



Bondi Junction to City Cycleway

Aboriginal and historical heritage due diligence assessment

Prepared for Spackman Mossop Michaels | 30 July 2018

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Final

Report J17247RP1 | Prepared for Spackman Mossop Michaels | 30 July 2018

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Date	2 November 2017	2 November 2017	Date	2 November 2017

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Document Control

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1 Introduction

1.1 Introduction

City of Sydney Council (Council) proposes to install a cycleway connecting Centennial Park and Moore Park Trust's Oxford Street Cycleway and Pedestrian Path with the Bourke Street Separated Cycleway (the project) in the Sydney Local Government Area (LGA). The project will primarily involve constructing a two-way separated cycleway along Moore Park Road. The design of the project is attached in Appendix A and the project area that covers the extent of proposed works is shown in Figure 1.1.

EMM Consulting Pty Limited (EMM) has prepared an Aboriginal and historical due diligence assessment to support a review of environmental factors (REF) for the project. The main aims of the assessment were to:

- determine if Aboriginal objects, Aboriginal places or statutory listed historical heritage items will be impacted by the project;
- determine if further assessment or permits are required prior to project construction.

1.2 Description of the project

1.2.1 Overview

The project will provide a safe route for bike riders between Bondi Junction and the City. It will extend along Moore Park Road and a short section of Fitzroy Street connecting with existing cycleways at the northern edge of Centennial Park (Oxford Street) and Bourke Street in the City. The works will be undertaken in accordance with all relevant City of Sydney policies and specifications

1.2.2 Project details

i Cycleway works

- A two-way cycleway is proposed on the south side of Moore Park Road, between Lang Road and South Dowling Street;
- the existing marked bike lanes are currently on each side of the road. This space will be consolidated to the south side and the protection provided by a separated cycle facility will provide a higher level of safety for bike riders. The existing traffic and parking lanes and planted median will be shifted north;
- the cycleway in front of the stadium (between Driver Avenue and Poate Road) will be at the same level as the footpath so that during an event, the cycleway can be closed and provide more footpath space for pedestrians. An alternative route has been proposed during special events;
- the cycleway will occupy the footpath at Fitzroy Street between Anzac Parade and South Dowling Street; and
- the cycleway crossings at signalised and un-signalised intersections will be improved, to provide a safer crossing point for people both walking and cycling.

ii Adjusted traffic signals

- In order to allow people to continue cycling through signalised intersections without dismounting, bicycle lanterns are proposed on existing traffic signals along the route. This will provide bike riders a safe phase within the signal sequence to cross concurrently with pedestrian movements;
- the existing slip lane at the intersection of Fitzroy Street and South Dowling Street will be signalised, to provide a safer crossing for people walking and riding; and
- the existing slip lane at the intersection of Lang Road and Moore Park Road will be removed and an additional left-only traffic lane will be provided instead. This will improve safety at this intersection, and enable a bus stop upgrade.

iii Footpath works

- To improve amenity and safety, the footpath will be widened at Anzac Parade, Oatley Road, Regent Street, Poate Road, Gordon Street and Lang Road;
- to provide space for the cycleway, the footpath will be realigned up to 0.8 m into Moore Park between Anzac Parade and Driver Avenue. The Eastern Distributor tunnel exit along this section prevents this space being harvested from the road. Three Box Brush street trees will require removal. Furthermore, no Moore Park trees will be affected. The proposed design is supported by the Centennial Parklands Trust, and consistent with its masterplan currently on exhibition;
- a larger pedestrian island for people walking and riding will be provided at the intersection of South Dowling and Fitzroy Streets;
- the existing footpath in Moore Park around the Korean War Memorial will be realigned and widened along with new lighting and planting;
- a new bend-out cycleway intersection is proposed at Poate Road to slow vehicles down and provide a safer environment for pedestrian and cyclists; and
- footpaths from Poate Road to South Dowling will be improved with new verge landscaping, to provide better amenity for people walking with the existing footpath and verge retained from Lang Road to Poate Road.

iv Bus Stops

- The existing bus stop on Moore Park Road near Lang Road will be relocated and a new footpath area will be provided for people getting on and off the bus; and
- a shuttle bus stop for the new UTS Moore Park Precinct and Australian Rugby Development Centre will be provided close to the new campus. A setdown area will be provided at the bus stop.

v Parking

No parking will be removed as part of this project. There may be temporary parking loss during construction.

vi Lighting improvement works

- Lighting will be upgraded as required to meet relevant Australian standards at the following intersections:
 - the intersection of Albion Street and Flinders Street; and
 - the intersection of Anzac Parade/Flinders Street and Moore Park Road.
- lighting along the pedestrian crossing on the slip lane at Fitzroy Street and South Dowling Street will be upgraded as required to ensure a compliant level of lighting; and
- lighting will be improved along the upgraded footpath around the Korean War Memorial in consultation with the Centennial Park and Moore Park Trust.

vii Stormwater renewal works

The project will also include stormwater renewal works along Moore Park Road in between Oatley and Gordon Street/Cook Road to address overflow issues in the area. Proposed stormwater renewal works and connections will meet City of Sydney and Sydney Water requirements as applicable.

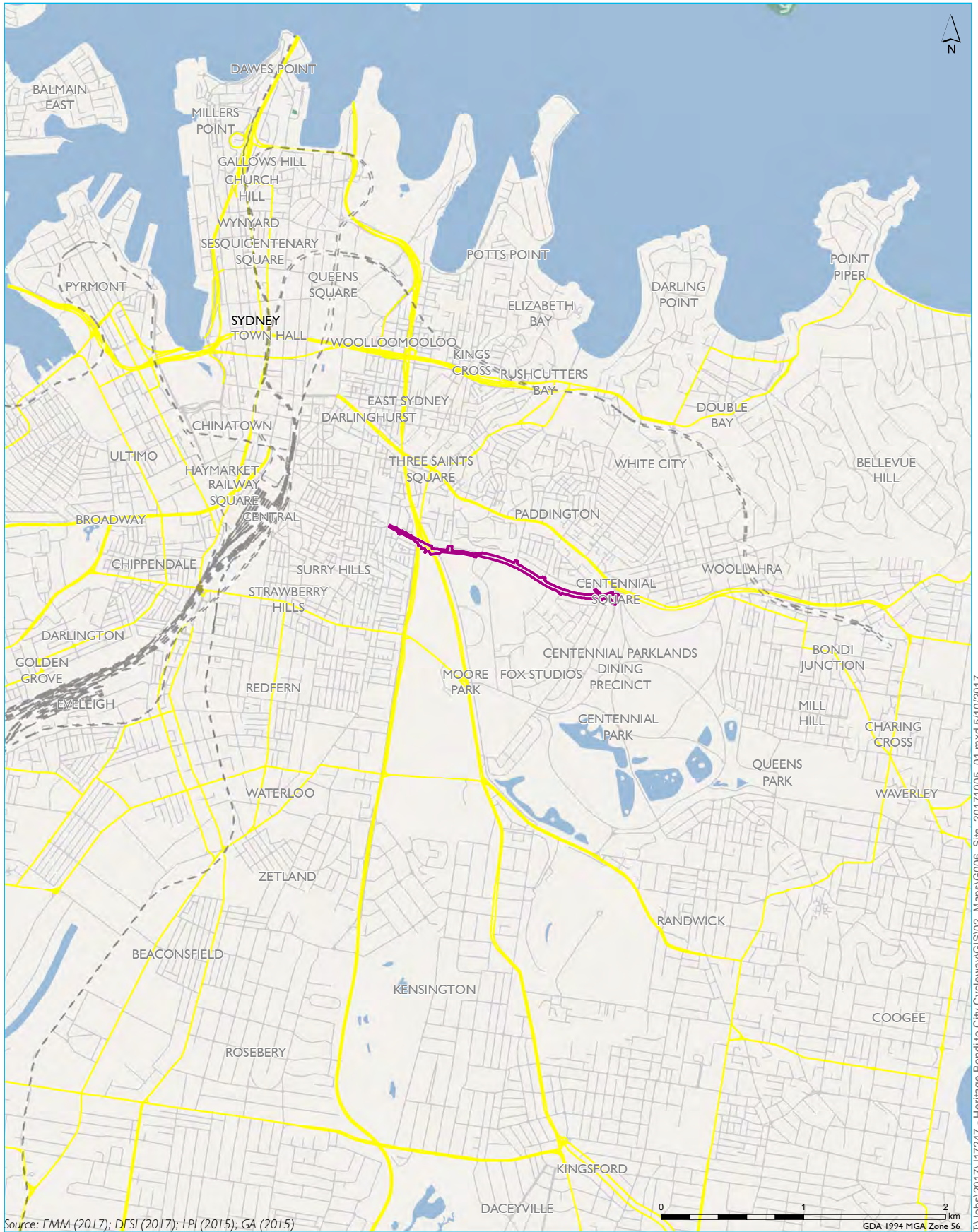
1.3 Construction activities

Construction works will include, but are not limited to, works to upgrade the existing roadway, paving and footpath, curbs, road crossings, parking arrangements, street tree and garden bed planting, and signage to fulfil design and safety requirements. Construction of the stormwater renewal works will be completed within existing stormwater trenches. However, if further ground disturbance of intact soil is required, further consideration may be required.

