EXECUTIVE SUMMARY

Roads and Maritime Services NSW (Roads and Maritime) propose to upgrade four intersections and introduce clearways between the Euston Road/Maddox Street intersection in Alexandria and the Anzac Parade, Alison Road and Dacey Avenue intersection in Moore Park (the proposal). The proposal is located about three kilometres south of the Sydney central business district (CBD) in the suburbs of Alexandria, Waterloo, and Moore Park within the City of Sydney local government area (LGA). The proposal is primarily within the area of the Metropolitan Local Aboriginal Land Council (MLALC). Parts of the proposal to the east of South Dowling Street are within the area of the La Perouse Local Aboriginal Land Council (LPLALC).

Artefact Heritage has been engaged by Jacobs on behalf of Roads and Maritime to prepare this Aboriginal Archaeological Survey Report (PACHCI Stage 2) for the proposal. This report has been prepared in accordance with the Office of Environment and Heritage (OEH) Guide to Investigating and Reporting on Aboriginal Cultural Heritage in NSW 2010 (Guide) and the OEH Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 2010 (Code of Practice).

The proposal area comprises:

- **Proposal area**: this is the entirety of the proposal and includes locations in which works are restricted to changes in traffic management through signage changes, with no impacts to ground surface.
- **Construction footprint**: these are the four intersection locations where ground disturbing works will take place.
- **Construction compounds**: these are five temporary site compounds, with no impacts to ground surface.

The proposal consists of:

- New clearways on both sides of Euston Road and McEvoy Street between Maddox Street and Bourke Street from 6:00am to 7:00pm Monday to Friday and 9:00am to 6:00pm on weekends
- New clearways at all times along Lachlan Street and Dacey Avenue between Bourke Street and Anzac Parade
- Right turn bans at most intersections without traffic signals and a right turn ban into Bunnings from McEvoy Street
- Improving the intersections and road re-surfacing at:
  - Fountain Street and McEvoy Street
  - Botany Road and McEvoy Street
  - Elizabeth Street and McEvoy Street
  - South Dowling Street, Lachlan Street and Dacey Avenue
- Minor kerb adjustments at:
  - Stokes Avenue and McEvoy Street
  - Kensington Lane and McEvoy Street
- Landscaping adjustments and replacement tree planting where works are undertaken
- Relocation of utilities and adjustments to traffic signals and street lights
- Property acquisitions, leases and adjustments
• Temporary construction facilities, including site compounds and stockpile sites.

General impacts throughout the construction footprint are likely to extend to one metre below current ground surface. Where relocation of utilities and services is required, particularly associated with sewer formation at intersections, localised impacts may extend to five metres below current ground surface. No impacts below ground surface are proposed at any of the construction compounds or in the proposal area outside of the construction footprint.

Overview of findings

The assessment has found that the proposal area is of very low to low archaeological potential as a result of soil disturbances documented within it resulting from historical road formation and the construction of multiple subsurface utilities and services. These disturbances are most pronounced within the intersections of the construction footprint in which major subsurface utilities are concentrated. The construction footprint is of very low archaeological potential.

Consideration has also been paid to possible elevated archaeological potential associated with specific geological units. The proposal area is within the Botany Sands geological unit. Upper grey layers of this unit within the top 1.5 metres of natural soil once formed a habitation surface. Where these grey sands are preserved they are of elevated potential for Aboriginal archaeological remains. Where these grey sand layers have been truncated, archaeological excavations in remaining sand layers near the proposal area have not identified these remaining sands to be of elevated archaeological potential. The degree of disturbance evidenced at the proposal area generally and particularly in the construction footprint is most likely to have removed or disturbed any such grey sands.

Recommendations

The following recommendations are made to manage potential impacts associated with the proposal:

• Work may proceed without further Aboriginal archaeological assessment or permits
• Staff engaged in ground penetrating works must undergo a heritage induction prior to commencing work on the proposal. This heritage induction should provide staff with the capacity to identify potential Aboriginal archaeological remains, and procedures to be followed if these are identified.
• All ground penetrating works must comply with the Roads and Maritime Standard Management Procedure, Unexpected Heritage Items (2015).¹
• Any ground disturbing activities for the proposal outside the construction footprint assessed in this report may require further assessment.

ABBREVIATIONS

ACHAR  Aboriginal Cultural Heritage Assessment Report
AHIMS  Aboriginal Heritage Information Management System
ALR Act  Aboriginal Land Rights Act 1983
Artefact Heritage  Artefact Heritage Services Pty Ltd
ATSHIP Act  Aboriginal and Torres Strait Islander Heritage Protection Act 1984
BP  Before Present (that is 1950)
Code of Practice  Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010
Commonwealth Act  Aboriginal and Torres Strait Islander Heritage Protection Act 1984
Consultation Requirements  Aboriginal cultural heritage consultation requirements for proponents 2010
DA  Development Application
DECCW  Department of Environment, Climate Change and Water (now OEH)
EP&A Act  Environmental Planning and Assessment Act 1979
EPBC Act  Environment Protection and Diversity Conservation Act 1999
Guide  Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW
ha  hectares
km  kilometres
LALC  Local Aboriginal Land Council
LPLALC  La Perouse Local Aboriginal Land Council
LGA  Local Government Area
MLALC  Metropolitan Local Aboriginal Land Council
m  metres
NPW Act  National Parks and Wildlife Act 1974
NTSCorp  Native Title Service Provider for Aboriginal Traditional Owners in New South Wales and the Australian Capital Territory
OEH  Office of Environment and Heritage
PAD  Potential Archaeological Deposit
RAP  Registered Aboriginal Party
REF  Review of Environmental Factors
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1.0 INTRODUCTION

1.1 Background

Roads and Maritime Services NSW (Roads and Maritime) proposes to upgrade four intersections and introduce clearways between the Euston Road/Maddox Street intersection in Alexandria and the Anzac Parade, Alison Road and Dacey Avenue intersection in Moore Park (the proposal). The proposal is located about three kilometres south of the Sydney central business district (CBD) in the suburbs of Alexandria, Waterloo, and Moore Park within the City of Sydney local government area (LGA). The proposal is primarily within the area of the Metropolitan Local Aboriginal Land Council (MLALC). Parts of the proposal to the east of South Dowling Street are within the area of the La Perouse Local Aboriginal Land Council (LPLALC).

Artefact Heritage has been engaged by Jacobs on behalf of Roads and Maritime to prepare this Aboriginal Archaeological Survey Report (PACHCI Stage 2) for the proposal. This report has been prepared in accordance with the Office of Environment and Heritage (OEH) Guide to Investigating and Reporting on Aboriginal Cultural Heritage in NSW 2010 (Guide) and the OEH Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW 2010 (Code of Practice).

The proposal area comprises:

- **Proposal area:** this is the entirety of the proposal and includes locations in which works are restricted to changes in traffic management through signage changes, with no impacts to ground surface.
- **Construction footprint:** these are the four intersection locations where ground disturbing works will take place.
- **Construction compounds:** these are five temporary site compounds, with no impacts to ground surface.

