Georges Cove Marina Due Diligence Report

Aboriginal and historical due diligence report

Prepared for Mirvac | 23 April 2018

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Draft

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1 Introduction

1.1 Background

Mirvac is proposing to develop the site at 146 Newbridge Road, Moorebank, currently Lot 7 DP 1065574 (Lot 7) in the Liverpool City Council Local Government Area.

The Moorebank East residential estate will be developed on the northern section of Lot 7 within an area zoned as Medium Density Residential (R3). However, the southern-most section of the residential estate area is currently zoned Private Recreation (RE2). Mirvac will be seeking to apply an 'enabling clause' to allow the construction of residential development within the existing RE2 zoning. The residential development would be limited to a key area on the southern section of Lot 7 within the area zoned as RE2. It is also proposed to rezone part of this area to allow R3 Medium Density housing to adjoin the proposed residential estate on the northern section of Lot 7.

A planning proposal is being prepared to support these residential uses. This due diligence forms part of the planning proposal submission.

EMM Consulting (EMM) was engaged to prepare an Aboriginal and historic due diligence report on behalf of Mirvac to support development applications for the project. This report complies with the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act), *Heritage Act 1977* (Heritage Act), and *National Parks and Wildlife Act 1974* (NPW Act).

1.2 Project area

The project area is 23 km west of Sydney (Figure 1.1) on the western bank of the Georges River in Moorebank (Figure 1.2). Moorebank is a growing suburb in the Liverpool local government area. It is bordered on the east side by the Western Sydney University and Bankstown airport, with Liverpool to the west and Heathcote National park to the south. The Benedict Moorebank Quarry lies directly to the north.

There are two distinct project areas for consideration, a southern project area and northern project area (Figure 1.2). The southern project area is the larger of the two at 2.2 ha stretches 280 m along the western bank of a body of water. The northern project area stretches 134 m along the northern edge of the body of water and is 0.3 ha.