A number of palm trees along the Moore Park Road central median strip will be removed as part of the realignment of the median strip. Council propose to relocate the affected palms back into the modified central median following major construction.

The cycleway will be constructed of asphalt with the surfaces being delineated though colour treatments and line marking. The materials will reflect the local character and be made up of concrete for the footpath and shared zones, while the cycleway will (as per the entire cycleway to which it connects) be constructed from asphalt. Existing lighting signs and poles will be retained where possible and removed where safe access is required for pedestrians and cyclists. The redevelopment of the Sydney Football Stadium may impact on the construction of the cycleway.

Pedestrian access will be maintained on the southern side of Moore Park Road and Fitzroy Street at all times throughout construction.



KEY

- Project area
- Rail line
- Main road
- Local road
- Waterbody

Project area

Bondi Junction to City cycleway
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Figure 1.1

1.4 Legislative overview

1.4.1 Environmental Planning and Assessment Act 1979

The determining authority is Council. Council has the duty to consider the environmental impacts of the project under Section 5.5 of the NSW *Environmental Planning and Assessment Act 1979*, as at 1 July 2018 (EP&A Act). This due diligence assessment forms an appendix to the REF for the project.

1.4.2 Aboriginal heritage

Aboriginal objects and places are protected in New South Wales (NSW) under Part 6 of the NSW *National Parks and Wildlife Act 1974* (NPW Act). Section 90 of the NPW Act requires an Aboriginal heritage impact permit (AHIP) for harm to an Aboriginal object or Aboriginal place. Significant penalties are in place for harm to Aboriginal objects or places or regardless of whether the harm was committed knowingly or not. Defences against prosecution include impacts in compliance with an AHIP, acting in accordance with specified codes of practice or the conduct of certain low impact activities.

The *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (due diligence guidelines) (DECCW 2010) provide a generic code of practice used to determine whether activities will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm. A summary of the due diligence process is shown in Figure 1.2. If the due diligence assessment determines that Aboriginal objects or places are likely to be harmed, an AHIP is required to manage harm as defined by Part 6, Section 86 of the NPW Act.

1.4.3 Historical heritage

Listing on statutory registers provides legal protection for heritage items. In NSW, the *Heritage Act 1977* (the Heritage Act), and the *Environmental Planning and Assessment Act* (EP&A Act) are the primary statutory controls protecting historical heritage and archaeology within NSW. The State Heritage Register (SHR), the Section 170 registers, and heritage schedules of Local Environmental Plans LEPs have varying degrees of legal obligation. Places on the National Heritage List and the Commonwealth Heritage List are protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Register of the National Estate became a non-statutory register when the EPBC Act was gazetted.

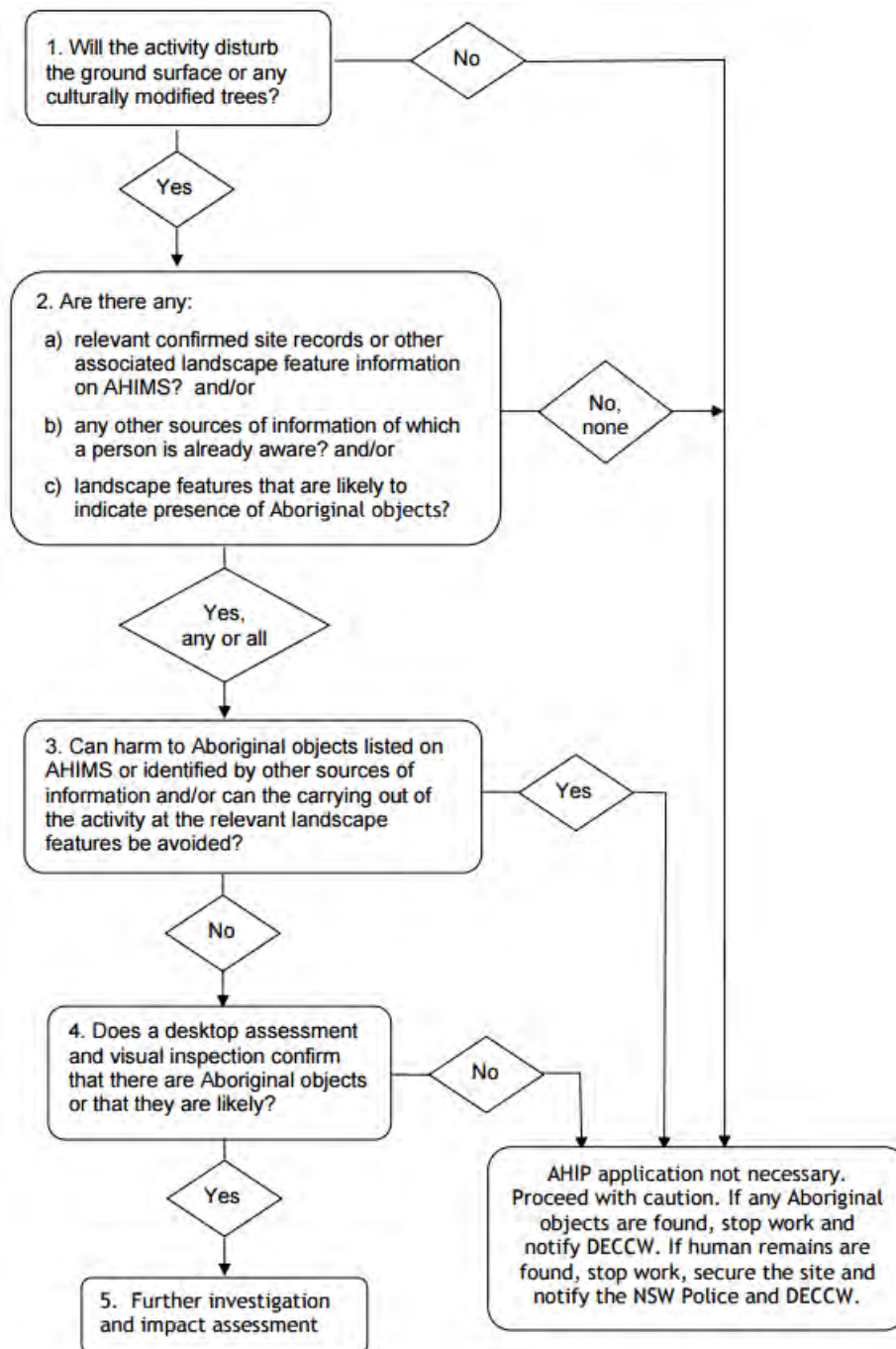


Figure 1.2 Due diligence process summary (source: due diligence guidelines (DECCW 2010))

1.5 Assessment methods

1.5.1 Aboriginal heritage

This report follows the due diligence guidelines. In summary, the assessment involved:

- a search of the Aboriginal Heritage Information System (AHIMS) database on 19 September 2017;
- consideration of existing Aboriginal cultural heritage studies in the area and region for the presence of Aboriginal objects or places;
- consideration of the environmental context for the presence of Aboriginal objects or places;
- a site inspection project area by an EMM archaeologist to identify any Aboriginal objects or areas of potential archaeological deposit (PAD); and
- determination of whether further heritage investigation and impact assessment is required.

Table 1.1 describes the basic steps of a due diligence assessment as set out in Section 8 of the due diligence guidelines (refer Figure 1.2). It also provides an overview of the assessment results in accordance with these steps and lists the section(s) in the report where each of these is addressed in full.

