



**RICHMOND ROAD UPGRADE  
ELARA BOULEVARD TO HERITAGE ROAD**

**Aboriginal Archaeological Survey Report  
Stage 2 PACHCI**

Prepared for Roads and Maritime Services

Blacktown Local Government Area

March 2019

Ref. 1822

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## Document Information

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## Executive Summary

Roads and Maritime Services (Roads and Maritime) propose to extend the upgrade of Richmond Road from Elara Boulevard to Heritage Road in Marsden Park, NSW. The proposed upgrade works will facilitate and improve connectivity to future residential and commercial developments in the Marsden Park and Marsden Park North precincts. It is anticipated that the proposed works will take place within the existing 56 metre wide road corridor, however minor widening may be required to accommodate upgrade works.

Kelleher Nightingale Consulting Pty Ltd (KNC) was engaged by Roads and Maritime to prepare an Aboriginal archaeological survey report to inform the strategic design development and environmental assessment for the proposed works. This assessment was prepared in accordance with the Stage 2 requirements of the Roads and Maritime *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* and the Office of Environment and Heritage *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

Background research and archaeological survey identified four previously recorded Aboriginal archaeological sites (comprising six AHIMS registrations) within the study area. These sites comprise Marsden Park Echo Vale No 2 Riverstone Meatworks (including MPIA9 and MPAS3), MPAS6, C-IF-1/Clydesdale and C-ST-1. Outside of the identified Aboriginal sites, the remainder of the study area displays low archaeological potential due to a combination of archaeologically unfavourable topography, erosion or disturbance from land use practices.

Significance assessment was undertaken of the archaeological features on the basis of site intactness/integrity, landform context and archaeological research potential. One previously identified archaeological site (MPAS6) exhibited high archaeological significance, two previously identified archaeological sites (Marsden Park Echo Vale No 2 Riverstone Meatworks and C-ST-1) exhibited moderate significance and one previously identified archaeological site (CF-IF-1 /Clydesdale) exhibited low archaeological significance.

Based on a study area wide impact assessment, all sites will be at least partially impacted by the proposed works.

Future detailed design for the project should take the location of the identified sites into consideration and avoid impact where possible. If the identified archaeological sites cannot be avoided, further investigation and assessment would be required. Further investigation would include a test excavation of Marsden Park Echo Vale No 2 Riverstone Meatworks (including MPIA9 and MPAS3) and MPAS6 in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, to determine the intactness, extent and significance of any subsurface archaeological deposits.

The proposed works overlap several areas that have been previously assessed for their Aboriginal cultural heritage values and are covered under existing Aboriginal Heritage Impact Permits (AHIPs). It is recommended that Roads and Maritime consult with relevant AHIP holders to complete the proposed works in these areas under their respective permits. Any works undertaken within existing AHIP areas must be undertaken in accordance with AHIP conditions.

An AHIP would be required prior to impacting Aboriginal archaeological sites located outside of existing AHIP areas. Mitigation requirements will be determined during the detailed design stage and should be based on the extent of impact caused by the planned works and significance of the impacted archaeology.

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## 1 Introduction

### 1.1 Project background

Roads and Maritime Services (Roads and Maritime) propose to extend the upgrade of Richmond Road from Elara Road to Heritage Road in Marsden Park, NSW. The proposed upgrade works will facilitate and improve connectivity to future residential and commercial developments in the Marsden Park and Marsden Park North precincts. It is anticipated that the proposed works will take place within the existing 56 metre wide road corridor, however minor widening may be required to accommodate upgrade works. The 'study area' for this report comprises the existing Richmond Road corridor between Elara Boulevard and Heritage Road and a buffer area (Figures 1 and 2).

Kelleher Nightingale Consulting Pty Ltd (KNC) was engaged by Roads and Maritime to prepare an Aboriginal archaeological survey report to inform the strategic design development and environmental assessment for the proposed works.

This assessment was prepared in accordance with the Stage 2 requirements of the Roads and Maritime *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (PACHCI) (Roads and Maritime 2011) and the Office of Environment and Heritage (OEH) *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010).

### 1.2 Summary of findings

Background research and archaeological survey identified four previously recorded Aboriginal archaeological sites (comprising six AHIMS registrations) within the study area. These sites comprise Marsden Park Echo Vale No 2 Riverstone Meatworks (includes MPIA9 and MPAS3), MPAS6, C-IF-1/Clydesdale and C-ST-1. Outside of the identified Aboriginal sites, the remainder of the study area displays low archaeological potential due to a combination of archaeologically unfavourable topography, erosion or disturbance from land use practices.

Based on a study area wide impact assessment, all previously identified sites will be at least partially impacted by the proposed works. Future detailed design for the project should take the location of the identified sites into consideration and avoid impact where possible.

If the identified archaeological sites cannot be avoided, further investigation and assessment would be required. Further investigation would include a test excavation of Marsden Park Echo Vale No 2 Riverstone Meatworks (including MPIA9 and MPAS3) and MPAS6 in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* and Roads and Maritime PACHCI, to determine the intactness, extent and significance of any subsurface archaeological deposits.

The proposed works overlap several areas that have been previously assessed for their Aboriginal cultural heritage values and are covered under existing Aboriginal Heritage Impact Permits (AHIPs) (Figure 1). It is recommended that Roads and Maritime consult with relevant AHIP holders to complete the proposed works in these areas under their respective permits. Any works undertaken within existing AHIP areas must be undertaken in accordance with AHIP conditions.

An AHIP would be required prior to impacting Aboriginal archaeological sites located outside of existing AHIP areas. Mitigation requirements will be determined during the detailed design stage and should be based on the extent of impact caused by the planned works and significance of the impacted archaeology.

### 1.3 Investigator / contributors

A full list of investigator / contributors to the current study is included in Table 1 below.

**Table 1. Investigator / contributor**

| Investigator / Contributor | Affiliation                             | Role                                  |
|----------------------------|---|---------------------------------------|
| Dr Matthew Kelleher        | Kelleher Nightingale Consulting         | Reporting, Survey, Advisor and Review |
| Ben Anderson               | Kelleher Nightingale Consulting         | GIS                                   |
| Madeline Harding           | Kelleher Nightingale Consulting         | Reporting                             |
| Steve Randall              | Deerubbin Local Aboriginal Land Council | Cultural Heritage Advisor, Survey     |

## 1.4 Project description

Roads and Maritime propose to extend the upgrade of Richmond Road from Elara Boulevard to Heritage Road in Marsden Park, NSW (Figures 1 and 2). Richmond Road forms the primary arterial road servicing traffic within the North West Region and facilitates access towards the M7. Richmond Road has already been upgraded to a 4-lane dual carriageway westward from Langford Drive towards Elara Boulevard. Richmond Road west of Elara Boulevard remains a two-lane undivided road.

Richmond Road provides an important east- to west -link through an area of north-west Sydney that is set to undergo significant land-use and transport changes, including rapid population and employment growth over the next 20 years and beyond. Richmond Road is also part of a Flood Evacuation Route.

Upon completion, the Richmond Road upgrade from Elara Boulevard to Heritage Road will improve connectivity to the proposed developments within the Marsden Park and Marsden Park North precincts, permitting additional access to Richmond Road. The proposed upgrade works would involve the following key elements:

- (i) Provide additional signal controlled access for the new commercial and residential developments at Marsden Park and Marsden Park North precincts
- (ii) Provide bus bays and bus priority lanes at the signalised intersections
- (iii) Increase the road from a single lane to two lanes in each direction
- (iv) Provide shared paths for pedestrian and cyclists.



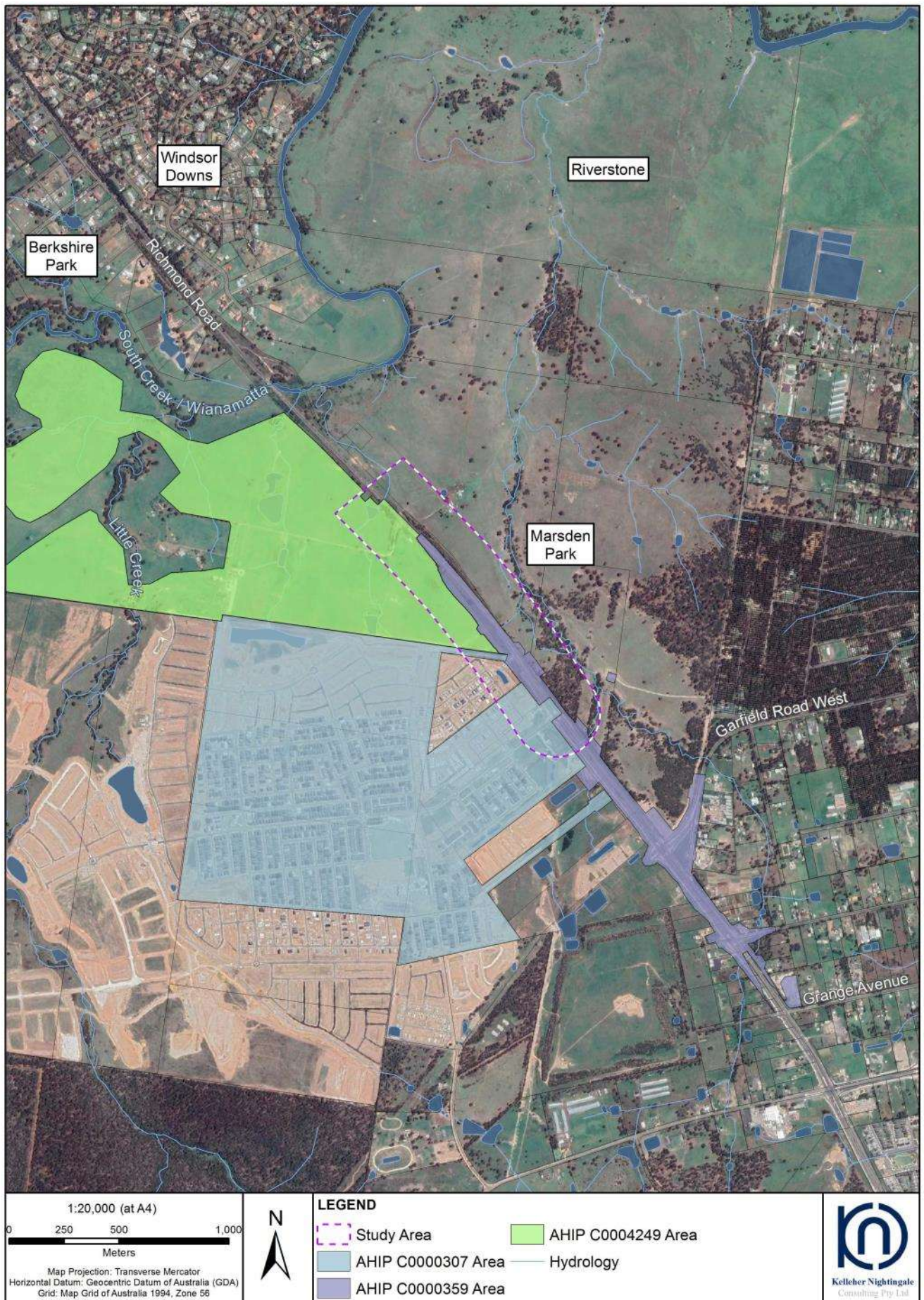


Figure 1. Study area location and existing AHIPs





Figure 2. Detail of study area



## 2 Aboriginal stakeholder consultation

Roads and Maritime has developed the PACHCI to provide a consistent means of effective consultation with Aboriginal communities regarding activities which may impact on Aboriginal cultural heritage and a consistent assessment process for Roads and Maritime activities across NSW. In accordance with the PACHCI, the early stages of Roads and Maritime projects involve consultation with Local Aboriginal Land Councils and registered Native Title holders/claimants.

The project has been conducted in consultation with the Deerubbin Local Aboriginal Land Council (DLALC). No Native Title holders/claimants are currently registered for the study area.

DLALC were contacted by KNC at the commencement of the project to discuss the proposed works and invited to participate in the archaeological survey.

The archaeological survey of the study area was arranged with DLALC for Wednesday 5 December 2018. Steve Randall from DLALC participated in the survey.

### 3 Review of previous archaeological investigations

#### 3.1 AHIMS web services

The Aboriginal Heritage Information Management System (AHIMS) is a database operated by the (NSW) Office of Environment and Heritage (OEH) and regulated under section 90(Q) of the (NSW) National Parks and Wildlife Act 1974 (NPW Act). AHIMS contains information and records related to registered Aboriginal archaeological sites (Aboriginal objects, as defined under the NPW Act) and declared Aboriginal places (as defined under the NPW Act) in NSW.