The objectives of this report are to:

- Assess the Aboriginal cultural heritage values of the proposal area, including archaeological and community cultural values, and the significance of identified values
- Identify Aboriginal cultural heritage values that may be impacted by the proposal including consideration of cumulative impacts, and measures to avoid significant impacts
- Identify any recommended further investigations, mitigation and management measures required, and appropriate approvals pathways.

This report has been prepared in accordance with:

- Roads and Maritime Procedure for Aboriginal Cultural Heritage Consultation and Investigation PACHCI (Roads and Maritime, 2011)
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010 (the Code of Practice) (Department of Environment Climate and Change & Water (DECWW), 2010)
• **Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010** (the Consultation Requirements) (DECWW 2010).

This report includes:
• A description of the scope of the proposal and the extent of the proposal area
• A description of Aboriginal community involvement and Aboriginal consultation
• A significance assessment of the proposal area including cultural and archaeological values
• A description of the statutory requirements for the protection of Aboriginal heritage
• An impact assessment for recorded Aboriginal sites and areas of archaeological potential
• Provision of measures to avoid, minimise, and if necessary, offset the predicted impacts on Aboriginal heritage values.

1.2 The proposal

The proposal includes activities that will impact ground surface, which have been assessed in this report. The proposal also includes activities which will not impact ground surfaces, and which have not been assessed in this report. The total proposal comprises:
• New clearways on both sides of Euston Road and McEvoy Street between Maddox Street and Bourke Street from 6:00am to 7:00pm Monday to Friday and 9:00am to 6:00pm on weekends
• New clearways at all times along Lachlan Street and Dacey Avenue between Bourke Street and Anzac Parade
• Right turn bans at most intersections without traffic signals and a right turn ban into Bunnings from McEvoy Street
• Improving the intersections and road re-surfacing at:
  − Fountain Street and McEvoy Street
  − Botany Road and McEvoy Street
  − Elizabeth Street and McEvoy Street
  − South Dowling Street, Lachlan Street and Dacey Avenue
• Minor kerb adjustments at:
  − Stokes Avenue and McEvoy Street
  − Kensington Lane and McEvoy Street
• Landscaping adjustments and replacement tree planting where works are undertaken
• Relocation of utilities and adjustments to traffic signals and street lights
• Property acquisitions, leases and adjustments
• Temporary construction facilities, including site compounds and stockpile sites at:
  − The Roads and Maritime car park on the south-west corner of the McEvoy Street/Stokes Avenue intersection, Alexandria (Site 1)
  − Road reserve at the southern end of Cope Street, Alexandria (Site 2)
  − Road reserve at the southern end of George Street, Alexandria (Site 3)
1.3 Timing

The duration of construction impacts within each of the four intersection construction zones would typically be between 6 to 18 months.

1.4 Depth of Impacts

General impacts throughout the proposal area are likely to extend to one metre below current ground surface. Where relocation of utilities and services is required, particularly associated with sewer formation at intersections, localised impacts may extend to five metres below current ground surface. No impacts below ground surface are proposed at any of the construction compounds.

1.5 Location

The proposal area is in a modified urban environment in a fast growing redevelopment area. Land use surrounding the proposal includes a mix of residential, commercial/business, recreational, industrial and transport related land uses. The main features of the proposal area and its surrounds include:

- Moore Park, Moore Park golf course and E.S. Marks athletics field
- Centennial Parklands which contain the Kensington Ponds
- Tay Street Reserve
- The Supa Centre Moore Park shopping complex
- Residential properties to the south (Tay Street) and north-east (Martin Road) and apartments along the western side of South Dowling Street
- New unit developments in Green Square
- Randwick Racecourse
- Sydney Cricket Ground, Moore Park showground and Allianz Stadium are located north of the proposal.
- Commercial premises and small retail along the western boundary of the road corridor
- New WestConnex M5 interfaces with the western end of the corridor.

1.6 Proposal area

The proposal is located along the existing Euston Road, McEvoy Street, Bourke Street (Alexandria), Lachlan Street, South Dowling Street (Waterloo), Anzac Parade, Alison Road, and Dacey Avenue (Moore Park). The total proposal area including construction footprint and construction compounds is shown in Figure 1. The construction footprint where ground disturbing works are proposed is shown in detail in Figure 2 and Figure 3.
Figure 1: Location of the proposal area
Figure 2: Western extent of the construction footprint
Figure 3: Eastern extent of the construction footprint
1.7 Scope of this assessment

Artefact Heritage has been engaged by Jacobs to prepare this report. This Aboriginal archaeological survey report complies with Stage 2 of the PACHCI and the Office of Environment and Heritage NSW Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (2010) (Code of Practice, 2010). If Aboriginal sites or areas of archaeological sensitivity were to be impacted by the proposal, Stage 3 PACHCI would be initiated by Roads and Maritime.

The scope of assessment includes:

- An overview of the Aboriginal history of the proposal area
- A search of the Aboriginal Heritage Information Management System (AHIMS) Register maintained by the Office of Environment and Heritage (OEH) NSW
- Identification of Aboriginal sites and areas of archaeological potential within the proposal area
- A site survey with Local Aboriginal Land Council (LALCs)
- Assessment of the significance of identified Aboriginal sites
- Assessment of the potential for unidentified Aboriginal sites
- Conclusions and recommendations.

1.8 Report structure

- Section 2 – Statutory requirements
- Section 3 – Proposal area context
- Section 4 – Field methods
- Section 5 – Survey results
- Section 6 – Analysis and discussion
- Section 7 – Significance assessment
- Section 8 – Impact assessment
- Section 9 – Management and mitigation measures
- Section 10 – Aboriginal stakeholder consultation
- Section 11 – Staging
- Section 12 – Recommendations
- Section 13 – References.

1.9 Limitations and constraints

The scope of this assessment is based on information supplied by the proponent, prior archaeological excavations in the area, historical documentary and image research, utilities and service mapping, and pedestrian survey of the proposal area. Limitations encountered include:

- Assessment of archaeological sensitivity is largely based on reports of archaeological testing undertaken in the immediate proximity of the proposal area. Only few such reports are available.
The ground surface of the proposal area is effectively all beneath considerable urban infrastructure including buildings, pavement, and roadway. This constrains the direct visual estimation of soil preservation and archaeological potential.

1.10 Report authorship and acknowledgements

This report was prepared by Michael Lever, Senior Heritage Consultant at Artefact Heritage. Management input and review was provided by Dr Sandra Wallace (Director).

1.11 Aboriginal community involvement

In accordance with the PACHCI, Aboriginal community engagement and consultation is managed by Roads and Maritime. Aboriginal community participation in the site survey was sought but did not eventuate. All parts of the construction footprint of the current proposal have already been surveyed by Aboriginal community representatives for a previous larger version of the A2MP proposal. This previous site survey took place on 9th November 2016. Michael Lever and Adele Zubrycka (Artefact), and Jay Daley (Metropolitan LALC) and Ricky Campbell (La Perouse LALC) walked all of the current proposal area from west to east on the northern side of the proposal area and returned west to east on the southern side of the proposal area. It is understood that this report would be supplied to both Metropolitan and La Perouse LALC for comment as part of the Review of Environmental Factors (REF) process.
2.0 STATUTORY REQUIREMENTS


The National Parks and Wildlife Act (1974) (NPWA), administered by the Office of Environment and Heritage (OEH) provides statutory protection for all Aboriginal ‘objects’ (consisting of any material evidence of the Aboriginal occupation of NSW) under Section 90 of the Act, and for ‘Aboriginal Places’ (areas of cultural significance to the Aboriginal community) under Section 84.