1.3 Legislative context

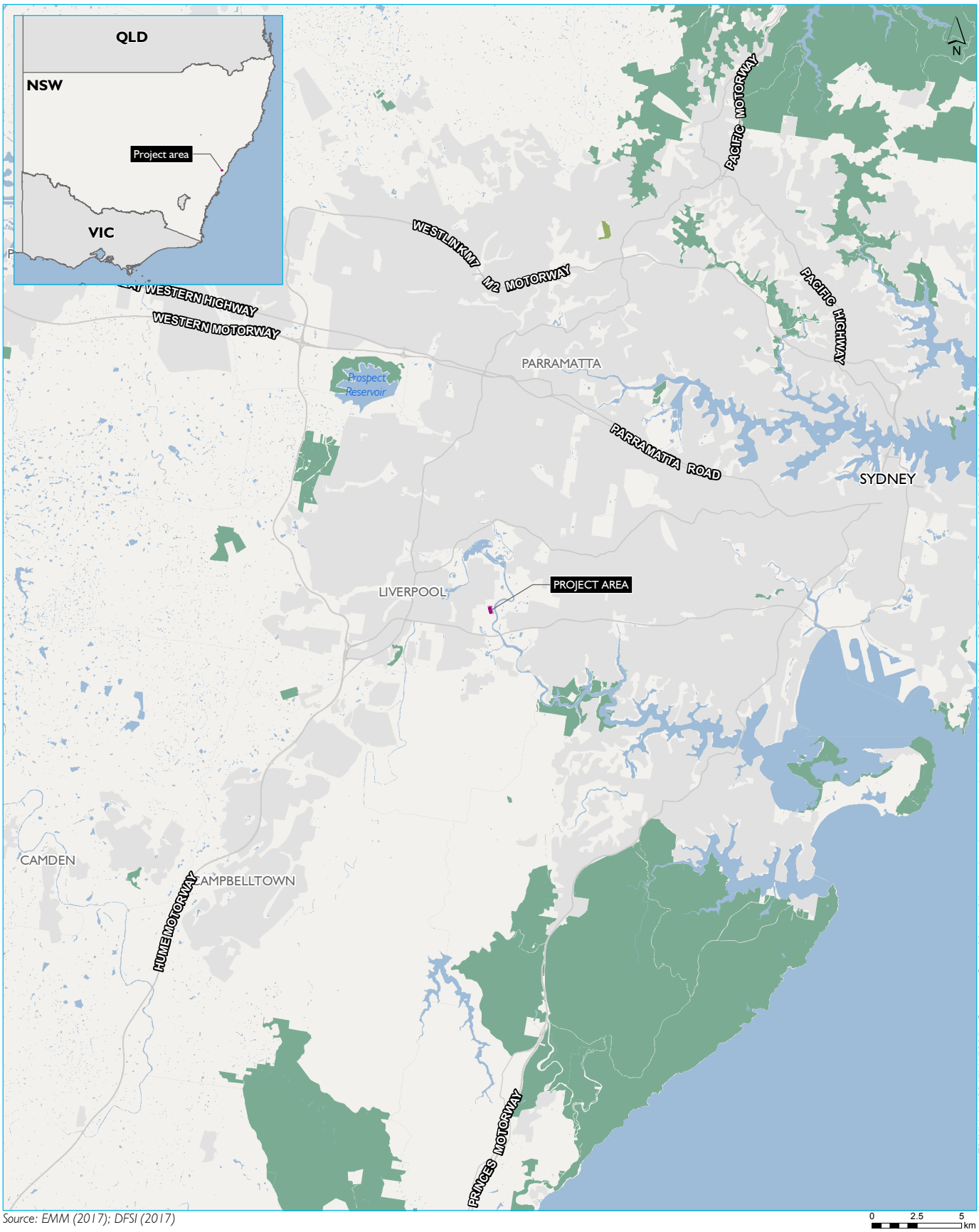
1.3.1 Aboriginal heritage

Aboriginal objects are protected in New South Wales (NSW) under the NPW Act. Section 90 of the 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 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 Act defines an Aboriginal object as:

> any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.

Harm is defined as:

> any act or omission that: (a) destroys, defaces or damages the object or place, or (b) in relation to an object—moves the object from the land on which it had been situated, or (c) is specified by the regulations, or (d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c), but does not include any act or omission that: (e) desecrates the object or place, or (f) is trivial or negligible, or (g) is excluded from this definition by the regulations.



Source: EMM (2017); DFSI (2017)

KEY

- Project area
- Built up areas
- Waterbody
- NPWS reserve
- State forest
- roadsegment_DFSI_2017 DQ

Project area in the regional context

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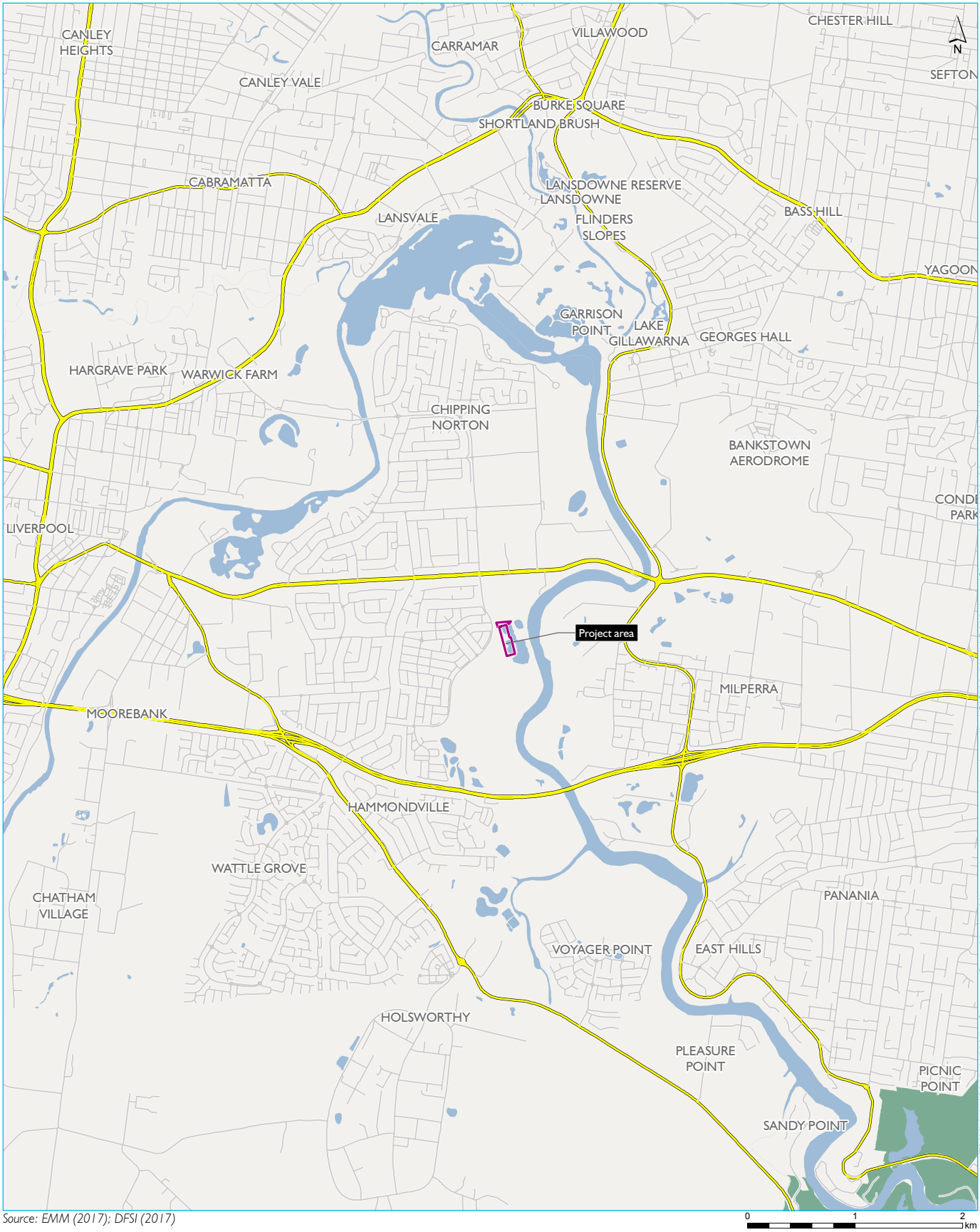
Figure 1.1