Table 1.1 Due diligence summary

Step	Results	Section in this report
STEP 1: Check for records of Aboriginal objects and places in area of proposed activity.	No Aboriginal objects have been recorded in the project area.	Section 2.1.2
STEP 2: Is the activity a 'Low Impact Activity', as defined in the National Parks and Wildlife Regulation?	The project is not a low impact activity.	Section 1.2
STEP 3: Are there any landscape features on undisturbed land that are likely to indicate the presence of Aboriginal objects?	The landscape is modified and highly disturbed. As such, the presence of Aboriginal objects is unlikely.	Section 2.1.1
STEP 4: Does a desktop assessment and visual inspection confirm that there are Aboriginal objects present or likely to be present?	Desktop assessment and a site inspection confirm that the project area is highly disturbed and therefore the presence of Aboriginal objects is unlikely.	Sections 2.1 and Chapter 3
STEP 5: Can the activity be relocated away from the known/likely area for Aboriginal objects?	Not applicable.	Not applicable.
STEP 6: Commence investigation for an Aboriginal heritage impact permit (AHIP).	Not applicable.	Not applicable.

1.5.2 Historical heritage

The purpose of the historical due diligence assessment was to identify historical heritage items and determine whether further assessment and/or permits are required. As such, the assessment has involved:

- Searches of statutory heritage registers;
- background research for an historical overview;
- a site inspection;
- a summary impact assessment; and
- recommendations for the potentially affected heritage items.

2 Existing environment

2.1 Aboriginal heritage

2.1.1 Landscape context

The purpose of reviewing the landscape context of the project footprint is to identify the likelihood of Aboriginal objects being deposited or preserved, in the context of historical and natural site disturbance processes.

The project area was originally part of the territory of the Gadigal Aboriginal group. It lies at the head of the Botany Bay catchment area within a Quaternary sand landscape characterised by gently undulating coastal dune fields (eSPADE 2017). Prior to historic land clearing, the vegetation was dry sclerophyll tall open woodland. Timber clearance led to problems with erosion by the mid nineteenth century.

The project area is now characterised by intensive development related to the construction of paths, roads and parklands. This has involved extensive ground disturbance within the limits of previous excavation for these developments. Any Aboriginal objects originally within the project area are likely to have been removed as a result of activities. Further details of current land use and disturbance are described in the site inspection results in Chapter 3.

2.1.2 Database searches.

Searches were made of the following databases on 12 September 2017:

- the Aboriginal Heritage Management System (AHIMS);
- the Aboriginal places register via NSW State Heritage Register (SHR);
- schedule 5 of the City of Sydney's Local Environment plan (LEP); and
- the Native Title Vision website.

An AHIMS search for an area with a radius of 1 km around the project area identified two sites within the search area (Figure 2.1). Neither of these Aboriginal sites is within the project area. No impacts are anticipated to known Aboriginal sites from the project.

Table 2.1 AHIMS sites

Site ID	Site type	Status
45-6-0647	Rock engraving	destroyed
45-6-3155	Artefacts	destroyed

A search of the Aboriginal places register confirmed that none are situated in or within the vicinity of the project area. No impacts are anticipated to known Aboriginal places from the project.



KEY
 ● AHIMS site
 □ Project area

AHIMS sites

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Figure 2.1



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Source: EMM (2017); DFSI (2017)

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 GDA 1994 MGA Zone 56

Searches of the Native Vision GIS system on the www.nntt.gov.au website found that none of the project area is subject to any registered native title claims, Indigenous Land Use Agreements (ILUAs), or joint management arrangements.

2.1.3 Previous Aboriginal heritage investigations

The following relevant Aboriginal heritage investigations have been reviewed to determine if Aboriginal objects have been recorded on similar landscapes in the local area and the potential for Aboriginal sites to exist within the project area.

In 2013 Godden Mackay Logan (GML) conducted an assessment for the CBD and South Light Rail Environment Impact Statement (GML 2013). They identified a number of potential archaeological deposits (PADs) in the project footprint and made the following predictions that are pertinent to the project area:

- Aboriginal objects may be present in historical archaeological stratigraphic layers;
- remnant Aboriginal archaeological deposits may survive in small pockets of remnant natural soils;
- given the likely depth of Botany sands within the Moore Park precinct, it is possible that intact soil profiles, which would have the potential for Aboriginal archaeological objects such as hearths or stone artefacts, remain below the modern disturbance; and
- if the pH is close to neutral or within anaerobic/waterlogged conditions, organic remains such as middens or burials may be present.

GML noted that archaeological test excavation would be required to confirm these predictions in key locations.

Australian Museum Business Services (AMBS 2002) assessed pre-colonial Aboriginal land and resource-use in Centennial, Moore and Queen's Parks. They concluded that there is some potential for Aboriginal sites to survive at depth below areas of disturbance and that any buried archaeological evidence would be most likely small scale artefact scatters, isolated artefacts, hearths and pounding/grinding stones. However further work was need to assess the full extent of the impact of disturbance on potential archaeological deposits.

GML and Austral Archaeology (1997) undertook a program of archaeological test pitting along the western edge of Moore Park as part of early works for the Eastern Distributor. Test pits were dug to 2.2 m. They found fill between 40–150 cm and no evidence of Aboriginal occupation.

The only case of Aboriginal artefacts being identified near the project area is a campsite beneath the car park of the Moore Park Tennis Centre which was discovered in 2014 (AHIMS 45-6-3155). It consisted of the remains of dune sands containing a small number of stone artefacts (Sydney Barani website).

2.2 Historical heritage

2.2.1 Historical overview

Centennial Parklands is part of land originally designated as Sydney Common in 1811. In 1820 a water reserve was set aside to the east of Sydney Common and between 1827 and 1838 Lachlan's Water Tunnel (Busby's Bore) was built, using convict labour, to provide fresh water to a terminal in Hyde Park (SHR 01384). The 'Bore' was approximately 5.5 foot (1.65 m) high, 4.5 foot (1.35 m) wide and extended for 12,000 feet (approximately 4 km). Shafts and wells were tapped into the bore, of which 28 have been located, including two in Victoria Barracks, opposite the project area (Sydney Water 2005).

A Permanent Conservation Order applies to the section of the Bore between Centennial Park and College Street. This includes the project area (DP205794/Lot 1 and DP 752011/Lot 1528). Busby's Bore has a heritage curtilage of 3 m from all surfaces of the horizontal channel of the bore itself and 3 m from all surfaces of all the vertical shafts, offset shafts and structures associated with it (SHR 00568).

In 1866 Sydney City Council dedicated the north-west section of Sydney Common as Moore Park for public recreation. Since then, the original topography of the project area has been modified by roads and modern development. Aerial photography shows that in 1943 there was little to no vegetation along the south side of Moore Park Road (SIX maps imagery).

