

# Appendix B5

## Heritage CEMP Sub-plan

M6 Stage 1 Project

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## Document control

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## Document status

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## 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 Project website.

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 and on the Project website.

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## Glossary/Abbreviations

Abbreviations	Expanded text
Aboriginal place	An Aboriginal Place is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture.
Aboriginal objects	Aboriginal objects include any deposit, object or material evidence (not being a handicraft made for sale), including Aboriginal remains, relating to the Aboriginal habitation of NSW, before or concurrent with occupation by non-Aboriginal people, as defined in section 5 of the NPW Act
AMBS	AMBS Ecology & Heritage
CEMP	Construction Environmental Management Plan
CoA	Conditions of Approval
CGU	CPB Contractors, Ghella, UGL Engineering joint venture
DPIE	NSW Department of Planning, Industry and Environment
EES	NSW Department of Environment, Energy and Science
EIS	Environmental Impact Statement for M6 Stage 1
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
EMM	Environmental management measures
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
EWMS	Environmental Work Method Statements
Heritage Act	<i>Heritage Act 1977</i>
Heritage Council of NSW	Heritage Council
Heritage NSW	Heritage NSW, Department of Premier and Cabinet (formerly Office of Environment and Heritage (OEH) and Department of Environment Climate Change and Water (DECCW))
HM	Heritage Management or mitigation measure
HMP or Plan	Heritage Management CEMP Sub-plan
LALC	Local Aboriginal Land Council
LEP	<i>Local Environmental Plan</i>

Abbreviations	Expanded text
LGA	<i>Local Government Area</i>
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NVMP	Noise & Vibration CEMP Sub-plan
OEH	Office of Environment and Heritage
PACHCI	<i>Roads and Maritime Services Procedure for Aboriginal Cultural Heritage Consultation and Investigation (Roads and Maritime Services, 2011)</i>
PAD	Potential Archaeological Deposit
Project, the	M6 Stage 1
UDLP	Urban Design and Landscape Plan
RAP	Registered Aboriginal Parties
Relic	<p>A 'relic' means any deposits, artefact, object or material evidence that:</p> <ul style="list-style-type: none"> <li>relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and</li> <li>is of local or state significance.</li> </ul>
Secretary	Secretary of the NSW Department of Planning, Industry and Environment (or delegate)
SoHI	Statement of Heritage Impact
TfNSW	Transport for New South Wales

# 1 Introduction

## 1.1 Context

This Heritage CEMP Sub-plan (HMP) forms part of the Construction Environmental Management Plan (CEMP) for the M6 Stage 1 (the Project).

The HMP has been prepared to address the requirements of the Minister's Conditions of Approval (CoA), the environmental management measures listed in the M6 Stage 1 Environmental Impact Statement (EIS) as amended by the Submissions and Preferred Infrastructure Report (PIR), including the environmental management measures listed in the PIR and applicable legislation.

This Plan has been provided for information only and is not a requirement under CoA C4.

## 1.2 Background and project description

The Project comprises a new twin motorway tunnel (approximately four kilometres (km) in length) between the M8 Motorway at Arncliffe and President Avenue at Kogarah with a tunnel portal and entry and exit ramps connecting the tunnels to the surface.

Works will include a connection to the M8 Motorway, line marking of additional travel lanes between the St Peters interchange to the M6 Stage 1 tunnels, an intersection with President Avenue (including widening and raising of President Avenue), and intersection improvements at the President Avenue/Princes Highway intersection. Mainline tunnel stubs would be constructed to allow for connections to future stages of the M6 Extension.

The Project was declared as Critical State Significant Infrastructure (CSSI) and the M6 Stage 1 Project was approved by the Minister for Planning and Public Spaces on 18 December 2019.

Key features of the Project include:

- Mainline tunnels approximately 3km in length, sized for three lanes of traffic and line marked for two lanes on opening of the motorway;
- Entry and exit ramp tunnels approximately 1.5km in length and a tunnel portal connecting the tunnels to a surface intersection with President Avenue;
- Provision of a new intersection at President Avenue including the widening and raising of President Avenue at this location;
- Upgrade of the President Avenue and Princes Highway intersection to improve capacity and network integration;
- Provision of a new shared cycle and pedestrian pathways;
- Mainline tunnel stubs for a future connection to extend the Project to the south;
- Two motorway operation complexes (MOCs) as follows:
  - Arncliffe: including mechanical and electrical fit-out of the ventilation facility built by the New M5 Motorway project, and provision of a new water treatment plant and substation.
  - Rockdale (south): including a ventilation building, Disaster Recover Site (DRS), substation and power supply, deluge tanks.
- A tunnel ventilation system, including ventilation facilities located at Marsh Street, Arncliffe and West Botany Street, Rockdale, and in-tunnel ventilation systems (jet fans and ventilation ducts);
- New Utility Services, and modifications and connections to existing Utility Services;

- A permanent power supply connection to the Rockdale Ventilation Facility Site MOC from Ausgrid's Canterbury Sub-Transmission Substation;
- Emergency access and evacuation facilities, including pedestrian and vehicular cross, long passages, fire and safety life systems;
- Ancillary infrastructure for motorway operations including operations management and control systems, permanent power supply, communications, lighting, electronic toll collection system, toll gantries and traffic control and signage (both fixed and variable signage);
- Drainage infrastructure to collect surface water and groundwater inflows for treatment;
- Reinstatement of Bicentennial Park and recreation facilities;
- Reinstatement and rehabilitation of construction leased areas within the Arncliffe Site;
- Minor adjustments to local roads in the Project area;
- Development and implementation of systems integration and operating procedures with WestConnex Motorways to ensure safe operation of the interfaces between the Project and the WestConnex Motorways; and
- Any other works as required under the D&C Deed and the SWTC.

The following six surface compounds will facilitate construction of the Project:

- Arncliffe construction ancillary facility (C1), an existing construction site which was used for the construction of the M8 Motorway;
- Rockdale construction ancillary facility (C2), within an existing TfNSW depot;
- President Avenue construction ancillary facility (C3) at Rockdale, within Rockdale Bicentennial Park and an industrial area west of West Botany Street;
- Construction ancillary facilities (C4 and C5) near Muddy Creek to support construction of the Active Transport Corridor; and
- Princes Highway construction ancillary facility (C6) on the corner of Princes Highway and President Avenue, Kogarah to support the intersection surface works.

The F6 Extension Stage 1 EIS (AECOM, 2018) assessed the impacts of construction and operation of the Project on Aboriginal (Chapter 20) and non-Aboriginal heritage (Chapter 19 and Appendix N).

As part of EIS development, an assessment of Aboriginal cultural heritage was prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued by the NSW Department of Planning and Environment (DPE), now Department of Planning, Industry and Environment (DPIE).

The Aboriginal cultural heritage assessment was included as Chapter 20 of the EIS and determined that no previously recorded Aboriginal heritage sites, objects or places were present in the Project area, and that construction of the Project was not likely to result in direct or indirect impacts upon Aboriginal cultural heritage values.

Implementation of management procedures was recommended during construction in to reduce the potential risk of impacts to unexpected Aboriginal cultural heritage which could be discovered during construction.

An Aboriginal Stakeholder cultural heritage survey report was also prepared by the Metropolitan Local Aboriginal Land Council (LALC) to determine whether any features of Aboriginal cultural significance would be impacted by the project (EIS Appendix N). The Metropolitan LALC cultural heritage survey report indicated that it was likely that Aboriginal people had likely used the general area in the past, but the LALC had no objection to the proposed Project.

A Statement of Heritage Impact (SoHI) (AECOM, 2018b) was also completed to address the SEARs issued by DPE. The SoHI was included in the EIS as Appendix N. The EIS identified direct impacts to two non-Aboriginal heritage items and visual impacts to one additional heritage item as a result of the construction works, as well as potential for impacts to one further item as a result of the underground permanent power supply line works.

### **1.3 Scope of Heritage CEMP Sub-plan**

The scope of this Plan is to describe how CPB Contractors, Ghella, UGL Engineering (CGU) joint venture propose to manage and protect Aboriginal and non-Aboriginal heritage during construction of the Project. Operational impacts to Aboriginal heritage and associated mitigation measures do not fall within the scope of this Plan and are not discussed further.

### **1.4 Environmental management systems overview**

The environmental management system overview is described in Section 1.5 of the CEMP.

### **1.5 Consultation for preparation**

Refer to the CEMP for consultation requirements relating to the CEMP and all Sub-plans. Ongoing consultation with agencies and relevant stakeholders may be carried out for particular issues pertaining to the Project's impact on Aboriginal and non-Aboriginal heritage, such as in the case of any unexpected heritage finds.

Section 4 of this Plan outlines previous and ongoing consultation with Aboriginal stakeholders.

## 2 Purpose and objectives

### 2.1 Purpose

The purpose of this Plan is to describe how Aboriginal and non-Aboriginal heritage will be protected and managed during construction of the Project.

### 2.2 Objectives

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

- The Environmental Assessment prepared for M6 Stage 1 Project, including the EIS, the Response to Submissions on the EIS, the PIR and Response to Submissions on the PIR;
- Infrastructure Approval CoA (SSI 8931);
- TfNSW specifications G36, G38 and G40; and
- All other relevant legislation and other requirements included in Appendix A1 of the CEMP.

### 2.3 Environmental Performance Outcomes and Targets

The following Project outcomes for heritage as compiled in Section 24.7 of the EIS are relevant to this Plan:

- Impacts on heritage items will be minimised during construction and works will be undertaken in accordance with relevant management strategies for specific heritage items where impacts are unavoidable;
- Visual impacts to heritage items will be mitigated through individually tailored landscape treatments; and
- Key heritage values and stories will be incorporated into the final urban design and landscaping outcomes.

The following targets have been set with reference to this Plan:

- To minimise or avoid impacts on known non-Aboriginal heritage sites.
- To follow correct procedure and ensure notification of any unexpected Aboriginal or non-Aboriginal heritage finds uncovered during construction.
- To ensure that Cultural Heritage Awareness Training is provided to all personnel in the form of inductions before they begin work on-site.

Heritage performance outcomes in reference to this Plan are detailed in Table 1.

Table 1: Heritage performance outcomes

Project outcome	Document Reference
<p>The design, construction and operation of the project facilitates, to the greatest extent possible, the long-term protection, conservation and management of the heritage significance of items of environmental heritage and Aboriginal objects and places.</p>	<p>Sections 6 and 7.</p>
<p>The design, construction and operation of the project avoid or minimises impacts, to the greatest extent possible, on the heritage significance of environmental heritage and Aboriginal objects and places.</p>	

# 3 Environmental requirements

## 3.1 Relevant legislation and guidelines

### 3.1.1 Legislation

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

### 3.1.2 Guidelines

Guidelines, specifications and policy documents relevant to this Plan include:

- *Roads and Maritime Services Specification G36 – Environmental Protection* (Management System);
- *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (Roads and Maritime Services 2011);
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010) (for reference only);
- *Altering Heritage Assets* (Heritage Office and DUAP 1996);
- *Assessing Heritage Significance* (NSW Heritage Office 2001);
- *Roads and Maritime Cultural Heritage Guidelines* (November 2015);
- *Roads and Maritime Standard Management Procedure: Unexpected Heritage Items* (November 2015);
- *Archaeological Assessment Guidelines* (NSW Heritage Office and NSW Department of Urban Affairs and Planning 1996);
- *NSW Government Policy on Aboriginal Participation in Construction* (released 1 May 2015, updated 1 August 2016);
- *Statements of Heritage Impact* (Heritage Office and Department of Urban Affairs & Planning 1996, revised 2002); and
- *Assessing Significance for Historical Archaeological Sites* (Heritage Branch, Department of Planning, 2009).