EMM



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Source: EMM (2017); DFSI (2017)

KEY

- Project area
- Waterbody
- NPWS reserve
- Main road
- Local road

Project area in the local context

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Figure 1.2

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This report has been prepared in accordance with *The Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010) (the Code) to address potential Aboriginal heritage issues. Historical heritage issues are investigated by assessing historical disturbance to the site to assist with decisions about the level of archival research that is likely to be required.

The Code provides a generic checklist to assist with determining whether activities will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm. The advantages of due diligence for assessing potential harm to Aboriginal objects are that it:

- provides a defence against prosecution for inadvertent impacts if the process is followed;
- assists in avoiding unintended harm to Aboriginal objects;
- provides certainty to land managers and developers about appropriate measures for them to take;
- encourages a precautionary approach; and
- results in more effective conservation outcomes for Aboriginal cultural heritage.

The steps required by the due diligence process are:

- consideration of existing archaeological investigation records of Aboriginal objects;
- consideration of landscape features on undisturbed land known to be sensitive for the presence of Aboriginal objects; and
- a visual study area inspection, where sensitive landforms occur, of proposed impact areas to identify any Aboriginal objects or potential archaeological deposits (PADs).

The conclusion of a due diligence assessment is to advise on the necessity to undertake additional investigation of the site to best manage the archaeological and cultural resource.

If the due diligence assessment determines that artefacts or areas of potential archaeological deposit are likely to be harmed, a permit is required to manage harm as defined by Part 6, Section 86 of the NPW Act.

Understanding the landscapes that lend themselves to everyday life for Aboriginal people of the past helps identify areas of higher potential. These landscape characteristics are identified in the Code and are:

- within 200 m of waters[1]; or
- located within a sand dune system; or
- located on a ridge top, ridge line or headland; or
- located within 200 m below or above a cliff face; or
- within 20 m of or in a cave, rock shelter, or a cave mouth and is on land that is not disturbed land.

[1] 'Waters' means the whole or any part of: any river, stream, lake, lagoon, swamp, wetlands, natural watercourse, tidal waters (including the sea). Note: the boundary or tidal waters is defined as the high water mark. (DECWW 2010c, p.12*)*

In addition to these characteristics, other criteria are deep or intact soil profiles that may hold artefacts and landforms that exhibit additional desirable features for camping, such as gentle slopes or low lying hills, which are positioned to offer some protection from the elements and visibility of the surrounding area.

1.4 Report context

Table 1.1 describes the basic steps of an Aboriginal due diligence assessment as set out in Section 8 of the Code. 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.

The due diligence assessment included a search of the Aboriginal Heritage Information System (AHIMS) database on 9 November 2017. Environmental landscape information and previous archaeological investigations in the vicinity of the study area were reviewed to determine if the project would occur on any landforms that may indicate the presence and survival of Aboriginal objects.