2.2.2 Statutory register searches

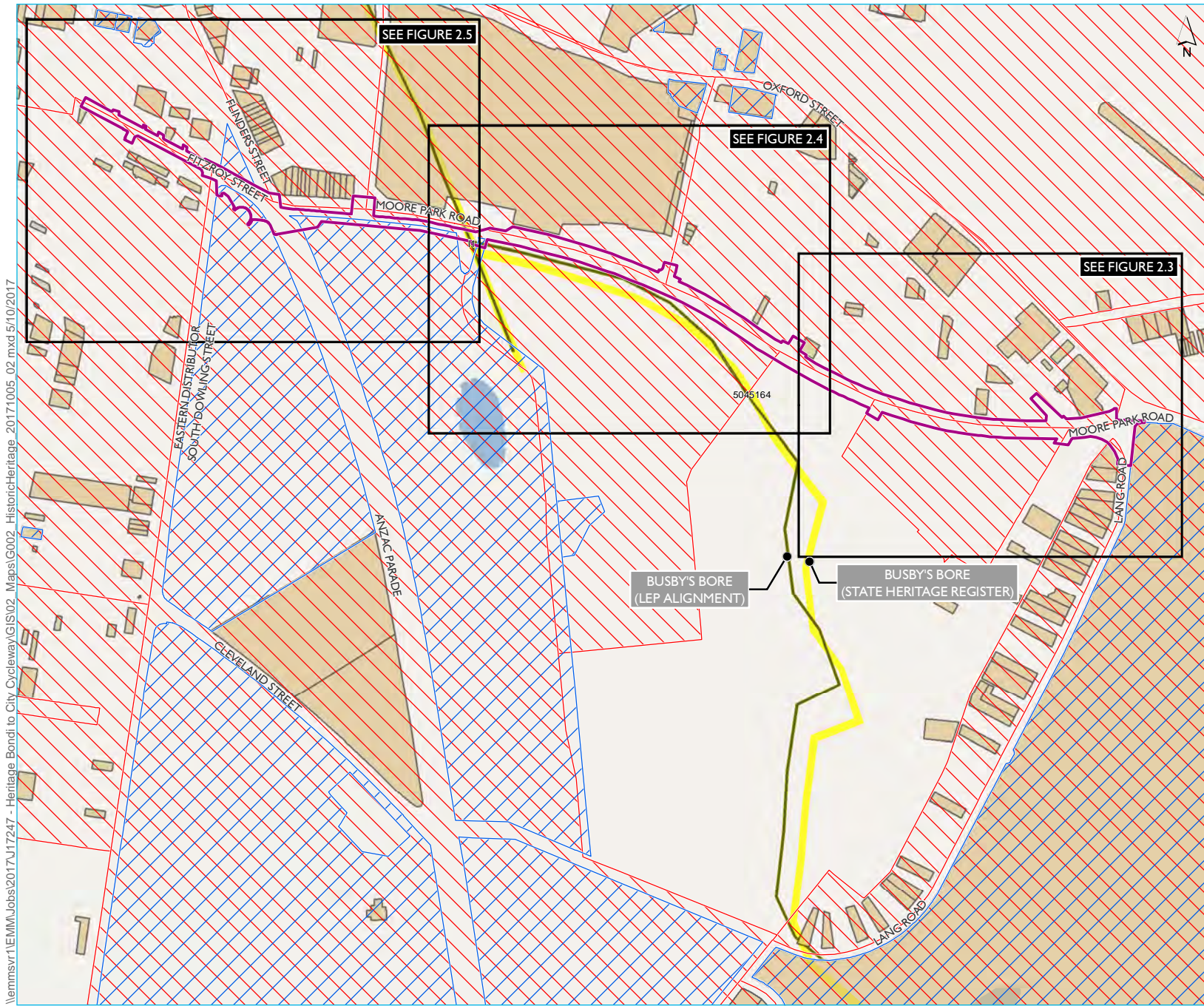
Searches were made of the following databases on 12 September 2017:

- The National Heritage List (NHL);
- The Commonwealth Heritage List (CHL);
- The State Heritage Register (SHR);
- Schedule 5 of the City of Sydney Local Environment Plan (LEP); and
- The Register of the National Estate (RNE, non-statutory).

The results of the register searches are listed in Table 2.2 and illustrated on Figures 2.2–2.5.

Table 2.2 Register search for items within the project area

Register	Register listing
National Heritage List (NHL)	The land within the project area is not listed on the NHL.
Commonwealth Heritage List (CHL)	The land within the project area is not listed on the CHL.
State Heritage Register (SHR)	00568 – Busby’s Bore, Centennial Park to College St, Surry Hills. This item intersects with the cycleway near the junction of Moore Park Road and Driver Avenue. 01384 Centennial Park, Moore Park, Queens Park. Parts of the project area are within the north-western curtilage of Moore Park.
City of Sydney LEP (2012)	Item 1 – Busby’s Bore, including tunnels, shafts and wells. Conservation Area C6 – Furber Road Conservation Area C7 – Lang Road Conservation Area C36 – Moore Park Conservation Area C37 – Sydney Cricket Ground Conservation Area C48 – Paddington South Conservation Area C49 – Victoria Barracks Conservation Area C59 – Bourke Street North Conservation Area 60 – Moore Park
Register of the National Estate (RNE, non-statutory)	1795 – Busby’s Bore or The Tunnel, Oxford St, Sydney.



- KEY**
- Project area
 - State Heritage Act
 - Conservation Area - general
 - Busby's Bore (State Heritage Register)
 - Item - general
 - Waterbody

Overview of heritage listings

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Figure 2.2

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Source: EMM (2017); DFSI (2017)

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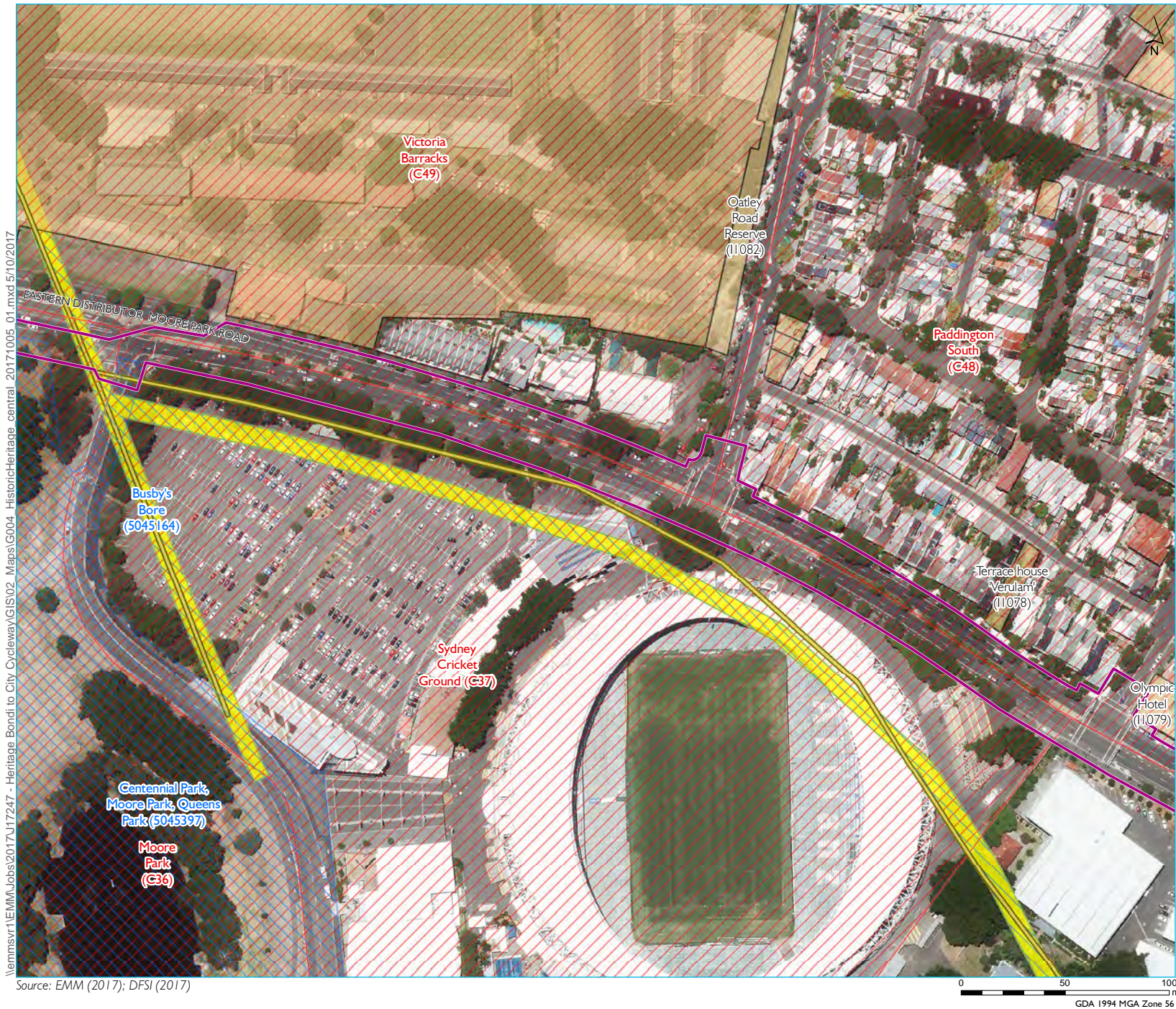


- KEY**
- Project area
 - Busby's Bore (State Heritage Register)
 - Conservation Area - General
 - State Heritage Act
 - Item - general

Heritage listings (east)

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Figure 2.3



- KEY**
- Project area
 - Busby's Bore (State Heritage Register)
 - Conservation Area - General
 - State Heritage Act
 - Item - general

Heritage listings (centre)

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Figure 2.4



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Source: EMM (2017); DFSI (2017)

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m
GDA 1994 MGA Zone 56



- KEY**
- Project area
 - Busby's Bore (State Heritage Register)
 - Conservation Area - General
 - State Heritage Act
 - Item - general

Heritage listings (west)

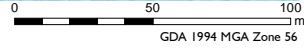
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Figure 2.5



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Source: EMM (2017); DFSI (2017)



3 Site inspection

3.1 General

Pamela Chauvel (Archaeologist EMM) inspected the project area on 19 September 2017 in order to identify areas of archaeological potential or items of heritage interest. The inspection began at the corner of Moore Park Road and Oxford Street, the easternmost point of the project area and continued west along the southern side of Moore Park Road, following the route of the proposed cycleway, to the corner of Fitzroy Street and Bourke Street (Plate 3.11).

