reporting, artefact analysis and relics conservation would be carried out if relics are identified. <p>» The following mitigation and management measures would be implemented for Zone 3 – Nil-low archaeological resource present:</p> <ul style="list-style-type: none"> • A heritage induction would be carried out for all contractors, to be developed as part of the heritage management plan. • Works are unlikely to impact on significant archaeological resources; however, an archaeologist would be engaged should any unexpected potential archaeological remains be encountered in accordance with an unexpected finds procedure. 				
Potential impacts to significant archaeology	HE-2	<p>Archaeological salvage excavation would not be carried out prior to the preparation of an archaeological research design. For this project, it is likely that the archaeological research designs would recommend archaeological salvage in the following instances:</p>	During enabling works	Table 6-1 Archaeological Research Design provided as a separate document	The Archaeological Research Design and Archaeological Work Method Statement outlines the methodologies for archaeological management	H11

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>» Where detailed archival research and understanding of modern disturbance (such as information to show the extent of previous sub-surface excavation, for example plans or drawings of a building's basement level(s)) needs to be supplemented with more site-specific (on-ground) information to better define the archaeological potential and/or significance of the site.</p> <p>» In areas where access for excavation activities is not restricted by buildings or other structures.</p> <p>Salvage excavation would generally be recommended in areas where there is a moderate to high potential for relics of local or State significance to be present. It would involve locating and recording any relics found prior to their removal by construction. Staged salvage excavation could only <u>would</u> be carried out after project approval.</p>			including Excavation Director supervision.	

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
Potential impacts to significant archaeology	HE-3	<p>Archaeological monitoring (i.e. the monitoring of construction excavation activities by a qualified archaeologist) would be carried out as required in accordance with by the archaeological research design to record any significant remains uncovered during excavation. Examples of where archaeological monitoring may be required include:</p> <ul style="list-style-type: none"> » Low impact construction activities (such as narrow trenching) in areas of moderate to high potential for local or State significant relics. » Areas with low potential to contain remains of State significance. 	During enabling works	Table 6-1 Archaeological Research Design provided as a separate document	The Archaeological Research Design and Archaeological Work Method Statement outlines the methodologies for archaeological management including Excavation Director supervision.	H4, H10, H19
Potential impacts to significant archaeology	HE-4	<p>As detailed design progresses, opportunities to avoid or further minimise impacts to identified archaeological sites of State and local significance would be considered and documented in the design report.</p> <p>The project design would be sympathetic to identified potential archaeological resources items (i.e. in archaeological management Zones 1 and 2) and, where reasonable and feasible, minimise impacts to those resources. The detailed design for sections of the project that would impact on known archaeological resources would be developed in</p>	During detailed design	Table 6-1 Archaeological Research Design provided as a separate document	The Archaeological Research Design and Archaeological Work Method Statement outlines methodologies for archaeological management including test excavation. Results of test excavation and monitoring would be reviewed when considering avoidance of any	H4

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		consultation with a qualified archaeologist and relevant stakeholders as advised (e.g. the OEH and City of Parramatta Council).			significant archaeological remains located.	
n/a	HE-5	An Exhumation Policy and Guideline would be prepared prior to construction as part of the heritage management plan, and would inform the unexpected finds procedure in relation to the unexpected discovery of human remains. It would be developed in accordance with the Guidelines for Management of Human Skeletal Remains (NSW Heritage Office, 1998).	Not applicable to enabling works as areas identified as having potential for human remains associated with the cemetery would not be impacted.	n/a	The TfNSW Unexpected Finds Guideline would be sufficient to manage the risk of discovery of human remains during these works.	H23
Potential impacts to significant archaeology	HE-6	<p>The mitigation and management measures for Zone 1 – State significant historical archaeology would apply to the following HAMU:</p> <ul style="list-style-type: none"> » HAMU 4 – Cumberland Hospital (east). » HAMU 8 – Roman Catholic Cemetery. » HAMU 13 – Prince Alfred Square. » HAMU 18 – The Town Drain – Macquarie Street and Barrack Lane. » HAMU 20 – Robin Thomas. » HAMU 21 – Commissariat and barracks (George Street east). 	During enabling works	Table 6-1 Archaeological Research Design provided as a separate document	The Archaeological Research Design and Archaeological Work Method Statement outlines the methodologies for archaeological management.	H10, H11

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>» HAMU 31 – Grave of Eliner Magee and Child.</p> <p>The mitigation and management measures for Zone 2 – Locally significant historical archaeology would apply to the following HAMUs:</p> <p>» HAMU 1 – Eastern side of Hawkesbury Road including the road corridor.</p> <p>» HAMU 2 – Western side of Hawkesbury Road including the road corridor.</p> <p>» HAMU 3 – Cumberland Hospital (west).</p> <p>» HAMU 5 – Factory Street.</p> <p>» HAMU 7 – Church Street.</p> <p>» HAMU 9 – Parramatta North Public School.</p> <p>» HAMU 10 – Church Street west (between Fennell and Harold Street).</p> <p>» HAMU 11 – Royal Oak Hotel.</p> <p>» HAMU 12 – Parramatta North off-corridor works.</p> <p>» HAMU 14 – Phillip Street.</p> <p>» HAMU 15 – George Street.</p> <p>HAMU 16 – Macquarie Street.</p>				

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		» HAMU 17 – Horwood Place. » HAMU 19 – Barrack Lane. » HAMU 22 – Smith Street. » HAMU 23 – Charles Street. » HAMU 24 – Parramatta CBD off-corridor works. » HAMU 25 – Tramway Avenue. » HAMU 27 – Carlingford Railway Line. » HAMU 28 – Sandown Line. » HAMU 29 – Rosehill Gardens Racecourse. » HAMU 32 – Female Orphan School. » HAMU 33 – The Ponds and Rydalmere Station. » HAMU 34 – Dundas Railway Station. » HAMU 35 – Carlingford Stock Feeds. The mitigation and management measures for Zone 3 – Nil-low archaeological resource present would apply to the following HAMUs: » HAMU 6 – Westmead off-corridor works. » HAMU 25 – The former Wunderlich Tile Factory.				

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		» HAMU 26 – James Ruse Drive.				
n/a	HE-7	<p>In relation to HAMU 4 – Cumberland Hospital (east), the following mitigation and management measures would be implemented:</p> <p>» Thorough archaeological investigation of potential archaeological remains associated with Mrs Bett’s House and the Lunatic Asylum would be required prior to the proposed excavation works commencing in these areas as required in accordance with the Zone 1 archaeological management measures.</p> <p>» Alternative construction methods would be identified and considered for the Grose Street Drain (local significance). Should impact to a section of the drain be unavoidable, archaeological investigation of this area would be carried out prior to excavation works.</p>	Not applicable to enabling works as outside area of enabling works project impact	N/a	Not applicable to enabling works as outside area of enabling works project impact.	n/a
n/a	HE-8	In relation to HAMU 18 – The Town Drain – Macquarie Street and Barrack Lane, alternative construction methods would be investigated and considered for works in the location of the town drain in George Street in order to retain this section of the drain where feasible.	During enabling works	Table 6-1	Surface works only at the location of the drain. Vibration monitoring would be undertaken.	H18

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
No impacts	HE-9	<p>Appropriate heritage interpretation would be incorporated into the detailed design of the project and would include results of archaeological investigations. An interpretation plan would be prepared for the project in accordance with the NSW Heritage Manual, the NSW Heritage Office's Interpreting Heritage Places and Items: Guidelines (August 2005), and the NSW Heritage Council's Heritage Interpretation Policy.</p> <p>This would apply across the project, in particular in relation to the following items:</p> <ul style="list-style-type: none"> » Cumberland District Hospital Precinct. » Royal Oak Hotel and Stables. » Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve). » Camellia Underbridge Abutments (south and north). » Dundas Railway Station Group. » Carlingford Stock Feeds. 	<p>Not applicable to enabling works.</p> <p>Note that impacts within Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) are limited to footpath installation around 10 x 1 m at the intersection of George and Harris Street. This impact would be too minor to trigger HE-9 as it would have minor and localised impacts to heritage significance and would not offer meaningful opportunity for interpretation. It would not impact within the current fence line of the reserve and would not impact fabric. The impacts would be managed archaeologically. A</p>	Table 6-1	Significant impacts to the curtilages of the listed items will not occur as part of the enabling works project although a heritage interpretation strategy has been prepared for Queens Wharf Reserve.	H5

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
			Heritage Interpretation Strategy including the reserve would be prepared for later project stages.			
n/a	HE-10	<p>The platforms, stops and substations would be designed to remain non-obtrusive with limited bulk to minimise visual impacts on heritage items in the vicinity to respect the historical landscape of the project.</p> <p>Form, fabric and palette would respond to place and context, and respect the heritage values of the area. Where possible, the recommendations of the interpretation plan would be incorporated into design.</p> <p>Ancillary works required by the project related to power supply, drainage facilities, railway tracks, OHW and any other works would be designed to minimise impacts on heritage items and areas of archaeological potential as much as feasible within the context of the project.</p>	Not applicable to enabling works as outside the area of enabling works project impact	n/a	Not applicable to enabling works as outside the area of enabling works project impact.	n/a

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>This would apply across the project, in particular, with respect to the following heritage items:</p> <ul style="list-style-type: none"> » Western Sydney University. » Cumberland District Hospital Precinct. » Alfred Square (and potential archaeological site). » Lennox Bridge. » Anthony Malouf and Co. » St Peter's Uniting Church and studio theatre. » Shop (and potential archaeological site) (item I663). » Shop (item I662). » Shop (item I661). » Parramatta House (and potential archaeological site). Westpac Bank. » Warders Cottages. » Convict Barracks Wall. » Dundas Railway Station Group. » Carlingford Stock Feeds 				

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
n/a	HE-11	<p>During detailed design and construction planning, opportunities to minimise impacts on the Cumberland District Hospital Precinct would be explored including:</p> <ul style="list-style-type: none"> » Considering a wire-free design in this area to reduce visual impacts. » Design of the Parramatta North Bridge to minimise visual impacts and retain significant views and vistas to the nineteenth century heritage landscape. A high-quality design would be prepared in consultation with an experience heritage architect. » The light rail stop would be designed to minimise visual impacts. Appropriate tree plantings would be included in the design to soften the relationship of the light rail stop in the existing environment. » Design of roadworks would seek to prioritise the retention and protection of kerbing. » Impacts significant trees and plantings would be avoided where possible. <p>The Heritage Division (as delegate of the NSW Heritage Council) would be consulted during detailed design</p>	Not applicable to enabling works as outside the area of enabling works project impact.	n/a	Not applicable to enabling works as outside the area of enabling works project impact.	n/a

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
n/a	HE-12	<p>An appropriately qualified and experienced heritage architect would provide independent review periodically throughout detailed design in relation to the following heritage items:</p> <ul style="list-style-type: none"> » Cumberland District Hospital Precinct. » Alfred Square (and potential archaeological site). » Lennox Bridge. » Dundas Railway Station Group. <p>The detailed design report(s) prepared for the project would document how the recommendations of the heritage architect / engineer have been considered and actioned.</p>	Not applicable to enabling works as outside the area of enabling works project impact.	n/a	Not applicable to enabling works as outside the area of enabling works project impact.	n/a
n/a	HE-13	<p>A moveable heritage item strategy would be prepared by a suitably qualified heritage consultant and include a comprehensive record of all moveable heritage. The moveable heritage item strategy would form part of a broader interpretation strategy for the project and would include the following items:</p> <ul style="list-style-type: none"> » Cumberland District Hospital Precinct. » Royal Oak Hotel and stables. » Dundas Railway Station Group. 	Not applicable to enabling works as outside the area of enabling works project impact.	n/a	Not applicable to enabling works as outside the area of enabling works project impact.	n/a

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
Mitigation for impacts within SHR curtilage	HE-14	<p>Prior to the commencement of construction, photographic archival recording and reporting would be carried out in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006).</p> <p>The record would be prepared by a suitably qualified heritage consultant using archival-quality material. Records for State Heritage Register (SHR) listed items would be held at the NSW Heritage Council, the State Library and the owner of the asset. Records for locally-listed items would be held by the local council, the local library/studies and the owner of the asset.</p> <p>Specific items subject to archival recording would be documented as part of the heritage management plan and would include:</p> <ul style="list-style-type: none"> » Cumberland District Hospital Precinct. » St Patrick's Roman Catholic Cemetery. » Royal Oak Hotel and Stables. » Alfred Square (and potential archaeological site). 	Prior to enabling works.	Table 6-1	Undertaken for Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve). Curtilages of other items would not be impacted by enabling works.	H7

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		» Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve). » Camellia Underbridge Abutments (south and north). » Dundas Railway Station Group.				
n/a	HE-15	Prior to total or partial demolition of heritage items or elements located within the boundaries of a heritage item, heritage fabric would be identified for salvage and reuse opportunities considered. Components of high and exceptional significance recommended for conservation and reuse would be listed within a salvage schedule to be incorporated within a Salvage Scheme for the project. The scheme would indicate appropriate storage locations as well as appropriate types of buildings and structures where the salvaged elements may be reused. This would apply to the following items: » Cumberland District Hospital Precinct. » Stone kerbing and trees (I362). » Stone kerb and gutter (I353). » Stone kerb and gutter (I329). » Camellia Underbridge Abutments (south and north).	Not applicable to enabling works as outside the area of enabling works project impact.	n/a	Not applicable to enabling works as outside the area of enabling works project impact.	n/a

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		» Dundas Railway Station Group (platforms).				
n/a	HE-16	<p>For State Heritage Register items, existing Conservation Management Plans (CMPs) would inform the design and construction methodology in that area. Where impacts to SHR items would modify the item or impact significant elements, updated CMPs would be prepared which would include recommendations on amendments to curtilage. This would apply to the following items:</p> <ul style="list-style-type: none"> » Cumberland District Hospital Precinct. » St Patrick's Roman Catholic Cemetery. » Alfred Square (and potential archaeological site) (when listed). » Lennox Bridge. » Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve). » Sewage Pumping Station 67. » Rydalmere Hospital Precinct (former). » Dundas Railway Station Group. 	During detailed design	Table 6-1	Note that impacts within Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) are limited to footpath installation around 10 x 1 m at the intersection of George and Harris Street and reconfiguration of the playing fields. These impacts are not significant and therefore no updates to the CMP are warranted which trigger HE-16.	n/a

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
n/a	HE-17	<p>During detailed design and construction planning, opportunities to reduce direct impacts on trees where they contribute to the heritage character of a location would be investigated in accordance with the tree mitigation and management measures, including trees and plantings associated with the following heritage items:</p> <ul style="list-style-type: none"> » Cumberland District Hospital Precinct. » Street trees along O'Connell Street that form part of heritage item (I362). » St Patrick's Roman Catholic Cemetery. » Alfred Square (and potential archaeological site). » Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve). » Queen's Wharf Reserve and stone wall and potential archaeological site. » Wetlands. » Trees in median strip. » Rydalmere Hospital Precinct. 	<p>During detailed design</p> <p>Applicable to:</p> <ul style="list-style-type: none"> » Queen's Wharf Reserve and stone wall and potential archaeological site. 	Table 6-1	<p>Impacts to trees at Queen's Wharf Reserve and stone wall and potential archaeological site were considered in the detailed design including the landscape design. The design will provide better public access to the site and engagement with its heritage values.</p> <p>Tree removal at Robin Thomas Reserve has been minimised where possible. Landscaping works for the playing field reconfiguration are to be coordinated with the proposed RTR Masterplan works being delivered by others.</p>	H21

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
n/a	HE-18	During detailed design and construction planning, opportunities to appropriately reuse the Camellia underbridge abutments would be explored in consultation with a heritage architect.	Not applicable to enabling works as outside the area of enabling works project impact	n/a	Not applicable to enabling works as outside the area of enabling works project impact.	n/a
n/a	HE-19	During detailed design and construction planning, opportunities to reduce impacts on Dundas Railway Station Group would be explored including improving the interface design between the proposed light rail infrastructure and the existing heritage infrastructure, including the potential adaptive reuse of original heritage infrastructure as part of the light rail stop. Any adaptive reuse would be developed in consultation with a heritage architect.	Not applicable to enabling works as outside the area of enabling works project impact	n/a	Not applicable to enabling works as outside the area of enabling works project impact.	n/a
n/a	HE-21	An Aboriginal and non-Aboriginal Management Plan would be prepared as described in AB-2. In addition, archaeological monitoring of construction excavation activities would be carried out by a qualified archaeologist based on the archaeological research design to record any significant remains uncovered by excavation (in accordance with HE-3). Examples of where archaeological monitoring may be required include:	Prior to enabling works	This plan	The Archaeological Research Design and Archaeological Work Method Statement outlines the methodologies for archaeological management.	H4

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>» Low impact construction activities (such as narrow trenching) in areas of moderate to high potential for local or State significant relics.</p> <p>» Areas with low potential to contain remains of State significance.</p>				
n/a	HE-22	The construction methodology (including for demolition of existing buildings and/or structures) would be developed to minimise direct and indirect impacts on adjacent and/or adjoining heritage items. This would include consideration of potential vibration related impacts, where identified the Construction Noise and Vibration Management Plan.	<p>Prior to enabling works</p> <p>Applicable to the Convict Drain (George Street) and Parramatta Correctional Centre</p>	<p>Table 5-1</p> <p>Table 6-1</p>	The NVMP provides recommendations for monitoring. It is expected that vibration impact on the Convict Drain (George Street) and Parramatta Correctional Centre would be minor as a result of enabling works.	H8
n/a	HE-23	In relation to HAMU 31 – Grave of Elinor Magee and Child, the grave site would be identified in the Environmental Control Maps and protected and avoided during construction works.	Not applicable to enabling works as outside the area of enabling works project impact	n/a	Not applicable to enabling works as outside the area of enabling works project impact.	n/a