A search of AHIMS was conducted on 1 February 2019 to identify registered (known) Aboriginal sites or declared Aboriginal places within or adjacent to the study area (Client service ID 396062). The search results are attached as Appendix A.

The AHIMS Web Service database search was conducted within the following coordinates (GDA, Zone 56):

Eastings: 296881 - 299225  
 Northings: 6269220 - 6271712  
 Buffer: 0 metres (the search coordinates included a buffer around the study area).

The AHIMS search results showed:

|           |   |
|-----------|---|
| <b>51</b> | <b>Aboriginal sites are recorded in or near the above location</b>        |
| <b>0</b>  | <b>Aboriginal places have been declared in or near the above location</b> |

The distribution of registered Aboriginal sites within these coordinates are shown in Figure 3. The frequencies of site types within the search area are shown in Table 2. The AHIMS results, the nature of previously recorded sites and previous archaeological investigations in the area are discussed further in section 3.3.

**Table 2. Frequency of site types and context from AHIMS database search**

| Site Context | Site Feature                           | Number    | Frequency  |
|--------------|--|-----------|------------|
| Open         | Artefact                               | 47        | 92         |
|              | Artefact; Stone quarry                 | 1         | 2          |
|              | Modified Tree (Carved or Scarred)      | 1         | 2          |
|              | Potential Archaeological Deposit (PAD) | 2         | 4          |
| <b>Total</b> |  | <b>51</b> | <b>100</b> |

#### 3.2 Other heritage registers and databases

Other sources of information including heritage registers and lists were also searched for known Aboriginal heritage in the vicinity of the study area. These included:

- Blacktown Local Environmental Plan (LEP) 2015
- Roads and Maritime Heritage Register
- Sydney Water Heritage Register
- State Heritage Register and State Heritage Inventory
- Commonwealth Heritage List
- National Heritage List
- Australian Heritage Places Inventory
- Register of the National Estate

A heritage listing for the 'Clydesdale – House Barn, Cottage and Farm Landscape' is located within the north western portion of the current study area, adjacent to Richmond Road. The Clydesdale property is listed on the State Heritage Register (SHR) ID 00674 as archaeologically, historically and socially significant (Figure 3). The SHR listing for Clydesdale notes the Aboriginal archaeological sites recorded on the estate, describing the open campsite and stone artefacts registered on AHIMS. The following statement has been taken from the SHR listing for Clydesdale:

Clydesdale has State significance as one of a series of pre 1840s homesteads in the Hawkesbury area which contributed substantially to the agricultural and pastoral economy of the region, and the understanding of the historical development of colonial New South Wales and the pastoral era of the Cumberland Plain. Its landscape features remain relatively intact, including significant remnant woodlands, Aboriginal relics, two cemeteries (both resting places for the early pioneers of Clydesdale and the district), and its original entry avenue off Richmond Road. The entrance avenue is still discernible for its individual approach and is an example of colonial landscape design that opposed the principles practised in England during the early 19th century. The house retains its original relationship to its landscape setting and farm and is the only remaining example of the lowland model of homestead siting in the Blacktown area and one of three remaining examples intact on the Cumberland Plain. The site derives additional significance for its use as one of only two Marist seminaries in Australia for training South Sea Islander priests in the 1860s, and as a RAAF convalescent home during the 1940s.

An AHIP (AHIP #C0004249) was granted on 18 January 2019 for impacts to sites C-IF-1/Clydesdale, C-IF-2 and C-OS-1 located on the Clydesdale Estate. Any works related to the current proposal undertaken within this AHIP area will be required to comply with the AHIP conditions. A Section 60 permit has also been applied for in relation to historical (non-Aboriginal) heritage, in accordance with the *Clydesdale Estate, Marsden Park Conservation Management Plan* (GBA Heritage 2016). Future Roads and Maritime works in Clydesdale will need to comply with the Section 60 conditions.

The 'St Phillips Church Cemetery' is listed on the Blacktown LEP (Item no. I37) as an item of local significance. The item is located north of the current study area, on the eastern boundary of South Creek (Figure 3). The State Heritage Inventory (SHI) listing (Database no. 1140032) identifies the St Phillips Church Cemetery as part of the former Church complex associated with Clydesdale. The cemetery contains the graves of twelve early settlers who were interred between 1848 and 1872. The graveyard also contains the remains and headstone of Jane Lock, a descendent of Colebee, who had received one of the first Aboriginal land grants near the Blacktown Native Institute, through the Locke Family.

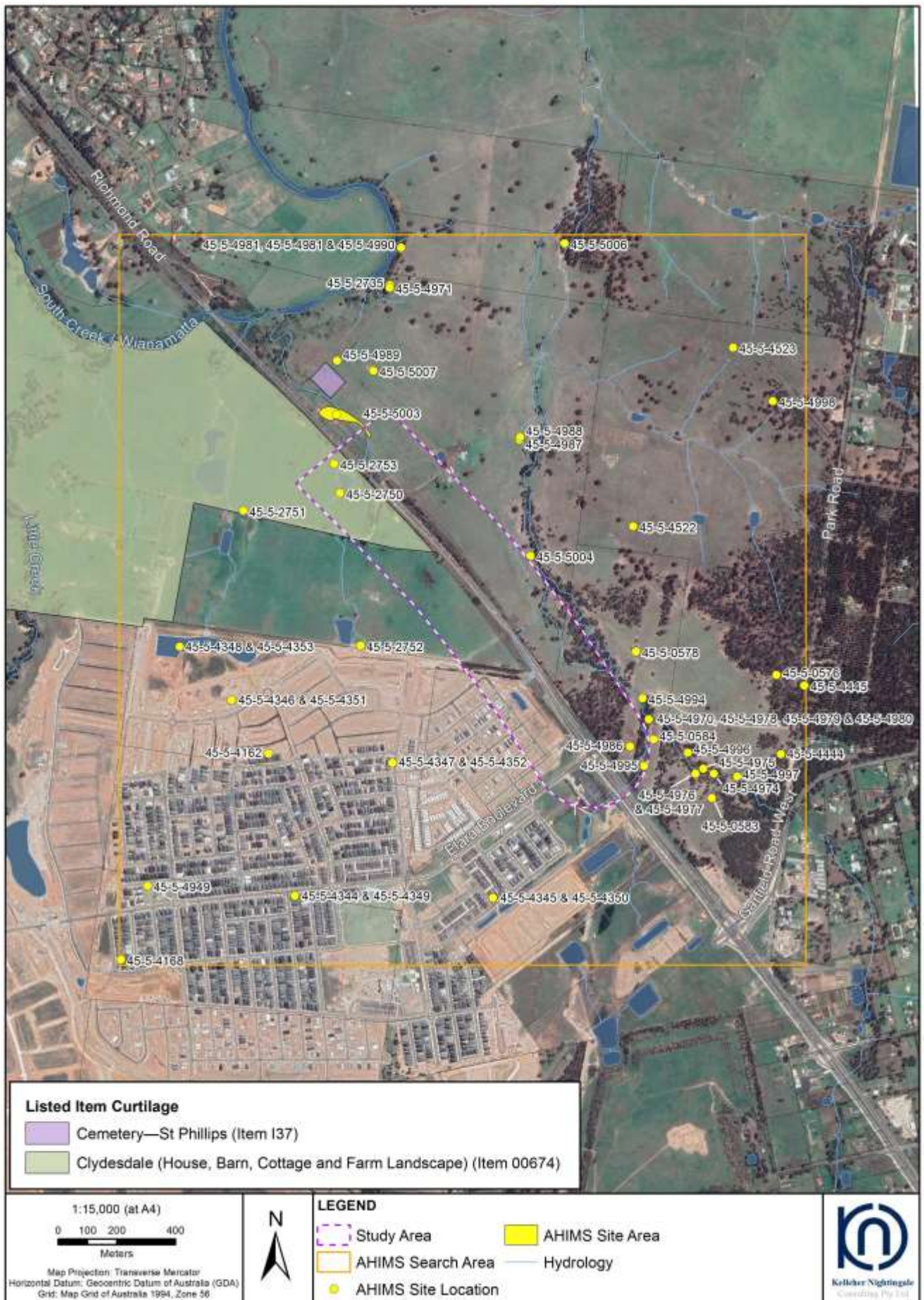


Figure 3. AHIMS search results



### 3.3 Previous archaeological investigations

Several archaeological investigations have been undertaken within and around the study area as part of proposed infrastructure and precinct development projects. A summary of the relevant investigations is presented in this section.

Archaeological investigation of land owned by Riverstone Meatworks on the northern side of Richmond Road was undertaken in 1983 by Haglund and Stockton and included lands bound by Richmond Road to the south, Park Road and Garfield Road West to the southeast, Riverstone Road to the northeast and Eastern Creek and terrain to the northwest. A total of 14 sites comprising ten artefact scatters and five isolated finds were identified within the assessment area. Higher density sites were identified on the slightly elevated and well-drained alluvial banks of creeks and streams, with most of the raw material likely sourced from nearby hills. It was also noted however, that there was no guarantee that archaeological sites within these contexts were in situ, as they could have been re-deposited within the silt of flood waters.

The assessment identified one Aboriginal archaeological site located within the current study area. Marsden Park Echo Vale No 2 Riverstone Meatworks (AHIMS 45-5-0584) was recorded as a diffuse scatter of stone artefacts present in eroded areas in or adjacent to a gully. Marsden Park Echo Vale No 2 Riverstone Meatworks extends into the south eastern portion of the current study area. Artefacts identified included flakes and flaked pieces of yellow and red silcrete, yellow indurated mudstone and banded chert. One artefact demonstrated evidence of use-wear. It was determined at the time of recording that the site had the potential to extend further beyond the area of exposure. Three archaeologically sensitive areas were also identified as a result of the assessment, one of which included the location of Marsden Park Echo Vale No 2 Riverstone Meatworks (AHIMS 45-5-0584) and lands north of Richmond Road within the current study area which were determined to be elevated above the 1 in 20 year flood level. Further detailed assessment was recommended in this area prior to any development of the area. It was determined that the majority of the assessment area northwest of South Creek and east of Eastern Creek was unlikely to contain intact archaeological deposit as a result of fluvial activity.

Archaeological survey was undertaken for an archaeological study of Aboriginal sites within the Blacktown LGA. Archaeological survey was conducted within the north western sector of the LGA which included survey within the previously surveyed property owned by Riverstone Meatworks Company Pty Ltd (Kohen 1986). A total of seven sites were identified as a result of the assessment. Two sites identified as a result of survey (BTNW/6 and BTNW/7) were located adjacent to Richmond Road. The assessment identified site BTNW/6 as a small scatter of artefacts located on a creek running alongside Richmond Road. A total of 23 artefacts were identified spanning 30 metres at the existing site location, eroding out of the bank of the creek. Artefacts identified included three silcrete cores, a silcrete scraper and 19 flakes. BTNW/6 was later determined to be located within existing site Marsden Park Echo Vale No 2 Riverstone Meatworks (AHIMS 45-5-0584) and the site recording was updated on the AHIMS database to reflect this.

The assessment identified that most archaeological sites occurring within the Blacktown LGA were located adjacent to creeks and on the ridges. Sites were also likely to be concentrated closer to sources of silcrete present along Plumpton Ridge and at Eastern Creek and South Creek. These areas were identified as areas of high archaeological sensitivity which would require further archaeological assessment should they be impacted by any development. A portion of the ridgeline containing the St Marys Formation located approximately 800 metres to the northeast, was also recommended for protection and preservation as this area contained one major and two minor artefact scatter sites, scarred trees, a possible contact site and a possible burial mound.

Archaeological investigations were undertaken by Jim Kelton for lands located within the Clydesdale property adjacent to South Creek in 2001 (Central West Archaeological and Heritage Services Pty Ltd 2001). The assessment included the north western portion of the current study area. As a result of the investigation, four Aboriginal archaeological sites were identified: C-IF-1/Clydesdale (AHIMS 45-5-2750), C-ST-1 (AHIMS 45-5-2753), C-IF-2 (AHIMS 45-5-2751) and C-OS-1 (AHIMS 45-5-2752). The sites included two isolated finds, a scarred tree and an open artefact scatter. Due to high levels of disturbance the sites were assessed as being of low significance, with the exception of the scarred tree (site CS-T-1) which was of moderate significance based on its cultural values. Sites CF-IF-1/Clydesdale and C-ST-1 are located within the current study area. An Aboriginal archaeological survey for a transmission line (Koettig 1980) also identified one Aboriginal archaeological site on the Clydesdale property: EKC 31 (AHIMS 45-5-0267). The site comprised a scatter of artefacts associated with a possible scarred tree on a creek embankment. The artefacts consisted of silcrete, chert and quartz, and included the tip of an edge ground hatchet and a thumbnail scraper.