The protection provided to Aboriginal objects applies irrespective of the level of their significance or issues of land tenure. However, areas are only gazetted as Aboriginal Places if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is, of special significance to Aboriginal culture.

The NPWA was amended in 2010 and as a result the legislative structure for seeking permission to impact on heritage items has changed. A Section 90 permit is now the only Aboriginal Heritage Impact Permit (AHIP) available and is granted by the OEH. Various factors are considered by OEH in the AHIP application process, such as site significance, Aboriginal consultation requirements, ESD principles, project justification and consideration of alternatives. The penalties and fines for damaging or defacing an Aboriginal object have also increased.

As part of the administration of Part 6 of the Act, OEH regulatory guidelines on Aboriginal consultation are in place, which are outlined in the Aboriginal Cultural Heritage Consultation Requirements for Proponents (Requirements 2010). Guidelines are also in place for the processes of due diligence as outlined in the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (Due Diligence Code of Practice 2010) in accordance with the 2010 amendment to the Act.

There are no gazetted Aboriginal Places within the proposal area. All Aboriginal objects, whether recorded or not are protected under the NPWA.

2.2 Native Title Act (1994)

The NSW Native Title Act 1994 was introduced to work in conjunction with the Commonwealth Native Title Act 1993. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act. A search of the National Native Tribunal applications register was undertaken for this assessment and no Native Title Claims over the proposal area were identified.

2.3 Aboriginal heritage investigation guidelines

Stage 2 of the PACHCI involves the identification of Aboriginal sites and areas of archaeological potential within the proposal area. The investigation involves an archaeological survey conducted with representatives of the LALC. Where it is identified in the PACHCI Stage 2 investigation that Aboriginal sites or areas of archaeological potential would be impacted, Roads and Maritime commences Stage 3 of the PACHCI. Stage 3 includes comprehensive Aboriginal stakeholder consultation, archaeological test excavation (where required), an Aboriginal Focus Group (AFG) meeting, and preparation of an Aboriginal Cultural Heritage Assessment Report (CHAR) to support an AHIP application or State Significant Infrastructure (SSI) approvals. Archaeological investigations are subject to the OEH Code of Practice for Archaeological Investigation of Aboriginal Objects (Archaeological Investigation Code of Practice 2010). Stage 4 of the PACHCI involves any mitigation measures required following approvals, such as archaeological salvage excavation or surface collection prior to impacts.
3.0 ENVIRONMENTAL AND HISTORICAL CONTEXT

3.1 Geological context

3.1.1 Geology and geomorphology

The proposal area is situated on the Botany Sands geological unit. This is an aeolian (wind-blown) deposit of sands that has formed to considerable depth over the past 12,000 years as sea levels fell and the shoreline retreated in stages to its current location. Behind these former shorelines a coastal hinterland formed including large sand sheets, dunes, waterbodies and swamps (Gale S., 2016). Such active sands can capture and preferentially preserve archaeological material within them. The archaeologically sensitive layer of the Botany Sands is primarily those grey sands which once comprised ground surface during Aboriginal habitation of the area. The proposal area was once within a landscape of high rolling sand dunes, stabilised by native vegetation. The grey colour of these sands derives from breakdown of surface vegetation. Traces of this vegetation may also be preserved as an overlying thin darker grey layer above the mid-grey archaeologically sensitive sands. By the mid nineteenth century, devegetation through clearance for grazing and timber getting resulted in sand-drifting on a massive scale, until stabilised again through revegetation. In the later nineteenth century sand mining took place, altogether removing a number of previous high points. Such a major alteration to landscape is the removal of the south section of the local highpoint to the immediate north of Waterloo Oval, which now constitutes a cutting for McEvoy Street (Gale S. C., 2017).

3.1.2 Waterways

The porous sands of the Botany Basin drain rapidly. Water filters through these sands and pools on the often deeply buried bedrock forming a natural subsurface water basin. It is due to this rapid drainage that no major watercourses are located on the Botany Sands. The major regional waterways are the George’s River and Cook’s River to the west which are both situated on impermeable geologies. Due to this subsurface pooling and also due to the cleaning effect of sand filtration on rainwater, the Botany Basin was historically of great significance as a drinking water source for early Sydney (NSW State Heritage Register, 2016). Prior to dramatic historical alterations, the geology of the proposal area saw it richly endowed with smaller waterways, waterbodies and swamp environments, located between higher dunes. The nature of the area as containing wetlands and marshes between higher dunes is illustrated in Figure 4. This figure does not map in detail the surrounds of the proposal area but is constrained to the Botany and Lachlan watersheds. Nevertheless, the character of the landscape it maps in Botany, matches the described natural landscape of the proposal area (Gale S., 2016).
3.2 Aboriginal archaeological and ethnohistorical context

3.2.1 Aboriginal ethnohistorical context

Aboriginal groups recorded in the wider region and surrounds of the proposal area include the Cadigal, Wangal, Kameygal and Muru-Ora-Dial (Mulvaney & White, 1987, p. 345).

Many Aboriginal tribal boundaries in Australia have been determined from linguistic evidence. They are therefore only approximations. Simply identifying a named group of Aboriginal people who were once observed to inhabit an area may not provide much real insight to concepts or practices of land use at the time. Social interaction, tribal boundaries and linguistic evidence may not always correlate. Further, a western understanding of the nature of borders and boundaries appears incompatible with Aboriginal behaviours described by authors including W. Stanner (1905-1981). Stanner was probably the single most influential Australian anthropologist of the twentieth century.

Stanner provided an analytic framework for understanding Aboriginal concepts of place and belonging, and practices of land use, that has likely not been bettered to date (Stanner, 1965). Stanner proposed that an integrated scheme of spatial meanings best represented Aboriginal attachments to place and social organisation. These were: Estate, Range, Domain and Regime. Stanner’s definitions are succinct:

*The estate was the traditionally recognized locus (’country’, ’home’, ’ground’, ’dreaming place’) of some kind of patrilineal descent-group forming the core or nucleus of the territorial group. It seems usually to have been a more or less continuous stretch…..*
...The range was the tract or orbit over which the group, including its nucleus and adherents, ordinarily hunted and foraged to maintain life. The range normally included the estate: people did not usually belong here and live there but, in some circumstances, the two could be practically dissociated.