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
	AB-1	Aboriginal heritage interpretation would be incorporated into the design of the project in consultation with registered Aboriginal stakeholders.	Prior to enabling works	Table 6-1	Any information on Aboriginal objects discovered would be input into Heritage Interpretation Strategies for construction program.	H5
	AB-2	<p>An Aboriginal and non-Aboriginal heritage management plan would be prepared as part of the CEMP. Specific measures would be identified in consultation with NSW Office of Environment and Heritage (OEH) and other relevant government agencies. As relevant, the plan would be developed in consultation with Registered Aboriginal Parties.</p> <p>The objectives and strategies of the plan would include the following:</p> <ul style="list-style-type: none"> » Minimise impacts on items or places of heritage value. » Procedures for carrying out salvage or excavation of heritage relics or sites (where relevant) and any recordings of heritage relics prior to works commencing that would impact the heritage relic or site. 	Prior to enabling works	This Plan Section 7.6 for human remains	<p>Aboriginal heritage management is to be consistent with the overarching methodology outlined in the CHAR. Additional test excavation methodologies is to be prepared for impacts PAD/sites.</p> <p>The approved HMP is to be provided to RAPs for information.</p> <p>The Archaeological Research Design and Archaeological Work Method Statement outlines the methodologies</p>	H16, H17 , H25

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>» Procedures for interpretation of heritage values uncovered during salvage or excavation during detailed design.</p> <p>Details on management measures to be implemented to prevent and minimise impacts on heritage items (including further heritage investigations, archival recordings and/or measures to protect unaffected sites during construction works in the vicinity).</p> <p>» Procedures for unexpected heritage finds, including procedures for dealing with human remains (and burials). The Transport for NSW Unexpected Heritage Finds Guideline (2014) would be implemented.</p> <p>» Procedures for the reinstatement of areas of heritage value that would be temporarily impacted by construction following the completion of construction.</p> <p>» Heritage monitoring and auditing requirements.</p>			for non-Aboriginal archaeological management.	
	AB-3	Archaeological salvage excavation (in accordance with the methodology detailed in Technical Paper 4 – Parramatta Light Rail: Aboriginal Cultural Heritage Assessment) would be carried	During enabling works if required after test excavation:	n/a	If salvage is required after the results of test excavation are known the	H17

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		<p>out for the following sites prior to the commencement of construction:</p> <ul style="list-style-type: none"> » Cumberland Hospital East. » Harris Street Footpath/Robin Thomas Reserve. » PLR AFT 2 (formerly PLR PAD 2). » Sydney Turf Club car park. 	<ul style="list-style-type: none"> » Harris Street Footpath/Robin Thomas Reserve. » PLR AFT 2 (formerly PLR PAD 2). 		methodology in the ACHAR would be followed for salvage excavation.	
	AB-4	<p>Exclusion zones would be established during construction for the following partially impacted sites to protect the portion of the site located outside the project construction disturbance boundary:</p> <ul style="list-style-type: none"> » Cumberland Hospital East. » Harris Street Footpath/Robin Thomas Reserve. <p>Suitable controls would be identified in the heritage management plan and shown on the Environmental Control Maps (refer Transport for NSW Guide to Environmental Control Map), which may include barrier fencing to delineate the exclusion zones.</p>	<p>During enabling works</p> <p>Applicable to:</p> <ul style="list-style-type: none"> » Harris Street Footpath/Robin Thomas Reserve. 	Table 6-1 CEMP ECM Appendix A6	The ECM is to identify the extent of Aboriginal site Harris Street Footpath/Robin Thomas Reserve. Works within the site would be undertaken in accordance with the provisions of the CHAR and test excavation methodology.	H1, H22
	LU-4	Transport for NSW would undertake works required to realign of the existing playing fields to mitigate the direct	Prior to direct impact on playing	This Plan	This HMP includes scope for the realigning of the Robin Thomas	H29, H30

Outcome	Ref #	Commitment	Timing	HMP Reference	How addressed?	Control Measure
		impact of the project on the ongoing use of the playing fields.	fields that impact their ongoing use		Reserve Playing fields as described in Section 1.3	

Table 3-3: Environmental Performance Outcomes

Ref #	Environmental Performance Outcome	How addressed?
EPO-HE-1 EPO-HE-2	The design of the project would reflect the input of an independent heritage architect and, for Lennox Bridge, a heritage engineer, at key locations and relevant stakeholders. The project would be sympathetic to heritage items and, where feasible and reasonable, avoid and minimise impacts to non-Aboriginal heritage items and archaeology	Detailed design for enabling works has accounted for minimising heritage impacts. Impacts to built heritage items are minimal in regard to enabling works, with no significant impacts to fabric, therefore a heritage architect was not engaged during enabling works design. It is understood this would be undertaken during the construction of the project by separate contractors. Lennox Bridge will not be impacted by the enabling works. Impacts to non-Aboriginal heritage items and archaeology are minimal as a result of enabling works. Appropriate control measures to minimise impacts and manage archaeology are included in this plan and the Archaeological Research Design.
EPO-AB-1 EPO-AB-2	The project would be sympathetic to heritage items and, where feasible and reasonable, avoid and minimise impacts on Aboriginal heritage items and archaeology. Appropriate Aboriginal heritage interpretation would be incorporated into the design of the project in consultation with registered Aboriginal stakeholders	Appropriate archaeological management of Aboriginal heritage would be undertaken in accordance with the CHAR, including archaeological excavation in identified areas of archaeological sensitivity. Aboriginal consultation has been undertaken during the EIS assessment phase and will continue in relation to any impacts to Aboriginal heritage proposed under the enabling works. Aboriginal heritage is included in the Heritage Interpretation Plan prepared for Queens Wharf reserve.

4 Consultation

4.1 Consultation Requirements under the Infrastructure Approval

4.1.1 Consultation for this HMP

Condition C3 requires that the HMP be prepared in consultation with the relevant Council and Heritage NSW.

The key stakeholders related to Heritage have been consulted in preparation of this HMP include:

- Heritage NSW (as delegate of the NSW Heritage Council)
- City of Parramatta Council.

4.1.2 Registered Aboriginal Parties

Consultation with Registered Aboriginal Parties (RAPs) was undertaken during concept design as part of the Parramatta Light Rail Stage 1 Environmental Impact Statement (EIS) and preparation of the ACHAR. The list of RAPs as compiled during the EIS assessment phase is as below.

Table 4-1: List of Registered Aboriginal Parties

Registered Aboriginal Stakeholder	Representative and/or Contact Person
Deerubbin Local Aboriginal Land Council	CEO
A1 Indigenous Services	Carolyn Hickey
Aboriginal Archaeology Service Inc.	Andrew Williams
Amanda Hickey Cultural Services	Amanda Hickey
Badu	Karia Bond
Biamanga	Seli Storer
Bidawal	Stella Brierley
Bilinga	Simalene Carriage
Cullendulla	Corey Smith
Darren John Duncan	Darren John Duncan
Darug Aboriginal Cultural Heritage Assessments	Celestine Everingham
Darug Aboriginal LandCare	Des Dyer
Darug Land Observations	Jamie Workman
Dharug	Andrew Bond
Didge Ngunawal Clan	Lilly Carroll and Paul Boyd
Djiringanj	Keith Nye
Elouera	Lenard Nye
Eora	Kahu Brennan
Gangangarra	Kim Carriage

Registered Aboriginal Stakeholder	Representative and/or Contact Person
Goobah	Basil Smith
Gulaga	Wendy Smith
Gundungurra Tribal Technical Services	Chris Payne
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Turrise (Carroll)
Kamilaroi-Yankuntjatjara Working Group	Phil Khan
Kuringgai	Toni Brierley
Muragadi Heritage Indigenous Corporation	Jesse Johnson (Carroll)
Murra Bidgee Mullangari	Darleen Johnson
Murramarang	Roxanne Smith
Murrumbul	Steven McCarron
Ngarigo	Newton Bond
Ngunawal	Mitchell Freeman
Nundagurri	Newton Carriage
City of Parramatta Council Aboriginal and Torres Strait Islander Advisory Committee	Maggie Kyle
Rane Contracting	Tony Williams
Tharawal	Violet Carriage
Thauaira	Shane Carriage
Tocomwall	Danny Franks
Walbunja	Hika Tekowhai
Walgula	Ronald Stewart
Wandanian	William Bond
Widescope Indigenous Group	Steven Hickey
Wingikara	Izahya Henry
Yerramurra	Owen Carriage Jr
Registered Aboriginal Stakeholder [details withheld]*	Registered Aboriginal Stakeholder [details withheld]*

**one additional Aboriginal stakeholder has registered for the project but has chosen to withhold their details in accordance with item 4.1.5 of the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (OEH 2010b).*

Aboriginal community consultation has been guided by Heritage NSW 'Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation'¹, using the Heritage NSW 'Aboriginal cultural heritage consultation requirements for proponents'² as best practice.

¹ Department of Environment and Conservation 2005

² Department of Environment, Climate Change and Water 2010

As the RAPs were consulted during the EIS process, the RAPs will be provided with a copy of the Approved HMP for information.

A consultation log will be maintained for the project to detail any correspondence or ongoing consultation undertaken with the RAPs.

RAPs would be given the opportunity to participate in any archaeological test or salvage excavations in regard to Aboriginal archaeology. The Project heritage consultants would liaise with the RAPs to organise participation and scheduling of fieldwork.

RAPs would also be notified in the event of an unexpected find of an Aboriginal object, or human remains that may be Aboriginal.

4.2 Consultation Requirements under the EIS

All relevant requirements have been listed in Sections 3.2 and 3.3.

5 Existing environment and impacts

The following sections summarise what is known about Aboriginal and non-Aboriginal heritage within and adjacent to the project corridor and outlines impacts and management measures.

The key reference documents are:

- Parramatta Light Rail; Non-Aboriginal Archaeological Assessment. Report to WSP/Jacobs on behalf of TfNSW (Artefact 2017a)
- Parramatta Light Rail; Built Heritage Impact Assessment. Report to WSP/Jacobs on behalf of TfNSW (Artefact 2017b)
- Parramatta Light Rail Aboriginal Cultural Heritage Assessment (KNC 2017).

5.1 Listed heritage items

The enabling works would not directly impact the majority of listed heritage items identified in the EIS as the works are primarily restricted to the road corridor.

Heritage items located within the project corridor are listed below in Table 5-1. The location of these items is shown on the heritage maps in Appendix B. Where relevant items are included in the ECM in Appendix A6 of the CEMP.

Table 5-1: Heritage items

Name	Location	Significance	Project impact	Management	Map reference
<p>Parramatta LEP 2011 1489</p> <p>Queens Wharf Reserve and stone wall and potential archaeological site</p>	198 George Street	Local	<p>Removal of trees required for construction</p> <ul style="list-style-type: none"> Trimming of upper branches Removal of main trunks Excavation of tree roots Plant used will be excavator, chainsaw, bogie tipper, flat-bed truck, EWP <p>Demolition and removal of existing kerbs, footpaths and underpass</p> <ul style="list-style-type: none"> Underpass diverges from George St into the reserve, under the MacArthur St bridge and merges onto Georges St again. Plant used will be excavators with hammers, bogie tippers, posi track <p>Construction of stormwater drainage along Georges St including new turning lanes and through the reserve.</p> <ul style="list-style-type: none"> Excavate approx.. 2m from surface level 	<p>Management would include:</p> <p>Archival recording of item</p> <p>Preparation of a Heritage Interpretation Strategy for input into detailed design and the landscape plan</p> <p>Archaeological management of subsurface impacts in accordance with the ARD</p> <p>Avoidance of impacts to existing heritage interpretation installations</p> <p>Exclusion zones around significant fabric</p>	Figure 8-4

Name	Location	Significance	Project impact	Management	Map reference
			<ul style="list-style-type: none"> Plant used will be excavator, 2t tipper <p>Construction of full depth pavement</p> <ul style="list-style-type: none"> Demolition of existing road where required Excavation to 0.5m adjacent to the reserve Placement of roadbase and asphalt material Plant used will be excavator with hammer, bogie tipper, posi track, rollers, paving machine. <p>Construction of new kerbs / Footpath</p> <ul style="list-style-type: none"> New footpath/kerb runs adjacent to reserve Plant used will be concrete agitator, concrete pump, kerb machine various hand tools - vibrators, screeds etc. 		

Name	Location	Significance	Project impact	Management	Map reference
<p>SHR 1863</p> <p>Parramatta LEP 2011 A2</p> <p>Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve).</p>	143a George St	State	<p>Impacts within Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) including:</p> <p>Footpath installation around 10 x 1 m at the intersection of George and Harris Street.</p> <p>Playing fields reconfiguration within Robin Thomas Reserve, including:</p> <ul style="list-style-type: none"> • Removal and replacement of the existing cricket pitch, goal posts and new line marking • Installation of two new and relocation of two existing sporting field flood light poles • Installation of electrical services (using existing trenches where possible) • New fencing along the northern, western and southern boundary of the playing fields. • Removal of two trees and landscaping (mass planting along western boundary) • Installation of new asphalt footpath including three light posts. 	<p>Archaeological management of subsurface impacts in accordance with ARD and AWMS.</p> <p>Archival recording of the heritage item prior to works commencing</p> <p>Exclusion zone (ECM) for significant fabric.</p>	<p>Figure 8-4</p> <p>Figure 8-13</p>

Name	Location	Significance	Project impact	Management	Map reference
SHR 00812 Parramatta LEP 2011 100812 Parramatta Correctional Centre	73 O'Connell Street	State	<p>Removal of trees along O'Connell St from Barney St intersection to Dunlop St³</p> <ul style="list-style-type: none"> Trimming of upper branches Removal of main trunks Excavation of tree roots Trees sit approx. 5m from the Gaol Wall Plant used will be excavator, chainsaw, bogie tipper, trucks, EWP <p>Installation of Stormwater Drainage along O'Connell St</p> <ul style="list-style-type: none"> Excavate to approx. 2m below surface in a line 3m from the gaol wall Plant used will be excavator, compaction plate, 2t tipper <p>Construction of road pavements along O'Connell St</p> <ul style="list-style-type: none"> Demolition of existing roads and kerbs Excavate approx. 0.5m deep for pavement construction Edge of pavement is approx. 4m from Gaol Wall 	<p>Vibration monitoring for impacts to wall in accordance with Noise and Vibration Management Plan</p> <p>Archaeological management of subsurface impacts in accordance with ARD</p> <p>Protection of wall during all works including exclusion zone on ECM and physical barrier such as bollards or robust fencing. The physical barrier should not be attached to the fabric of the wall.</p> <p>Archival recording of the heritage item prior to works commencing including recording of the trees to be removed</p>	Figure 8-5

³ During the concept and detailed design process, TfNSW have designed the upgraded O'Connell Street whilst considering the trees along the road within the constraints of safety requirements. The number of trees retained has increased from the EIS and SPIR assessment

Name	Location	Significance	Project impact	Management	Map reference
			<ul style="list-style-type: none"> Plant used will be excavator with hammer, bogie tippers, posi track, rollers <p>Construction of kerbs along O'Connell St</p> <ul style="list-style-type: none"> Kerbs to be constructed in front of the wall approx. 4m away Plant used will be kerb machine, concrete agitators. <p>Construction of footpath along O'Connell St</p> <ul style="list-style-type: none"> Footpath runs along the face of the gaol wall approx. 0.5m away Plant used will be a concrete agitator, concrete pump various hand tools - vibrators, screeds etc. 		
Parramatta LEP 2011 (I353) Stone kerb and gutter	South side of Dunlop Street between Church and O'Connell Street	Local	No impacts within curtilage as a result of enabling works	Exclusion zone (ECM)	Figure 8-6

Name	Location	Significance	Project impact	Management	Map reference
SHR 0071, SHR 0086 Parramatta LEP 084 Kings School/Marsden Rehabilitation Centre	Marist Place and Marsden Street	State	Minor impacts within curtilage as a result of enabling works including vegetation removal and trenching to enabling widening of the turning circle	Exclusion zone (ECM) for significant fabric Archaeological management of subsurface impacts in accordance with ARD	Figure 8-5
Parramatta LEP 2011 (1647) Convict Drain	George Street between Charles Street and Barrack Lane	Local	No direct impacts. Vibration impacts would be monitored	Vibration monitoring in accordance with Noise and Vibration Management Plan	Figure 8-3
Parramatta LEP 2011 North Parramatta Conservation Area	O'Connell Street North Parramatta	Local	No impacts within curtilage as a result of enabling works	Exclusion zone (ECM)	Figure 8-5

Name	Location	Significance	Project impact	Management	Map reference
SHR 00059 Depth Health s170 Parramatta District Hospital - Brislington and Landscape Parramatta LEP 1699 Brislington property, Moreton Bay fig tree (and potential archaeological site) ⁴	164 Marsden Street/ 10 George Street	Local	Impacts associated with compound site. No sub surface impacts, hardstand to be maintained.	Exclusion zone around structure and trees (ECM). Physical barrier such as bollards or robust fencing may be required if construction or operational impacts are within 5 metres of structures or trees.	Figure 8-2
Parramatta LEP 2011 LEP I1387 Pair of cottages	84 and 86 O'Connell Street	Local	No impacts within curtilage as a result of enabling works	Exclusion zone (ECM)	Figure 8-6

⁴ Note that the project footprint is only within the LEP listed curtilage and would not affect the related adjacent SHR listings

5.2 Non-Aboriginal Archaeology

Parramatta and surrounding suburbs were one of the oldest European settlements in Australia. The majority of the Stage 1 project area was identified to have some potential to contain significant archaeological remains, some of which were identified as being of potential State significance.