An Aboriginal heritage due diligence assessment (KNC 2016) of the Clydesdale Estate historic built heritage and landscape features of Clydesdale House, Stables/Barn, Cottage and graveyard was completed to facilitate protection and landscape maintenance activities for the historic buildings and grounds. The assessment confirmed the location of six previously identified Aboriginal archaeological sites. No new Aboriginal sites were recorded and it was determined that historic conservation and maintenance works would not impact on Aboriginal heritage.

A cultural heritage assessment report was prepared for proposed development of lands within the Clydesdale Estate (KNC 2018). The assessment identified that a total of three previously identified sites of low archaeological significance (C-IF-1/Clydesdale, C-IF-2 and C-OS-1) would be impacted by the proposed works. An AHIP was sought from OEH for impact to these sites. Three sites (C-ST-1, MPP-18 and EKC 31) of moderate archaeological significance were not located within the development application impact area. These sites were not covered under the subsequent AHIP. Overall the Clydesdale area was assessed as being highly disturbed due to intensive agricultural use and exhibited low-moderate archaeological potential depending on level of disturbance and proximity to South Creek. AHIP #C0004249 was granted on 18 January 2019 for impacts to sites C-IF-1/Clydesdale, C-IF-2 and C-OS-1. Any works related to the current proposal undertaken within this existing AHIP area will be required to comply with the AHIP conditions.

Aboriginal archaeological investigations were undertaken for the Marsden Park Precinct which assessed lands located within the current study area south of Richmond Road (KNC 2012). The assessment resulted in the identification of 67 archaeological sites; six of which were located within the Clydesdale property. Two of these sites C-IF-1/Clydesdale (AHIMS 45-5-2750) and C-ST-1 (AHIMS 45-5-2753) are located within the current study area and were revisited as part of the precinct assessment. The significance of the site was still assessed as moderate due to the previously demonstrated range of archaeological materials. C-IF-1/Clydesdale (AHIMS 45-5-2750) and C-ST-1 (AHIMS 45-5-2753) were found to be consistent with their original recordings. Scarred tree C-ST-1 was determined to be of moderate significance for its cultural value, while C-IF-1/Clydesdale was found to exhibit levels of disturbance or low archaeological potential for in situ deposit. The assessment identified that whilst Aboriginal sites were found across the proposed precinct, the larger less disturbed Aboriginal sites tended to be clustered in the central portion of the precinct (southwest of the current study area), associated with lower long term erosion rates and more archaeologically informative landforms and soils. Sites located in intact areas (generally raised areas outside of flood prone lands) retained archaeological integrity and had some research potential to further an understanding of past Aboriginal occupation and use of the precinct and surrounds.

A portion of the Marsden Park precinct located within the southern portion of the study area has since undergone extensive residential development. AHIP #C0000307 was granted on 4 April 2014 for impacts to Aboriginal archaeological sites located within the development area. No Aboriginal archaeological sites identified within the AHIP area were located within the current study area.

Aboriginal heritage assessment was undertaken for upgrades to a section of Richmond Road between Grange Avenue and the South Creek floodplain. The assessment included a portion of Richmond Road corridor located within the current study area. A total of four previously identified sites were located within the assessment area; including site Marsden Park Echo Vale No 2 Riverstone Works (AHIMS 45-5-0584) within the current study area. All four sites were composed of artefact scatters located across ridgetop, slope and drainage landforms and were determined to be of moderate archaeological significance. The predominant raw material observed was silcrete. Survey of Marsden Park Echo Vale No 2 Riverstone Works confirmed that higher numbers of artefacts were noted near the junction of the creek, with artefact numbers tapering off towards Richmond Road. The portion of the site closest to Richmond Road exhibited mostly background level artefact numbers and increased surface disturbance. The remainder of the site was determined to retain moderate archaeological potential. All four sites were impacted, either wholly or partially, by the proposed works. Salvage was recommended for all sites, with the exception of site Marsden Park Echo Vale No 2 Riverstone Works (AHIMS 45-5-0584), as only the disturbed portions of the site adjacent to Richmond Road were to be impacted by the proposed works.

AHIP #C0000359 was granted for the project on 9 May 2014. Any works related to the current proposal undertaken within this AHIP area will be required to comply with the AHIP conditions. Marsden Park Echo Vale No 2 Riverstone Works has since been partially destroyed according to the AHIMS database.

KNC undertook an Aboriginal and non-Indigenous due diligence assessment for lands located within the Marsden Park North Precinct in 2014. The assessment included the properties north of Richmond Road within the current study area. The due diligence assessment identified 34 Aboriginal archaeological sites within the assessment area (KNC 2014). Fourteen areas of moderate or high level potential archaeological deposit (PAD) were also identified. No newly identified sites were identified within the current study area as part of this assessment. It was determined that a process of management/ mitigation would be required for all potentially impacted sites prior to any development of the Marsden Park North Precinct.

Further archaeological investigations for the proposed Marsden Park North Precinct were undertaken by Artefact Heritage to inform an Indicative Layout Plan for the precinct. The assessment identified a total of 75 Aboriginal archaeological sites within the precinct assessment area; this included 37 previously recorded sites and 38 newly identified sites (Artefact Heritage 2018). Sites within the assessment precinct area consisted of artefact scatters, isolated finds and PADs. The majority of archaeological sites (63 of 75 sites) were determined to be of low archaeological significance, with five sites each of high and moderate archaeological significance respectively. Two sites displayed moderate to low archaeological significance. Low significance sites mostly comprised isolated artefacts identified in disturbed contexts. Two additional areas were considered to be of cultural significance; and comprised the St Marys Formation and St Philips Cemetery, located north and east of the study area respectively.

Newly identified sites comprised complete and broken flakes, cores and angular fragments. Fine to medium grained silcrete was the most common raw material identified, however mudstone was also identified in small numbers. The majority of sites were present in areas containing good visibility along creek banks or low lying plain landforms. The study area was also divided into areas of high, moderate and low archaeological sensitivity based upon landform, survey results and disturbance levels.

Two newly identified sites MPIA12 and MPAS7 (45-5-4989 and 45-5-5007) were identified on the low lying plain landform north of the study area boundary. The sites included an isolated find and surface artefact scatter. The sites were determined to be of low archaeological significance and do not extend into the current study area. Two areas of high archaeological sensitivity were also identified as part of the assessment extend along the creek bank landforms located within the north western and south eastern parts of the current study area. Site MPAS06 (AHIMS 45-5-5003) was an artefact scatter site with PAD which extends into the north western portion of the current study area. The AHIMS site card for site MPAS05 (AHIMS 45-5-5004) (located along the northern boundary within the central part of the study area) shows that this site is actually located 90 metres north of its registered coordinate location. This site does not extend into the current study area.

Several additional AHIMS registrations were recorded within the existing site extent of Marsden Park Echo Vale No 2 Riverstone Works (AHIMS 45-5-0584) as a result of the Marsden Park North Precinct assessment. These include AHIMS registrations 45-5-4970, 45-5-4978, 45-5-4979, 45-5-4980, 45-5-4986, 45-5-4994 and 45-5-4995. Two of these recordings, isolated artefact MPIA9 (AHIMS 45-5-4995) and artefact scatter MPAS3 (AHIMS 45-5-4995) were registered within the current study area.

KNC undertook archaeological assessment for the proposed extension/construction and upgrade of Bandon Road located within the suburb of Vineyard, northeast of the study area (KNC 2015). The assessment included the extension of Bandon Road to Richmond Road, across the existing Marsden Park and Riverstone suburbs. The southern portion of the assessment area was located within the central portion of the current study area, north of Richmond Road. A total of 13 Aboriginal archaeological sites were identified within the assessment area, including six previously recorded sites and seven newly recorded sites. None of these sites were located within the current study area. The sites identified comprised four artefact scatters, two isolated artefacts and seven potential archaeological deposits. Raw materials identified included siliceous tuff, chert/chalcedony and petrified wood, however the majority of artefacts were made from silcrete. Artefacts identified included distal and medial flake fragments, complete flakes, flaked pieces, angular fragments and cores. The sites were predominantly identified on raised landforms within close proximity to water sources which contained areas with potential for in situ archaeological deposits and low level disturbance. Twelve of the identified sites were deemed to be of moderate scientific significance and one site was deemed to be of low scientific significance. It was recommended that future detailed design for the project should take the location of the identified sites into consideration and avoid impact where possible. If impact to identified sites couldn't be avoided, it was determined that an AHIP would be required prior to impacting the Aboriginal archaeological sites.

An assessment was undertaken for water related services for the (then) North West Growth Centre. Aboriginal Heritage Management Solutions (2011) undertook Aboriginal cultural heritage assessment for 24 kilometres of water and wastewater pipelines, a reservoir and a pumping which included desktop assessment and archaeological field survey of the Riverstone Precinct. No archaeological sites associated with the assessment were identified within the current study area. Ground surface disturbance within the assessment area was mostly high, or modified within road corridors. Effective survey coverage was recorded as 14% due to dense grass cover over most parts of the assessment area. A total of 36 sites were identified within the assessment. The sites were primarily found in close proximity to the major creeklines in the area, including Eastern Creek, Killarney Chain of Ponds and First Ponds Creek. A total of 22 sites (15 newly recorded and seven previously recorded) were identified as being potentially impacted by the water related services. These site types included isolated finds, artefact scatters, PADs (both with and without surface artefacts) and a scarred tree. Significance assessment was undertaken and determined that three sites displayed low significance, twelve displayed moderate significance, one displayed moderate-high significance and five displayed high significance.

### 3.4 Previously identified sites within the study area

Previous archaeological investigations have identified four Aboriginal archaeological sites (comprising six AHIMS registrations) situated within the current study area. These sites are discussed below.

#### **Marsden Park Echo Vale No 2 Riverstone Meatworks (AHIMS 45-5-0584) (includes MPIA9 and MPAS3)**

Site Marsden Park Echo Vale No 2 Riverstone Meatworks was an artefact scatter located across the creek banks of an unnamed tributary of South Creek, which crosses under Richmond Road in the south eastern portion of the study area. The site extends from the Richmond Road boundary to a tributary confluence to the north. Artefacts were identified in eroded areas on the creek banks and included flake fragments, flakes, and cores. Higher numbers of artefacts were noted near the junction of the creek, with artefacts numbers tapering off west of the junction moving towards Richmond Road. The southern portion of the site (away from the creek junction) exhibited mostly background level artefact numbers and increase surface disturbance. All recorded artefacts were composed of silcrete, likely associated with the St Marys Formation outcrop present on a ridge 500m east of the site.

Additional artefacts recorded at the site have been registered separately on AHIMS as MPIA9 (AHIMS 45-5-4986) and MPAS3 (AHIMS 45-5-4995). These additional recordings form part of the wider Marsden Park Echo Vale No 2 Riverstone Meatworks archaeological deposit and are not considered to constitute separate archaeological sites.

A portion of the site is covered under AHIP #C0000359 which was granted for the Richmond Road Stage 3 project on 9 May 2014. The portion of the site within the AHIP area has since been partially destroyed according to the AHIMS database. Any works related to the current proposal undertaken within this AHIP area will be required to comply with the AHIP conditions.

#### **MPAS6 (AHIMS 45-5-5003)**

Site MPAS6 was an artefact scatter site measuring approximately 192 x 37 metres identified on a creek bank landform associated with a tributary of South Creek. A total of 56 artefacts were identified at the site. The site was identified in an area of high archaeological sensitivity and had potential for subsurface archaeological deposits. The site was determined to be of high archaeological significance.

#### **C-IF-1/Clydesdale (AHIMS 45-5-2750)**

Site C-IF-1/Clydesdale was originally recorded as an isolated artefact identified on an eroded surface adjacent to a dam. A further three silcrete artefacts were identified on the same landform during the survey for the Marsden Park Precinct. The ground where the artefacts were found had been extensively disturbed as a result of construction of the dam. The site was assessed as having low archaeological significance.

The site is wholly covered under AHIP #C0004249 which was granted for the Clydesdale Estate project on 18 January 2019. Any works related to the current proposal undertaken within this AHIP area will be required to comply with the AHIP conditions.

#### **C-ST-1 (AHIMS 45-2753)**

C-ST-1 consisted of a single Aboriginal scarred tree recorded within the north western portion of the study area adjacent to the existing Richmond Road corridor. The tree was situated in a low lying area to the north of the artefact scatter C-IF-1/Clydesdale. There were no visible marks associated with bark removal activities and the scar is an indeterminate shape. However based on its proximity to South Creek and to the numerous archaeological sites associated with South Creek, site C-ST-1 was assessed as having a moderate archaeological significance. The site is not covered under the existing Clydesdale Estate AHIP.