Estate and range together may be said to have constituted a domain, which was an ecological life-space. In good habitats range and estate might be virtually co-extensive, a clear distinction between them scarcely being possible (eg on the rich Daly River meander). There, some local groups (probably always a minority) could find on the estates of their nuclei most of what they needed to sustain life. But, they often went beyond estate or range from ennui, to obtain special foods and raw materials, to share in neighbours' windfalls, for the pleasures and duties connected with the 'external structure ' of social life (Stanner, 1958), and for other reasons. The visits were covered by conventions or institutional rules. Constant interaction of this kind characterized both the religious and the secular life. There was a real interest in mixing with neighbours, and a strong moral requirement to share life-supports with them. (Stanner, 1965, p. 2).

Stanner noted that different elements of life and values were differently represented in these spatial concepts:

Range was more important than estate from the aspect of survival. Estate was probably more important from the aspect in which social life expressed through institutions and culture the triumph over the problems of survival (Stanner, 1965, p. 3)

Stanner’s definition of Regime is less succinct. Regime describes the location of an Aboriginal group with respect to an over-arching land pattern or environment, (which may correlate to divisions in language group). Thus, Aboriginal groups may be depicted, or depict themselves, as River People, Dryland People, or Saltwater People. In his recent work, Paul Irish does not use Stanner’s terminology, but nevertheless represents a similar relationship to territory demonstrated by Aboriginal people in the region between the southern shores of Port Jackson and the NSW south coast (Irish, 2017). Irish depicts Aboriginal people from Port Jackson and Botany Bay having primary attachment to areas in these locations, but also having ‘beats’ in far wider territorial areas.

British colonisation had a profound and devastating effect on the Aboriginal population of the Sydney region. In the early days of the colony Aboriginal people were disenfranchised from their land as the British claimed areas for settlement and agriculture. The process of colonisation saw the appropriation of resources such as pasture, timber, fishing grounds and water sources, often at the expense of the local Aboriginal people (Butlin, 1983).

A large part of the destruction of Aboriginal culture may not have occurred through war with the British, or through British decimation of Aboriginal groups, but instead through disease and forced removal from traditional lands. The smallpox epidemic of 1789 had a profound effect on the population of the Sydney region, and would have impacted disastrously on Aboriginal groups. It is likely that over half of the Aboriginal people of the Sydney region died through exposure to European diseases to which they had not developed immunity. The disease spread across throughout the Sydney region including the Cumberland Plain, with evidence to suggest that it spread farther afield and possibly over the Blue Mountains (Butlin, Our original aggression: Aboriginal populations of southeastern Australia 1788-1850, 1983). This loss of life meant that some of the Aboriginal groups who had not been observed near the coastal settlement of Sydney may have disappeared entirely or had been forced to move from traditional areas, before Europeans could observe them, or record their clan names (Karskens, 2010, p. 452).
The proposal area is currently within the lands of the Metropolitan LALC, to the west of the Eastern Distributor and in the lands of the La Perouse LALC to the east of the Eastern Distributor. The La Perouse Aboriginal community includes members who can trace their attachment to country through and before colonisation by the British. Families such as Timbury (Timbery) and Campbell have longstanding associations with the area recorded in both Aboriginal tradition and stories, and European documentary history.

Aboriginal technologies for fishing and seafood extraction have been historically portrayed in detail and were capable of supporting many local Aboriginal people on a year-round basis, without the need to travel widely in order to obtain sustenance (Karskens 2009). Travel outside of core country (estate) may have been undertaken for trade, social, and ritual purposes in order to maintain ties to people and places of significance (Irish 2017). Colonisation had a devastating effect on the ability of Aboriginal people to continue their traditional lifestyles. As is evident from early sources the elements of landscape that were most attractive to European colonists were often the camping places and resources of the Aboriginal people. The fishing areas of Port Jackson, including shellfish sources that had supported local Aboriginal people for many generations, were rapidly depleted freshwater sources were blocked from access and spoiled, and scrub and woods were cleared from the surrounds of the harbour and streams.

3.2.2 Overview of recorded Aboriginal sites within 250 metres of the proposal area

3.2.2.1 OEH Aboriginal Heritage Information Management System (AHIMS)

OEH maintains the AHIMS database, a register of Aboriginal archaeological sites that have been recorded in NSW. An extensive search of AHIMS was undertaken on 18 November 2019 with a buffer of one kilometre around the proposal area (Client ID 465437). There are no registered Aboriginal sites within the proposal area. Two registered Aboriginal sites are located within 250 metres of the proposal area. These are site Tay Reserve Artefact Site ID 45-6-370, Moore Park AS1 Site ID 45-6-3155. The low number of sites recorded in the surrounds of the proposal area (refer to Table 1) likely represents the historically built urban nature of the locale, and the resulting low rates of testing undertaken there. The location of the closest of these sites is shown in Figure 5.

The registered Aboriginal sites within the AHIMS search parameters are listed alphabetically in Table 1 below.

Table 1: OEH AHIMS site register search results
<table>
<thead>
<tr>
<th>Site ID</th>
<th>Site Name</th>
<th>Type of Site</th>
<th>Closest distance to proposal area (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDA 94</td>
<td>USYD Central</td>
<td>Artefact</td>
<td>45-6-2597</td>
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<td>Shell Midden</td>
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Figure 5: Location of AHIMS sites near the proposal area
3.2.3 Details of recorded Aboriginal sites near the proposal area

3.2.3.1 Tay Reserve Artefact Site ID 45-6-3704

Artefact Heritage in 2018 in connection with the CBD and Southeast Light Rail project. Testing consisted of machine excavation of four test pits in the reserve. Disturbed soils containing historical artefacts overlay pale yellow sand which was encountered at approximately 900 millimetres depth in each of the test pits. This sand was found to be consistent with sterile B horizon soils identified in earlier test excavations throughout the surrounding area. The site comprises two Aboriginal lithic artefacts retrieved from disturbed soils. Although the test pits excavated showed that the original dune surface was truncated in that location, there is still potential for intact profiles to remain within the A2MP impact area and in the Tay Reserve artefact site. There is also the potential at Tay Reserve for preserved archaeology associated with King Billy and the former toll house, providing evidence around early Aboriginal-European interactions in the area. The low density of artefacts retrieved from this site would suggest a similar level of archaeological sensitivity to Moore Park AS1 Site ID 45-6-3155 which is discussed in more detail below. As a result of test excavations, the whole of Tay Reserve has been registered as an Aboriginal site; Tay Reserve Artefact Site ID 45-6-3704.

3.2.3.2 Moore Park AS1 (45-6-3155)

It comprised eight artefacts found in, or slightly below, grey sands at between 0.9 to 1.2 metres in depth (Artefact Heritage, 2014). The highest number of artefacts were retrieved from Test Pit 4. Five lithic artefacts were retrieved from Test Pit 4 from a transition layer between light greyish brown (remnant A1 unit) and bleached white sand (A2 unit) at between 900 millimetres and 1000 millimetres depth. Staged salvage excavations were carried out, particularly in the surrounds of Test Pit 4. These identified a further three artefacts; two at transition to bleached white sand and one in a disturbed context (Artefact Heritage, 2015). Based on the results of archaeological test and salvage excavation, Moore Park AS1 was assessed as demonstrating moderate archaeological significance. Despite the site consisting of only a low-density scatter, the significance of the site has been bolstered by its uniqueness, due to the rarity of archaeological excavation within a local context (Artefact Heritage, 2015:45). This increase in extent of Site ID 45-6-3155 was undertaken in order to include areas next to it that are of similar low slope and base of slope landform and which are therefore potentially of similar archaeological sensitivity to the tested extent of Site ID 45-6-3155. The extent of Moore Park AS1 does not include the current roadway. This reflects the considerable disturbance beneath the roadway as evidenced by geotechnical testing and excavation associated with road maintenance and formation works that have been monitored by Artefact Heritage.