The Project area has been divided into a number of project specific historical archaeological management units (HAMU's) which incorporate both the on and off-corridor works. Project specific HAMU's were developed based on land-use history, historic plans, pre-existing studies (such as the PHALMS) and previous archaeological investigations in the vicinity of the Project.

Three archaeological management zones were developed within these HAMUs to provide management of the archaeological resource. These zones are based on the significance of the potential remains. These management zones are as follows:

- Zone 1: State significant archaeological resources - known or potential
- Zone 2: Locally significant archaeological resources, and low potential for state significant archaeological resources - known or potential
- Zone 3: Nil-low archaeological potential

The enabling works would include works within a number of HAMUs.

Table 5-2: Summary of proposed works within HAMUs

HAMU	Potential archaeological resource	Significance	Project impact	Management (as per ARD)	Figure reference
5	Grose Street Drain	Local	Service identification (NDD), service relocation and road widening	Zone 2 Unexpected finds procedure	Figure 8-9

HAMU	Potential archaeological resource	Significance	Project impact	Management (as per ARD)	Figure reference
7	Truncated remains associated with late 19th century residential and commercial development of Church Street, as well as evidence of early road infrastructure.	Local	Service identification (NDD), service relocation and road widening	<p>Test Excavation (trenching works towards the middle of Church Street)</p> <p>Monitoring (NDD in the middle of Church Street)</p> <p>Test Excavation (excavations for services and stormwater drainage at 579 Church Street)</p> <p>Monitoring (NDD for service identification at 579 Church Street)</p> <p>Unexpected Finds Procedure for remainder</p>	Figure 8-9

HAMU	Potential archaeological resource	Significance	Project impact	Management (as per ARD)	Figure reference
12	Parramatta North Off-Corridor works	Local	Service identification (NDD), service relocation and road widening	<p>Zone 2</p> <p>Test Excavation (trenching works towards the middle of Church Street)</p> <p>Monitoring (NDD in the middle of Church Street)</p> <p>Test Excavation (trenching works within area south of Victoria Road)</p> <p>Monitoring (NDD within area south of Victoria Road)</p> <p>Test Excavation (excavations for services and stormwater drainage at 1-5 Barney Street)</p> <p>Monitoring (NDD for service identification at 1-5 Barney Street)</p> <p>Unexpected Finds Procedure for remainder</p>	Figure 8-9 and Figure 8-10

HAMU	Potential archaeological resource	Significance	Project impact	Management (as per ARD)	Figure reference
12	Parramatta North Off-Corridor works – within SHR listed Kings School/Marsden Park Rehabilitation Centre	State	Vegetation removal, trenching and road widening	Zone 1 Test Excavation (all excavation works) Monitoring (any turf removal, minor vegetation removal or surface works) Unexpected Finds Procedure for remainder	Figure 8-10
15	Remains associated with the George Street tramline, Parramatta Gasworks early services and drains and former building frontages	Local	Service identification (NDD), service relocation and road widening and landscaping	Zone 2 Test Excavation (excavations for service relocation, stormwater drainage, and tree footings along George Street and within 192-196 George Street) Monitoring (service and utility identification along George Street and landscaping within 192-196 George Street) Unexpected Finds Procedure for remainder	Figure 8-11 and Figure 8-12

HAMU	Potential archaeological resource	Significance	Project impact	Management (as per ARD)	Figure reference
17	Remains associated with late 19th century residential and commercial development of Parramatta (prior to establishment of Horwood Place)	Local	Service identification (NDD), service relocation and road widening	Zone 2 Test Excavation (excavations for service relocations) Monitoring (NDD for service identification) Unexpected Finds Procedure for remainder	Figure 8-11
18	The Town Drain - Macquarie Street, Barrack Lane, and George Street	State	Surface works, road milling and sheeting	Zone 1 Unexpected find as no subsurface works expected	Figure 8-12
19	Barrack Lane	State	Service identification (NDD), service relocation and road widening	Zone 1 Monitoring (excavations for stormwater drainage) Unexpected Finds Procedure for remainder	Figure 8-12

HAMU	Potential archaeological resource	Significance	Project impact	Management (as per ARD)	Figure reference
20	Remains associated with the former Soldiers District Remains associated with the Purchase Nursery (includes small portion of SHR listed Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) at corner of Harris and George Street)	State, local	Service identification (NDD), service relocation, footpath widening and road widening	Zone 1 Test Excavation (all excavation works) Monitoring (surface demolition works along the east side of Harris Street) Unexpected Finds Procedure for remainder	Figure 8-12
22	Remains associated with late 19th century residential and commercial development of Smith Street	Local	Service identification (NDD), service relocation and road widening	Zone 2 Archaeological monitoring and unexpected finds in accordance with the ARD	Figure 8-11
22	Remains associated with late 19th century residential and commercial development of Charles Street	Local	Service identification (NDD), service relocation and road widening	Zone 2 Unexpected finds procedure	Figure 8-11

HAMU	Potential archaeological resource	Significance	Project impact	Management (as per ARD)	Figure reference
23	Smith Street	Local	Service identification (NDD), service relocation and road widening	Zone 2 Monitoring (excavations on the northwest corner of the George/Chalmers intersection) Unexpected Finds Procedure	Figure 8-12
24	Parramatta CBD off Corridor works	Local	Service identification (NDD), service relocation and road widening	Zone 2 Unexpected Finds Procedure	Figure 8-11
36	Queens Wharf Reserve	State	Landscaping	Zone 1 Test Excavation (all excavation works) Monitoring (surface and landscaping works)	Figure 8-12

HAMU	Potential archaeological resource	Significance	Project impact	Management (as per ARD)	Figure reference
N/A	Remains associated with the former Soldiers District Remains associated with the Purchase Nursery (includes small portion of SHR listed Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve) at corner of Harris and George Street)	State, local	Playing field relocation	Managed by Archaeological Work Method Statement	Figure 8-13

5.3 Aboriginal Archaeology

The ACHAR for the Stage 1 project identified a number of Aboriginal sites and areas of potential archaeological deposit (PADs). It should be noted that in Parramatta there is potential for Aboriginal and non-Aboriginal archaeology to be present in the same archaeological contexts. As such any management of archaeological resources should take into account the potential for contact archaeology. Methodologies for dealing with contact archaeology are outlined in the ACHAR, ARD and would be included in any work method statement or test excavation methodology prepared for excavation works.

Two of these areas are within the enabling works project area and would be partially impacted (Figure 8-8).

5.3.1 AHIMS 45-6-3157 Harris St Footpath/Robin Thomas Reserve

The following description is taken from the ACHAR (page 21).

Harris St Footpath/Robin Thomas Reserve was an open context site listed as an Aboriginal Resource and Gathering site, with artefacts and associated PAD. The site was located on the crest of a low flat terrace formed from Parramatta Sand Body substrate and overlooking the southern bank of Parramatta River. The site area was bound by George Street to the north, Purchase Street to the east, residential properties and Lot 7 DP 720779 to the south and Harris Street to the west.

The western portion of the site is registered on the (NSW) State Heritage Register (SHR) (Item 01863, gazetted 8 July 2011). The SHR listing notes that the location “would have been an attractive location for Aboriginal people in the pre-colonial or early colonial period. The area had ready access to two permanent water sources, Parramatta River and Clay Cliff Creek and mixed resources (forest, riverine and estuarine). Additional resources such as, waterfowl and water plants were available from a large water lagoon, with three ponds, that was located behind the former

residence 'Ellangowan' in the centre of the block bounded by Harris, Hassall, Purchase and George Streets". The SHR listing also noted that auger samples had been taken from the site which indicated the presence of deep soil profiles suitable for the preservation of subsurface Aboriginal archaeological material.

An archaeological test excavation program was undertaken in the north-western portion of the site by Comber Consultants (in preparation). The excavation program comprised nine 1 x 1 metre trenches that were excavated within the Harris Street footpath between Harris Street and Robin Thomas Reserve. A total of 59 artefacts were collected from five of the nine excavated trenches. The assemblage consisted of one core, six flakes, three retouched flakes and 49 flaked pieces. The artefacts were made from silcrete, chert, glass, quartz and quartzite.

Impact to the AHIMS 45-6-3157 Harris St Footpath/Robin Thomas Reserve as a result of the enabling works would require salvage excavations as per the ACHAR (Figure 8-8).

5.3.2 PLR AFT1

The following description is taken from the ACHAR (page 25).

PLR AFT1 is an area of potential archaeological deposit situated on a raised terrace approximately 30 metres south of Parramatta River (Figure 8-8). The PAD is located within Queens Wharf Reserve on the northern side of George Street, approximately 80 metres east of the intersection of George Street and Harris Street. PLR AFT1 is approximately 15 metres north of site Harris St Footpath/Robin Thomas Reserve (AHIMS IDs 45-6-3157/45-6-3158) and 25 metres west of PLR PAD 3. The elevation of the area above Parramatta River would have limited the impact of flooding on the subsurface deposit while the proximity of the area to the resources along and within the river would have made the location attractive to Aboriginal people in the past. Parish maps and historical aerial photography indicate that disturbance from both historic and modern land use has been limited in the PAD area. The survey noted that visible disturbance within the area was restricted to the southern boundary and associated with the construction of George Street and underground utilities. The area was assessed as having potential for subsurface archaeological deposit due to its elevated location on the Parramatta Sand Body, low level of disturbance and proximity to the resources of the Parramatta River.

Impact to the PLR AFT1 as a result of the enabling works would require salvage excavations as per the ACHAR (Figure 8-8).

6 Environmental mitigation and management measures

Specific measures and requirements to address contract specification, CoA and REMMs in relation to Aboriginal and non-Aboriginal heritage are outlined in Table 6-1.

Table 6-1: Heritage management and mitigation measures

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference (COAs in bold)
GENERAL					
H1	Environmental Control Maps to be developed for work areas and submitted to the Environmental Representative for endorsement, including outlining specific heritage control measures and exclusion zones where required.	ECMs	Prior to enabling works	Environment Manager	E60, E61, E76, AB4
H2	Heritage induction for contractors prior to site works commencing. The induction would outline Aboriginal and non-Aboriginal heritage issues and constraints and discuss the Unexpected Heritage Finds Guidelines.	NA	Prior to enabling works	Environment Manager	C3
H3	Undertake a consistency assessment (or appropriate alternate assessment) where required for works proposed outside the CSSI project boundary. Provision of heritage advice may be required to support the consistency assessment.	Heritage consultant where required	Prior to or during enabling works	Environment Manager/ Heritage Consultant	C3

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference (COAs in bold)
H4	Preparation of Archaeological Research Design (ARD) for road modification and associated works and Archaeological Work Method Statement (AWMS) for Robin Thomas Reserve playing fields reconfiguration in consultation with the NSW Heritage Council (or delegate). The ARD and AWMS have been prepared as separate documents which includes additional assessment of archaeological potential and significance of impacted areas and outlines appropriate archaeological management methodologies in line with the CSSI approval documents.	Heritage consultant	Prior to enabling works	Heritage Consultant	E72, E73 , HE-1, HE-3, HE-21
H5	Nomination and attendance of a suitably qualified Excavation Director to oversee archaeological management during construction. The name and contact details of the Excavation Director must be included on the ECM.	Excavation Director	Prior to enabling works	Heritage Consultant	E74 , HE-1
H6	Preparation of Heritage Interpretation Strategy. A HIS has been prepared for Queens Wharf Reserve. The strategy would be updated within six months of any archaeological excavations.	Heritage consultant	Prior to enabling works	Heritage Consultant	E64, E79, E64a , HE-9, AB-1
H7	Photographic archival recording of Ancient Aboriginal and Early Colonial Landscape (Robin Thomas Reserve), Queens Wharf Reserve, Parramatta Correctional Centre and Kings School (former)/ Marsden Rehabilitation Centre where works would modify the items.	Heritage consultant	Prior to enabling works	Heritage Consultant	HE-14

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference (COAs in bold)
SITE SPECIFIC HERITAGE MANAGEMENT / MITIGATION MEASURES					
H8	Work method statement for works near Parramatta Correctional Centre. Works are understood to include tree removal and excavation. Direct impacts to fabric are not expected. The work method statement would be prepared once the works methodology is known and would include and additional management or mitigation measures necessary to reduce or avoid heritage impacts including the location and nature of physical barriers.	Design and impact information	Prior to enabling works	Heritage Consultant	E60
H9	Archaeological management for works within Queens Wharf Reserve. This would be included in the ARD.	Design and impact information	Prior to enabling works	Environment Manager/ Heritage Consultant	E72
H10	Archaeological management within Zone 2 HAMUs. Archaeological monitoring would be undertaken in accordance with the methodology outlined in the ARD.	Heritage consultant	During enabling works	Heritage Consultant	HE-3, HE-6
H11	Non-Aboriginal archaeological test/salvage excavation in areas to be impacted by the works within HAMU 20 (Harris Street and Robin Thomas Reserve) which is a Zone 1 HAMU. Archaeological testing would be required in accordance with the methodology provided in the ARD and AWMS. Consideration of Aboriginal heritage values would be included in the methodologies.	Heritage consultant	Prior to enabling works	Heritage Consultant	HE-2, HE-6

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference (COAs in bold)
H12	Notification of relics (under s146 of the NSW Heritage Act) in accordance with the TfNSW Unexpected Finds Guideline.	Heritage consultant	During enabling works	Environment Manager/ Heritage Consultant	HE-1,
H13	Site clearance after archaeological management completed. An email or memo would be provided with endorsement by the Excavation Director prior to works commencing in the area once archaeological management was completed.	Heritage consultant	During enabling works	Environment Manager/ Heritage Consultant	CEMP
H14	Post-excavation reporting for non-Aboriginal archaeology. An archaeological excavation report would be prepared to outline the results of the excavations.	Heritage consultant	Post enabling works	Heritage Consultant	E75
H15	Preparation of salvage methodology for PLR PAD2 (AHIMS IDs 45-6-3157/45-6-3158) and Aboriginal archaeological testing and salvage of PLR PAD2 (AHIMS IDs 45-6-3157/45-6-3158) would be required in accordance with the methodology provided in the ARD. Consideration of Aboriginal heritage values would be included in the methodology.	Heritage consultant	Prior to and during enabling works	Heritage Consultant	E78
H16	Post-excavation reporting for Aboriginal archaeology. An archaeological excavation report would be prepared to outline the results of the excavations.	Heritage consultant	Post enabling works	Heritage Consultant	AB-2, E75
H17	Continuing consultation with Registered Aboriginal Parties (RAPs) in accordance with the ACHAR	Heritage consultant	Prior to and during enabling works	Heritage Consultant	AB-2, AB-3

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference (COAs in bold)
H18	Heritage advice in relation to vibration impacts Vibration monitoring would be required for the convict drain on George Street and the wall in the Parramatta correctional centre and any other heritage items that are approaching or within the safe working distances identified in Table 6-10 of the CNVMP. Advice of a heritage specialist would be provided for heritage items that may be impacted by vibration.	Heritage consultant Vibration consultant	Prior to and during enabling works	Heritage Consultant Noise and vibration specialist	E42, E43, E44 , HE-8, HE-22
H19	If subsurface impacts are required within the compound site (Parramatta LEP 10059 Brislington property, Moreton Bay fig tree - and potential archaeological site) archaeological management would be required in accordance with the ARD.	Heritage consultant	During enabling works	Heritage Consultant	E72, E73 , HE-1, HE-3
H20	Recording of any newly identified Aboriginal sites and updates to records of any impacted sites on the AHIMS register.	Heritage consultant	During enabling works	Heritage Consultant	Heritage NSW comments
H21	Detailed design should consider avoidance of visual impact and impact to setting, especially in regard to removal of trees.	NA	Prior to enabling works	Design manager	HE-17
H22	The ECM will identify the extent of Aboriginal site Harris Street Footpath/Robin Thomas Reserve. Works within the site extent would be undertaken in accordance with the provisions of the CHAR and test excavation methodology.	Heritage consultant	During enabling works	Environment Manager	AB-4

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference (COAs in bold)
H23	<p>If suspected heritage (including non-Aboriginal or Aboriginal) items are the TfNSW Unexpected Finds procedure (Appendix A) will be followed for the duration of the project. Note that suitably qualified Aboriginal or non-Aboriginal heritage experts must be utilised to assess the finds.</p> <p>Note, if suspected human remains are encountered the following process would be followed and management measures would be developed in accordance with the Guidelines for Management of Human Skeletal Remains (NSW Heritage Office, 1998)</p> <p>In the event of identification of potential human remains:</p> <ul style="list-style-type: none"> • Stop works in the vicinity • Notify site manager and environmental manager • Call NSW Police • Engage a suitably experienced archaeologist/forensic anthropologist to identify whether remains are human • Contact the NSW Coroner in the event of identification of human remains • Notify the NSW Heritage Division if the remains are identified to be relics • If remains are identified as archaeological engage a suitably experienced archaeologist to manage the find in consultation with the RAPs if necessary. 	Heritage consultant	Construction	Site Engineer / Environment Manager	E62, E63 , HE-1, HE-5

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference (COAs in bold)
H24	Where archaeological remains are identified during works to be of higher significance than as assessed during preparation of the ARD and/or AWMS, the ARD/AWMS and HMP would be updated to include additional and appropriate archaeological management.	Heritage consultant	Construction	Environment Manager	Heritage NSW comments
H25	Where items of heritage value are temporarily impacted, such as removal of turf or surface treatment, reinstatement should aim to replace consistent with the original state. If this is not practicable advice should be sought from a suitable heritage consultant.	Heritage consultant	Construction	Environment Manager	AB-2
H26	This plan would be reviewed by CoPC and Heritage NSW prior to construction including updates to include the Robin Thomas Reserve playing fields reconfiguration.	n/a	Pre-construction	Environment Manager	C3, C5
H27	Evidence to demonstrate the implementation of the plan would be provided to the ER as requested.	n/a	Construction	Environment Manager	A23
H28	Stone kerbing adjacent to the Parramatta Correctional Centre would be removed and replaced closer to the goal wall as part of the enabling works. Two mature trees at the Barney Street intersection would be retained.	Heritage consultant	Construction	Environment Manager	Project commitment

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference (COAs in bold)
H29	<p>Work involving excavation within Robin Thomas Reserve would be designed in consultation with Heritage NSW to minimise impacts to:</p> <ul style="list-style-type: none"> • Parramatta Sand Body; and • Former site of c.1790 Military Barracks and Soldiers Garden. 	Heritage consultant	Prior to and during construction	Environment Manager	Project commitment
H30	The footpath work in Robin Thomas Reserve must be informed by the Excavation Director's observations of works along the western boundary with the aim of minimising impacts to the Parramatta Sand Body where reasonable and feasible.	Heritage consultant	Construction	Environment Manager	Project commitment

7 Compliance Management

7.1 Roles and responsibilities

The Project Team's organisational structure and overall roles and responsibilities are outlined in Section 3.2 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 3 of this Plan.