The project area slopes gently from east to west from Centennial Park to Oatley Road where it levels out before rising again towards Anzac Parade. From there it undulates and then rises more steeply along Fitzroy Street towards Bourke Street.

Ground surface visibility within the project area was poor, being mostly covered with a bitumen surface on roads and footpaths. Between Centennial Park and Poate Road there was a narrow (approximately 1 m) wide grassed verge between the road curb and bitumen footpath (Plate 3.1), but the footpath along the remainder of the route was completely surfaced with bitumen between the road curb and fences. The road curbs were all of concrete material and no historical sandstone curb material was observed during the site inspection.

No Aboriginal objects were identified during survey. The entirety of the project area is within a modified landscape.

3.2 Items of heritage interest

The site inspection focused on identifying historical items within the vicinity of the project footprint. These items were photographed and are discussed below.

The project will involve the removal and relocation of a number of palm trees along sections of the median strip on Moore Park Road (Plate 3.2 and Plate 3.3). These trees are well-established and contribute to the streetscape of Moore Park Road within their respective conservation areas.

The underground alignment of Busby's Bore intersects with the project area between Oatley Road and Driver Avenue. Construction works for the Australian Rugby Development Centre are currently occurring directly above Busby's Bore (Plate 3.4). Immediately to the west of Driver Avenue, there is a T-junction in the surface curtilage of Busby's Bore and it heads north-west across Moore Park Road (Plate 3.6). No features of Busby's Bore were visible as it is an underground structure.

Chain-linked bollards will be retained at the west of the corner of Moore Park Road and Driver Avenue (Plate 3.5) and to the north of the Korean War Memorial (Plate 3.9).

Other items of interest include sandstone columns related to the entrance and fencing of Moore Park (Plate 3.7, Plate 3.8 and Plate 3.10). These items will have new asphalt their bases but will not be physically impacted by the project. A small alignment of sandstone blocks around a garden bed near the corner of South Dowling Street and Fitzroy Street will be retained (Plate 3.10).



Plate 3.1 Moore Park Rd between Centennial Park and Poate Road. Example of a small grass verge beside bitumen footpath (view west) that will form the cycleway



Plate 3.2 Example of palm trees requiring removal and relocation along a median strip of Moore Park Road (view east towards Centennial Park)



Plate 3.3 Example of palm tree to be relocated along median strip of Moore Park Road (view north)



Plate 3.4 Location above the alignment of Busby's Bore showing current construction zone (view west)



Plate 3.5 Corner of Driver Avenue and Moore Park Road. Bollards will be retained (view west)



Plate 3.6 Corner of Driver Avenue and Moore Park Road where the underground alignment of Busby's Bore occurs (view east)



Plate 3.7 Sandstone pier (marked by red arrow) marking the end of a bollard fence (view east)



Plate 3.8 Example of the easternmost Moore Park Gateway Piers (view south)



Plate 3.9 Bollards near the Korean War Memorial that will be retained (view west)



Plate 3.10 The western-most Moore Park Gateway piers (left) and the sandstone garden wall that will be retained (shown by red arrow) near the Korean War Memorial (view north-east)



Plate 3.11 View from Bourke St looking east along Fitzroy Street, the easternmost point of the project area. Footpaths on both sides of Fitzroy St are currently shared bike and pedestrian zones

4 Potential impacts

4.1 Aboriginal heritage

Desktop assessment indicated that the project area exhibits landform elements, which if undisturbed, may have archaeological potential. However, review of the findings of previous reports, the historical background and a site inspection indicates that the project area has been highly disturbed and therefore has low archaeological potential. The width and depth of additional excavation required for the project is very likely to remain within the level of previous land use disturbance and therefore Aboriginal objects are unlikely to occur in this area.

It is likely that activities associated with the stormwater renewal works will remain within existing trenches or the highly disturbed soil directly surrounding it. However, if the works are anticipated to involve disturbance to intact soils then further investigation or impact assessment may be required.

4.2 Historical heritage

The potential impacts of the project on historical heritage are addressed in Table 4.1. The details of each of these items were reviewed on the State Heritage Inventory (SHI) to identify which of their aspects (if any) may be impacted by the project.

The project area is along the edges of eight conservation areas. Generally, the project will not adversely impact on the heritage significance or character of the streetscape because the proposed cycleway will be created along existing roads and paths. The removal and relocation of palm trees along the median strip of Moore Park Road will be a temporary visual impact during cycleway construction but it will not cause long-term impacts. Additional garden beds and plantings along the project area are encouraged according to the policy recommendations for relevant conservation areas. Overall the project is likely to have a neutral impact on the heritage conservation areas, with a temporary visual impact during construction.

The project enters the curtilage of two SHR listed heritage items: Moore Park and Busby's Bore. In July 2018, EMM conducted further assessment to more accurately map the Bore's horizontal and vertical channels so that a more reliable impact assessment could be made. Results of this assessment are included in Appendix **Error! Reference source not found.**

The additional heritage assessment tasks completed for the project indicate that impacts are not anticipated to heritage items in the vicinity. Provided that City of Sydney Council consults with The Centennial and Moore Park Trust and the works are undertaken in accordance with the endorsed management plan, the following recommendations can be made:

- The proposed works within the curtilage of Centennial Park, Moore Park, Queens Park (SHR #01384) comply with the site specific SHR exemptions for the item. No exemption notification under Section 57(2) of the Heritage Act is required for Heritage Division approval for the proposed works to proceed.
- The proposed works are very unlikely to be within the heritage curtilage of Busby's Bore (SHR #00568). Therefore no standard exemption notification under Section 57(2) of the Heritage Act is required for the proposed works to proceed.

Table 4.1 Register search for items within the project area

Register	Register listing	Overview of significant features relevant to the project	Potential Impacts
National Heritage List (NHL)	The land within the project area is not listed on the NHL.	Not applicable.	Not applicable
Commonwealth Heritage List (CHL)	The land within the project area is not listed on the CHL.	Not applicable.	Not applicable
State Heritage Register (SHR)	00568 – Busby’s Bore, Centennial Park to College St, Surry Hills. This item intersects with the cycleway near the junction of Moore Park Road and Driver Avenue.	Water supply tunnel from Centennial Park to Hyde Park. Built 1827–1837.	It is conservatively estimated that the proposed works are over 13 m from the nearest vertical shaft. The 1892 plan indicates that the horizontal channel of the bore is approximately 38 feet (116 m) below the ground surface. Proposed works will be less than 1 m. See Appendix C for the relevant maps and plan. As such, impacts are very unlikely.
	01384 Centennial Park, Moore Park, Queens Park. Parts of the project area are within the north-western curtilage of Moore Park.	The curtilage of Moore Park where it intersects with the project is part of the greater Centennial Parklands which is a unique place of exceptional National, State and Local heritage significance. It is a grand, linked open space of largely nineteenth-century landscape design intended for social and physical activity.	The project will involve minor changes within the northern boundary of the SHR curtilage. Originally planned changes to the Korean War Memorial will no longer take place.
City of Sydney LEP (2012)	Item 1 – Busby’s Bore, including tunnels, shafts and wells. Conservation Area C6 – Furber Road	Refer to SHR listing above. The significance of Moore Park Road within this conservation areas is quoted from the SHI as follows: “Southern side only from Poate Road to Cook Road: very intact very few intrusions. Predominant character: Two storey grand Federation era terraces and semi-detached houses, largely intact. Detracting elements: high front fences to Moore Park Road, 1st floor balcony enclosures to facades to Moore Park Road, and the post war residential flat building at 59 Moore Park Road. Street Rating: A”	Refer to SHR listing above The palm trees subject to removal and relocation are not specifically referred to as significant features of the conservation area. However, the policy recommendations to enhance the significance of the conservation areas include maintaining street plantings to unify street scapes. Overall, the removal and relocation of the designated palm trees will cause a temporary visual impact to the streetscape. Other changes relate to the cycleway construction and will only occur on existing paths or roads. As such impacts will be minor to negligible.