## 3.2 Minister's Conditions of Approval

CoA relevant to this Plan are listed in Table 2. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 2 CoA relevant to HMP

CoA No.	Condition Requirements	Document Reference
E57	<p>The Proponent must prepare and implement an interpretive strategy to recognise the prior presence of Aboriginal people, within and adjoining the project area and in particular Patmore Swamp and Kings Wetland. The strategy must be prepared in accordance with relevant NSW Government guidelines and in consultation with relevant Aboriginal Stakeholders including the local Aboriginal community through an experienced Aboriginal facilitator.</p> <p>The outcomes of the Strategy must be incorporated into the UDLP [Urban Design and Landscape Plan] required under by <b>Condition E154</b>.</p>	The UDLP
E58	<p>An area of at least twice the construction area in Patmore Swamp must be rehabilitated with endemic flora species. The areas to be rehabilitated within Patmore Swamp, and details of the selected planting and species, must be incorporated into the <b>UDLP</b>.</p>	Table 6 and Section 6.3.4 The UDLP
E59	<p>Before conducting acoustic treatment at any building listed as a heritage item within the relevant LEP, the advice of a suitably qualified and experienced built heritage expert must be obtained and implemented to ensure any such work does not have an adverse impact on the heritage significance of the item.</p>	Section 7, Table 7 and Section 6.3.1
E60	<p>An <b>Unexpected Heritage Finds and Human Remains Procedure</b> must be prepared and implemented to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or EES.</p> <p>Note: Human remains that are found unexpectedly during the carrying out of works may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.</p>	Section 7, Sections 6.3.5 and 6.3.6 Appendix B

CoA No.	Condition Requirements	Document Reference
E76	The Proponent must conduct vibration testing prior to and during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances and/or any changes required to plant and equipment to prevent damage on built heritage items. These measures must be implemented where testing indicates the potential for vibration to damage built heritage items.	Section 7 and Section 6.3.1
E155	<p>The <b>UDLP(s)</b> must be prepared by a suitably qualified and experienced person(s). Unless otherwise approved by the Planning Secretary, the person(s) must show demonstrated skill and expertise in the following professional fields:</p> <ul style="list-style-type: none"> <li>a. architecture;</li> <li>b. urban design;</li> <li>c. landscape design;</li> <li>d. Aboriginal cultural heritage; and</li> <li>e. non-Aboriginal heritage.</li> </ul>	The UDLP

CoA No.	Condition Requirements	Document Reference
E156	<p>The <b>UDLP</b> must be prepared in consultation with relevant council(s), the community and affected landowners and businesses. The <b>UDLP</b> must meet the reasonable requirements of these stakeholders and must meet or exceed the design standards of relevant council(s) guidelines. The <b>UDLP</b> must include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> <li>a. an analysis of the heritage, built, natural and community context and values, and articulation of the urban design objectives, principles and standards for the CSSI;</li> <li>b. the urban design and landscape requirements of this approval, including but not limited to: <ul style="list-style-type: none"> <li>(i) the <b>Pedestrian and Cycle Implementation Plan</b> identified in <b>Condition E153</b>,</li> <li>(ii) heritage interpretation and plantings (including rehabilitation works to address heritage impacts on Patmore Swamps) identified in <b>Condition E58</b>,</li> <li>(iii) the <b>RFRP</b> [Recreation Facilities Replacement Plan] identified in <b>Condition E104</b>,</li> <li>(iv) sustainability initiatives;</li> </ul> </li> <li>c. the design of the CSSI elements including their form, materials, detail and staging;</li> <li>d. the design of the project landform and earthworks;</li> <li>e. the location of existing vegetation, areas of vegetation to be retained and proposed planting and seeding details, including the use of local indigenous species for revegetation activities;</li> <li>f. visual screening requirements;</li> <li>g. developed visuals, cross sections and plans showing the proposed design outcome; and</li> <li>h. details of strategies to rehabilitate, regenerate or revegetate disturbed areas and successfully establish and maintain the resulting new landscape.</li> </ul>	<p>Section 7 and Section 6.3.3 The UDLP</p>

### 3.3 Environmental Management Measures

Relevant EMM are listed in Table 3. 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 EMM relevant to HMP

Outcome	Ref #	Commitment	Timing	HMP Reference
Unexpected finds	AH1	If an Aboriginal object(s) is discovered during construction it would be managed in accordance with the <i>Standard Management Procedure: Unexpected Heritage Items</i> (Roads and Maritime Services 2015).	Construction	Section 7 Appendix A
Unexpected finds	AH2	If human remains are discovered during construction they would be managed in accordance with the <i>Standard Management Procedure: Unexpected Heritage Items</i> (Roads and Maritime Services 2015).	Construction	Section 7 Appendix B
Unexpected finds	AH3	The UDLP will include an Aboriginal interpretative signage strategy developed in consultation with the Metropolitan LALC.	Construction	The UDLP
General	NAH1	A Heritage Management Plan will be prepared for the project. The plan will detail measures to minimise impacts on identified heritage features within the project boundary and will also detail procedures to manage unexpected heritage finds.	Prior to construction	This Plan
General	NAH2	Impacts to non-Aboriginal heritage items will be avoided and minimised. Where impacts are unavoidable, works will be undertaken in accordance with the relevant management strategy as defined for the non-Aboriginal heritage item.	Prior to construction Construction	Sections 5, 6, and 7

Outcome	Ref #	Commitment	Timing	HMP Reference
Kings Wetland	NAH3	Consultation will be undertaken with Bayside Council regarding the impacts that would occur to the Kings Wetland (heritage item listed on the Rockdale LEP 2011). Roads and Maritime will provide a copy of the proposed landscape rehabilitation plan to Council to facilitate comment on the proposed impacts and mitigation measures.	Prior to construction	Section 7
Patmore Swamp	NAH4	Notification and consultation will be undertaken with Bayside Council outlining the impacts that would occur to the Patmore Swamp (heritage items listed on the Rockdale LEP 2011).	Prior to construction	Section 7
Kings Wetland	NAH5	<p>A protection area will be established either side of the proposed haul road to reduce impacts within the boundaries of the heritage listing. The delineation of the protection area will be maintained throughout the construction period.</p> <p>As part of the detailed design phase, the haul road through the boundaries of the heritage listing will be further optimised with a view to reducing the requirement for the removal of vegetation, as far as is practical.</p> <p>At the conclusion of construction, parts of the area within the boundaries of the heritage listing will be rehabilitated.</p>	<p>Detailed design</p> <p>Construction</p>	<p>Section 7</p> <p>Section 6.3.4</p>

Outcome	Ref #	Commitment	Timing	HMP Reference
Patmore Swamp	NAH6	<p>A protection area will be established as a no-go area during construction along either side of the proposed shared cycle and pedestrian pathways and along the new boundary of President Avenue and Patmore Swamp, to preserve as much of the existing vegetation as is practical within the boundaries of the heritage listing. The delineation of the protection area will be maintained throughout the construction period.</p> <p>A heritage interpretation strategy will be prepared to outline opportunities for heritage interpretation being integrated into the design of the shared cycle and pedestrian pathway through Patmore Swamp.</p>	Construction	Section 6.3.3 and 6.3.4
Bardwell Park Railway Station group	NAH7	The installation of the permanent power supply across the Bardwell Park Railway Station group overbridge would be undertaken to avoid permanent changes to the fabric and visual appearance of the bridge. Should this be unavoidable, further assessment will be undertaken during detailed design.	Prior to construction	Section 6.3.2
Shop and residence, Princes Highway	NAH8	Vibration monitoring of the heritage item will be undertaken during vibration intensive construction works to ensure vibration limits are not exceeded. The monitoring system will include real time notification to the Site Foreman of any exceedances of the applicable limits so that appropriate corrective action can be taken.	Pre-Construction Construction	Section 6.3.1

# 4 Consultation

## 4.1 Consultation undertaken to date

Consultation and collaboration with Aboriginal stakeholders is integral to assessment and management of Aboriginal cultural heritage for the Project. Consultation is outlined in the EIS in Chapter 20.1.5, and the Metropolitan LALC's Aboriginal Stakeholder Cultural Heritage Survey Report is presented in Appendix N of the EIS.

Aboriginal community consultation has been undertaken by Roads and Maritime (RMS, now TfNSW) as per the Stage 1 and Stage 2 PACHCI requirements. It was identified that that the Project had potential to disturb land on which Aboriginal objects or significant cultural values could occur.

Metropolitan LALC was consulted for the project, to provide any relevant cultural information relevant to the project footprint. Metropolitan LALC Culture and Heritage Officer, Selina Timothy was invited to attend the field inspection, during which no specific cultural values were identified by the Metropolitan LALC representative. It was however noted that the area would have been utilised in the past by Aboriginal people, as it would have had swamp resources and was close to coastal resources.

Metropolitan LALC prepared an Aboriginal stakeholder cultural heritage survey report to assist RMS in determining if further assessment and consultation was required for the Project. Metropolitan LALC and an AECOM archaeologist undertook a field inspection to determine whether features of cultural heritage significance were present within the proposed Project footprint.

Based on the results of the field inspection, the report concluded that the Project was not likely to affect any potential Aboriginal cultural heritage features, and that Metropolitan LALC had no objection to the proposed development. It was recommended that if any earthworks were to disturb the natural earth level, that Metropolitan LALC and an archaeologist be notified prior to the commencement of construction works, and that they be present on site to identify any cultural material that may be present.

## 4.2 Ongoing consultation

If unexpected Aboriginal or non-Aboriginal heritage finds are identified during construction, consultation and engagement with relevant stakeholders will be carried out as per the *Roads and Maritime Standard Management Procedure: Unexpected Heritage Items*, refer to Appendix A

# 5 Existing environment

The following sections summarise what is known about Aboriginal and non-Aboriginal heritage within and adjacent to the Project.

The key reference documents are the M6 Extension Stage 1 EIS, Chapters 19 and 20, and Appendix N.

## 5.1 Aboriginal Heritage

The following information is based on the research completed by AECOM to inform the assessment of potential impacts to Aboriginal heritage in the project EIS, and on the Aboriginal stakeholder cultural heritage survey report prepared by the Metropolitan Local Aboriginal Land Council (MLALC).