7.2 Training

All employees, contractors and utility staff working on site will undergo site induction training relating to heritage management issues prior to construction commencing. The induction training will address elements related to heritage management including:

- Existence and requirements of this sub-plan
- Relevant legislation
- Roles and responsibilities for heritage management
- Location of identified heritage sites and no-go areas
- Proposed heritage management and protection measures
- Procedure to follow in the event of an unexpected heritage item find or discovery of human remains during construction works (Transport for NSW Unexpected Heritage Finds Guideline (refer Appendix A).
- Identification of possible intact heritage items including, intact soil profiles, siltcrete, flakes. Similar.

Further details regarding staff induction and training are outlined in Section 5 of the CEMP.

The identification of potential heritage impacts and stop work processes will be addressed in the induction process and will be noted in the ECMs.

7.3 Monitoring and inspections

Inspections of sensitive areas and activities with the potential to impact heritage will occur for the duration of the project. Some specific monitoring requirements in relation to some items have been documented in Table 6-1.

Monitoring of exclusions zones occurs as part of the regular inspections as outlined in the CEMP.

Archaeological monitoring of subsurface works in areas of known archaeological potential is outlined in the ARD and AWMS.

Requirements and responsibilities in relation to monitoring and inspections are documented in Section 7.2 of the CEMP.

7.4 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this sub plan, CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 7.4 of the CEMP.

7.5 Reporting

Reporting requirements and responsibilities are documented in Section 7.5 of the CEMP. There are specific reporting requirements associated with heritage management and monitoring including:

- Results of any 'Unexpected heritage finds'
- Heritage archival recording and salvage report will be prepared; and
- Archaeological Excavation Report if required.

7.6 Unexpected finds

Unexpected finds would generally be managed under the TfNSW Unexpected heritage finds procedure (Appendix A). The TfNSW Unexpected heritage finds procedure is considered appropriate by the project archaeologists. In accordance with Condition E62 the procedure is considered certified by Dr Sandra Wallace (PhD Archaeology), Director at Artefact and Anita Yousif, Associate Director at Extent Heritage.

Although the TfNSW Unexpected heritage finds procedure includes human remains as an example of an unexpected find it does not specify the required procedure for reporting the find.

In the event of identifying potential human remains during construction of the PLR enabling works the following would be undertaken in consultation with the ER:

- Stop work and secure the site
- Notify the site manager, the ER and TfNSW
- Engage technical specialist(s) (archaeologist or forensic anthropologist) to assess find nature
- Contact the NSW Police and coroner if remains are found to be human
- Once confirmation is received from the technical specialist that the remains are of human origin, there are three possible statutory pathways to follow based on the assessment:

Forensic case (remains are less than 100 years old):

If it is determined by specialist assessment that the remains are forensic, the remains would come under the jurisdiction of the State Coroner and the Coroners Act 2009. The NSW Police would likely secure the site and will advise on the procedure to be followed which would include involvement of the Coroner.

Archaeological – non-Aboriginal human remains (more than 100 years old):

Notification to the Heritage NSW. Additional consultation and approvals would be required in order to impact remains under the CSSI. The police and coroner may still have involvement in order to confirm that they have no jurisdiction under the Corners act.

Archaeological – suspected Aboriginal human remains (more than 100 years old):

The RAPs must be present where it is reasonably suspected that Aboriginal burials or human remains have been encountered. Recording of Aboriginal ancestral remains must be undertaken by, or be conducted under the direct supervision of a specialist. The police and coroner may still have involvement in order to confirm that they have no jurisdiction under the Corners act.

Notification to Heritage NSW and the RAPs. Additional consultation and approvals would be required in order to impact remains under the CSSI.

Note that the approval does not allow impact to human remains under the CSSI.

8 Review and improvement

8.1 Continuous improvement

Continuous improvement of this plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets by the Environmental Risk Assessment process (Section 2.3 and Appendix A2 of the CEMP) for the purpose of identifying opportunities for improvement. The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

8.2 HMP update and amendment

The processes described in Section 8 of the CEMP may result in the need to update or revise this Plan. This will occur as needed.

The processes described in Section 8 CEMP may result in the need to update or revise this Plan. This will occur as needed, this will include the assessment of risks associated with noise and vibration impacts of the project.

Only the Environment Manager, or delegate, has the authority to change any of the environmental management documentation.

A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure (Section 9.2 of the CEMP).

Appendix A – TfNSW Unexpected Heritage Finds Guideline:

Unexpected Heritage Finds Guideline

DMS-SD-115

Supporting Document – Applicable to Infrastructure & Place
Divisional Management System

Status:	Approved
Version:	3.2
Branch:	Program Management Office
Section:	Planning, Environment and Sustainability
Business unit:	Environmental Management
Date of issue:	23 August 2019
Review date:	23 April 2020
Audience:	Project Delivery/External TSR
Asset classes:	<input checked="" type="checkbox"/> Heavy Rail; <input checked="" type="checkbox"/> Light Rail; <input checked="" type="checkbox"/> Multi Sites; <input checked="" type="checkbox"/> Systems; <input checked="" type="checkbox"/> Fleets
Project delivery model:	IP Project/Alliance/Novo Rail
Project type:	Not Applicable
Project lifecycle:	<input type="checkbox"/> Feasibility; <input type="checkbox"/> Scoping; <input type="checkbox"/> Definition; <input checked="" type="checkbox"/> Construction readiness; <input checked="" type="checkbox"/> Implementation; <input checked="" type="checkbox"/> Finalisation; <input type="checkbox"/> Not applicable
Process owner:	Director Planning, Environment and Sustainability

Document history

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1.0	11 Jul14	3164499_5	First issue
2.0	14 Apr15	3164499	Updated to be published to TfNSW website
3.0	28 Apr 16	3164499_12	Updated to reflect changes in organisation structure.
3.1	23 Apr 19		Document rebranded to Infrastructure and Place.
3.2	23 August 2019	3164499	DMS update

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1. Purpose

The purpose of this document is to provide guidance to site personnel in the event that an unexpected heritage find is encountered on a Infrastructure and Place (IP) site.

An 'unexpected heritage find' can be defined as any unanticipated archaeological discovery, that has not been previously assessed or is not covered by an existing excavation permit, and that has potential heritage value.

In New South Wales, there are strict laws to protect and manage heritage objects and relics. As a result, appropriate heritage management measures need to be implemented to minimise impacts on heritage values, ensure compliance with relevant heritage notification and other obligations, and to minimise the risk of penalties to individuals, IP and its contractors.

2. Scope

In some instances, even when appropriate and robust cultural heritage assessments are undertaken during the environmental impact assessment process, some heritage objects or relics are not identified, and are subsequently found on a IP site. This guideline outlines the procedure that should be followed in those circumstances.

This guideline includes references to some of the relevant legislative and regulatory requirements but is not intended to replace them. It is not intended to replace any requirements identified as part of the environmental impact assessment process

This guideline does not apply to:

- Aboriginal and non-Aboriginal cultural heritage objects or relics found during investigations undertaken to inform the environmental assessment, in accordance with relevant legislation and the [Planning Approvals and Environmental Impact Assessment – DMS-ST-051](#). These environmental impact assessments typically identify all heritage items before the project is implemented
- cultural heritage investigations undertaken to comply with conditions set out in any land use planning approval for a project
- archaeological investigations permitted under the *National Parks and Wildlife Act 1974* (NPW Act) or the *Heritage Act 1977* (Heritage Act).

3. Definitions

All terminology in this document is taken to mean the generally accepted or dictionary definition with the exception of the following terms which have a specifically defined meaning:

CEMP	Construction environmental management plan
EM	Contractor/alliance environment manager
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EPM	IP environment and planning manager
Heritage Act	NSW <i>Heritage Act 1977</i>
NPW Act	NSW <i>National Parks and Wildlife Act 1974</i>
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PME	Principal Manager Environmental Management

TSR

TfNSW Standard Requirement

4. Accountabilities

The Director Planning and Environment Services is accountable for this document including authorising the document, monitoring its effectiveness and performing a formal document review.

Project directors are accountable for ensuring the requirements of this document are implemented within their area of responsibility.

Project directors who are accountable for specific projects/programs are accountable for ensuring associated contractors follow this document to the extent they are required under the TfNSW Standard Requirements (TSR).

Contractors are accountable for following this document, where this guideline forms a part of their contract.

5. Legislative requirements

Table 1 identifies some of the relevant legislation/regulations for the protection of heritage and the management of unexpected heritage finds in NSW. It should be noted that significant penalties exist for breaches of the listed legislation as a result of actions that relate to unauthorised impacts on heritage items. Further, it is noted that heritage that has been assessed and is being managed in accordance with an environmental impact assessment is exempt from these offences.

To avoid breaches of legislation, it is important that IP and its contractors are aware of their legislative obligations under relevant legislation and that appropriate management measures are in place to avoid impacts on unexpected heritage items during construction. Contractors/alliances will need to ensure that they undertake their own due diligence to identify any other legislative requirements that map apply for a given project.

Table1 Legislation and guidelines for management of unexpected heritage finds

Relevant Requirement	Objectives and offences
<i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>	<ul style="list-style-type: none"> Requires heritage to be considered within the environmental impact assessment of projects. This guideline is based on the premise that an appropriate level of Aboriginal and non-Aboriginal cultural heritage assessment and investigations and mitigation have already been undertaken under the relevant legislation, including the EP&A Act, during the assessment and determination process. It also assumes that appropriate mitigation measures have been included in the conditions of any approval.
<i>National Parks and Wildlife Act 1974 (NPW Act)</i>	<ul style="list-style-type: none"> Provides for the protection and management of Aboriginal objects. An Aboriginal object is defined as: <i>'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'</i>. It is an offence to harm or desecrate an Aboriginal object or place. These are strict liability offences. An offence cannot be upheld

Relevant Requirement	Objectives and offences
	<p>where the harm or desecration was authorised by an Aboriginal heritage impact permit and the permit's conditions were not contravened.</p> <ul style="list-style-type: none"> A person must notify the Heritage Branch of OEH if a person is aware of the location of an Aboriginal object. Penalties for some of the offences can include 2 years imprisonment and/or up to \$550,000 (for individuals), and a maximum penalty of \$1.1million (for corporations).
Heritage Act 1977	<ul style="list-style-type: none"> Provides for the care, protection and management of relics. A relic is defined as: <i>'any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.'</i> It is an offence to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by the Heritage Branch of the OEH. A person must notify the Heritage Branch of OEH, if a person is aware or believes that they have discovered or located a relic. Penalties for offences under the Heritage Act can include 6 months imprisonment and/or up to \$1.1million.

6. Unexpected heritage finds protocol

6.1. What is an unexpected heritage find?

An 'unexpected heritage find' can be defined as any unanticipated archaeological discovery that has not been identified during a previous assessment or is not covered by an existing permit under relevant legislation such as the NPW Act or Heritage Act. The find may have potential cultural heritage value, which may require some type of statutory cultural heritage permit or notification if any interference of the heritage item is proposed or anticipated.

The range of potential archaeological discoveries can include but are not limited to:

- Aboriginal stone artefacts, shell middens, burial sites, engraved rock art, scarred trees
- remains of rail infrastructure including buildings, footings, stations, signal boxes, rail lines, bridges and culverts
- remains of other infrastructure including sandstone or brick buildings, wells, cisterns, drainage services, conduits, old kerbing and pavement, former road surfaces, timber and stone culverts, bridge footings and retaining walls
- artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes
- archaeological human skeletal remains.

6.2. Managing unexpected heritage finds

In the event that an unexpected heritage find (the 'find') is encountered on a IP site, the flowchart in Figure 1 should be followed. Table 2 indicates roles and responsibilities referred to in Figure 1.

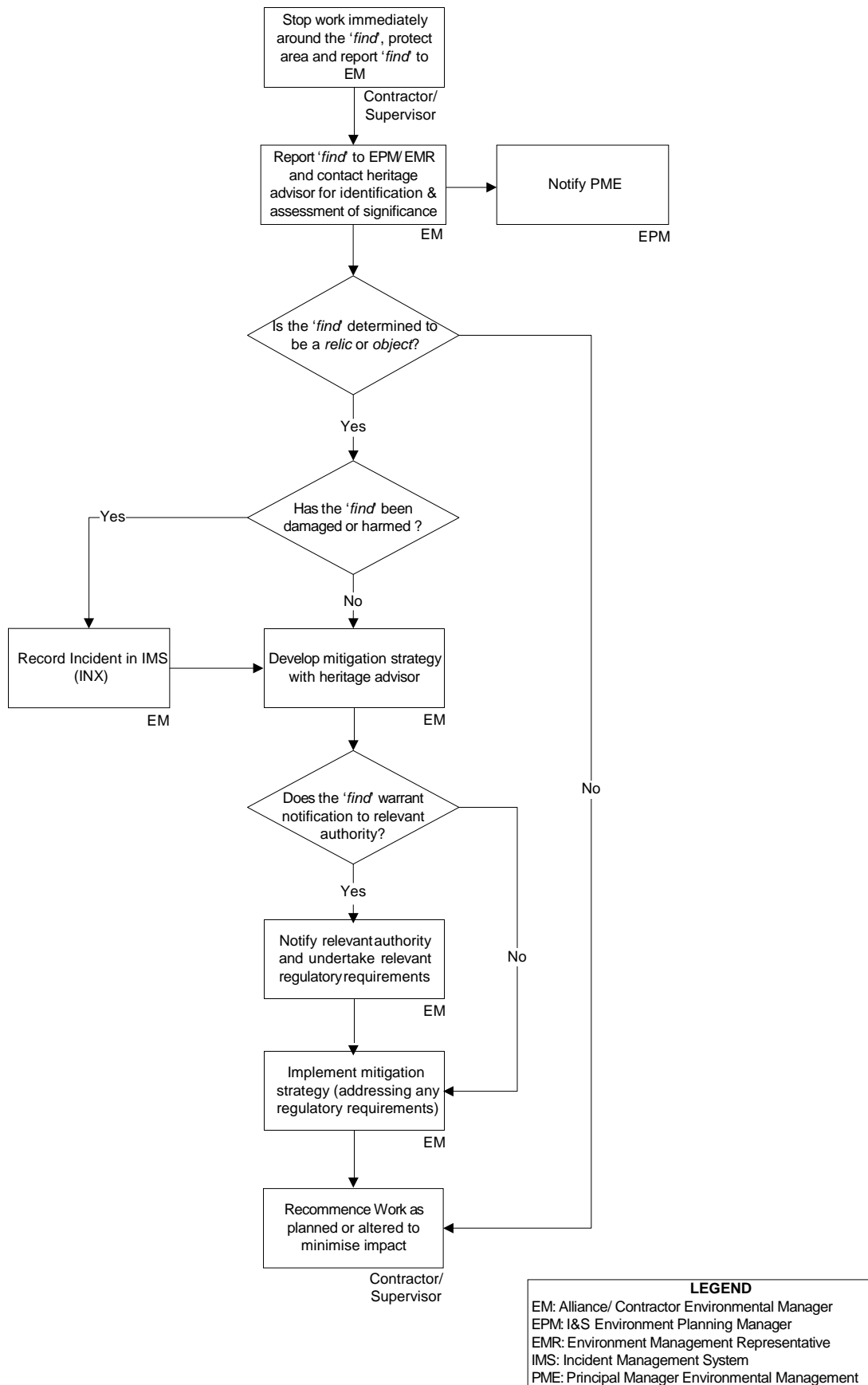


Figure 1: Unexpected heritage finds flowchart

Table 2: Roles and responsibilities within Figure 1

Abbreviation used in flowchart	Role	Responsibility or role under this Guideline
Contractor/supervisor	Contractor / supervisor	Stop work immediately when an unexpected heritage find is encountered. Cordon off area until EM advises that work can recommence.
EM	Contractor or alliance environment manager	<p>Manage the process of identifying, protecting and mitigating impacts on the 'find'.</p> <p>Liaise with heritage advisor and relevant authorities on significance of the find, mitigation and regulatory requirements.</p> <p>Complete incident report and review CEMP for any changes required. Propose amendments to the CEMP if any changes are required.</p> <p>Advise Contractor / supervisor to recommence work.</p>
Heritage advisor	Contractor's or project heritage advisor or consultant	Provide expert advice to the EM on 'find' identification, significance, mitigation, legislative procedures and regulatory requirements.
EPM	IP environment and planning manager	Notify PME of 'find' and manage incident reporting once completed by EM.
Relevant authorities	Environment Protection and Regulation Group of OEH (for Aboriginal objects)	<p>Regulate the care, protection and management of Aboriginal objects.</p> <p>Issue Aboriginal heritage impact permits.</p>
	Heritage Branch of OEH (for relics)	<p>Regulate the care, protection and management of relics.</p> <p>Issue excavation permits.</p>