Table 4.1 Register search for items within the project area

Register	Register listing	Overview of significant features relevant to the project	Potential Impacts
	Conservation Area C7 – Lang Road	Main significance is associated with residences and their setting adjacent to Centennial Park.	No significant features will be impacted. The project will only change the corner footpaths and road of Lang and Moore Park road. As stated in the policy recommendations for the heritage item, the proposed garden bed and trees are encouraged at street ends to reinforce landscape vistas. Other changes relate to the cycleway construction and will only occur on existing paths or roads. As such impacts will be minor to negligible.
	Conservation Area C36 and C60 – Moore Park	Refer to SHR listing for the item.	Refer to SHR listing for the item
	Conservation Area C37 – Sydney Cricket Ground	Significance of this conservation area primarily relates to the cricket grounds and not necessarily Moore Park Road.	The removal and relocation of palm trees would not impact the significance of the conservation area. Other changes relate to cycleway construction and will only occur on existing paths or roads. As such impacts will be minor to negligible.
	Conservation Area C48 – Paddington South	The significance of Moore Park Road within this conservation area relates to the Victorian building developments that characterise the area.	The palm trees subject to removal and relocation are not specifically referred to as significant features of the conservation area. However, the policy recommendations to enhance the significance of the conservation areas include maintaining street plantings to unify street scapes. Other changes relate to the cycleway construction and will only occur on existing paths or roads. As such impacts will be minor to negligible.
	Conservation Area C49 – Victoria Barracks	The significance of the conservation area primarily relates to the complex of buildings to the north and not particularly Moore Park Road.	The removal and relocation of palm trees would not impact the significance of the conservation area. Other changes relate to the cycleway construction and will only occur on existing paths or roads. As such impacts will be minor to negligible.
	Conservation Area C59 – Bourke Street North	Primary significance relates to Victorian era houses. The significance of Fitzroy Street is summarised as: “A street of Victorian character that is predominantly intact and contains a mixture of shops/residences and terraces. Subject to heavy traffic. New work should focus	Proposed changes relate to the cycleway construction and will only occur on existing paths or roads. As such impacts will be minor to negligible.

Table 4.1 Register search for items within the project area

Register	Register listing	Overview of significant features relevant to the project	Potential Impacts
Register of the National Estate (RNE, non-statutory)	1795 – Busby’s Bore or The Tunnel, Oxford St, Sydney.	on reinstating balconies and restoring original elements. Dormers may be appropriate and should be considered on merit. Sections of sandstone curbing are present and should be maintained with missing sections rebuilt. Street Rating: A”.	Refer to SHR listing for details.

5 Recommendations

5.1 Aboriginal heritage

The following recommendations have been prepared to respond to the site conditions and current legislation and guidelines protecting Aboriginal cultural heritage:

- The nature and extent of ground disturbance activities associated with the stormwater renewal works must be resolved prior to excavation activities.
 - If the stormwater renewal works will be constructed within existing trenches and/or previously disturbed land, then no further investigation is required.
 - If the stormwater renewal works will involve ground disturbance intact soils (soils not previously disturbed) then further investigation and assessment is required to determine if Aboriginal objects will be harmed by the activity.
- No further assessment is required for the remaining project activities and it can proceed with caution in the project area.
- Aboriginal objects and places remain protected under the NPW Act. Considering this, all workers (including contractors) should be made aware that it is illegal to harm an Aboriginal object, and if a potential Aboriginal object is encountered during activities associated with the project all work will cease in the immediate vicinity of the item and a qualified heritage professional will be contacted for advice.
- In the event that known or suspected human skeletal remains are encountered during the activity, the following procedure will be followed:
 - all work in the immediate vicinity will cease and the find will be immediately reported to the work supervisor who will immediately advise the Environment Manager or other nominated senior staff member;
 - the Environment Manager or other nominated senior staff member will promptly notify the police and the state coroner (as required for all human remains discoveries);
 - the Environment Manager or other nominated senior staff member will contact OEH for advice on identification of the skeletal material;
 - if it is determined that the skeletal material is Aboriginal ancestral remains, the Local Aboriginal Land Council will be contacted and consultative arrangements will be made to discuss ongoing care of the remains; and
 - if it is determined that the skeletal material is not Aboriginal ancestral remains, further investigation will be conducted to determine if the remains represent a historical grave or if further involvement of the police is required.

5.2 Historical heritage

5.2.1 SHR items

No further heritage investigations or permits are required for the proposed works to proceed. However, significant historical archaeological remains are still protected under the Heritage Act through the operation of the 'relics' provisions in Sections 139–146 of the Heritage Act. If archaeological deposits are discovered during the works, all work must cease in the affected area(s) and the Heritage Division must be notified in accordance with Section 146 of the Heritage Act. Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.

5.2.2 LEP items

The project is unlikely to detract from the heritage significance of heritage conservation areas through which it traverses. Table 4.1 of this report should be considered as a summary statement of heritage impact that demonstrate impacts will be minor to negligible.

It is recommended that the design and materials used for the cycleway are in keeping with established cycleways in the City of Sydney Council LGA and that these are sympathetic to the heritage significance of the conservation areas.

References

Australian Museum Business Services (AMBS), January 2002, *Pre-colonial Aboriginal land and resource use in Centennial, Moore and Queens Parks—assessment of historical and archaeological evidence for Centennial Parklands Conservation Management Plan*

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Godden Mackay Logan, 2013, *CBD and South East Light Rail Environment Impact Statement – Heritage Impact Assessment*. Report prepared for Parsons Brinckerhoff on behalf of Transport for NSW

Godden Mackay Heritage Consultants, May 1997, Eastern Distributor—Aboriginal Archaeology Monitoring Report, prepared for Leighton Contractors

Godden Mackay Pty Ltd and Austral Archaeology Pty Ltd, December 1997, POW Project 1995—Archaeological Investigation— Volume 2, Archaeology; Part 3—Aboriginal Archaeology, prepared for the South Eastern Sydney Area Health Service, Heritage Council of NSW and the NSW Department of Health

Sydney Barani website, accessed 5 October 2017 <http://www.sydneybarani.com.au/>, produced by City of Sydney Council

Sydney Water Corporation, accessed 5 October 2017 https://www.sydneywater.com.au/web/groups/publicwebcontent/documents/document/zgrf/mdq0/~edisp/dd_044107.pdf, produced by Sydney Water

Appendix A

AHIMS search results

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
45-6-0647	Centennial Park	AGD	56	336273	6247961	Open site	Valid	Art (Pigment or Engraved) :-	Rock Engraving	
	<u>Contact</u>	<u>Recorders</u>								
45-6-3155	Moore Park AS1	GDA	56	335613	6247909	Open site	Destroyed	Artefact :-		
	<u>Contact</u>	<u>Recorders</u>	Artefact - Cultural Heritage Management ,Mr.Josh Symons,Mr.Alex Timms							
		<u>Permits</u>	4019							

Report generated by AHIMS Web Service on 12/09/2017 for Pamela Chauvel for the following area at Datum :GDA, Zone : 56, Eastings : 334214 - 337654, Northings : 6247656 - 6250032 with a Buffer of 50 meters. Additional Info : Report for client. Number of Aboriginal sites and Aboriginal objects found is 2

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix B

Additional assessment for Moore Park and Busby's Bore



11 July 2018

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Re: Bondi Junction to City Cycleway: Additional heritage assessment and advice regarding State Heritage Register (SHR) items: Centennial Park, Moore Park, Queens Park (SHR #01384) and Busby's Bore (SHR #00568).

Dear Matthew

1 Background

City of Sydney Council (Council) proposes to install a cycleway connecting Centennial Park and Moore Park Trust's Oxford Street Cycleway and Pedestrian Path with the Bourke Street Separated Cycleway (the project) in the Sydney Local Government Area (LGA). The project will primarily involve constructing a two-way separated cycleway along Moore Park Road.