A Permanent Power Supply connection is required as part of the Project. An indicative alignment for this permanent power supply line was assessed in the EIS, which stated that further design refinement in consultation with Ausgrid and other key stakeholders would take place during detailed design. A revised alignment has now been developed, which deviates from the approved indicative alignment at two main locations. A technical memorandum prepared by AECOM identified that the portion of the revised alignment within Wolli Creek Regional Park would require additional assessment for Aboriginal heritage (AECOM 2020). This assessment was undertaken and the results are discussed in Section 5.1.1. Item locations are shown in Figure 3.

The Project footprint is located on Gameygal (also spelt Kameygal) land, a clan that is part of the coastal Dharug language group. The Gameygal people exploited a wide range of marine, freshwater, terrestrial and avian fauna as well as plant food resources.

The natural environment of the Project footprint comprised flat swampy land, and historic records detail Gameygal people undertaking activities in this area such as fishing from bark canoes, utilising grass tree stems for spear shaft manufacture, wrapping hair in paperbark strips for decoration and partaking in a variety of art activities. Specifically, the Project footprint is located within the Botany Lowlands physiographic region, characterised by deep sand dunes and patches of swampland surrounding Botany Bay. The geological formation of this area comprises a mixture of Quaternary alluvium and sands associated with watercourses.

The natural environment of the local area drastically changed following European settlement. In 1812, a section of the Project footprint located in Scarborough Park was granted to Patrick Moore which went on to become known as Patmore Swamp. In the 1930s the Government drained Patmore Swamp and created artificial lakes throughout the area, with the modified landscape renamed Scarborough Park. In the 1890s, the search for new permanent clean water sources resulted in the diversion of Sheas Creek and excavation of Alexandra Canal located to the north of the project area. During these works, an Aboriginal site consisting of dugong bones and axe heads was identified within a layer of dark bluish grey sandy clay with marine shells. The excavated material was collected and retained by the Australian Museum, and in 2009 the dugong bones were radiocarbon dated to 5,520±70 years.

Numerous Aboriginal resistance acts occurred as a result of the spread of European settlement across the Sydney region. Pemulwuy, a Bidjigal man from the George's River area, led many of these acts and became known as an "active, daring leader of his people". It is believed that he led numerous raids on settler farms and to have speared many travellers around Botany Bay and the Georges River. It has also been suggested that when active he hid in swampy areas around Botany Bay.

The Metropolitan LALC identified that pre-disturbance swamp and creeks in the Project area would have been significant to Aboriginal people due to the presence of fish and birds, native food, fresh

drinking water and swimming areas. As such, they stated that there was a high likelihood that the Project area was a significant social and spiritual area.

### 5.1.1 Subsequent AHIMS Assessment for Permanent Power Supply

A search of the Aboriginal Cultural Heritage Information Management System (AHIMS) identified nine Aboriginal sites within the vicinity (approximately 500 metres) of the Permanent Power Supply alignment (refer Figure 3 and Table 4.). These sites are all closed context rockshelter sites located on the south-facing slopes of the Wolli Creek drainage valley.

Background research and archaeological survey did not identify any Aboriginal objects, archaeological sites or potential archaeological deposits within the proposed work area. The closest previous AHIMS recording is a shelter site located approximately 50 metres south west of the study area boundary and would not be affected by the proposed works.

The most frequent archaeological sites in the local area are rockshelter sites located on slopes between the Wolli Creek valley and the Earlwood plateau. The gentle lower slopes of the study area are not a suitable landform for sandstone overhangs, which are more common on the steeper valley sideslopes. No outcropping sandstone was identified during the field survey. The study area is more likely to have been used as part of resource-gathering activities along the lower freshwater section of Wolli Creek. Landscape disturbance from clearing and agriculture and the erosional, sandy soils mean the study area is unlikely to retain intact subsurface archaeological deposit associated with this land use.

In summary, the Stage 2 PACHCI assessment did not identify any impact to Aboriginal heritage as a result of the proposal and the proposed works may proceed with caution. Consultation with Metro LALC did not identify any objections to the proposal on Aboriginal heritage grounds. Management recommendations include the use of TfNSW's Unexpected Heritage Items: Heritage Procedure in the event of uncovering an unexpected archaeological find during TfNSW activities (Roads and Maritime Services 2015).



Figure 3 Heritage Items in Permanent Power Supply vicinity

Table 4 AHIMS Heritage Items in Project vicinity

Site Name	AHIMS Item Number	Site Details and Location	Impact Assessment
Wolli Creek 1.6	45-6-2414	<p>Site 45-6-2414 comprises a closed context rock shelter recorded during survey of the Wolli Creek valley by students from Tranby College in 1986. The site is registered approximately 85 metres south west of the current study area boundary. The AHIMS site card describes a shelter set below a 12 metre long slab/sheet of exposed sandstone bedrock on the slope below Brays Avenue. It was approximately 50 metres below the road in an area of outcropping sandstone which was heavily vegetated with weed species and regrowth trees. It faces southwest and was approximately three metres long, 1.7 metres high at the dripline and 0.5 metres deep. The site card notes it had a sandy floor but no evidence of Aboriginal occupation.</p> <p>This site is erroneously listed on the AHIMS as containing artefacts.</p>	There would be no impact to this item.
Wolli Creek 1.3	45-6-2416	<p>Site 45-6-2416 was recorded during the same investigation, part of a cluster of three recordings made in a steeply sloping area of bushland between Forrest Avenue and the cleared section of Illoura Reserve. The site is approximately 510 metres south west of the current study area boundary and was recorded below a sandstone outcrop at the rear of a house. The shelter was 18 metres long, ranging in depth from 90 centimetres – 1.6 metres and in height from 70cm to 1.4 metres. Recorded archaeological material included charcoal, animal bones and shell midden material. It was noted there appeared to be a large build-up of silt within the shelter due to construction of a rockery in the garden above.</p>	There would be no impact to this item.
Wolli Creek 1.2	45-6-2417	<p>Site 45-6-2417 comprised a west-facing rockshelter recorded approximately 50 metres to the northeast of 45-6-2416, in a sandstone cliffline below Forrest Avenue. It was located in the same cliffline as 45-6-2418 (described below), approximately three metres to the south of this site. The shelter measured 1.9 metres long, three metres deep, and varied in height from 70-80cm. A large amount of silty deposit was present on the shelter floor and some fragmented shell material was recorded. No artefacts were observed. Some disturbance was evident in the vicinity from weed growth and rubbish dumping. The site was considered a suitable candidate for further investigation, including an archaeological excavation.</p>	There would be no impact to this item.
Wolli Creek 1.1	45-6-2418	<p>Site 45-6-2418 was recorded in close spatial association with 45-6-2417, being located approximately three metres further south along the same series of cliffline overhangs. The shelter faced south west and overlooked the Wolli Creek valley. Shelter length was 5.5 metres, width 3.5 metres and depth 2.6 metres. The shelter floor displayed some built up silty deposit and three to four small chert flakes were recorded on the surface. Disturbance</p>	There would be no impact to this item.

		from household rubbish dumping was evident and a small track ran along the front of the shelter.	
WC-OVRH-1	45-6-3698	Site 45-6-3698 was a potential rockshelter site located on a south east facing lower slope approximately 20 metres from Wollli Creek. The site was identified during investigations for the new M5 Motorway (AECOM 2015; see Section 4.4). The site was recorded and registered as a sandstone shelter overhang with an area of potential archaeological deposit within the overhang. The shelter measures 5.8 metres long by 1.2 metres high and 2.7 metres deep, with a PAD area of 1.1 x 1.3 metres. Site condition was described as poor and no art or archaeological material was identified. The site was disturbed by rubbish and a partial collapse of the ceiling. It was considered unlikely that the shelter retained any archaeological material (i.e. low archaeological potential) however it was registered on AHIMS as a shelter with PAD. The shelter is located approximately 660 metres south west of the current study area.	There would be no impact to this item.
WC-OVRH-2	45-6-3699	Site 45-6-3966 was a second potential rockshelter site recorded during investigations for the new M5 (AECOM 2015; see Section 4.4) below a sandstone overhang south of Sutton Avenue. The site is located approximately 350 metres east of the current study area. The shelter measured 3.6 metres long by 1.9 metres high and 2.7 metres deep. Site condition was described as poor and no art or archaeological material was identified. The back wall was covered in graffiti and there was some disturbance evident to the shelter floor, however an area of PAD measuring 3.6 x 1.9 metres was recorded. The shelter faces east and is located on a midslope.	There would be no impact to this item.
Wollli Creek 2.4	45-6-2565	Site 45-6-2565 was recorded during the Tranby College survey. The rockshelter was located at the end of Minnamorra Avenue, just below the top of the exposed sandstone scarp on the upper slope overlooking the Wollli Creek valley. It is registered approximately 500 metres east of the current study area. The shelter faces south west and measured 16.2 metres long by 1.2 metres deep. Height varied but was less than one metre along its length. The site card describes the site as being in poor condition with a disturbed sandy floor and no evidence of art or artefacts.	There would be no impact to this item.
Wollli Creek 2.1	45-6-2566	Site 45-6-2566 was recorded to the southwest of 45-6-2565, lower down the slope. The site is approximately 450 metres from the eastern study area boundary. The shelter was identified in a south-facing section of the cliffline with a large overhang. The site measured three metres long by 1.4 metres high and 50-80cm deep. There was no evidence of art or artefacts, but the sandy shelter floor was considered to display archaeological potential. Site condition was assessed as good with little evident disturbance to the shelter or floor deposit. The site was considered a suitable candidate for further investigation, including an archaeological excavation.	There would be no impact to this item.

Wolli Creek	45-6-2568	Site 45-6-2568 was recorded east of Sutton Avenue during the Tranby College survey. The registered site coordinates place it among an area of houses and are likely incorrect; the site being correctly positioned in the sandstone cliffs below with 45-6-2565 and 45-6-2566. Shelter dimensions were 2.7 metres high by 3.7 metres long and 1.4 metres deep. No archaeological material was identified, and the shelter floor was described as having been heavily disturbed by campers.	There would be no impact to this item.
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A review of this data indicates that no recorded Aboriginal sites would be impacted by the proposed works.

## 5.2 Non-Aboriginal Heritage

### 5.2.1 Historical Summary

The following information is based on the research completed by AECOM (2018b) to inform the Statement of Heritage Impact for the Project and additional research undertaken by AMBS.

The first land grant in the area was to Robert Campbell in 1803, a merchant, pastoralist, politician and philanthropist. In 1812, Patrick Moore was granted 60 acres and William Packer was granted two parcels, one 30 acres and the other 100 acres. The Cooks River Dam, linking the northern and southern banks of the Cooks River Road, was constructed using convict labour between 1839 and 1841, opening the southern shore to settlement. In 1848, 611 people are recorded as living in the area across 132 houses. By the late 1860s the area along the coastal strip was becoming increasingly developed.