7. Related documents and references

[Environmental Incident Classification and Reporting – DMS-PR-105](#)

[Planning Approvals and Environmental Impact Assessment – DMS-ST-051](#)

[Guide to Environmental Control Map – DMS-SD-015](#)

Appendix B – Agency Consultation

Reference Number	Comment	Response	Management plan reference location
Stakeholder	City of Parramatta Council		
Date of comments	19 November 2018		
Document description	Email for City of Parramatta Council		
1.1	CoP were not in a position to comment detailed comment and as such we will defer to comments made by the Office of Environment and Heritage		
Stakeholder	Office of Environment and Heritage – Communities and Greater Sydney Division		
Date of comments	27 September 2018		
Document description	Email		
2.1	Indicated that this team will not review or provide comment on the CHMP		
Stakeholder	Office of Environment and Heritage		
Date of comments	8 November 2018		
Document description	Letter via email titled: Parramatta Light Rail Stage 1 – Review of Construction Environmental Management Plan Heritage Management Subplan		
3.1	Refer to the comment Tables issued to Heritage NSW below		

General Comments

Heritage NSW Resonance Letter Reference	Heritage Division Comment	DWJV Response
1.0	<p>The following documents have been reviewed for this project referral:</p> <p><i>Appendix B5 Heritage Management Sub Plan Parramatta Light Rail Stage 1 Enabling Works dated September 2018 Rev C.</i></p> <p>It is noted the overarching Construction Environment Management Plan (CEMP) and the Noise and Vibration Management Sub Plan were not referred to the Heritage Council at this stage for comment. This are required for any further assessment and comment.</p> <p>Following a review of the documents, we provide the below comments. Further detailed comments are supplied in the attached Annexure.</p>	<p>The CEMP, construction noise and vibration management subplans have been supplied for information only to OEH on the 16th of November 2018. The Team Binder reference is PLRP-DWJV-OEH-CORR-000002</p>
2.0	<p>General</p> <p>It is very ambiguous which conditions of consent apply to the Enabling Works and/or Construction. For example, the conditions Heritage Interpretation Strategy (E64), Archaeological Excavation Director (E72), and the preparation of Archaeological Research Designs and Vibration Monitoring (E73).</p>	<p>The staging report for the Enabling Works, showing relevant conditions has been for information only to OEH on the 16th of November 2018. The Team Binder reference is PLRP-DWJV-OEH-CORR-000002.</p> <p>A Heritage Interpretation Strategy (E64) has been drafted and will be finalised prior to works in Queens Wharf Reserve. This is the only area where the Enabling Works triggers this condition. This HIS will be submitted to the Heritage Mailbox and will be</p>

	<p>Further discussions between yourselves and DPIE are required to clarify and clearly state when a condition of consent applies to Enabling Works and/or Construction.</p> <p>In addition, it is recommended that the design of the Enabling Works is undertaken in consultation with the project design team to ensure works are not unnecessarily undertaken prior to detailed design of the project being developed as this has the potential to restrict opportunities for design refinement to avoid impacting heritage items during the detailed design phase.</p>	<p>implemented in consultation with OEH and Heritage Council (or its delegate).</p> <p>Iain Stuart has been nominated as the excavation director. This is included within the Archaeological research design.</p> <p>An archaeological research design has been developed and is provided today.</p> <p>Vibration monitoring is included within the construction noise and vibration monitoring subplan. Section 5.3, and 6.3.2.</p> <p>The alignment design of the Enabling works scope is outside of the scope of this management plan. Design of the Project is based around sizing of pipes and materials strength etc. Design interactions related to alignment and extents were included within the EIS and SPIR process. Revisions of the scope to minimise the impacts on heritage items was included in this process.</p>
3.0	<p><u>Scope of the Sub Plan</u></p> <p>It is understood that the submitted Sub Plan is for the enabling works only, and that further Heritage Sub Plans will be prepared for the project. However, this remains unclear within the document. The scope of this Sub Plan should be made explicit in the introduction of the document to ensure clarity of use and to better explain why many of the conditions appear not be triggered at this stage under Enabling Works and require more detailed design to inform their progression.</p>	<p>Yes, this HMP is for the enabling works only. Additional information on scope will be included in the HMP.</p> <p>Relevant conditions are included within the Staging report which was supplied on the 16th of November. The staging report indicates which conditions have been triggered for the relevant stage of works.</p>

4.0	<p><u>Scope of the Project Works</u></p> <p>A list of works has been included within the document relating to the Enabling Works. However, it is unclear what works are proposed in each area. The Heritage Management Sub Plan should provide adequate information about the scope of works at each area to understand the details and what impacts the Enabling Works will have to heritage items and heritage conservation areas, what mitigation is required, who is responsible and how to manage non-compliance. For example, it is unclear what works are proposed adjacent to Parramatta Correctional Centre and whether the appropriate mitigation measures have been identified for implementation</p>	<p>The HMP is an overarching document which describes the processes for management heritage with the enabling works.</p> <p>Further detail as described is included within the ARD, what mitigation measures will be implement throughout the works areas. To note, mitigation measures will be developed in consultation with a heritage and vibration consultant, as described in Section 6.3.2 of the noise and vibration management plan. Some additional information regarding local and state heritage items / conservation areas within the curtilage will be incorporated into a summary table within the HMP.</p> <p>Non-conformances are managed through the CEMP framework and is described in the CEMP in Section 7.6</p>
5.0	<p><u>Enabling Works boundary</u></p> <p>The Enabling Works boundary is contrary to the layout provided within the Preferred Infrastructure Report (PIR) which forms part of the approval. In particular, the layout along O'Connell Street, North Parramatta in the PIR indicates no works occurring north of Barney Street. Further, the PIR notes that <i>design refinements have occurred so that no construction works are required on O'Connell Street north of Barney Street thereby eliminating visual impact to O'Connell Street</i>. It is unclear why this has changed. Further clarification is required on the works boundary. It is also unclear if exclusion zones are required for any heritage items. These should be clearly identified on a map.</p> <p>In addition, the Enabling Works boundary runs adjacent to a number of heritage items including Rosemeath Cottage, Avondale and North Parramatta Conservation Area. It remains unclear whether any of the</p>	<p>The footprint of the disturbances areas of the project including the Enabling Works is provided in the EIS and SPIR.</p> <p>The relevant amended disturbance boundaries amended in SPIR. Screen shots are shown below:</p>

Enabling Works will trigger the need for vibration monitoring. This must be established prior to Enabling Works commencing.



		<p>Regarding road or utility works beyond the assessed boundary, please refer to the TfNSW letter which explains the process for the Conditions of Approval Appendix A – Flexibility Provisions. The visual impact along O'Connell Street north of Barney Street would be minimal, please refer to the response to comment 6.0 below and the design changes which facilitate tree retention.</p> <p>General heritage mitigation measures are described in Section 6.3.2 of the noise and vibration management plan. Consultation with a heritage consultant and vibration specialist will be sought prior to works near heritage items</p>
6.0	<p><u>Parramatta Correctional Centre (Parramatta Gaol)</u></p> <p>The row of Cinnamomum camphora (Camphor Laurel) street trees along the western side of O'Connell Street date from the 1920s and help to emphasise the linearity of the Parramatta Correctional Centre's enclosing sandstone walls. The street trees have high historic and aesthetic significance deriving from their deliberate planting and their contribution to the setting of Parramatta Gaol and to the streetscape. As part of the Enabling Works, these trees are proposed to be removed.</p> <p>Mitigation measure VL-6 notes '<i>During detailed design, opportunities would be investigated where feasible to retain vegetation in order to screen and visually integrate the project with the surrounding area...including along the O'Connell Street perimeter of Parramatta Gaol (Parramatta Correctional Centre)</i>'. There is concern that these significant trees will be removed before opportunities for retention are investigated during detailed design development. It is therefore recommended that</p>	<p>During the concept and detailed design process, TfNSW designed the upgraded O'Connell Street whilst considering the trees along the road. Road safety considerations constrain the design options. TfNSW note the following:</p> <ul style="list-style-type: none"> Initial concept designs using Board Street required the removal of the whole row of camphor laurels, as was identified in the EIS. Further design refinement identified the opportunity to use Barney Street, which facilitated retention of roughly half of the row of trees (from Barney to Board street along O'Connell Street) as was identified in the SPIR. Further work during detailed design identified that the two most mature trees (about 33% larger than the others) could be retained in the island at Barney and O'Connell Street intersection.

	<p>detailed design in this area is undertaken as part of the Enabling Works design to ensure the trees are not removed.</p>	<ul style="list-style-type: none"> • In discussions with the landowner of the Parramatta Gaol (Deerubbin Local Aboriginal Land Council), they requested felled trees be delivered to the Gaol for the Aboriginal community use of making furniture. PLR are investigating the feasibility of this request. • Discussions with the City of Parramatta identified their preference to use trees that have a similar canopy in replacement plantings. <p>This process will be summarised and noted within the HMP that design was undertaken with the intent to minimise heritage impacts</p>
7.0	<p><u>Archaeological Research Designs</u></p> <p>It is not clear from the document whether the Archaeological Research Designs will be a key input into the Enabling Works or Construction, or both. The development of the project's detailed design must inform the research design to mitigate impacts. This again relates to the scope of this HMP and how it relates to the Enabling Works. Condition of Consent E68 refers to avoiding impacts through detailed design. However if there is an impact from the Enabling Works, these must follow this principle of avoidance of harm to archaeology of significance.</p>	<p>The draft ARD for the works has been prepared and is tabled today. The works will be undertaken as per the ARD. The ARD will be updated and submitted via the Heritage Mailbox following this meeting</p> <p>The design has been undertaken in accordance with minimising impacts to heritage items, namely During Concept and initial Detailed Design phases, TfNSW has investigated the preservation of the sandstone kerbing and the Gaol walls. The sandstone kerbing will be recovered and stored at the City of Parramatta's compound for sandstone kerbing. For reconstruction of the road, heritage sandstone kerbing from the said compound will be installed on the western kerb (closest the Gaol wall).</p> <p>The Gaol wall was considered in the design, mainly the requirement to periodically access the footings of that wall to validate they are in good keeping. The design has allowed for a nominal 700mm offset from the wall to the hardstand footpath whereas these periodic investigations can be undertaken by the landowner. The design was also coordinated with the landowner for their consideration of aboriginal interpretation of the area.</p>

		To note: Design of the Enabling works scope is outside of the scope of this management plan. Design interactions were included within the EIS and SPIR process to minimise the impacts on heritage items
8.0	<p><u>Management of Aboriginal and Historical Archaeology</u></p> <p>The document separates management of historical and Aboriginal archaeology. This is a concern as Parramatta contains State significant archaeological evidence which often includes post contact Aboriginal archaeology within historic layers. In separating the methodologies and management into two sections, there is a danger in assuming it will only be relevant to manage it the archaeology in one way, either Aboriginal or Historic. It is recommended the start of section 5 should include a sentence outlining the archaeological resource has potential to be significant in both categories and may need to be managed in a way that complements multiple values.</p>	Noted. And to be included
9.0	<p><u>Auditing</u></p> <p>Reference to Section 3.9.3 in the CEMP is provided relating to the Auditing program. However, no detail has been supplied within this document. It remains unclear how auditing will include review of the heritage management program, such as peer review or compliance with research design approved etc. We do note however, that a management flowchart has been included for unexpected finds with in the document under Appendix A.</p>	The auditing process is detailed in Section 7.4 of the CEMP.

Annexure: OEH detailed comments on the CEMP Heritage Subplan

Section/page	Part of plan	Heritage Division Comment	DWJV Response
1.3, p3	Scope of sub-plan	<p>Provide explanation of the scope of the Sub Plan ie for the enabling works only, to ensure clarity of use and to better explain why many of the conditions appear not be triggered at this stage under Enabling Works and require more detailed design to inform their progression.</p> <p>In addition, the list of works should be expanded to include what works are being undertaken in each area to ensure the impacts are identified, and to better guide the management of the works during construction.</p>	Noted and will amend
3.2 - Minister's Conditions of Approval Table 3-1, p7	E44	<p>The CEMP should outline the protocol for monitoring where demolition (which is part of the enabling works) is proposed, and in what context. Demolition may not harm heritage items, however that is not clear in this plan.</p> <p>It is recommended that Table 3-1 be updated to be clearer and more focused to address the Enabling Works and heritage requirements.</p>	Noted and will amend
Table 3-1, p7	E60 and E61	Reference to Environmental Control Map needs to be clarified.	Noted and will amend
Table 3-1, p8	E64 Heritage Interpretation Strategy	<p>Heritage Interpretation Strategy (HIP):</p> <p>It is noted in the document that this requirement for the HIP will be <i>'confirmed during detailed design once it is confirmed that impacts will occur within the curtilages of these items.'</i></p> <p>This condition requires the HIP to be prepared prior to impact commencing for these sites. This requirement is not specifically excluded under Construction in the glossary. This indicates specific detail will be required at the Enabling Works stage.</p> <p>If it is identified that Enabling Works at Robin Thomas</p>	<p>HIS prepared for Queens Wharf Reserve</p> <p>Not required now for Robin Thomas Reserve as Enabling Works impacts not within curtilage</p>

Section/page	Part of plan	Heritage Division Comment	DWJV Response
		Reserve (the Ancient Aboriginal and Early Colonial Landscape)' and 'Queen's Wharf Reserve' will trigger this condition, then parts of this strategy must be addressed. Timing for preparation of this needs to be clear prior to any Enabling Works commencing, as well as any amendments that may need to be undertaken to the HIP to incorporate all PLR sites as outlined in that strategy prior to works commencing.	
Table 3-1, p9	E65	It is recommended that it is clearly identified whether the Enabling Works will trigger this condition or not. In addition, there is a concern that Enabling Works may be undertaken unnecessarily prior to detailed design being developed. This would result in impacts to heritage items that could be avoided through the detailed design process. Therefore, it is recommended that a co-ordinated approach is taken with the project design team to ensuring the Enabling Works do not unnecessarily impact heritage items and do not restrict opportunities for design refinement to avoid impacting heritage items during the detailed design phase.	Detailed design will have consideration for heritage impacts. This will be addressed in the HMP.
Table 3-1, p10	E68	If Enabling Works triggers this condition, please include details of how this aspect of the project will be managed.	Detailed design will have consideration for heritage impacts. This will be addressed in the HMP (note, for (f) Queens Wharf Reserve only as the only impacted item).
Table 3-1 p10	E69	The Subplan should identify how to monitor works in the relevant areas of Enabling Works, how to address exceedances and what to do for non-conformity and mitigation. Memos that are separate to the subplan should not be submitted for additional consultation in future. That is not consistent with the application for a CEMP for a construction project.	E69 would not be triggered by Enabling Works as no acoustic treatment of heritage buildings would be required. This is identified in the Staging Report.
Table 3-1, p11 P12; p13	E72, E73, E74	It should clearly state an Archaeological Research Design relevant to the Enabling works will or will not be prepared.	ARD has been prepared – will clarify in CHMP

Section/page	Part of plan	Heritage Division Comment	DWJV Response
Table 3-1 p13	E76	It is unclear what 'This plan' means in terms of actions.	Noted and will clarify
Section 3.3 Table 3-2, p15-17	HE 1	Preparation of archaeological research designs for the three zones of the project. This is identified as needing to be prepared prior to, during and after the enabling works, but it is unclear what actions will be undertaken and when. It is recommended that this commitment is stepped out as to what work is required for the Enabling works program to start, and what works will be undertaken during that program.	ARD has been prepared – will clarify in CHMP
Table 3-2, p18, p19	HE 2/ HE 3/ HE 4	<p>It is unclear why there is a discussion around the application of salvage excavation during Enabling Works – agreed that a research design in conjunction with detailed design should address this requirement.</p> <p>The condition around testing for e.g. the Ancient Aboriginal and early colonial landscape, means the Enabling Works should be informed by these results. It also means for other sites like the Queens Wharf reserve, this should also be avoided in terms of impact. This means the enabling works, although not detailed design needs to be informed by the archaeological program first and avoidance of impact, if it is likely, should be addressed through even this part of the project.</p>	<p>More detail provided in ARD, will clarify in HMP that ARD is being prepared</p> <p>Please note that Robin Thomas Reserve (Ancient Aboriginal and early colonial landscape) would not be impacted by Enabling Works. Impact on relevant items will be managed through the HMP and ARD as discussed in meeting of 20/11/2018.</p>
Table 3-2, p31	HE-17	Prior to any removal of trees along the west side of O'Connell Street, the mitigation measure VL-6 should be adequately investigated - 'During detailed design, opportunities would be investigated where feasible to retain vegetation in order to screen and visually integrate the project with the surrounding area...including along the O'Connell Street perimeter of Parramatta Gaol (Parramatta Correctional Centre).'	Noted. Opportunities to reduce tree impacts through design have been considered throughout the ongoing process of concept and detailed design. See notes on comment 6.0 above
Table 3-2, p32	HE-22	Parramatta Correctional Centre should be added to the list.	Noted and will add
Table 3-2, p35	AB-4	It is recommended that this be linked to a constraints	Mitigation requirement to include exclusion zones in