## 4 Landscape context

The study area is located in the north west of the Cumberland Plain, a gently undulating and generally low-lying physiographic region of the Sydney Basin. The Sydney Basin is a large geological feature stretching from Batemans Bay in the south to Newcastle in the north and Lithgow in the west. The formation of the basin began between 250 to 300 million years ago when river deltas gradually replaced the ocean that had extended as far west as Lithgow.

The topography of the study area is characterised by crest, slope, open depression and flat landforms that form the undulating plain and floodplain adjacent to South Creek (Figure 4). South Creek is one of the major watercourses of the Cumberland Plain and flows into the Hawkesbury River approximately eight kilometres north of the study area. Various unnamed first and second order tributary watercourses drain into South Creek from the surrounding slopes, including one drainage tributary which crosses Richmond Road south to north across the southern boundary of the study area. Archaeologically, South Creek has been proven to be a focal point for Aboriginal land use activity and is likely to have provided a stable source of water and raw materials suitable for tool-making.

The underlying geology of the study area comprises three units associated with the South Creek floodplain (Figure 5). Quaternary Alluvium is a relatively recent deposit of fine-grained sands, silts and clays. Quaternary alluvial deposits across the Cumberland Plain occur in association with more permanent waterways and cyclical episodes of fluvial erosion and deposition, in this case occurring along South Creek and associated floodplain. Fluvial activity during the Tertiary Period resulted in the deposition of gravels and finer sediments called Rickabys Creek Gravel and Londonderry Clay respectively. Londonderry Clay is present across the majority of the study area. The Londonderry Clay consists of mottled red-grey, moderately to highly plastic clay with sandy lenses and iron-cemented sand clay aggregates. Patches of ferruginized consolidated sand are also present and influence the soil deposits within the study area. An isolated deposit of the Rickabys Creek Gravel can be found at the interface of the Quaternary Alluvium and Londonderry Clay in the north western part of the study area. Exposed deposits of these gravels are often associated with Aboriginal archaeological sites as they were exploited for the quality stone material consisting of chert and silcrete. A large outcrop of silcrete associated with the St Marys Formation is also located on a ridgeline to the north east of the study area and outcrops are common around Riverstone to the east.

The soil landscapes within the study area are tied to the topography and underlying geology (Figure 5). The South Creek soil profile can be found along the floodplain of South Creek and its associated tributaries. The South Creek soil landscape is characterised by deep to very deep alluvial sediments, loams and clays, susceptible to erosion and frequent flooding. In general, the South Creek soil profile of the study area matches the distribution of the Quaternary Alluvium. Moving away from the floodplain of South Creek, the Berkshire Park soil profile can be found in the elevated central portion of the study area. Berkshire Park soils are characterised by often mottled orange heavy clays and clayey sands with ironstone nodules throughout. The Berkshire Park soil profile is associated with both the Rickabys Creek Gravel and the Londonderry Clay geologic formations.

A small portion of the Blacktown soil landscape is present within the southernmost portion of the study area. The residual Blacktown soil landscape developed in situ on the slopes from underlying Bringelly Shale geology located south of the current study area. This soil landscape consists of shallow to moderately deep hard-setting red, brown and yellow podzolic soils. It is subject to minor erosion where surface vegetation is not maintained. The soil landscape is often close to water sources and associated resources without being within flooding areas.

The distribution of native vegetation within the study area has been affected by historic and contemporary European land use practices in the region. Prior to 1788, a mixture of native vegetation communities would have extended across the entirety of the Cumberland Plain with distribution determined by a combination of factors including soil, terrain and climate. The clearance of native vegetation across the majority of the study area by European settlers has left remnant areas of native vegetation adjacent to South Creek and some of its tributaries. These areas are classified as Shale Gravel Transitional Forest and Alluvial Woodland.

European settlement of the area began in the early 19th century with several land grants in the region. The land grants were primarily utilised for agricultural or pastoral land use and widespread native vegetation clearance was conducted in order to prepare the land. In the succeeding centuries, land use within the region has remained primarily associated with farming; however, recent urban development has begun to transform the area. Past and present land use practices have had a variable impact on the landscape within the study area. Activities associated with the construction of the Richmond Road corridor have modified the landscape by creating cuttings and artificial embankments in addition to modifying the course of several waterways. Construction activities related to residential development and related infrastructure have also modified the landscape and disturbed subsurface deposits.



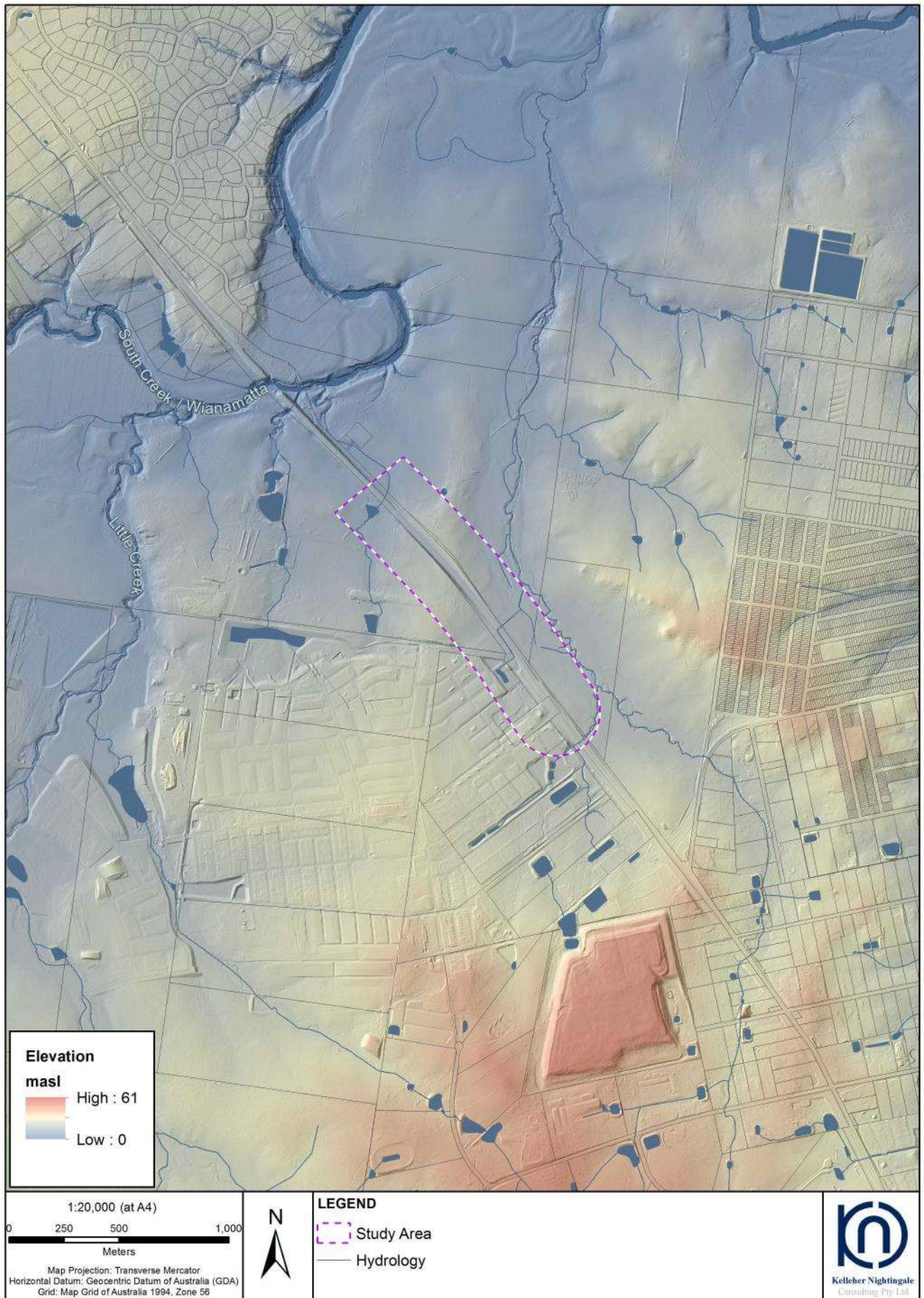


Figure 4. Topography of the study area



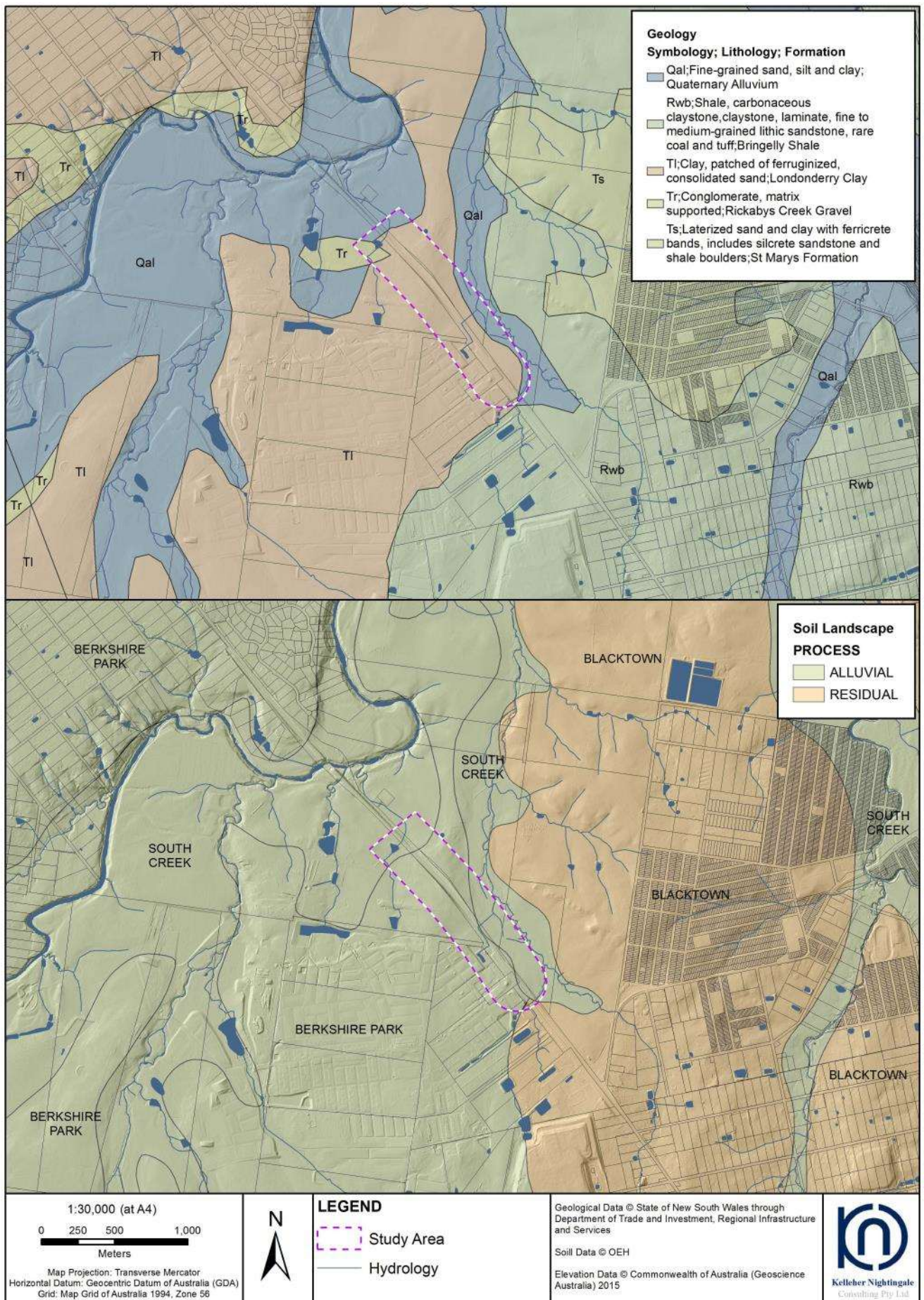


Figure 5. Geology and soil landscapes of the study area

## 5 Regional character and site predictions

Previous archaeological investigations have provided data on site distribution, site typology and lithic raw material use that aid in assessing the archaeological character of the region. Site frequency and density can be related to key landscape factors including distance to water, landform, degree of slope, soil landscape and proximity to environmental resources.