Between 1856 and 1861, Thomas Holt, a wealthy pastoralist, wool merchant and politician purchased an estate of largely undeveloped land extending from Botany Bay to Port Hacking. Monterey, a tidal swamp, was within Holt's estate, which he, with other landholders, persuaded the government to dedicate low-lying land for development. The drained land, Scarborough Park, was part of Patrick Moore's Swamp or Patmore Swamp and was named by the Thomas Holt after the English coastal town of Scarborough, North Yorkshire. Between 1932 and 1935, with the assistance of the government relief programme, a lake was dredged, drained, filled in and levelled to create what is now deemed to be the most beautiful of the municipality's parks.

The wetlands form part of a system of tidal and freshwater swamps and provide important habitats for a variety of animal and plant species, including common wetland birds and several protected migratory birds. The Patmore Swamp and Scarborough Ponds are part of the central wetland system which drains into Botany Bay.

The opening of the Illawarra Line in 1884 stimulated growth in the area by improving access. Advantage was soon taken of this, with Thomas Sawyell developing a private tramway along Bay Street, connecting Rockdale Station with Lady Robinson's Beach. This development was soon followed by the completion of government Tramways in Kogarah and Sans Souci, which led to further development in those areas.

This growth, coupled with the attraction of living near the coast, meant that lower lying lands between the beach and railway were used as market gardens, piggeries, and poultry farms, with the *Arncliffe Market Gardens* and *Toomevara Lane Chinese Market Gardens* being examples of this trend.

Toward the end of the nineteenth and start of the twentieth centuries, the swampy areas around Muddy Creek, including what is now *Patmore Swamp* and *King's Wetland* had seen relatively little development, and larger land grants began to be progressively subdivided to smaller allotments.

From the 1890s onwards, the local government was continually petitioned to drain Patmore Swamp to make way for residential development. In the 1930s, depression era relief works in

Scarborough Park included drainage and the creation of artificial lakes. In the late 1950s, the layout of lakes in Scarborough Park was altered, creating the artificial lake system present today. Until the 1980s there were few development changes to Patmore's Swamp to the north of President Avenue.

In the lead up to the Australian Bicentenary in 1988, Rockdale Council upgraded the then swamp area north of President Avenue to include the new open grassed field, carpark on the western side of the watercourse, and new playing fields on the eastern side. The redesign included large scale landscaping works that redefined the layout of Patmore Swamp to what it is today.

## 5.2.2 Heritage Items

There are some inconsistencies between the heritage items described in the SoHI (AECOM, 2018b) for the Project and the EIS (AECOM 2018a). The summary of heritage impacts in the SoHI (AECOM 2018b: Table 4) lists direct impacts to the *Kings Wetland* and *Patmore Swamp* heritage items, and indirect impacts to the *Brighton Le Sands Public School*.

It also assesses vibration and subsidence impacts to various items, some of which are located above the proposed tunnel route, and others which are located up to 1.5 kilometres away from the proposed tunnel route.

The EIS also notes direct impacts to the *Kings Wetland* and *Patmore Swamp* heritage items, and indirect impacts to the *Brighton Le Sands Public School*. It also assesses vibration and subsidence impacts, listing only items located directly above the tunnel alignment (AECOM 2018a: Table 19-4).

For any heritage items located above the tunnelling route, AECOM assessed that the proposed works are unlikely to have any subsidence or vibration impacts, and as such there would be no impact on the significance of these items. Table 4 provides a summary of heritage impacts from the proposed works and includes items listed on *Local Environmental Plans* (LEPs) or Section 170 Heritage and Conservation Registers within an approximate 200m buffer of the Project area, and State Heritage Register listed items within an approximate 500m buffer of the Project area.

The locations of heritage items in the vicinity of the study area are shown in Figure 1 to Figure 3. Note that the location of the SHR curtilage of the Western Outfall Main Sewer (01647) is shown in Figure 4.

Table 5 Impacts to Non-Aboriginal heritage items in Project vicinity

Listed Item	Significance	Register	Address	Location	Assessed impact	Impact to Significance
Arnccliffe Market Gardens (01395)	State	State Heritage Register	212 West Botany Street, Banksia	500m from tunnel alignment	No impacts	There would not be any impacts to this SHR listed item.
Arnccliffe Railway Station Group (01076)	State		Arnccliffe Railway station, Station Street and road bridge on Forest Road	280m from tunnel alignment	No impacts	There would not be any impacts to this SHR listed item.
Toomevara Lane Chinese Market Gardens (01394)	State		29A Toomevara Street, Kogarah	100m from tunnel alignment	No impacts	There would not be any impacts to this SHR listed item.
Western Outfall Main Sewer (01647)	State		Valda Avenue (off south side of Kogarah Golf Course) Arnccliffe	Above the route of the tunnels	The WOMS will be monitored regularly to ensure that there are no impacts as a result of tunnelling vibration.	There would not be any impacts to this SHR listed item.
Wilsons Farm House (00487)	State		310 West Botany Street, Rockdale	400m from tunnel alignment	No impacts	There would not be any impacts to this SHR listed item.

Brighton-Le- Sands Public School - Buildings B00A and B00B (5065719)	Local	Department of Education S170 Register	35 Crawford Road Brighton-Le-Sands	Adjacent to the project area	The heritage listed 1916 school building will be monitored regularly for the effects of vibration.	There would be no direct impact to the school or to the identified heritage building. The heritage listing for the Brighton-Le- Sands is specific to the school buildings and the aesthetic significance of the school brings to Crawford Street, and does not include any views or vistas to or from the building. There would be no indirect impacts to the heritage significance associated with the Brighton-Le-Sands school.
Arnccliffe Market Gardens (3490005)	State	Department of Urban Affairs and Planning S170 Register	212 West Botany Street, Banksia	500m from tunnel alignment	No impacts.	There would not be any impacts to this SHR listed item.
Kings Wetland (3490033)	Regional		Kings Road, Brighton-Le-Sands	Within the project area	Removal of vegetation along the eastern boundary that is associated with the Heritage Listing.	There will be an impact on the aesthetic and historical significance. However, removed vegetation will be rehabilitated at the conclusion of construction works to a state that is similar to it's current state.
Bardwell Park Railway Station Group (4801896)	Local		Hartill-Law Avenue, Bardwell Park	Within the project area	Within proposed powerline connection route.	As Bardwell Park Railway Station Group has the potential for direct impacts avoidance should be sought as a first preference, with mitigation measures required should the works require egress through the listed curtilage.

Shop and residence (I97)	Local	Kogarah LEP 2012	111 Princes Highway, Kogarah	Adjacent to surface works at 111 Princes Highway. No direct impacts.	There would not be any vibration or subsidence impacts to this locally listed item if use of machinery is limited to a maximum plant use of vibratory roller < 100 kN (Typically 2-4 T), the medium hydraulic hammer (900 kg – 12-18 T excavator) and the hand-held jack hammer, which the noise and vibration assessment has identified as safe plant to use within seven metres distance and avoid cosmetic damage to existing structures. A visual inspection and assessment should be undertaken by a heritage specialist before works commence to ensure no additional mitigation measures are required.	There would not be any vibration or subsidence impacts to this locally listed item if use of machinery is limited to a maximum plant use of vibratory roller < 100 kN (Typically 2-4 T), the medium hydraulic hammer (900 kg – 12-18 T excavator) and the hand-held jack hammer, which the noise and vibration assessment has identified as safe plant to use within seven metres distance and avoid cosmetic damage to existing structures. A visual inspection and assessment should be undertaken by a heritage specialist before works commence to ensure no additional mitigation measures are required.
Toomevara Lane Chinese Market Gardens (I199)	Local		29A Toomevara Street, Kogarah	100m from tunnel alignment	No impacts	There would not be any impacts to this locally listed item.

"Bard of Avon" (I13)	Local	Rockdale LEP 2011	39 Eden Street, Arncliffe	180m from tunnel alignment	No impacts	There would not be any impacts to this locally listed item.
"Glenwood" (I12)	Local		27 Eden Street, Arncliffe	180m from tunnel alignment	No impacts	There would not be any impacts to this locally listed item.
Arncliffe Public School and 'Teluba' (I42)	Local		168–170 Princes Highway, Arncliffe	Above the route of the tunnels	No impacts	There would not be any impacts to this locally listed item.
Californian bungalow (I47)	Local		27 Segenhoe Street, Arncliffe	50m from tunnel alignment	No impacts	There would not be any vibration or subsidence impacts to this locally listed item.
House (I35)	Local		31 Kyle Street, Arncliffe	Above the route of the tunnels	No impacts	There would not be any impacts to this locally listed item.
House (I56)	Local		73 West Botany Street, Arncliffe	Above the route of the tunnels	No impacts	There would not be any impacts to this locally listed item.
House (I70)	Local		15 Cameron Street, Banksia	50m from tunnel alignment	No impacts	There would not be any impacts to this locally listed item.
Kings Wetland (I169)	Regional		Kings Road, Brighton-Le-Sands	Within the project area	Removal of vegetation along the eastern boundary that is associated with the Heritage Listing.	Moderate impact to the aesthetic and historical significance. Vegetation that would be cleared will be rehabilitated at the conclusion of construction

						works to a state that is similar to how it is currently.
Paired house (I10) (Victorian Terrace)	Local		23 Duncan Street, Arncliffe	150m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
Paired house (I9) (Victorian Terrace)	Local		21 Duncan Street, Arncliffe	150m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
Part of single-storey terraced cottages known as Jackson's Row (I74)	Local		11 Gibbes Street, Banksia	Above the route of the tunnels	No impacts	There will not be any impacts to this locally listed item.
Part of single-storey terraced cottages known as Jackson's Row (I75)	Local		18 Gibbes Street, Banksia	90m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
Rock Lynn (I207)	Local		58 Bestic Street, Rockdale	Above the route of the tunnels	No impacts	There will not be any impacts to this locally listed item.

Roslyn Hall (I208)	Local		85-89 Cameron Street Rockdale	90m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
Roslyn Hospital (I24)	Local		30 Forest Road, Arncliffe	150m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
Sandstone Victorian cottage (I34)	Local		15 Kyle Street, Arncliffe	Above the route of the tunnels	No impacts	There will not be any impacts to this locally listed item.
Sewer vent (I55)	Local		20A West Botany Street, Arncliffe	90m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
St Francis Xavier Catholic Presbytery (I23)	Local		26 Forest Road, Arncliffe	150m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
St Francis Xavier Church group (I22)	Local		2-4 Forest Road, Arncliffe	100m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
Stone cottage (I11)	Local		25 Duncan Street, Arncliffe	150m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.

Victorian house (I45)	Local		23 Segenhoe Street, Arncliffe	50m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
Victorian House (I46)	Local		25 Segenhoe Street, Arncliffe	50m from tunnel alignment	No impacts	There will not be any impacts to this locally listed item.
Wilson's Farmhouse (I224)	State		310 West Botany Street, Rockdale	400m from tunnel alignment	No impacts	There will not be any impacts to this SHR listed item.