Section/page	Part of plan	Heritage Division Comment	DWJV Response
		map.	ECMs is to be incorporated into HMP.
Section 5		Section 5 should also consider the Preferred Infrastructure Report as well as the conditions of consent and how these conditions may vary the advice and management of heritage items along the corridor route in the original EIS documents. This is relevant particularly for management of archaeological sites where there are requirements for additional early investigation to inform the approach to managing sites in conditions E68 and E73.	<p>REMMs have been included</p> <p>Information on archaeological management included in the ARD</p> <p>Items which are out of scope will also be clarified in the HMP.</p>
Section 5.1, p39		Table 5-1 is the list of heritage items which will be affected by the proposed works and this links to maps in Appendix C. However, Appendix B is the map set which includes all heritage items along the entire route. This does not help to explain the impacts and management required for the enabling works under the current document.	Noted and will clarify
Table 5-1, p39-40		<p>Identifies Built historic heritage items which are listed on Statutory registers relevant to the enabling works. This is misleading as it implies there are not listed archaeological sites within the enabling works corridor, e.g. the Ancient Aboriginal and early colonial landscape is not mentioned. This level of detail is lacking from following tables. Project impact is outlined as follows:</p> <ul style="list-style-type: none"> Convict Drain – no direct impacts, Vibration impacts to be confirmed during detailed design. Is there a measure to identify a baseline and then a monitoring program during Enabling Works which can also be used for the construction work? Parramatta LEP 10059 and Brislington Property, Moreton Bay Fig Tree should be two items under the LEP – the listing is incorrect as stated (10059 should be 10059). These listings include Brislington 	Noted and will add archaeological items

Section/page	Part of plan	Heritage Division Comment	DWJV Response
		property, Moreton bay fig tree (and potential archaeological site) which is SHR 59 and Parramatta District Hospital Archaeology SHR 828.	
Table 5-2, p41-42		<p>Outlines historical archaeological Management Units which may be affected by the Enabling Works within a management unit (2) for locally significant archaeology and (1) State significant archaeology.</p> <p>HAMU 19 (Barrack Lane) has elsewhere been advised consistently by the Heritage Council of NSW may contain STATE significant archaeology linked to the adjacent and confirmed remains of the convict lumberyard. These remains extend into Barrack Lane. This is incorrectly identified as being within HAMU 2 (locally significant archaeological management). Note this is reflected by the Conditions of Consent.</p> <p>HAMU 20 (Soldier's District) which coincides with SHR listed Ancient Aboriginal and early colonial landscape – SHR listing 1863, also known as AHIMS 45-6-3157. This is separately listed under Aboriginal Archaeology.</p> <p>HAMU 15 (Queens Wharf Reserve) has elsewhere been advised consistently by the Heritage Council of NSW may contain STATE significant archaeology. This is incorrectly identified as being within HAMU 2 (locally significant archaeological management). Note this is reflected by the Conditions of Consent.</p> <p>HAMU 24 – should be renamed – it is the carpark for the Parramatta District Hospital Site. Archaeological Assessment has previously been undertaken of this site by Casey and Lowe.</p>	Noted and will amend where needed. This is also dealt with in the ARD
Section 5.3, p42	Aboriginal Archaeology	The potential for archaeological resources from historical and Aboriginal archaeology within the same contexts is likely in Parramatta. It is recommended the start of section 5 should include a sentence outlining the archaeological resource has this potential. The methodologies for works within the PLR corridor – for Enabling works and later construction should also include	Noted and will add

Section/page	Part of plan	Heritage Division Comment	DWJV Response
		advice on how to best manage the two coinciding phases of occupation and evidence together in one method. To resolve this, it is suggested that CEMP subplan should outline a management protocol where historical and Aboriginal archaeological resources are anticipated or found. This would satisfy requirements e.g. for notification that remain under s146 of the Heritage Act 1977 as well as s89A of the National Parks and Wildlife Act 1974.	
Section 6	Environmental Aspects and Impacts	This section outlines specific management requirements for each of the items identifies in section 5 under section 6.2 and in Table 6-1. This table does not explain exactly what the enabling works would involve.	Noted and will clarify
Table 6-1, p44-46		SHR 1863 Ancient Aboriginal and early colonial landscape – It is unclear how if impacts occur, how these could be ‘made good’ at the end of the enabling works. Surely the management should be the Enabling works are preceded by an archaeological investigation program which is required by Condition E73B. Any times need comply with condition E68. There is another question of requirements for the Heritage Interpretation Strategy prior to impacts being undertaken. SHR 812 Parramatta Correctional Centre – It is unclear how the argument for the vegetation not being significant has been made. Convict Drain – LEP 1647 – it is not clear how the item would be monitored for noise and vibratory impacts. The Noise and Vibration Management sub plan has not been referred for comment.	RTR will not be impacted See notes in comment 6.0 around removal of trees Noise and vibration Management Plan has been tabled, will add clarification to HMP
Section 7 Environmental mitigation and management measures, p52	Section 8.1	This section appears to outline who is responsible for actions prior to the enabling works commencing and for what activity. It is important that this CEMP and its subplan just relates to Enabling works if the people or contractor changes for the construction package. They are linked to H items as outlined in table 3-2. It remains unclear what the H reference refers to.	Noted and will clarify

Section/page	Part of plan	Heritage Division Comment	DWJV Response
Section 8 Compliance Management, p52-53	Section 8.1	This section needs to explain the works will only relate to this Enabling Works program. The Non-Aboriginal heritage education and training package for the project is not included in Appendix A, although the document (Section 8.1, p53) states this.	Noted, and scope of HMP will be made clear. Identification of potential heritage impacts and stop work processes in induction process and ECMs will be noted.
Appendix B	Mapping	Figure 9-8 Aboriginal heritage – implies the Aboriginal archaeological site is not SHR listed (this is the Ancient Aboriginal and early colonial Landscape). This item also extends beyond the area shown.	Noted and will amend
Appendix B	Mapping	Figure 9-10 Non-Aboriginal archaeology North and Figure 9-9 Non-Aboriginal archaeology CBD do not show items that may be listed on e.g. the SHR or an LEP. This is important to understand where these sites inter- relate.	Noted and will clarify
Appendix	Mapping	A constraints map should be provided indicating any exclusion zones around heritage items.	Will provide exclusion zones on ECMs where relevant. This will be noted in mitigation measure in HMP.

Consultation for the Robin Thomas Reserve Playing Fields Reconfiguration

Reference Number	Comment	Response	Management plan reference location
Stakeholder	City of Parramatta Council		
Date sent for comment / document version	29 October 2020		
Date of comments	18 November 2020		
Document description	Email from Sandra Martin (on behalf of Anthony Newland) from City of Parramatta Council	Noted	N/A
1.1	No comments	N/A	N/A
Stakeholder	Heritage NSW		
Date sent for comment / document version	28 October 2020; 12 November 2020; 27 November 2020. Heritage Management Sub-plan, Rev.05 RTR Southern Playing Fields AWMS Enabling Works, 23 October 2020		
Date of comments	14 December 2020; 17 December 2020.		
Document description	Email received from Felicity Barry of Heritage NSW on 14 December 2020 requesting additional information to assist in the review of HMP.	Letter response provided to Heritage NSW to address request for information on 14 Dec 2020.	N/A
	Letter received from Heritage NSW on 17 December 2020 confirming that <i>"the CHMP is supported as drafted"</i>	Noted	N/A
2.1	Acceptance of HMP	N/A	N/A