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.	AHIMS return zero results for the project area.	3.1.1
STEP 2: Is the activity a 'Low Impact Activity', as defined in the National Parks and Wildlife Regulation?	This activity is not classed as a 'Low Impact Activity' defined as in the National Parks and Wildlife Regulation.	
STEP 3: Are there any landscape features on undisturbed land that are likely to indicate the presence of Aboriginal objects?	Landforms are present that could indicate activity, however the level of disturbance is so great, any activity has likely been destroyed previously	4.1
STEP 4: Does a desktop assessment and visual inspection confirm that there are Aboriginal objects present or likely to be present?	Both the desktop survey and visual inspection confirm the level of disturbance on the site and therefore that it is improbable that Aboriginal objects are present.	4.1
STEP 5: Can the activity be relocated away from the known/likely area for Aboriginal objects?	Not applicable	
STEP 6: Commence investigation for an Aboriginal Heritage Impact Permit (AHIP).	Not applicable	

1.4.1 Historical heritage

Listing on statutory registers provides legal protection for heritage items. In NSW, the Heritage Act, and 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 (NHL) and the Commonwealth Heritage List (CHL) are protected under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The Register of the National Estate (RNE) became a non-statutory register when the EPBC Act was gazetted, but is still used as a reference tool for items that have not been transferred to the NHL, the CHL or the LEP.

1.5 Authorship and acknowledgments

This report was prepared by Kerryn Armstrong (EMM Consultant Archaeologist) who also conducted the site inspection. Quality assurance was provided by Pamela Kottaras (EMM Heritage Services Manager). GIS services were provided by Roshni Sharma (EMM GIS analyst).

2 Existing Environment

2.1 Environmental context

The environmental context is used to predict the likelihood of archaeological material being present, its spatial distribution and preservation. Landscape features were an important factor for the choice of camping, transitory and ceremonial areas used by Aboriginal people as topography and hydrology created attractive places to camp; geology was important for raw materials and soil types played a role in ecosystems and later, site preservation. Natural resources, including raw stone materials and local flora and fauna provided food, tools and material resources. Additionally, natural and cultural (anthropogenic) site formation processes influence the present location of archaeological material (eg moved through disturbance), along with its preservation and archaeological integrity.

2.1.1 Geology and soils

The Sydney basin is composed of a Triassic system of shales and rocks, called the Wianamatta group (NSW Geoscience 2017) comprising of Bringelly shale, Minchinbury sandstone and Ashfield shale. Both Ashfield and Bringelly shales are composed of a clay, quartz and siderite minerals, creating a consistent microstructure between the two. Between the two shales, lies Minchinbury sandstone which is often only obvious in road cuttings or quarries as it generally considered well covered with shale and soil. The Wianamatta group overlays the Hawkesbury sandstone which has often been documented at up to 200 m thick.

The original soil landscape for the project area is Richmond alluvial sand composed of weak composite orange and red clay loams (eSPADE 2017). This is common along the banks of both the George and Nepean rivers. The A1 Horizon is loose red-brown loamy sand with a slightly acidic pH of 5.5, which tops the A2 Horizon of brown sandy loam. The B1 Horizon is a reddish to yellow light clay, it is porous and tops a B2 horizon which is a heavy clay. This subsoil is also reddish to yellow and is dense, smooth and has a variable structure. Although this is the soil landscape for the area at, and surrounding the project area, it is notable to mention the area has been covered in fill.

2.1.2 Landscape features

The southern project area contains a large body of water in the north-east corner and is surrounded by steep banks. The geomorphology of the land described in Section 2.1.1 is not consistent with the existing landscape. The project area has been extensively disturbed by historic earthworks, which includes excavation and fill (Plate 2.1). The deep excavations have removed large volumes of soil, which has been replaced by water.

The northern project area has also been subject to a large amount of disturbance through earthworks that include substantial excavation and fill activities (Plate 2.2 and Plate 2.3). This level of disturbance has removed all the natural landforms.

Plate 2.1 Evidence of excavation in foreground, and introduced fill in background. View north

Plate 2.2 Evidence of excavation and introduced fill in the northern project area. View north.

Plate 2.3 Northern project area showing evidence of excavation and introduced fill. View east.

2.1.3 Hydrology

The project area is located 200 m west of Georges Rivers (Figure 1.2), a seventh order stream in accordance with the Strahler system. Georges River was renamed after the European contact, previously it was known as the Tucoerah River by the custodians who were the Dharawahl and Darug Aboriginal People (Campbelltown's Aboriginal History 2017). The Georges River is part of the larger Georges River catchment area which supplies roughly 1 million people with water. The river flows through Liverpool to connect up with Botany Bay, and has long been an important resource to those who have lived in the area.