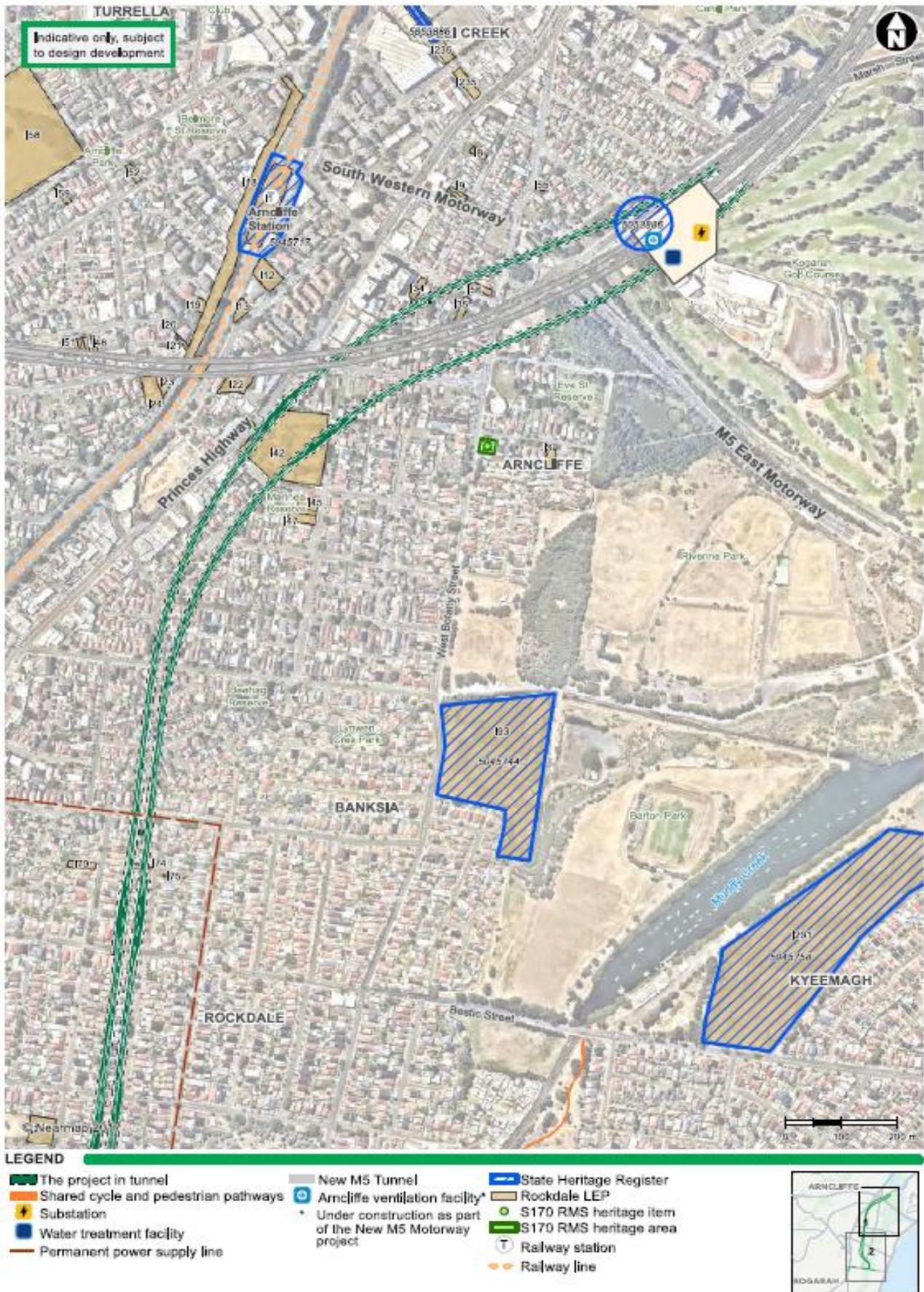


Figure 1 Non-Aboriginal heritage in Project vicinity (EIS Appendix N - SHI)

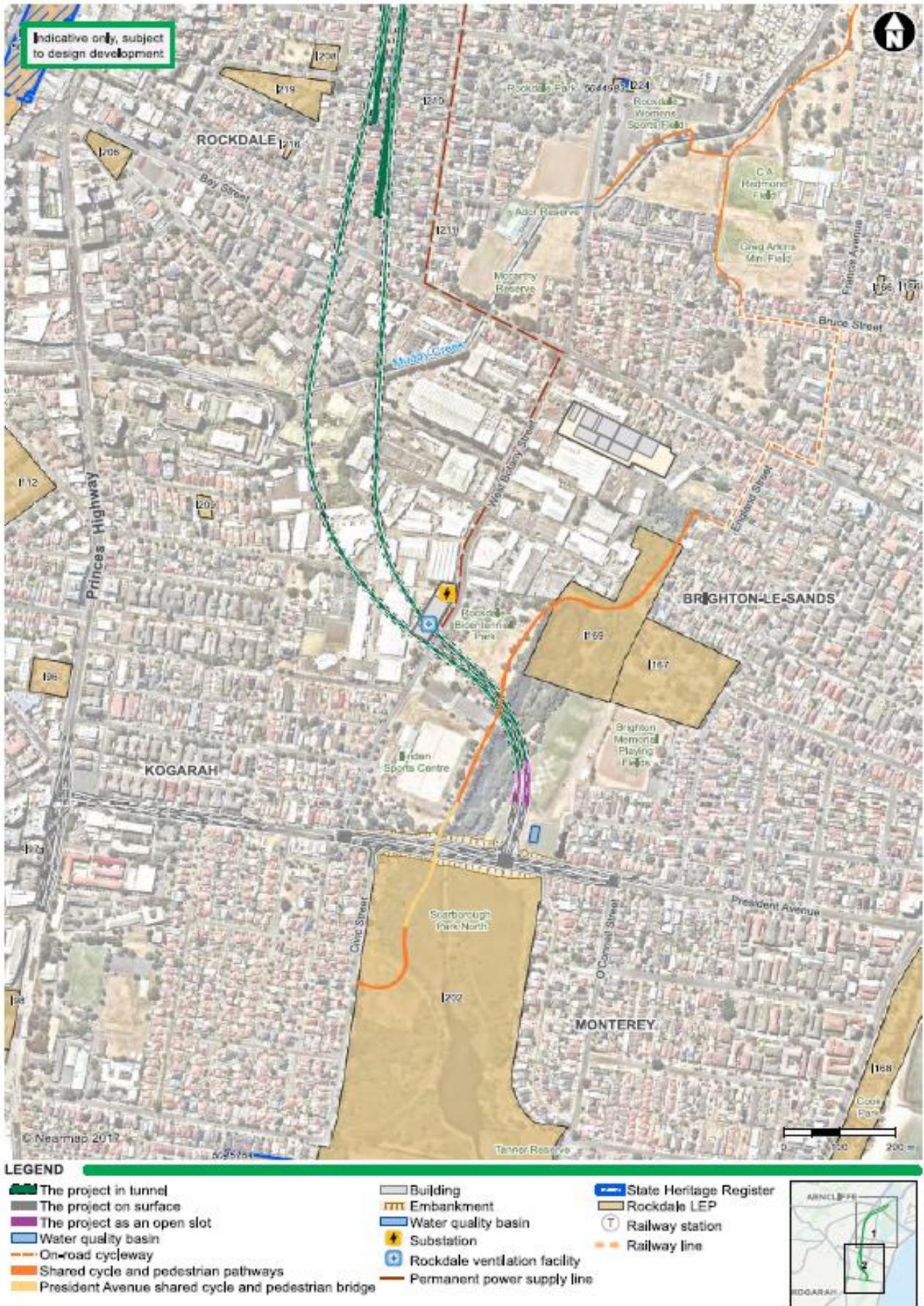


Figure 2 Non-Aboriginal heritage items in Project vicinity (EIS - Appendix N - SHI)