In November 2017, EMM Consulting Pty Limited (EMM) prepared an Aboriginal and historical due diligence assessment (heritage assessment) to support a review of environmental factors (REF) for the project. As part of the assessment outcomes, the report identified that the project may encroach upon the curtilages of two State Heritage Register (SHR) items: Centennial Park, Moore Park, Queens Park (SHR #01384) and Busby's Bore (SHR#00568). These heritage items are protected under the NSW *Heritage Act 1977* (Heritage Act).

The heritage assessment identified that although the project will involve works within the curtilage of Moore Park (part of SHR #01384) on its very northern boundary, it is unlikely to impact the heritage significance of the item. Moore Park is a place of exceptional National, State and Local heritage significance. It is a grand, linked open space of largely nineteenth-century landscape design intended for social and physical activity. EMM advised that further assessment was needed to confirm that the proposed works within the small area of SHR curtilage are exempt from requiring a Section 60 application to impact a SHR item in accordance with Section 57(2) of the Heritage Act.

The heritage assessment identified that the project will involve works above the alignment of Busby's Bore which is a water supply tunnel from Centennial Park to Hyde Park built 1827–1837. EMM determined that the project was unlikely to impact Busby's Bore, but further investigation was recommended to more accurately map the Bore's horizontal and vertical channels so that a more reliable impact assessment could be made.

2 Methods and results

2.1 Centennial Park, Moore Park, Queens Park (SHR #01384)

2.1.1 Aims and methods

The aim of the additional assessment was to verify if the proposed works within curtilage of Moore Park (part of SHR #01384) qualify as being exempt activities under Section 57(2) of the Heritage Act and if an exemption notification form is required to be submitted to the NSW Heritage Council via the Heritage Division, Office of Environment and Heritage (Heritage Division). Accordingly, EMM completed the following:

- review of the proposed works against the site specific exemptions set out in Schedule C of the SHR exemption criteria; and
- consultation with the Heritage Division to determine if an exemption notification form is required.

2.1.2 Results

Site specific exemptions apply to Centennial Park, Moore Park, Queens Park (SHR #01384) under Section 57(2) of the Heritage Act, and which are listed on the items SHR datasheet. EMM consulted the Heritage Division on 9 November 2017 to determine if an exemption notification was required for the proposed works. The Heritage Division advised that no exemption notification would be required if the proposed works follow the activities set out in Schedule C of the SHR exemption criteria.

The proposed works are reviewed against the relevant exemption criteria in Table 1. Many of the exemption criteria are linked to activities aimed to implement the *Centennial Parklands Plan of Management*. The Plan of Management (2006–2016) is in the process of being replaced by the *2018 And Beyond* document (in draft). Management objectives specific to Moore Park are detailed in the subsidiary document, *Moore Park Master Plan 2040* which identifies improved access for cyclists and pedestrians throughout the park, including along Moore Park Road, as a key priority.

The Centennial and Moore Park Trust (the Trust) is responsible for the long-term strategic planning of the Parkland, implementing the Plan of Management, as well as the day-to-day management of the three parks – Centennial Park, Moore Park and Queens Park. EMM understand that Council has consulted with the Trust (Geoff Reinhard – Manager, Planning) about the proposed works to ensure the design and materials of the project within the SHR curtilage are in keeping with the Plan of Management and other Trust policies.

Overall, Table 1 demonstrates that the proposed works fall under the SHR exemption criteria, assuming that the Trust agrees that the nature of the proposed works are to implement the Plan of Management and other Trust policies. Accordingly, no exemption notification form is required to be submitted to the NSW Heritage Council.

Table 1 Centennial Park, Moore Park, Queens Park (SHR #01384) Exemption evaluation

SHR Exemption Criteria	Relevant proposed works
4. Alteration of roads, pathways and fences:	
i) Closure, removal, alteration or construction of roads and pathways to implement the Plan of Management and other Trust policies.	The proposed works includes alterations and constructions of pathways to create the cycleway. Council has consulted with the Trust so that the proposed works are in keeping with the Plan of Management and other Trust policies. The proposed works fulfil this exemption criterion.
ii) Repair, removal and installation of fences to implement the Trust's policies	The proposed works includes the removal and installation of fences along Moore Park Road. None of these were identified as heritage items during the heritage assessment. Council has consulted with the Trust so that the proposed works are in

Table 1 Centennial Park, Moore Park, Queens Park (SHR #01384) Exemption evaluation

SHR Exemption Criteria	Relevant proposed works
	keeping with the Plan of Management and other Trust policies. The proposed works fulfil this exemption criterion.
iii) Parking management measures to implement the Trust's parking policies.	Not applicable
5. Management of lawns, sports fields, garden beds, hard landscaping and living collection	
i) Removal and replacement of existing plantings.	The proposed works will involve the removal of four trees along Moore Park Road at the very edge of the SHR curtilage between Anzac Parade and Driver Avenue. These trees were not identified to have heritage significance during the heritage assessment. Most trees will be retained, including all of the fig trees south of the proposed cycleway near the Korean War Memorial. Council has consulted with the Trust so that the proposed works are in keeping with the Plan of Management and other Trust policies. The proposed works fulfil this exemption criterion.
ii) Removal, construction or alteration of garden beds, hard landscaping and plantings to implement the Plan of Management and other policies for the parklands where the Trust is satisfied that the activity will not materially affect the heritage significance of the Parklands as a whole or the area in which they are to be undertaken.	The proposed works will involve landscaping. Importantly, the landscaping will not remove the sandstone garden bed wall located adjacent to the Moore Park Gateway piers near the Korean War Memorial. Council has consulted with the Trust so that the proposed works are in keeping with the Plan of Management and other Trust policies. The proposed works fulfil this exemption criterion.

2.2 Busby's Bore (SHR#00568)

The aim of the additional assessment was to determine if the project will potentially impact Busby's Bore. EMM completed the following tasks:

- interpretation of the historical plan of Busby's Bore (1892) provided by the Heritage Division using GIS to determine the current location and depth of the bore and the vertical shafts depicted on the plan; and
- review of the maximum depth of excavation proposed for the project in the vicinity of Busby's Bore;
- assessment of the project's potential to impact Busby's Bore; and
- determination if further assessment or approvals required for the proposed works above Busby's Bore.

2.2.1 Results

EMM consulted the Heritage Division on 9 November 2017 to determine if an exemption notification needed to be submitted for the proposed works. The Heritage Division advised that no exemption notification is required if the proposed works do not fall within the identified curtilage of the bore. The SHR curtilage for Busby's Bore is described as:

“All those pieces or parcels of land extending between Centennial Park and College Street, Sydney, along with a curtilage of three metres from all surfaces of the horizontal channel of the Bore itself and three metres from all surfaces of all the vertical shafts and offset shafts and structures associated with the Bore, as shown edged heavy black on the plan catalogued H.C. 1564 in the office of the Heritage Council of New South Wales.”

The general alignment of the bore and its curtilage is provided on GIS spatial data issued by the Heritage Division. However, the data does not show the location of the bore’s vertical shafts. To resolve this issue and measure the project’s distance from the nearest vertical shafts, the EMM GIS team superimposed the 1892 plan of the bore onto a current map using the ArcGIS geo-referencing tools (Figures 1 and 2). Using a conservative measurement (measuring from outer rim of the vertical shaft marked on the 1892 plan), the proposed works are over 13 m from the nearest shaft (Shaft No.8). A more realistic measurement taken from the centre point of the shaft marked on the 1892 plan indicates that the proposed works are over 20 m from Shaft No.8.

The 1892 plan also includes a vertical plan showing the depth of the horizontal channel of the bore along its entire alignment (Plate 1). The vertical plan indicates horizontal channel of the bore is approximately 38 ft (11.6 m) below the ground surface. The proposed works above the bore will involve excavation to a maximum depth of 0.8 m associated with pathway construction. As such, the proposed works will not impact the ground within the heritage curtilage of the bore.