Archaeological sites in the region generally occur as surface artefact scatters and isolated artefacts that have been identified across the various landforms, geologies and soil landscapes within the study area. Relatively elevated landforms along the margins of creeks, especially those offering permanent water and associated environmental resources would have been favourable for occupation by Aboriginal people. This is reflected in the archaeological record by higher artefact densities recorded at these sites, especially along South Creek, potentially reflecting repeated or more intensive use of these locations.

Numerous raw material sources have been documented in the wider region and are known to have been utilised by Aboriginal people in the past. Geology landscapes within and surrounding the study area consist of Rickabys Creek Gravel and St Mary's Formation geologies which contain high quality raw materials suitable for artefact production.

The study area is located within a landscape with varying levels of natural and human disturbance including the construction of roads, housing, utilities, erosion and fluvial activity. Within these contexts Aboriginal objects are unlikely to survive in situ and the archaeological potential of such sites is generally low. Conversely, ground surface visibility is often increased by these processes, leading to increased identification of surface artefacts in these areas.

Based on information from previous archaeological investigations, landscape context and regional character, site predictions for the study area include the following:

- Archaeological sites are likely to consist of open artefact scatters and/or isolated artefacts on the undulating hills associated with the Berkshire Park landscape or elevated terraces and flats associated with the Quaternary Alluvium landscape.
- It can be expected that silcrete will be the most commonly encountered artefact raw material, with occasional occurrences of quartz, chert and siliceous tuff/mudstone.
- Clearance of the majority of original vegetation lessens the likelihood of identifying culturally modified trees, but old growth trees may be present in the study area and have the potential to display scars of Aboriginal origin.
- The identification of archaeological sites is likely to be affected by differential visibility of the ground surface, but successful assessment of areas of potential archaeological deposit can be made based on landform and other environmental factors such as disturbance, degree of slope and distance to water.



## 6 Sampling strategy and field methods

The aim of the archaeological survey was to conduct a full coverage, pedestrian survey of the study area and to record any Aboriginal archaeological sites or areas with potential to contain Aboriginal objects. An additional aim of the field survey was to relocate and confirm (where possible) the location and extent of previously recorded sites listed on the AHIMS database. The study area was arbitrarily divided into two survey units based on landform and features of the physical environment (Figure 6).

Survey Unit 1 encompassed the northern portion of the study area. The survey unit had been largely cleared of vegetation and contained semi-rural properties and pasture as well as a portion of the Richmond Road corridor. The survey unit covered the crest, flat, open depression and slope landforms comprising the undulating plain adjacent to South Creek.

Survey Unit 2 comprised the southern portion of the study area. The survey unit contained semi-rural properties and pasture, new residential development and a portion of the Richmond Road corridor. The survey unit had been largely cleared in association with agricultural land use practices and as well as clearing for bulk earthworks related to residential development. The survey unit covered the crest, flat, open depression and slope landforms that formed the interface between a low south to north running ridgeline and a south to north flowing tributary of South creek.

Based on the archaeological background and landform context of the study area, the survey team closely inspected any areas of surface exposure for artefacts, evidence of intact soils and any mature trees for evidence of Aboriginal bark removal. Assessments of soil disturbance were also made during the survey.

All survey units were inspected by pedestrian survey. The archaeological survey was conducted on Wednesday 5 December 2018. The survey team comprised Matthew Kelleher (KNC) and Steve Randall (DLALC).

The survey team were equipped with high resolution aerial photography and topographic maps showing the study area boundary. A non-differential GPS receiver was used for spatial recordings. All GPS recordings were made using the Geocentric Datum of Australia (GDA) coordinate system. Detailed notes on the condition of each survey unit were compiled by the survey team including an assessment of surface visibility, vegetation coverage, modern disturbance and current land use.



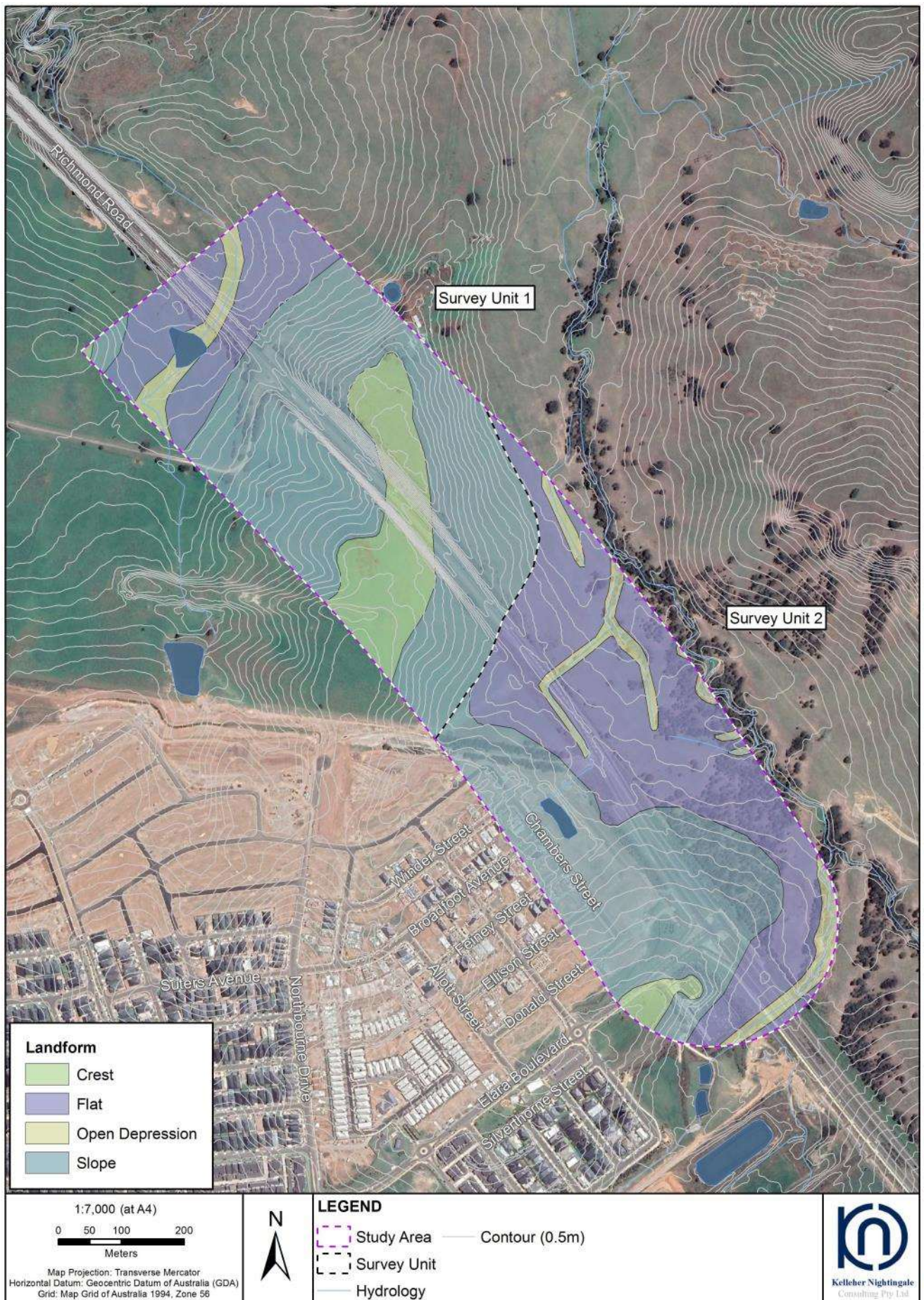


Figure 6. Survey units and landform



## 7 Survey results

The survey revisited and reassessed four previously recorded archaeological sites (comprising six AHIMS registrations) within the study area. The survey did not identify any new Aboriginal archaeological sites within the study area. The results of the survey are shown in Figure 7 and described below.

### 7.1 Previously recorded sites within the study area

|                             |   |
|-----------------------------|---|
| <b>Site Name:</b>           | Marsden Park Echo Vale No 2 Riverstone Meatworks (includes sites MPIA9 and MPAS3) |
| <b>AHIMS ID:</b>            | 45-5-0584   |
| <b>Coordinates (GDA94):</b> | 298704E 6269989N (originally recorded as AGD66 298600E 6269800N)                  |
| <b>Landform Context:</b>    | Flat/Open Depression  |

Marsden Park Echo Vale No. 2 Riverstone Meatworks was identified during an investigation in 1983 of the land adjoining the study area. Marsden Park Echo Vale No. 2 was relocated during field survey for the Richmond Road Upgrade Stage 3 Project and was found to extend across a larger surface area than was originally recorded with a portion of the site extending into the Richmond Road corridor. The site was located approximately 80 metres east of the Richmond Road/Elara Boulevard intersection.

The site was an artefact scatter located along both banks of a tributary of South Creek. The site includes the immediate creek banks and adjacent areas and extends roughly from the existing Richmond Road boundary to the tributary confluence to the north. Higher numbers of artefacts were noted near the junction of the creek, with artefacts numbers tapering off south of the creek junction moving towards Richmond Road. The northern portion of the site (away from the creek junction) exhibited mostly background level artefact numbers and increase surface disturbance. The tributary runs through a cleared paddock underneath overhead transmission lines. Artefacts were located in eroded areas on both the north and south banks. Sample artefacts identified were all made from silcrete raw material. A St Marys Formation outcrop exists on a ridge 500m northeast of the site. Artefact types identified included a core, proximal flake fragment, split flake, flake and a bifacial core. The site was assessed as having moderate archaeological potential due to topographic location on a raised landform adjacent to a tributary of South Creek. The site contained variable levels of disturbance with low levels of visible disturbance within the north eastern part of the site.

Additional artefacts recorded at the site have been registered separately on AHIMS as MPIA9 (AHIMS 45-5-4986) and MPAS3 (AHIMS 45-5-4995). These additional recordings form part of Marsden Park Echo Vale No 2 Riverstone Meatworks and are not considered to constitute separate archaeological sites.

The site location was revisited during the current archaeological survey and the survey team noted that the site exhibited variable levels of disturbance. The site was assessed as having moderate archaeological potential due to the potential for intact subsurface deposits, artefact density and the site's location. No additional artefacts were identified at the site by the survey team.

|                             |                      |
|-----------------------------|----------------------|
| <b>Site Name:</b>           | MPAS6                |
| <b>AHIMS ID:</b>            | 45-5-5003            |
| <b>Coordinates (GDA94):</b> | 297623E 6271098N     |
| <b>Landform Context:</b>    | Flat/Open Depression |

MPAS6 was identified during an investigation in 2018 of the land adjoining the study area. Site MPAS6 was an artefact scatter site measuring approximately 192 x 37 metres identified on a low-lying landform associated with a tributary of South Creek. A total of 56 artefacts were identified at the site, eroding out of the slope. The site was identified in an area of high archaeological sensitivity and contained potential for subsurface archaeological deposits. The site was determined to be of high archaeological significance.

The site location was revisited during the current archaeological survey by the survey team. The site was considered to extend further to the north and east on the basis of landform, encompassing the slightly elevated spur running to the north west from the central ridge line. The site was assessed as having high archaeological potential due to the potential for intact subsurface deposits, artefact density and the site's proximity to South Creek. No additional artefacts were identified at the site by the survey team.

**Site Name:** C-IF-1 /Clydesdale  
**AHIMS ID:** 45-5-2750  
**Coordinates:** 297634E 6270829N  
**Landform Context:** Open Depression

Site C-IF-1/Clydesdale was identified during an investigation in 2001 of land adjoining the study area. Site C-IF-1/Clydesdale was originally recorded as an isolated artefact identified on an eroded surface adjacent to a dam. A further three silcrete artefacts were identified on the same landform during the survey for the Marsden Park Precinct in 2012. The ground where the artefacts were found had been extensively disturbed as a result of construction of the dam. The site was assessed as having low archaeological significance.

The site location was revisited during the current archaeological survey. No artefacts were identified at the site by the survey team. The site was assessed as having no intact archaeological deposit and low archaeological potential due to extensive disturbance from modern land use practices. The site is covered under an existing AHIP.

**Site Name:** C-ST-1  
**AHIMS ID:** 45-5-2753  
**Coordinates:** 297614E 6270929N  
**Landform Context:** Slope

Site C-ST-1 was identified during an investigation in 2001 of land adjoining the study area; the site was subsequently revisited during the survey for the Marsden Park Precinct in 2012. C-ST-1 consisted of a single Aboriginal scarred tree located within the north western portion of the study area. The tree was situated in a low lying area to the north of the artefact scatter C-IF-1/Clydesdale. There were no visible marks associated with bark removal activities and the scar is an indeterminate shape. However based on its proximity to South Creek and to the numerous archaeological sites associated with South Creek, site C-ST-1 was assessed as being of moderate archaeological significance.