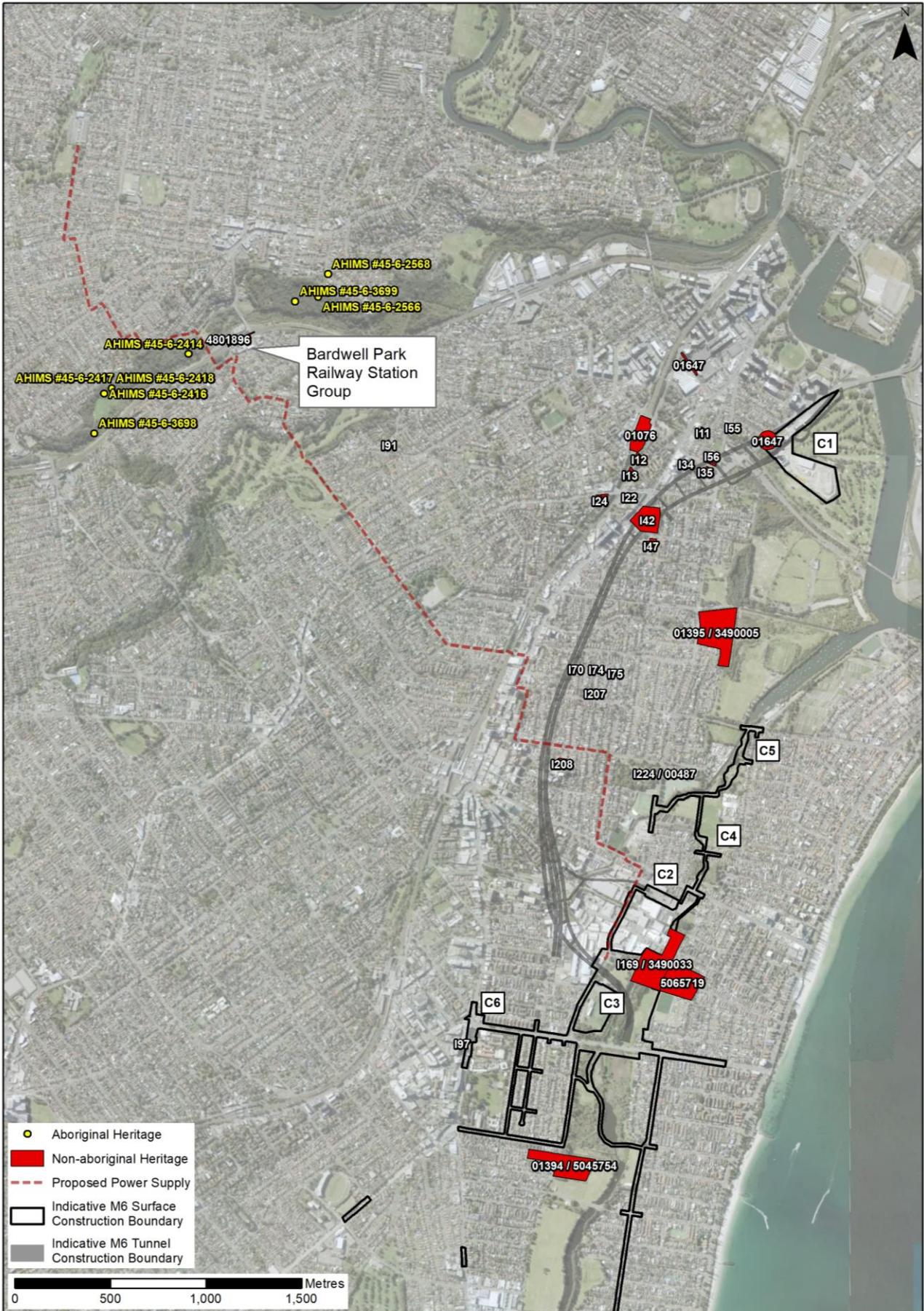
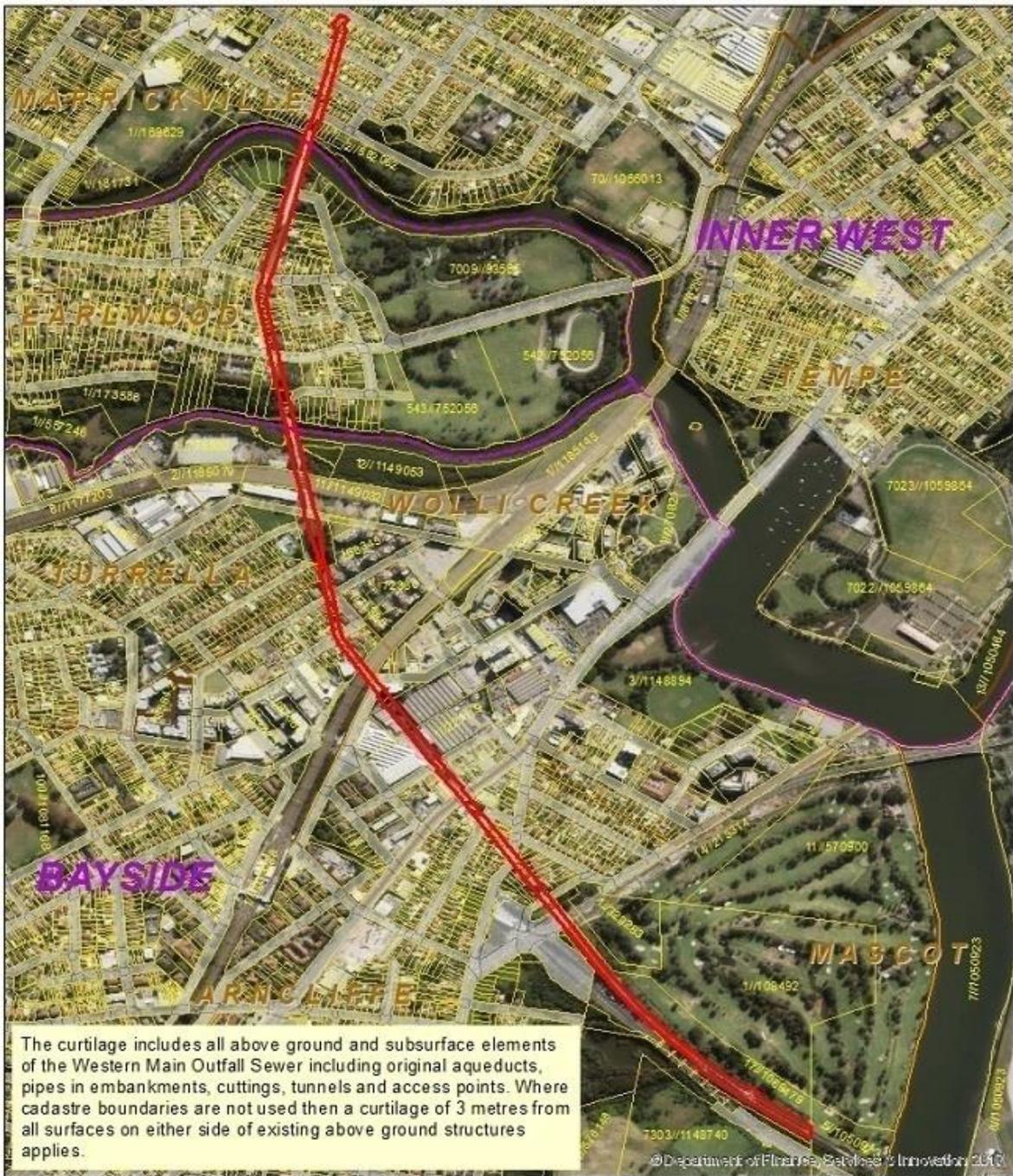


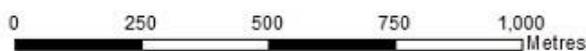
Figure 3 Aboriginal and Non-Aboriginal Heritage items in Permanent Power Supply vicinity



State Heritage Register - SHR 01647, Plan 2060

Western Outfall Main Sewer

Gazettal Date: 15 November 2002



Scale: 1:12,000  
Datum/Projection: GCS GDA 1994



Legend

- SHR Curtilage
- Land Parcels
- Railways
- Roads
- Paths
- Suburbs

Figure 4 Curtilage of the Western Outfall Main Sewer (SHR 01647)

# 6 Environmental aspects and impacts

## 6.1 Construction activities

Key aspects of the Project that could result in adverse impacts to Aboriginal and Non-Aboriginal heritage include:

- Vegetation clearing and removal;
- Temporary access roads;
- Pavement works for internal access road; and
- Construction of shared pathway/cycle routes and overpass.

## 6.2 Aboriginal heritage impacts

Based on the assessment of the project footprint and proposed works undertaken for the project EIS, construction of the project is not likely to result in direct or indirect impacts upon Aboriginal cultural heritage.

## 6.3 Non-Aboriginal heritage impacts

The heritage items in the vicinity of the study area have been tabulated in Section 5.2.2 as an easy reference. As such those items that are likely to be affected by the proposed works are addressed here. The boundary of the construction worksites will be fenced to prevent construction personnel entering listed heritage items or sites outside the construction footprint, unless authorised to do so.

*Kings Wetland* is a local heritage item listed on the Rockdale LEP 2011 (I169) and the Department of Urban Affairs and Planning Section 170 Register (3490033). The EIS has identified that works include the removal of vegetation along the eastern boundary of *Kings Wetland* to enable the construction of a haul road, and the construction of shared cycleways and pedestrian paths within the curtilage of the item. This will result in a moderate impact to the aesthetic and historical significance of the item. At the completion of works, the vegetation cleared to establish the haul road will be rehabilitated.

*Brighton Le Sands Public School*, also a local heritage item listed on the Rockdale LEP 2011 (I167) and the Department of Education Section 170 Register (5065719) shares the eastern boundary with *Kings Wetland*. The school will not be physically impacted by the proposed works, and as the school does not have any heritage listed views or vistas associated with the adjacent parkland, it has been assessed that there will be no indirect visual impact to its heritage significance.

*Patmore Swamp* is a local heritage item listed on the Rockdale LEP 2011 (I202). The EIS has identified that works will remove a 30m wide frontage along the southern side of President Avenue. The works encompass the construction of a raised shared cycleway and pedestrian path over President Avenue, linking Civic Crescent Reserve (containing *Patmore Swamp*) with Rockdale Bicentennial Park (containing *Kings Wetland*). This would include a spiral approach ramp in Civic Crescent Reserve and shared cycleway and pedestrian paths through the reserve, linking Civic Avenue and Chuter Avenue. This will result in minor impacts to the heritage significance of the item. The removal of the portion of the swamp along President Avenue is considered to be a negative impact, however, the construction of a new shared pedestrian and cycle pathway through the swamp would promote the aesthetic significance of the swamp and would have a positive heritage outcome.

*Shop and Residence (I97)* is a locally listed heritage item on the Rockdale LEP 2011. Surface works will be occurring in the vicinity of this heritage item. The proposed works will not physically impact the item; however recommendations were made to limit machinery to a maximum plant use of vibratory roller < 100 kN (Typically 2-4 T), the medium hydraulic hammer (900 kg – 12-18 T excavator) and the hand-held jack hammer, which the noise and vibration assessment has identified as safe plant to use within seven metres distance and avoid cosmetic damage to existing structures. This would minimise risk of vibration or subsidence impacts to the item.

The proposed permanent power supply will extend through the curtilage of the local heritage item Bardwell Park Railway Station Group, listed on the Transport Asset Holding Entity Section 170 Register (4801896). Further assessment of detailed design may be required to assess impacts to this item.

### 6.3.1 Noise and vibration monitoring

The boundary of the construction worksites will be fenced to prevent construction personnel entering listed heritage items or sites outside the construction footprint, unless authorised to do so.

To limit the risks of vibration-induced damage on identified built heritage items, pre- and post-construction dilapidation inspections will be conducted. Inspections will document the location of all cracks and/or defects observed and any changes in crack width/defect size will be measured during and after construction completion.

The process for identification and monitoring of potential effects of vibration on sensitive heritage items is addressed in the Noise and Vibration CEMP Sub-plan (NVMP) (Appendix B3 of CEMP) in accordance with Roads and Maritime Construction Noise and Vibration Guideline (2016) and monitoring requirements will be detailed in site and activity specific Construction Noise and Vibration Impact Statements (CNVIS) to be prepared progressively.

As noted in the NVMP, heritage buildings should not be assumed to be more sensitive to vibration than non-heritage items, unless structurally unsound (p45); however,

*a conservative vibration damage screening level (peak component particle velocity) for heritage buildings/structures can be set to 2.5mm/s... which will allow potentially impacted heritage structures to be identified. If a heritage structure is predicted to be exposed to vibration levels above the conservative vibration screening level of 2.5mm/s, further investigation would be undertaken to determine whether the structure is structurally unsound. Where a heritage building is deemed to be sensitive to vibration impacts, the more stringent DIN 4150-2016 Group 3 guideline values can be applied (2021:45)*

The NVMP notes that in accordance with CoA E28, *consultation with a heritage specialist will be undertaken prior to the installation of any monitoring equipment, where installation may impact on heritage listed structures (2021:78)*. It is also noted that the heritage specialist would advise on the locations of monitoring equipment on heritage structures (2021:80). The heritage specialist will present the advice in the form of a heritage Memo, or email as appropriate.

Surface construction activities are in close proximity and are likely to indirectly impact one locally listed built heritage item:

- Shop and Residence, 111 Princes Highway, Kogarah LEP I97

This two-storey commercial shop and residence, formally the Bank of Australasia is a Victorian Italianate building with face brick with rendered quoins and window and door surrounds. A slate roof and rendered chimneys. It is historically significant as it represents one of the banks that were located along one of the major transport routes through the locality c1880 (The Bank of Australasia). It is a good representative example of the grand Victorian development of civic buildings. It is located within the Station Park Estate subdivision Est c 1885.

### 6.3.2 Powerline connection

The detailed design of the permanent power supply should avoid direct physical or visual impacts to the *Bardwell Park Railway Station Group*. If impacts cannot be avoided, a SoHI must be prepared to assess the impacts of the proposed works. This should be undertaken in accordance with the guideline *Statements of Heritage Impact* (Heritage Office 1996, rev. 2002) and include:

- Scope of works for the power supply connection;
- A visual inspection of the item;
- An assessment of the proposed works;
- An assessment of the impacts of the proposed works against the heritage significance of the item; and
- Recommendations for management or mitigation measures, where required.