A first order stream (Strahler) 60 m south of the project area was an ephemeral water source connected with Georges River, although there is no evidence of it present day.

2.1.4 Vegetation

Due to the high erodibility of the of the Richmond alluvial sands, soil fertility is generally regarded as low to very low. However, red cedar (*Toona ciliata*), paperbarks (*Melaleuca*) and coach wood (*Ceratopetalum apetulum*) were common in the past. The landscape has also known to encourage native reeds still common in the area today.

Due to the amount of degradation of native soils, transference via fill in the past and prior development of the area in large there is limited natural vegetation in the project area (Plate 2.4). There are isolated clumps of reeds and shrubs with grass coverage along the edge of the water body; no mature trees were present in the project area.

Plate 2.4 Example vegetation in the project area. View south-east

2.1.5 Land use

Moorebank and the surrounding area of Liverpool were often used as a services arm of Sydney. With a military barracks and hospital both built in the 1800s. The area developed rapidly with residential areas being built for workers in local industry, gas-works, a veterinary hospital and paper mill amongst others. Farming was mainly by returned soldiers who were allotted settlement scheme farms in the surrounding area (The Founding of Liverpool 2017).

3 Desktop Survey

3.1 Aboriginal Context

Information about the socio-cultural structure of Aboriginal society prior to European contact largely comes from ethno-historic accounts made by Europeans. These accounts and observations were made after massive social disruption due to disease and displacement. As a result, this information is often contentious, particularly in relation to language area boundaries.

However, it is generally accepted that the Dharawahl and Darug Aboriginal People are the traditional custodians of the land that the project area is on. The river and surrounding vegetation provided plenty of food, in the form of possums, wallabies and lizards, birds and eggs as well as river resources such as fish and oysters; while the plant varieties included roots and berries. Shelter came in the form of sandstone overhangs and erosion as the area is rich in Hawkesbury sandstone geology (Turbet 1989, pp. 53-65).

3.1.1 Register searches

Searches were made on 9 November 2017 of the following heritage databases (Figure 3.1):

- the Aboriginal heritage information management system (AHIMS); and
- the Aboriginal places register (accessed via State Heritage Inventory); and
- the Native Title Vision website.

Table 3.1 Aboriginal register search for items within the project area

Register	Results
AHIMS and heritage database search	No sites found within a 50 m buffer of the project area
Aboriginal places register	No sites found within the project area
Native Title Claims	No claims found within the project area
Indigenous Land Use Agreements (ILUAs)	No ILUAs found within the project area

3.2 Relevant archaeological investigations

There is a lack of archaeological investigations pertaining to the project area. The reason for this could be either a low number of sites, or more likely, a low amount of investigation into the area. It can be safely posited however, that since rivers are of high economic and cultural value, the area around Georges River would also provide year round food and supplies.

3.3 Historical Context

3.3.1 Register searches

Searches were made of the following heritage databases on 9 November 2017 (Figure 3.2):

- the National Heritage List (NHL);
- the Commonwealth Heritage List (CHL);

- the State Heritage Register (SHR);
- the State heritage Inventory;
- Schedule 5 of the Liverpool Local Environmental Plan (LEP);
- Schedule 5 of the Bankstown LEP; and
- the Register of the National Estate (RNE)

Table 3.2 Historical register search for items within the project area

Register	Register listings
National Heritage List (NHL)	No items within the project area
Commonwealth Heritage List (CHL)	No items within the project area
State Heritage List (SHR)	No items within the project area
Schedule 5 of the Liverpool LEP	No items within the project area
Schedule 5 of the Bankstown LEP	No items within the project area
Register of the National Estate (RNE)	No items within the project area

Heritage items in the vicinity of the project area are listed in Table 3.3.