3.3 Background reports and excavation results

3.3.1 Background reports

This section focuses on the study of published reports, chiefly those that have identified Aboriginal artefactual material during excavations on the Botany Sand Sheet.

For the purposes of this report, a broad summary was undertaken of select archaeological reports on the Botany Sands. This did not include reports which examined landscapes that differed clearly from the proposal area, such as along the existing coastline of Sydney e.g. Comber (2015) or Lampert (1985).
This broader study indicates that published investigations on the Botany Sands which included subsurface investigation have generally not encountered Aboriginal archaeology where these sands have been truncated or disturbed e.g. Ausgrid (2012). Artefact Heritage has undertaken multiple as-yet unpublished excavations in Botany Sands for other projects, including within roadways. These excavations indicate that road infrastructure has characteristically truncated or disturbed the artefact bearing layers of underlying sand. Nil to very low numbers of artefacts were identified during these excavations.

**Centennial, Moore and Queens Parks**

Attenbrow (2002) carried out a wide ranging and detailed report into the archaeological potential of Centennial, Moore and Queens Parks. Parts of these locations are near to the proposal and are of similar landform and geology as much of the proposal area. Locations on Botany Sand that had been subject to development through roads and tracks were rated by Attenbrow as of low to medium archaeological potential if disturbance resulting from development did not extend to ‘bedrock or pre-human land surface’. It is taken here that by ‘pre-human land surface’, Attenbrow refers to sand strata deeper than the grey deposits which are of elevated archaeological potential.

**200 George Street Sydney**

GML (GML Heritage, 2014) encountered what appeared to be two small areas of natural soil profile during excavations beneath previously developed ground in the Sydney CBD. Although geomorphological advice was obtained that these locations were below sea level, the areas were deemed as PADs and were excavated. No Aboriginal artefacts were recovered. It was concluded that soils in one area were a recent marine deposit, and the second area was identified as of such “highly irregular bedrock surface” that deposition of artefacts on it was unlikely (GML Heritage, 2014, p. 5).

**CBD and South East Light Rail Project**

Preliminary assessment for the CSELR project included an archaeological background analysis (GML, 2013). The proposal area of the current report approaches that of CSELR at Tay Reserve. This area was assessed as having archaeological potential. With regards to Tay Reserve, the CSELR report noted that it was less likely to be disturbed than much of the CSELR proposed route, and held potential for prehistoric and historic Aboriginal archaeological remains (GML, 2013, p. ii). This was justified as due to the depth of sands in the Botany Sand Sheet and that it was ‘possible intact soil profiles remain below the modern disturbance’ (GML, 2013, p. i). The implications of this finding are significant for the proposal, which is situated wholly within Botany Sands.

**Moore Park Tennis Centre**

Artefact Heritage conducted archaeological test excavation within the Moore Park Tennis Centre proposal area in September 2014 (Artefact Heritage, 2014a). A total of five pits were excavated by machine up to a depth of 1.2 metres. Five Aboriginal artefacts were retrieved in light grey-brown sands of one pit (Test Pit 4) and are thought to be associated with an intact natural ground surface buried beneath up to 700 millimetres of introduced 19th and 20th century fill. Due to the rarity and potential significance of Aboriginal sites in the Eastern Suburbs sand sheet system, Artefact Heritage (2014a) recommended that archaeological salvage excavation of the deposit in the vicinity of Test Pit 4 should be conducted (Artefact Heritage, 2014b). This was undertaken and resulted in recovery of a total of only three additional artefacts. These were located at the transition between the light grey-brown (A1 horizon) sands noted above, and underlying bleached sands. The study concluded that the stratigraphy at the Moore Park Tennis Centre differed from other sites on Botany Sands where artefacts had been identified. At other sites, artefacts had chiefly been found in the uppermost natural soil unit (A1 unit). At the Moore Park Tennis Centre, soils had been disturbed and the upper A1 soil unit was not present and artefact counts were resultanty lower (Artefact Heritage, 2014b, p. 44).
Randwick Stabling Yards

GML has undertaken several studies in the Randwick area. In particular, large parts of local roadway and parklands were included in wider Aboriginal heritage assessments for CSELR (Steele, 2006) (GML Heritage, 2015a). In 2015, GML (GML Heritage, 2015b) provided reporting on likely archaeological sensitivities at the CSELR Randwick Stabling Yards. This report indicated that local soils had been subject to considerable disturbance and fill. Ten test pits measuring 2 metres by 0.45 metres were excavated to depths equal to the proposed depths of local disturbance through construction. Of these, only one test pit produced artefacts, with 36 artefacts recovered from two spits between 300-500 millimetres below surface. Soils were described as greyish-brown to brown sands. In summary of work undertaken in the area, GML (2015b, p. 5) concluded that modelling of archaeological sensitivity in the local sands, even following test excavation, remained difficult due to the widespread and unpredictable nature of historical disturbance to potentially archaeologically sensitive sands.

Large numbers of lithic artefacts were reported located at the Randwick Stabling Yards by GML. Reporting on this find is not available. It is understood the site comprised historical fill over a dump of European flint gravel that had been utilised by Aboriginal people as a lithic resource during a relatively narrow time period. The discrete spatial and chronological nature of this deposit indicates against a widespread elevation of archaeological sensitivity in its broader surrounds and does not indicate a preserved soil profile.

Randwick Racecourse

A report by Steele (Steele, Aboriginal Archaeological Heritage Impact Assessment. Randwick Racecourse, Randwick NSW, 2006) investigated the potential archaeological sensitivity of the Randwick Racecourse. This is located at closest 500 metres south east of the proposal area at Tay Reserve. Steele noted the small number archaeological studies on the local dune formations (Steele, 2006, p. 23). Steele did not undertake excavation, but created sensitivity modelling based on topography, potential land use by Aboriginal people in the past, and evident disturbance. Steele determined that much of the Randwick Racecourse had been part of a previous swamp and was therefore of low potential Aboriginal archaeological sensitivity. Steele identified an area of remnant dune formation in the south east of the Randwick Racecourse which he determined as of high Aboriginal archaeological potential.

Rose Bay Golf Club

One example of excavation on the Botany Sand Sheets which may inform on the archaeological characteristics of the proposal area in locations of disturbed soils is JMCHM (2009) which was undertaken at the Royal Sydney Golf Club at Rose Bay. JMCHM 2009 was triggered by the recommendations of a more limited previous report that had identified human remains in the Rose Bay Golf Club (Donlon, Report on an Aboriginal burial at the Royal Sydney Golf Club, Kent Rd, Rose Bay, NSW:, 2005). The Golf Club is located on undulating foreshore dunes. It is far closer to the current coastline (100 metres), than is the proposal area of this report (one kilometre), it was supplied with freshwater by the Rose Bay Creek, now a canal, and was on the margins of local swamplands.