Appendix C – Heritage Maps

Figure 8-1: Listed heritage items CBD overview

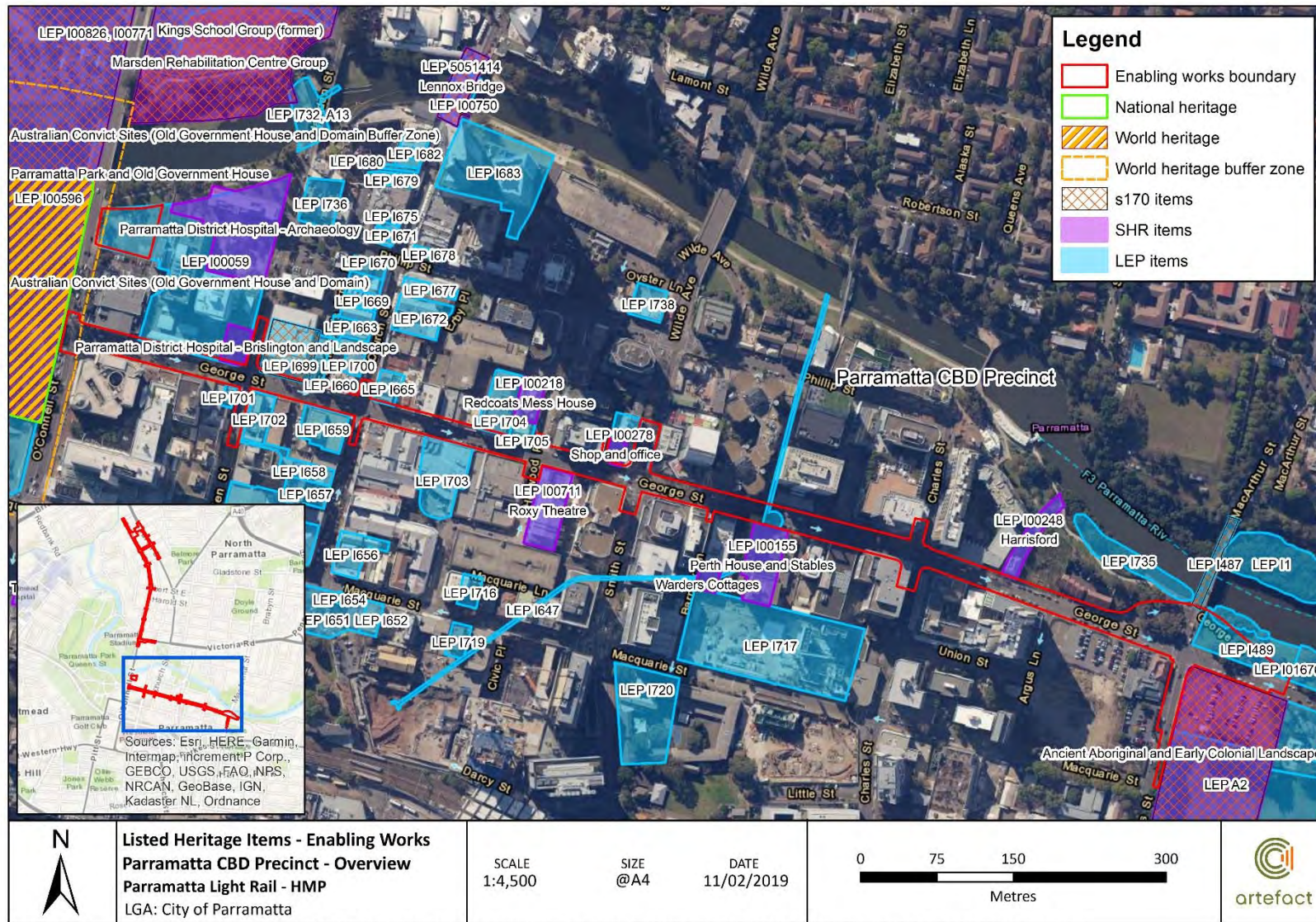


Figure 8-2: Listed heritage items CBD detail 1

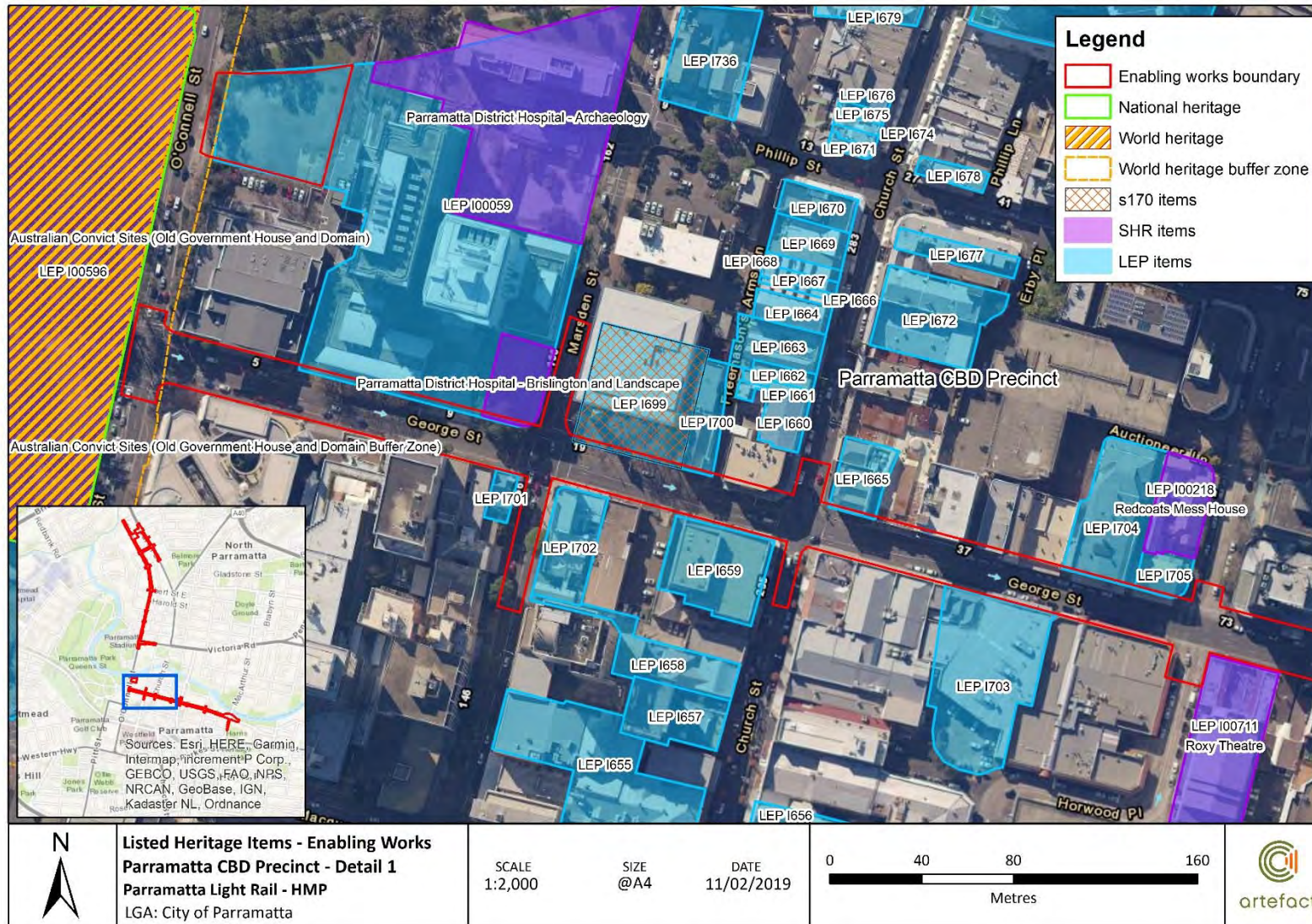


Figure 8-3: Listed heritage items CBD detail 2

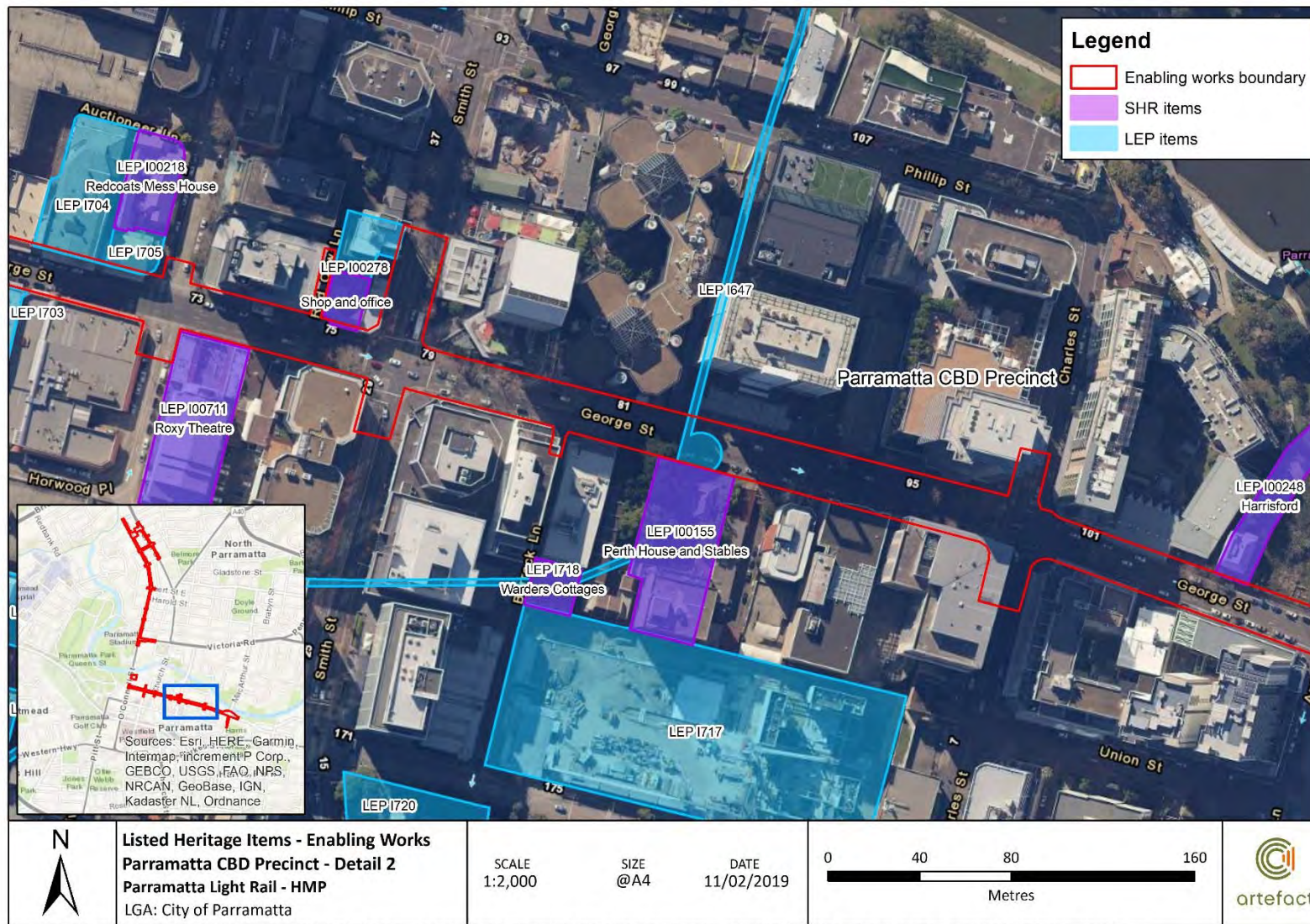


Figure 8-4: Listed heritage items CBD detail 3

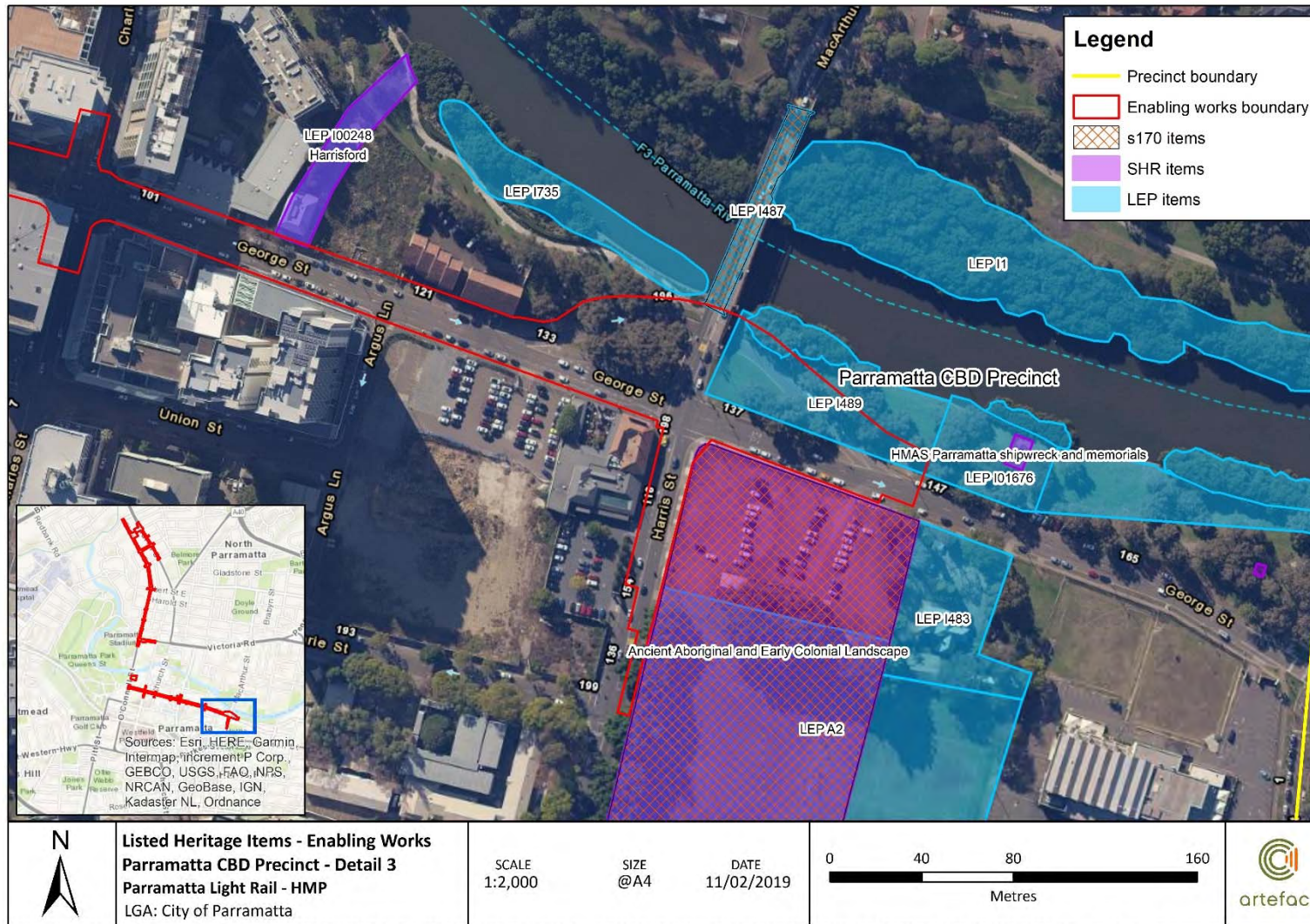


Figure 8-5: Listed heritage items north overview

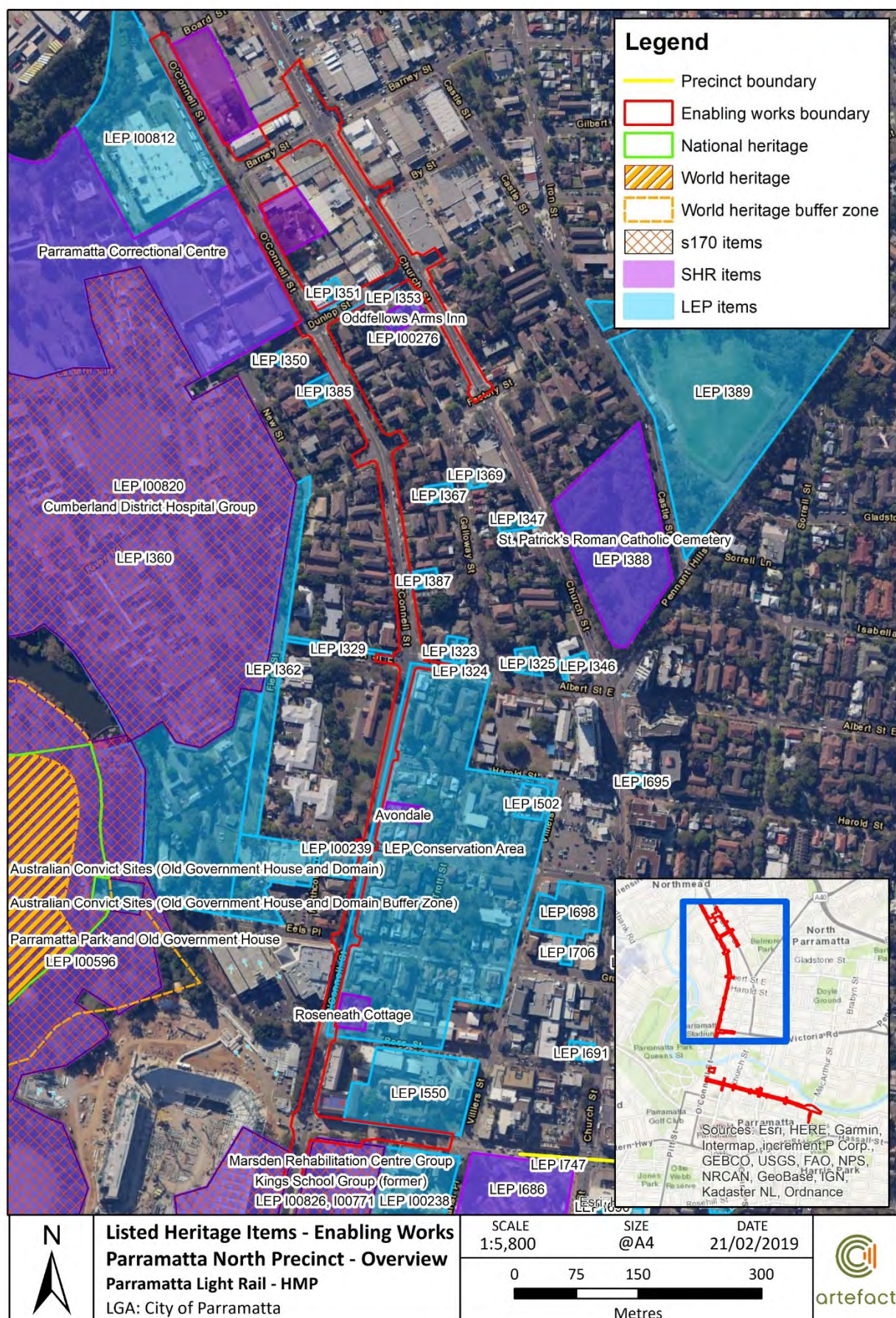
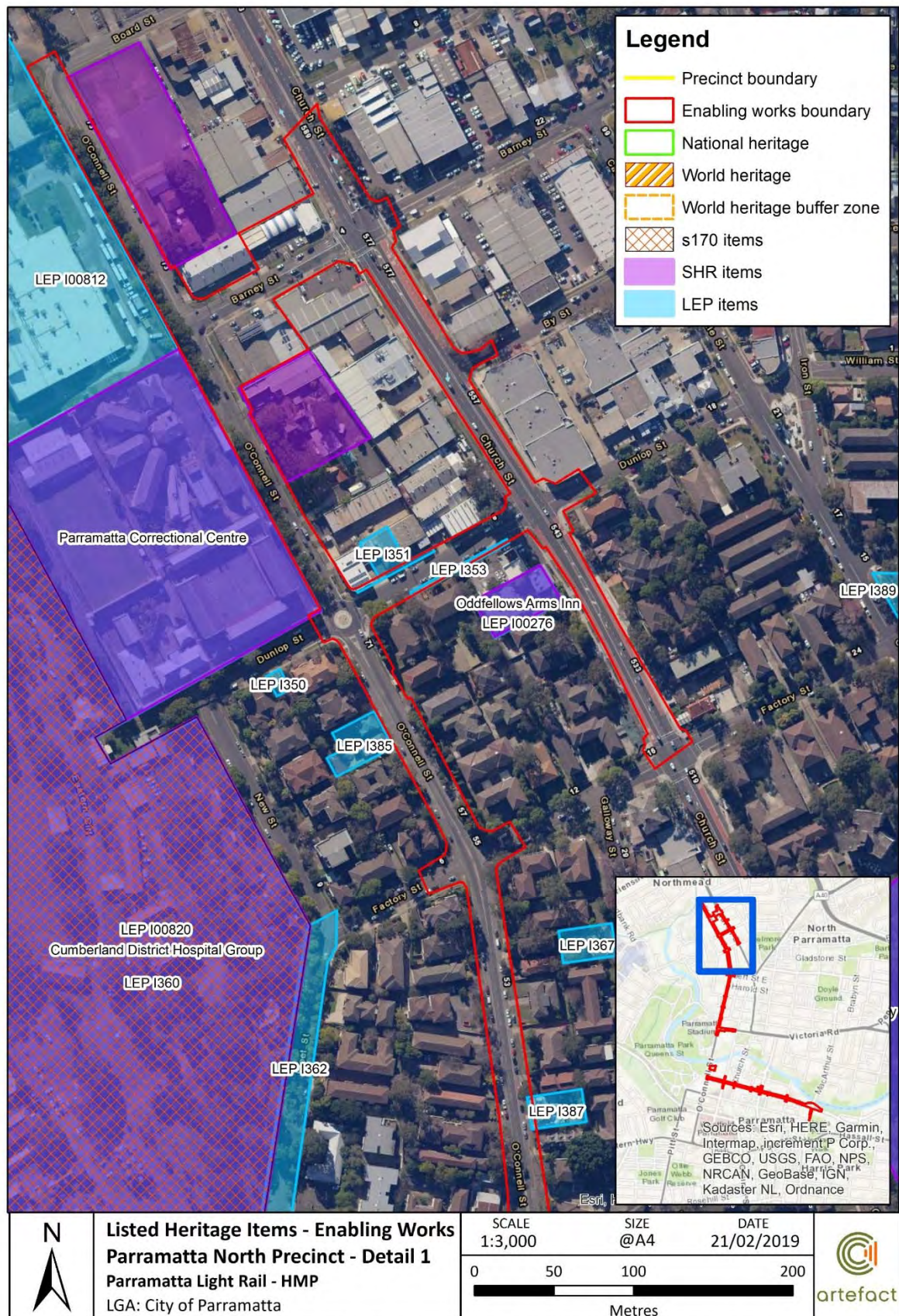


Figure 8-6: Listed heritage items north detail 1



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Figure 8-8: Aboriginal heritage PADs as identified in CHAR