### 6.3.3 Interpretation strategy

At completion of the works a heritage interpretation strategy will be prepared to outline opportunities for heritage interpretation being integrated into the design of the shared cycle and pedestrian pathway through *Patmore Swamp*. This interpretation strategy should form a part of the UDLP and include:

- Historical context for the plan, include a history of *Patmore Swamp*, and context for the surrounding area;
- A summary of key interpretive themes;
- A discussion of potential interpretive media; and
- Key stories and images.

### 6.3.4 Vegetation management

Works will require the removal of vegetation in both the *Patmore Swamp* and *Kings Wetland* heritage items for the construction of shared cycle and pedestrian pathways in both items, the establishment of a haul road inside the curtilage of *Kings Wetland* and for works along President Avenue within the curtilage of *Patmore Swamp*.

During detailed design, the alignment of the haul road should be optimised where practical to minimise the requirement for vegetation removal.

During construction, protection areas (no-go zones) should be established at the following locations:

- On either side of the haul road through the *Kings Wetland* heritage item; and
- Along the proposed shared cycle and pedestrian pathways and along the new boundary of President Avenue within the *Patmore Swamp* heritage item.

Protection areas should be clearly delineated by fencing and signage and should be marked on site plans. Contractors should be briefed regarding no-go zones as a part of their induction.

At the completion of construction, the impacted areas in the curtilage of *Kings Wetland* and at least twice the size of the impacted area the curtilage of *Patmore Swamp* should be rehabilitated. Strategies for the rehabilitation, including flora species to be used in rehabilitation, should be detailed in the landscape rehabilitation plan for the project.

### 6.3.5 Unexpected heritage items

Any unexpected heritage finds made on the project will be managed in accordance with the *Roads and Maritime Standard Management Procedure: Unexpected Heritage Items*, provided in Appendix

A of this HMP. An overview of the process, as it applies to the project, is provided below based on Figure 1 of the procedure. When an unexpected item is discovered:

1. Stop work and protect the item. Inform the ER, Environmental Manager, and TfNSW Heritage Manager.
2. Contact the nominated heritage consultant for the project to assess the item.
3. The heritage consultant for the project will complete a preliminary recording and assessment of the item:
  - a. If the item **is not** heritage, the procedure can terminate at this stage, and works can recommence.
  - b. If the item **is** heritage, continue to step 4.
4. The heritage consultant will formulate a, archaeological or heritage management plan as appropriate.
5. The Environmental Manager or TfNSW Heritage Manager will formally notify Heritage NSW, of the find.
6. Implement the archaeological or heritage management plan following consultation with Heritage NSW. This may include the requirement to obtain approval for works to proceed.
7. Review HMP and approval conditions.
8. Resume work.

### 6.3.6 Human remains procedure

Should any potential human remains be identified during works, they will be managed in accordance with the *Roads and Maritime Standard Management Procedure: Unexpected Heritage Items*, provided in Appendix B of this HMP.

All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently. Work will only recommence once the requirements of the unexpected heritage finds procedure have been satisfied.

# 7 Environmental mitigation and management measures

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

## 7.1 Aboriginal Heritage

### 7.1.1 Unexpected heritage items

The EIS and subsequent assessment have identified that it is unlikely that that Aboriginal heritage objects or human remains are present within the project area. However, should any potential Aboriginal heritage objects or human remains be identified during works, all works in the vicinity of the find must cease. The steps outlined in the *Roads and Maritime Standard Management Procedure: Unexpected Heritage Items (2015)* will then be followed.

All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently. Work will only recommence once the requirements of the unexpected heritage finds procedure have been satisfied.

*The Roads and Maritime Standard Management Procedure: Unexpected Heritage Items (2015)* is attached to this Plan as Appendix A

## 7.2 Non-Aboriginal Heritage

The EIS has identified four heritage items that will/or have the potential to be impacted by the project works. provides a summary of management measures required for each of the identified heritage items within the project area.

Should unexpected potential Non-Aboriginal heritage objects or human remains be identified during the works, all works in the vicinity of the find must cease. The steps outlined in the *Roads and Maritime Standard Management Procedure: Unexpected Heritage Items (2015)* will then be followed. All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently. Work will only recommence once the requirements of the unexpected heritage finds procedure have been satisfied.

Table 6 Non-Aboriginal heritage - impacts and mitigation

Name	Impact	Management
Bardwell Park Railway Station Group	<ul style="list-style-type: none"> <li>Located within proposed powerline connection route.</li> <li>Specific impacts subject to detailed design.</li> </ul>	<ul style="list-style-type: none"> <li>Direct physical or visual impacts to the station (including Hartill-Law Overbridge) should be avoided by the detailed design.</li> <li>If impacts cannot be avoided, a Statement of Heritage Impact will be required to address the EMMs for the project.</li> </ul>

Name	Impact	Management
Kings Wetland	<ul style="list-style-type: none"> <li>• Removal of vegetation along the eastern boundary to construct a haul road.</li> <li>• Construction of shared cycleways and pedestrian paths.</li> </ul>	<ul style="list-style-type: none"> <li>• Consultation with Bayside Council regarding the Impacts.</li> <li>• Optimise Road design to reduce requirement for vegetation removal.</li> <li>• Establish a protection zone on either side of the haul road.</li> <li>• Rehabilitate vegetation on completion of works.</li> </ul>
Patmore Swamp	<ul style="list-style-type: none"> <li>• Removal of a 30 metre frontage along President Avenue.</li> <li>• Construction of shared cycleways and pedestrian paths.</li> <li>• Construction of spiral approach ramp.</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of an interpretation strategy.</li> <li>• Consultation with Bayside Council regarding the Impacts.</li> <li>• Establish a protection zone on either side of the haul road.</li> <li>• Rehabilitate vegetation on completion of works, at least twice the size of the construction areas within Patmore Swamp.</li> </ul>
Shop and residence	<ul style="list-style-type: none"> <li>• No direct impacts.</li> <li>• Surface works occurring in close proximity to the item.</li> </ul>	<ul style="list-style-type: none"> <li>• Limit machinery use to a maximum plant use of vibratory roller &lt; 100 kN (Typically 2-4 T), the medium hydraulic hammer (900 kg – 12-18 T excavator) and the hand-held jack hammer.</li> <li>• A visual inspection and assessment should be undertaken by a heritage specialist before works commence to ensure no additional mitigation measures are required.</li> <li>• Undertake vibration monitoring during works.</li> </ul>

Table 7 Aboriginal and Non-Aboriginal management and mitigation measures.

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
<b>GENERAL</b>						
HM1	Personnel working on Site aware would be made aware of all heritage sites and areas of cultural sensitivity identified in the EIS documents via induction training prior to commencing work on site.	Induction training power point	Pre-construction and during inductions	Environmental manager	Best practice	Toolbox talks
HM2	If suspected Aboriginal or non-Aboriginal heritage items or human remains are uncovered during construction they will be managed in accordance with the <i>Standard Management Procedure: Unexpected Heritage Items</i> (Roads and Maritime 2015).	<i>Standard Management Procedure: Unexpected Heritage Items</i> (Roads and Maritime 2015).	Pre-construction, construction, post-construction	Environmental Manager or delegate Foreman	CoA E60 EMM NAH 1, NAH2	Unexpected find reports

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
<b>SITE SPECIFIC NON-ABORIGINALHERITAGE MANAGEMENT / MITIGATION MEASURES</b>						
HM3	Design the powerline connection to avoid physical or visual impacts to the <i>Bardwell Park Railway Station Group</i> or complete a SoHI to address the impacts.	Detailed design	Pre-construction	Project Manager	EMM NAH7	Detailed design Heritage advice or SoHI.
HM4	Consult with Bayside Council regarding impacts to the <i>Kings Wetland</i> heritage item, including a copy of the proposed landscape rehabilitation plan.	Detailed design, proposed landscape rehabilitation plan	Pre-construction	Project Manager	EMM NAH3	Consultation log
HM5	Notify and consult with Bayside Council regarding impacts to the <i>Patmore Swamp</i> heritage item.	Detailed design	Pre-construction	Project Manager	EMM NAH4	Consultation log
HM6	Design haul road within the <i>Kings Wetland</i> heritage item to minimise requirement for vegetation removal, as far as practical.	Detailed design	Pre-construction	Project Manager	EMM NAH5	Detailed design
HM7	Establish a protection area (no-go zone) on either side of the haul road through the <i>Kings Wetland</i> heritage item	Site plans	Construction	Project Manager	EMM NAH5	Site plans, photographs

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	for the duration of construction.					
HM8	Rehabilitate the area within the <i>Kings Wetland</i> heritage item at the conclusion of construction.	Landscape rehabilitation plan	Construction	Project Manager	EMM NAH5	Landscape rehabilitation plan
HM9	Establish a protection area (no-go zone) along the proposed shared cycle and pedestrian pathways and along the new boundary of President Avenue and Patmore Swamp for the duration on construction	Site plans	Construction	Project Manager	EMM NAH6	Site plans, photographs
HM10	Rehabilitate at least twice the construction areas within Patmore Swamp.	Landscape rehabilitation plan	Construction	Project Manager	CoA E58	Landscape rehabilitation plan
HM11	Prepare a Heritage Interpretation Strategy to outline opportunities for heritage interpretation being integrated into the design of the shared cycle and pedestrian pathway through Patmore Swamp.	Detailed design	Pre-construction	Project Manager	EMM NAH6 CoA E156	Heritage Interpretation Strategy.
HM12	Prior to completing acoustic treatment on any listed	Scope of works for	Construction	Project Manager	CoA E59	Heritage advice

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
	heritage item, obtain advice from a suitably qualified and experienced built heritage expert to ensure that the work does not have an adverse impact on the heritage significance of the item.	acoustic treatment				Proof of implementation
HM13	<p>Complete vibration testing prior to and during activities that have the potential to impact on heritage items including the <i>Shop and Residence</i>. This should:</p> <ul style="list-style-type: none"> <li>• Identify minimum safe working distances</li> <li>• Identify any changes to plant/equipment required</li> <li>• Include real time notifications to the Site Foreman of any exceedances so that corrective action can be taken.</li> </ul> <p>Where the potential for impacts to built heritage items is identified, these measures must be implemented.</p>		Construction	Project Manager, Site Foreman	CoA E76 EMM NAH 8	Results of vibration testing

ID	Measure/Requirement	Resources needed	When to implement	Responsibility	Reference	Evidence
HH12	<p>Prior to the completion of works in the vicinity of the <i>Shop and Residence</i> the contractor should:</p> <ul style="list-style-type: none"> <li>• Limit machinery use to a maximum plant use of vibratory roller &lt; 100 kN (Typically 2-4 T), the medium hydraulic hammer (900 kg – 12-18 T excavator) and the hand-held jack hammer, or as identified by vibration testing completed for HH11.</li> <li>• Engage the heritage specialist to complete a visual inspection and assessment before works commence to ensure no additional mitigation measures are required.</li> </ul>		Construction	Project Manager, Site Foreman	Recommendations of the SoHI (AECOM, 2018b)	Heritage advice

# 8 Compliance management

## 8.1 Roles and responsibilities

The Project Team's organisational structure and overall roles and responsibilities are outlined in Section 3.4 of the CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Section 7 of this Plan

## 8.2 Training

All employees, contractors and utility staff working on site will undergo site induction training relating to Aboriginal and non-Aboriginal 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; and
- Procedure to follow in the event of an unexpected heritage item find or discovery of human remains during construction works (*Roads and Maritime Services Unexpected Heritage Items, Heritage Procedure* (November 2015) (refer to Appendix B)).