Donlon (2005) investigated an Aboriginal burial that was identified during works at the Royal Sydney Golf Club. Donlon had previously undertaken an extensive synthesis of 319 known Aboriginal skeletons from the Sydney Basin (Donlon, 1995). This 1995 report is unfortunately not to hand, however elements of it can be derived from other works. Donlon found that only 75 % of the skeletons had known burial places. Of these, the majority (23 %) were found in beach dunes, rock shelters (21 %) or in the current harbour (17 %). Donlon’s findings concluded that burials could be present at any place in the Golf Club, generally in the upper one meter of soil. Her recommendations were that any future large-scale ground disturbance at the Golf Club should be archaeologically monitored (JMCHM, 2009, p. 1).
The report (JMCHM, 2009) examined the grounds of the Royal Sydney Golf Club at Rose Bay, prior to further proposed development. The area investigated measured 750 metres squared and was comprised of lawn and bowling green, both of which had been visibly subject to some past disturbance in formation of their level surfaces. This disturbance comprised a combination of removal of soils in some areas, and deposition of nearly 2.5 metres of this as fill in other areas.

McDonald (JMCHM 2009. p3) encountered two separate sets of Aboriginal remains during excavation, one in-situ, and one that had been subject to disturbance. No stratigraphic detail is given for these, however from images in the report (JMCHM, p. 14) it is evident that the in-situ remains were located in light yellow sands, likely immediately underlying the grey surface sands.

The bowling green that McDonald examined had been subject to significant modification through removal of surface light grey sands, and it appears that these sands were relocated to the lawn area. Excavation in the lawn area (on the former dune crest) recorded over 5,000 Aboriginal stone artefacts, predominantly in grey sands, some of which were thought to be relocated from the bowling green. However, artefacts were also present in-situ throughout the soil profile, including at low densities to one metre depth in undisturbed yellow sand. Analysis of these artefacts found a high proportion of very small debitage flakes which was interpreted to represent manufacture of tools on site. Large flakes and cores were rare, likely reflecting the lack of local stone sources and the resulting intensive use of available stone. Although no detailed artefact analysis is available in McDonald (2009), it can be observed that quartz was the most frequently present stone type, while other types including silcrete and tuff were present. In the upper grey sands, backed blades and microliths including Bondi Points are present. The scant artefact data presented in McDonald (2009), combined with the redeposited nature of the sands these artefacts were found in, renders it impossible to attempt a correlation between tool types, provisional dating based on tool typology, and stratigraphic units. A broad chronological observation can be made however, that the small tools described by McDonald (2009) are congruent with the “Australian Small Tool Tradition” which has been proposed to date from the late Holocene (4-5,000 BP - present) (Gould, 1969).

Summary

In conclusion, archaeological reporting on the proposal area and its surrounds indicate that ground surfaces have frequently been disturbed and appear to have been subject to little formal testing. Except for recent, as yet undocumented excavations at the proposed Randwick Stabling Yards, there are no records of artefactual deposits of any density in the kilometre around the proposal area. The low numbers of recorded Aboriginal sites in the proposal area and surrounds does not indicate that Aboriginal archaeology may not be present in the proposal area. Rather, the current highly built up land use and soil disturbance combined with limitations on archaeological testing has made the detection of sites quite difficult. This is demonstrated in reporting by Artefact (2014a, 2014b), which attributed the low densities of artefacts that they recovered, to the predominant removal of the upper (A1) sand horizon in their proposal area.

The above studies have indicated that the two primary factors in indicating likely archaeological potential are landform and levels of soil disturbance. Throughout the proposal area there is a similar dune and lower dune slope landform to that encountered at Moore Park AS1 (Site ID 45-6-3155). It seems probable that Site ID 45-6-3155 reflects patterns of local landform utilisation by Aboriginal people in the past, and that this pattern of utilisation would have been similar through the proposal area. Variations in sensitivity of this landform would most likely result from historical soil disturbances.

3.3.2 Excavation results

Artefact Heritage has undertaken multiple as-yet unpublished excavations in Botany Sands for the CBD and Southeast Light Rail project between Central Station and Randwick, including within roadways.
Reporting for this project is in preparation. These excavations include those mentioned above at Tay Reserve. Other excavations in Botany Sands along Alison Road and Anzac Parade near the eastern end of the proposal area did not locate any Aboriginal objects in the pale or white dune sands which underly the grey sand layer that is considered of heightened archaeological sensitivity. In almost all cases the construction of existing roadway and associated landform modification had removed the archaeologically sensitive thin grey sand layer. Figure 6 shows representative levels of disturbance associated with road formation to Botany Sands, seen here to extend more than 1.4 metres below current ground surface.

Figure 6: Example of test pit excavated by Artefact Heritage within the bus lane south of Lang Road, Centennial Park

3.3.3 Historical land use

The proposal area has been subject to a wide variety of historical impacts including widespread sand drift due to devegetation, and sand mining (Gale S. C., 2017). The most severe impact on the proposal area is reflected in its currently visible highly developed character. This retains little if any of the area’s natural landform. In the decades after colonisation the proposal area was characterised by small agricultural concerns including market gardening and noxious industry activity. For over a century the area has formed an industrial, transport and freight hub, interspersed with areas of lower-priced housing (Dictionary of Sydney, 2016). Historical disturbances to Dacey Avenue are well documented. Here, the natural dunes (Figure 8) were deeply cut to build tramway lines (Figure 7).
Figure 7: Cutting for the Dacey Avenue tramline. Image dated 1918 (City of Sydney Image Library).

Figure 8: Low resolution image of Moore Park Golf Course in 1921 (City of Sydney Image Library).

3.3.4 Evidence from Dial Before You Dig (DBYD)

The proposal west of South Dowling Road is situated in a densely constructed environment that includes high density housing complexes often developed on the site of former industrial facilities. Current commercial and industrial facilities make up the bulk of the proposal surrounds. Both industrial and high-density residential developments require substantial services and utilities. The nature of local development is such that little room for these services exists other than beneath roadways. Dial Before You Dig (DBYD) searches were run for the four locations of proposed subsurface impact:

- Fountain Street and McEvoy Street
- Botany Road and McEvoy Street
- Elizabeth Street and McEvoy Street
• South Dowling Street, Lachlan Street and Dacey Avenue

The results of DBYD searches have been reproduced in simplified view in images below (Figure 9, Figure 10, Figure 11 and Figure 12). These images only incorporate major subsurface services, generally those with a diameter of more than 300 millimetres (mm) and in some cases up to 1.2 metres in diameter. These are characteristically located at least 600mm beneath current road surface. Multiple smaller subsurface services are also present including telecommunications networks – however the total density of the subsurface services within proposed locations of impacts is so high and vertically stacked, that representation of all services is not feasible.