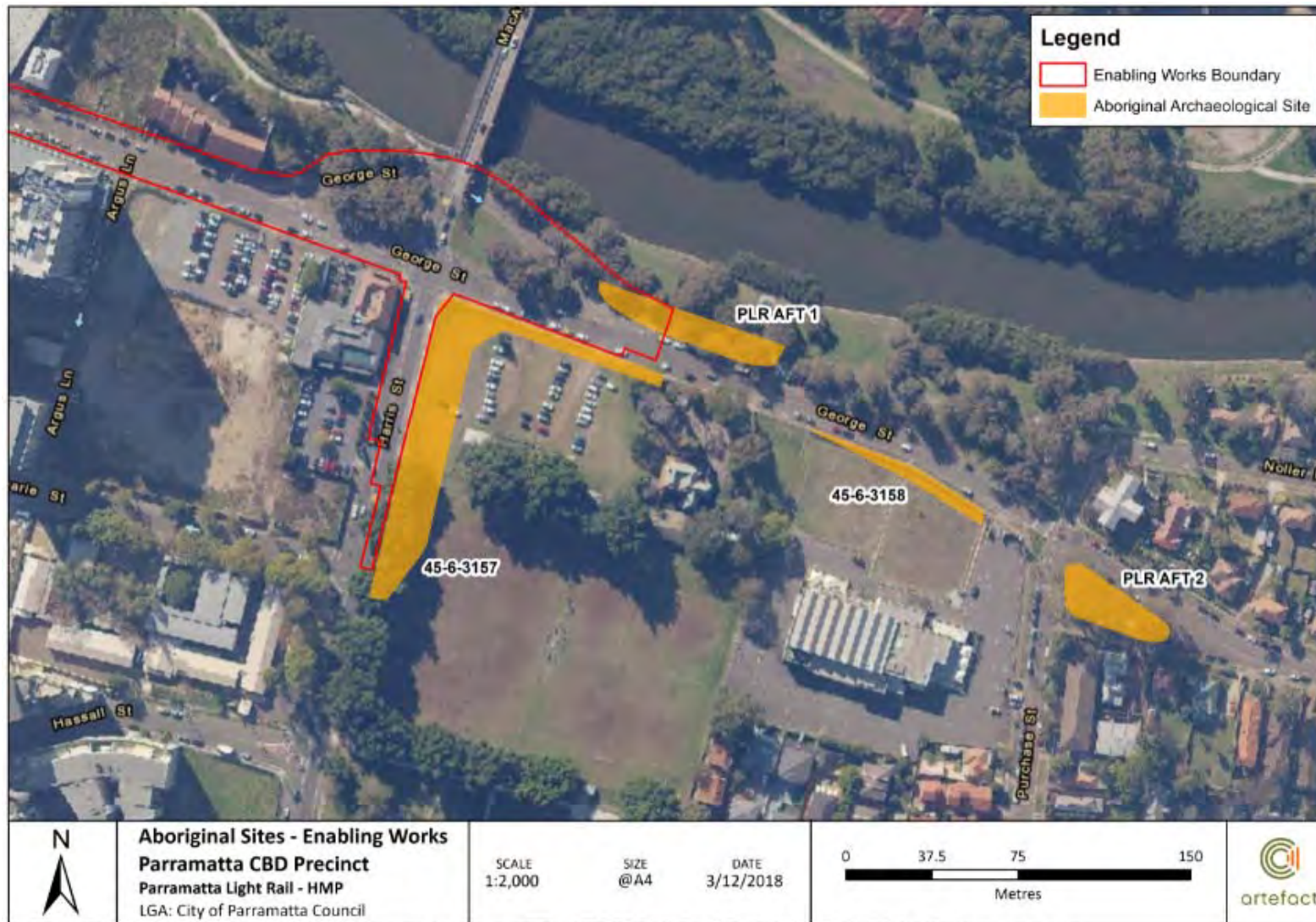


Figure 8-9: Non-Aboriginal archaeology HAMUs Parramatta North



Figure 8-10: Non-Aboriginal archaeology HAMUs Parramatta North

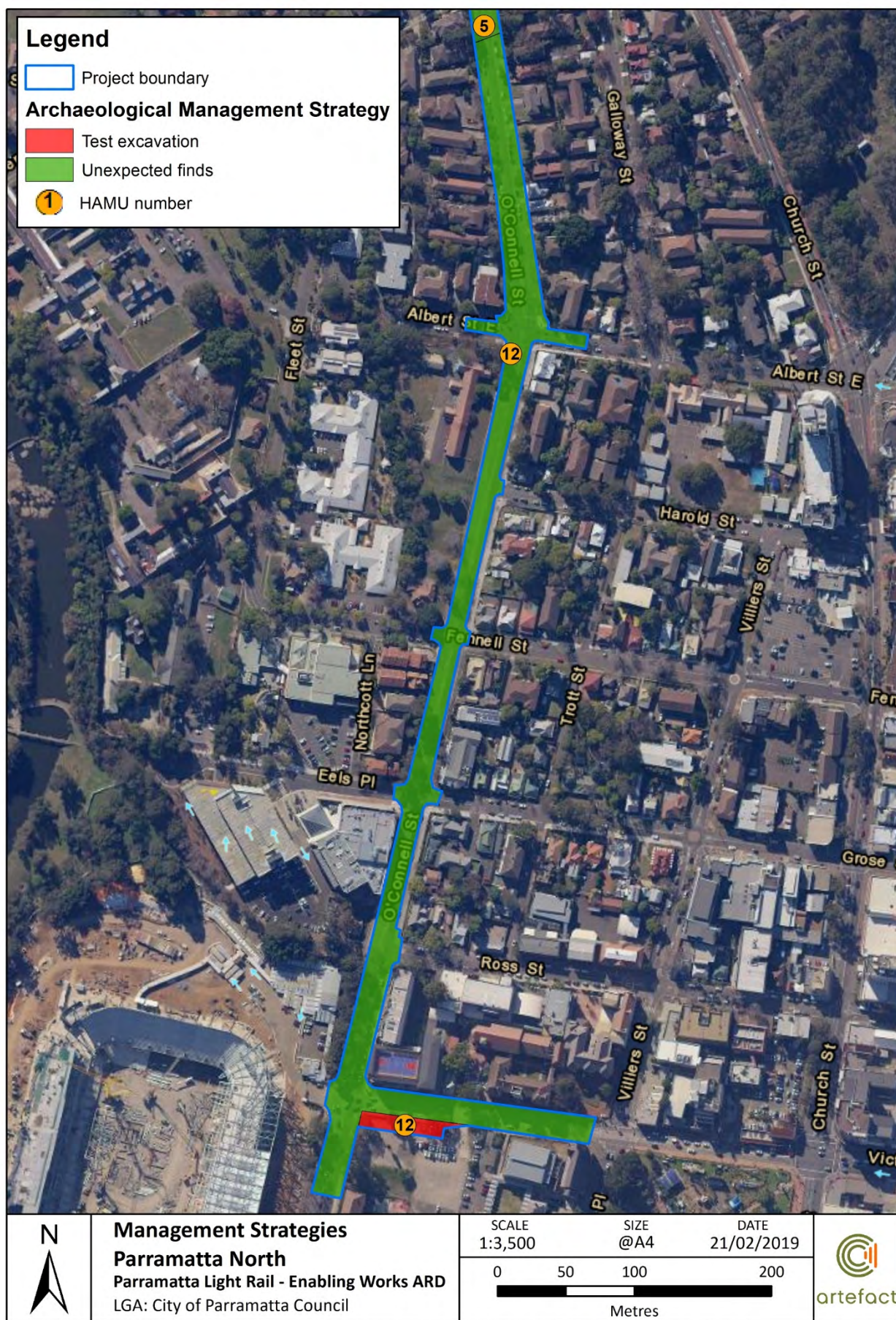


Figure 8-11: Non-Aboriginal archaeology HAMUs CBD

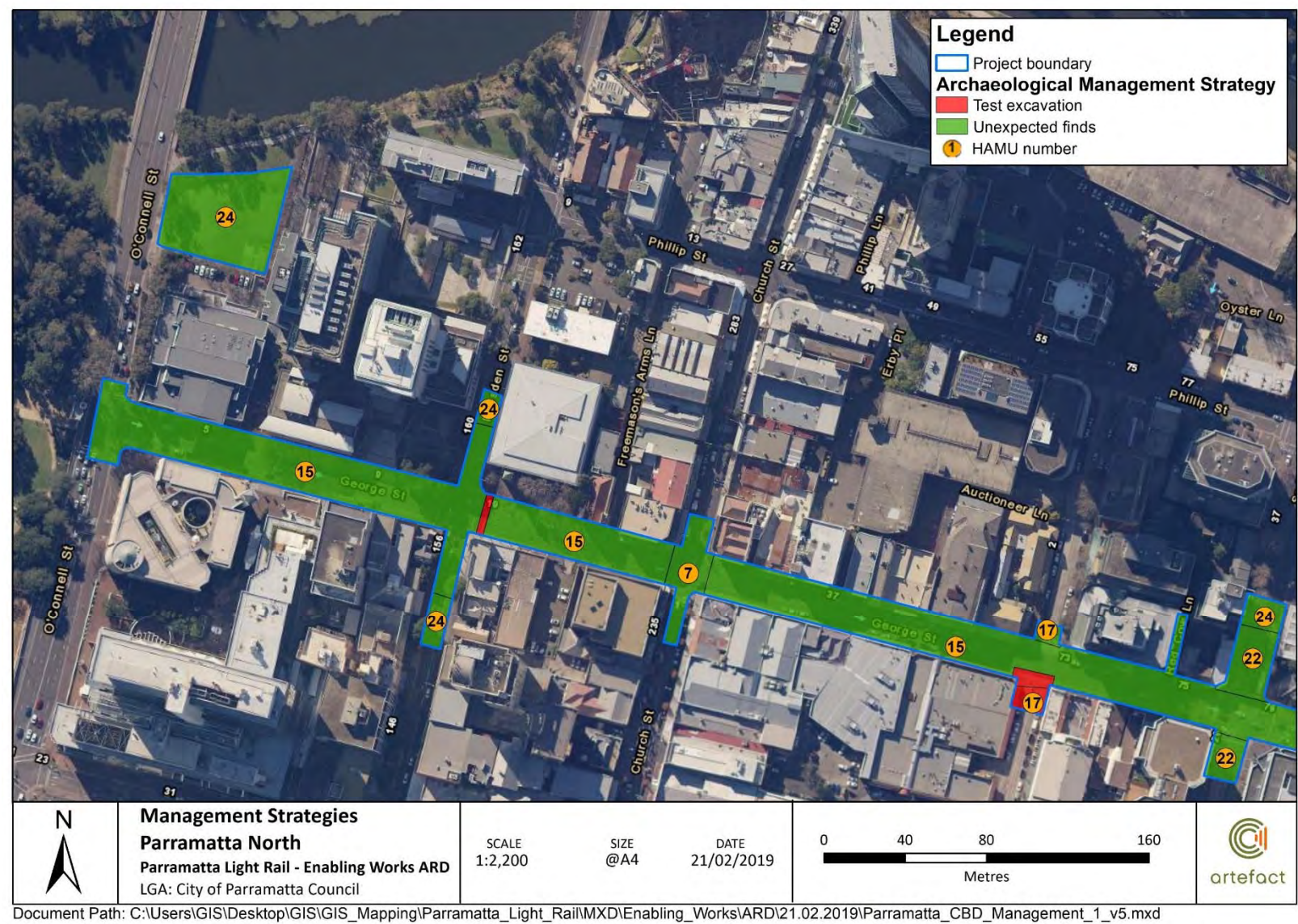


Figure 8-12: Non-Aboriginal archaeology HAMUs CBD

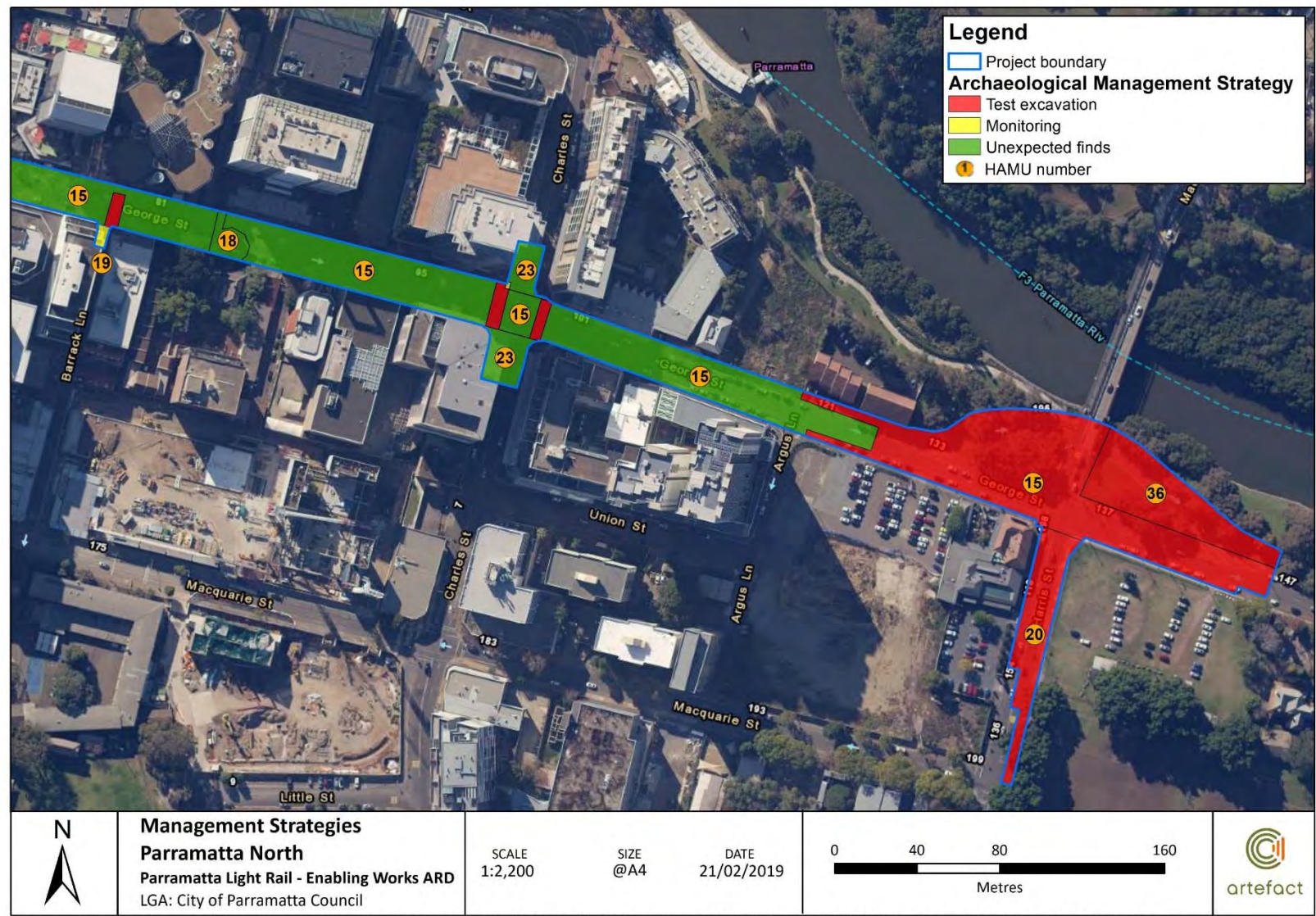
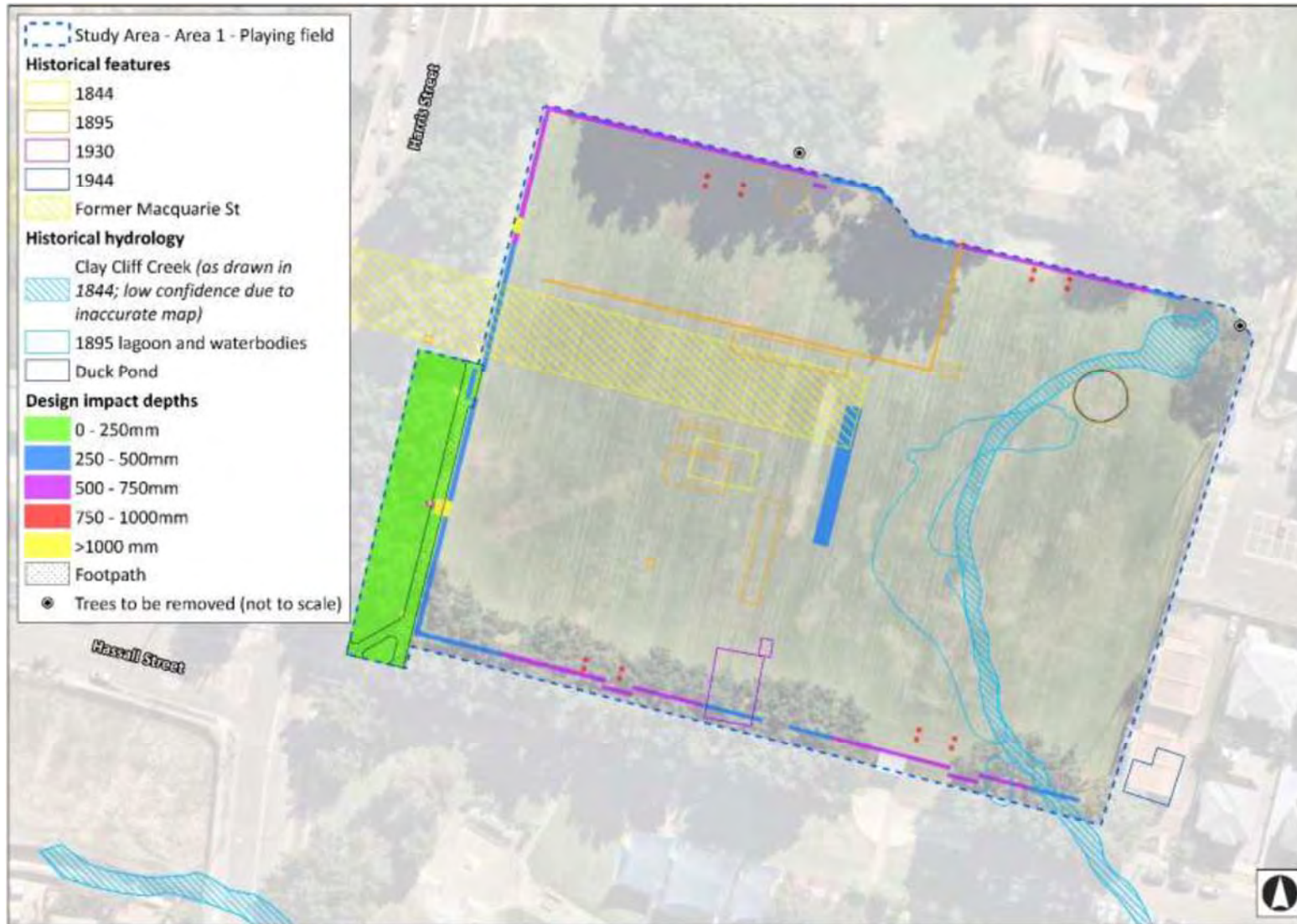


Figure 8-13: The overlay of historical archaeological features and depth of impacts by the Robin Thomas Reserve reconfiguration works





18 December 2020

Transport for NSW

Attention to: **Megan Haberley**
Senior Manager Environment
Parramatta Light Rail
130 George St, Parramatta, NSW 2150

**Review of Appendix B5 – Heritage Management Sub Plan.
Enabling Works (Package 1) Parramatta Light Rail – Stage 1
(PLR-DWJV-PJT-PE-PLN-00003)**

Pursuant to SSI8285 Condition of Approval A23 (d) i), as the approved Environmental Representative, I confirm that I have reviewed the updated document, Appendix B5 – Heritage Management Sub Plan. Enabling Works (Package 1) Parramatta Light Rail – Stage 1 (PLR-DWJV-PJT-PE-PLN-000003), Rev 05.02, dated October 2020, revised by Diona Ward Joint Venture, for consistency with the requirements of the Conditions of Approval.

In my opinion the aforementioned document, that has been updated to include the Robin Thomas Reserve playing fields reconfiguration, remains consistent with the requirements included in or required under the terms of the Conditions of Approval for the Parramatta Light Rail (Stage 1) development.

It is noted that the Archaeological Work Method Statement must be revised and resubmitted to Heritage Council of NSW (or its delegate) prior to works commencing.

Yours sincerely,

Australian Quality Assurance & Superintendence Pty Ltd (AQUAS)

A handwritten signature in black ink, appearing to read 'G. Lehn', is positioned above the printed name.

Gillian Lehn

Environmental Representative
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email: gillian.lehn@aquas.com.au |

Filename : AQ1148.05 PLR DWJV HMP rev05.02 endorsement 201218