The site was revisited during the current archaeological survey and confirmed the location of scarred tree C-ST-1. The site was assessed as being of moderate archaeological significance.





Figure 7. Survey results



## 7.2 Survey coverage

Survey Unit 1 encompassed a drainage tributary of South Creek and a low ridgeline located in the northern part of the study area. Landforms present included the crest, slope, flat and open depression landforms related to these landscape features. The survey unit comprised semi-rural properties and pastures in addition to a section of the existing Richmond Road corridor. The majority of the survey unit had been cleared of native vegetation as a result of agricultural land use and the construction of the road. Remnant vegetation and exotic weeds were present in small sections bordering the road corridor and property fencelines.



**Plate 1. Survey Unit 1 overlooking MPAS6 (AHIMS 45-5-5003) showing low levels of ground surface visibility and trees bordering South Creek in background.**



**Plate 2. Survey Unit 1 facing northwest on low crest landform, demonstrating visibility on exposed vehicle tracks and increased vegetation along fenceline.**

The majority of the study area exhibited low levels of visible disturbance related to agricultural land use. However, areas surrounding or within the existing Richmond Road corridor contained higher levels of disturbance. A section of the road corridor has cut through the existing low ridgeline trending south to north across the survey unit leading to extensive modification of the landscape within this part of the study area. Entrances and unsealed driveways leading to adjacent properties have also contributed to disturbance within the survey unit. Ground surface visibility within Survey Unit 1 was generally low due to bitumen surfaces, the presence of pasture grasses within properties and weeds and low grasses within the road corridor. Exposures were present within vehicle and access tracks bordering the road, in erosion scours across grazing areas and within road verges and unsealed driveways. Visibility however, was generally impeded by blue metal, introduced gravels and mud within the road corridor and unsealed driveways and leaf litter and dead grasses within properties.



**Plate 3. Survey Unit 1 facing scarred tree C-ST-1 (AHIMS 45-5-2753) (centre).**



**Plate 4. Survey Unit 1 facing south east demonstrating exposures present on unsealed driveway.**

Three previously recorded Aboriginal archaeological sites (MPAS6, C-IF-1/Clydesdale and C-ST-1) were located within Survey Unit 1. The locations of these sites were revisited by the survey team. The location of artefact scatter site MPAS6 (AHIMS 45-5-5003) was confirmed on the north western side of Richmond Road, adjacent to the road and approximately 260 metres southwest of South Creek. The site was determined to contain potential for intact subsurface archaeological deposit due to low levels of visible disturbance and its presence on an elevated landform adjacent to a tributary of South Creek. No additional artefacts were identified at the site location during the current archaeological survey. Sites C-IF-1/Clydesdale and C-ST-1 were also revisited by the survey team. Both sites contained high levels of disturbance associated with land use practices. No additional artefacts or areas of potential archaeological deposit were identified during the current survey. No new Aboriginal archaeological sites, objects or areas of potential archaeological deposit were identified within Survey Unit 1.



**Plate 5. Survey Unit 1 facing north, showing Richmond Road cut through low ridgeline.**



**Plate 6. Survey Unit 2 looking north east towards remnant vegetation along tributary of South Creek.**

Survey Unit 2 covered the southern portion of the study area and included the crest and slope landforms associated with a nearby ridgeline located outside of the study area, as well as the open depression and flat landforms associated with a tributary of South Creek located to the north, and present along the south eastern border of the study area. This survey unit consisted primarily of a section of the existing Richmond road corridor, as well as areas of new and under construction residential development south of Richmond Road. To the north, semi-rural properties are present and continue to be associated with agricultural land use and grazing practices. Patches of remnant vegetation are present on the northern side of Richmond Road, primarily related to the tributary confluence present within this part of the study area. Survey Unit 2 had been subject to disturbance and landscape modification, particularly within the road corridor and south of the road. The portion of the survey unit north of Richmond Road generally exhibited low levels of visible disturbance.

Ground surface visibility within Survey Unit 2 was very low, with limited exposure present primarily within the northern part of the survey unit within grazing areas or along fencelines. Visibility was low as a result of concrete and bitumen surfaces and grassed areas within the road corridor, and as a result of low pasture grasses within properties north of Richmond Road. Visibility on exposures was generally impeded by leaf litter and introduced gravels. No new Aboriginal archaeological sites, objects or areas of potential archaeological deposit were identified within Survey Unit 2. One previously recorded site, Marsden Park Echo Vale No 2 Riverstone Meatworks (AHIMS 45-5-0584) was relocated within Survey Unit 2. The site also comprised two additional AHIMS registrations for MPIA9 and MPAS3 (AHIMS 45-5-4986 and 45-5-4995) which were recorded within the study area. The site was determined to contain potential for intact archaeological deposit within proximity to the junction of the creek. No artefacts were identified during the current survey.



**Plate 7. Survey Unit 2 facing southwest showing disturbance associated with road construction.**



**Plate 8. Survey Unit 2 showing disturbance associated with new intersection. Note increased vegetation north of Richmond Road in the background.**

In summary, four previously recorded sites (comprising six AHIMS registrations) were relocated as part of the current study area. Two of these sites, MPAS6 and Marsden Park Echo Vale No 2 Riverstone Meatworks (includes MPIA9 and MPAS3) displayed further potential for intact subsurface deposits. The remaining sites, CF-IF-1/Clydesdale and C-ST-1 were present within disturbed contexts and findings were consistent with previous site recordings. The remainder of the study area had been disturbed in varying degrees by historic and contemporary land use practices associated with agricultural grazing practices, residential development and the construction of the Richmond Road corridor. No new Aboriginal archaeological sites or areas of potential archaeological deposit were identified as a result of the archaeological survey.



### 7.3 Survey coverage analysis

Surface exposure across the study area was low and visibility within surface exposures was moderate to low. Surface exposure varied considerably within the survey area and was dependant on vegetation density, natural processes such as erosion and modern land use practices. Details of survey and landform coverage are outlined in Tables 3 and 4 below.

**Table 3. Survey coverage**

| Survey Unit | Landform        | Area (m <sup>2</sup> ) | Visibility (%) | Exposure (%) | Effective Coverage (m <sup>2</sup> ) | Effective Coverage (%) |
|-------------|-----------------|------------------------|----------------|--------------|--------------------------------------|------------------------|
| 1           | Slope           | 183,145                | 30             | 30           | 16,483                               | 9                      |
| 1           | Open Depression | 12,017                 | 50             | 20           | 1,202                                | 10                     |
| 1           | Crest           | 48,668                 | 40             | 20           | 3,893                                | 8                      |
| 1           | Flat            | 53,936                 | 50             | 30           | 8,090                                | 15                     |
| 2           | Slope           | 121,057                | 30             | 20           | 7,263                                | 6                      |
| 2           | Open Depression | 22,439                 | 50             | 30           | 3,366                                | 15                     |
| 2           | Crest           | 5,896                  | 40             | 10           | 236                                  | 4                      |
| 2           | Flat            | 152,847                | 50             | 30           | 22,927                               | 15                     |

**Table 4. Landform coverage**

| Landform        | Area (m <sup>2</sup> ) | Area Effectively Surveyed (m <sup>2</sup> ) | % of Landform Effectively Surveyed | # of Sites |
|-----------------|------------------------|---|------------------------------------|------------|
| Crest           | 54,564                 | 4,129                                       | 8                                  | 0          |
| Flat            | 206,783                | 31,017                                      | 15                                 | 3          |
| Open Depression | 34,456                 | 4,568                                       | 13                                 | 1          |
| Slope           | 304,202                | 23,746                                      | 8                                  | 0          |

## 8 Analysis and discussion

Background research, AHIMS records and archaeological field surveys identified four previously identified Aboriginal archaeological sites (comprising six AHIMS registrations) within the study area. These sites comprise Marsden Park Echo Vale No 2 Riverstone Meatworks (includes MPIA9 and MPAS3), MPAS6, C-IF-1/Clydesdale and C-ST-1.

The sites are located within close proximity to tributaries of the major water source of South Creek. Previous archaeological investigations have shown that higher density artefact scatters are often located along the South Creek watercourse where permanent water and associated environmental resources would have been favourable for occupation by Aboriginal people. The archaeological sites which occur in the vicinity of smaller creeks, such as drainage tributaries of South Creek, generally contain lower artefact densities, possibly indicating less frequent use or use for different activities. However, higher density artefact scatters also occur within proximity to the St Marys Formation approximately 500 metres northeast of the study area, as the St Marys Formation geologies would have provided suitable raw materials for artefact manufacture.

The archaeological field survey found that overall ground surface exposure across the study area was low and restricted to areas where natural processes or land use practices including erosion, livestock and vehicle movement had removed vegetation or restricted its growth. Limitations to visibility within these areas included detritus and introduced material such as blue metal adjacent to the roads. The ground surface was not visible within the majority of the study area due to dense grasses and other vegetation cover in addition to road infrastructure. Despite the lack of surface visibility it was still possible to assess the archaeological potential based on landform and disturbance.

The survey found that the majority of the study area contained low potential for subsurface archaeology due to unfavourable location or ground surface disturbance from modern land use practices including agricultural use, the construction of buildings and roads, the installation of utilities, landscaping and earthworks.

### 8.1 Aboriginal settlement history of the study area

The physical evidence of Aboriginal landscape use in the area predominantly consists of artefact scatters and isolated artefacts. Within the study area, four Aboriginal archaeological sites (comprising six AHIMS registrations) have been identified.

Sites Marsden Park Echo Vale No 2 Riverstone Meatworks and MPAS6 consisted of artefact scatter sites located along the creek banks of tributaries draining into South Creek. The sites exhibit relatively stable soils, predominantly low levels of visible disturbance and contain the potential for intact subsurface archaeological deposit.

Site C-IF-1/Clydesdale was a low density artefact scatter identified on the edge of an on-line dam. The site was recorded within a highly disturbed context as a result of the construction of the dam.

C-ST-1 was a single Aboriginal scarred tree. The tree was situated in a low lying area to the north of the artefact scatter C-IF-1/Clydesdale. There were no visible marks associated with bark removal activities and the scar is an indeterminate shape. Scarred trees are significant evidence of Aboriginal occupation across the landscape and are highly significant to contemporary Aboriginal peoples as they are a tangible expression of Aboriginal culture.

The archaeological evidence indicates that South Creek was a focus for intensive Aboriginal occupation due to the resources available in the area. Adjacent elevated areas are likely to have functioned as camp sites from which past Aboriginal people could have exploited these resources.

## 9 Significance assessment

One of the primary steps in the process of cultural heritage management is the assessment of significance. Not all sites are equally significant and not all are worthy of equal consideration and management (Sullivan and Bowdler 1984; Pearson and Sullivan 1995:7). The determination of significance can be a difficult process as the social and scientific context within which these decisions are made is subject to change (Sullivan and Bowdler 1984). This does not lessen the value of the heritage approach, but enriches both the process and the long term outcomes for future generations as the nature of what is conserved and why, also changes over time.

The assessment of significance is a key step in the process of impact assessment for a proposed activity as the significance or value of an object, site or place will be reflected in resultant recommendations for conservation, management or mitigation.

The Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (OEH 2010a) requires significance assessment according to criteria established in the Australia ICOMOS Burra Charter, 1999 (Australia ICOMOS 1999). The Burra Charter and its accompanying guidelines are considered best practice standard for cultural heritage management, specifically conservation, in Australia. Guidelines to the Burra Charter set out four criteria for the assessment of cultural significance:

- Aesthetic value - relates to the sense of the beauty of a place, object, site or item
- Historic value - relates to the association of a place, object, site or item with historical events, people, activities or periods
- Scientific value - scientific (or research) value relates to the importance of the data available for a place, object, site or item, based on its rarity, quality or representativeness, as well as on the degree to which the place (object, site or item) may contribute further substantial information
- Social value - relates to the qualities for which a place, object, site or item has become a focus of spiritual, political, national or other cultural sentiment to a group of people. In accordance with the OEH Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW, the social or cultural value of a place (object, site or item) may be related to spiritual, traditional, historical or contemporary associations. According to OEH, "social or cultural value can only be identified through consultation with Aboriginal people" (OEH 2011:8).

There are four archaeological features located within the study area. The significance assessment (archaeological survey) for the identified archaeological sites has focussed on the scientific significance of Aboriginal heritage values as identified in the Burra Charter.

### **Scientific Values**

Scientific value has been assessed for the identified Aboriginal archaeological sites within the study area. This value has been developed based on significance criteria of research potential (including integrity/condition, complexity and archaeological potential), representativeness and rarity. Identified archaeological sites in the study area displayed low, moderate and high scientific significance.