With the exception of McEvoy Street between Pitt and Elizabeth Streets (Figure 11), and Dacey Avenue west of South Dowling Street (Figure 12), all roadway locations in the proposed impact locations have already been subject to substantial disturbance through installation of major subsurface services.
Figure 9: Subsurface utilities in construction footprint - corner Fountain Street and McEvoy Street
Figure 10: Subsurface utilities in construction footprint - corner Botany Road and McEvoy Street
Figure 11: Subsurface utilities in construction footprint - corner Elizabeth Street and McEvoy Street
Figure 12: Subsurface utilities in construction footprint - corner South Dowling Street, Lachlan Street and Dacey Avenue
3.3.5 Evidence from aerial imaging

3.3.5.1 Fountain Street
The vast majority of the proposal area west of South Dowling Street is evident on aerial imaging as highly developed. Two discrete areas of apparently undeveloped land that do not contain substantial subsurface utilities are present on McEvoy Road, immediately east and west of Fountain Street, these locations are indicated with red arrows in Figure 13 and Figure 14. Comparison of present landform to that shown in aerial imaging dated to 1943 demonstrates that to the east of Fountain Street these locations were once the site of industrial facilities that have since been cleared. Disturbances associated with construction and demolition of these facilities is almost certain to have removed archaeologically sensitive units of Botany Sands that they may once have contained. Land here to the west of Fountain Street however can only be shown as having been partially occupied by structures, and the potential exists for relatively undisturbed soils to remain.

Figure 13: Current undeveloped land at the intersection of Fountain Street and McEvoy Street (Six Maps 2019)

Figure 14: Previous structures in land at the intersection of Fountain Street and McEvoy Street in 1943 (Six Maps)

3.3.5.2 South Dowling Road
Impacts are proposed within the eastern lanes of South Dowling Road immediately north and south of Dacey Avenue, and within Dacey Avenue for a distance of 80 metres east from South Dowling Road. Assessment for minor works associated with the proposal found that in this location South Dowling Road and its intersection with Dacey Avenue has been extensively widened as a result of the Eastern
Distributor access ramp. This has entailed resumption of land along and within the Moore Park Golf course and the reduction of ground level by up to 1.5 metres to two metres as evidenced by the difference between current road grades and ground surfaces immediately to the east within Moore Park Golf Club. Excavation for road base and for installation of subsurface utilities below the current road level would indicate that disturbance has taken place to at least two metres to three metres below previous ground surfaces. The construction of the Eastern Distributor immediately next to this location was carried out through open cut methods and further disturbances are likely to have resulted from this (Artefact, 2019). Aerial imaging of these changes to local landform is shown in Figure 15 and Figure 16 with current lot boundaries shown for reference. In Figure 16 the south west corner of the proposal area is within land once developed with substantial built structures.

Figure 15: Current configuration intersection South Dowling Street and Dacey Avenue (Six Maps)

Figure 16: 1943 Configuration intersection South Dowling Street and Dacey Avenue (Six Maps)

3.4 Predictive model

3.4.1 Correlation between landform and site location

Prior to development and modification, the proposal area within the Botany Sands was comprised of vegetated sand dunes with swamps, watercourses and low-lying land (Attenbrow 2010). Although the sample size is small and the extent of existing archaeological investigation is limited, there is some correlation between occurrence of Aboriginal sites and site types on the Botany Sand sheet relative to certain landforms contained in the proposal area. Local landforms of heightened potential appear to be dune crests and lower slopes and swales, with the highest density artefact deposits likely to be found in preserved upper grey sand layers such as identified at Moore Park AS1 Site ID 45-6-3155. Moore Park AS1 Site ID 45-6-3155 may occupy part of the same preserved dune foot that is possibly present in Tay Reserve Artefact Site ID 45-6-3704.

These potential archaeological values are greatly reduced by the extent of disturbance to local soils that has been documented in the proposal area. Archaeological reporting indicates that where Botany
Sands have been truncated by road formation their archaeological potential is considerably diminished. Excavations carried out by Artefact Heritage in Botany Sands beneath roadways near the proposal indicate a nil to low archaeological sensitivity for such truncated locations. Locations within the proposal area that are located at the toe or crest slopes of current or historically documented dune landforms have been subject to intensive landform modification. These modifications include the substantial cutting of McEvoy Street through a localised dune immediately north of Waterloo Oval, and cutting into the Moore Park Golf Club at the intersection of South Dowling Street and Dacey Avenue. It is due to such impacts to local landform associated with road formation that Moore Park AS1 Site ID 45-6-3155 has been defined to exclude current roadway situated within it.

3.4.2 Predictive Statements

The following levels of sensitivity as associated with landform types have been defined for the proposal area:

- Low-Moderate: Preserved dune systems or elevated ground
- Low: Disturbed dune systems or elevated ground
- Very Low: Disturbed lower lying ground
4.0 SITE SURVEY

Archaeological survey of the proposal area was carried out by Michael Lever and Adele Zubrzycka of Artefact Heritage with Lee Davison, Aboriginal Cultural Heritage Officer for Roads and Maritime Services NSW on the 22 October 2019. Metropolitan Local Aboriginal Land Council and La Perouse Local Aboriginal Land Council were contacted by Roads and Maritime to participate in the survey but were not able to attend. As detailed above in Section 1.11, both LALCs have participated in a site survey of the proposal area for a previous larger version of the A2MP proposal.

The proposal area was divided into four survey units focussing on the areas of proposed construction impacts. Given the highly developed nature of the proposal area, survey concentrated on the identification of exposed or potentially less disturbed areas of ground surface.

A photographic record was kept of all survey units. Photographs were taken to record aspects of survey units including surface exposures, vegetation, disturbance, and areas of archaeological potential.

4.1 Comprehensive survey

The proposal area was subject to comprehensive archaeological survey along the footpaths of the proposal area and in accessible open areas and parkland. Surface visibility was effectively nil in most of the proposal area which is currently below roadway and pavement.

4.1.1 Survey Results

The proposal area was already known to be heavily developed and subject to multiple phases of historical construction and demolition. Its soils are almost wholly beneath roadways and footpaths. The site survey confirmed this. Except for isolated areas within nature strips and plantings within properties no soils were visible. The proposal area is cut to depth through the only local high point (at Elizabeth Street), and any heightened archaeological potential associated with this elevation is negated by the extent of landform alteration that is visible there.
4.2 Survey unit 1 – McEvoy and Fountain Streets

Figure 17: Survey Unit 1

Survey unit 1 is developed with roadway and pavement flanked by high density residential blocks and industrial and commercial premises (Figure 18). At the intersection of McEvoy Street and Fountain Street several small parcels of undeveloped ground are present (Figure 20, Figure 21). The location of most of these parcels has been shown as previously disturbed (see above, Figure 13 and Figure 14). Site inspection of the remaining parcel west of Fountain Street (Figure 19) illustrated that it had been significantly disturbed through levelling and planting during recent development, and was undercut by several minor services. No areas of undisturbed land or of likely archaeological potential were identified in Survey unit 1.
Figure 18: Characteristic streetscape - McEvoy Street. View east to Fountain Street