Table 3.3 Historical register search for items within the vicinity

Register	Register listing	Item number	Distance from project area
National Heritage List (NHL)	No items within the vicinity	Not applicable	Not applicable
Commonwealth Heritage List (CHL)	Defence national storage and distribution centre	105641	4.5 km
State Heritage List (SHR)	No items within the vicinity	Not applicable	Not applicable
Schedule 5 of the Liverpool LEP	Dwelling – Chipping Norton	20	2 km
Schedule 5 of the Liverpool LEP	Palm trees (*Phoenix canariensis*)	21	2.1 km
Schedule 5 of the Liverpool LEP	Avenue of trees	22	950 m
Schedule 5 of the Liverpool LEP	Hammondville Home for Senior Citizens	29	1.5 km
Schedule 5 of the Liverpool LEP	St Anne's Anglican Church	30	1.6 km
Schedule 5 of the Liverpool LEP	Australian Army Engineers Group, including RAE Memorial Chapel, RAE Monument, Major General Sir Clive Steele Memorial Gates, Cust Hut	57	2.7 km
Schedule 5 of the Liverpool LEP	Warwick farm Racecourse Group	66	2.3 km
Schedule 5 of the Bankstown LEP	Bankstown Aerodrome	I18	1.4 km
Schedule 5 of the	Milperra Soldier Settlement (former)	I29	1.5 km

Table 3.3 Historical register search for items within the vicinity

Register	Register listing	Item number	Distance from project area
Bankstown LEP			
Register of the National Estate (RNE)	Defence national storage and distribution centre	103862	4.5 km

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Source: EMM (2017); DFSI (2017); AHIMS (2017)

0 1 2 km
GDA 1994 MGA Zone 56

KEY

- AHIMS sites
- Project buffer (10km)
- Project area

AHIMS sites

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Figure 3.1

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KEY

- Project area
- Commonwealth Heritage List items

Liverpool LEP 2008 / Bankstown LEP 2015 listed items

- Item - General
- Item - Landscape

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Source: EMM (2017); DFSI (2017); DoE (2013); OEH (2005); DPE (2017)

Registered historical items

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Figure 3.2

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4 Results

4.1 Survey results

Desktop research predicted a low probability of sites due to both the highly disturbed nature of the project areas and that the project areas were historically subject to regular flooding. The prediction of low potential is supported by the results of the field survey.

A pedestrian survey was carried out on the 10 November 2017 in good weather (Figure 4.1). A large portion of the project area was covered in water. The site has been highly disturbed, and a large amount of previous work has been carried out, including the transference of fill and deep excavation. Ground visibility was approximately 15% and the exposure approximately 5-10%. The project area held no mature trees, and a relatively small amount of native vegetation (approximately 5%).

Although the area is known for producing suitable material for knapping and stone tools (Attenbrow 2010), there was a lack of evidence of such material in both project areas. Table 4.1 demonstrates how the project areas relate to known landscape indicators for Aboriginal sites. Although the project areas are close to a substantial river with a presence of alluvial sand, the level of disturbance is too great for sites to have survived.

Table 4.1 Landscape indicators for Aboriginal sites

Does the project area lie within 200 m of waters?	Yes, the project area is within 200 m of the Georges River
Is the project area within a sand dune system?	Yes, the soil system of the Georges River is alluvial sand
Is the project area located on a ridge top, ridge line or headland?	No
Is the project area located within 200 m below or above a cliff face?	No
Is the project area located within 20 m of a cave, or in a rock shelter or at a cave mouth and is on land that is not disturbed land?	No

The level of disturbance to the site also precludes the preservation of relics, if they ever existed.

4.2 Aboriginal sites

There are no registered or newly identified sites in the two project areas.

4.3 Historical sites

There are no listed heritage items or potential heritage items or relics in the two project areas.

4.4 Summary

There are no anticipated impacts to Aboriginal objects in the project area as it is highly unlikely that if Aboriginal objects existed in this location, they have not survived the extensive earthworks.

There are also no anticipated impacts to known or potential historical heritage items in the area.

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Source: EMM (2017); DFSI (2017); LPI (2015); GA (2015); LPMA (2011)

0 25 50 m
GDA 1994 MGA Zone 56

KEY

- Project area
- Waypoints
- Survey track

Site inspection record

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Figure 4.1

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5 Conclusion and recommendations

5.1 Conclusion

Background research and field inspection did not find evidence of either Aboriginal sites or historical sites in the two project areas. Further, the project areas have undergone a high level of disturbance through extensive excavation activities that would have removed Aboriginal sites.

The two project areas at the subject site assessed in this report have no Aboriginal cultural heritage constraints and no historical heritage constraints.

5.2 Recommendations

The following recommendations have been prepared to respond to the site conditions and current legislation and guidelines protecting Aboriginal and historical heritage. The recommendations below are informed by the background research and fieldwork undertaken for the project.

They are:

- works may proceed with caution;
- in the unlikely event that sites are discovered work should immediately cease and archaeological advice sought;
- 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.
- should the project areas be expanded, additional archaeological due diligence should be undertaken.

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