High significance is usually attributed to sites which are so rare or unique that the loss of the site would affect our ability to understand an aspect of past Aboriginal use/occupation of an area. In some cases a site may be considered highly significant because it is now rare due to destruction of the archaeological record through development. Sites with moderate significance are those that offer the potential to yield information that will contribute to the growing holistic understanding of the Aboriginal cultural landscape of the region. Archaeological investigation of moderately significant sites will contribute knowledge regarding site type interrelationships, cultural use of landscape features and occupation patterns, especially in relation to the identified environmental factors influencing site formation and preservation in the region (fluvial activity and other disturbance factors along South Creek). Sites of low significance are those that do not offer this potential and are unlikely to provide any further scientifically valuable information.



## 9.1 Statements of significance

Background research and survey identified four previously recorded Aboriginal archaeological sites (comprising six AHIMS registrations) within the study area. Statements of significance have been developed based on background research and the current archaeological assessment (field survey). Statements of significance are presented below.

Site MPAS6 exhibits *high archaeological significance*. Site MPAS6 consisted of an artefact scatter site located along the flat landform associated with a tributary draining into South Creek. The site exhibits relatively stable soils, predominantly low levels of visible disturbance and contains the potential for intact subsurface archaeological deposit. The archaeology present at this location offers scientific insight into past Aboriginal activities along South Creek.

Site Marsden Park Echo Vale No 2 Riverstone Meatworks exhibits *moderate archaeological significance*. The site displays relatively low levels of disturbance. Significant archaeological deposit remains in less disturbed portions of the site. These deposits appear relatively intact. The archaeology present at this location offers scientific insight into past Aboriginal activities between South Creek and the lithic resources common around Riverstone and Marsden Park.

Site C-ST-1 exhibits *moderate archaeological significance*. C-ST-1 consisted of a single scarred tree located in a low lying area within the north western portion of the study area. The site area has been highly disturbed by topsoil erosion and dam excavation. Scarred trees are significant evidence of Aboriginal occupation across the landscape and are highly significant to contemporary Aboriginal peoples as they are a tangible expression of Aboriginal culture.

C-IF-1/Clydesdale exhibits *low archaeological significance*. C-IF-1/Clydesdale was a low density surface scatter identified on an eroded surface adjacent to a dam. The site area had been extensively cleared in the past and is disturbed by modern land use practice, which has resulted in a remnant artefact scatter. The site demonstrated low scientific value and it is unlikely that further investigation of the site would contribute to our understanding of Aboriginal landscape use in the region or local area.

**Table 5. Identified Aboriginal archaeological sites and significance assessment**

| Site  | Registered Name/s                                   | AHIMS ID  | Assessed Significance |
|---|---|-----------|-----------------------|
| Marsden Park Echo Vale No 2<br>Riverstone Meatworks | Marsden Park Echo Vale No 2<br>Riverstone Meatworks | 45-5-0584 | Moderate              |
|   | MPIA9   | 45-5-4986 |                       |
|   | MPAS3   | 45-5-4995 |                       |
| MPAS6   | MPAS6   | 45-5-5003 | High                  |
| C-IF-1/Clydesdale                                   | C-IF-1/Clydesdale                                   | 45-5-2750 | Low                   |
| C-ST-1  | C-ST-1  | 45-5-2753 | Moderate              |

## 10 Impact assessment

Roads and Maritime propose the upgrade of Richmond Road between Elara Boulevard and Heritage Road in Marsden Park. Four Aboriginal archaeological sites (comprising six AHIMS registrations) are located within the study area (Table 6). These sites comprise Marsden Park Echo Vale No 2 Riverstone Meatworks (includes MPIA9 and MPAS3), MPAS6, C-IF-1/Clydesdale and C-ST-1.

Based on a corridor wide impact assessment, the identified sites will be at least partially impacted by the proposed works. Best practice is to avoid all impact to Aboriginal archaeological sites.

Future design for the project should take the location of the identified sites into consideration and avoid impact where possible. If impact to identified sites cannot be avoided, additional assessment and an AHIP would be required prior to impacting Aboriginal archaeological sites.

**Table 6. Impact assessment for identified Aboriginal archaeological sites**

| Site Name  | Registered Site Name/s                              | AHIMS ID  | Impact Assessment |
|--|---|-----------|-------------------|
| Marsden Park Echo Vale<br>No 2 Riverstone<br>Meatworks | Marsden Park Echo Vale No 2<br>Riverstone Meatworks | 45-5-0584 | Will be impacted  |
|  | MPIA9   | 45-5-4986 |                   |
|  | MPAS3   | 45-5-4995 |                   |
| MPAS6  | MPAS6   | 45-5-5003 | Will be impacted  |
| C-IF-1/Clydesdale                                      | C-IF-1/Clydesdale                                   | 45-5-2750 | Will be impacted  |
| C-ST-1   | C-ST-1  | 45-5-2753 | Will be impacted  |

## 11 Legislative considerations

The National Parks and Wildlife Act 1974 (NPW Act) is the primary statutory control dealing with Aboriginal heritage in New South Wales. Items of Aboriginal heritage (Aboriginal objects) or Aboriginal places (declared under section 84) are protected and regulated under the Act.

Under the Act, an “Aboriginal object” is defined as “any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains”. As such, Aboriginal objects are confined to physical evidence and are commonly referred to as Aboriginal sites.

Aboriginal objects are protected under section 86 of the Act. It is an offence to harm or desecrate an Aboriginal object, either knowingly [section 86 (1)] or unknowingly [section 86 (2)].

There are offences and penalties relating to harm to, or desecration of, an Aboriginal object or declared Aboriginal place. Harm includes to destroy, deface, damage or move. Penalties are tiered according to offences, which include:

- a person must not harm or desecrate an Aboriginal object that the person knows is an Aboriginal object;
- a person must not harm or desecrate an Aboriginal object (strict liability offence);
- a person must not harm or desecrate an Aboriginal place (strict liability offence);
- failure to notify Office of Environment and Heritage of the location of an Aboriginal object (existing offence and penalty); and
- contravention of any condition of an Aboriginal Heritage Impact Permit.

Under section 87 (1) it is a defence if “(a) the harm or desecration concerned was authorised by an Aboriginal heritage impact permit, and (b) the conditions to which that Aboriginal heritage impact permit was subject were not contravened”.

Section 87 (2) of the Act provides a defence against prosecution under section 86 (2) if “the defendant exercised due diligence to determine whether the act or omission constituting the alleged offence would harm an Aboriginal object and reasonably determined that no Aboriginal object would be harmed”.

Under section 90 (1) of the Act “the Director-General may issue an Aboriginal heritage impact permit”. The regulation of Aboriginal heritage impact permits is provided in Part 6 Division 2 of the Act, including regulations relating to consultation (section 90N).

An Aboriginal Heritage Impact Permit (AHIP) is required for an activity which will harm an Aboriginal object.



## 12 Management and recommendations

Background research and archaeological survey identified four previously recorded Aboriginal archaeological sites (comprising six AHIMS registrations) within the study area. These sites comprise Marsden Park Echo Vale No 2 Riverstone Meatworks (includes MPIA9 and MPAS3), MPAS6, C-IF-1/Clydesdale and C-ST-1. Outside of the identified Aboriginal sites, the remainder of the study area displays low archaeological potential due to combinations of archaeologically unfavourable topography, erosion or disturbance from land use practices.

Based on a study area wide impact assessment, sites Marsden Park Echo Vale No 2 Riverstone Meatworks (includes MPIA9 and MPAS3), MPAS6, C-IF-1/Clydesdale and C-ST-1 will be at least partially impacted by the proposed works. Future detailed design for the project should take the location of the identified sites into consideration and avoid impact where possible.

If the identified archaeological sites cannot be avoided, further investigation and assessment would be required. Further investigation would include a test excavation of Marsden Park Echo Vale No 2 Riverstone Meatworks (including MPIA9 and MPAS3) and MPAS6 in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* and Roads and Maritime PACHCI, to determine the intactness, extent and significance of any subsurface archaeological deposits.

The proposed works overlap several areas that have been previously assessed for their Aboriginal cultural heritage values and are covered under existing Aboriginal Heritage Impact Permits (AHIPs). It is recommended that Roads and Maritime consult with relevant AHIP holders to complete the proposed works in these areas under their respective permits. Any works undertaken within existing AHIP areas must be undertaken in accordance with AHIP conditions.

An AHIP would be required prior to impacting Aboriginal archaeological sites located outside of existing AHIP areas. Mitigation requirements will be determined during the detailed design stage and should be based on the extent of impact caused by the planned works and significance of the impacted archaeology.

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## Appendix A AHIMS Extensive Search Results





### AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : 1822

Client Service ID : 396062

| SiteID    | SiteName  | Datum | Zone | Easting | Northing | Context   | Site Status            | SiteFeatures                                    | SiteTypes      | Reports   |
|-----------|---|-------|------|---------|----------|-----------|------------------------|---|----------------|-----------|
| 45-5-2735 | WD9<br><b>Contact</b>   | AGD   | 56   | 297700  | 6271350  | Open site | Valid                  | Artefact :-                                     |                | 3327      |
|           | <b>Recorders</b> Ms.Alison Nightingale  |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |
| 45-5-2750 | C-IF-1/Clydesdale<br><b>Contact</b>   | AGD   | 56   | 297530  | 6270640  | Open site | Valid                  | Artefact :-                                     |                | 98040     |
|           | <b>Recorders</b> Central West Archaeological and Heritage Services Pty Ltd    |       |      |         |          |           |                        | <b>Permits</b> 4357                             |                |           |
| 45-5-2751 | C-IF-2<br><b>Contact</b>  | AGD   | 56   | 297200  | 6270580  | Open site | Valid                  | Artefact :-                                     |                | 98040     |
|           | <b>Recorders</b> Central West Archaeological and Heritage Services Pty Ltd    |       |      |         |          |           |                        | <b>Permits</b> 4357                             |                |           |
| 45-5-2752 | C-OS-1/Clydesdale<br><b>Contact</b>   | AGD   | 56   | 297600  | 6270120  | Open site | Valid                  | Artefact :-                                     |                | 98040     |
|           | <b>Recorders</b> Central West Archaeological and Heritage Services Pty Ltd    |       |      |         |          |           |                        | <b>Permits</b> 4357                             |                |           |
| 45-5-2753 | G-ST-1<br><b>Contact</b>  | AGD   | 56   | 297510  | 6270740  | Open site | Valid                  | Modified Tree<br>(Carved or Scarred) :-         |                |           |
|           | <b>Recorders</b> Central West Archaeological and Heritage Services Pty Ltd    |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |
| 45-5-0576 | Blacktown Northwest 5 Riverstone Meatworks<br><b>Contact</b>                  | AGD   | 56   | 299020  | 6270020  | Open site | Valid                  | Artefact :-                                     | Open Camp Site | 1007,1050 |
|           | <b>Recorders</b> Jim Kohen  |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |
| 45-5-0578 | Blacktown Northwest 7,Riverstone Meatworks;<br><b>Contact</b>                 | AGD   | 56   | 298540  | 6270100  | Open site | Valid                  | Artefact :-                                     | Open Camp Site | 1007      |
|           | <b>Recorders</b> Jim Kohen  |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |
| 45-5-0583 | Marsden Park Echo Vale No 1 Riverstone Meatworks<br><b>Contact</b>            | AGD   | 56   | 298800  | 6269600  | Open site | Valid                  | Artefact :-                                     | Open Camp Site |           |
|           | <b>Recorders</b> Julie Stockton   |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |
| 45-5-0584 | Marsden Park Echo Vale No 2 Riverstone Meatworks<br><b>Contact</b>            | AGD   | 56   | 298600  | 6269800  | Open site | Partially<br>Destroyed | Artefact :-                                     | Open Camp Site | 1007      |
|           | <b>Recorders</b> Julie Stockton,Julie Stockton                                |       |      |         |          |           |                        | <b>Permits</b> 3697                             |                |           |
| 45-5-4162 | WP 2 (Woorong Park)<br><b>Contact</b>   | GDA   | 56   | 297390  | 6269942  | Open site | Destroyed              | Artefact : 1                                    |                |           |
|           | <b>Recorders</b> Ms.Vanessa Hardy,Kelleher Nightingale Consulting Pty Ltd     |       |      |         |          |           |                        | <b>Permits</b> 3685                             |                |           |
| 45-5-4168 | MPP-05<br><b>Contact</b>  | GDA   | 56   | 296887  | 6269239  | Open site | Destroyed              | Artefact : 2                                    |                |           |
|           | <b>Recorders</b> Ms.Vanessa Hardy,Kelleher Nightingale Consulting Pty Ltd     |       |      |         |          |           |                        | <b>Permits</b> 3685                             |                |           |
| 45-5-4522 | NMP PAD 1<br><b>Contact</b>   | GDA   | 56   | 298636  | 6270717  | Open site | Valid                  | Potential<br>Archaeological<br>Deposit (PAD) :- |                |           |
|           | <b>Recorders</b> Mr.Mark Rawson   |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |
| 45-5-4523 | NMP PAD 2<br><b>Contact</b>   | GDA   | 56   | 298977  | 6271327  | Open site | Valid                  | Potential<br>Archaeological<br>Deposit (PAD) :- |                |           |
|           | <b>Recorders</b> Mr.Mark Rawson   |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |
| 45-5-4949 | Elara Keeping Place<br><b>Contact</b>   | GDA   | 56   | 296978  | 6269491  | Open site | Valid                  | Artefact : 1                                    |                |           |
|           | <b>Recorders</b> Eco Logical Australia Pty Ltd - Sydney,Mr.Tyler Beebe        |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |
| 45-5-4970 | MPIA8<br><b>Contact</b>   | GDA   | 56   | 298689  | 6270059  | Open site | Valid                  | Artefact :-                                     |                |           |
|           | <b>Recorders</b> Artefact - Cultural Heritage Management Miss,Julia McLachlan |       |      |         |          |           |                        | <b>Permits</b>                                  |                |           |