Further details regarding staff induction and training are outlined in Section 3.6 of the CEMP.

## 8.3 Monitoring and inspections

Requirements and responsibilities in relation to monitoring and inspections are documented in Sections 3.9.1 and 3.9.2 of the CEMP. Specific requirements for non-Aboriginal heritage monitoring and inspections include:

- Noise and Vibration monitoring and inspections of *Shop and Residence (197)* throughout Project works to ensure works do not exceed the recommended conservative vibration damage screening level; and
- If a heritage structure is predicted to be exposed to vibration levels above the conservative vibration screening level of 2.5mm/s, further investigation would be undertaken to determine whether the structure is structurally unsound.

## 8.4 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 3.9.3 of the CEMP.

## 8.5 Reporting

Reporting requirements and responsibilities are documented in Section 3.9.5 of the CEMP. Specific requirements for Aboriginal and non-Aboriginal heritage reporting include:

- Reporting in accordance with *Roads and Maritime's Standard Management Procedure: Unexpected Heritage Items* (March 2015) if an unexpected heritage item is discovered.
- Reporting in accordance with the PACHCI (2011) is required if land outside of the assessed construction footprint is to be utilised during construction of the Project.
- Reporting in accordance with *Statements of Heritage Impact* (Heritage Office and Department of Urban Affairs & Planning 1996, revised 2002) should impacts be unavoidable at Bardwell Park Railway Station Group.
- Reporting in accordance with CoA E28. A Construction Noise and Vibration Impact Statement will be undertaken prior to the installation of any monitoring equipment, where installation may impact on heritage listed structures.

# 9 Review and improvement

## 9.1 Continual improvement

Continual improvement of this plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continual improvement process is 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; and
- Make comparisons with objectives and targets.

## 9.2 Heritage CEMP Sub-plan update and amendment

The processes described in Section 3.13 of the CEMP may result in the need to update or revise this Plan. This will occur as needed.

Only the Environmental 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 – refer to Section 3.13.2 of the CEMP.



**Appendix A - TfNSW Standard Management Procedure:  
Unexpected Heritage Items**



# Unexpected Heritage Finds Guideline

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3TP-SD-115/2.0

Supporting Document – Applicable to Transport Projects  
Delivery Office

## Quality Management System

Status:	Approved
Version:	2.0
Branch:	Planning and Environment Services
Business unit:	Environmental Management
Date of issue:	14 April 2015
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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:	TP 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:	Technical Director Planning and Environment Services

## Document history

Version	Date of approval	Doc. control no.	Notes
1.0	11 July 2014	3164499_5	First issue
2.0	14 April 2015	3164499	Updated to be published to TfNSW website

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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 Transport Projects Delivery Office (TPO) 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, TPO 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 TPO 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 [Guide for Planning and Environmental Approvals – 2TP-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:

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

<b>PME</b>	Principal Manager Environmental Management
<b>TPO</b>	Transport Projects Delivery Office (TfNSW)
<b>TSR</b>	TfNSW Standard Requirement

## 4. Accountabilities

The Technical 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 TSR E – Environmental Management and the contract.

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 TPO 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
<b><i>Environmental Planning and Assessment Act 1979 (EP&amp;A Act)</i></b>	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.
<b><i>National Parks and Wildlife Act 1974 (NPW Act)</i></b>	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> .

Relevant Requirement	Objectives and offences
	<p>It is an offence to harm or desecrate an Aboriginal object or place. These are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an Aboriginal heritage impact permit and the permit's conditions were not contravened.</p> <p>A person must notify the Heritage Branch of OEH if a person is aware of the location of an Aboriginal object.</p> <p>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).</p>
<p><b>Heritage Act 1977</b></p>	<p>Provides for the care, protection and management of relics.</p> <p>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></p> <p>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.</p> <p>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.</p>

## 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 TPO site, the flowchart in Figure 1 should be followed. Table 2 indicates roles and responsibilities referred to in Figure 1.

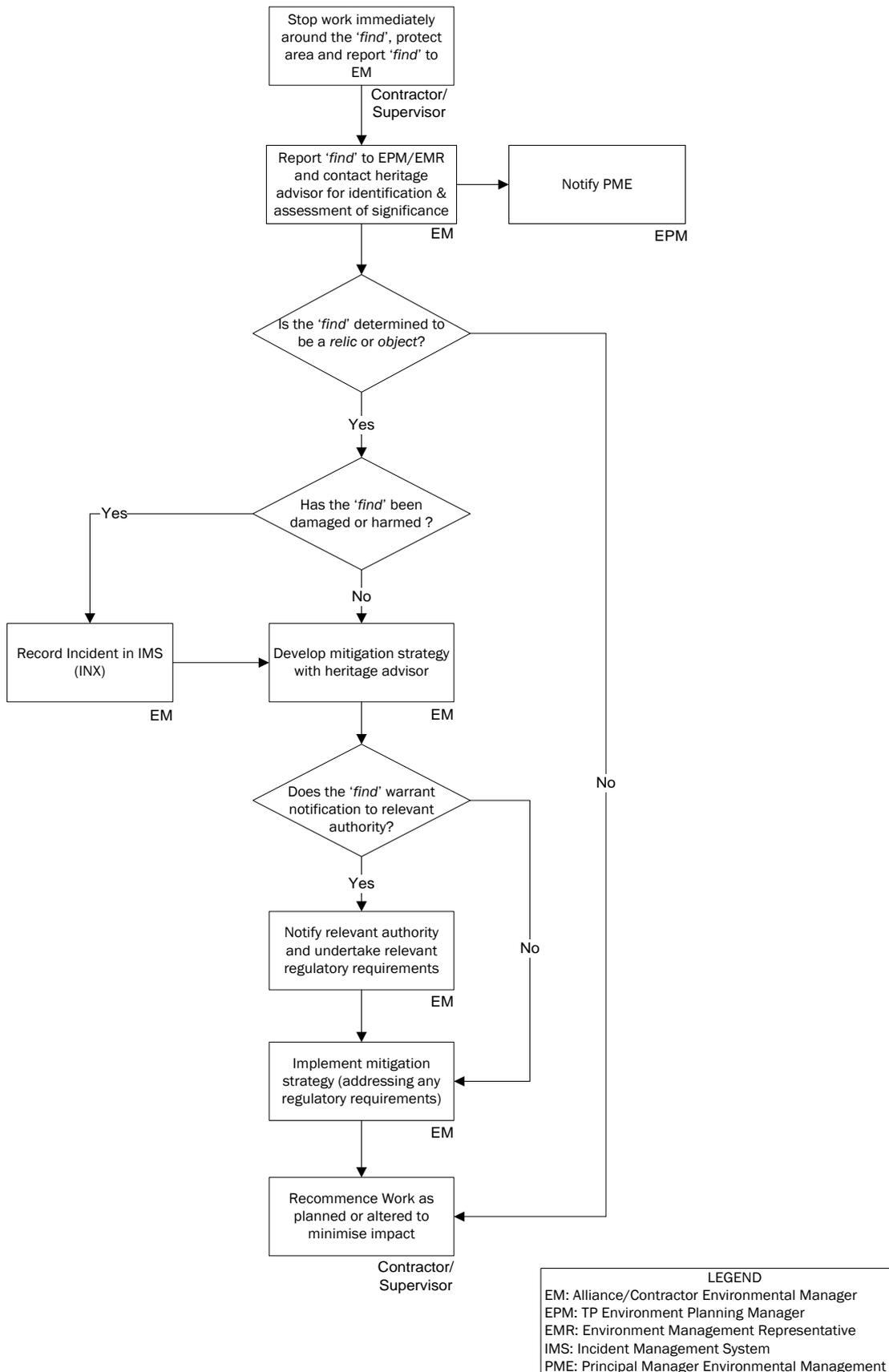


Figure 1: Unexpected heritage finds flowchart

**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	Manage the process of identifying, protecting and mitigating impacts on the 'find'. Liaise with heritage advisor and relevant authorities on significance of the find, mitigation and regulatory requirements. Complete incident report and review CEMP for any changes required. Propose amendments to the CEMP if any changes are required. Advise Contractor / supervisor to recommence work.
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	TPO 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)	Regulate the care, protection and management of Aboriginal objects. Issue Aboriginal heritage impact permits.
	Heritage Branch of OEH (for relics)	Regulate the care, protection and management of relics. Issue excavation permits.

## 7. Related documents and references

### Related Documents

[Environmental Incident Classification and Reporting – 9TP-PR-105](#)  
[Guide to Environmental Control Map – 3TP-SD-015](#)

**Appendix B - Unexpected Finds of Human Remains Procedure**

# UNEXPECTED FINDS OF HUMAN REMAINS PROCEDURE

**INTERNAL HOLD POINT: STOP WORK DUE TO DISCOVERY OF SUSPECTED HUMAN REMAINS**  
Works in immediate vicinity to stop, area to be protected and report find to Environmental Coordinator and Environmental Manager. TfNSW Environmental Representative notified.

Find is reported to Excavation Director and Project Heritage Specialist to determine if find is suspected of being human remains.

NSW Police notified of the find of suspected human remains by Project Manager.

Forensic case – remains are less than 100 years old

Written approval is received from the NSW Police for works to recommence.

**INTERNAL HOLD POINT RELEASE: WORKS CAN RECOMMENCE**  
Event is documented under TfNSW Incident Reporting Procedure and in Synergy.

If of Aboriginal ancestry, Registered Aboriginal Party and OEH will identify the appropriate course of action to be implemented.

Written approval received from RAP and OEH to recommence works.

**INTERNAL HOLD POINT RELEASE: WORKS CAN RECOMMENCE**  
Event is documented in accordance with TfNSW Incident Reporting Procedure and in Synergy.

Archaeological case – greater than 100 years old

Environment Manager notifies Office of Environment and Heritage (OEH) and Registered Aboriginal Party (RAP) of find.

Are the remains Aboriginal or non-Aboriginal ancestry? Stakeholders to be kept up to date with findings.

If of non-Aboriginal ancestry, OEH will identify the appropriate course of action to be implemented.

Written approval received from OEH to recommence works.

**INTERNAL HOLD POINT RELEASE: WORKS CAN RECOMMENCE**  
Event is documented in accordance with TfNSW Incident Reporting Procedure and in Synergy.