3 Conclusion and recommendations

The additional heritage assessment tasks completed for the project indicate that impacts are not anticipated to heritage items in the vicinity. Provided that City of Sydney Council consults with The Centennial and Moore Park Trust and the works are undertaken in accordance with the endorsed management plan, the following recommendations can be made:

- The proposed works within the curtilage of Centennial Park, Moore Park, Queens Park (SHR #01384) comply with the site specific SHR exemptions for the item. No exemption notification under Section 57(2) of the Heritage Act is required for Heritage Division approval for the proposed works to proceed.
- The proposed works are very unlikely to be within the heritage curtilage of Busby's Bore (SHR #00568). Therefore no standard exemption notification under Section 57(2) of the Heritage Act is required for the proposed works to proceed.

No further heritage investigations or permits are required for the proposed works to proceed. However, significant historical archaeological remains are still protected under the Heritage Act through the operation of the ‘relics’ provisions in Sections 139–146 of the Heritage Act. If archaeological deposits are discovered during the works, all work must cease in the affected area(s) and the Heritage Division must be notified in accordance with Section 146 of the Heritage Act. Additional assessment and approval may be required prior to works continuing in the affected area(s) based on the nature of the discovery.

4 Closing

I trust that this letter meets your requirements for works to proceed. Please do not hesitate to contact me on my details below.



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T:\Jobs\2017\17247 - Heritage Bondi - to City Cycleway\GIS02 - Maps\G007 - BusbysBoreLocation_20180710_02.mxd 16/07/2018



KEY

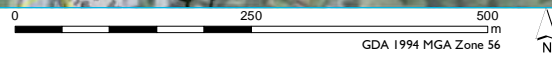
- Project area
- Busby's Bore alignment (State Heritage Act)

Project area

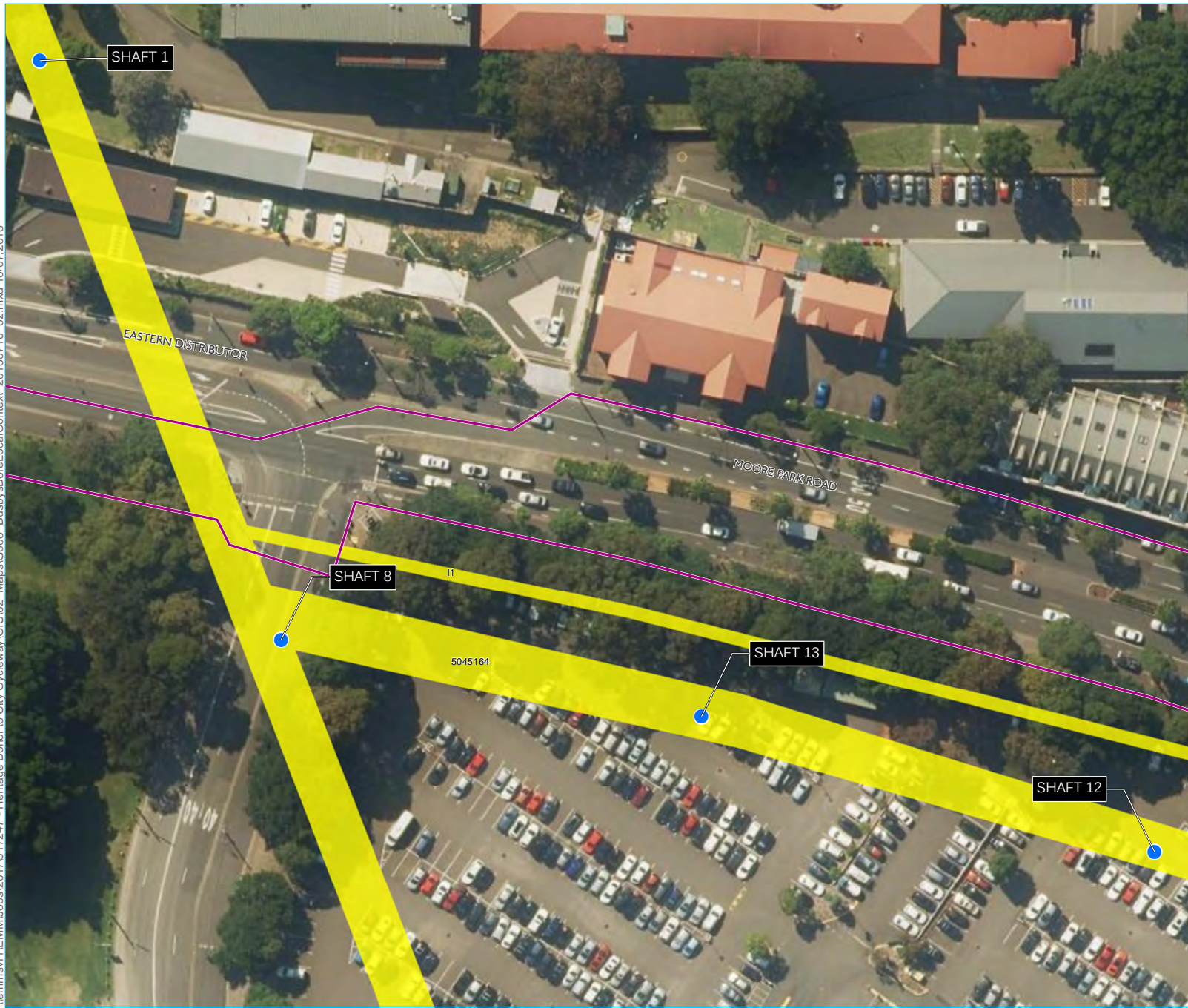
Geo-referenced 1892 plan of Busby's Bore

Figure 1

Source: EMM (2017); DFSI (2017)



\\emmsvr1\EMM\Jobs\2017\17247 - Heritage Bondi to City Cycleway\GIS\02_Maps\G008_BusbysBoreLocalContext_20180710_02.mxd 10/07/2018



- KEY
- Indicative shaft location of Busby's Bore
 - ▭ Project area
 - Busby's Bore alignment (State Heritage Act)

Local extent

Geo-referenced 1892 plan of Busby's Bore

Figure 2



Source: EMM (2017); DFSI (2017)

0 25 50
m
GDA 1994 MGA Zone 56

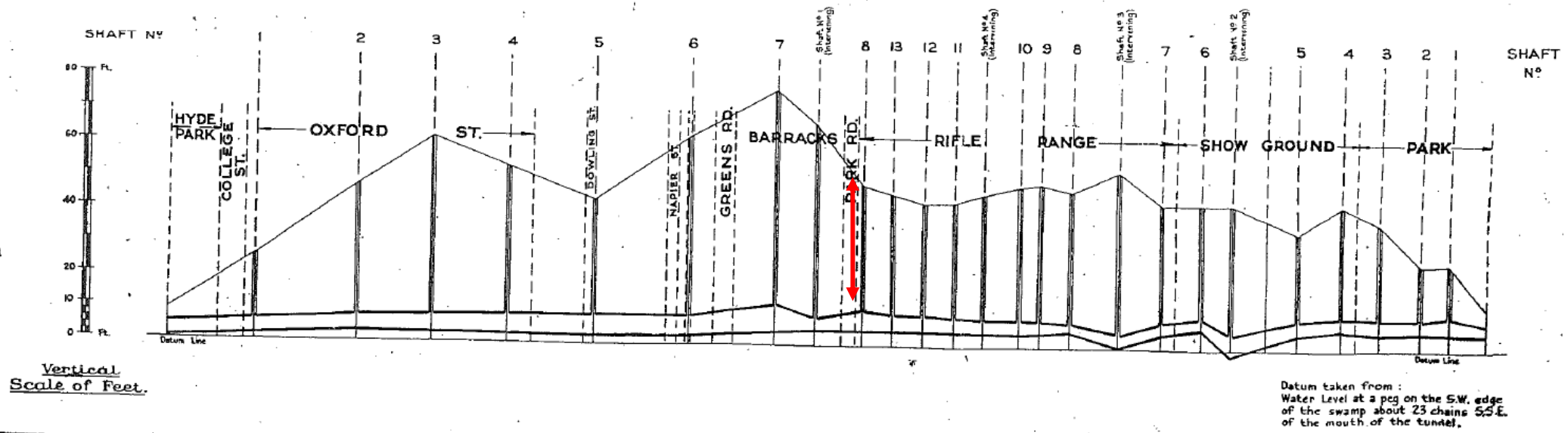


Plate 1 Vertical plan of Busby's Bore with red arrow inserted by EMM to show the location of the proposed works and the distance between ground level and the top of the vertical bore channel (source: Heritage Council NSW, Plan Number H.C 1564).