Figure 19: Undeveloped area west of Fountain Street, north side of McEvoy Street. View SE

Figure 20: Intersection McEvoy and Fountain Streets. View south

Figure 21: Intersection McEvoy and Fountain Streets. View West
4.3 Survey unit 2 – McEvoy Street and Botany Road

Figure 22: Survey Unit 2

4.3.1 Results – Survey unit 2

Survey unit 2 is wholly within land heavily developed through roadway, paved surrounds and flanked by multiple story commercial and residential developments that often closely adjoin the footpath. Botany Road here is located at the toe of a localised rise, which continues upwards to the east and north. The slight slope downwards to the west is visible in Figure 23, slope upwards to the north is visible in Figure 24. The descent of Botany Road to the south is shown in Figure 25, in which the close proximity of multi-storey buildings is also evident. No areas of undisturbed land or of likely archaeological potential were identified in Survey unit 2.
Figure 23: McEvoy Street at Botany Road, view west

Figure 24: McEvoy Street at Botany Road, View north

Figure 25: Botany Road at McEvoy Street, view south

Figure 26: McEvoy Street, view NE to Botany Road
4.4 Survey unit 3 – McEvoy and Elizabeth Streets

Figure 27: Survey Unit 3

4.4.1 Results – Survey unit 3

Survey unit 3 is located on a slope which rises gradually to the north and east, before reaching a steeper crest immediately east of Pitt Street. The nature of this gradual rise is shown in Figure 28 which looks back westwards along McEvoy Street towards Botany Road. Figure 29 is taken facing east from the same point as Figure 28. It illustrates the current gradual rise of roadway, contrasted with the steep rise of the natural crest located to the left (north). The angle of original land surface in this location has been estimated and shown with a red line drawn between the mid-slope of adjacent rise, and ground surface at Waterloo Oval. It is evident that the natural dune crest landform has been significantly cut to form McEvoy Street. The natural drop of landform here from north to south is illustrated in Figure 30, which shows McEvoy Street (to left) as sitting unnaturally level on a local slope. The extent of local landform alteration is also evident in Figure 31 in which the remnant dune slope is visible to the left (west) contrasted against the level streetscape. From Elizabeth Street, landform declines relatively steeply towards the east (Figure 32). No areas of undisturbed land or of likely archaeological potential were identified in Survey unit 3.
Figure 28: McEvoy Street at Pitt Street, view west

Figure 29: McEvoy Street at Pitt Street, view east

Figure 30: McEvoy Street at Pitt Street, view east

Figure 31: Elizabeth Street at McEvoy Street, view north

Figure 32: McEvoy Street from Elizabeth Street, view east
4.5 Survey unit 4 – Lachlan Street/South Dowling Street/Dacey Avenue intersection

Figure 33: Survey Unit 4

Survey unit 4 ascends to the east and landform here once reached its highest point in the dunes that now comprise the Moore Park Golf Club. Land to the west of South Dowling Street is heavily developed. Levels of development and natural rise are shown in Figure 34 and Figure 35. The intersection of South Dowling and Lachlan Street is an almost wholly artificial landscape, being constructed above the Eastern Distributor northern and southern access ramps Figure 36. In the east, at the intersection of South Dowling Street and Dacey Avenue, estimation of original ground surface levels and the degree of reduction from these for road formation can be gained from the height of surfaces in the Moore Park Golf Course, compared to current road surfaces (Figure 37, Figure 38). Within Dacey Avenue, the roadway still presents as cut significantly into surrounding land, as illustrated historically in Figure 7 above. No areas of undisturbed land or of likely archaeological potential were identified in Survey unit 3.
4.6 Survey Coverage

A summary of survey coverage, in accordance with the OEH code of practice, is outlined in Tables 3 and 4 below. Although ground surface was obscured, the open nature of the proposal area meant that all existing surfaces could be readily viewed to a far greater extent than is usual in vegetated environs. Therefore, even though survey participants did not walk in regularly spaced transects (due to safety considerations), survey coverage has nevertheless been given as 100%. The primary intention of the survey was to identify potentially sensitive landforms and areas of exposed undisturbed ground, rather than the detection of artefacts on the ground surface. As a result, values that bear on the ability to detect artefacts such as ground visibility and exposure data are not informative here, and have not been included in the data below.
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5.0 CONCLUSIONS

5.1 Archaeological sensitivity

The predictive model for survey had identified the following three categories of potential sensitivity:

- Low-Moderate: Preserved dune systems or elevated ground
- Low: Disturbed dune systems or elevated ground
- Very Low: Disturbed lower lying ground

No locations of preserved dune systems or elevated ground were identified through site survey. Locations formerly on crest or upper slopes in the proposal area have been subject to significant disturbance associated with reduction of slope and elevation for road formation. The extent of deep subsurface utility infrastructure mapped on DBYD is large and it is highly unlikely that undisturbed soil profiles exist within the proposal area. The proposal area is therefore of very low to low archaeological sensitivity.
6.0 SIGNIFICANCE ASSESSMENT

6.1 Significance assessment criteria

An assessment of the cultural heritage significance of an item or place is required in order to form the basis of its management. OEH (2011) provides guidelines for heritage assessment with reference to the Burra Charter (Australia ICOMOS 2013) and the Heritage Office guidelines (2001). OEH requires consideration of the following:

- Research potential: does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state’s natural and cultural history?
- Representativeness: how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- Rarity: is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential: does the subject area contain teaching sites or sites that might have teaching potential?

It is important to note that heritage significance is a dynamic value.

There are no currently registered AHIMS sites in the proposal area, no other potential archaeological values have been identified which would warrant significance assessment.

6.1.1 Cultural significance

It is acknowledged that the Botany Sands and the historically resource-rich local landscape is highly significant to Aboriginal people. Cultural significance should be taken into consideration in consultation with the Registered Aboriginal Parties (RAPs) when archaeological management decisions are made.
7.0 IMPACT ASSESSMENT

The proposal includes multiple upgrades to roadway including intersections and shared paths, along Euston Road, McEvoy Street, Lachlan Street, and Dacey Avenue. For the purposes of this assessment it has been assumed that a maximum level of disturbance such as associated with excavation for utility relocation and road reconstruction including bulk earthworks may occur at any point in the proposal area.

The proposal would not impact any registered AHIMS sites.

The proposal would only impact areas that have been assessed as of very low to low Aboriginal archaeological sensitivity. Impacts to Aboriginal objects are therefore considered unlikely.
8.0 RECOMMENDATIONS

Recommendations

The following recommendations are made to manage potential impacts associated with the proposal:

- Works may proceed without further Aboriginal archaeological assessment or permits
- Staff engaged in ground penetrating works must undergo a heritage induction prior to commencing work on the proposal. This heritage induction should provide staff with the capacity to identify potential Aboriginal archaeological remains, and procedures to be followed if these are identified.
- All ground penetrating works must comply with the Roads and Maritime Standard Management Procedure, Unexpected Heritage Items (2015)\(^2\)
- Any ground disturbing activities for the proposal outside the construction footprint assessed in this report may require further assessment.

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9.0 REFERENCES