Report generated by AHIMS Web Service on 01/02/2019 for Madeline Harding for the following area at Datum :GDA, Zone : 56, Eastings : 296881 - 299225, Northings : 6269220 - 6271712 with a Buffer of 0 meters. Additional Info : Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 51

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### AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : 1822

Client Service ID : 396062

| SiteID    | SiteName                  | Datum            | Zone | Easting | Northing | Context                                 | Site Status          | SiteFeatures | SiteTypes | Reports        |
|-----------|---------------------------|------------------|------|---------|----------|---|----------------------|--------------|-----------|----------------|
| 45-5-4971 | MPIA1.3<br><b>Contact</b> | GDA              | 56   | 297804  | 6271531  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4974 | MPIA1<br><b>Contact</b>   | GDA              | 56   | 298911  | 6269873  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4975 | MPIA2<br><b>Contact</b>   | GDA              | 56   | 298875  | 6269890  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4976 | MPIA3<br><b>Contact</b>   | GDA              | 56   | 298849  | 6269873  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4977 | MPIA4<br><b>Contact</b>   | GDA              | 56   | 298848  | 6269873  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4978 | MPIA5<br><b>Contact</b>   | GDA              | 56   | 298691  | 6270058  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4979 | MPIA6<br><b>Contact</b>   | GDA              | 56   | 298690  | 6270059  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4980 | MPIA7<br><b>Contact</b>   | GDA              | 56   | 298689  | 6270059  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4981 | MPIA1.6<br><b>Contact</b> | GDA              | 56   | 297843  | 6271668  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4982 | MPIA1.4<br><b>Contact</b> | GDA              | 56   | 297843  | 6271668  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4986 | MPIA9<br><b>Contact</b>   | GDA              | 56   | 298624  | 6269966  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4987 | MPIA1.0<br><b>Contact</b> | GDA              | 56   | 298248  | 6271012  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4988 | MPIA1.1<br><b>Contact</b> | GDA              | 56   | 298250  | 6271022  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4989 | MPIA1.2<br><b>Contact</b> | GDA              | 56   | 297625  | 6271282  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4990 | MPIA1.5<br><b>Contact</b> | GDA              | 56   | 297843  | 6271668  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4994 | MPAS4<br><b>Contact</b>   | GDA              | 56   | 298668  | 6270130  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |
| 45-5-4995 | MPAS3<br><b>Contact</b>   | GDA              | 56   | 298673  | 6269900  | Open site                               | Valid                | Artefact :-  |           |                |
|           |                           | <b>Recorders</b> |      |         |          | Artefact - Cultural Heritage Management | Miss.Julia McLachlan |              |           | <b>Permits</b> |

Report generated by AHIMS Web Service on 01/02/2019 for Madeline Harding for the following area at Datum :GDA, Zone : 56, Eastings : 296881 - 299225, Northings : 6269220 - 6271712 with a Buffer of 0 meters. Additional Info : Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 51

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## AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : 1822

Client Service ID : 396062

| SiteID    | SiteName                                | Datum   | Zone | Easting | Northing | Context   | Site Status            | SiteFeatures                    | SiteTypes | Reports |
|-----------|---|---|------|---------|----------|-----------|------------------------|---------------------------------|-----------|---------|
| 45-5-4996 | MPAS2<br><b>Contact</b>                 | GDA   | 56   | 298822  | 6269945  | Open site | Valid                  | Artefact :-                     |           |         |
|           | <b>Recorders</b>                        | Artefact - Cultural Heritage Management, Miss, Julia McLachlan<br><b>Permits</b>  |      |         |          |           |                        |                                 |           |         |
| 45-5-4997 | MPAS1<br><b>Contact</b>                 | GDA   | 56   | 298990  | 6269863  | Open site | Valid                  | Artefact :-                     |           |         |
|           | <b>Recorders</b>                        | Artefact - Cultural Heritage Management, Miss, Julia McLachlan<br><b>Permits</b>  |      |         |          |           |                        |                                 |           |         |
| 45-5-4998 | St Marys Formation MP<br><b>Contact</b> | GDA   | 56   | 299112  | 6271144  | Open site | Valid                  | Artefact :-, Stone<br>Quarry :- |           |         |
|           | <b>Recorders</b>                        | Artefact - Cultural Heritage Management, Miss, Julia McLachlan<br><b>Permits</b>  |      |         |          |           |                        |                                 |           |         |
| 45-5-5003 | MPAS6<br><b>Contact</b>                 | GDA   | 56   | 297623  | 6271098  | Open site | Valid                  | Artefact :-                     |           |         |
|           | <b>Recorders</b>                        | Artefact - Cultural Heritage Management, Miss, Julia McLachlan<br><b>Permits</b>  |      |         |          |           |                        |                                 |           |         |
| 45-5-5004 | MPAS5<br><b>Contact</b>                 | GDA   | 56   | 298285  | 6270616  | Open site | Valid                  | Artefact :-                     |           |         |
|           | <b>Recorders</b>                        | Artefact - Cultural Heritage Management, Miss, Julia McLachlan<br><b>Permits</b>  |      |         |          |           |                        |                                 |           |         |
| 45-5-5006 | MPAS8<br><b>Contact</b>                 | GDA   | 56   | 298401  | 6271682  | Open site | Valid                  | Artefact :-                     |           |         |
|           | <b>Recorders</b>                        | Artefact - Cultural Heritage Management, Miss, Julia McLachlan<br><b>Permits</b>  |      |         |          |           |                        |                                 |           |         |
| 45-5-5007 | MPAS7<br><b>Contact</b>                 | GDA   | 56   | 297749  | 6271248  | Open site | Valid                  | Artefact :-                     |           |         |
|           | <b>Recorders</b>                        | Artefact - Cultural Heritage Management, Miss, Julia McLachlan<br><b>Permits</b>  |      |         |          |           |                        |                                 |           |         |
| 45-5-4349 | MPE04-1<br><b>Contact</b>               | GDA   | 56   | 297481  | 6269457  | Open site | Destroyed              | Artefact : 1                    |           |         |
|           | <b>Recorders</b>                        | Ms, Vanessa Hardy, Doctor, Tim Owen<br><b>Permits</b> 3685                        |      |         |          |           |                        |                                 |           |         |
| 45-5-4350 | MPS 1-1<br><b>Contact</b>               | GDA   | 56   | 298156  | 6269450  | Open site | Destroyed              | Artefact : 1                    |           |         |
|           | <b>Recorders</b>                        | Ms, Vanessa Hardy, Doctor, Tim Owen<br><b>Permits</b> 3685                        |      |         |          |           |                        |                                 |           |         |
| 45-5-4351 | MPE02-1<br><b>Contact</b>               | GDA   | 56   | 297265  | 6270124  | Open site | Destroyed              | Artefact : 1                    |           |         |
|           | <b>Recorders</b>                        | Ms, Vanessa Hardy, Doctor, Tim Owen<br><b>Permits</b> 3685                        |      |         |          |           |                        |                                 |           |         |
| 45-5-4352 | MPE03-1<br><b>Contact</b>               | GDA   | 56   | 297813  | 6269910  | Open site | Destroyed              | Artefact : 1                    |           |         |
|           | <b>Recorders</b>                        | Ms, Vanessa Hardy, Doctor, Tim Owen<br><b>Permits</b> 3685                        |      |         |          |           |                        |                                 |           |         |
| 45-5-4353 | MPE1-1<br><b>Contact</b>                | GDA   | 56   | 297087  | 6270306  | Open site | Destroyed              | Artefact : 1                    |           |         |
|           | <b>Recorders</b>                        | Ms, Vanessa Hardy, Doctor, Tim Owen<br><b>Permits</b> 3685                        |      |         |          |           |                        |                                 |           |         |
| 45-5-4444 | MPWW-1<br><b>Contact</b>                | GDA   | 56   | 299140  | 6269940  | Open site | Partially<br>Destroyed | Artefact :-                     |           | 103659  |
|           | <b>Recorders</b>                        | Mr, Mark Rawson<br><b>Permits</b> 3980  |      |         |          |           |                        |                                 |           |         |
| 45-5-4445 | MPWW-2<br><b>Contact</b>                | GDA   | 56   | 299220  | 6270174  | Open site | Valid                  | Artefact :-                     |           | 103658  |
|           | <b>Recorders</b>                        | Mr, Mark Rawson<br><b>Permits</b>   |      |         |          |           |                        |                                 |           |         |
| 45-5-4344 | MPE04<br><b>Contact</b>                 | GDA   | 56   | 297481  | 6269457  | Open site | Destroyed              | Artefact : 1                    |           |         |
|           | <b>Recorders</b>                        | Ms, Vanessa Hardy, GML Heritage Pty Ltd + Context - Surry Hills<br><b>Permits</b> |      |         |          |           |                        |                                 |           |         |
| 45-5-4345 | MPS 1<br><b>Contact</b>                 | GDA   | 56   | 298156  | 6269450  | Open site | Destroyed              | Artefact : 1                    |           |         |
|           | <b>Recorders</b>                        | Ms, Vanessa Hardy, GML Heritage Pty Ltd + Context - Surry Hills<br><b>Permits</b> |      |         |          |           |                        |                                 |           |         |
| 45-5-4346 | MPE02                                   | GDA   | 56   | 297265  | 6270124  | Open site | Destroyed              | Artefact : 1                    |           |         |

Report generated by AHIMS Web Service on 01/02/2019 for Madeline Harding for the following area at Datum :GDA, Zone : 56, Eastings : 296881 - 299225, Northings : 6269220 - 6271712 with a Buffer of 0 meters. Additional Info : Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 51

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### AHIMS Web Services (AWS) Extensive search - Site list report

Your Ref/PO Number : 1822

Client Service ID : 396062

| SiteID    | SiteName       | Datum            | Zone  | Easting | Northing | Context   | Site Status | SiteFeatures | SiteTypes | Reports        |
|-----------|----------------|------------------|---|---------|----------|-----------|-------------|--------------|-----------|----------------|
|           | <u>Contact</u> | <u>Recorders</u> | Ms.Vanessa Hardy,GML Heritage Pty Ltd + Context - Surry Hills |         |          |           |             |              |           |                |
| 45-5-4347 | MPE03          | GDA              | 56  | 297813  | 6269910  | Open site | Destroye d  | Artefact : 1 |           | <u>Permits</u> |
|           | <u>Contact</u> | <u>Recorders</u> | Ms.Vanessa Hardy,GML Heritage Pty Ltd + Context - Surry Hills |         |          |           |             |              |           |                |
| 45-5-4348 | MPE 1          | GDA              | 56  | 297087  | 6270306  | Open site | Destroye d  | Artefact : 1 |           | <u>Permits</u> |
|           | <u>Contact</u> | <u>Recorders</u> | Ms.Vanessa Hardy,GML Heritage Pty Ltd + Context - Surry Hills |         |          |           |             |              |           |                |

Report generated by AHIMS Web Service on 01/02/2019 for Madeline Harding for the following area at Datum :GDA, Zone : 56, Eastings : 296881 - 299225, Northings : 6269220 - 6271712 with a Buffer of 0 meters. Additional Info : Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 51

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